

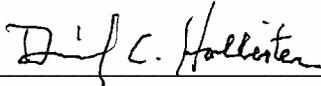
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Acknowledgements

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Executive Summary

The Importance of Health Care to Michigan's Economy

- Health care is Michigan's largest industry in terms of employment
- There are 445,000 jobs directly related to health care and 233,000 jobs indirectly related to health care
- Health care employment provides \$17.7 billion per year in wages and benefits in Michigan
- Health care employees earn an average of \$34,300 per year (2001) and contribute \$55,000 annually to the local economy

Health Care Provides Opportunities to Grow and Upgrade Michigan's Workforce

- Michigan workforce shortages currently exist for well-paid occupations such as nurses, pharmacists, therapists, lab technologists, imaging technicians, and others
- Demand for health care workers will grow as Michigan's baby boomers get older, as the total population grows, and as new entrants to the labor force decline

Health Care Workforce Development in Michigan Project (June – September 2004)

- Products developed through this project
 - Supply and demand forecasts for 30 professional and technical health care occupations
 - Profiles of each occupation, including education, certification, wages, and other data
 - Database of model practices for expanding the health care workforce
- Findings
 - There are current and anticipated employment opportunities for all health care professional and technical occupations in Michigan, **not just nurses**
 - Health care workforce shortages are evident across the state, especially in rural areas
 - Shortages of some health care occupations—such as nursing, pharmacy, and EMTs and paramedics—pose serious threats to the future health and safety of Michigan residents.

- There are no quick fixes—health care workforce development will be a **long-term effort**
- Opportunities for growing the workforce in this industry are likely for the next 20 years
- Opportunities exist for workers at all ages and at all stages of their careers
- A variety of model practices for growing the health care workforce have been identified:
 - ◆ Models for recruiting new workers into the pipeline
 - ◆ Models for upgrading the skills and knowledge of incumbent workers
 - ◆ Some information on transitioning displaced workers from manufacturing or other industries to new careers in health care has been identified; more is needed

Lessons Learned and Recommendations

■ Lesson learned

- Successful models exhibit high levels of collaboration among employers, educators, professionals, and government
- Successful education programs exhibit high levels of flexibility as to where career education is provided, when it is provided, and how it is administered
- A shortage of qualified health care career faculty is an impediment to expanding the health care workforce
- Health care career faculty are needed for both classroom and clinical education
- Expanding the health care workforce is costly
 - ◆ Health care career education requires expensive equipment and facilities
 - ◆ Health care career education is usually conducted in small classes

■ Recommendations

- Use the products from this project (supply and demand forecasts, occupational profiles, and model practices database) to assist Regional Skills Alliances, workforce investment boards, and Michigan Works! agencies
- Maintain and update the information resources developed through this project
 - ◆ Regularly update the occupational profiles, model practices database, and health care occupations forecasts
 - ◆ Make these materials available online as part of MDLEG's Career Portal Web site

- Maintain the Health Care Workforce Development in Michigan Advisory Roundtable temporarily to review recommendations and advise on program implementation
 - ◆ Establish Advisory Roundtable subcommittees to address the unique issues posed by
 - Licensed professionals
 - Unlicensed professionals, technicians, and direct care workers
 - Labor unions and employers
- Use these resources to apply for USDOL-ETA health care workforce demonstration grants and other public and private workforce development funding
- Promote Michigan's participation in the Census Bureau's Local Employment Dynamics (LED) system to provide Michigan with more detailed local workforce data
- Conduct a statewide survey of employment vacancies, turnover, and anticipated needs among Michigan health care employers, including clinics, physician offices, hospitals, and others
- Evaluate the capacity of health care career education programs in Michigan to meet anticipated needs; identify faculty, facility, and resource shortages in health care career education
- Coordinate health care workforce development efforts with the Lieutenant Governor's Commission on Higher Education

Introduction: The Importance of Health Care to Michigan's Economy

For the past 100 years Michigan's economy has been associated with durable goods manufacturing and, in particular, with the manufacture and assembly of automobiles. In recent years, however, it has become increasingly evident that Michigan also has a very strong presence in the provision of health care services to the residents of Michigan, medical education, pharmaceutical research and manufacturing, and other health care-related activities. This is undoubtedly due to the presence of four medical schools, extensive graduate medical education, and a number of world-class medical centers and community hospitals throughout Michigan. As a result, recent analysis indicates that health care has become Michigan's largest industry, with more residents employed in health care-related activities than any other. Moreover, unlike the cyclical nature of manufacturing, health care is one of the most stable sectors in Michigan's economy. A study conducted by the Minnesota IMPLAN[®] Group, Inc. (MIG, Inc.) for the Michigan Health & Hospital Association (MHA), the Michigan State Medical Society, and the Michigan Osteopathic Association earlier this year reported that more than 658,000 jobs and \$25 billion in wages and salaries are generated annually in Michigan either directly or indirectly by the state's health care industry (MHA, 2004).

Health care in Michigan is not only an important industry from a statewide perspective, but it is also a very important industry for the economic stability and well being of numerous individual Michigan communities. In fact, health care employment is the single largest employment category in numerous Michigan communities, especially those in which a community hospital is located. Figures from the MIG, Inc. study, below, illustrate the importance of health care employment in Michigan's ten largest counties.

Table 1: Health Care Employment in Michigan's Ten Largest Counties

County	Direct Health Care Jobs	Wages, Salaries, and Benefits (\$Billions)
Wayne County	80,723	\$3.500
Oakland County	64,217	\$2.800
Kent County	31,701	\$1.300
Macomb County	25,608	\$1.100
Washtenaw County	23,777	\$1.100
Genesee County	20,997	\$0.982
Ingham County	15,819	\$0.689
Kalamazoo County	13,264	\$0.629
Saginaw County	13,229	\$0.558
Ottawa County	7,883	\$0.263

Source: Minnesota IMPLAN Group, Inc., 2004.

Other sources of data verify the size of Michigan's health care workforce and the importance of health care services to Michigan's economy. The Census Bureau's *County Business Patterns* report indicated that direct health care employment in Michigan in 2001 provided 445,000 people with jobs earning an average annual income of \$34,000 (excluding physicians). Between 1988 and 1998, Michigan health care employment grew four times the rate of statewide population growth (28% versus 7%).

The health care industry also holds great promise for the future, both in Michigan and elsewhere throughout the nation, as the nation's population ages and the demand for health care services and the individuals to provide those services continue to grow. In 2000, Michigan's older population (those aged 65 and older) numbered approximately 1.2 million. This number will grow to 1.5 million by the year 2015 when the first wave of the baby-boom generation reaches retirement age. In addition, the oldest members of our population (those aged 85 and older) are growing at an even faster pace as medical science and overall quality of life allows Americans to live longer than ever before. The need for health care services will increase dramatically as the population lives longer and grows older.

From a somewhat different perspective, as a relatively large proportion of health care occupations require high levels of education and/or highly specialized skills, the average salaries

of those employed in the health care sector tend to be higher than the statewide average,¹ and these occupations typically are not subject to layoff or downsizing. Also, few of these jobs are likely to be moved off shore. In addition, due to the direct interaction between patient and caregiver that characterizes most health care activities, most outsourcing of ancillary or support activities (such as laundry or physical therapy) is done locally.

There are, however, chronic and significant shortages in a number of health care professions—both in Michigan and across the nation. Among the most significant shortages are professional nurses, rehabilitation therapists, and laboratory technicians. In February 2004, RNs became the U.S. Department of Labor’s most in-demand occupation with the largest ten-year job growth among all occupations.

In 2001, First Consulting Group of San Diego, California, conducted a nationwide study of health care workforce shortages at American hospitals on behalf of the American Hospital Association and others. As illustrated in Figure 1, hospitals across the nation at that time reported vacancies in excess of 10% for RNs, imaging technicians (e.g., radiographers, mammographers, etc.), pharmacists, licensed practical nurses, and laboratory technicians.

¹ Physicians are not included in this study.

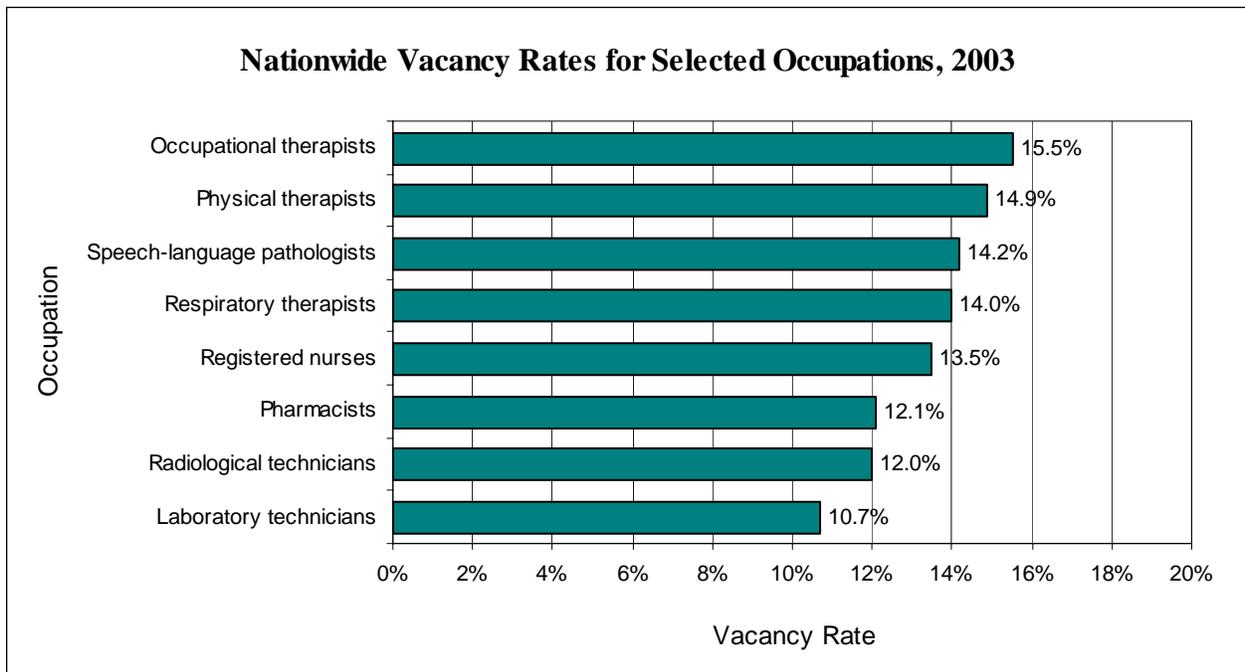


Figure 1

Source: American Hospital Association; First Consulting Group, Inc., 2001.

In a more recent study by the Bernard Hodes Group (2003) of vacancy rates and occupational turnover among health care organizations across the nation, vacancy rates in excess of 10% were reported for a wide variety of highly skilled technical occupations in hospitals and other health care facilities, including occupational and physical therapists, RNs, pharmacists, radiological technicians, and laboratory technicians.

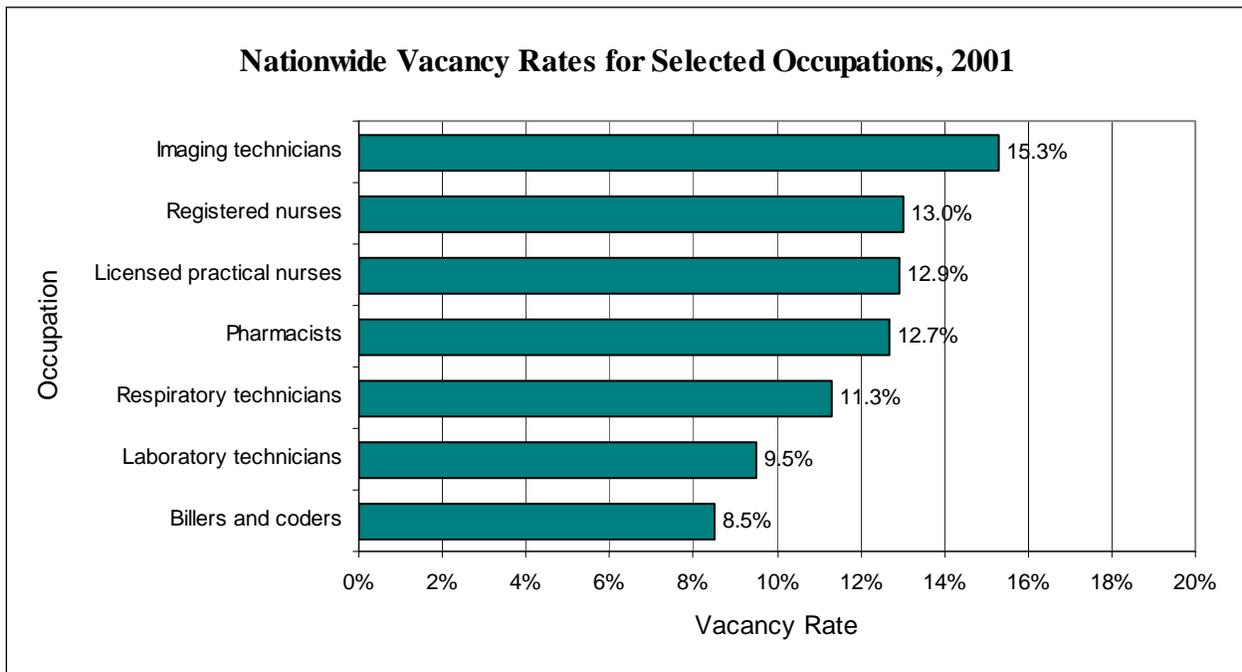


Figure 2
 Source: Bernard Hodes Group, Health Care Metrics Survey, 2003.

Turnover rates for these occupations at hospitals and other health care service providers (physician offices, medical laboratories, and long-term care facilities, for example) are also quite high as a result of these shortages. Among the 151 respondents to the Bernard Hodes Group survey, RNs had the highest turnover rate (15.5%) followed by therapists—e.g., occupational, respiratory, physical, and speech/language therapists (13.5% to 14.9%)—radiological technicians (12.1%) and pharmacists (12.0%).

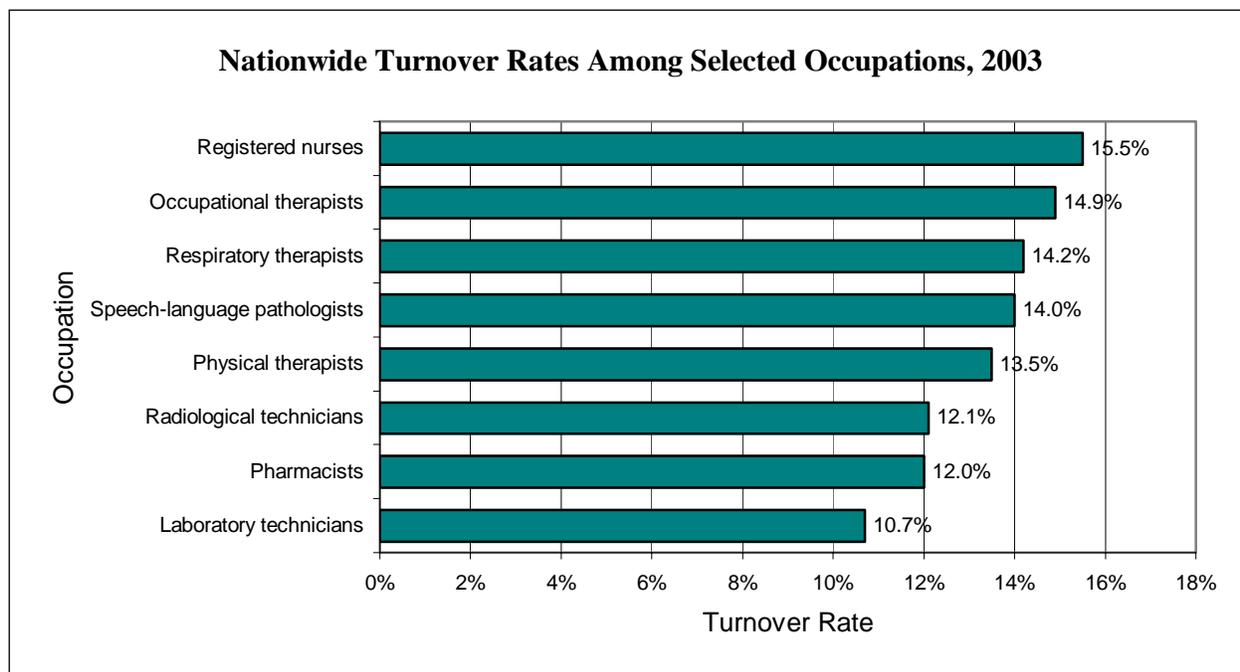


Figure 3

Source: Bernard Hodes Group, Health Care Metrics Survey, 2003.

Some of these shortages have resulted in greater competition to fill these positions, increases in the financial incentives to attract new hires, and greater efforts to retain and upgrade the skills of current health care team members. A recent study by the staff of Voluntary Hospitals of America (VHA) has shown that the costs associated with staff turnover comprise a major expense to health care employers that could be avoided if more adequate supplies of well-educated and certified health care workers were available. VHA estimates that the overall cost of recruiting and orienting a staff nurse, for example, is roughly equal to that nurse's entire annual salary (Keith and Olivio, 2002).

Based on the size and importance of health care services and organizations within Michigan's economy and the critically important workforce training and development component that is required to maintain and grow a qualified and available workforce, the Michigan Department of Labor & Economic Growth (MDLEG) and the Michigan Department of Community Health (MDCH) have joined together to target this industry's potential for strengthening Michigan's current economy and for aligning Michigan's economy with the workforce trends of the future. Moreover, this effort is designed to provide Michigan residents the opportunity to acquire the

education and technical skills to fill a growing number of stable, well-paying, and desirable jobs that are available close to home. Public Policy Associates, Incorporated (PPA), a Lansing-based public policy research, evaluation, and development firm, was hired to analyze Michigan's health care workforce. Among PPA's main responsibilities were estimating future supply and demand for 30 health care occupations, compiling profiles for each of these occupations, and identifying innovative ideas for expanding and upgrading Michigan's health care workforce.

Description of the Project

As a key part of Michigan's ongoing effort to align workforce development with economic development, the purpose of this project is to establish clear and measurable benchmarks and to facilitate coordination among the various stakeholders to assure that Michigan has an adequate supply of skilled professional health care workers to fill both current and anticipated positions within Michigan's health care sector.

Operationally, the goals of this project are to provide a detailed understanding of the health care workforce in Michigan to MDLEG and MDCH so that they can identify appropriate occupational targets in their efforts to grow Michigan's economy, recruit and train Michigan residents to fill important and well-paying health care occupations, and help employers meet their need to provide fully staffed health care facilities and well-trained health care providers within the communities they serve. Several specific tasks were identified to meet these needs:

- *Identify a core set of health care occupations upon which to focus.* Based on discussions among MDLEG, MDCH, and PPA staff during the early stages of this project, it was decided that the most appropriate targets of this project would be several of the most in-demand professional and technical health care occupations within the following four groups:

- Licensed health care practitioners (excluding physicians)²
- Therapists
- Other health care technical occupations
- Health care support occupations

Direct care workers, including certified nursing assistants (CNAs), nursing aides, psychiatric aides, orderlies, and others who provide similar services, are not included in this study.

- *Identify current and future occupational patterns for each target occupation.* Using available labor market statistical information and standard forecasting techniques, current numbers and projected demand and supply of health care professionals were calculated for the entire state and for each of Michigan's 18 labor market areas. This information was used to determine which professions were likely to be in greatest demand in the future.
- *Compile a comprehensive profile of each targeted occupation.* Although the research team recognizes that extensive information about each health care occupation and profession is available from a number of sources—including the U.S. Department of Labor, the Michigan Occupational Information System (MOIS), the Michigan Health Council, and others—each of these sources is incomplete in terms of providing comprehensive and up-to-date information targeted towards adults regarding health care occupations and careers. For this reason, each occupation targeted within this project was profiled using data resources compiled from each of the preceding sources and others in order to provide MDLEG and MDCH a single background document for use in developing specific programs and/or directing individuals towards learning about specific health care occupations.

Each profile brings together a number of vital pieces of information concerning the specific occupation, including the following:

² Physicians were excluded because the recruitment, training, and licensure of both allopathic and osteopathic physicians is highly regulated and is largely outside of the direct influence of the economic development or workforce development efforts of MDLEG. It was also discovered shortly after this project began that efforts to study Michigan's physician workforce issues were already under discussion by Michigan's four medical schools, the Michigan State Medical Society, the Michigan Osteopathic Association, and other organizations, and any analysis by MDLEG would be redundant.

- Occupational title and brief description
- Current salary levels
- Occupational prospects
- Educational requirements
- Testing and licensure requirements, if any
- Sources of additional information

■ *Identify model practices for attracting, recruiting, training, and retaining health care professionals and technicians.* The most critical task of this project has been to identify model practices that might be proposed and successfully used by statewide and local agencies, employers, consortia, and others to address many of the key health care workforce shortages in Michigan. This project identified three target populations to which these practices might successfully be employed.

- New entrants into the labor force (“pipeline issues”): Identify practices that inform decision making, stimulate interest, and recruit high school and postsecondary students to pursue education regarding health care occupations, as well as provide them with effective educational and training programs.
- Current employees (career ladders and lateral career paths): Identify practices to enhance employee retention and to upgrade current health care workers through additional education, cross training, expanded responsibilities, work place and occupational redesign, etc.
- Displaced workers: Identify practices to transition displaced workers from manufacturing or service occupations to health care occupations by capitalizing on skills they already have and providing them with the additional education and training they need to adopt new careers.

- *Professional oversight and advice.* In addition to each of the specific tasks identified above, a critical facet of this project was the recognition that support and acceptance of this project among health care professionals and organizations that are involved in recruiting, educating, and employing health care professionals was absolutely necessary for this project's ultimate success. In addition, it was reasoned that individuals representing these key constituents would provide an invaluable source of information and advice about professional issues, training programs, educational trends, and other nuances that could help to direct this project away from pitfalls and towards success. Based on this recognition, the Health Care Workforce Development in Michigan Advisory Roundtable was established in order to provide MDLEG, MDCH, and PPA staff with ongoing advice and to review the results of work in progress.

Once this project got under way, the Advisory Roundtable was convened three times at the Michigan Public Health Institute in Okemos. Each meeting of the Advisory Roundtable was chaired by a member of the executive staff of MDLEG. The first meeting provided the advisory group with an overview of the project and its goals; this meeting also helped to identify the occupations that were targeted in this project. The second meeting provided the group with an opportunity to review preliminary products including preliminary occupational forecasts, preliminary occupational profiles, and a preliminary database of "model" practices. Significant changes in the format and content of each of these products resulted from discussions at the second meeting. The third meeting provided the group with revised versions of each product as well as the opportunity to discuss future efforts that might follow completion of this project.

The Advisory Roundtable was designed to include representatives of all relevant stakeholders involved in health care workforce issues in Michigan. Among others, these included:

- Health care practitioners
- Four-year colleges and universities
- Community colleges

- Intermediate school districts
- MDLEG and MDCH staff
- Governor's office
- Professional associations
- Hospitals
- Michigan Works!

A complete list of the members of the Health Care Workforce Development in Michigan Advisory Roundtable can be found in Appendix A.

In addition to the external review and advice provided by the Advisory Roundtable, internal meetings were conducted every two to three weeks with the executive staff of MDLEG, MDCH staff, and PPA staff involved with this project.

Occupational Profiles

As the discourse on health care careers and workforce development continues, MDLEG saw a need for a repository of data on health care occupations specifically created for stakeholders in Michigan. The Department recognized the need for a central, integrated resource that could be used by many stakeholders, including career counselors, students, and dislocated workers, to name a few. This need was made clear as the research team began to pull together data from hundreds of disparate sources to describe the landscape of health care careers and how these occupations could offer some answers for the workforce development system, educators, and current health care workers in Michigan. Each of these compartmentalized sources crystallized the reality that the health care system is fragmented, with little sector-wide information, planning, and coordination among:

- Individual professions and networks.
- Health care profession educational organizations.

- Licensing and certification standards and processes.
- The broader workforce system.

One strategy to manage this fragmentation is to create an intersystem repository of health care occupation information. This intersystem repository addresses the compartmentalization of resources, knowledge, and information for many potential users. Having access to information across a broad spectrum of health care careers can address fragmentation in a variety of ways.

- Individual professions and networks can communicate with a common language and with an equal opportunity to access resources. Individual professions can have access to one comprehensive resource that provides information about licensing requirements for their profession, educational opportunities within their field, and transferable skills.
- Health care professional organizations can benefit from this repository as well. For example, professional associations would have a comprehensive resource to which they can refer others that could potentially help strengthen the quality of practitioners in their profession.
- The occupational profile system offers a comprehensive overview so that students and new professionals can learn about the licensing and certification requirements for their profession and begin to operationalize their training as they gain experience in their field.
- MichiganWorks! counselors and other workforce and career development professionals have one source to which they can refer their clients. Within this resource, users can discover a general description of the health care career, the median annual income, and other resources that may be useful when providing counsel on career goals and career planning.

Data-Collection Strategy

The Advisory Roundtable was used extensively to develop the data-collection strategy for the health care occupation profiles. The Advisory Roundtable was established to provide a context of expertise from which to draw insights relating to the various aspects of this project. Using this context of expertise, the following data-collection strategies were developed:

- Collect data from reliable federal government sources of data:
 - Data was collected from the Bureau of Labor Statistics (BLS) Web site (www.bls.gov/oco/home.htm) to inform the career outlook section of the profile.
 - Data was also collected from two Web sites in order to reference funding sources available to individuals seeking training.
 - ◆ www.studentaid.ed.gov
 - ◆ www.michiganworks.gov

- Collect data from reliable state government sources including:
 - Michigan Labor Market Information (LMI).
 - ◆ LMI data (www.michlmi.org) was used to report the wage information included in the profiles.
 - ◆ The LMI occupational descriptions were used to describe each occupation included in the profiles.

 - The Michigan Career Portal was used to provide links to other resources useful to individuals seeking additional information.

 - The Michigan workforce development system through MichiganWorks! is listed as a resource for career counseling and funding opportunities.

 - Michigan Department of Community Health, Bureau of Health Professions was used extensively to help the research team understand the context of licensing and credentialing for each health care occupation. The licensing information, Public Health Code, and Administrative Rules included in the profiles were captured from the Bureau of Health Professions Web site: http://www.michigan.gov/mdch/0,1607,7-132-27417_27529---,00.html.

- Collect data from state and national occupation-specific organizations.
 - Each state and national association, society, or council Web site was reviewed for useful information for the profiles.
 - ◆ These organizations were also called to determine what sources of information might be useful.
 - The Web sites of accrediting bodies were reviewed to discover information pertaining to educational requirements and opportunities for each occupation included in the profiles.

- Collect data from other miscellaneous sources recommended by the Advisory Roundtable. The Advisory Roundtable also suggested other Web sites and reports that included valuable information. These include:
 - Michigan Health Opportunities for Today and Tomorrow (www.mihott.com). The Michigan Health Council in partnership with the Michigan Pharmacy Association created this Web site.
 - *Scope of Practice of Health Professionals in the State of Michigan* prepared by Public Sector Consultants with sponsorship from the Michigan State Medical Society and the Michigan Osteopathic Association (2001). This is a manual that describes the landscape of health care professions broken down by profession.
 - American Medical Association's 2004-2005 edition of the *Health Professions Career and Education Directory*. This includes information on 6,500 educational programs in 64 different professions and is referenced in the education section of our profiles.

Structure of Profiles

The profiles are structured into eight major sections with additional subsections:

- *Wages*. This section reports wage information for each occupation as an hourly rate and an annual rate as reported by the following sources:

- Labor Market Information (2002)
 - U.S. Department of Labor, Bureau of Labor Statistics (2003)
- *Outlook.* Employment levels for each profiled occupation are provided, where available, for metropolitan areas in Michigan. The overall outlook for that occupation, as determined by the U.S. Department of Labor's online *Occupational Outlook Handbook, 2004-2005 Edition* (<http://bls.gov/oco/>).
 - *Credentialing.* If the profession is a licensed profession in the state of Michigan, the licensing requirements are noted in this section. The Public Health Code and the Administrative Rules are summarized as well to provide the user with an in-depth look into the occupation.
 - *Education.* The purpose of this section is to provide users with information on preparation for this occupation. The educational requirements for each occupation are included as well as links to finding educational programs in the state of Michigan.
 - *Transferable Skills.* A link to a skill identifier tool is provided [http://www.acinet.org/acinet/skills_home.asp]. The purpose of this section is to provide tools to help workers interested in health care understand how their skills can be used in a variety of health professions.
 - *Funding.* These sources provide users with a first glance at the funding opportunities available for training.
 - National resources
 - State resources
 - *Resources.* This section provides additional resources so that users can dig deeper into the various professions to get the information they need to meet their needs.
 - State association
 - National association

- Accrediting organization
- Other occupation-specific organizations

List of Occupations Included

Licensed Health Care Practitioners

Chiropractors*

Dentists*

Optometrists*

Pharmacists*

Physician assistants*

Podiatrists*

Registered nurses (RNs)*

Therapists

Occupational therapists*

Physical therapists*

Radiation therapists

Respiratory therapists*

Allied Health—Technicians and Technologists

Cardiovascular technologists and
technicians

Dental hygienists*

Diagnostic medical sonographers

EMTs and paramedics*

Laboratory technicians

Laboratory technologists

Licensed practical nurses (LPNs)*

Medical records/health info technicians

Nuclear medicine technologists

Pharmacy technicians

Radiological technologists and technicians

Respiratory therapy technicians

Surgical technologists

Health Care Support Occupations

Dental assistants*

Medical assistants

Occupational therapist aides

Occupational therapist assistants*

Physical therapist aides

Physical therapist assistants

* Occupations licensed in the state of Michigan.

Occupational Forecasts

Changes in both the supply and demand for health care workers vary over time and vary from place to place depending on the availability of educational resources, the level of education and skill that is required for each occupational category, and the demographic and economic characteristics of individual communities or regions. Changes in any of these factors, as well as changes over time, may lead to temporal variations in the supply of and demand for services provided by health care professionals and other health care workers. Within the broad category that incorporates all health care workers, changes in the supply of specific occupational categories may vary considerably. Changes in the supply of physicians may take up to 12 years to affect (e.g., four years of college, four years of medical school, and several years of postgraduate medical education and advanced training). In contrast, the supply of qualified individuals in a number of health technology and allied health professions (e.g., diagnostic medical sonographers, dental assistants, and cardiovascular technologists) may require as little as one or two years of formal, postsecondary education. These observations concerning the ability to change the supply of health care professionals are only valid, however, if appropriate education or training is available, if individuals are willing to be trained, and if regulatory barriers to new recruits or retraining of other health care professionals do not impede this process.

For the purpose of this project, “midterm” forecasts of both the demand and supply of 30 health care occupations in Michigan have been compiled. “Midterm” forecast refers to future estimates that fall between relatively short-term forecasts of up to 5 years—forecasts that are often employed to chart short-term trends in the economy—and long-term forecasts of between 20 and 50 years into the future. The latter are often employed by economists and demographers to chart the broad sweeps of economic and demographic change that provide the context within which more specific trends may be anticipated. Recognizing that the goal of this project is to provide information that will inform and help to align workforce and economic development policies that may be implemented immediately and that will have significant impact on Michigan’s economy in only a few years, “midterm” forecasts of Michigan’s health care workforce in the years 2010

and 2015 will indicate where the state is likely to be and what may need to be changed as it moves toward the future in this large and important sector of Michigan's economy. Also, the supply forecasts presented below have been calculated specifically with regard to Michigan's existing capacity to train the health care professionals and technicians that our growing and aging population will demand. While there is always some migration among health care professionals and technicians into and out of Michigan in response to educational and career opportunities elsewhere, family life cycle changes, or personal preferences, the principal focus of this report is to examine the demand for qualified health care workers in Michigan and to determine if Michigan's capacity to meet this demand through existing policies, programs, and resources is adequate.

Forecasts

Demand Forecasts

The basis for the forecasts to 2015 that are included in this report are occupational data produced by MDLEG. MDLEG's Labor Market Information Division, in cooperation with the U.S. Department of Labor, produces forecasts of Michigan's labor force with details about a large number of specific occupations and details about 18 labor market areas within Michigan. These forecasts are tied to national economic forecasts, specific industry forecasts (i.e., the automobile industry in Michigan), and population trends. They are currently available on the MDLEG/LMI Web site (www.michlmi.org/forecast/) to the year 2010.

Using MDLEG data as the starting point, PPA has developed a set of forecasts that identify the demand for specific health care occupations for Michigan and for each of its labor market areas for the years 2005, 2010, and 2015. PPA's forecasts for this report are ratio-based calculations that adjust census-year population data, demographic projections, and employment forecasts to the age distribution of Michigan's census count and to projected changes in the population age distribution over time. Specifically, PPA's occupational forecasts are weighted to reflect the potential demand of the population aged 65 and older. It has been well documented that the greatest demand for most health care services (with some notable exceptions such as obstetrical and pediatric services) are generated by those aged 65 and older, and usage tends to increase as the population lives longer and ages. Using the most recent census data (year 2000) and the most

recent MDLEG/LMI data for the number of working practitioners, annual estimates of the number of practitioners per 100,000 older Michigan residents are calculated for the intervening years and extrapolated to the years 2010 and 2015.³ The key variable in these calculations is change in the projected numbers of Michigan's 65-and-older population.

Supply Forecasts

The likely supply of health care professionals in any individual occupational category is more difficult to predict as it may be the product of such factors as the overall economic climate, the availability of access to career-appropriate education and training, work effort by those employed in the profession or occupation, changing health care delivery models, public perceptions of the desirability of specific occupations, the availability of competing or alternative occupations, working conditions, and the adequate numbers of individuals in the population to draw from.

It was originally intended that a cohort-component or a "trends" model would be employed to forecast the anticipated supply of health care workers in each of the 30 occupational categories chosen for analysis. This model assumes that underlying all such forecasts is the well-documented relationship between gross domestic product and health care spending in the United States: as gross domestic product is expected to continue growing in the future, health care spending will continue to increase and will stimulate the growing employment of health care workers in various occupations and professions. In addition, this approach views physicians, nurses, and other health care professionals as cohorts that ebb and flow over time. These cohorts grow through new graduates into the occupation or profession and decline through retirement and other periodic exits from the profession, changes in the composition of the profession (e.g., gender) that may be related to work effort (e.g., full-time versus part-time work), and

³ Casual observation of occupational forecasts prepared by MDLEG/LMI and professional licensure files maintained by the MDCH typically reveal wide variation between these two sources. This may be attributed to the inclusion of all current licensees in the licensure file, including retirees who maintain their professional licenses, those who have temporarily withdrawn from the labor force, those who reside and work outside Michigan but retain a Michigan license, those who are licensed but who do not provide professional services (such as RNs who serve as health care executives), and those who are unemployed or who are between jobs. The only source of these data is the licensure renewal forms. In contrast, MDLEG/LMI occupational data are based on annual employer surveys and wage-record data that identify individuals who are actually working and the occupations in which they are working, regardless of their professional license.

opportunities and trends in the substitution of one health care professional (e.g., physician assistants or advanced-practice nurses) for another (e.g., physicians in primary care practice).

With the exception of data regarding physicians and the changes that are affecting the practice of medicine in the United States, there is relatively little data available regarding the characteristics of incumbents in most of the health care occupations that are examined in this project. For purposes of this project, therefore, forecasts of the supply of technicians, technologists, health care professionals and health care support workers will be in the form of “best case” scenarios that examine current availability of training opportunities in Michigan for each profession or occupation and assume that each of these programs will operate at full capacity through 2015 and that all program graduates will find work in Michigan after graduation and stay here. For example, if Michigan colleges and universities have indicated that they currently have the capacity to enroll a maximum of 180 students in a two-year occupational therapist assistant program, these “best case” supply forecasts assume that 90 new occupational therapist assistants will graduate and enter Michigan’s health care labor force each year through 2015 and remain in Michigan indefinitely. While we recognize that health care workers can and do move from state to state to practice their professions, these forecasts are designed to help us understand the opportunities for recruiting and educating Michigan residents to qualify for these positions, many of which are presently, and will continue to be, in short supply in the future.

These forecasts also take into account MDLEG/LMI estimates of the anticipated need for new and replacement workers in each of these occupations. These occupational forecasts are somewhat tempered by also accounting for the proportion of the replacement workers that represent routine employment turnover rather than new entrants to the workforce that are replacing retirees or others who are permanently or temporarily exiting the workforce.

Educational capacity data were derived from the American Medical Association (AMA) 2004-2005 edition of the *Health Professions: Career and Education Directory* and other sources. Turnover rates among specific occupations and professions were derived from national surveys of allied health occupations conducted by First Consulting Group (2001) and the Bernard Hodes

Group (2003). Known turnover rates were applied to similar occupational groups when specific data were not available for those occupations.

Caveats

The occupational demand and supply forecasts provided in this report are intended to be indicative of broadly anticipated trends within each of the specified occupations and professions. They are intended to indicate the general direction of change in demand for these occupations over the next ten years, the change in the supply of professionals in each category assuming full enrollment and completion in all educational programs that currently exist (assuming no growth or decline in the number or capacity of these programs), and the overall magnitude of the gap between demand and supply that may be anticipated as these trends progress over time.

These figures are not intended to be definitive forecasts of the precise demand or supply of future health care professionals in Michigan. Future advancements in medical technology, pharmaceuticals, or health care delivery systems may affect demand for services and professionals in ways that cannot be anticipated at this time. Similarly, increasing the actual supply of health care professional and technical workers—which is the ultimate goal of this project—may be affected by policy initiatives and economic decisions. For example, increases or decreases in educational capacity, alteration of pay scales, migration of health care workers from other states or nations, and implementation of practices that promote health care employment among populations that were previously ignored will all affect the supply of health care professionals and technical workers. If this project is successful, the supply of health care professionals and technical workers will increase, and the supply forecasts presented here will be proven wrong.

It is also likely that the capacity of Michigan educational institutions to provide training for each of these occupations and professions may be understated in a few cases. While the AMA's *Health Professions: Career and Education Directory* is the most comprehensive source of information on 40 occupational categories (and almost twice that many specific occupations), these data do not cover all of the occupations specified in this report, and some of the data reported are not entirely up to date. For example, five programs are identified as providing

training for diagnostic medical sonographers in Michigan, but local health care employment experts indicate that at least one and possibly three or four other educational institutions currently provide that training in Michigan as well. Therefore, the capacity for professional sonography training in Michigan is likely to be understated for this profession. This may also be the case for some of the other occupations targeted in this report.

In addition, the use of educational capacity as a driver of occupational supply is intended to serve as a benchmark against which progress may be measured. Capacity may grow or decline over time in reaction to the demand for health care professionals, enrollment by students, and the financial ability to support what, in many instances, are relatively expensive educational services. It is also recognized that even with capacity enrollments, all students will not necessarily complete their course of study, and not all of those that do will necessarily enter into the occupation or profession for which they have trained.

Statewide Occupational Forecasts

Licensed Health Care Practitioners

- Registered nurses. Although interest in nursing and enrollments in registered nursing programs have reversed the declines of the 1990s, even full enrollment in nursing programs in Michigan will lead to significant shortages by 2010 and 2015. Barring any increase in capacity and without the addition of foreign-trained nurses or the use of nurse-extenders, the shortage of RNs in Michigan will be almost 7,000 by 2010 and almost 18,000 by 2015. Interviews with nurse executives and nursing educators have verified that one of the most significant barriers to expanding the cadre of qualified and available RNs in Michigan (and elsewhere) is the very limited supply of qualified nursing faculty. Please note that there are no breakouts for advanced-practice nurses elsewhere in this report. According to the Health Resources and Services Administration (HRSA, 2004), there are currently 2,895 advanced-practice nurses in Michigan with active licenses. These include 1,190 nurse practitioners, 258 certified nurse-midwives, and 1,447 certified registered nurse anesthetists.

- Chiropractors. There were almost 3,500 chiropractors in practice in Michigan in 2000. If there are no changes in current utilization patterns, the demand for practitioners of

chiropractic in Michigan will grow to approximately 4,500 by 2015. The potential supply of chiropractors for Michigan cannot be determined as there are no colleges of chiropractic medicine located in Michigan.

- **Dentists.** The demand for dentists in Michigan will grow by approximately 25% by 2015, from approximately 6,400 practicing dentists in 2000 to approximately 8,300 in 2015. Dentistry education in Michigan is provided at the University of Detroit – Mercy and the University of Michigan. At current graduation levels, the supply of dentists in Michigan will only slightly trail demand through 2010, but there will be a shortage of about 500 by 2015. The demand for dental services would be likely to grow even more if Medicaid reimbursements for dental services are increased, as this might lead to expanded dental services to the poor.
- **Optometrists.** The demand for optometrists in Michigan is similarly expected to grow by approximately 25% by 2015. The number of optometrists employed in Michigan, however, is relatively small, and total growth within this profession is expected to increase by less than 400, from 1,140 to approximately 1,500 in 2015. Optometry education is only offered at Ferris State University in Michigan, and the future supply of optometrists is forecasted to closely match future demand.
- **Pharmacists.** Although the growth of mail-order pharmacies has dampened some of the fiercest competition for retail pharmacists that was common over the past several years, the overall pharmacy vacancy rate in 2004 was still 5%, and vacancy rates for the four of every ten pharmacists who work in hospitals, government, or the military reach as high as 11%. Wayne State University’s reduction in upcoming pharmacy class size may reflect this trend. Nonetheless, the overall demand for pharmacists in Michigan is expected to continue growing between now and 2015, and the supply of new pharmacists graduating from Michigan universities will not keep up with this growth. The demand for pharmacists in Michigan is expected to grow from 7,200 in 2000 to approximately 9,400 by 2015. The supply of pharmacists in Michigan, however, is expected to decline slowly and dip below 7,000 between 2010 and 2015.

- Physician assistants. The number of physician assistants in Michigan is expected to grow steadily from 1,850 in 2000 to 2,400 in 2015 as the demand for “physician extenders” grows and as federally qualified health clinics, especially in rural areas, continue to find it difficult to recruit physicians. The demand for physician assistants in Michigan is expected to grow at about the same pace, and the supply of physician assistants may slightly exceed demand over the next ten years.
- Podiatrists. There were only 320 practicing podiatrists in Michigan in 2000, but with the growth of Michigan’s older population, demand for practitioners of podiatric medicine will increase to 415 by 2015. The future supply of podiatrists is unknown as there are no colleges of podiatric medicine located in Michigan.

Therapists

- Occupational therapists. As Michigan’s population ages, the demand for physical, occupational, and speech-language therapists (not included in this project) and other providers of rehabilitation services will grow. Based on the growth of Michigan’s older population, Michigan will need 5,000 occupational therapists by the year 2015. The supply of occupational therapists is expected to remain fairly steady at close to current levels over this entire time period, creating a shortage of more than 1,200 by 2015.
- Physical therapists. Michigan currently has approximately 5,000 physical therapists in clinical practice and the demand for physical therapists is expected to increase by about 1,500 by 2015. Michigan’s colleges and universities that offer physical therapy programs do not currently have the capacity to meet this growing need. Unless there are changes in the educational criteria for becoming a physical therapist or the practice of physical therapy changes in some way that increases productivity, there may be as few as 4,200 physical therapists practicing in Michigan by 2015.⁴

⁴ Physical therapy programs are increasingly offering a doctorate that, although not currently required for licensure or to practice, will likely become the professional standard, thus extending the length of time required to produce additional practitioners.

- Radiation therapists. Numbering fewer than 400 in 2000, the demand for radiation therapists in Michigan is expected to grow proportionately with the growth of the older population through 2015, when demand will be in excess of 450 practitioners. There are only 4 accredited programs in Michigan and at current capacity the supply of radiation therapists in Michigan will likely decline to slightly more than 300 by 2015.
- Respiratory therapists. The demand for respiratory therapists in Michigan will grow by approximately 900 by 2015. The supply of respiratory therapists is expected to keep up with demand through 2010 and drop off between 2010 and 2015, leaving a shortage of about 400.

Allied Health—Technicians and Technologists

- Cardiovascular technologists and technicians. Supply and demand patterns for cardiovascular technologists and technicians are similar to the supply and demand patterns for some therapist occupations and laboratory technicians and technologists. The demand for qualified practitioners will continue to grow over the next ten years, but there is relatively little capacity to educate enough technicians and technologists to meet this growing demand, and this shortfall will be dramatic. By 2015, the demand for cardiovascular technicians and technologists to treat the cardiac problems of an aging population may reach 2,400 with only half as many (1,200) practitioners available to fill these slots.
- Dental hygienists. The demand for dental hygienists in Michigan will grow in much the same manner as the demand for dentists who employ them. In 2000, there were approximately 6,600 dental hygienists working in Michigan, and this demand is expected to jump to 8,500 by 2015. The supply of dental hygienists is expected to keep up with demand for the next 5 years and then fall behind by more than 1,000 between 2010 and 2015.
- Diagnostic medical sonographers. At current rates of growth in demand and with only a small capacity to educate new sonographers at the present time in Michigan, there will be a significant shortage of practitioners in Michigan as early as 2010, when demand may exceed supply by 44%. However, some programs in diagnostic sonography may be missing from the data used for these calculations, thus possibly underestimating Michigan's capacity in

this profession. Nevertheless, even if capacity were actually twice as high as reported here, there would still be a shortage of diagnostic medical sonographers in Michigan.

- Emergency medical technicians (EMTs) and paramedics. There are currently 5,200 EMTs and paramedics in Michigan and the demand will grow as Michigan's population grows and ages. Demand may be as high as 6,700 by 2015, but supply will not be keeping up with demand and a shortfall of 30% or more could be evident by that time without additional recruitment.
- Medical and clinical laboratory technicians. Lab technicians will be in short supply over the next 10 years as demand grows by approximately 1,000 and the supply of qualified lab technicians declines by approximately the same amount.
- Medical and clinical laboratory technologists. Lab technologists will exhibit the same patterns of supply and demand as indicated for lab technicians. In this case, however, the magnitude of the figures is greater. Demand may grow by as much as 1,700 by 2015, and after accounting for retirements and other exits from this occupation, the shortfall could be as high as 2,800 by 2015.
- Licensed practical nurses (LPNs). The demand for LPNs in Michigan will likely increase by more than 5,000 by 2015. The supply of LPNs is projected to remain stable for a few years, but then begin to drop by 2007 as current training programs in Michigan fail to keep up with retirements, dropouts, and movement of LPNs into other health care occupations. From 2010 onward, it is expected that there will be a serious shortage of LPNs, possibly reaching a deficit of 5,600 by 2015.
- Medical records and health information technologists. Billers, coders, and other health information technologists are already in short supply, and the demand for this occupation will grow as the volume of health care encounters grows over the next decade. Standardization of billing forms and other health care documentation in the future could reduce much of this demand, but at the present time the demand for this occupation will grow by more than 1,500

by 2015. The supply of medical records and health information technologists in Michigan will remain much lower than needed for the foreseeable future. By 2015, the demand for billers and coders may reach 6,800 while the supply may only be 3,900, thus producing a shortage of 2,900.

- Nuclear medicine technologists. There were 650 nuclear medicine technologists working in Michigan hospitals and clinics in 2000. The demand for these technicians, who work closely with radiation therapists and oncologists, will increase by approximately 200 by 2015. The supply of nuclear medicine technicians will lag demand only slightly through 2010, but after that, the supply shortfall may grow as high as 200 or 25%.

- Pharmacy technicians. There are currently more than 8,000 pharmacy technicians in Michigan, and the demand for pharmacy technicians may exceed 10,000 by 2015 given the continuing growth in the older population and continuing growth in the number of pharmaceutical prescriptions that are filled each year. The supply of pharmacy technicians is not expected to grow, and the gap between supply and demand is predicted to widen considerably by 2015, when the shortfall could reach 50%.

- Radiological technicians and technologists. Radiological technicians and technologists continue to be in demand, although there are at least 20 hospital, college, and university radiology programs in Michigan. Demand is expected to grow from approximately 6,000 radiographers to approximately 8,000 by 2015. Supply is expected to hover around the 6,000 mark for most of this period. Some of the demand growth is likely to be for various advanced radiologic specialties including computed tomography (CT scans), magnetic resonance imaging (MRI), and mammography.

- Respiratory therapy technicians. Although there is expected growth in demand for respiratory technicians over the next decade, the supply of respiratory therapy technicians will be adequate. Both the supply and demand for respiratory therapy technicians in Michigan are expected to grow from less than 500 in 2000 to approximately 600 in 2015.

- Surgical technologists. The demand for surgical technologists will continue to grow through 2015, from 2,100 to approximately 2,800. Given the current availability of training and turnover, it is expected that there will be a surplus of qualified surgical technologists in Michigan during this entire period.

Health Care Support Occupations

- Dental assistants. As the demand for dentists and dental services grows over the next decade, there will be a commensurate growth in demand for dental assistants. Michigan will require an additional 3,000 dental assistants by 2015. The supply side of this issue is less promising, as there may be as few as 8,500 dental assistants for almost 14,000 positions. As many dental assistants work part time, however, some of this shortfall may be reduced by incumbents working longer hours.
- Medical assistants. The demand for medical assistants, primarily in physician offices and ambulatory-care facilities, will grow by approximately 30% between 2000 and 2015, from roughly 15,000 to 19,000. The supply of medical assistants is anticipated to grow slowly during this period to more than 16,000 by 2015.
- Occupational therapist (OT) assistants. The demand for OT assistants is predicted to grow only modestly, from 560 in 2000 to 700 in 2015. Training capacity in Michigan is currently more than adequate to meet that demand.
- Occupational therapist aides. The demand for OT aides will also grow modestly, from 240 in 2000 to 300 by 2015. There are currently no data available concerning the supply of OT aides in Michigan.
- Physical therapist (PT) assistants. There are more than seven times as many PT assistants as OT assistants currently working in Michigan, and the demand for qualified PT assistants will grow from approximately 1,800 in 2000 to about 2,300 in 2015. Current estimates indicate that there will be an adequate supply of PT assistants to fill these positions throughout this entire period.

- Physical therapist aides. The demand for PT aides is expected to increase from 1,500 in 2000 to approximately 1,900 in 2015. There are currently no data available concerning the supply of PT aides in Michigan.

Model Practices Research

So that each new venture does not have to reinvent processes, a selection of model practices was collected as part of the Health Care Workforce Development in Michigan project. These examples of practices that have been tried and tested were collected for the benefit of those who seek to address workforce development in health care. Model practice information was collected via several methods including literature reviews, Internet searches, key informant interviews, and site visits.

Often model practices were introduced through the suggestions of the Advisory Roundtable. Web sites to visit, publications to review, and individuals to contact were all mentioned to PPA staff. These included:

- Site visit to University of Detroit – Mercy to review their fast track second degree program.
- Site visit to the Michigan Works! Job Force Board to review their Health Care Roundtable.
- Interview with Jacqueline Hooper, D.P.H., Dean of Allied Health Programs, Ferris State University, Big Rapids, Michigan.
- Interview with Francine Boren-Gilkenson, Ph.D., Director of the Training and Upgrading Fund for 1199 SEIU/League Employment, Training & Job Security Program, New York, New York.
- Interview with Barbara Hoenig, CAEL/DOL Senior Program Director, Philadelphia, Pennsylvania.
- Informal conversation with Dr. Jean Moore, Center for Health Workforce Studies, State University of New York – Albany, School of Public Health, Rensselaer, New York.

- Interview with Jim Taylor, Dean of Allied Health Care, Kalamazoo Valley Community College, Texas Township, Michigan.
- Review of information collected by the Center for Health Workforce Studies, State University of New York – Albany.
- Review of information collected by the Center for Health Professions, University of California – San Francisco.
- Review of information collected by the National Governors’ Association, Center for Best Practices.
- Review of information collected by the American Hospital Association, AHA Commission on Workforce for Hospitals and Health Systems.

As each model practice was reviewed, it was classified into one of several major categories depending on the focus of the practice. In addition, each major category was broken down into several subcategories to narrow the focus of the practice. These categories are used as the index of the model practices report and include:

- Reduce turnover and vacancies among current professional health care staff
 - In-service training
 - Coaching and mentoring
 - Education assistance
 - Intradiscipline career advancement
 - Interdiscipline career advancement
 - Innovative education policies
 - Web-based education

- Health care mobility
 - Coaching and mentoring
 - Education assistance and leave
 - Innovative education policies
 - Web-based education

- Transitioning displaced workers
 - Skills development
 - Innovative education policies
 - Models of integration and coordination among WIA, colleges, and providers
 - Web-based education
 - Federal and state dislocated worker funds

- Attract and recruit future health care workforce
 - Postsecondary level
 - ◆ Partnership with schools and employers
 - ◆ Web-based education
 - Kindergarten through 12th grade level
 - ◆ Academic preparation in math and science
 - ◆ Information about career pathways
 - ◆ Job shadowing
 - ◆ Career/education development programs
 - ◆ Co-op programs with local health care providers
 - ◆ Outreach to parents, teachers, and counselors
 - ◆ Hands-on experiences
 - ◆ Parent, teacher, and counselor support

As the available literature was reviewed, many model suggestions were found. These were policies, practices, and ideas that had not yet been implemented. Suggestions of possible model practices were not included as part of this report; we have focused on those practices that might be possible to successfully replicate. With the assistance of the Advisory Roundtable to determine the most important information about each practice, the following aspects of each are described:

- Title of the model practice
- Location of the model practice
- Where information was found

- Where additional information can be found
- Description of the model practice
- Funding information

Each of these aspects was determined to be important if replication of the practice was to occur.

The model-practices listing that is reported here is by no means a complete and exhaustive list of practices that have been done and may be replicated. There are many additional avenues that could be pursued and constant updating and follow-up that can be done. It is the project team's hope that the model practices presented here can stimulate a variety of activities in the continued development of the health care workforce.

Conclusions and Recommendations

Conclusions

The data presented in the preceding sections along with the detailed information provided in the appendices confirm that there is extensive opportunity to expand Michigan's workforce in a number of relatively high-salary technical and professional occupations within Michigan's health care industry. In addition, there are well-documented workforce shortages in the health care sector that have been plaguing Michigan's health care industry for years, and efforts to increase the supply of qualified workers would help these employers and the communities in which they are located. Finally, this report has identified a number of strategies and tactics that have been successfully used in Michigan and elsewhere to expand the health care workforce and health care employment by stimulating interest among students and young people, by enhancing the skills and qualifications of current health care workers, and by retraining displaced workers for new careers in health care.

Occupations in Greatest Demand

Of the 30 occupational categories that were examined for this project, there are, or there will be, shortages in approximately two-thirds of the occupations over the next ten years. These

shortages are based on three fundamental assumptions: (1) that demand for health care services will continue to grow as the population grows and ages, (2) that current educational programs in Michigan for each of these occupations will be operating at full capacity over the entire 15-year period between 2000 and 2015, and (3) that there will be an overall shortage of new entrants to Michigan's labor force over the next decade. While the first assumption is very likely to be proved correct, the second assumption is unusually optimistic and may not prove to be true for each occupational category. If this is the case, the shortages in these occupational fields will be even greater than indicated in this report. On the other hand, these assumptions do not take into account the possibility that educational opportunities at Michigan colleges, universities, hospitals, and proprietary schools will expand over the next decade. If so, the shortages will likely be smaller than predicted here. The third assumption is a demographic reality that will mean more competition among industries for new workers in years to come.

- Licensed health care practitioners. Two occupational categories for which shortages have been widely publicized are nursing and pharmacy, and it is anticipated that both nursing and pharmacy will continue to exhibit significant gaps between supply and demand for at least the next decade.
 - Registered nurses. A wide spectrum of organizations—hospitals, schools of nursing, the news media, and nonprofits such as the Robert Wood Johnson Foundation—have been quite successful in recent years in publicizing the importance of nursing and in promoting the nursing profession. As a result, there have been recent increases in nursing school applications and enrollments in Michigan, and there have been a number of innovative programs to bring RNs back into the profession and to upgrade the skills of incumbent RNs. Currently, nursing schools in Michigan receive more applicants than they can enroll, and some nursing schools have waiting lists. All students in traditional undergraduate nursing programs do not, however, complete those programs. The proportion of nursing students who do not complete their program of study may be as high as 35%. This is attributed in part to inadequate preparation in mathematics and science among some of the students. Legislative efforts to mandate lower patient-to-nurse ratios than are presently found in hospital settings will also drive up the demand for

RNs if and when such legislation is ratified. Finally, although nursing schools have attempted to recruit more men and minorities, both men and minorities remain underrepresented in nursing and in nursing education in Michigan.

The most serious impediment to meeting the growing demand for RNs, however, is a lack of qualified instructors to teach nursing students. Nationwide, there is a nurse faculty vacancy rate of 8.6%. Nurses who teach in academic settings are aging and are not being supplemented or replaced by younger instructors. The median age of nursing instructors is about 51.5, according to the American Association of Colleges of Nursing (AACN), and a large portion of nursing faculty will be retiring within a decade. In addition, nurses with master's or doctoral degrees can usually make more money in bedside practice, nursing administration, or working for HMOs and insurance companies. There is also a shortage of trained preceptors in hospitals and other nursing sites that can provide the practical training and experience that accompanies the more traditional training in the classroom and laboratory. The Nursing Alliance of West Michigan has implemented a cooperative program in the Grand Rapids area to train bachelor's degree-prepared RNs to serve as preceptors in their own health care organizations.

The U.S. Department of Health and Human Services' Health Resources and Services Administration still anticipates a shortage of as many as 800,000 RNs across the nation by the year 2020. A shortage of approximately 14,000 registered nurses in Michigan by 2015 is likely.

- Pharmacists. Pharmacists have been in very short supply over the past few years as the volume of prescription pharmaceuticals has grown. In 2001, the National Association of Chain Drug Stores reported that 3 billion prescriptions were filled in the United States. They predict that this number will grow to 4 billion by 2006 (www.nacds.org). Despite growing utilization of mail-order pharmacies in Michigan (which have reduced demand) and greater educational requirements (e.g., Pharm.D. degree, which has slowed the supply of new pharmacists), Michigan's aging population and the growing reliance on pharmaceutical-based therapies for a growing number of ailments will continue to drive

the demand for pharmacists beyond the state's current capacity to train them. By 2015, Michigan could experience a shortage of as many as 2,800 pharmacists without any change in capacity, but the gap could be smaller as the retail provision of pharmaceuticals by mail and through the Internet reduces some of the growing demand for traditional pharmacists.

- Therapists. With the aging of the baby-boom generation, the need for most of the therapeutic professions will increase dramatically in Michigan. Most of these occupations require considerable postgraduate education including, in most cases, a full year of supervised clinical experience before licensure is attainable. By the year 2015, Michigan will have significant shortages of occupational, physical, and radiation therapists. It is also likely that there will be a significant shortage of speech-language pathologists, although this occupation was not included among the 30 occupations targeted for this project. There will also be a shortage of respiratory therapists after 2010, but this shortage will be minimal. It appears that respiratory therapy programs in Michigan have the capacity to meet most of the increased demand for respiratory therapists over the next decade, assuming that these programs run at full capacity and all of their candidates graduate.

- Allied health—technicians and technologists. The increased dependence on sophisticated technology by health care organizations and even individual physicians, dentists, and other health care practitioners has generated a growing need for personnel to operate these machines and provide technical services as part of a team approach to health care. As a result, there are several categories of health care technical occupations that did not exist a few decades ago, and new occupations are emerging on a regular basis. In Michigan, almost all of the allied health care technicians that were examined for this project will be in short supply over the next decade. These include:
 - Cardiovascular technicians
 - EMTs and paramedics
 - Laboratory technologists and technicians
 - Diagnostic medical sonographers

- Nuclear medicine technologists
- Radiological technologists and technicians
- Pharmacy technicians
- Surgical technologists
- LPNs

Technologist occupations (such as laboratory technologist) often require four years of college training while the other technical occupations listed above typically require only a year or two of postsecondary education. In some cases, training programs may even be provided internally by the larger health care systems. Several of these occupations are licensed, and certification through a national examination is required for job mobility and advancement in almost all cases.

Each of these occupations is absolutely essential for the information physicians and others need to diagnose and treat patients both inside and outside of the hospital setting. These positions pay relatively well, are generally quite stable, and they provide a variety of employment opportunities for individuals in each of the populations this project is targeting. The only negative aspect of these occupations—as with many of the occupations that directly or indirectly provide patient care—is that incumbents will be subject to shift work and weekend work.

One additional technical occupation that is not involved with patient care—medical records and health information technologists—is also in short supply. These individuals facilitate the flow of medical records and billing documents that allow health care organizations, individual practitioners, and health care insurers to operate. Barring any major change in the organization of the nation’s health care system over the next decade, the demand for “billers and coders” will continue to grow. If however, there is any sort of reorganization that reduces the thousands of health care insurance billing systems, contracts, insurance riders, and health plan limitations that currently exist, the demand for qualified professionals in this field will diminish. In addition, as the administrative costs of health care in the United States are estimated as high as 37% and provides a very attractive target for cost cutting through

standardization and automation (even without health care reform), the long-term prospects for health information technologists beyond 2015 may be less attractive than for those technicians and technologist who are directly involved in the care of patients.

- Health care support occupations. Six specific health care support occupations were identified for this project: medical and dental assistants, OT assistants and aides, and PT assistants and aides. Over the next ten years, there will be a serious shortage of both medical and dental assistants in Michigan unless the supply of individuals (who are almost exclusively women at the present time) can be expanded through recruitment, upgrading other workers, or training displaced workers to fill these slots. However, as there is no career ladder for most of these employees, competition from other occupations and incumbent turnover are likely to be ongoing problems.

The demand for therapists will be accompanied by a demand for formally trained support personnel to work under the direction of therapists (occupational and physical therapist assistants) along with less formally trained workers (occupational and physical therapist aides) to physically assist patients in therapy and attend to their personal needs. The supply of physical and occupational therapist assistants over the next ten years in Michigan will clearly not keep up with the growth in demand for these occupations. The demand for aides is also expected to grow, but the supply of aides is unknown, as these positions are not licensed or certified and formal training programs for these occupations were not identified.

Geographic Variations in Demand

Variations in the demand for health care professionals, technical workers, and support workers are primarily driven by population size, population density, and the presence or absence of medical facilities within the region. Larger and more densely populated regions, such as Detroit and Grand Rapids, have a higher concentration of health care providers and higher concentrations of health care workers than smaller and less densely settled areas such as the Upper Peninsula or several parts of northern Lower Michigan. With a few exceptions, fewer health care services are available in rural and thinly populated areas, but these areas, nonetheless, have as much or even greater difficulty in attracting an adequate supply of nurses and other

health care professionals and technicians that are needed to serve the existing facilities and residents in these areas. Thus, while the absolute demand for health care workers is proportionately greater in higher-population regions, the impact of recruiting, educating, and placing health care workers in Michigan's less well-served and rural areas will likely have a greater impact on the local economy and the growth of the local workforce.

Two other factors are also driving the demand for health care professionals and technicians in rural Michigan, especially many areas of northern Lower Michigan and the Upper Peninsula. While medically underserved areas may be found in both rural and urban Michigan, those in rural Michigan provide some unique opportunities for health care workers. Rural hospitals and federally qualified health clinics that provide primary care services may provide important employment opportunities for physician assistants and advanced-practice nurses, as these areas typically have the greatest difficulty in attracting adequate supplies of physicians. Moreover, rural Michigan—especially northern Lower Michigan—has experienced significant growth of retirees over the past two decades and, as is well known, older people are typically the largest consumers of health care services in our society. The popularity of moving to rural areas of Michigan, even if this is only for part of each year, has dramatically increased the demand for services in areas where relatively few facilities or practitioners are located.

Model Practices

There is no one best practice for promoting workforce development for all health care occupations, among a diverse group of target populations, or within a diversity of specific geographic locations. During the course of this project, the goal shifted from finding a single best practice for each situation to identifying a large number of model practices that have been implemented to address a wide variety of situations. Some of these practices have been designed for very specific populations, and some have been more successful than others. It also should be noted that much of the attention paid to health care occupations around the nation has focused more on nursing than other specific health care occupations. All of the examples cited, however, provide insight into a diverse set of approaches that may be useful to consider for any one of the occupational categories that has been targeted, within settings where shortages are most likely to occur, and with varying resources that may be applied to local efforts at workforce development.

Much of the information that has been gathered regarding model practices is devoted mainly to the recruitment and education of new entrants into the health care workforce. Programs in Michigan and throughout the nation have been identified that have expanded the awareness of high school and college students about health care careers, educated parents and school counselors about new and growing opportunities in health care, targeted underrepresented minorities for health care careers, and established distance learning and other innovative techniques for training allied health care workers in rural areas. Additional work needs to be done to identify a greater number of programs that specifically address the development of career ladders for incumbent health care professionals and technicians and that successfully address the transition of displaced workers in manufacturing or other industries into qualified health care professions. Examples of some of the model practices that have been identified are noted below.

- *Recruit and train new workers for health care occupations.* A large number of practices were identified from Michigan and around the nation that have been used to attract and facilitate entry of new workers into the health care industry. New York State has established a 20-hour core curriculum for CNAs that is transferable for training in other entry-level patient-care occupations. In California, the state rural health care association partnered with a college in northern California to provide distance learning for allied health care programs to 14 rural counties that could not sustain allied health care training programs on their own. Hospitals in and around Omaha, Nebraska, and Chapel Hill, North Carolina, respectively are providing scholarships to students in accelerated nursing programs in exchange for future work commitments at these hospitals. The state of Florida is supporting exploratory programs in nursing for middle school students through grants to school districts to encourage student interest in this career. Florida has also established a loan forgiveness program for nursing students. Around Fresno, California, 13 high schools, 2 community colleges, and an adult education provider have partnered to create “health academies” or “schools within schools” to promote careers in social work, medical technology, physical therapy, and other health care-related occupations. Allied health care students at California State University – Fresno served as allied health care ambassadors, mentoring students in the high school health academies. Also in California, Los Angeles Orthopaedic Hospital has

teamed up with the Los Angeles public school system to launch the Orthopaedic Hospital Medical Magnet School to train future medical professionals starting in the ninth grade. A similar project in New Jersey was promoted by the Pfizer Foundation, the Office of the Governor, and a local high school to establish a Medical Science Academy to foster interest in health care careers among high school students. This venture provides training and curriculum development for teachers, laboratory equipment, and interaction between students and working health care professionals. Community colleges and local hospitals are providing internship opportunities.

- *Facilitate career ladders and lateral career paths for incumbent workers in health care.* In Grand Rapids, Aquinas College, in cooperation with the University of Detroit – Mercy, is working with the West Michigan Nursing Advisory Council to train nurses with bachelor’s degrees to serve as preceptors who will oversee direct clinical training to nurses, simultaneously upgrading the skills of bedside nurses and supplementing nursing faculty who are in short supply. In Minnesota, Ridgewater College and regional health care providers formed a partnership to develop a workforce development model that would positively impact the educational and health care settings in their region. Their goal was to create a new way of educating, recruiting, and retaining workers. In Wyoming, hospitals have established a career ladder for CNAs by establishing a hospital-based program for CNAs who are on the job to obtain their nursing degrees. The Council for Adult and Experiential Learning (CAEL), in cooperation with the state of Maryland, the Maryland Hospital Association, and several other organizations, is starting to establish competency-based apprenticeships for both incumbent and newly hired workers to enter and advance in health care careers, including an LPN-to-RN path. This program allows incumbents to continue working while they learn, provides current workers with flexibility in receiving traditional didactic training, coordinates with local community colleges to oversee clinical training, and prepares the participants to take the NCLEX-RN exam. One of the largest programs in the nation for upgrading the skills of incumbent health care workers is sponsored by Service Employees International Union (SEIU) local 1199 in collaboration with employers and with educational institutions in the New York City area.

For the past 30 years, SEIU 1199 has managed a labor-management program that originally served exclusively as a means of channeling employer contributions to provide tuition grants for union members to attend college. Over the past three decades this program has expanded beyond college tuition and now focuses largely on upgrading the education and skills (including two-year and four-year college education) of workers at institutions and organizations where SEIU members are employed. Programs include training incumbent workers to gain new skills to fill shortages such as training kitchen workers to become medical billers or training CNAs to become radiographers or to enter into other technical occupations. Education is also provided at both the precollege level (GED, English as a second language, and college preparatory training) and at the college level where some health care workers are provided tuition benefits and, in some cases, full-time financial support to complete a degree in health care shortage occupations such as social work or pharmacy. In addition, SEIU 1199's experience indicates that career counseling is critical for individual success. SEIU 1199 provides career counseling for all students, and they require all students to participate.

SEIU 1199 serves approximately 30,000 of 70,000 eligible members (out of 120,000 total membership) each year at a cost in excess of \$100 million, most of which is obtained from federal and state grants and contracts. SEIU 1199 has experienced a 97% retention rate among union members in nursing programs, and 100% of those who are qualified to take the nursing exam have passed it. Of those attending college other than for nursing, approximately 70% have graduated. SEIU 1199's goal is to reach an 80% graduation rate among members whose education is supported.

- *Transition displaced workers to health care occupations.* Although one of the more critical tasks in developing a qualified workforce to fill some of the current and future health care workforce vacancies in Michigan is the establishment of programs to recruit and train displaced workers for health care careers, only a few programs have been identified that address this issue. Those displaced worker programs in health care that have been identified are mainly focused on basic-skills training in preparation for entry into health care careers

education. TANF (Temporary Assistance for Needy Families) funds have been used for some of these programs. The most extensive of these programs are offered by SEIU 1199 in New York in collaboration with local public schools, community colleges, and senior-level colleges. These institutions provide a variety of training opportunities for dislocated SEIU workers to acquire basic skills and training in a variety of allied health care occupations. As noted above, these workers are offered the opportunity while unemployed to enhance their precollege skills, if needed, as well as to participate in college-level training to qualify for jobs that are in demand. As with the programs that SEIU 1199 manages for upgrading incumbent workers, programs for dislocated workers are made possible by the collaboration of the union's Labor-Management Fund, employers, and educational organizations. Of particular importance is the need for flexibility in both the location and the scheduling of basic education and occupational training. The relatively large number of students who are educated through SEIU 1199-sponsored programs makes it possible for SEIU 1199 to negotiate with school districts and the City University of New York to provide many of the classes at times and locations that are most convenient for SEIU 1199 members. The executive director of this program also reported that, in some cases, SEIU 1199 works closely with local schools or colleges to hire its own qualified instructors and provide school- or college-sponsored educational services at the union's own facilities.

Other Considerations

Despite the accumulation of a large number of model practices that may serve as guides to activities that might be adopted to meet some of Michigan's specific health care workforce needs, there are some additional factors that may serve as underlying impediments to the successful adoption of many of these practices.

- *Faculty shortages.* One of the key impediments for all of the educational and training approaches that have been identified and may be recommended for use with all three target populations is the lack of adequate faculty to serve all of the students who wish to be educated. Interviews with nursing school administrators, for example, revealed that there are waiting lists for entry into nursing programs across the state. Recently there have been more applicants to nursing schools in Michigan than can be handled by these schools. This is, in

part, the result of successful efforts over the past few years to publicize the need for more nurses along with efforts to build public interest in and respect for nursing, such as the advertising campaign conducted by the Robert Wood Johnson Foundation. Nursing school administrators have reported in interviews with PPA staff that there are several underlying factors for this shortage. One is a shortage of nursing school faculty. As of March 2004, AACN reported an 8.6% nursing faculty vacancy rate across the nation. This is, in part, explained by greater financial opportunities for advanced-degree nurses in direct care or in administrative positions relative to the financial rewards for teaching. Specialist nurses with BSN degrees are paid roughly \$65,000 per year to work in patient care, and master's-prepared nurses can make that amount or more in hospital administration and a variety of other positions outside of direct care. In contrast, nurses with Ph.D.s and master's-prepared nurses who teach nursing students typically have salaries that are approximately 20% lower. As a result, United States nursing schools turned away nearly 16,000 qualified applicants to baccalaureate nursing programs in 2003. Conversations with nursing school administrators in both southeast Michigan and western Michigan indicated that they have had similar experiences. Also, as noted earlier, nursing faculty are aging and a substantial proportion of nursing faculty working today will likely retire within the next decade. Educational administrators have also reported shortages of qualified faculty for other health care occupations that is leading to, at best, the inability to expand health care occupation programs and, at worst, the elimination of entire programs.

For nursing education, there is also a shortage of preceptors who provide student nurses with direct, hands-on clinical experience in a hospital or long-term care facility. The Nursing Alliance of West Michigan has established a coalition of educational institutions and health care organizations to address this issue through establishment of local workshops for bachelor's-prepared nurses to acquire the appropriate skill sets that will allow them to serve as preceptors in their respective hospitals or other settings.

- *Financial impediments in allied health care education.* A second concern is that the cost of educating health care workers is relatively expensive, especially when compared to the typical liberal arts and humanities education provided by community colleges and four-year

colleges and universities. There are two reasons for this. First is the reliance of health care career training on a substantial amount of laboratory and hands-on training that requires the use of expensive equipment and more intense faculty interaction than is typically found in basic liberal arts and humanities. Second, some of these expenses are reinforced by licensure board rules as well as by the pragmatic reality that much of the curricula for these professions are most effectively taught to relatively small groups of students. In other words, most undergraduate training in health care occupations cannot be provided to large numbers of students in large lecture classes. One academic administrator interviewed for this project indicated that the cost per credit hour for health care occupation education at his institution was approximately four times or even five times the average cost per credit hour for all classes offered at his institution. Other administrators verified that the cost of the health care career offerings were typically several times the average cost of other academic offerings. Another administrator commented that the cost of providing this sort of education is the main reason that programs at individual colleges or universities are eliminated periodically and, more important, why the likelihood of colleges or universities in Michigan expanding or creating new health care career programs is quite low. While these administrators do not necessarily speak for all health care career educators in Michigan, both agreed that state subsidies will be needed if the capacity of these programs is to be expanded or if new programs are to be established to meet growing needs.

- *Professional limitations.* The licensure boards and professional organizations that oversee some health care professions have also pursued policies in recent years that may be either limiting or slowing the training of some new health care professionals. One example has been with regard to educational standards that have not, according to some educators, allowed greater flexibility in dealing with the shortage of qualified teaching staff. During the course of this project, it was reported that Michigan's Board of Nursing has reiterated its dictum that there be no more than ten students per faculty member in nursing educational programs, including preceptorships. As a result of this rule, even as interest in nursing has grown, the capacity of nursing education programs in Michigan to provide the hands-on practical experience on the nursing floor has been limited due to a lack of qualified bedside nurses to provide this training. As noted earlier, an extraordinary effort by hospitals, colleges

and universities, and others over several years has been needed to develop a training program for nursing preceptors in order to address this need. In contrast, one health care education administrator questioned whether allowing one instructor for 11 or 12 nursing students would have made a difference.

A second instance of professional board limitations on training was expressed by a health care occupations educational administrator who related his frustration in providing an off-campus, community-sponsored EMT training program. As his educational institution was only authorized to provide that training in one physical location—on the institution’s campus, any off-campus training provided would not be certified and students would not be qualified for licensure despite the fact that the program was provided with the same curriculum and by the same faculty.

Third, educational requirements for some health care professions have been expanded recently and, thus, require a longer period of training before candidates are entitled to take their licensure exams. Pharmacy programs in Michigan are transitioning to doctoral programs (Pharm.D.) that require an extra year of education. Physical therapists are increasingly being offered additional training leading to a Doctor of Physical Therapy degree. While this degree is not required to practice, students choosing this option will delay their entry into practice for an additional one to two years. Efforts to increase the educational and training requirements for these and other health care occupations will compound some of the shortages that are already evident.

Lessons Learned

Several very important lessons have been learned from this project that will help to frame subsequent efforts to create a larger and more highly trained health care workforce in the state of Michigan.

- Health care workforce development in Michigan should be inclusive of a wide variety of occupations, not just nursing. While the nursing workforce crisis in Michigan is widely recognized, significant shortages in other health care occupations—including most therapists

and therapist assistants, technologists and technicians, and health care support personnel—pose serious threats to Michigan’s health care delivery system and, as a result, provide great opportunities for recruiting, training, and placing new workforce cohorts in these positions.

- Health care workforce development will be a long-term effort. While some of the occupations identified in this report may be addressed through short-term recruitment and educational activities, the health care industry and the demand for health care professionals and technicians will continue to grow for the next 20 years as the baby-boom generation enters retirement age.
- Model practice solutions to the health care workforce crisis in Michigan span the entire range of age and career. Efforts to upgrade the skills of older, more-experienced incumbent health care workers and efforts to impart new skills and knowledge to displaced workers from other industries are as important in meeting the needs of Michigan’s health care industry as are the efforts to promote health care careers among young people.
- There is an enormous variety of model practices that have made an impact under varying circumstances, in different locations, and for a diversity of health care professions and occupations. Health care workforce development efforts need to include careful examination of a number of model practices in order to identify practices that may be best suited to specific local labor markets.
- The most successful programs identified through this effort are those that have established high levels of collaboration among key stakeholders, especially educational organizations, professional associations, and health care employers. This has been demonstrated in terms of both developing educational programs for students, such as those offered by SEIU 1199 in New York, and programs to develop additional faculty resources, such as the preceptor training effort by the West Michigan Nursing Advisory Council.
- Successful models exhibit flexibility in education and training—e.g., flexibility in location of educational and training programs, flexibility in scheduling of educational and training

programs, and flexibility in the administration of educational and training programs.

CAEL's health care occupations apprenticeship program in Maryland involves employers, professional organizations, and community colleges in competency-based professional education outside of traditional educational settings.

- Health care workforce development also means health care education faculty development. Despite the recent upswing in nursing school enrollment, efforts to broaden nursing education as well as education and training for other health care professions and occupations is being hindered by the shortage of qualified faculty to teach the next generation of health care workers.

- Health care workforce development also requires greater-than-average financial commitment. Health care professional and technical education is very expensive, especially because of the need for laboratory and clinical education as well as the relatively low student-to-faculty ratios that are required by some accrediting bodies. Employers, educators, labor unions, and government will have to collaborate on acquiring additional funding from innovative sources.

Recommendations

This project has been an important first step in addressing Michigan's interest in stimulating the growth of a highly trained and well-paid professional health care workforce while meeting the demand to address the health care industry's (and the public's) critical need for health care workers that are in short supply. One of the next major steps in aligning health care workforce development with Michigan's overall economic development strategy is to address the fragmentation of the health care workforce system at the regional level through the establishment of Regional Skill Alliances (RSAs). The information provided through this project can be an important source of technical support for the RSAs in their efforts to facilitate regional partnerships among health care employers, educators, professional associations, and workforce development organizations in order to grow Michigan's health care workforce.

Not all of the issues associated with stimulating the supply of qualified health care professionals and technicians in Michigan have been addressed yet. Nonetheless, this project has advanced this important effort in several significant ways. This project has identified critical health care occupations that will grow beyond Michigan's current ability to meet workforce demands and has identified the magnitude of this growth over the next ten years. This project has brought together critical information on the opportunities and rewards that are available to those who pursue these careers. Most important, this project has also identified a number of programs and practices that may be used to stimulate new interest in these careers, that can provide new education and career paths for workers already in the health care industry, and that may be used to help retrain workers from other industries who have skills and talents that may lead to success in new health care careers.

The following recommendations are offered in order to move the efforts of this project further along towards developing and implementing the policies that will be needed to significantly increase Michigan's health care workforce over the next 12 to 24 months.

- Maintain the Health Care Workforce Development in Michigan Advisory Roundtable and continue its work. This advisory group has provided extraordinarily valuable information about health care careers in Michigan through the exchange of information and the cross fertilization of ideas among key stakeholders who often do not come together on issues such as these.
- Use the materials produced by this project to provide information and technical support to RSAs that are targeting health care workforce issues in their respective regions.
- Use the materials produced through this project to provide Michigan Works! and workforce investment boards around the state with information and technical assistance in developing their own projects and programs to expand the health care workforce in their own areas.
- Establish a process to maintain and regularly update the profiles and the model practices databases and to periodically update the occupational forecasts so they will remain up to date

and useful tools for MDLEG and MDCH, for local workforce development agencies, for Michigan business and industry, and for individuals who are interested in pursuing health care careers.

- Add a health care careers database to MDLEG's Career Portal Web site (www.michigan.gov/careers) that will appeal to various levels and aspects of health care career research. This database will be based on the career profiles developed for this project (see Appendix B), including a description of the occupation, key employment and earnings statistics, occupational outlooks, professional associations, licensing requirements, educational requirements, and administrative rules regarding scope of practice. By placing this information on the Career Portal Web site, access to integrated health care career information will be made easier and continuously updatable.

- In order to monitor progress in addressing health care workforce shortage problems across Michigan, conduct a health care employer survey to track both regional and statewide vacancies and turnover for professional and nonprofessional health care occupations. This effort should be incorporated with the ongoing efforts of MDLEG's Labor Market Information division to track employment vacancies across all industries in Michigan.

- Determine the capacity of public and proprietary educational institutions and training organizations throughout Michigan to prepare health care practitioners and allied health care professionals, technologists, technicians, and assistants. In addition, determine the size of entering classes, graduating classes, and the number of qualified students turned away (if any) due to limited capacity.

- Use the information compiled through this initial project as the basis for applying for demonstration grants from the U.S. Department of Labor, other federal agencies, and private foundations and charitable organizations to fund implementation of programs that can be successfully applied to promoting health care occupations, educating students for health care careers, enhancing the skills and opportunities for health care workers, and meeting the workforce needs of health care providers throughout Michigan.

- Promote Michigan's participation in the Census Bureau's Local Employment Dynamics (LED) system. This new effort links employment (wage-record data) with traditional census data, thus allowing much more detailed and sophisticated analysis of local employment patterns along with the social and economic characteristics of members of the workforce within substate labor market areas.

- Develop a set of working committees composed of coalitions of key industry and professional stakeholders along with public agencies that will develop solutions to specific health care workforce issues in Michigan and then facilitate their implementation. Structurally, these working committees will coordinate their efforts with the Health Care Workforce Development in Michigan Advisory Roundtable. Operationally, each working committee will address a distinct aspect of health care workforce issues and will be comprised of individuals representing the most appropriate organizations, interests, and agencies for those concerns. Distinct working committees are suggested for the following:
 - Licensed health care professionals (including physicians, nurses, therapists, technicians, and others)
 - Nonlicensed professionals and other health care workers (including allied health care workers, nonlicensed technicians and technologists, and others)
 - Employers and labor (including health care organizations and organized labor organizations)

- Coordinate the policy decisions and the operational policies and plans developed through these efforts with the educational policies and plans under development by Lieutenant Governor Cherry's Commission on Higher Education in order to assure that Michigan's economic development, workforce development, and higher education policies are not established in isolation from or at cross purposes to each other.

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Appendix A: List of Advisory Roundtable Members and Their Affiliations

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Appendix B: Occupational Profiles

Cardiovascular Technologist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary-functions, lung capacity, and similar tests.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

Some job openings for cardiovascular technologists and technicians will arise from replacement needs as individuals transfer to other jobs or leave the labor force. However, job growth and replacement needs will produce relatively few job openings because the occupation is small.

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$19.30	\$40,150.00
Detroit MSA	\$19.64	\$40,860.00
Flint MSA	\$19.87	\$41,330.00
Lansing MSA	\$21.15	\$43,980.00
Saginaw MSA	\$16.37	\$34,050.00
Balance of State - Northwest Lower Peninsula	\$18.56	\$38,610.00
Balance of State - South Central Lower Peninsula	\$16.54	\$34,410.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

The amount of training depends upon your individual qualifications and the fields in which you are interested. If you would like to be trained in both invasive and noninvasive cardiology, it may take longer than focusing on one specific area. In general, programs range from 1 to 4 years. Most cardiovascular technologists complete two-year programs and receive associate's degrees. A two-year program begins with general education requirements like biology and finishes with specialized classes in your field of interest.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

Alliance of Cardiovascular Technologists -- <http://www.acp-online.org/>

RESOURCES

American Registry of Diagnostic Medical Sonographers -- <http://www.ardms.org>

American Society of Echocardiography -- <http://www.asecho.org>

Cardiovascular Credentialing International -- <http://www.cci-online.org>

Committee on Accreditation for Allied Health Education Programs -- <http://www.caahep.org>

Joint Committee on Education in Cardiovascular Technology -- (410) 418-4800

Society of Vascular Ultrasound -- <http://www.svunet.org>

Chiropractor

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Doctors of Chiropractic (D.C.s), known as chiropractors, are health practitioners who treat patients primarily by manual adjustment of parts of the body, giving special consideration to the spinal column and central nervous system. The Chiropractor's system of health care is a drugless, nonsurgical healing art based on the principle that the nervous system controls the state of health of the human body and that abnormal functions and many disorders of the body are caused by interference with nerve transmission and expression.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$49.76	\$103,500.00
Detroit MSA	\$53.26	\$110,780.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33812001&Dpt=CH&RngHigh=):

R 338.12001 Definitions.

Rule 1. As used in these rules:

(a) "Adjustment apparatus" means a tool or device used to apply a mechanical force to correct a subluxation or misalignment of the vertebral column or related bones and tissues for the establishment of neural integrity.

(b) "Analytical instruments" means instruments which monitor the body's physiology for the purpose of determining subluxated or misaligned vertebrae or related bones and tissues.

(c) "Code" means Act No. 368 of the Public Acts of 1978, as amended, being S333.1101 et seq. of the Michigan Compiled Laws.

(d) "Rehabilitative exercises" means the coordination of a patient's exercise program, the performance of tests and measurements, instruction and consultation, supervision of personnel, and the use of exercise and rehabilitative procedures, with or without assistive devices, for the purpose of correcting or preventing a subluxated or misaligned vertebrae of the vertebral column.

History: 1979 ACS 9, Eff. Jan. 14, 1982.

R 338.12002 Licensure; application.

Rule 2. (1) An applicant for licensure shall apply on forms provided by the department.

(2) An applicant shall submit application fees established by the legislature with the application.

History: 1979 ACS 9, Eff. Jan. 14, 1982; 2000 MR 6, Eff. May. 4, 2000.

R 338.12003 Licensure by examination; petition.

Rule 3. (1) An applicant for licensure by examination shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and these rules, an applicant for licensure by examination shall meet both of the following provisions:

(a) Have graduated from a program or institution of chiropractic that meets the educational standards in R 338.12006 and have final, official transcripts provided to the department from the educational institution.

(b) Meet 1 of the following:

(i) For applications filed on or before December 31, 2000, an applicant shall have achieved either of the following:

(A) A passing score on the state examination which is approved by the Michigan board of chiropractic and which is administered by the department of consumer and industry services under R 338.12005(1).

(B) Passing scores on parts I and II of the national board examination.

The scores and verification shall be sent directly from the national board office to the chiropractic board office.

(ii) For an application filed on or after January 1, 2001, an applicant shall have passed parts I, II, and III of the national board examination that is conducted and scored by the national board of chiropractic examiners.

(2) If an applicant fails to achieve a passing score on part III of the national board examination, then the applicant may petition the board for licensure. The board may grant the license if the applicant meets all other requirements for licensure and conclusively demonstrates, to the satisfaction of the board, that failure to achieve a passing score on part III does not reflect the applicant's ability to engage in the practice of chiropractic as defined in part 164 of the code.

History: 1979 ACS 9, Eff. Jan. 14, 1982; 1987 MR 3, Eff. Apr. 15, 1987; 1992 MR 12, Eff. Dec. 19, 1992; 2000 MR 6, Eff. May. 4, 2000; 2001 MR 8, Eff. May 4, 2001.

Editor's Note: On May 9, 2001, pursuant to Section 56 of 1969 PA 306, as amended, being Section 24.256 of the Michigan Compiled Laws, an obvious error in this rule has been corrected at the request of the promulgating agency. The rule as published in the Michigan Register and filed with the Office of the Great Seal contained an incorrect reference in subsection (2), to "part iii" of the national board examination. This was changed to a roman numeral, "part III."

R 338.12004 Licensure by endorsement.

Rule 4. (1) An applicant for a chiropractic license by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and these rules, an applicant shall satisfy the requirements of this rule.

(2) If an applicant was licensed in another state before January 1, 2001, and has been engaged in the practice of chiropractic for a minimum of 5 years before the date of filing an application for Michigan licensure, it will be presumed that the applicant meets the requirements of section 16186(1)(a) and (b) of the code.

(3) If an applicant does not meet the requirements of subrule (2) of this rule, then the applicant, in addition to meeting the requirements of the code, shall have been licensed in another state and establish having passed the examination specified in R 338.12003.

History: 1979 ACS 9, Eff. Jan. 14, 1982; 1987 MR 3, Eff. Apr. 15, 1987; 2000 MR 6, Eff. May 4, 2000.

R 338.12005 Examinations.

Rule 5. (1) The board approves and adopts the state examination conducted and scored by the department of consumer and industry services.

The passing score for the examination shall be a converted score of not less than 75.

(2) The board approves and adopts the national board examination in chiropractic that is conducted and scored by the national board of chiropractic examiners. The passing score for the national board examination parts I, II, and III shall be a converted score of not less than 75.

History: 1979 ACS 9, Eff. Jan. 14, 1982; 1987 MR 3, Eff. Apr. 15, 1987; 2000 MR 6, Eff. May 4, 2000.

R 338.12006 Adoption of educational standards by reference.

Rule 6. The board adopts by reference the standards of the council on chiropractic education, commission on accreditation, as specified in the publication entitled, "Standards for Chiropractic Programs and Institutions," January 1999. The standards are available from The Council on Chiropractic Education, 7975 North Hayden Road, Suite A210, Scottsdale, Arizona 85258, at no cost. The standards are also available at the Board of Chiropractic, Department of Consumer and Industry Services, 611 West Ottawa Street, P. O. Box 30670, Lansing, Michigan 48909.

History: 1979 ACS 9, Eff. Jan. 14, 1982; 2000 MR 6, Eff. May. 4, 2000.

R 338.12007 Rescinded

History: 1979 ACS 9, Eff. Jan. 14, 1982; rescinded 2000 MR 6, Eff. May. 4, 2000.

R 338.12008 License renewal and relicensure.

Rule 8. (1) An applicant for renewal of a license to practice chiropractic or an applicant for relicensure under section 16201(3) of the code shall have completed, in the 2-year period immediately preceding the application, 24 hours of continuing education in programs approved by the board. This rule does not apply to licensees who have obtained their initial chiropractic license within the 2-year period immediately preceding the expiration date of the initial license.

(2) An applicant for relicensure under the provisions of section 16201(4) of the code shall comply with either of the following requirements:

(a) Have completed, in the 3-year period immediately preceding the application for relicensure, 36 hours of continuing education in programs approved by the board with not less than 24 hours in courses on chiropractic adjusting techniques.

(b) Have been continuously licensed and engaged in the practice of chiropractic in another state during the 3-year period immediately preceding the application for relicensure.

R 338.12008a Continuing education; approval of programs; acceptable and unacceptable programs.

Rule 8a. (1) The board shall consider any of the following as board-approved continuing education:

(a) Successful completion of a course or courses offered for credit in a chiropractic school approved by the board under R 338.12006.

(b) Successful completion of a continuing education program offered by a chiropractic school approved by the board under R 338.12006.

(c) Renewal of a license held in another state that requires continuing education for license renewal which is substantially equivalent to the requirements of these rules if the applicant resides and practices in that state.

(2) The board shall consider requests for approval of continuing education programs by sponsors who submit applications on a form provided by the department. For purposes of this rule, 1 hour of continuing education is defined as 50 minutes. The board shall evaluate applications for approval based upon all of the following:

(a) Programs shall have content outlines and schedules.

(b) Sponsors shall provide a listing of program materials.

(c) Sponsors shall provide information relative to the method for monitoring attendance.

(d) Sponsors shall furnish evidence of attendance to attendees.

(e) Program instructors or presenters shall demonstrate qualifications and knowledge in the subject matter.

(f) Programs shall relate to the general subject area of the practice of chiropractic.

(3) Programs considered for approval under subrules (1) and (2) of this rule shall not receive credit for those portions of programs covering subject areas that include practice building, marketing, administration, or financial advancement.

History: 1979 ACS 9, Eff. Jan. 14, 1982; 1987 MR 3, Eff. Apr. 15, 1987; 1992 MR 3, Eff. Apr. 14, 1992; 2000 MR 6, Eff. May. 4, 2000.

R 338.12009 Assessment of fine.

Rule 9. (1) When a fine has been designated as an available sanction for a violation of sections 16221 to 16226 of the code, in the course of assessing a fine, a board shall take into consideration the following factors without limitation:

(a) The extent to which the licensee obtained financial benefit from any conduct comprising part of the violation found by the board.

(b) The willfulness of the conduct found to be part of the violation determined by the board.

(c) The public harm, actual or potential, caused by the violation found by the board.

(d) The cost incurred in investigating and proceeding against the licensee.

(2) A fine shall not exceed the sum of \$10,000.00 for each violation found to have been committed by the licensee.

History: 1979 ACS 9, Eff. Jan. 14, 1982.

R 338.12010 Adjustment apparatus; criteria for board approval.

Rule 10. In accordance with section 16423 of the code, the following criteria are established for adjustment

apparatus which the board has been asked to approve:

- (a) The purpose of the apparatus is to restore or maintain alignment of vertebrae.
- (b) The apparatus applies a mechanical force to the spine or related bones and tissues.

History: 1979 ACS 9, Eff. Jan. 14, 1982.

R 338.12011 Analytical instruments; criteria for board approval.

Rule 11. In accordance with section 16423 of the code, the following criterion is established for analytical instruments which the board has been asked to approve:

The purpose of the instrument is to monitor the body's physiology for the purpose of determining subluxated or misaligned vertebrae or related bones and tissues.

History: 1979 ACS 9, Eff. Jan. 14, 1982.

R 338.12012 Rescinded.

History: 1979 ACS 9, Eff. Jan. 14, 1982; rescinded 1996 MR 9, Eff. Oct. 5, 1996.

R 338.12013 Rescission.

Rule 13. R 338.2201 to R 338.2225 and R 338.2241 of the Michigan Administrative Code, appearing on pages 2536 and 2537 of the 1979 Michigan Administrative Code, and page 135 of Quarterly Supplement No. 5 to the 1979 Michigan Administrative Code, are rescinded.

History: 1979 ACS 9, Eff. Jan. 14, 1982.

R 338.12014 Advertising.

Rule 14. (1) All licensees practicing chiropractic in Michigan shall use the word "chiropractic" or "chiropractor" or the initials "D.C." in conjunction with their names on all signs, letterheads, business cards, or similar items of identification.

(2) Any advertisement or advertising which does any of the following is deemed by the board to be fraudulent, false, deceptive, or misleading:

- (a) Contains a misrepresentation of facts.
- (b) Is misleading or deceiving in its content or context.
- (c) Creates false or unjustified expectations of beneficial treatment or successful cures.
- (d) Fails to prominently identify the chiropractor or chiropractors referred to in the advertising as a chiropractor or chiropractors.
- (e) Contains any representation which identifies the chiropractic practice being advertised by a name which does not include the term "chiropractor" or "chiropractic" or some easily recognizable derivative thereof.
- (f) Appears in any classified directory, listing, or compendium under a heading which, when considered together with the advertisement, has the capacity or tendency to be deceptive or misleading with respect to the profession or professional status of the chiropractor.

History: 1987 MR 3, Eff. Apr. 15, 1987

Michigan Public Health Code (www.michigan.legislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-164&highlight=>

Occupational Board Information:

The Michigan Board of Chiropractic was originally formed with the enactment of Public Act 145 of 1933. On September 30, 1978 this authority was transferred to the Public Health Code, Public Act 368 of 1978, as amended.

The practice of chiropractic as defined in the Public Health Code means that discipline within the health arts which deals with the nervous system and its relationship to the spinal column and its inter-relationship with other body systems.

The Public Health Code mandates certain responsibilities and duties for a health professional licensing board.

Underlying all duties is the responsibility of the board to promote and protect the public's health, safety, and welfare. This responsibility is implemented by the Board by ascertaining minimal entry level competency of health practitioners and verifying continuing education during licensure. The Board also has the obligation to take disciplinary action against licensees who have adversely affected the public's health, safety, and welfare.

The Michigan Board of Chiropractic consists of 9 voting members: 5 chiropractors and 4 public members.

The Board currently oversees the practice of approximately 2,756 chiropractors.

EDUCATION

The typical applicant at a chiropractic college has already acquired nearly four years of premedical undergraduate college education, including courses in biology, inorganic and organic chemistry, physics, psychology, and related lab work. Once accepted into an accredited chiropractic college, the requirements become even more demanding—four to five academic years of professional study are the standard. Because of the hands-on nature of chiropractic, and the intricate adjusting techniques, a significant portion of time is spent in clinical training. Doctors of chiropractic—who are licensed to practice in all 50 states, the District of Columbia, and in many nations around the world — undergo a rigorous education in the healing sciences, similar to that of medical doctors. In some areas, such as anatomy, physiology, rehabilitation, nutrition and public health, they receive more intensive education than their M.D. counterparts.

Like other primary health care doctors, chiropractic students spend a significant portion of their curriculum studying clinical subjects related to evaluating and caring for patients. Typically, as part of their professional training, they must complete a minimum of a one-year clinical-based program dealing with actual patient care. In total, the curriculum includes a minimum of 4,200 hours of classroom, laboratory, and clinical experience. The course of study is approved by an accrediting agency that is fully recognized by the U.S. Department of Education. This has been the case for more than 25 years.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Chiropractic Association -- <http://www.amerchiro.org/>

State Association:

Michigan Chiropractic Society -- <http://www.chiromi.com/>

RESOURCES

Dental Assistant

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assist dentist, set up patient and equipment, and keep records.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Balance of State - Northwest Lower Peninsula	\$15.22	\$31,660.00
Balance of State - South Central Lower Peninsula	\$12.62	\$26,240.00
Balance of State - Upper Peninsula	\$10.19	\$21,190.00
Michigan	\$13.48	\$28,030.00
Ann Arbor MSA	\$14.08	\$29,290.00
Benton Harbor MSA	\$13.45	\$27,970.00
Detroit MSA	\$14.34	\$29,820.00
Flint MSA	\$12.56	\$26,130.00
Grand Rapids-Muskegon-Holland MSA	\$12.92	\$26,870.00
Jackson MSA	\$11.59	\$24,110.00
Kalamazoo-Battle Creek MSA	\$11.44	\$23,790.00
Lansing MSA	\$15.42	\$32,060.00
Saginaw MSA	\$11.84	\$24,620.00
Balance of State - Northeast Lower Peninsula	\$9.50	\$19,770.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33811101&Dpt=CH&RngHigh=):

R 338.11101 Definitions.

Rule 1101. As used in these rules:

- (a) "Act" means Act No. 368 of the Public Acts of 1978, as amended, being §333.1101 et seq. of the Michigan Compiled Laws.
- (b) "Analgesia" means the diminution or elimination of pain in the conscious patient.
- (c) "Assignment" means that a dentist has designated a patient of record upon whom services are to be performed by an assistant, registered dental assistant, or registered dental hygienist and has described the procedure to be performed. The dentist need not be physically present in the office or in the treatment room at the time the procedures are being performed.
- (d) "Assistant" means a nonlicensed person who may perform basic supportive procedures under the supervision of a dentist as provided in these rules.
- (e) "Board" means the Michigan board of dentistry.
- (f) "Dentist" means a person licensed by the board pursuant to the act and these rules.
- (g) "Direct supervision" means that a dentist has designated a patient of record upon whom services are to be performed by an assistant, registered dental assistant, or registered dental hygienist and has described the procedures to be performed. The dentist shall examine the patient before prescribing the procedure to be performed.

performed and again upon completion of the procedure. The dentist shall be physically present in the office at the time the procedures are being performed.

(h) "General anesthesia" means the elimination of all sensations accompanied by a state of unconsciousness and loss of reflexes necessary to maintain a patient airway. (i) "General supervision" means that a dentist has designated a patient of record upon whom services are to be performed. The dentist shall be physically present in the office at the time the procedures are being performed.

(j) "Licensed" means the possession of a full license to practice, unless otherwise stated.

(k) "Local anesthesia" means the elimination of sensation, especially pain, in 1 part of the body by the topical application or regional injection of a drug.

(l) "Office" means the building or suite in which dental treatment is performed.

(m) "Patient of record" means a patient who has been examined and diagnosed by a licensed dentist and whose treatment has been planned by a licensed dentist.

(n) "Public health service" means the United States public health service. A person applying for an exemption under this classification shall submit a certified copy of his or her official papers verifying active duty status.

(o) "Registered dental assistant" means a person licensed by the board pursuant to the act and these rules. A dental hygienist may perform the functions of a registered dental assistant if the board as a registered dental assistant licenses him or her.

(p) "Registered dental hygienist" means a person licensed by the board pursuant to the act and these rules.

(q) "Second pair of hands," as used in R 338.11109, means acts, tasks, functions, and procedures performed by a dental assistant, registered dental assistant, or registered dental hygienist at the direction of a dentist who is in the process of rendering dental services and treatment to a patient. The acts, tasks, functions, and procedures performed by a dental assistant, registered dental assistant, or registered dental hygienist are ancillary to the procedures performed by the dentist and intended to provide help and assistance at the time the procedures are performed. This definition shall not be deemed to expand the duties of the dental assistant, registered dental assistant, or registered dental hygienist as provided by the act and rules promulgated by the board.

(r) "Sedation" means the calming of a nervous, apprehensive individual, without inducing loss of consciousness, through the use of systemic drugs. Agents may be given orally, parenterally, or by inhalation.

(s) "Treatment room" means the particular room or specific area in which the dental treatment is performed upon a patient.

R 338.11103 Applicability of rules.

Rule 1103. These rules apply to dentists, registered dental assistants, and registered dental hygienists.

R 338.11107 Signs; disclosure of names of dentists practicing in an establishment.

Rule 1107. The name of the dentist actually practicing dentistry within an establishment shall be clearly disclosed by means of a sign or letting on or near a door, window, or wall of the establishment. If more than 1 dentist practices in a single establishment, the names of all the dentists practicing at the establishment shall be listed.

R 338.11247 Limited licenses; issuance; requirements.

Rule 1247. (1) The board may issue a limited license, pursuant to section 16182(2)(a) of the act, to an individual who is a graduate of a dental, dental hygiene, or dental assisting program approved by the board and who is enrolled or involved in a postgraduate course of study.

(2) The board may issue a limited license, pursuant to section 16182(2)(b) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant who is employed by a dental program or a dental auxiliary program as a teacher, and who functions only in a nonclinical academic research setting or in an administrative setting.

(3) The board may issue a limited license, pursuant to section 16182(2)(c) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant and who is employed by a dental program or a dental auxiliary program as a clinical teacher. The individual may perform dental procedures upon patients while employed as a clinical teacher by the dental or dental auxiliary program if such procedures are performed under the general supervision of a faculty member who is fully licensed as a dentist. An individual licensed under this subrule shall not do either of the following:

(a) Hold himself or herself out to the public as being engaged in the practice of dentistry other than as a clinical instructor.

(b) Provide dental services outside his or her employment as a clinical instructor.

(4) An individual applying for a limited license under section 16182(2) of the act shall meet both of the following requirements:

(a) Comply with section 16174 of the act.

(b) Submit proof of graduation from an approved school of dentistry, dental hygiene, or dental assisting or a certified copy of the diploma and transcript from an unapproved school of dentistry, dental hygiene, or dental assisting. The latter proof shall be translated into English, if necessary, and certified by an official of the United States embassy.

(5) Limited licenses shall be renewed annually at the discretion of the board.

R 338.11253 Certification of renewal; display.

Rule 1253. A licensee shall display a currently renewed certificate of licensure in his or her principal place of practice. A licensee whose practice involves more than 1 office shall have his or her pocket card portion of the currently renewed certificate of licensure available for viewing upon request.

R 338.11401 Delegation or assignment of procedures by dentist to assistant, registered dental assistant, or registered dental hygienist; certain procedures prohibited.

Rule 1401. (1) A dentist shall not delegate or assign the following functions to an assistant or a registered dental assistant unless authorized by these rules or the code:

(a) Diagnosing, or prescribing for, any of the following:

(i) Disease.

(ii) Pain.

(iii) Deformity.

(iv) Deficiency.

(v) Injury.

(vi) Physical condition.

(b) Cutting of hard and soft tissue.

(c) Removal of any of the following:

(i) Accretions.

(ii) Stains.

(iii) Calculus deposits.

(d) Deep scaling.

(e) Root planing.

(f) Any intra-oral restorative procedures.

(g) Administration of any of the following:

(i) Local anesthesia.

(ii) Nitrous oxide analgesia.

(iii) Acupuncture.

(h) Irrigation and medication of root canals, try-in of cones or points, filing, or filling of root canals.

(i) Taking impressions for any purpose other than study or opposing models.

(j) Permanent cementation of any restoration or appliance.

(2) A dentist shall not assign to a registered dental hygienist the procedures described in subrule (1) (a), (b), (f), (g), (h), (i), and (j) of this rule unless authorized by these rules or the code.

R 338.11406 Assignment of intra-oral procedures to registered dental hygienist.

Rule 1406. The intra-oral procedures listed in R 338.11405(1)(a), (b), and (f) and (2)(b) shall not be assigned to a registered dental hygienist unless the registered dental hygienist is also licensed as a registered dental assistant pursuant to R 338.11235.

R 338.11408 Registered dental hygienist; assignment of intra-oral procedures under assignment of dentist; assignment of intra-oral procedures under direct supervision.

Rule 1408. (1) A registered dental hygienist shall not perform the following intra-oral dental procedures unless the procedures are performed under the assignment of a dentist as defined in section 16601 of the code:

(a) Removal of accretions and stains from the surfaces of the teeth and application of topical agents essential to complete prophylaxis.

(b) Root planing.

(c) Polishing and contouring restorations.

(d) Application of anticariogenic agents.

(e) Charting of the oral cavity using radiographs, including all of the following:

(i) Periodontal charting.

- (ii) Intra- and extra-oral examination of soft tissue.
- (iii) Charting of radiolucencies or radiopacities, existing restorations, and missing teeth.
- (f) Preliminary examination, including both of the following:
 - (i) Classifying occlusion.
 - (ii) Testing pulp vitality using an electric pulp tester.
- (g) Application of nonaerosol and noncaustic topical anesthetic agents by prescription of the dentist.
- (h) Placement and removal of intra-coronal temporary sedative dressings.
- (i) Taking intra-oral measurements for orthodontic procedures.
- (j) Placement and removal of postextraction and periodontal dressings.
- (k) Removal of excess cement from tooth surfaces.
- (l) Nutritional counseling for oral health and maintenance.
- (m) Application of commonly accepted emergency procedures.
- (n) Removal of sutures.
- (o) Placement and removal of rubber dam.
- (2) A registered dental hygienist shall not perform soft tissue curettage unless under the direct supervision of a dentist.

R 338.11704 License renewal for dental hygienists and dental assistants; relicensure; requirements; applicability.

Rule 4. (1) This part applies to applications for the renewal of a registered dental hygienist license or a registered dental assistant license and applications for relicensure pursuant to section 16201(3) and (4) of the act which are filed on or after April 30, 1994.

(2) An applicant for license renewal who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure shall possess current certification in basic or advanced cardiac life support from an agency or organization that grants certification pursuant to standards substantially equivalent to the standards adopted in R 338.11705(3) and shall comply with the following requirements, as applicable:

(a) For a registered dental hygienist license or a registered dental assistant license, the applicant shall have completed not less than 36 hours of continuing education acceptable to the board during the 3-year period immediately preceding the date of the application. Each licensee

shall complete a minimum of 12 hours of approved continuing education in programs directly related to clinical issues such as delivery of care, materials used in the delivery of care, and pharmacology.

(i) Applicants holding both a registered dental hygienist license and a registered dental assistants license shall have completed not less than a total of 36 hours of continuing education acceptable to the board during the 3-year period immediately preceding the date of the application. The 36 hours shall include not less than 12 hours devoted to registered dental hygienist functions, and not less than 12 hours devoted to registered dental assistants functions.

(b) If an organized continuation course or program is offered in segments of 50 to 60 minutes each, 1 hour of credit shall be given for each segment.

(3) The submission of the application for renewal shall constitute the applicant's certification of compliance with the requirement of this rule.

The board may require an applicant or licensee to submit evidence to demonstrate compliance with this rule. The applicant or licensee shall maintain evidence of complying with the requirements of this rule for a period of 4 years from the date of the application.

R 338.11704a Acceptable continuing education for dental hygienists and dental assistants; limitations.

Rule 4a. The board shall consider any of the following as acceptable continuing education:

(a) Successful completion of a course or courses offered for credit in a dental school or hospital-based dental specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the board pursuant to the provisions

of R 338.11307. Ten hours of continuing education shall be credited for each quarter credit earned and 15 hours shall be credited for each semester credit earned, without limitation.

(b) Attendance at a continuing education program offered by a dental school or hospital-based dental specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the

board pursuant to the provisions of R 338.11307. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(c) Attendance at a continuing education program approved by the board pursuant to the provisions of R 338.11705 of this part. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(d) Development and presentation of a table clinic demonstration or a continuing education lecture offered in conjunction with the presentation of continuing education programs approved by the board. One hour of continuing education shall be credited for each hour devoted to the development and initial presentation of a table clinic demonstration or a continuing education lecture, with a maximum of 10 hours of continuing education credited for the development and presentation of the same table clinic demonstration or continuing education lecture.

(e) Twelve hours of continuing education shall be credited for the initial publication of an article or articles related to the practice of dentistry, dental hygiene, or dental assisting in the journal of an accredited school of dentistry, dental hygiene or dental assistant, or in a state or state component association of dentists, dental specialists, dental hygienists, or dental assistants.

(f) Twenty-five hours of continuing education shall be credited for the initial publication of an article or articles related to the practice of dentistry, dental hygiene, or dental assisting in a textbook or in the journal of a national association of dentists, dental specialists, dental hygienists, or dental assistants.

(g) Twelve hours of continuing education may be earned in board-approved, on-line continuing education activities.

(h) One hour of continuing education shall be credited for each hour of reading articles and viewing or listening to media, other than on-line programs, devoted to dental, dental hygiene, or dental assisting education with a maximum of 10 hours credited under this category.

(i) Renewal of a license held in another state that requires continuing education for license renewal that is substantially equivalent to that required in these rules if the applicant resides and practices in another state. For a registered dental hygienist or registered dental assistant, 36 hours of continuing education shall be credited for evidence of current licensure in such other state.

(j) For a registered dental assistant, meeting the requirements for recertification in R 338.11705(2). Thirty-six hours of continuing education shall be credited for evidence of current certification, other than life certification, by the dental assisting national board.

(k) One continuing education contact hour may be granted for each hour of program attendance at a continuing education program which has been granted approval by another state board of dentistry.

(l) Six hours of continuing education shall be credited to dental hygienists or registered dental assistants for attendance at dental related programs which are documented by the licensee as relevant to health care and advancement of the licensee's dental education. The board shall deny a request for approval if the continuing education request does not meet the criteria used by the board for approval of continuing education sponsors.

(m) A maximum of 18 credit hours per renewal period may be earned for programs related to specific dental specialty topics approved for category 1 continuing education by the boards of medicine or osteopathic medicine.

R 338.11705 Standards and requirements; adoption by reference.

Rule 5. (1) The board approves and adopts by reference the standards and criteria of the national sponsor approval program of the academy of general dentistry for approval of continuing education sponsoring organizations, institutions, and individuals, which are in the publication entitled "Program Approval for Continuing Education (PACE), a Guidebook, Revised July 2002".

Information on the pace standards and criteria is available at no cost from the Academy of General Dentistry, 211 East Chicago Avenue, Suite 900, Chicago, IL 60611 or from the academy's internet website at <http://www.agd.org>. A copy of the guidebook is available for inspection and distribution at cost from the Michigan Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

Approval of a sponsor by the academy of general dentistry committee on national sponsor approvals or by any academy of general dentistry constituent academy shall constitute prima facie evidence that the sponsor meets the standards and criteria adopted by the board.

(2) The board approves and adopts by reference the standards and criteria of the National Sponsor Approval Program of the American Dental Association Continuing Education Recognition Program (ADA CERP) for approval of continuing education sponsoring organizations, which are set forth in the publication entitled "ADA CERP Recognition Standards and Procedures, Revised April 2002." A copy of this publication may be

obtained at no cost from the association at ADA CERP 211 E. Chicago Avenue, Chicago, IL 60611-2678 or from the association's internet website at <http://www.ada.org/prof/ed/ce/cerp>. A copy of the publication is available for inspection and distribution at cost from the Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909. Approval of a sponsor by the ADA CERP or by any constituent group of ADA CERP shall constitute prima facie evidence that the sponsor meets the standards and criteria adopted by the board.

(3) The board approves and adopts by reference the requirements for recertification established by the dental assisting national board and set forth in the publication entitled "2002 Recertification Guidelines & Requirements." A copy of the publication may be obtained at no cost from the Dental Assisting National Board, 676 N. St. Clair Street, Suite 1880, Chicago, IL 60611 or from the national board's internet website at <http://www.danb.org>. A copy of the guidelines and requirements are available for inspection and distribution at cost from the Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(4) The board shall consider any continuing dental education program that is offered by a sponsor that applies to the board and demonstrates it substantially meets the standards and criteria adopted by the board as a continuing education program approved by the board.

(5) The board adopts by reference the standards for certification in basic and advanced cardiac life support set forth by the American heart association in the guidelines for cardiopulmonary resuscitation and emergency cardiac care for professional providers and published in "Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care (70-2041). A copy of the guidelines for cardiopulmonary resuscitation and emergency cardiac care may be obtained from the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231 or at <http://www.ahajournals.org> at a cost of \$20.00 as of the adoption of these rules. A copy of this document is available for inspection and distribution at cost from the Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(6) The board may approve a state, regional, or national dental organization as an acceptable provider of continuing education courses if the organization presents standards, criteria, and course monitoring procedures for its courses that are acceptable to the board. This approval may be withdrawn if the board determines the organization is not complying with the standards and criteria presented. The standards, criteria, and monitoring procedures will be retained in the department's board files. An organization shall update its file with the department every 5 years.

R 338.11235 Licensure to practice as a registered dental assistant; requirements.

Rule 1235. An individual applying for a license to practice as a registered dental assistant shall meet all of the following requirements:

- (a) Comply with section 16174 of the act.
- (b) Graduate or receive a certificate from a school which meets the standards set forth in R 338.11307.
- (c) Pass the board comprehensive and clinical examination.

R 338.11239 Registered dental assistant examination; content; time; place; passing score.

Rule 1239. (1) The board shall conduct a comprehensive and clinical examination for individuals seeking licensure as a registered dental assistant.

(2) Examination for licensure as a registered dental assistant shall be both comprehensive and clinical and shall include, but not be limited to, all of the following:

- (a) Oral anatomy.
- (b) Law and rules governing dental auxiliaries.
- (c) Instrumentation and use of dental materials.
- (d) Mouth mirror inspection.
- (e) Rubber dam application.
- (f) Application of anticariogenics.
- (g) Placement and removal of temporary crowns and bands.
- (h) Radiography.
- (i) Periodontal dressings, application and removal.
- (j) Removal of sutures.

(3) The examination shall be given at least once a year. The passing score for the examination shall be a converted score of 75 on each section.

(4) A candidate who fails to achieve a passing score on all parts within an 18-month period shall reapply to take the entire clinical and comprehensive examination.

R 338.11241 Registered dental assisting licensure candidate who fails the clinical or comprehensive examination twice; requirements before reexamination.

Rule 1241. (1) Before being permitted to retake the clinical examination, a registered dental assisting licensure candidate who sustains 2 successive failures in the clinical examination shall be required to meet both of the following requirements subsequent to the last examination failed:

(a) The candidate shall present evidence of additional education consisting of a minimum of 20 hours of board-approved instruction, which shall be both didactic and clinical, in a school approved by the board.

(b) The course shall be satisfactorily completed as evidenced by certification by the dean or his or her appointee.

(2) Before being permitted to retake the comprehensive examination, a registered dental assisting licensure candidate who sustains 2 successive failures in the comprehensive section of the examination shall be required to meet both of the following requirements subsequent to the last examination failed:

(a) The candidate shall present evidence of additional education consisting of a minimum of 20 hours of board-approved instruction in a school approved by the board.

(b) The course shall be satisfactorily completed as evidenced by a certification by the dean or his or her appointee.

R 338.11245 Registered dental assisting licensure candidate who fails the examination 3 times; requirements before reexamination.

Rule 1245. Before being permitted to retake the examination, a registered dental assisting licensure candidate who fails any part of the examination 3 times shall be required by the board to return to an accredited school for 1 academic semester or term. The course of the 1 academic semester or term shall be satisfactorily completed as evidenced by certification by the dean or his or her appointee.

R 338.11247 Limited licenses; issuance; requirements.

Rule 1247. (1) The board may issue a limited license, pursuant to section 16182(2)(a) of the act, to an individual who is a graduate of a dental, dental hygiene, or dental assisting program approved by the board and who is enrolled or involved in a postgraduate course of study.

(2) The board may issue a limited license, pursuant to section 16182(2)(b) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant who is employed by a dental program or a dental auxiliary program as a teacher, and who functions only in a nonclinical academic research setting or in an administrative setting.

(3) The board may issue a limited license, pursuant to section 16182(2)(c) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant and who is employed by a dental program or a dental auxiliary program as a clinical teacher. The individual may perform dental procedures upon patients while employed as a clinical teacher by the dental or dental auxiliary program if such procedures are performed under the general supervision of a faculty member who is fully licensed as a dentist. An individual licensed under this subrule shall not do either of the following:

(a) Hold himself or herself out to the public as being engaged in the practice of dentistry other than as a clinical instructor.

(b) Provide dental services outside his or her employment as a clinical instructor.

(4) An individual applying for a limited license under section 16182(2) of the act shall meet both of the following requirements:

(a) Comply with section 16174 of the act.

(b) Submit proof of graduation from an approved school of dentistry, dental hygiene, or dental assisting or a certified copy of the diploma and transcript from an unapproved school of dentistry, dental hygiene, or dental assisting. The latter proof shall be translated into English, if necessary, and certified by an official of the United States embassy.

(5) Limited licenses shall be renewed annually at the discretion of the board.

R 338.11261 Licensure by endorsement of registered dental assistants; requirements.

Rule 1261. (1) A dental assistant applying for licensure by endorsement as a registered dental assistant shall be currently licensed in another state for performance of expanded functions as described in R 338.11405 and shall comply with section 16186 of the act and all of the following requirements:

(a) Have graduated from a school which meets the standards provided in R 338.11307 and submit original, official transcripts of professional education and documentation of graduation for board evaluation.

(b) Be endorsed, on a form supplied by the board, by the licensing agency of any state in which the applicant holds a current license for performance of expanded functions.

(c) Show proof, on a form supplied by the board, of having no record of final or pending disciplinary action in any state in which the applicant is or has been licensed.

(d) Show proof of meeting the requirements of R 338.11205, R 338.11241, or R 338.11245 if a failing grade has been received on any state or regional examination within 5 years from date of application for endorsement.

(e) Show proof of successful completion of a substantially equivalent written and clinical examination.

(2) To determine substantial equivalency as specified in subrule(l)(e) of this rule, the board will consider factors such as the following:

(a) Subject areas included.

(b) Detail of material.

(c) Comprehensiveness.

(d) Length of the examination.

(e) Degree of difficulty.

(3) To demonstrate substantial equivalency as specified in subrule(l)(e) of this rule, the applicant may be required to submit or cause to be submitted such materials as the following:

(a) A certified copy of the examination.

(b) An affidavit from the responsible official of the appropriate state agency describing the examination and setting forth the legal standards which were in effect at the time of the examination.

(c) An affidavit describing the examination from the responsible official within a state society or another organization with knowledge of the examination.

(d) Other credible evidence.

(4) A dental assistant who does not fulfill the requirements of subrule

(l) of this rule or who has previously failed the Michigan clinical registered dental assisting examination shall not be eligible for licensure by endorsement in this state and shall be required to comply with the provisions of R 338.11235.

(5) The board may deny an application for licensure by endorsement upon finding the existence of a board action in any other state for a violation related to application subdivisions of section 16221 of the act or upon determining that the applicant does not fulfill the requirements of section 16186 of the act.

R 338.11307 Approval of dental assisting schools; standards; adoption by reference; approval of schools preparing persons for licensure as registered dental assistants.

Rule 1307. (1) The board adopts the standards of the commission on dental accreditation of January 1995 as the standards by which the board shall determine whether to approve a school that is in compliance with the standards. Certification by the commission on dental accreditation that the standards adopted by the board constitutes a prima facie showing that the school is in compliance with the standards. The board shall actively participate in the evaluation process.

(2) The standards of the commission on dental accreditation may be obtained from the Michigan Board of Dentistry, Department of Consumer and Industry Services, P.O. Box 30018, Lansing, MI 48909, at no cost, or from the Commission on Dental Accreditation, 211 E. Chicago Ave., Chicago, IL 60611, at no cost.

R 338.11403 Assistant; delegation of intra-oral procedures under general supervision; delegation of intra-oral procedures under direct supervision.

Rule 1403. (1) The following intra-oral procedures shall not be delegated to an assistant unless the procedures are performed under general supervision:

(a) Trial sizing of orthodontic bands.

(b) Holding the matrix for anterior resin restorations.

(c) Making impressions for study and opposing models.

(d) Application of topical anesthetic solutions (nonaerosol).

(e) Instructing in the use and care of dental appliances.

(f) Operation of dental radiographic equipment if the assistant has

successfully completed a course in dental radiography which is substantially equivalent to a course taught in a program approved by the board pursuant to R 338.11303 or R 338.11307. This subdivision takes effect 3 years after the effective date of this amendatory rule.

(2) The following intra-oral procedures shall not be delegated to an assistant unless the procedures are performed only under direct supervision:

(a) Placement and removal of orthodontic separators.

(b) Placement and removal of orthodontic elastics, ligatures, and arch wires.

(3) Except for those procedures described in this rule, intra-oral procedures shall not be delegated to an assistant.

R 338.11405 Registered dental assistant; assignment of intra-oral procedures under general supervision; assignment of intra-oral procedures under direct supervision.

Rule 1405. (1) A dentist shall not assign the intra-oral dental procedures detailed in R 338.11403(l) and the following additional intra-oral procedures to a registered dental assistant unless the procedures are performed under the general supervision of a dentist:

- (a) Placement and removal of rubber dam.
- (b) Placement and removal of nonmetallic temporary restorations.
- (c) Removing excess cement from supragingival surfaces of a tooth with nonrotary instruments.
- (d) Application of anticariogenics after oral prophylaxis, when ordered by a licensed dentist.
- (e) Mouth mirror inspection of oral cavity, including chartings of lesions, existing restorations, missing teeth, and classification of occlusion.
- (f) Sizing of temporary crowns and bands.

(2) A dentist shall not assign the intra-oral dental procedures detailed in R 338.11403(2) and the following additional intra-oral procedures to a registered dental assistant unless the procedures are performed under the direct supervision of a dentist:

- (a) Placement and removal of periodontal dressings.
- (b) Temporary cementation and removal of temporary crowns and bands.
- (c) Removal of sutures.
- (d) Polishing specific teeth with a slow-speed rotary handpiece immediately before procedures that require acid etching, for:
 - (i) Placement of sealants.
 - (ii) Placement of resin-bonded orthodontic appliances.
 - (iii) Placement of direct restorations by the dentist.

(3) Except for the procedures described in this rule, a dentist shall not assign intra-oral procedures to a registered dental assistant.

Michigan Public Health Code (www.michigan legislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-166&highlight=>

Occupational Board Information:

The Michigan Board of Dentistry was originally formed with the enactment of Public Act 122 of 1919 and regulated the practice of dentistry and dental hygiene and authorizing dental assistants.

In 1978, this authority was transferred to the Public Health Code, Public Act 368 of 1978, as amended, and included certification of specialists in the fields of orthodontics, endodontics, prosthodontics, pediatric dentistry, periodontics, oral and maxillofacial surgery, and oral pathology.

The practice of dentistry means the diagnosis, treatment, prescription, or operation for a disease, pain, deformity, injury, or physical condition of the human tooth, teeth, alveolar process, gums or jaws, or their dependent tissues, or an offer, undertaking, attempt to do, or holding oneself out as able to do any of these acts.

The practice of dental hygiene means practice at the assignment of a dentist in that specific area of dentistry based on specialized knowledge, formal education, and skill with particular emphasis on preventive services and oral health education.

Practice as a dental assistant means assistance in the clinical practice of dentistry based on formal education, specialized knowledge, and skill at the assignment and under the supervision of a dentist. The Board has the obligation to take disciplinary action against licensees.

The Michigan Board of Dentistry consists of 19 voting members: 8 dentists, 2 dental specialists, 4 hygienists, 2 registered dental assistants, and 3 public members.

The Board currently oversees the practice of approximately 7,749 dentists (1,060 dental specialists), 9,014 hygienists and 1,012 dental assistants.

EDUCATION

What kind of training will I need in order to become a dental assistant?

Most dental assisting programs last between nine months and one year, leading to a certificate or diploma. The American Dental Association's Commission on Dental Accreditation has approved 248 programs that emphasize classroom instruction and hands-on training in clinics or offices.

Employers often prefer certified dental assistants, who have passed national examinations that verify their professional skills and knowledge. The most widely-recognized certifying body is the Dental Assisting National Board, Inc. Dental assistants can sit for their national exam after completing an accredited training program, or after working full-time for two years. Dental assistants who pass this exam become Certified Dental Assistants and can renew their certification annually.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Dental Assistants Association -- <http://www.dentalassistant.org/>

State Association:

Michigan Dental Association -- <http://www.michigandental.org>

RESOURCES

Commission on Dental Accreditation, American Dental Association -- <http://www.ada.org>
Dental Assisting National Board, Inc. -- <http://www.danb.org>

Dental Hygienist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop X-rays, or apply fluoride or sealants.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

Because multiple jobholding is common in this field, the number of jobs exceeds the number of hygienists. More than half of all dental hygienists work part time - less than 35 hours a week.

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$23.82	\$49,540.00
Ann Arbor MSA	\$33.79	\$70,270.00
Benton Harbor MSA	\$23.98	\$49,890.00
Detroit MSA	\$23.64	\$49,180.00
Flint MSA	\$22.05	\$45,860.00
Grand Rapids-Muskegon-Holland MSA	\$21.15	\$43,990.00
Jackson MSA	\$24.37	\$50,680.00
Kalamazoo-Battle Creek MSA	\$23.36	\$48,580.00
Lansing MSA	\$23.14	\$48,130.00
Saginaw MSA	\$21.07	\$43,820.00
Balance of State - Northeast Lower Peninsula	\$21.25	\$44,210.00
Balance of State - Northwest Lower Peninsula	\$22.27	\$46,320.00
Balance of State - South Central Lower Peninsula	\$23.55	\$48,990.00
Balance of State - Upper Peninsula	\$24.42	\$50,790.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33811101&Dpt=CH&RngHigh=):

R 338.11101 Definitions.

Rule 1101. As used in these rules:

- "Act" means Act No. 368 of the Public Acts of 1978, as amended, being §333.1101 et seq. of the Michigan Compiled Laws.
- "Analgesia" means the diminution or elimination of pain in the conscious patient.
- "Assignment" means that a dentist has designated a patient of record upon whom services are to be performed by an assistant, registered dental assistant, or registered dental hygienist and has described the procedure to be performed. The dentist need not be physically present in the office or in the treatment room at the time the procedures are being performed.
- "Assistant" means a nonlicensed person who may perform basic supportive procedures under the supervision of a dentist as provided in these rules.
- "Board" means the Michigan board of dentistry.
- "Dentist" means a person licensed by the board pursuant to the act and these rules.

(g) "Direct supervision" means that a dentist has designated a patient of record upon whom services are to be performed by an assistant, registered dental assistant, or registered dental hygienist and has described the procedures to be performed. The dentist shall examine the patient before prescribing the procedure to be performed and again upon completion of the procedure. The dentist shall be physically present in the office at the time the procedures are being performed.

(h) "General anesthesia" means the elimination of all sensations accompanied by a state of unconsciousness and loss of reflexes necessary to maintain a patient airway. (i) "General supervision" means that a dentist has designated a patient of record upon whom services are to be performed. The dentist shall be physically present in the office at the time the procedures are being performed.

(j) "Licensed" means the possession of a full license to practice, unless otherwise stated.

(k) "Local anesthesia" means the elimination of sensation, especially pain, in 1 part of the body by the topical application or regional injection of a drug.

(l) "Office" means the building or suite in which dental treatment is performed.

(m) "Patient of record" means a patient who has been examined and diagnosed by a licensed dentist and whose treatment has been planned by a licensed dentist.

(n) "Public health service" means the United States public health service. A person applying for an exemption under this classification shall submit a certified copy of his or her official papers verifying active duty status.

(o) "Registered dental assistant" means a person licensed by the board pursuant to the act and these rules. A dental hygienist may perform the functions of a registered dental assistant if he or she is licensed by the board as a registered dental assistant.

(p) "Registered dental hygienist" means a person licensed by the board pursuant to the act and these rules.

(q) "Second pair of hands," as used in R 338.11109, means acts, tasks, functions, and procedures performed by a dental assistant, registered dental assistant, or registered dental hygienist at the direction of a dentist who is in the process of rendering dental services and treatment to a patient. The acts, tasks, functions, and procedures performed by a dental assistant, registered dental assistant, or registered dental hygienist are ancillary to the procedures performed by the dentist and intended to provide help and assistance at the time the procedures are performed. This definition shall not be deemed to expand the duties of the dental assistant, registered dental assistant, or registered dental hygienist as provided by the act and rules promulgated by the board.

(r) "Sedation" means the calming of a nervous, apprehensive individual, without inducing loss of consciousness, through the use of systemic drugs. Agents may be given orally, parenterally, or by inhalation.

(s) "Treatment room" means the particular room or specific area in which the dental treatment is performed upon a patient.

R 338.11103 Applicability of rules.

Rule 1103. These rules apply to dentists, registered dental assistants, and registered dental hygienists.

R 338.11107 Signs; disclosure of names of dentists practicing in an establishment.

Rule 1107. The name of the dentist actually practicing dentistry within an establishment shall be clearly disclosed by means of a sign or letting on or near a door, window, or wall of the establishment. If more than 1 dentist practices in a single establishment, the names of all the dentists practicing at the establishment shall be listed.

R 338.11109 Second pair of hands.

Rule 1109. A person, while assisting a licensed dentist who at the time is actively performing services in the mouth of a patient, may function as a second pair of hands for the dentist.

R 338.11221 Licensure by examination to practice dental hygiene; requirements; graduates of schools in compliance with board standards.

Rule 1221. An applicant for dental hygienist licensure by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and administrative rules promulgated under the code, an applicant for dental hygienist licensure by examination shall meet all of the following requirements:

(a) Graduate from a dental hygiene program in compliance with the standards set forth in R 338.11303.

(b) Pass all parts of the dental hygiene national board examination that is conducted and scored by the joint commission of national dental examiners in order to qualify for the licensing examination provided for in subdivision (c) of this rule. The requirement does not apply to applicants who have graduated before 1962.

(c) Pass the combined regional dental hygiene examination that is conducted and scored by the northeast regional board of dental examiners, incorporated.

R 338.11222 Licensure to practice dental hygiene; graduates of schools not in compliance with board standards; requirements.

Rule 1222. An individual who graduated from a school of dental hygiene that is not in compliance with the standards provided in R 338.11303 may be licensed by the board if the individual meets all of the following requirements:

- (a) Complies with section 16174 of the act.
- (b) Presents to the board a final, official transcript establishing graduation from a school in which he or she has obtained a dental hygiene degree. If the transcript is issued in a language other than English, an original, official translation shall also be submitted.
- (c) Successfully completes a program in a dental hygiene school that is in compliance with the standards of R 338.11303 and the individual is confirmed by the administrator of the school attended.
- (d) Passes all parts of the dental hygiene national board examination that is conducted and scored by the joint commission on national dental examinations.
- (e) Passes the combined regional examination in dental hygiene that is conducted and scored by the northeast regional board of dental examiners, incorporated.

R 338.11223 Registered dental hygienist examinations; passing scores.

Rule 1223. (1) The board approves and adopts the dental hygiene examination developed and scored by the joint commission on national dental examinations. A passing score on the examination shall be a converted score of not less than 75 on each part.

(2) The board approves and adopts the dental hygiene examination developed and scored by the northeast regional board of dental examiners, incorporated. A passing score on the dental hygiene examination shall be a converted score of not less than 75 on each part.

R 338.11233 Registered dental hygienist; use of letters "R.D.H."; registered dental assistant; use of letters "R.D.A."

Rule 1233. (1) Pursuant to section 16264 of the act, the registered dental hygienist who has received a bona fide degree or certificate of dental hygiene from a duly recognized and accredited school of dental hygiene and who has completed all requirements for licensure may use the letters "R.D.H." after his or her name in connection with the practice of dental hygiene.

(2) Pursuant to section 16264 of the act, a registered dental assistant who has received a bona fide degree or certificate of dental assisting from a duly recognized and accredited school of dental assisting and who has completed all requirements for licensure may use the letters "R.D.A." after his or her name in connection with the practice of dental assisting.

History: 1984 MR 7, Eff. July 19, 1984.

R 338.11247 Limited licenses; issuance; requirements.

Rule 1247. (1) The board may issue a limited license, pursuant to section 16182(2)(a) of the act, to an individual who is a graduate of a dental, dental hygiene, or dental assisting program approved by the board and who is enrolled or involved in a postgraduate course of study.

(2) The board may issue a limited license, pursuant to section 16182(2)(b) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant who is employed by a dental program or a dental auxiliary program as a teacher, and who functions only in a nonclinical academic research setting or in an administrative setting.

(3) The board may issue a limited license, pursuant to section 16182(2)(c) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant and who is employed by a dental program or a dental auxiliary program as a clinical teacher. The individual may perform dental procedures upon patients while employed as a clinical teacher by the dental or dental auxiliary program if such procedures are performed under the general supervision of a faculty member who is fully licensed as a dentist. An individual licensed under this subrule shall not do either of the following:

- (a) Hold himself or herself out to the public as being engaged in the practice of dentistry other than as a clinical instructor.
 - (b) Provide dental services outside his or her employment as a clinical instructor.
- (4) An individual applying for a limited license under section 16182(2) of the act shall meet both of the following requirements:

- (a) Comply with section 16174 of the act.
- (b) Submit proof of graduation from an approved school of dentistry, dental hygiene, or dental assisting or a certified copy of the diploma and transcript from an unapproved school of dentistry, dental hygiene, or dental assisting. The latter proof shall be translated into English, if necessary, and certified by an official of the United States embassy.
- (5) Limited licenses shall be renewed annually at the discretion of the board.

R 338.11253 Certification of renewal; display.

Rule 1253. A licensee shall display a currently renewed certificate of licensure in his or her principal place of practice. A licensee whose practice involves more than 1 office shall have his or her pocket card portion of the currently renewed certificate of licensure available for viewing upon request.

R 338.11259 Licensure by endorsement of dental hygienists; requirements.

Rule 1259. (1) A dental hygienist applying for licensure by endorsement shall be currently licensed in another state and shall comply with section 16186 of the act and all of the following requirements:

- (a) Have graduated from a school which meets the standards provided in R 338.11303 and submit original, official transcripts of professional education and documentation of graduation for board evaluation.
- (b) Have passed all phases of the national board examination for dental hygienists. This requirement is waived for persons who graduated from an accredited school before 1962.
- (c) Be endorsed, on a form supplied by the board, by the licensing agency of any state in which the applicant holds a current license.
- (d) Show proof, on a form supplied by the board, of having no record of final or pending disciplinary action in any state in which the applicant is or has been licensed.
- (e) Show proof of meeting the requirements of R 338.11205, R 338.11225, or R 338.11227 if a failing grade has been received on any state or regional examination within 5 years from date of application for endorsement.
- (f) Show proof of successful completion of a substantially equivalent written and clinical examination.

(2) To determine substantial equivalency as specified in subrule(1)(f) of this rule, the board will consider factors such as the following:

- (a) Subject areas included.
- (b) Detail of material.
- (c) Comprehensiveness.
- (d) Length of the examination.
- (e) Degree of difficulty.

(3) To demonstrate substantial equivalency as specified in subrule(1)(f) of this rule, the applicant may be required to submit, or cause to be submitted, such materials as the following:

- (a) A certified copy of the examination.
- (b) An affidavit from the responsible official of the appropriate state agency describing the examination and setting forth the legal standards which were in effect at the time of the examination.
- (c) An affidavit describing the examination from the responsible official within a state society or another organization with knowledge of the examination.
- (d) Other credible evidence.

(4) A dental hygienist who does not fulfill the requirements of subrule(1) of this rule or who has previously failed the Michigan clinical examination or any portion of the northeast regional board examination shall not be eligible for licensure by endorsement in this state and shall be required to take the Michigan licensure examination as described in R 338.11223.

(5) The board may deny an application for licensure by endorsement upon finding the existence of a board action in any other state for a violation related to applicable subdivisions of section 16221 of the act or upon determining that the applicant does not fulfill the requirements of section 16186 of the act.

R 338.11303 Approval of dental hygiene schools; standards; adoption by reference.

Rule 1303. (1) The board adopts the standards set forth by the commission on dental accreditation of July 1995 as the standards by which the board shall determine whether to approve a school that prepares persons for licensure as dental hygienists. Certification by the commission on dental accreditation that a school is in compliance with the standards adopted by the board constitutes a prima facie showing that the school is in compliance with the standards. The board shall actively participate in the evaluation process.

(2) The standards of the commission on dental accreditation may be obtained from the Michigan Board of Dentistry, Department of Consumer and Industry Services, P.O. box 30018, Lansing, MI 48909, at no cost, or

from the Commission on Dental Accreditation, 211 E. Chicago Ave., IL 60611, at no cost.

R 338.11401 Delegation or assignment of procedures by dentist to assistant, registered dental assistant, or registered dental hygienist; certain procedures prohibited.

Rule 1401. (1) A dentist shall not delegate or assign the following functions to an assistant or a registered dental assistant unless authorized by these rules or the code:

(a) Diagnosing, or prescribing for, any of the following:

(i) Disease.

(ii) Pain.

(iii) Deformity.

(iv) Deficiency.

(v) Injury.

(vi) Physical condition.

(b) Cutting of hard and soft tissue.

(c) Removal of any of the following:

(i) Accretions.

(ii) Stains.

(iii) Calculus deposits.

(d) Deep scaling.

(e) Root planing.

(f) Any intra-oral restorative procedures.

(g) Administration of any of the following:

(i) Local anesthesia.

(ii) Nitrous oxide analgesia.

(iii) Acupuncture.

(h) Irrigation and medication of root canals, try-in of cones or points, filing, or filling of root canals.

(i) Taking impressions for any purpose other than study or opposing models.

(j) Permanent cementation of any restoration or appliance.

(2) A dentist shall not assign to a registered dental hygienist the procedures described in subrule (1) (a), (b), (f), (g), (h), (i), and (j) of this rule unless authorized by these rules or the code.

R 338.11406 Assignment of intra-oral procedures to registered dental hygienist.

Rule 1406. The intra-oral procedures listed in R 338.11405(1)(a), (b), and (f) and (2)(b) shall not be assigned to a registered dental hygienist unless the registered dental hygienist is also licensed as a registered dental assistant pursuant to R 338.11235.

R 338.11408 Registered dental hygienist; assignment of intra-oral procedures under assignment of dentist; assignment of intra-oral procedures under direct supervision.

Rule 1408. (1) A registered dental hygienist shall not perform the following intra-oral dental procedures unless the procedures are performed under the assignment of a dentist as defined in section 16601 of the code:

(a) Removal of accretions and stains from the surfaces of the teeth and application of topical agents essential to complete prophylaxis.

(b) Root planing.

(c) Polishing and contouring restorations.

(d) Application of anticariogenic agents.

(e) Charting of the oral cavity using radiographs, including all of the following:

(i) Periodontal charting.

(ii) Intra- and extra-oral examination of soft tissue.

(iii) Charting of radiolucencies or radiopacities, existing restorations, and missing teeth.

(f) Preliminary examination, including both of the following:

(i) Classifying occlusion.

(ii) Testing pulp vitality using an electric pulp tester.

(g) Application of nonaerosol and noncaustic topical anesthetic agents by prescription of the dentist.

(h) Placement and removal of intra-coronal temporary sedative dressings.

(i) Taking intra-oral measurements for orthodontic procedures.

(j) Placement and removal of postextraction and periodontal dressings.

(k) Removal of excess cement from tooth surfaces.

- (1) Nutritional counseling for oral health and maintenance.
- (m) Application of commonly accepted emergency procedures.
- (n) Removal of sutures.
- (o) Placement and removal of rubber dam.
- (2) A registered dental hygienist shall not perform soft tissue curettage unless under the direct supervision of a dentist.

R 338.11704 License renewal for dental hygienists and dental assistants; relicensure; requirements; applicability.

Rule 4. (1) This part applies to applications for the renewal of a registered dental hygienist license or a registered dental assistant license and applications for relicensure pursuant to section 16201(3) and (4) of the act which are filed on or after April 30, 1994.

(2) An applicant for license renewal who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure shall possess current certification in basic or advanced cardiac life support from an agency or organization that grants certification pursuant to standards substantially equivalent to the standards adopted in R 338.11705(3) and shall comply with the following requirements, as applicable:

(a) For a registered dental hygienist license or a registered dental assistant license, the applicant shall have completed not less than 36

hours of continuing education acceptable to the board during the 3-year period immediately preceding the date of the application. Each licensee

shall complete a minimum of 12 hours of approved continuing education in programs directly related to clinical issues such as delivery of care, materials used in the delivery of care, and pharmacology.

(i) Applicants holding both a registered dental hygienist license and a registered dental assistants license shall have completed not less than a total of 36 hours of continuing education acceptable to the board during the 3-year period immediately preceding the date of the application. The

36 hours shall include not less than 12 hours devoted to registered dental hygienist functions, and not less than 12 hours devoted to registered dental assistants functions.

(b) If an organized continuation course or program is offered in segments of 50 to 60 minutes each, 1 hour of credit shall be given for each segment.

(3) The submission of the application for renewal shall constitute the applicant's certification of compliance with the requirement of this rule.

The board may require an applicant or licensee to submit evidence to demonstrate compliance with this rule.

The applicant or licensee shall maintain evidence of complying with the requirements of this rule for a period of 4 years from the date of the application.

R 338.11704a Acceptable continuing education for dental hygienists and dental assistants; limitations.

Rule 4a. The board shall consider any of the following as acceptable continuing education:

(a) Successful completion of a course or courses offered for credit in a dental school or hospital-based dental specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the board pursuant to the provisions

of R 338.11307. Ten hours of continuing education shall be credited for each quarter credit earned and 15 hours shall be credited for each semester credit earned, without limitation.

(b) Attendance at a continuing education program offered by a dental school or hospital-based dental specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the board pursuant to the provisions of R 338.11307. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(c) Attendance at a continuing education program approved by the board pursuant to the provisions of R 338.11705 of this part. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(d) Development and presentation of a table clinic demonstration or a continuing education lecture offered in conjunction with the presentation of continuing education programs approved by the board. One hour of continuing education shall be credited for each hour devoted to the development and initial presentation of a table clinic demonstration or a continuing education lecture, with a maximum of 10 hours of continuing education credited for the development and presentation of the same table clinic demonstration or continuing

education lecture.

(e) Twelve hours of continuing education shall be credited for the initial publication of an article or articles related to the practice of dentistry, dental hygiene, or dental assisting in the journal of an accredited school of dentistry, dental hygiene or dental assistant, or in

a state or state component association of dentists, dental specialists, dental hygienists, or dental assistants.

(f) Twenty-five hours of continuing education shall be credited for the initial publication of an article or articles related to the practice

of dentistry, dental hygiene, or dental assisting in a textbook or in the journal of a national association of dentists, dental specialists, dental hygienists, or dental assistants.

(g) Twelve hours of continuing education may be earned in board-approved, on-line continuing education activities.

(h) One hour of continuing education shall be credited for each hour of reading articles and viewing or listening to media, other than on-line programs, devoted to dental, dental hygiene, or dental assisting education with a maximum of 10 hours credited under this category.

(i) Renewal of a license held in another state that requires continuing education for license renewal that is substantially equivalent to that required in these rules if the applicant resides and practices in another state. For a registered dental hygienist or registered dental assistant, 36 hours of continuing education shall be credited for evidence of current licensure in such other state.

(j) For a registered dental assistant, meeting the requirements for recertification in R 338.11705(2). Thirty-six hours of continuing education shall be credited for evidence of current certification, other than life certification, by the dental assisting national board.

(k) One continuing education contact hour may be granted for each hour of program attendance at a continuing education program which has been granted approval by another state board of dentistry.

(l) Six hours of continuing education shall be credited to dental hygienists or registered dental assistants for attendance at dental related programs which are documented by the licensee as relevant to health care and advancement of the licensee's dental education. The board shall deny a request for approval if the continuing education request does not meet the criteria used by the board for approval of continuing education sponsors.

(m) A maximum of 18 credit hours per renewal period may be earned for programs related to specific dental specialty topics approved for category 1 continuing education by the boards of medicine or osteopathic medicine.

R 338.11705 Standards and requirements; adoption by reference.

Rule 5. (1) The board approves and adopts by reference the standards and criteria of the national sponsor approval program of the academy of general dentistry for approval of continuing education sponsoring organizations, institutions, and individuals, which are in the publication entitled "Program Approval for Continuing Education (PACE), a Guidebook, Revised July 2002".

Information on the pace standards and criteria is available at no cost from the Academy of General Dentistry, 211 East Chicago Avenue, Suite 900, Chicago, IL 60611 or from the academy's internet website at <http://www.agd.org>. A copy of the guidebook is available for inspection and distribution at cost from the Michigan Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

Approval of a sponsor by the academy of general dentistry committee on national sponsor approvals or by any academy of general dentistry constituent academy shall constitute prima facie evidence that the sponsor meets the standards and criteria adopted by the board.

(2) The board approves and adopts by reference the standards and criteria of the National Sponsor Approval Program of the American Dental Association Continuing Education Recognition Program (ADA CERP) for approval of continuing education sponsoring organizations, which are set forth in the publication entitled "ADA CERP Recognition Standards and Procedures, Revised April 2002." A copy of this publication may be obtained at no cost from the association at ADA CERP 211 E. Chicago Avenue, Chicago, IL 60611-2678 or from the association's internet website at <http://www.ada.org/prof/ed/ce/cerp>. A copy of the publication is available for inspection and distribution at cost from the Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909. Approval of a sponsor by the ADA CERP or by any constituent group of ADA CERP shall constitute prima facie evidence that the sponsor meets the standards and criteria adopted by the board.

(3) The board approves and adopts by reference the requirements for recertification established by the dental assisting national board and set forth in the publication entitled "2002 Recertification Guidelines & Requirements." A copy of the publication may be obtained at no cost from the Dental Assisting National

Board, 676 N. St. Clair Street, Suite 1880, Chicago, IL 60611 or from the national board's internet website at <http://www.danb.org>. A copy of the guidelines and requirements are available for inspection and distribution at cost from the Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(4) The board shall consider any continuing dental education program that is offered by a sponsor that applies to the board and demonstrates it substantially meets the standards and criteria adopted by the board as a continuing education program approved by the board.

(5) The board adopts by reference the standards for certification in basic and advanced cardiac life support set forth by the American heart association in the guidelines for cardiopulmonary resuscitation and emergency cardiac care for professional providers and published in "Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care (70-2041). A copy of the guidelines for cardiopulmonary resuscitation and emergency cardiac care may be obtained from the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231 or at <http://www.ahajournals.org> at a cost of \$20.00 as of the adoption of these rules. A copy of this document is available for inspection and distribution at cost from the Department of Community Health, Bureau of Health Professions, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(6) The board may approve a state, regional, or national dental organization as an acceptable provider of continuing education courses if the organization presents standards, criteria, and course monitoring procedures for its courses that are acceptable to the board. This approval may be withdrawn if the board determines the organization is not complying with the standards and criteria presented. The standards, criteria, and monitoring procedures will be retained in the department's board files. An organization shall update its file with the department every 5 years.

Michigan Public Health Code (www.michiganlegislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-166&highlight=>

Occupational Board Information:

The Michigan Board of Dentistry was originally formed with the enactment of Public Act 122 of 1919 and regulated the practice of dentistry and dental hygiene and authorizing dental assistants.

In 1978, this authority was transferred to the Public Health Code, Public Act 368 of 1978, as amended, and included certification of specialists in the fields of orthodontics, endodontics, prosthodontics, pediatric dentistry, periodontics, oral and maxillofacial surgery, and oral pathology.

The practice of dentistry means the diagnosis, treatment, prescription, or operation for a disease, pain, deformity, injury, or physical condition of the human tooth, teeth, alveolar process, gums or jaws, or their dependent tissues, or an offer, undertaking, attempt to do, or holding oneself out as able to do any of these acts.

The practice of dental hygiene means practice at the assignment of a dentist in that specific area of dentistry based on specialized knowledge, formal education, and skill with particular emphasis on preventive services and oral health education.

Practice as a dental assistant means assistance in the clinical practice of dentistry based on formal education, specialized knowledge, and skill at the assignment and under the supervision of a dentist. The Board has the obligation to take disciplinary action against licensees.

The Michigan Board of Dentistry consists of 19 voting members: 8 dentists, 2 dental specialists, 4 hygienists, 2 registered dental assistants, and 3 public members.

The Board currently oversees the practice of approximately 7,749 dentists (1,060 dental specialists), 9,014 hygienists and 1,012 dental assistants.

EDUCATION

Either a two- or four-year degree in dental hygiene is needed. Most programs are two years long and lead to an associate degree. They are offered through community colleges and technical colleges.

Dental hygiene programs at universities are typically four years long and lead to a bachelor's degree. A bachelor's offers a broader base in the humanities and other disciplines through two years of prerequisite courses such as English, speech, psychology, sociology, nutrition, chemistry and biology.

An associate degree is sufficient for practicing in a private dental office, while a bachelor's or master's degree can lead to careers in research, administration, teaching or clinical practice in public or school health programs.

What are the typical prerequisites for a dental hygiene program?

Admission requirements vary from school to school but generally include the following:

- * High school diploma or GED
- * Minimum age of 18
- * High school courses in math, chemistry, biology and English
- * A minimum 'C' average
- * College entrance exam scores

Most programs prefer applicants who have completed at least one year of college. Some bachelor's programs require two years of college prior to enrollment in a dental hygiene program as well as completion of courses in chemistry, English, speech, psychology or sociology.

Dental hygienists must be licensed by the state in which they want to practice. To qualify for licensure, you need to graduate from an accredited dental hygiene program and pass written and clinical exams. Almost all states require the National Board Dental Hygiene Examination in addition to the regional or state clinical exam. Some states may require an exam on the legal aspects of dental hygiene practice. After earning licensure, dental hygienists may use "RDH" after their names to signify that they are a Registered Dental Hygienist.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:
American Dental Hygienists' Association -- <http://www.adha.org/>

State Association:
Michigan Dental Association -- <http://www.michigandental.org>

RESOURCES

Commission on Dental Accreditation, American Dental Association -- <http://www.ada.org>

Dentist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Diagnose and treat diseases, injuries, and malformations of teeth and gums and related oral structures.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow more slowly than average (increase 3 to 9 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	<u>Mean Hourly Wage</u>	<u>Mean Annual Wage</u>
Michigan	\$67.16	\$139,700.00
Benton Harbor MSA	\$91.56	\$190,450.00
Detroit MSA	\$63.27	\$131,610.00
Flint MSA	\$81.24	\$168,980.00
Grand Rapids-Muskegon-Holland MSA	\$83.68	\$174,050.00
Jackson MSA	\$87.89	\$182,800.00
Kalamazoo-Battle Creek MSA	\$96.55	\$200,820.00
Lansing MSA	\$79.68	\$165,720.00
Saginaw MSA	\$90.19	\$187,590.00
Balance of State - Northeast Lower Peninsula	\$62.63	\$130,280.00
Balance of State - Northwest Lower Peninsula	\$37.46	\$77,920.00
Balance of State - Upper Peninsula	\$61.08	\$127,040.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33811101&Dpt=CH&RngHigh=):

R 338.11101 Definitions.

Rule 1101. As used in these rules:

- (a) "Act" means Act No. 368 of the Public Acts of 1978, as amended, being §333.1101 et seq. of the Michigan Compiled Laws.
- (b) "Analgesia" means the diminution or elimination of pain in the conscious patient.
- (c) "Assignment" means that a dentist has designated a patient of record upon whom services are to be performed by an assistant, registered dental assistant, or registered dental hygienist and has described the procedure to be performed. The dentist need not be physically present in the office or in the treatment room at the time the procedures are being performed.
- (d) "Assistant" means a nonlicensed person who may perform basic supportive procedures under the supervision of a dentist as provided in these rules.
- (e) "Board" means the Michigan board of dentistry.
- (f) "Dentist" means a person licensed by the board pursuant to the act and these rules.
- (g) "Direct supervision" means that a dentist has designated a patient of record upon whom services are to be performed by an assistant, registered dental assistant, or registered dental hygienist and has described the procedures to be performed. The dentist shall examine the patient before prescribing the procedure to be performed and again upon completion of the procedure. The dentist shall be physically present in the office at the time the procedures are being performed.
- (h) "General anesthesia" means the elimination of all sensations accompanied by a state of unconsciousness and

loss of reflexes necessary to maintain a patient airway.

(i) "General supervision" means that a dentist has designated a patient of record upon whom services are to be performed. The dentist shall be physically present in the office at the time the procedures are being performed.

(j) "Licensed" means the possession of a full license to practice, unless otherwise stated.

(k) "Local anesthesia" means the elimination of sensation, especially pain, in 1 part of the body by the topical application or regional injection of a drug.

(l) "Office" means the building or suite in which dental treatment is performed.

(m) "Patient of record" means a patient who has been examined and diagnosed by a licensed dentist and whose treatment has been planned by a licensed dentist.

(n) "Public health service" means the United States public health service. A person applying for an exemption under this classification shall submit a certified copy of his or her official papers verifying active duty status.

(o) "Registered dental assistant" means a person licensed by the board pursuant to the act and these rules. A dental hygienist may perform the functions of a registered dental assistant if he or she is licensed by the board as a registered dental assistant.

(p) "Registered dental hygienist" means a person licensed by the board pursuant to the act and these rules.

(q) "Second pair of hands," as used in R 338.11109, means acts, tasks, functions, and procedures performed by a dental assistant, registered dental assistant, or registered dental hygienist at the direction of a dentist who is in the process of rendering dental services and treatment to a patient. The acts, tasks, functions, and procedures performed by a dental assistant, registered dental assistant, or registered dental hygienist are ancillary to the procedures performed by the dentist and intended to provide help and assistance at the time the procedures are performed. This definition shall not be deemed to expand the duties of the dental assistant, registered dental assistant, or registered dental hygienist as provided by the act and rules promulgated by the board.

(r) "Sedation" means the calming of a nervous, apprehensive individual, without inducing loss of consciousness, through the use of systemic drugs.

Agents may be given orally, parenterally, or by inhalation.

(s) "Treatment room" means the particular room or specific area in which the dental treatment is performed upon a patient.

R 338.11103 Applicability of rules.

Rule 1103. These rules apply to dentists, registered dental assistants, and registered dental hygienists.

R 338.11107 Signs; disclosure of names of dentists practicing in an establishment.

Rule 1107. The name of the dentist actually practicing dentistry within an establishment shall be clearly disclosed by means of a sign or letting on or near a door, window, or wall of the establishment. If more than 1 dentist practices in a single establishment, the names of all the dentists practicing at the establishment shall be listed.

R 338.11109 Second pair of hands.

Rule 1109. A person, while assisting a licensed dentist who at the time is actively performing services in the mouth of a patient, may function as a second pair of hands for the dentist.

R 338.11115 Assessment of fines.

Rule 1115. (1) When a fine has been designated as an available sanction for a violation of sections 16221 to 16226 of the act, in the course of assessing a fine, the board shall take into consideration the following factors without limitation:

(a) The extent to which the licensee obtained financial benefit from any conduct comprising part of the violation found by the board.

(b) The willfulness of the conduct found to be part of the violation determined by the board.

(c) The public harm, actual or potential, caused by the violation found by the board.

(d) The cost incurred in investigating and proceeding against the licensee.

(2) A fine shall not exceed the sum of \$50,000.00 for each violation found to have been committed by the licensee.

R 338.11117 Violations of the act.

Rule 1117. All of the following activities are violations of the act:

(a) Abandonment of dental treatment of a patient of record without advising the patient of the necessity of immediate dental or medical treatment when needed and without advising the patient to seek treatment from

another health professional is a violation of section 16221(a) of the act.

(b) Performance of dental treatment without the patient's express or implied consent or the express or implied consent of the patient's guardian is a violation of section 16221(a) of the act.

(c) Practicing or offering to practice professional responsibilities which the licensee knows or has reason to know he or she is not competent to perform is a violation of section 16221(a) and (b)(i) of the act.

(d) Practicing or offering to practice, without adequate supervision, professional services which the licensee is authorized to perform only under the supervision of a licensed dentist as provided for in these rules, except in an emergency situation where a person's life or health is in immediate danger, is a violation of section 16221(a) and (b)(i) of the act.

(e) Delegating or assigning professional responsibilities to a person when the licensee delegating or assigning such responsibilities knows or has reason to know that such person is not qualified by training, by experience, or by licensure to perform them is a violation of section 16221(a) and (b)(i) of the act.

(f) Failure to be present in the office as needed to supervise, or failure to provide needed level of supervision of, the work of an assistant, registered dental assistant, registered dental hygienist, or other employee not licensed as a dentist under the act is a violation of section 16221(a) of the act.

(g) Failure to provide the same level of emergency care at all offices or facilities is a violation of section 16221(a) of the act.

(h) It shall be deemed a violation of section 16221(c)(ii) of the act if a dentist allows his or her license to be used by a person who is unlawfully engaged in the practice of dentistry. "Person," as used in this rule, is defined in section 1106 of the act.

R 338.11120 Dental treatment records; requirements.

Rule 1120. (1) A dentist shall make and maintain a dental treatment record on each patient.

(2) The dental treatment records for patients shall include all of the following information:

(a) Dental procedures performed upon the patient, including the charting of all restorations, missing teeth, or other developmental deformities.

(b) The date the procedure was performed.

(c) Identity of the dentist or the dental auxiliary performing each procedure.

(d) The date, dosage, and amount of any medication or drug prescribed, dispensed, or administered to the patient.

(e) Radiographs taken in the course of treatment. If radiographs are transferred to another dentist, the name and address of that dentist shall be entered in the treatment record.

(3) All dental treatment records shall be permanent and shall be maintained for not less than 10 years from the date of the last treatment provided.

R 338.11121 Scheduled controlled substances; inventory record requirements.

Rule 1121. (1) When a controlled substance, as described in article 7 of the act, is stocked in a dental office for dispensing or administering to a patient, an accurate inventory of the drug shall be maintained and include all of the following information:

(a) The date and quantity of the drug purchased.

(b) The amount, dosage, and date dispensed or administered.

(c) The name of the patient to whom it was dispensed or administered.

(2) The inventory record shall be available for inspection for not less than 10 years.

(3) The inventory record shall be in addition to the dental treatment records required by R 338.11120.

R 338.11201 Licensure by examination to practice dentistry; graduates of schools in compliance with board standards.

Rule 1201. An applicant for dentist licensure by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and administrative rules promulgated under the code, an applicant for dentist licensure by examination shall meet all of the following requirements:

(a) Graduate from a dental school that is in compliance with the standards set forth in R 338.11301.

(b) Pass all parts of the national board examination that is conducted and scored by the joint commission of national dental examiners, to qualify for the licensing examination provided in subdivision (c) of this rule. The requirement does not apply to applicants who have graduated before 1950.

(c) Pass the combined regional examination in dentistry that is conducted and scored by the northeast regional board of dental examiners, incorporated.

R 338.11202 Licensure to practice dentistry; graduates of school not meeting board standards; requirements.

Rule 1202. An individual who graduated from a school of dentistry that is not in compliance with the standards provided in R 338.11301 may be licensed by the board if the individual meets all of the following requirements:

- (a) Complies with section 16174 of the act.
- (b) Presents to the board a final, official transcript establishing graduation from a school in which he or she has obtained a dental degree.

If the transcript is issued in a language other than English, an original, official translation shall also be submitted.

- (c) Successfully completes a minimum 2-year program in a dental school that is in compliance with the standards set forth in R 338.11301 and the individual is confirmed by the dean of the school attended.
- (d) Passes all parts of the national board examination that is conducted and scored by the joint commission of national dental examiners.
- (e) Passes the combined regional examination in dentistry that is conducted and scored by the northeast regional board of dental examiners, incorporated.

R 338.11203 Dental examinations; required passing scores.

Rule 1203. (1) The board approves and adopts the examination developed and scored by the joint commission on national dental examinations. A passing score on the examination shall be a converted score of not less than 75 on each part.

(2) The board approves and adopts the examination developed and scored by the northeast regional board of dental examiners, incorporated. A passing score on the examination shall be a converted score of not less than 75 on each part of the examination.

R 338.11247 Limited licenses; issuance; requirements.

Rule 1247. (1) The board may issue a limited license, pursuant to section 16182(2)(a) of the act, to an individual who is a graduate of a dental, dental hygiene, or dental assisting program approved by the board and who is enrolled or involved in a postgraduate course of study.

(2) The board may issue a limited license, pursuant to section 16182(2)(b) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant who is employed by a dental program or a dental auxiliary program as a teacher, and who functions only in a nonclinical academic research setting or in an administrative setting.

(3) The board may issue a limited license, pursuant to section 16182(2)(c) of the act, to an individual who is a graduate dentist, dental hygienist, or dental assistant and who is employed by a dental program or a dental auxiliary program as a clinical teacher. The individual may perform dental procedures upon patients while employed as a clinical teacher by the dental or dental auxiliary program if such procedures are performed under the general supervision of a faculty member who is fully licensed as a dentist. An individual licensed under this subrule shall not do either of the following:

(a) Hold himself or herself out to the public as being engaged in the practice of dentistry other than as a clinical instructor.

(b) Provide dental services outside his or her employment as a clinical instructor.

(4) An individual applying for a limited license under section 16182(2) of the act shall meet both of the following requirements:

(a) Comply with section 16174 of the act.

(b) Submit proof of graduation from an approved school of dentistry, dental hygiene, or dental assisting or a certified copy of the diploma and transcript from an unapproved school of dentistry, dental hygiene, or dental assisting. The latter proof shall be translated into English, if necessary, and certified by an official of the United States embassy.

(5) Limited licenses shall be renewed annually at the discretion of the board.

R 338.11253 Certification of renewal; display.

Rule 1253. A licensee shall display a currently renewed certificate of licensure in his or her principal place of practice. A licensee whose practice involves more than 1 office shall have his or her pocket card portion of the currently renewed certificate of licensure available for viewing upon request.

R 338.11255 Licensure by endorsement of dentist; requirements.

Rule 1255. (1) A dentist applying for licensure by endorsement shall be currently licensed in another state and shall comply with section 16186 of the act and all of the following requirements:

- (a) Have graduated from a school which meets the standards provided in R 338.11301 and submit original, official transcripts of professional education and documentation of graduation for board evaluation.
 - (b) Have passed all phases of the national board examination for dentists, in sequence. This requirement is waived for persons who graduated from an accredited school before 1950.
 - (c) Be endorsed, on a form supplied by the board, by the licensing agency of any state in which the applicant holds a current license.
 - (d) Show proof, on a form supplied by the board, of having no record of final or pending disciplinary action in any state in which the applicant is or has been licensed.
 - (e) Show proof of meeting the requirements of R 338.11205, R 338.11207, or R 338.11211 if a failing grade has been received on any state or regional examination within 5 years from date of application for endorsement.
 - (f) Show proof of successful completion of a substantially equivalent written and clinical examination.
- (2) To determine substantial equivalency as specified in subrule (1)(f) of this rule, the board will consider factors such as the following:
- (a) Subject areas included.
 - (b) Detail of material.
 - (c) Comprehensiveness.
 - (d) Length of the examination.
 - (e) Degree of difficulty.
- (3) To demonstrate substantial equivalency as specified in subrule (1)(f) of this rule, the applicant may be required to submit, or cause to be submitted, such materials as the following:
- (a) A certified copy of the examination.
 - (b) An affidavit from the responsible official of the appropriate state agency describing the examination and setting forth the legal standards which were in effect at the time of the examination.
 - (c) An affidavit describing the examination from the responsible official within a state society or another organization with knowledge of the examination.
 - (d) Other credible evidence.
- (4) A dentist who does not fulfill the requirement of subrule(1) of this rule or who has previously failed the Michigan clinical examination or any portion of the northeast regional board examination shall not be eligible for licensure by endorsement in this state and shall be required to take the Michigan licensure examination as described in R 338.11203.
- (5) The board may deny an application for licensure by endorsement upon finding the existence of a board action in any other state for a violation related to applicable subdivisions of section 16221 of the act or upon determining that the applicant does not fulfill the requirements of section 16186 of the act.

R 338.11267 Certification of a specialty by endorsement; requirements.

Rule 1267. (1) A dentist applying for certification of a specialty by endorsement shall hold a current Michigan dental license and shall comply with section 16186 of the act and all of the following requirements:

- (a) Have graduated from a program in the specific specialty which meets the standards provided in R 338.11301 and submit original, official transcripts of professional education and documentation of graduation for board evaluation.
 - (b) Be endorsed, on a form supplied by the board, by the certifying agency of any state in which the applicant holds a current license or specialty certification.
 - (c) Show proof, on a form supplied by the board, of having no record of final or pending disciplinary action by any state in which the applicant is or has been licensed or certified.
 - (d) Show proof of meeting the requirements of R 338.11507 or R 338.11511 if a failing grade has been received on any state or regional examination within 5 years from date of application for endorsement.
 - (e) Show proof of successful completion of a substantially equivalent clinical and written examination in the applicant's specialty.
- (2) To determine substantial equivalency as specified in subrule (1)(e) of this rule, the board will consider such factors as the following:
- (a) Subject areas included.
 - (b) Detail of material.
 - (c) Comprehensiveness.
 - (d) Length of the examination.
 - (e) Degree of difficulty.
- (3) To demonstrate substantial equivalency as specified in subrule (1)(e) of this rule, the applicant may be

required to submit or cause to be submitted such materials as the following:

- (a) A certified copy of the examination.
 - (b) An affidavit from the responsible official of the appropriate state agency describing the examination and setting forth the legal standards which were in effect at the time of the examination.
 - (c) An affidavit describing the examination from the responsible official within a state society or another organization with knowledge of the examination.
 - (d) Other credible evidence.
- (4) A dentist who does not fulfill the requirements of subrule (1) of this rule or who has previously failed the Michigan specialty examination shall not be eligible for certification by endorsement in this state and shall be required to take the Michigan examination in the specific specialty as described in part 5 of these rules.
- (5) The board may deny an application for certification by endorsement upon finding the existence of a board action in any other state for a violation related to applicable subdivisions of section 16221 of the act or upon determining that the applicant does not fulfill the requirements of section 16186 of the act.

R 338.11301 Approval of dental schools; standards; adoption by reference.

Rule 1301. (1) The board adopts the standards set forth by the commission on dental accreditation of September 1995 as the standards by which the board shall determine whether to approve a school that is in compliance with the standards. Certification by the commission on dental accreditation that a school is in compliance with the standards adopted by the board constitutes a prima facie showing that the school is in compliance with the standards. The board shall actively participate in the evaluation process.

(2) The standards of the commission on dental accreditation may be obtained from the Michigan Board of Dentistry, Department of Consumer and Industry Services, P. O. Box 30018, Lansing, MI 48909, at no cost, or from the Commission on Dental Accreditation, 211 E. Chicago Ave., Chicago, IL 60611, at no cost.

R 338.11401 Delegation or assignment of procedures by dentist to assistant, registered dental assistant, or registered dental hygienist; certain procedures prohibited.

Rule 1401. (1) A dentist shall not delegate or assign the following functions to an assistant or a registered dental assistant unless authorized by these rules or the code:

- (a) Diagnosing, or prescribing for, any of the following:
 - (i) Disease.
 - (ii) Pain.
 - (iii) Deformity.
 - (iv) Deficiency.
 - (v) Injury.
 - (vi) Physical condition.
 - (b) Cutting of hard and soft tissue.
 - (c) Removal of any of the following:
 - (i) Accretions.
 - (ii) Stains.
 - (iii) Calculus deposits.
 - (d) Deep scaling.
 - (e) Root planing.
 - (f) Any intra-oral restorative procedures.
 - (g) Administration of any of the following:
 - (i) Local anesthesia.
 - (ii) Nitrous oxide analgesia.
 - (iii) Acupuncture.
 - (h) Irrigation and medication of root canals, try-in of cones or points, filing, or filling of root canals.
 - (i) Taking impressions for any purpose other than study or opposing models.
 - (j) Permanent cementation of any restoration or appliance.
- (2) A dentist shall not assign to a registered dental hygienist the procedures described in subrule (1) (a), (b), (f), (g), (h), (i), and (j) of this rule unless authorized by these rules or the code.

R 338.11501 Specialties; recognition by the board.

Rule 1501. The board recognizes all of the following branches of dentistry as specialties:

- (a) Oral and maxillofacial surgery.
- (b) Orthodontics.

- (c) Prosthodontics.
- (d) Periodontics.
- (e) Pediatric dentistry.
- (f) Endodontics.
- (g) Oral pathology.

R 338.11503 Eligibility to qualify for state board specialty examination; exception.

Rule 1503. (1) To be eligible to take the state board specialty examination, an applicant shall comply with all of the following requirements:

- (a) Possess a current license to practice dentistry in Michigan.
 - (b) Fulfill the requirements set forth in these rules for that specialty.
 - (c) Submit evidence of completion from the dean or hospital administrator of a graduate program of dentistry that is approved by the board pursuant to the provisions of R 338.11301.
 - (d) Submit a completed application on a form provided by the department, together with the requisite fee not less than 30 days before the examination.
- (2) An applicant for certification in oral pathology is not required to take a state board specialty examination.

R 338.11505 Specialty certificate; general requirements.

Rule 1505. An applicant for a specialty certificate shall comply with all of the following requirements:

- (a) Submit a final official transcript of dental postgraduate training from a graduate program of dentistry approved by the board pursuant to the provisions of R 338.11301 or, in the case of a hospital program that does not issue transcripts, certification by the hospital administrator or other official of the satisfactory completion of the program.
- (b) Except as provided in R 338.11503(2), secure a minimum converted score of 75 in the state board written and clinical examination in the specific specialty pursuant to these rules. Submission of verification that an applicant for specialty certification has successfully passed the American board written examination is satisfactory compliance with the requirement for the written portion of the state board examination for certification in Michigan for the applicant's specialty.
- (c) The provisions of subdivision (b) of this rule are waived if the applicant has provided satisfactory evidence of the successful completion of the American board specialty written and clinical examinations. Other substantially equivalent specialty examinations approved by the board may be considered.

R 338.11507 Examination failure; candidate for certification as specialist.

Rule 1507. (1) An applicant who has failed a specialty certification examination may apply for reexamination.

(2) An applicant who fails to pass the examination upon his or her first attempt shall be given credit for the subjects passed and may take the examination a second time. Credits given for subjects passed shall apply to the second attempt only provided it is taken within 18 months of the date of notification.

(3) If the applicant fails to pass his or her examination on the second attempt, the applicant shall be required, on any subsequent attempt, to take the entire examination.

(4) If the applicant is unsuccessful on his or her second attempt and it appears to the board that the applicant requires further education, the board shall require the applicant to attend a school approved by the board to study subjects as provided within these rules. The applicant shall have a program approved by the board before commencing the program. The dean, or his or her appointee, of the school attended by the applicant shall certify that the applicant has successfully completed the program and is ready for reexamination before the applicant may be reexamined.

(5) If the applicant is unsuccessful on his or her third attempt, he or she may not retake the examination for 1 year.

R 338.11509 Dental specialty certification candidate who fails examination twice; requirements before reexamination.

Rule 1509. Before being permitted to retake the examination, a candidate for certification as a dental specialist who sustains 2 successive failures in the examination shall present evidence of additional education in the area in which the failure occurred. The additional education shall consist of a minimum of 40 hours of board-approved clinical instructions, which shall be both didactic and practical, shall be in a dental program or hospital approved by the board, and shall be completed subsequent to the date of the last examination failed.

The additional education shall be satisfactorily completed as evidenced by certification by the dean or his or her appointee.

R 338.11511 Dental specialty certification candidate who fails examination 3 times; requirements before reexamination.

Rule 1511. Before being permitted to retake the examination, a dental specialty certification candidate who fails the examination 3 times shall be required by the board to return to an accredited program for 1 academic year. The program shall be satisfactorily completed as evidenced by certification by the dean or his or her appointee.

R 338.11512 Oral pathology; certification requirements.

Rule 1512. An applicant for certification as an oral pathologist shall meet all of the following requirements:

- (a) Hold a current license to practice dentistry in Michigan.
- (b) Have graduated from a program of oral pathology approved by the board pursuant to the provisions of R 338.11301.
- (c) Pass the examination which is conducted and scored by the American board of oral pathologists.

R 338.11513 Oral (maxillofacial) surgery explained; certification requirements; examination content.

Rule 1513. (1) The practice of oral (maxillofacial) surgery includes the diagnosis and surgical and adjunctive treatment of the diseases, injuries, and deformities of the human mouth, jaws, and associated maxillofacial structures.

(2) The specialty of oral (maxillofacial) surgery shall include all of the following:

(a) The preliminary performance of a history and physical examination for the purpose of assessing medical, dental, and anesthetic risks for contemplated oral and maxillofacial surgery.

(b) The appropriate radiological and laboratory diagnosis.

(c) The anesthetic, surgical, and adjunctive management for diseases, injuries, and deformities of the human mouth, jaws, and associated maxillofacial structures.

(3) A dentist who desires certification as an oral (maxillofacial) surgeon shall comply with both of the following requirements:

(a) Hold a current license to practice dentistry in Michigan.

(b) Have completed not less than 3 years of hospital training in an accredited oral (maxillofacial) surgery training program approved by the board pursuant to R 338.11301.

(4) Examination for certification as an oral (maxillofacial) surgeon shall be both written and clinical and shall include but not be limited to, all of the following:

(a) Anatomy.

(b) Radiology.

(c) Pathology.

(d) Local anesthesia.

(e) General anesthesia.

(f) Major surgical procedures.

(g) History and physical evaluation.

(h) Management of hospitalized patient.

(i) Intra-oral surgery including infections.

(j) Completion and submission of 4 case histories documented by the hospital administrator and the respective chief of oral (maxillofacial) surgery. These case histories shall be representative of major oral and maxillofacial surgery.

(5) A dentist who desires certification as an oral (maxillofacial) surgeon shall comply with R 338.11505.

R 338.11515 Orthodontics explained; certification requirements; examination content.

Rule 1515. (1) The practice of orthodontics includes the supervision, guidance, and correction of the growing or mature dentofacial structures, including those conditions that require movement of teeth or correction of malrelationships and malformations of their related structures and the adjustment of relationships between and among teeth and facial bones by the application of forces or the stimulation and redirection of functions forces within the craniofacial complex.

(2) The specialty of orthodontics shall include all of the following:

(a) The diagnosis, prevention, interception, and comprehensive treatment of all forms of malocclusion of the teeth and associated alterations in their surrounding structures.

- (b) The design, application, and control of functional and corrective appliances.
- (c) The guidance of the dentition and its supporting structures to attain and maintain optimum occlusal relations in physiologic and esthetic harmony among facial and cranial structures.
- (3) A dentist who desires certification as an orthodontist shall comply with both of the following requirements:
 - (a) Hold a current license to practice dentistry in Michigan.
 - (b) Have graduated from a program of orthodontics approved by the board pursuant to R 338.11301.
- (4) Examination for certification as an orthodontist shall be both written and clinical and shall include, but not be limited to, all of the following:
 - (a) Facial growth.
 - (b) Human genetics.
 - (c) Occlusal development.
 - (d) Histology and physiology.
 - (e) Radiographic cephalometry.
 - (f) Dental material in orthodontics.
 - (g) Completion and submission of 5 case histories, including photographs, radiographs, and models. These case histories shall be completed and solely diagnosed, treatment planned, treated, and retained by the candidate. Recent graduates may, instead of 2 of the completed cases, submit records of 2 patients in treatment for each completed case which is not available. A recent graduate candidate shall present a letter from the chairman of the department of orthodontics certifying that the candidate solely treated each patient whose record is presented.
 - (h) The orthodontics specialty examination shall consist of any or all of the following:
 - (i) Written examination consisting of essay, short answer, true-false, multiple choice, or fill-in-the-blank questions.
 - (ii) Diagnosis and treatment planning of patients with complete diagnostic records as recommended by the American board of orthodontists and which are provided by the examiner.
 - (iii) Clinical examination, which includes diagnosis, treatment planning, and appliance construction procedures for an actual patient.
 - (iv) Presentation of the complete records as indicated in subdivision (g) of this subrule.
 - (v) Oral examination by not less than 2 of the examiners concurrently.
- (5) A dentist who desires certification as an orthodontist shall comply with R 338.11505.

R 338.11517 Prosthodontics explained; certification requirements; examination content.

- Rule 1517. (1) The practice of prosthodontics includes the restoration and maintenance of oral function by the replacement of missing teeth and maxillofacial tissue with artificial devices.
- (2) The specialty of prosthodontics shall include the providing of suitable substitutes for the coronal portions of or for 1 or more lost or missing natural teeth and their associated parts or for the loss of maxillofacial tissue in order to restore the impaired functions, appearance, comfort, and health of the patient.
- (3) A dentist who desires certification as a prosthodontist shall comply with both of the following requirements:
 - (a) Hold a current license to practice dentistry in Michigan.
 - (b) Have graduated from a program of prosthodontics approved by the board under R 338.11301.
- (4) Examination for certification as a prosthodontist shall be both written and clinical and shall include, but not be limited to, all of the following:
 - (a) Pharmacology.
 - (b) Denture theory.
 - (c) Dental materials.
 - (d) Crown and bridge.
 - (e) Occlusal adjustment.
 - (f) Periodontal therapy.
 - (g) Pathology and histology.
 - (h) Maxillofacial prosthetics.
 - (i) Oral pathology and diagnosis.
 - (j) Complete denture prosthodontics.
 - (k) Esthetic restorative procedures.
 - (l) Dental materials in prosthodontics.
 - (m) Principles of restorative dentistry.
 - (n) Clinical evaluation in restorative dentistry.
 - (o) Mandibular movement and functional occlusion.

(p) Completion and submission of 5 patient histories with appropriate preoperative and postoperative radiographs and photographs. The histories shall represent the major areas of prosthodontics, which include all of the following:

- (i) Immediate denture.
 - (ii) Single complete denture.
 - (iii) Fixed partial denture opposing fixed partial denture.
 - (iv) Combination complete denture and fixed partial denture.
 - (v) Combination complete denture and removable partial denture.
 - (vi) Combination removable partial denture and fixed partial denture.
 - (vii) Opposing maxillary complete denture and mandibular complete denture.
 - (viii) Removable partial denture and intracoronal and extracoronal retainers.
 - (ix) Maxillofacial prosthesis, which shall include, but not be limited to, an intra-oral prosthesis that may include both fixed and removable portions.
- (q) A comprehensive oral examination that shall be administered by not less than 2 examiners covering the broad field of prosthodontics and related arts and sciences or other case presentations as required, or both.
- (5) A dentist who desires certification as a prosthodontist shall comply with R 338.11505.

R 338.11519 Periodontics explained; certification requirements; examination content. Rule 1519. (1) The practice of periodontics includes the diagnosis and treatment of disease of the supporting and surrounding structures of the teeth and management of occlusion and temporomandibular joint dysfunction problems.

(2) A dentist who desires certification as a periodontist shall comply with both of the following requirements:

(a) Hold a current license to practice dentistry in Michigan.

(b) Have graduated from a program of periodontics approved by the board pursuant to R 338.11301.

(3) Examination for certification as a periodontist shall be written and clinical and shall include, but not be limited to, all of the following:

- (a) Histology.
 - (b) Pathology.
 - (c) Cell biology.
 - (d) Pharmacology.
 - (e) Oral physiology.
 - (f) Oral bacteriology.
 - (g) Physiology of occlusion.
 - (h) Surgical anatomy of the head and neck.
 - (i) Dental materials in restorative dentistry.
 - (j) Pathology and radiology of periodontal disease.
 - (k) Pathology of caries, pulp, periapical diseases.
- (1) Completion and submission of 5 patients of treatment of periodontal disease, 3 of which shall be moderate to severe periodontitis and 2 of which shall be selected from the following areas:
- (i) Mucogingival problems.
 - (ii) Juvenile periodontitis.
 - (iii) Hyperplastic gingivitis.
 - (iv) Periodontal maintenance therapy.
 - (v) Temporomandibular joint dysfunction.
 - (vi) Necrotizing ulcerative gingivitis (NUG).

(4) A dentist who desires certification as a periodontist shall comply with R 338.11505.

R 338.11521 Pedodontics explained; certification requirements; examination content. Rule 1521. (1) The practice of pedodontics includes the practice and teaching of comprehensive and therapeutic oral health and the care of children from birth to adolescence. This also includes the dental care of patients beyond the age of adolescence who demonstrate mental, physical, or emotional problems. The term "pediatric dentistry" shall mean the same as the term "pedodontics."

(2) A dentist who desires certification as a pedodontist shall comply with both of the following requirements:

- (a) Hold a current license to practice dentistry in Michigan.
- (b) Have graduated from a program of pedodontics approved by the board pursuant to R 338.11301.

(3) Examination for licensure as a pedodontist shall be both written and clinical and shall include, but not be limited to, all of the following:

- (a) Bacteriology.
- (b) Facial growth.
- (c) Oral pathology.
- (d) Occlusal development.
- (e) Pedodontic orthodontics.
- (f) Physical growth of children.
- (g) Psychology of child development.
- (h) Dental materials in pedodontics.
- (i) General anesthesia for infants and children.
- (j) Mental hygiene of childhood and adolescence.
- (k) Completion and submission of 10 completed patient history and treatment records which shall include all of the following:
 - (i) One case of dental anomaly.
 - (ii) Two cases of oral trauma to a child.
 - (iii) Two cases of interceptive or preventive orthodontics.
 - (iv) Two cases of pulpal therapy for a primary tooth and a young permanent tooth.
 - (v) Two comprehensive restorative patients, 1 of whom shall be a preschool patient.
 - (vi) One case of treatment for a handicapped child as an office or hospital procedure.
- (4) A dentist who desires certification as a pedodontist shall comply with R 338.11505.

R 338.11523 Endodontics explained; certification requirements; examination content.

Rule 1523. (1) The practice of endodontics includes the morphology, physiology, and pathology of the human dental pulp and periapical tissues.

Its study encompasses related basic and clinical sciences, including the biology of the normal pulp and the etiology, diagnosis, prevention, and treatment of diseases and injuries of the pulp and periradicular tissues.

(2) The specialty of endodontics shall include all of the following:

- (a) Pulpotomy.
- (b) Pulp capping.
- (c) Hemisections.
- (d) Pulp extirpation.
- (e) Root amputations.
- (f) Endodontic implants.
- (g) Treatment of the pulp canals.
- (h) Bleaching of discolored teeth.
- (i) Obturation of canals of the teeth.
- (j) Replantation and intentional replantation.
- (k) Periapical and lateral pathosis of pulpal origin.
- (l) Selective surgical removal of lesions of endodontic origin.
- (m) Differential diagnosis and control of pain of pulpal origin.
- (3) A dentist who desires certification as an endodontist shall comply with both of the following requirements:
 - (a) Hold a current license to practice dentistry in Michigan.
 - (b) Have graduated from a program of endodontics approved by the board pursuant to R 338.11301.
- (4) Examination for licensure as an endodontist shall be both written and clinical and shall include, but not be limited to, all of the following:
 - (a) Radiology.
 - (b) Cell biology.
 - (c) Pharmacology.
 - (d) Oral pathology.
 - (e) Human genetics.
 - (f) Local anesthesia.
 - (g) Surgical anatomy.
 - (h) General anesthesia.
 - (i) Endodontic surgery.
 - (j) Surgical anatomy of the neck.
 - (k) Oral and maxillofacial surgery.
 - (l) Dental materials in endodontics.
 - (m) Oral physiology, histology, and physiology.

(n) Completion and presentation of 16 case histories with complete radiographs before and after completion of the cases which shall include all of the following:

- (i) Eight molars.
 - (ii) Two premolars.
 - (iii) Two atypical treatment cases.
 - (iv) Three surgical cases, 1 of these cases shall be a posterior case.
 - (v) One apexification. A completed case with endodontic filling is preferable; however, if a partially completed case or no case is available, an outline of treatment should be presented.
- (5) A dentist who desires certification as an endodontist shall comply with R 338.11505.

R 338.11525 Specialists; holding self out to public.

Rule 1525. (1) A dentist who is not certified as a specialist by the board shall not announce or hold himself or herself out to the public as limiting his or her practice to, as being specially qualified in, or as giving special attention to, a branch of dentistry. A dentist is holding himself or herself out as a specialist in either of the following situations:

(a) When, in any way, he or she gives public emphasis to the practice of some particular specialty of dentistry without disclosing that he or she is a dentist who is not certified as a specialist.

(b) When he or she identifies himself or herself with a specialty, whether or not he or she claims special attention to, or a practice limited to, the specialty or employs the use of signs, professional cards, letterheads, other listings, or letters to the public or the profession which, in any way, imply special knowledge or ability in a specialty. This subdivision does not apply to specialists who are advertising in the specialty for which they are certified. For purposes of this subrule, a specialist who advertises services in an area other than his or her specialty is considered a general dentist and shall comply with the provisions of subdivision (a) of this subrule.

(2) Association, as an employer, employee, or partner, with an individual who is duly certified as a specialist by the board constitutes announcement to the public of qualifications for specialization, unless the individual so associating himself or herself publicly states, by signs, cards, or announcements, that he or she is engaged in the practice of general dentistry or the practice of some other specialty of dentistry in which he or she is duly certified.

R 338.11527 Dental license suspension or revocation; automatic suspension or revocation of specialty certification.

Rule 1527. The suspension or revocation of the dental license of a dentist shall automatically cause the suspension or revocation of a specialty certification issued to that dentist pursuant to the act and these rules.

R 338.11601 General anesthesia; conditions; violation.

Rule 1. (1) A dentist shall not administer general anesthesia to a dental patient or delegate and supervise the performance of any act, task, or function involved in the administration of general anesthesia to a dental patient, unless all of the following conditions are satisfied:

(a) The dentist has completed a minimum of 1 year of advanced training in general anesthesia and pain control in a program which meets the standards adopted in R 338.11603(1). This subdivision takes effect 1 year after the effective date of this amendatory rule.

(b) The dentist and the delegatee, if any, maintain current certification in basic or advanced cardiac life support from an agency or organization that grants such certification pursuant to standards substantially equivalent to the standards adopted in R 338.11603(3).

(c) The facility in which the anesthesia is administered meets the equipment standards adopted in R 338.11603(4).

(d) The dentist shall be physically present with the patient who is given any general anesthesia until he or she regains consciousness and the dentist shall remain on the premises until such patient is capable of being discharged.

(2) A dentist who does not meet the requirements of subrule (1) of this rule shall not offer general anesthesia services for dental patients unless all of the following conditions are met:

(a) General anesthesia services are directly provided through association with, and by, either of the following individuals:

(i) A physician who is licensed under the provisions of part 170 or 175 of the act and who is a member in good standing on the anesthesiology staff of a hospital accredited by the joint commission on accreditation of hospitals.

(ii) A dentist who meets the requirements of subrule (1)(a) and (b) of this rule.

(b) A person who administers anesthesia, as authorized by the provisions of subdivision (a) of this subrule, shall be physically present with the patient who is given any general anesthesia until he or she regains consciousness and the dentist shall remain on the actual premises where the general anesthesia is administered until the patient anesthetized is capable of being discharged.

(c) The provisions of subrule (1)(b) and (c) of this rule shall be complied with.

(3) A dentist is deemed to have violated the provisions of section 16221(1)(g) of the act if he or she administers general anesthesia to a dental patient or delegates and supervises the performance of any act, task, or function involved in the administration of general anesthesia to a dental patient or offers general anesthesia services for dental patients without being in compliance with the provisions of subrules (1) and (2) of this rule.

R 338.11602 Intravenous conscious sedation; conditions; violations.

Rule 2. (1) A dentist shall not administer intravenous conscious sedation to a dental patient or delegate and supervise the performance of any act or function involved in the administration of intravenous conscious sedation to a dental patient unless 1 of the following conditions is satisfied:

(a) The dentist complies with the provisions of R 338.11601(1) or (2).

(b) The dentist complies with both of the following provisions:

(i) The dentist has completed a minimum of 60 hours of training in intravenous conscious sedation and related academic subjects, including a minimum of 40 hours of supervised clinical instruction in which the individual has sedated not less than 20 cases in a course that is in compliance with the standards adopted in R 338.11603(2).

(ii) The dentist and the delegatee, if any, maintains current certification in basic or advanced cardiac life support from an agency or organization that grants such certification pursuant to standards substantially equivalent to the standards adopted in R 338.11603(3).

(c) The facility in which the anesthesia is administered is in compliance with the equipment standards adopted in R 338.11603(4).

(2) A dentist is deemed to have violated the provisions of section 16221(1)(g) of the act if he or she administers intravenous conscious sedation to a dental patient or delegates and supervises the performance of any act, task, or function involved in the administration of intravenous conscious sedation to a dental patient without being in compliance with the provisions of subrule (1) of this rule.

R 338.11603 Adoption of standards; effect of certification of programs.

Rule 3. (1) The board adopts the standards for advanced training in anesthesia and pain control set forth by the council on dental education of the American dental association in part 2 of the publication entitled "Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry," 1993 edition. Part 2 of the guidelines may be obtained from the Michigan Board of Dentistry, Department of Consumer and Industry Services, P.O. Box 30018, Lansing, MI 48909, or from the Council on Dental Education, American Dental Association, 211 E. Chicago Avenue, Chicago, IL 60611, at no cost. Certification of programs by the council on dental education as meeting the standards adopted constitutes a prima facie showing that the program is in compliance with the standards.

(2) The board adopts the standards for training in intravenous conscious sedation and related subjects set forth by the council on dental education of the American dental association in part 1 of the publication entitled "Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry," 1993 edition. Part 1 of the guidelines may be obtained from the Michigan Board of Dentistry, Department of Consumer and Industry Services, P.O. Box 30018, Lansing, MI 48909, or from the Council on Dental Education, American Dental Association, 211 E. Chicago Avenue, Chicago, IL 60611, at no cost. Certification of programs by the council on dental education as meeting the standards adopted constitutes a prima facie showing that the program is in compliance with the standards.

(3) The board adopts the standards for certification in basic and advanced cardiac life support set forth by the American heart association in the publication entitled "Standards and Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiac Care" and published in the publication entitled "Journal of the American Medical Association," volume 268, no.16, on October 28, 1992. A copy of the guidelines may be obtained from the Michigan Board of Dentistry, Department of Consumer and Industry Services, P.O. Box 30018, Lansing, MI 48909, at no cost, or from the American Heart Association, 7320 Greenville Avenue, Dallas, TX 75231, at a cost as of the time of adoption of these rules of \$1.04.

(4) The board adopts the standards regarding the equipment within a facility set forth by the American association of oral and maxillofacial surgeons in the publication entitled "Office Anesthesia Evaluation

Manual," fifth edition, 1995. A copy of the "Office Anesthesia Evaluation Manual" may be obtained from the Michigan Board of Dentistry, Department of Consumer and Industry Services, P.O. Box 30018, Lansing, MI 48909, at no cost, or from the American Association of Oral and Maxillofacial Surgeons, AAOMS publications #A-2, P.O. Box 5188, Glendale Heights, IL 60139, at a cost as of the time of adoption of these rules of \$50.00.

R 338.11604 "Morbidity" and "Mortality" defined; reporting requirements.

Rule 4. (1) As used in this rule:

(a) "Morbidity" means an incident that results in mental or physical impairment which is related to or results from the administration of general anesthesia or intravenous conscious sedation by a dentist, under the delegation and supervision of a dentist, or in a dental facility.

(b) "Mortality" means an incident that results in death related to the administration of general anesthesia or intravenous conscious sedation by a dentist, under the delegation and supervision of a dentist, or in a dental facility.

(2) A dentist shall file a morbidity report with the board within 30 days after the occurrence of an incident.

(3) A dentist shall file a mortality report with the board within 5 days after the occurrence of an incident.

(4) A dentist who fails to file a report as required by this rule is deemed to have violated the provision of section 16221(1)(g) of the act.

R 338.11701 License renewal for dentists; relicensure; requirements; applicability.

Rule 1. (1) This part applies to applications for the renewal of a dentist license and applications for relicensure pursuant to section 16201(3) and (4) of the act which are filed on or after April 30, 1994.

(2) An applicant for license renewal who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure shall possess current certification in basic or advanced cardiac life support from an agency or organization that grants certification pursuant to standards substantially equivalent to the standards adopted in R 338.11705(3) and shall comply with the following requirements, as applicable:

(a) For a dentist license, the applicant shall have completed not less than 60 hours of continuing education acceptable to the board during the 3-year period immediately preceding the date of the application. Each licensee shall complete a minimum of 20 hours of approved continuing education in programs directly related to clinical issues such as delivery of care, materials used in delivery of care, and pharmacology.

(b) Dental specialists shall have completed 20 hours of the 60 required board-approved continuing education hours in the dental specialty field in which they are certified within the 3-year period immediately preceding the renewal application.

(c) Each licensee shall complete at least 1 continuing education credit in pain and symptom management in each renewal period. Continuing education credits in pain and symptom management may include, but are not limited to, courses in behavior management, psychology of pain, pharmacology, behavior modification, stress management, clinical applications, and drug interactions.

(d) If an organized continuing education course or program is offered in segments of 50 to 60 minutes each, 1 hour of credit shall be given for each segment.

(3) The submission of the application for renewal shall constitute the applicant's certification of compliance with the requirements of this rule.

The board may require an applicant or a licensee to submit evidence to demonstrate compliance with this rule.

The applicant or licensee shall maintain evidence of complying with the requirements of this rule for a period of 4 years from the date of the application.

R 338.11703 Acceptable continuing education for dentists; limitations.

Rule 3. The board shall consider any of the following as acceptable continuing education:

(a) Successful completion of a course or courses offered for credit in a dental school or a hospital-based dental specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the board pursuant to the provisions

of R 338.11307. Ten hours of continuing education shall be credited for each quarter credit earned and 15 hours shall be credited for each semester credit earned, without limitation.

(b) A maximum of 20 credit hours per calendar year may be earned for satisfactorily participating for a minimum of 7 months in a postgraduate dental clinical training program in a hospital or institution that is approved by the board pursuant to the provisions of R 338.11301.

(c) Attendance at a continuing education program offered by a dental school or a hospital-based dental

specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the board pursuant to the provisions of R

338.11307. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(d) Attendance at a continuing education program approved by the board pursuant to the provisions of R 338.11705 of this part. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(e) Development and presentation of a table clinical demonstration or a continuing education lecture offered in conjunction with the presentation of continuing education programs approved by the board. One hour of continuing education shall be credited for each hour devoted to the development and initial presentation of a table clinical demonstration or a continuing education lecture, with a maximum of 10 hours of continuing education credited for the development and presentation of the same demonstration or lecture.

(f) Twelve hours of continuing education shall be credited for the initial publication of an article or articles related to the practice of dentistry, dental hygiene, or dental assisting in the journal of an accredited school of dentistry, dental hygiene, or dental assisting or a state or state component association of dentists, dental specialists, dental hygienists, or dental assistants.

(g) Twenty-five hours of continuing education shall be credited for the initial publication of an article or articles related to the practice of dentistry, dental hygiene, or dental assisting in a textbook or in the journal of a national association of dentists, dental specialists, dental hygienists, or dental assistants.

(h) Reading articles, viewing, or listening to media, other than on-line programs, devoted to dental, dental hygiene, or dental assisting education.

One hour of continuing education shall be credited for each hour devoted to such education, with a maximum of 10 hours credited under this category.

(i) Twenty hours of continuing education may be earned in board-approved, on-line continuing education activities.

(j) Successful completion of an American Board specialty examination.

Ten hours of continuing education shall be credited in the year in which the applicant is advised he or she passed the examination.

(k) Renewal of a license held in another state that requires continuing education for license renewal that is substantially equivalent to that required in these rules if the applicant resides and practices in another state. For a dentist, 60 hours of continuing education shall be credited for evidence of current licensure in another state.

(l) One continuing education contact hour may be granted for each hour of program attendance at a continuing education program which has been granted approval by another state board of dentistry.

(m) Ten hours of continuing education shall be credited to dentists for attendance at dental-related programs which shall be documented by the licensee as relevant to health care and advancement of the licensee's dental education. The board shall deny a request for approval if the continuing education request does not meet the criteria used by the board for approval of continuing education sponsors.

(n) A maximum of 30 credit hours per renewal period for a dentist may be earned for programs related to topics approved for category 1 continuing education by the boards of medicine or osteopathic medicine.

R 338.11704 License renewal for dental hygienists and dental assistants; relicensure; requirements; applicability.

Rule 4. (1) This part applies to applications for the renewal of a registered dental hygienist license or a registered dental assistant license and applications for relicensure pursuant to section 16201(3) and (4) of the act which are filed on or after April 30, 1994.

(2) An applicant for license renewal who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure shall possess current certification in basic or advanced cardiac life support from an agency or organization that grants certification pursuant to standards substantially equivalent to the standards adopted in R 338.11705(3) and shall comply with the following requirements, as applicable:

(a) For a registered dental hygienist license or a registered dental assistant license, the applicant shall have completed not less than 36

hours of continuing education acceptable to the board during the 3-year period immediately preceding the date

of the application. Each licensee

shall complete a minimum of 12 hours of approved continuing education in programs directly related to clinical issues such as delivery of care, materials used in the delivery of care, and pharmacology.

(i) Applicants holding both a registered dental hygienist license and a registered dental assistants license shall have completed not less than a total of 36 hours of continuing education acceptable to the board during the 3-year period immediately preceding the date of the application. The

36 hours shall include not less than 12 hours devoted to registered dental hygienist functions, and not less than 12 hours devoted to registered dental assistants functions.

(b) If an organized continuation course or program is offered in segments of 50 to 60 minutes each, 1 hour of credit shall be given for each segment.

(3) The submission of the application for renewal shall constitute the applicant's certification of compliance with the requirement of this rule.

The board may require an applicant or licensee to submit evidence to demonstrate compliance with this rule.

The applicant or licensee shall maintain evidence of complying with the requirements of this rule for a period of 4 years from the date of the application.

R 338.11704a Acceptable continuing education for dental hygienists and dental assistants; limitations.

Rule 4a. The board shall consider any of the following as acceptable continuing education:

(a) Successful completion of a course or courses offered for credit in a dental school or hospital-based dental specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the board pursuant to the provisions

of R 338.11307. Ten hours of continuing education shall be credited for each quarter credit earned and 15 hours shall be credited for each semester credit earned, without limitation.

(b) Attendance at a continuing education program offered by a dental school or hospital-based dental specialty program approved by the board pursuant to the provisions of R 338.11301, a dental hygiene school approved by the board pursuant to the provisions of R 338.11303, or a dental assisting school approved by the board pursuant to the provisions of R 338.11307. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(c) Attendance at a continuing education program approved by the board pursuant to the provisions of R 338.11705 of this part. One hour of continuing education shall be credited for each hour of program attendance, without limitation.

(d) Development and presentation of a table clinic demonstration or a continuing education lecture offered in conjunction with the presentation of continuing education programs approved by the board. One hour of continuing education shall be credited for each hour devoted to the development and initial presentation of a table clinic demonstration or a continuing education lecture, with a maximum of 10 hours of continuing education credited for the development and presentation of the same table clinic demonstration or continuing education lecture.

(e) Twelve hours of continuing education shall be credited for the initial publication of an article or articles related to the practice of dentistry, dental hygiene, or

Michigan Public Health Code (www.michigan legislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-166&highlight=>

Occupational Board Information:

The Michigan Board of Dentistry was originally formed with the enactment of Public Act 122 of 1919 and regulated the practice of dentistry and dental hygiene and authorizing dental assistants.

In 1978, this authority was transferred to the Public Health Code, Public Act 368 of 1978, as amended, and included certification of specialists in the fields of orthodontics, endodontics, prosthodontics, pediatric dentistry, periodontics, oral and maxillofacial surgery, and oral pathology.

The practice of dentistry means the diagnosis, treatment, prescription, or operation for a disease, pain, deformity, injury, or physical condition of the human tooth, teeth, alveolar process, gums or jaws, or their dependent tissues, or an offer, undertaking, attempt to do, or holding oneself out as able to do any of these acts.

The practice of dental hygiene means practice at the assignment of a dentist in that specific area of dentistry based

on specialized knowledge, formal education, and skill with particular emphasis on preventive services and oral health education.

Practice as a dental assistant means assistance in the clinical practice of dentistry based on formal education, specialized knowledge, and skill at the assignment and under the supervision of a dentist. The Board has the obligation to take disciplinary action against licensees.

The Michigan Board of Dentistry consists of 19 voting members: 8 dentists, 2 dental specialists, 4 hygienists, 2 registered dental assistants, and 3 public members.

The Board currently oversees the practice of approximately 7,749 dentists (1,060 dental specialists), 9,014 hygienists and 1,012 dental assistants.

EDUCATION

How Can I Prepare for a Career in Dentistry?

- * Get a broad exposure to science and math while in high school — enroll in college preparatory classes in biology, algebra, and chemistry
- * Continue taking natural science courses in college such as general biology, organic and inorganic chemistry, and physics
- * Ask to volunteer or job shadow at your family dentist's office, orthodontist's office, or pediatric dentist's office
- * A college undergraduate degree is recommended as preparation for dental school
- * Talk with admission officers about financial aid resources and dental school requirements (See list of 55 ADA accredited dental schools in the U.S)
- * Take the Dental Admissions Test (DAT) a year before entering dental school

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

State Association:

Michigan Dental Association -- <http://www.michigandental.org>

National Association:

American Dental Association -- <http://www.ada.org/>

RESOURCES

Commission on Dental Accreditation, American Dental Association -- <http://www.ada.org>

Diagnostic Medical Sonographer

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Produce ultrasonic recordings of internal organs for use by physicians.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$21.43	\$44,570.00
Ann Arbor MSA	\$22.67	\$47,140.00
Detroit MSA	\$21.89	\$45,530.00
Flint MSA	\$20.92	\$43,520.00
Grand Rapids-Muskegon-Holland MSA	\$21.33	\$44,370.00
Kalamazoo-Battle Creek MSA	\$21.59	\$44,920.00
Lansing MSA	\$21.41	\$44,530.00
Saginaw MSA	\$20.30	\$42,230.00
Balance of State - Northeast Lower Peninsula	\$20.75	\$43,160.00
Balance of State - Northwest Lower Peninsula	\$19.54	\$40,630.00
Balance of State - South Central Lower Peninsula	\$20.06	\$41,720.00
Balance of State - Upper Peninsula	\$19.06	\$39,640.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

EDUCATION

In addition to having your GED or high school diploma, you'll need to complete a sonographer program accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or the Joint Review Committee on Education for Diagnostic Medical Sonography (JRCEDMS). Programs range from four-year bachelor's degrees to one-year certificate programs, although graduation from a two-year allied health program is required to enter a one-year certificate program. In addition to applications of ultrasound and image evaluation, coursework generally includes biology, chemistry, anatomy, physiology, physics, and medical terminology. You'll also gain plenty of clinical, hands-on practical training with ultrasonography equipment. Regulations vary from state to state, but certification is highly recommended because most employers require it. In order to sit for the national certification exam given by the American Registry of Diagnostic Medical Sonographers (ARDMS) you must have an associate's or bachelor's degree from an accredited program. Upon passing the exam, sonographers become registered diagnostic medical sonographers (RDMS).

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

Society of Diagnostic Medical Sonography -- <http://www.sdms.org/>

RESOURCES

American Registry of Diagnostic Medical Sonographers -- <http://www.ardms.org>

Commission on Accreditation for Allied Health Education Programs -- <http://www.caahep.org>

Joint Review Committee on Education in Diagnostic Medical Sonography -- <http://www.jrcdms.org>

Emergency Medical Technician

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$12.27	\$25,510.00
Ann Arbor MSA	\$12.28	\$25,540.00
Benton Harbor MSA	\$11.94	\$24,840.00
Detroit MSA	\$14.02	\$29,160.00
Flint MSA	\$11.17	\$23,230.00
Grand Rapids-Muskegon-Holland MSA	\$11.61	\$24,140.00
Kalamazoo-Battle Creek MSA	\$9.54	\$19,830.00
Lansing MSA	\$13.83	\$28,780.00
Balance of State - Northeast Lower Peninsula	\$11.99	\$24,940.00
Balance of State - Northwest Lower Peninsula	\$10.23	\$21,270.00
Balance of State - South Central Lower Peninsula	\$9.98	\$20,750.00
Balance of State - Upper Peninsula	\$12.74	\$26,490.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(<http://www.state.mi.us/orr/emi/arcrules.asp?type=Numeric&id=2001&subId=2001%2D016+CH&subCat=Admincode>):
R 325.22301 Definitions.

Rule 22301. As used in these rules:

- (a) "Code" means 1978 PA 368, MCL 333.1101 et seq.
- (b) "Continuing education" means programs of education or training approved by the department for use by licensees to meet requirements for renewal or relicensure.
- (c) "CPR credential" means a department-approved cardiac pulmonary resuscitation (cpr) program for a health care provider or highest equivalent level of training.
- (d) "Department" means the department of community health.
- (e) "EMS" means emergency medical services.
- (f) "Endorsement" means the recognition of the licensing authority of one state by another state.
- (g) "NREMT" means the national registry of emergency medical technicians.
- (h) "Ongoing education" means education or training sessions, refresher courses, and other learning activities approved by the department and designed to assist individuals who are seeking licensure, or to assist personnel in maintaining and upgrading their knowledge and skills on an ongoing basis throughout the term of their licensure.
- (i) "Ongoing education" is also referred to as continuing education.
- (j) "Ongoing education credits" means the unit of measure, equal to 50 to 60 minutes of instruction, which is assigned to a specific ongoing education topic.

(k) "On-site program sponsor approval" means compliance with the state- approved program criteria by which an educational program is reviewed to determine its compliance with preset educational goals, expectations and equipment requirements.

(l) "Physician" means a doctor of medicine or doctor of osteopathy who possesses a valid license to practice medicine in Michigan.

(m) "Physician director" means a physician who serves as the medical advisor for an education program and who is responsible for establishing the standards for emergency medical care instruction utilized in the program.

(n) "Relicensure" means the granting of a license to a person whose license has lapsed for failure to renew the license within 60 days after the expiration date.

(o) "Renewal" means continuation of a license based on completion of requirements and payment of any fees within the time limits established.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22302 Terms defined in the code.

Rule 22302. Terms defined in the code have the same meanings when used in these rules.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22311 Examination application.

Rule 22311. For an applicant to take the appropriate examination, an application for examination shall be completed and submitted to the department or state-designated representative within 2 years of the course completion date. An applicant who submits an application more than 2 years after the course completion date shall meet any additional requirements established for acceptance into the examination.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22312 Licensure by examination.

Rule 22312. An applicant for licensure by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and administrative rules, an applicant for licensure by examination shall meet all of the following requirements:

(a) Completion of an appropriate education program at the level applied for, as approved under section 20912 of the code, and the proof of completion sent directly from the education program to the department.

(b) A first-time applicant shall attain a passing score on the appropriate department-prescribed examination. The passing scores shall be submitted directly to the department by the testing agency.

(c) An individual applying to the department for licensure by having passed the department-prescribed examinations shall have completed an initial education course within 2 years of application.

(d) The fees paid by an applicant who has not completed all requirements for licensure by examination within 2 years of the department's receiving the application shall be forfeited to the department and the application shall be void.

(e) An individual who is guilty of fraud or deceit in procuring or attempting to procure licensure, including using falsified documents to gain admittance to a department-prescribed licensure examination, shall be denied licensure for at least 2 years.

(f) An individual shall not represent himself or herself as, function as, or perform the duties of, a licensed medical first responder, emergency medical technician, emergency medical technician specialist or paramedic until licensed by the department in accordance with the code and these rules.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22313 Licensure at lower levels.

Rule 22313. A current ems licensee who applies for a lower level license shall meet all of the following requirements:

(a) A paramedic, who holds an active license, may apply for a license as an emergency medical technician specialist, emergency medical technician or medical first responder by submitting a new application for the lower level license along with the fee and proof of having earned the required continuing education at the emergency medical technician specialist, emergency medical technician, or medical first responder level.

(b) An emergency medical technician specialist, who holds an active license, may apply for a license as an

emergency medical technician or medical first responder by submitting a new application for the lower level along with the fee and proof of having earned the required continuing education at the emergency medical technician or medical first responder level.

(c) An emergency medical technician, who holds an active license, may apply for a license as a medical first responder by submitting a new application for the lower level along with the fee and proof of having earned the required continuing education at the medical first responder level.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22314 Licensure by endorsement.

Rule 22314. An applicant for licensure by endorsement shall submit a completed application on a form provided by the department together with the requisite fee, and all of the following documentation:

- (1) Verification of current licensure/certification/registration in any state which granted permission to practice.
- (2) Examination scores for a department-prescribed examination which shall be submitted to department and which verify passage of examinations or nremt status, or both.
- (3) Sanctions or grounds for sanctions by another state that may exist at time of application which shall disqualify the applicant until the other state certifies that those sanctions or grounds for sanctions no longer exist for the applicant.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22315 Licensure by national registry status only.

Rule 22315. An applicant for licensure who has active nremt status only and who has not been licensed in any other state shall submit a completed application on the form provided by the department, together with the requisite fee, and shall meet both of the following requirements:

- (1) Request nremt to send verification of scores or nremt status, or both.
- (2) Provide proof of training that is substantially equivalent to the state-prescribed curriculum and proof of continuing education or training in areas determined deficient by the department.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22316 License renewal. Rule 22316. Not more than 60 days before the date of license expiration, the department shall transmit to the last known address of the licensee an application for license renewal. Failure of the licensee to receive notice for renewal shall not relieve the licensee of the responsibility for renewing his or her license.

R 325.22321 License renewal or relicensure for medical first responders; continuing education.

Rule 22321. (1) An applicant for license renewal as a medical first responder who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure as a medical first responder shall accumulate at least 15 continuing education credit hours that are approved by the department under these rules during the 3 years preceding an application for renewal or relicensure.

(2) An applicant for license renewal or for relicensure under section 20954 of the code, in addition to the requirements of subrule (1) of this rule, shall have an appropriate and current cpr credential as determined by the department. Continuing education credit for a cpr credential may be part of the medical continuing education category requirement.

(3) The categories of approved continuing education activities for medical first responders shall include, but are not limited to, all of the following topics:

- (a) Preparatory.
- (b) Airway management and ventilation.
- (c) Patient assessment.
- (d) Trauma.
- (e) Medical.
- (f) Special considerations.
- (g) Operations.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22322 License renewal or relicensure for emergency medical technicians; continuing education.

Rule 22322. (1) An applicant for license renewal as an emergency medical technician who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure as an emergency medical technician shall accumulate at least 30 continuing education credit hours that are approved by the department under these rules during the 3 years preceding an application for renewal or relicensure.

(2) An applicant for license renewal or relicensure pursuant to section 20954 of the code, in addition to the requirements of subrule (1) of this rule, shall have an appropriate and current cpr credential as determined by the department. Continuing education credit for a cpr credential may be part of the medical continuing education category requirement.

(3) The categories of approved continuing education activities for emergency medical technicians shall include, but are not limited to, all of the following topics:

- (a) Preparatory.
- (b) Airway management and ventilation.
- (c) Patient assessment.
- (d) Trauma.
- (e) Medical.
- (f) Special considerations.
- (g) Operations.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22323 License renewal or relicensure for emergency medical technician specialists; continuing education.

Rule 22323. (1) An applicant for license renewal as an emergency medical technician specialist who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure as an emergency medical technician specialist shall accumulate at least 36 continuing education credit hours that are approved by the department under these rules during the 3 years preceding an application for renewal or relicensure.

(2) An applicant for license renewal or for relicensure under section 20954 of the code, in addition to the requirements of subrule (1) of this rule, shall have an appropriate and current cpr credential as determined by the department. Continuing education credit for a cpr credential may be part of the medical continuing education category requirement.

(3) The categories of approved continuing education activities for emergency medical technician specialists shall include, but are not limited to, each of the following topics:

- (a) Preparatory.
- (b) Airway management and ventilation.
- (c) Patient assessment.
- (d) Trauma.
- (e) Medical.
- (f) Special considerations.
- (g) Operations.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22324 License renewal or relicensure for paramedics; continuing education.

Rule 22324. (1) An applicant for license renewal or relicensure as a paramedic who has been licensed for the 3-year period immediately preceding the expiration date of the license or an applicant for relicensure as a paramedic shall accumulate at least 45 continuing education credit hours that are approved by the department under these rules during the 3 years preceding an application for renewal or relicensure.

(2) An applicant for license renewal or for relicensure under section 20954 of the code, in addition to the requirements of subrule (1) of this rule, shall have an appropriate and current cpr credential as determined by the department. Continuing education credit for cpr credential may be part of the medical continuing education category requirement.

(3) The categories of approved continuing education activities for paramedics shall include, but are not limited to, all of the following topics:

- (a) Preparatory.
- (b) Airway management and ventilation.

- (c) Patient assessment.
- (d) Trauma.
- (e) Medical.
- (f) Special considerations.
- (g) Operations.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22325 Certification of compliance; additional documentation.

Rule 22325. (1) Submission of an application for renewal or relicensure shall constitute the applicant's certification of compliance with the requirements of these rules.

(2) The department may require an applicant or licensee to submit documentation to demonstrate compliance with the continuing education requirement. The applicant or licensee shall maintain documentation of his or her compliance with the continuing education requirement for a period of 1 year after the expiration date of the license. Failure to provide such documentation creates a rebuttable presumption that the licensee has made a false and fraudulent statement in applying for a license to practice emergency medical services. As provided under section 20958 of the code, the department shall determine if failure to provide documentation of compliance with the continuing education requirement is a violation of section 20954 of the code.

(3) Acceptable documentation of continuing education shall include all of the following:

- (a) Name of licensee participating in program.
- (b) Name of sponsoring organization and instructor-coordinator number.
- (c) Title of program.
- (d) Hours of continuing education credit awarded per required category.
- (e) Date of program.
- (f) Signature of instructor-coordinator or designee.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22326 Continuing education courses and programs; standards for approval.

Rule 22326. (1) One continuing education credit hour may be earned for each 50 to 60 minutes of instruction at an approved education program that complies with this rule and R 325.22327.

(2) Initial education program sponsors shall be approved for up to 3 years for presentation of continuing education programs at the level consistent with education approval upon submission and approval of a continuing education sponsor application.

(3) The department approves and adopts, by reference, the standards and criteria of the continuing education coordinating board for emergency medical services (cecbems) that are in the publication entitled "CECBEMS Standards and Requirements for Organizational Accreditation". A copy of the publication is available for inspection and distribution to the public at cost from the Department of Community Health, Bureau of Health Professions, P.O. Box 30670, Lansing, MI 48909. A printed copy also is available at from CECBEMS 5111 Mill Run Road Dallas, TX 75244 or on-line at <http://www.cecbems.org/system.cfm> at no cost. Any program approved by cecbems shall be considered a Michigan-approved continuing education program.

(4) The department approves and accepts, by reference, the standards for credentialing in basic and advanced life support set forth by the American heart association in the guidelines for cardiopulmonary resuscitation and emergency cardiac care for professional providers and published in "Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care" (70-2041). A copy of the guidelines for cardiopulmonary resuscitation and emergency cardiac care is available for inspection and distribution to the public at cost from the Department of Community Health, Bureau of Health Professions, P.O. Box 30670, Lansing, MI 48909. A printed copy also is available from the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231 or <http://www.americanheart.org> at a cost of \$20 as of the adoption of these rules.

(5) Medical first responders completing an emergency medical technician course, or emergency medical technicians and emergency medical technician specialists completing a paramedic program may be awarded all the required ongoing education credit for the lower licensure level for the current renewal period.

(6) Continuing education credit may be awarded for continuing education programs approved by the Michigan boards of medicine, osteopathic medicine, nursing, or pharmacy toward the ems license if directly related to the emergency medical scope of practice issues, as determined by the department.

(7) Five continuing education credit hours may be awarded for each semester credit earned for academic courses related to ems that are offered either in an educational program approved by the Michigan boards of

medicine, osteopathic medicine, or nursing, or in an approved physician assistant program.

(8) Three continuing education credit hours may be awarded for each term credit earned for academic courses related to ems that are offered either in an educational program approved by the Michigan boards of medicine, osteopathic medicine, or nursing, or in an approved physician assistant program.

(9) Credit may be requested for programs offered by out-of-state or military-sponsored ems agencies before license renewal.

(10) The department or its designee shall publish a list of acceptable state or national programs sponsored by emergency medical organizations or other related organizations that do not meet any of the criteria listed in subrules (2) to (8) of this rule with pre-approved credits indicated in the publication.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22327 Continuing education program sponsors.

Rule 22327. (1) The department shall consider requests for approval of continuing education programs by instructor-coordinators, program sponsors, or other parties not covered in R 325.22326 who submit applications on a form provided by the department. The department or its designee shall evaluate applications for approval based on, but not limited to, the following criteria:

- (a) Educational goals or learning objectives.
- (b) Time schedule and continuing education credits to be awarded.
- (c) Sample certificate or documentation of attendance to be issued to attendees.
- (d) Documentation of qualifications of presenters.
- (e) Use of appropriate and adequate facilities for a program.
- (f) Program content that shall relate to the general subject of emergency medicine.
- (g) Evaluation tools to be used in a program.

(2) All applications for approval to conduct continuing education courses shall be submitted to the department or its designee on forms provided by the department at least 30 days before implementing the programs.

(3) Any individual attending out-of-state or military-sponsored ongoing education programs shall submit a request for approval of the program to the department or its designee if continuing education credits are to be awarded.

(4) Continuing education sponsor approval may be granted for up to 3 years.

(5) Independent study such as continuing education articles in professional journals, ongoing serial productions, or interactive computer programs shall be acceptable, if the program is developed by a professional group such as an educational institution, corporation, professional association, or other approved provider of continuing education and meets all of the following criteria:

- (a) Requires a participant to make an active and appropriate response to the educational materials presented.
- (b) Provides a test or evaluation tool.
- (c) Provides a record of completion as described in R 325.22325.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22331 Licensure by examination; requirements.

Rule 22331. (1) An applicant for licensure by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the code and the administrative rules, an applicant shall do all of the following:

- (a) Be a licensed emergency medical technician, emergency medical technician specialist, or paramedic.
- (b) Demonstrate successful completion of an approved instructor-coordinator educational program.
- (c) Have completed 3 years of full time, part time, on-call, or volunteer direct patient care with a licensed life support agency or other organization providing health care services as formally verified by a licensed physician or health care services agency director.
- (d) Pass the examination set forth in R 325.22333.

(2) The fees paid by an applicant who has not completed all requirements for licensure by examination within 2 years of the department's receiving the application shall be forfeited to the department and the application shall be void.

(3) An individual who is guilty of fraud or deceit in procuring or attempting to procure licensure, including using falsified documents to gain admittance to a department-prescribed licensure examination, shall be denied licensure for a period of at least 2 years.

(4) An individual shall not represent himself or herself as, function as, or perform the duties of, a licensed

instructor-coordinator until licensed as such by the department in accordance with the code and these rules.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22332 Examination application for instructor-coordinator.

Rule 22332. An application for examination as an instructor-coordinator shall be completed and returned to the department within 2 calendar years of course completion. A candidate for examination whose application is received more than 2 calendar years after course completion shall successfully complete another instructor-coordinator course before being admitted into a subsequent examination.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22333 Instructor-coordinator examination.

Rule 22333. The department or its designee shall administer a written examination to graduates of an instructor-coordinator education course conducted by a department-approved education program.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22334 Failure to pass examination; education course required; reexamination.

Rule 22334. An applicant who fails to attain a passing score on the written examination in 3 attempts shall successfully complete an approved instructor-coordinator education course or refresher course before reapplying to the department for further examination.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22335 Licensure by endorsement.

Rule 22335. An applicant for licensure by endorsement shall submit a completed application on a form provided by the department together with the requisite fee, and submit documentation of all of the following:

- (a) Verification of current licensure/certification/registration in any state which granted permission to practice.
- (b) Examination scores for a department-prescribed examination which shall be submitted to the department and which verify passage of examinations and/or nremt status.
- (c) Proof of training that is substantially equivalent to the state-prescribed curriculum and proof of continuing education or training in areas deemed deficient by the department.
- (d) Sanctions or grounds for sanctions by another state that may exist at time of application, which shall disqualify the applicant until the other state certifies that those sanctions or grounds for sanctions no longer exist for the applicant.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22336 Continuing education for instructor-coordinators; requirements.

Rule 22336. (1) All licensed instructor-coordinators shall accrue 30 continuing education credits in ongoing education programs specified by the department as appropriate for licensed instructor-coordinators. The continuing education credits shall be accrued during the 3-year licensure period.

(2) All continuing education courses shall be approved by the department or its designee before implementation if continuing education credits are to be awarded.

(3) Instructor-coordinators shall earn 30 continuing education hours in 1 of the following ways:

- (a) Completion of a minimum 30-hour department-approved instructor-coordinator refresher course.
- (b) Completion of the required 30 hours in department-approved professional development programs.
- (c) Completion of a total of 30 hours in professional development and educational experience with a minimum of 20 hours in department-approved professional development programs and a minimum of 10 hours in educational experience as defined by the department.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22337 Instructor-coordinator license renewal or relicensure.

Rule 22337. (1) Not more than 60 days before the date of license expiration, the department shall transmit to the last known address of the licensee, an application for license renewal. Failure of the licensee to receive

notice for renewal shall not relieve the licensee of the responsibility for renewing his or her license.

(2) An applicant for license renewal or relicensure as an instructor-coordinator who has been licensed for the 3-year period immediately before the expiration date of the license or an applicant for relicensure, in addition to holding a current license as an emergency medical technician, emergency medical technician specialist, or paramedic, shall accumulate during the 3 years before an application for renewal or relicensure at least 30 continuing education credit hours in department-approved programs.

History: 2004 MR 10, Eff. May 20, 2004.

R 325.22338 Certification of compliance; additional documentation.

Rule 22338. (1) Submission of an application for renewal or relicensure shall constitute an applicant's certification of compliance with the requirements of this rule.

(2) The department may require an applicant or licensee to submit documentation to demonstrate compliance with the continuing education requirement. An applicant or licensee is responsible for maintaining documentation of his or her compliance with the continuing education requirement for a period of 1 year from the expiration date of the license.

Failure to provide such documentation creates a rebuttable presumption that the licensee has made a false and fraudulent statement in applying for a license to practice emergency medical services. As provided under section 20958 of the code, the department shall determine if failure to provide documentation of compliance with the continuing education requirement is a violation of section 20954 of the code.

(3) Acceptable documentation of continuing education shall include all of the following:

- (a) Name of the licensee participating in the program.
- (b) Name of sponsoring organization and instructor-coordinator number.
- (c) Title of program.
- (d) Hours of continuing education credit awarded per required category.
- (e) Date of program.
- (f) Signature of instructor-coordinator or designee.

History: 2004 MR 10, Eff. May 20, 2004

Michigan Public Health Code (www.michigan legislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-17-209>

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

Emergency medical technician-paramedics, working under the direction of a physician (often through radio communication), recognize, assess, and manage medical emergencies of acutely ill or injured patients in prehospital care settings. EMT-Ps work principally in advanced life-support units and ambulance services under medical supervision and direction. Successful completion of an EMT-Ambulance program and evidence of certification are the primary prerequisites for entry into an EMT-paramedic program. Instruction in an EMT-paramedic program varies in length from 600 to 1000 hours.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

National Association of Emergency Medical Technicians -- <http://www.naemt.org/>

State Association:

Michigan Association of Emergency Medical Technicians -- <http://www.maemt.org/>

RESOURCES

National Highway Transportation Safety Administration, EMS Division --
<http://www.nhtsa.dot.gov/people/injury/ems>

National Registry of Emergency Medical Technicians -- <http://www.nremt.org>

Health Information Technologist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system. Process, maintain, compile, and report patient information for health requirements and standards.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$12.86	\$26,750.00
Ann Arbor MSA	\$11.97	\$24,890.00
Benton Harbor MSA	\$10.43	\$21,690.00
Detroit MSA	\$13.83	\$28,770.00
Flint MSA	\$12.99	\$27,030.00
Grand Rapids-Muskegon-Holland MSA	\$11.13	\$23,150.00
Jackson MSA	\$9.79	\$20,370.00
Kalamazoo-Battle Creek MSA	\$12.72	\$26,450.00
Lansing MSA	\$13.26	\$27,580.00
Saginaw MSA	\$12.18	\$25,340.00
Balance of State - Northeast Lower Peninsula	\$10.25	\$21,320.00
Balance of State - Northwest Lower Peninsula	\$11.18	\$23,250.00
Balance of State - South Central Lower Peninsula	\$12.18	\$25,340.00
Balance of State - Upper Peninsula	\$11.86	\$24,670.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

EDUCATION

In addition to having your GED or high school diploma, you'll need to complete an accredited two-year health information program. Health information administrators, who have more training and responsibilities, need a bachelor's degree in addition to a health information certificate. In the training programs, you'll learn how to evaluate and interpret health records and reports in order to accurately code diagnoses and procedures according to recognized classification systems. Coursework will likely include medical terminology, anatomy, physiology, health information legalities, statistics, database management, pathology, and pharmacology.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit
America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or
O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Health Information Management Association -- <http://www.ahima.org/>

State Association:

Michigan Health Information Management Association -- <http://www.mhima.org/>

RESOURCES

Licensed Practical Nurse

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Care for ill, injured, convalescent, or disabled persons in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$16.08	\$33,440.00
Ann Arbor MSA	\$16.98	\$35,320.00
Benton Harbor MSA	\$14.84	\$30,870.00
Detroit MSA	\$17.09	\$35,540.00
Flint MSA	\$16.25	\$33,800.00
Grand Rapids-Muskegon-Holland MSA	\$15.73	\$32,720.00
Jackson MSA	\$15.59	\$32,420.00
Kalamazoo-Battle Creek MSA	\$16.41	\$34,130.00
Lansing MSA	\$15.92	\$33,110.00
Saginaw MSA	\$15.41	\$32,060.00
Balance of State - Northeast Lower Peninsula	\$13.10	\$27,250.00
Balance of State - Northwest Lower Peninsula	\$14.44	\$30,030.00
Balance of State - South Central Lower Peninsula	\$15.02	\$31,230.00
Balance of State - Upper Peninsula	\$13.22	\$27,510.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33810101&Dpt=CH&RngHigh=):

R 338.10101 Definitions.

Rule 101. (1) As used in this part:

(a) "Act" means 1978 PA 368, MCL 333.1101 et seq.

(b) "Authorized representative" means the chairperson, vice chairperson, or such other member of the board or staff as the board may formally designate.

(c) "Board" means the Michigan board of nursing.

(2) Terms defined in the act have the same meanings when used in these rules.

History: 1989 MR 2, Eff. Mar. 1, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10102 Request for board action.

Rule 102. (1) A person who desires to submit a request for declaratory ruling under 1969 PA 306, MCL 24.201 et seq. shall make that request in writing. The request shall be filed with the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(2) The board or its authorized representative may require the person to submit additional information

necessary to make an appropriate resolution of the matter.

History: 1989 MR 2, Eff. Mar. 1, 1989; rescinded 2001 MR 12, Eff. Jun 26, 2001; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10103 Assessment of fines.

Rule 103. (1) The board shall make a determination as to the amount of a fine based on the following factors:

(a) The extent to which the licensee obtained financial benefit from any conduct comprising part of the violation found by the board.

(b) The willfulness of the conduct found to be part of the violation determined by the board.

(c) The cost incurred in investigating and proceeding against the licensee.

(2) A fine shall not exceed the sum of \$2,500.00 for each violation found to have been committed by the licensee.

History: 1989 MR 2, Eff. Mar. 1, 1989.

R 338.10104 Delegation.

Rule 104. (1) Only a registered nurse may delegate nursing acts, functions, or tasks. A registered nurse who delegates nursing acts, functions, or tasks shall do all of the following:

(a) Determine whether the act, function, or task delegated is within the registered nurse's scope of practice.

(b) Determine the qualifications of the delegatee before such delegation.

(c) Determine whether the delegatee has the necessary knowledge and skills for the acts, functions, or tasks to be carried out safely and competently.

(d) Supervise and evaluate the performance of the delegatee.

(e) Provide or recommend remediation of the performance when indicated.

(2) The registered nurse shall bear ultimate responsibility for the performance of nursing acts, functions, or tasks performed by the delegatee within the scope of the delegation.

History: 1989 MR 2, Eff. Mar. 1, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10199 Rescission.

Rule 199. R 338.1201 of the Michigan Administrative Code, appearing on page 2479 of the 1979 Michigan Administrative Code, is rescinded.

History: 1989 MR 2, Eff. Mar. 1, 1989.

R 338.10201 Definitions.

Rule 201. (1) As used in this part:

(a) "Act" means 1978 PA 368, MCL 333.1101 et seq.

(b) "Board" means the Michigan board of nursing.

(c) "Completed a practical nurse education program acceptable to the board" means 1 of the following:

(i) That the applicant is a graduate of a practical nurse education program which is located in this state and which is approved by the board.

(ii) That the applicant is a graduate of a practical nurse education program which is located in another state or territory of the United States, as required by § 333.16186, and that program is substantially equivalent to the program requirements of article 15 of the act and the rules promulgated by the board.

(iii) That the applicant is a graduate of a nurse education program that is substantially equivalent to a practical nurse education program approved by the board. The applicant has completed the core curriculum for practical nurse applicants in a nurse education program which is not less than 30 weeks in duration and which includes courses in both theory and clinical practice.

(d) "Completed a registered nurse education program acceptable to the board" means 1 of the following:

(i) That the applicant is a graduate of a registered nurse education program which is located in this state and which is approved by the board.

(ii) That the applicant is a graduate of a registered nurse education program which is located in another state or territory of the United States, as required by § 333.16186, and that program is substantially equivalent to the program requirements of article 15 of the act and the rules promulgated by the board.

(iii) That the applicant is a graduate of a nurse education program which is located outside of the United States

and that the applicant is in compliance with the requirements for a certificate from the commission on graduates of foreign nursing schools (cgfns) pursuant to the requirements set forth in the document entitled "Path to CGFNS Certification: Applicant Handbook, Edition 29" August, 2001. A copy of the guidebook can be obtained, at no cost, from the Commission on Graduates of Foreign Nursing Schools, 3600 Market Street, Suite 400, Philadelphia, PA 19104-2651 or from the commission's website at <http://www.cgfns.org>. A copy of the handbook is available for inspection or distribution at cost from the Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(A) If the applicant is a graduate of a nurse education program that is located outside of the United States, has passed the NCLEX examination, and has maintained an active license, with no disciplinary sanctions in this country for at least 5 years immediately preceding the application for a Michigan license, then the applicant shall be exempt from completing the requirements for a certificate from the commission on graduates of foreign nursing schools.

(iv) That the applicant is a graduate of a Canadian registered nurse program that is approved by a province in Canada and is taught in English. The applicant shall hold a license to practice nursing in Canada that is active and has not been sanctioned.

(e) "Core curriculum for practical nurse applicants" means courses in both didactic instruction and planned clinical learning in each of the following 4 areas of nursing:

(i) Medical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is in the acute or chronic phases of a medical illness.

(ii) Obstetrical nursing, which consists of the study of nursing care for women in the antepartum, labor/delivery, and postpartum phases of pregnancy, and includes the care of the newborn infant and may be referred to as maternal-child nursing. Gynecological nursing alone does not fulfill this obstetric nursing education requirement.

(iii) Pediatric nursing, which consists of the study of nursing care for children whose ages range from birth through adolescence and who are receiving nursing care for both medical and surgical reasons. This education does not include newborn nursing education.

(iv) Surgical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is receiving nursing care for a surgical procedure.

(f) "Core curriculum for registered nurse applicants" means courses in both didactic instruction and planned clinical learning in each of the following 5 areas of nursing:

(i) Medical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is in the acute or chronic phases of a medical illness.

(ii) Obstetrical nursing, which consists of the study of nursing care for women in the antepartum, labor/delivery, and postpartum phases of pregnancy, and includes the care of the newborn infant and may be referred to as maternal-child nursing. Gynecological nursing alone does not fulfill this obstetric nursing education requirement.

(iii) Pediatric nursing, which consists of the study of nursing care for children whose ages range from birth through adolescence and who are receiving nursing care for both medical and surgical reasons. This education does not include newborn nursing education.

(iv) Psychiatric nursing, which consists of the nursing care of patients who are receiving nursing care for an acute or chronic psychiatric disorder.

It may also be referred to as mental health nursing. Education that covers only areas of mental retardation, organic brain syndromes, or neurological diseases does not fulfill the psychiatric nursing education requirement.

(v) Surgical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is receiving nursing care for a surgical procedure.

(g) "Department" means the Michigan department of consumer and industry services.

(2) Terms defined in the act have the same meanings when used in these rules.

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10202 Examination; adoption; passing scores.

Rule 202. The board approves and adopts the examinations developed by the national council of state boards of nursing, inc., hereafter identified

as the "NCLEX-RN" for the registered nurse and the "NCLEX-PN" for the practical nurse. Examinees shall achieve a score of pass on the NCLEX computerized adaptive test (cat).

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10203 Licensure by examination; requirements.

Rule 203. (1) An applicant for licensure by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the act and the administrative rules promulgated pursuant thereto, an applicant shall satisfy the requirements of this rule.

(2) An applicant for a registered nurse license shall establish that he or she meets the eligibility requirements to sit for the NCLEX-RN set forth in R 338.10204 and shall pass the NCLEX-RN.

(3) An applicant for a practical nurse license shall establish that he or she meets the eligibility requirements to sit for the NCLEX-PN set forth in R 338.10204 and shall pass the NCLEX-PN.

(4) Notwithstanding the provisions of section 16307(3) of the act, the fees paid by an applicant who has not completed all requirements for licensure by examination within 3 years after receipt of the application by the department shall be forfeited to the department and the application shall be void.

History: 1990 MR 6, Eff. July 6, 1990.

R 338.10204 Examinations; eligibility; reexaminations.

Rule 204. (1) To assure eligibility for the examination, an applicant shall submit a completed application on forms provided by the department, together with the requisite fee.

(2) To be eligible to sit for the NCLEX-RN, an applicant shall establish that he or she has completed a registered nurse education program that is acceptable to the board.

(3) To be eligible to sit for the NCLEX-PN, an applicant shall establish that he or she has completed a practical nurse education program that is acceptable to the board.

(4) To be eligible to sit for the NCLEX-PN, an applicant whose nursing education was taught in a language other than English shall demonstrate a working knowledge of the English language in addition to meeting the other requirements of this rule. To demonstrate a working knowledge of English, an applicant shall document that he or she has obtained a scaled score of not less than 550 on the paper-based test or a scaled score of not less than 213 on the computer-based test of English as a foreign language that is administered by the educational testing service and obtained a score of not less than 50 on the test of spoken English that is administered by the educational testing service.

(5) An applicant shall complete the NCLEX-RN within 12 months of his or her first attempt at the test in this state or another state. The first attempt at the test shall occur within 2 years of graduation from a registered nurse education program. An applicant who has not achieved a passing score on the examination within the 12-month period shall not be eligible to sit again for the NCLEX-RN until the applicant has completed a registered nurse education program that is acceptable to the board.

Thereafter, an applicant may sit for the examination an additional cycle of 3 times after repeating the required registered nurse education program. An applicant may sit for the NCLEX-RN a maximum of 6 times total.

(6) If an applicant is a graduate of a Canadian registered nurse program that is approved by a province in Canada and is taught in English and the applicant holds a current license in Canada, the first attempt at taking the NCLEX-RN will not have to occur within 2 years of graduation.

(7) An applicant shall complete the NCLEX-PN within 12 months of his or her first attempt at the test in this state or another state. The first attempt at the test shall occur within 2 years of graduation from a practical nurse education program. An applicant who has not achieved a passing score on the examination within the 12-month period shall not be eligible to sit again for the NCLEX-PN until the applicant has completed a practical nurse education program that is acceptable to the board.

Thereafter, an applicant may sit for the examination an additional cycle of 3 times after repeating the required practical nurse education program. An applicant may sit for the NCLEX-PN a maximum of 6 times total.

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 1996 MR 2, Eff. Feb. 22, 1996; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10206 Licensure by endorsement; requirements.

Rule 206. (1) An applicant for licensure by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the act and the administrative rules promulgated pursuant thereto, an applicant who satisfies the requirements of this rule shall be deemed to meet the requirements of section 16186(l)(a) and (d) of the code.

(2) An applicant for a registered nurse license shall meet both of the following requirements:

- (a) The applicant shall establish that he or she has completed a registered nurse education program that is acceptable to the board as defined in R 338.10201 or that he or she meets all of the following requirements:
- (i) Was first licensed in another state before the effective date of this amendatory rule.
 - (ii) Is a graduate of a nurse education program that is located outside the United States.
 - (iii) Is a graduate of a nurse education program which is not less than 60 weeks in duration and which includes courses in both theory and clinical practice for registered nurse applicants.
 - (iv) Has completed the core curriculum for registered nurse applicants.
- (b) An applicant shall establish 1 of the following:
- (i) That he or she was first licensed as a registered nurse in another state pursuant to an examination that was taken before July 13, 1982.
 - (ii) That he or she was first licensed as a registered nurse in another state pursuant to an examination that was taken on or after July 13, 1982, but before February 14, 1989, and achieved a score of not less than 1600 on the NCLEX-RN.
 - (iii) That he or she was first licensed as a registered nurse in another state pursuant to an examination that was taken on or after February 14, 1989, and achieved a score of pass on the NCLEX-RN.
- (3) An applicant for a practical nurse license shall meet both of the following requirements:
- (a) The applicant shall establish that he or she has completed a practical nurse education program that is acceptable to the board.
 - (b) An applicant shall establish 1 of the following:
 - (i) That he or she was first licensed as a practical nurse in another state pursuant to an examination that was taken before October 19, 1982.
 - (ii) That he or she was first licensed as a practical nurse in another state pursuant to an examination that was taken on or after October 19, 1982, but before October 18, 1988, and achieved a score of not less than 350 on the NCLEX-PN.
 - (iii) That he or she was first licensed as a practical nurse in another state pursuant to an examination that was taken on or after October 18, 1988, and achieved a score of pass on the NCLEX-PN.

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10299 Rescission.

Rule 299. R 338.1201 to R 338.1235 of the Michigan Administrative Code, appearing on pages 2479 to 2482 of the 1979 Michigan Administrative Code, are rescinded.

History: 1990 MR 6, Eff. July 6, 1990.

R 338.10301 Definitions.

Rule 301. As used in this part:

- (a) "Act" means 1978 PA 368, MCL 333.1101 et seq.
- (b) "Clinical experience" means direct nursing care experiences with patients or clients which offer students the opportunity to integrate, apply, and refine specific skills and abilities which are based on theoretical concepts and scientific principles.
- (c) "Clinical laboratory hours" means those hours of the curriculum which are assigned to laboratory practice, simulated learning, and observational experiences which offer the student the opportunity to meet educational objectives.
- (d) "Conceptual framework" means the distinct, systematic organization of concepts which is derived from the philosophy and purposes of the program and gives direction to the curriculum.
- (e) "Cooperating agency" means an individual, organization, or institution which, by written agreement or letter of intent, accepts students and faculty for nursing educational experiences.
- (f) "Curriculum" means implementation of the philosophy, purposes, program objectives, and conceptual framework of the nursing program through the systematic arrangement of courses, including objectives stated in measurable terms and accomplished through appropriate learning experiences planned for a clearly defined group of students and extending over a period of time. Systematic and ongoing evaluation within the context of measurable objectives is inherent in the curriculum.
- (g) "Director of the nursing program" means a qualified nurse who is delegated the authority and accountability for the nursing program by the sponsoring agency.
- (h) "Full approval" means approval of a program granted after satisfactory demonstration to the board of

compliance with these rules.

- (i) "Initial approval" means approval which is granted by the board to inaugurate a program of nursing education.
- (j) "Instruction" means educational methodology for achieving curriculum objectives in a classroom.
- (k) "Learning experiences" means planned learning situations, which may include clinical experiences, clinical laboratory hours, or classroom instruction.
- (l) "Major program change" means revision of the program's philosophy, conceptual framework, or objectives; curriculum revision relating to a revision of the program's philosophy, conceptual framework, or objectives or change in primary instructional method; the elimination of separate course content for an integrated approach; or a permanent expansion in the number of students served.
- (m) "Nursing process" means the ongoing assessment, analysis, planning, implementation, and evaluation of nursing care.
- (n) "Observational experience" means a planned learning situation which is nonparticipatory and does not require intervention by the student. Experience shall meet preplanned stated objectives and provide for faculty and student evaluation.
- (o) "Philosophy" means the stated beliefs of a faculty about nursing education and practice which determine the design of the curriculum and the evaluation of the program and which are consistent with the educational philosophy of the sponsoring agency.
- (p) "Practical nurse program" means a nursing program to prepare students for practical nurse licensure. The program is approximately 1 year in duration and awards a certificate of completion.
- (q) "Program of nursing education" means a plan or design indicating the relationship of the components necessary to achieve the goal of preparing persons for licensure as registered or practical nurses under the act.
- (r) "Progress report" means a document to be submitted to the board at a specified interval to respond to definitive questions and requirements of the board as outlined in written form by the board to the sponsoring agency.
- (s) "Registered nurse program" means a nursing program to prepare students for initial registered nurse licensure.
- (t) "Self-study report" means a report of all aspects of a program of nursing education based upon the requirements of this part and prepared by the sponsoring agency. The report follows thorough review of all aspects of the program of nursing education by persons who are knowledgeable about the program.
- (u) "Site visit" means a physical inspection of an institution and all the components of its program of nursing education for the purpose of determining compliance with the requirements of this part.
- (v) "Sponsoring agency" means the organization or institution of which the nursing program is a component.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, eFF. dEC. 19, 2003.

R 338.10302 Applicability.

Rule 302. (1) An applicant for a license to practice as a registered nurse shall have completed an approved registered nurse program or a program deemed by the board to be equivalent thereto.

(2) An applicant for a license to practice as a practical nurse shall have completed an approved practical nurse program or a program deemed by the board to be equivalent thereto.

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10303 Program approval; procedure.

Rule 303. (1) The following requirements are established for initial approval of a program of nursing education:

(a) The sponsoring agency shall submit all of the following to the board:

- (i) A letter of intent to initiate a program of nursing education.
- (ii) Evidence that the mission of the sponsoring agency is consistent with provision of a program to prepare students for the practice of nursing as defined in the act.
- (iii) Evidence that the sponsoring agency will provide funding and other support for a nursing education program which meets the requirements defined in this part.
- (iv) If the sponsoring agency is an institution requiring approval of the Michigan department of career development to conduct a nursing education program or to confer a particular degree or certificate upon the graduates of the program, a copy of the Michigan department of career development approval shall be submitted to the board.
- (v) Evidence of the availability of sufficient cooperating agencies which meet the requirements of R

338.10307(5), (6), (7), and (8) to provide clinical experiences for the program.

(vi) Proposed number of students to become enrolled in the program annually.

(vii) Proposed first date of admission of students to the nursing sequence of the program.

(viii) Plans to recruit and employ a qualified director for the program and other faculty members sufficiently in advance of admitting students to the nursing sequence to assure consistency in the planning and implementation of the curriculum. If already appointed, the names and qualifications of the director of the program and other faculty members shall be provided.

(b) The board shall require a site visit to the program by the nurse consultant of the board in advance of considering initial approval. A report of the site visit shall be prepared by the nurse consultant and provided to the board and the sponsoring agency.

(c) Following initial approval from the board and before initiating the nursing sequence, the program shall submit a self-study report which is approved by the board. The report shall set forth evidence of plans for compliance with the educational requirements of this part.

(d) Annually, the program director shall submit a progress report during the period of initial approval. When applicable, the progress report shall include information about each of the following:

(i) Admission, progression, and retention of students.

(ii) Student achievement on the required licensure examination.

(iii) Program evaluation.

(iv) Program changes.

(2) The sponsoring agency may apply to the board for full approval of the program after graduation of the second class, but shall apply not later than graduation of the fourth class. One class shall be counted for each 12-month period. The following requirements are established for full approval of a program of nursing education:

(a) The sponsoring agency shall make application to the board in the form of a letter.

(b) The sponsoring agency shall submit a self-study report. The report shall set forth evidence of compliance with the educational requirements of this part.

(c) The board shall require a site visit to the program by the nurse consultant of the board before considering full approval. A report of the site visit shall be prepared by the nurse consultant and provided to the board and the sponsoring agency.

(d) When granted full approval for the program of nursing education, the sponsoring agency shall continue to meet all of the requirements of this rule. Every 4 years the sponsoring agency shall submit a report to the board which is accepted by the board. The report will alternate a self-study report with an abbreviated report on a form prepared by the board so that a self-study report is submitted every 8 years for non-accredited programs and at least every 10 years for accredited programs. A self-study report prepared for accreditation or re-accreditation by a nationally recognized accrediting agency of nursing education programs may be submitted in place of the self-study report prepared for the board. The schedule for submission of self-study reports for accredited programs shall follow the schedule of the nationally recognized accrediting agency. These reports shall be submitted to the board within 1 month following receipt of the nationally recognized accrediting agency's decision on accreditation of the nursing education program.

(3) Major program changes shall be submitted to the board in writing and shall be approved by the board before implementation. The type of approval, initial or full, under which a program is conducted shall not be altered when the board approves major program changes. All of the following information shall be submitted when requesting approval of a major program change:

(a) A comparative description of the current and proposed program or portion of the program which is proposed for change.

(b) Rationale for the change.

(c) Plans to evaluate the effect of the change.

(d) Any supporting documents.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10304 Program approval; decision.

Rule 304. (1) Within 90 days after all materials requested by the board have been received, the board shall do either of the following:

(a) Grant initial or full approval of the program or approve the program change when the board finds that the requirements of this part are substantially met.

- (b) Deny initial or full approval or approval of the program change when the board finds that the requirements of this part are not substantially met.
- (2) The board shall issue its decision in writing.
- (3) If approval is denied, the sponsoring agency may request a hearing which shall be conducted pursuant to the provisions of 1969 PA 306, MCL 24.201 et seq.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10305 Program requirements; generally.

Rule 305. (1) Programs of nursing education shall meet all of the following requirements:

- (a) Comply with the curriculum requirements established by the board and with other requirements set forth in this part.
- (b) Contribute to the safe practice of nursing by including the standards of practice, nursing behaviors, and other skills and knowledge in the curriculum to prepare persons for the practice of nursing as defined in the act.
- (c) Prepare students to meet the requirements for eligibility to take the required licensure examination.
- (2) The director of the program of nursing education and the faculty who provide the nursing sequence shall comply with the following requirements as applicable:
 - (a) Hold current licenses to practice as registered nurses in Michigan.
 - (b) For registered nurse programs, the following requirements shall be complied with by September 1, 1989:
 - (i) The director of the nursing program shall hold a minimum of a master's degree with a major in nursing.
 - (ii) Every member of the nursing faculty providing didactic instruction shall hold a minimum of a master's degree, the majority of which shall hold a master's degree with a major in nursing. If the master's degree is not in nursing, the faculty member shall hold a minimum of a baccalaureate degree in nursing science.
 - (iii) Every member of the nursing faculty who provides instruction in the clinical laboratory or cooperating agencies shall hold a minimum of a baccalaureate degree in nursing science.
 - (c) For practical nurse programs, the following requirements shall be complied with by September 1, 1989:
 - (i) The program director shall hold a minimum of a baccalaureate degree in nursing science.
 - (ii) Every member of the nursing faculty shall hold a minimum of a baccalaureate degree in nursing science.
 - (d) The director of the nursing program and full-time nursing faculty who were employed on or before May 4, 1989, shall be exempt from meeting the requirements of subdivisions (b) and (c) of this subrule.
- (3) Any exception made to the provisions of subrule (2) of this rule for full-time or part-time nursing faculty shall be based on the faculty member's progress toward meeting the requirements of these rules during each year for which the exception is requested. A maximum of 5 yearly exceptions shall be granted to any 1 full-time or part-time faculty member.
- (4) Nursing faculty shall be sufficient in number to prepare students to achieve the objectives of the program. The maximum ratio of students to faculty in clinical areas involving direct care of patients shall be not more than 10 students to 1 faculty member.
- (5) Requirements for admission, progression, and graduation shall be established and shall be made known and available in written form to prospective and current students.
- (6) A system for the permanent maintenance of records shall be established and shall include all of the following:
 - (a) Course outlines.
 - (b) Minutes of faculty and committee meetings.
 - (c) Student files, which shall be maintained in the nursing offices for each student.
 - (d) Student and graduate transcripts, which shall be retained for each student and graduate by the sponsoring agency in perpetuity and which shall evidence achievement and, when accomplished, program completion.

History: 1989 MR 4, Eff. May 4, 1989; 1996 MR 2, Eff. Feb. 22, 1996.

R 338.10306 Curriculum requirements generally.

Rule 306. (1) A statement of philosophy shall be established which is consistent with the philosophy of the sponsoring agency and which is implemented in the program of nursing education.

(2) There shall be course, level, and terminal objectives to serve as a guide in the development, implementation, and evaluation of the curriculum. The objectives shall be reviewed periodically and revised as necessary.

(3) The stated conceptual framework for the curriculum shall reflect the philosophy of the educational program and shall be identifiable in the objectives of the program of nursing education.

(4) Learning experiences and methods of instruction shall be selected to fulfill the stated objectives of each nursing course.

(5) Related clinical experiences and clinical laboratory hours shall be provided concurrently with, or immediately after, the theoretical presentation of the course content.

(6) Evaluation methods and tools to be used for measuring student achievement shall be determined by the faculty in keeping with the assessment methods of the sponsoring agency. These methods and tools shall be known to the students in the program.

(7) The director and faculty shall evaluate all aspects of the curriculum on a systematic basis. Records of the results of the evaluation shall be maintained for board review, if requested.

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10307 Curriculum; organization, development, implementation, control, and evaluation.

Rule 307. (1) The curriculum shall be organized, developed, implemented, controlled, and evaluated on a regularly scheduled basis by the director and the faculty within the framework of the philosophy, purposes, and objectives of the sponsoring agency and those approved by the board.

(2) The curriculum objectives shall identify the behavioral expectations of the graduate of the program and shall be used for the following purposes:

(a) Developing, organizing, implementing, and evaluating the curriculum.

(b) Identifying objectives for levels of progression and course and program completion.

(c) Providing to the student an organized pattern to follow in which the sequence of learning is from the simple to the complex and from the known to the unknown, with each learning experience built on previously learned information of nursing and related scientific knowledge.

(d) Organizing the courses so as to approximate, as closely as possible, the schedules of the sponsoring agency in terms, quarters, semesters, or trimesters.

(e) Distributing the courses throughout the curriculum so that an unreasonable overload does not exist in any segment of the sequence.

(3) The statement of the conceptual framework or rationale for the program shall be the basis for the organization of the nursing content of the curriculum.

(4) The course content and other learning experiences shall promote student growth in all of the following areas:

(a) The understanding of the roles and responsibilities of the members of the nursing profession.

(b) The application of the principles of nursing and the sciences which are basic to nursing practice in the development of plans of care for the patient or client.

(c) The provision of direct and indirect nursing care.

(d) The understanding of effective human relations and demonstrating the ability to use these principles in nursing situations.

(e) The recognition of physical, psychosocial, and spiritual needs of diverse patient/client populations in the provision of nursing care.

(f) The understanding of health, including the manifestations of disease and the initiation, organization, and application of the principles underlying the nursing care provided.

(g) Developing skills and abilities in the administration of all aspects of nursing care, including all of the following:

(i) Communications.

(ii) Problem solving.

(iii) Understanding legal and professional responsibilities.

(iv) The working relationships with other health care providers.

(h) Understanding and protecting the rights of patients or clients.

(5) All cooperating agencies selected for clinical and laboratory experiences shall have standards of nursing care which demonstrate concern for the patient or client and evidence the skillful application of all measures of safe nursing practice.

(6) All cooperating agencies shall have a current license, if required, for their operation and adhere to the local zoning ordinances governing their operation.

(7) When a site visit is made, cooperating agencies may be surveyed as a part of the review process to determine the contribution each makes to the course and program objectives. Selection shall be made by the site visitor.

(8) Each resource selected to provide clinical experience shall indicate a willingness to cooperate in the curriculum by providing a letter of intent, a written agreement, or a formal contract. Each resource shall provide experiences of a quality and quantity which will enable the student to meet the objectives established for the clinical experience.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10308 Registered nurse program; curriculum; implementation.

Rule 308. The director and faculty of a program of nursing education leading to licensure as a registered nurse shall comply with all of the following provisions:

(a) Select courses and assure teaching concepts for basic content in the biological, physical, behavioral, and other courses supportive of the nursing major which shall assist the student to improve abilities in all of the following areas:

(i) Communication.

(ii) Interviewing.

(iii) Problem solving.

(iv) Interpersonal relationships.

(v) Using scientific principles in providing individualized nursing care to the patient or client. Such courses shall have credits conferred consistent with the policies of the sponsoring agency.

(b) Provide courses and clinical experiences in the care of all age groups and sexes in medical, surgical, pediatric, geriatric, obstetrical, and psychiatric nursing. Opportunities for learning experiences in community aspects of nursing shall be made available. The elements of the nursing process shall be emphasized in all nursing courses. Clinical laboratory and clinical experience hours shall be sufficient in number to meet the course and program objectives.

(c) Assure that courses include content relating to all of the following:

(i) The legal scope of practice of a registered nurse.

(ii) The standards of conduct for members of the nursing profession.

(iii) Historical perspectives of nursing and current legal-ethical issues.

(iv) Licensure requirements.

(d) Select cooperating agencies which meet the requirements of R 338.10307(5), (6), and (8).

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10309 Practical nurse program; curriculum; implementation.

Rule 309. The director and faculty of a program of nursing education leading to licensure as a practical nurse shall comply with all of the following provisions:

(a) Select courses and assure teaching concepts on which the theory and practice of practical nursing is based. The basic principles of the natural and applied sciences which are fundamental to the theory and practice of practical nursing and which are applied in the planning and implementation of nursing care shall be included.

(b) Provide courses and clinical experiences in the care of all age groups and both sexes in medical, surgical, pediatric, obstetrical, and geriatric nursing and provide supervised practice in the administration of medications, exclusive of intravenous medications. Clinical laboratory and clinical experience hours shall be sufficient to meet the objectives of the curriculum.

(c) Assure that courses include content relating to all of the following:

(i) The legal scope of practice of a licensed practical nurse.

(ii) The standards of conduct for members of the nursing profession and, in particular, a licensed practical nurse.

(iii) Historical perspectives of nursing and current legal-ethical issues.

(iv) Licensure requirements.

(d) Select cooperating agencies which meet the requirements of R 338.10307(5), (6), and (8).

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10310 Board evaluation of nursing education program.

Rule 310. (1) The board may evaluate a program of nursing education when any of the following occurs:

(a) A request for initiating a program of nursing education is submitted.

(b) A request for full approval of a program is submitted.

(c) A request for approval of a major program change is submitted.

(d) The failure rate on the required licensure examination reaches or exceeds 25% for any 1 year of compiled statistics or reaches or exceeds 15% for any 2 of 3 years of compiled annual statistics. A program of nursing education shall report compiled annual data on NCLEX pass rates to the board at the meeting following the end of the first quarter of the calendar year.

(e) Complaints regarding the conduct of the program are received and it is necessary to validate the complaints.

(2) Evaluation processes may include any combination of the following:

(a) A self-study report.

(b) A site visit.

(c) A progress report.

(d) A follow-up study of graduates and employers.

History: 1989 MR 4, Eff. May 4, 1989; 1998 MR 8, Eff. Sep. 9, 1998.

R 338.10311 Failure of program to comply with rules; withdrawal of approval.

Rule 311. (1) The board shall proceed under section 17242 of the act if the board determines that a program of nursing education does not meet the requirements of this part.

(2) The board shall offer consultation with the nurse consultant of the board for guidance in correcting nursing education program deficiencies identified by the board.

(3) Withdrawal of board approval of the program of nursing education for stated deficiencies which were not remediated does not necessarily make any bona fide student enrolled in the program at the time of withdrawal of approval ineligible for the required licensure examination upon satisfactory completion of that program or another program of nursing education which has been approved by the board.

(4) Failure of a nursing program to meet all of the requirements of this part shall not, in and of itself make a graduate from the program ineligible for licensure in this state. Approval of the program in a jurisdiction which maintains substantially equivalent requirements shall be deemed in compliance with these rules.

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10312 Program termination; interruption or reduction of admissions.

Rule 312. (1) The board shall be informed if a date is established for termination of the program of nursing education.

(2) The board shall be informed regarding the system of retention of student records which are needed for endorsement purposes and proof of scholastic achievement. The board shall retain this information in the closed program files so that graduates may be given the source of information upon request.

(3) The board shall be informed if admissions to the program of nursing education are to be reduced or interrupted.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10401 Temporary certification.

Rule 401. Temporary certification in a nursing specialty field is not available in Michigan.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10402 Automatic suspension or revocation of specialty certification.

Rule 402. The suspension or revocation of a license as a registered nurse shall automatically cause the suspension or revocation of the specialty certification.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10403 Advertisement of services.

Rule 403. Only nurses certified in a nursing specialty field may hold themselves out to the public as nurse specialists using the title nurse anesthetist, nurse midwife, or nurse practitioner. Conduct contrary to this rule is deemed a violation of section 16221(g) of the act.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10404 Certification qualifications; nurse anesthetist, nurse midwife, and nurse practitioner.

Rule 404. (1) A specialty certification for a nurse anesthetist shall be granted to a registered nurse who satisfies all of the following requirements:

- (a) Holds a current and valid license to practice nursing in Michigan.
- (b) Submits an application for certification in a specialty area of nursing, on a form provided by the department, and the required fee.
- (c) Meets the standards set forth by either the American association of nurse anesthetists council on certification of nurse anesthetists or the council on recertification of nurse anesthetists. The standards are adopted by reference in these rules and are set forth in the publications entitled "Certification Examination for Nurse Anesthetists, Candidate Handbook," 2003, and "Council on Recertification of Nurse Anesthetists Criteria for Recertification," 2002. These publications may be obtained from the American Association of Nurse Anesthetists 222 South Prospect Avenue, Suite 202, Park Ridge, IL 60068, or from the association's website at <http://www.bookstore@aana.com>, at no cost. A copy of the standards is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O.

Box 30670, Lansing, MI 48909.

(2) A specialty certification for nurse midwife shall be granted to a registered nurse who satisfies all of the following requirements:

- (a) Holds a current and valid license to practice nursing in Michigan.
- (b) Submits an application for certification in a specialty area of nursing, on a form provided by the department, and the required fee.
- (c) Meets the standards set forth by the American college of nurse midwives certification council, inc. The standards are adopted by reference in these rules and are set forth in the publication entitled "Information for Candidates Handbook," effective October 2002. The standards may be obtained at no cost from the American College of Nurse Midwives Certification Council, 8201 Corporate Drive, Suite 550, Landover, MD 20785 or at <http://www.accmidwife.org>. A copy of the standards is available for inspection or distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(3) A specialty certification for nurse practitioner shall be granted to a registered nurse who satisfies all of the following requirements:

- (a) Holds a current and valid license to practice nursing in Michigan.
- (b) Submits an application for certification in a specialty area of nursing, on a form provided by the department, and the required fee.
- (c) Meets the advanced practice certification standards of 1 of the following certification organizations:
 - (i) The American nurses credentialing center, whose standards are adopted by reference and are set forth in the publication entitled "American Nurses Credentialing Center (ANCC) Certification, Advanced Practice and Informatics Nurse, Computer-Based Testing" 2002, which may be obtained at no cost from the American Nurses Credentialing Center, 600 Maryland Avenue SW, Suite 100 West, Washington, DC 20024-2571 or at <http://www.nursecredentialing.org>.
 - (ii) The national certification board of pediatric nurse practitioners and nurses, inc. whose standards are adopted by reference in these rules and are set forth in the publication entitled National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc. National Qualifying Exam and Certification Maintenance Program, 2003" which may be obtained at no cost from the National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc., 800 South Frederick Avenue, Suite 104, Gaithersburg, MD 20877 or at <http://www.pnpcert.org>.
 - (iii) The national certification corporation (ncc) for obstetric, gynecologic, and neonatal nursing specialties, whose standards are adopted by reference in these rules and are set forth in the publication entitled "NCC Registration Catalog" 2003 edition, which may be obtained at no cost from the National Certification Corporation, P.O. Box 11082, Chicago, IL 60611 or at <http://www.nccnet.org>.
 - (iv) The American academy of nurse practitioners, whose standards are adopted by reference in these rules and are set forth in the publication entitled "American Academy of Nurse Practitioners Report on Certification Methodologies 1997," which may be obtained at no cost from the Academy of Nurse Practitioners, Certification Program, Capitol Station, P.O. Box 12926, Austin, TX 78711.
 - (v) Oncology nursing certification corporation, whose standards are adopted by reference in these rules and are set forth in the publication entitled "The 2003 Oncology Nursing Certification Corporation Certification Bulletin," which may be obtained at no cost from The Oncology Nursing Certification Corporation, 125

Enterprise Drive, Pittsburgh, PA 15275-1214 or at <http://www.oncc.org>.

(4) The standards listed in subrules (i), (ii), (iii), (iv), and (v) also are available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

History: 1986 MR 2, Eff. Feb. 22, 1986; 1990 MR 6, Eff. July 6, 1990; 1998 MR 8, Eff. Sep. 9, 1998; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10405 Certification renewal or reregistration; schedule; requirements; maintenance of evidence of compliance.

Rule 405. (1) Certification renewal shall correspond with the same schedule as the license renewal.

(2) An applicant for renewal who held a specialty certification for the 2-year period immediately preceding license renewal or an applicant for reregistration of a specialty certification pursuant to section 16201(3) or (4) of the code shall meet the following requirements, as applicable:

(a) For the nurse anesthetist, the applicant shall have obtained recertification, within the 2-year period immediately preceding the application, that meets the requirements of the council on recertification of nurse anesthetists set forth in the publication entitled "Council on Recertification of Nurse Anesthetists Criteria for Recertification," 2002.

The publication is adopted by reference in this rule and may be obtained at no cost from either the Council on Recertification of Nurse Anesthetists, 222 South Prospect Avenue, Park Ridge, IL 60068, or from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(b) For the nurse midwife, the applicant shall meet 1 of the following requirements:

(i) If initially certified before 1996, have completed, within the 2-year period immediately preceding the application, the continuing competency assessment requirements of the American College of Nurse-Midwives set forth in the publication entitled "The Continuing Competency Assessment Program of The American College of Nurse-Midwives, 1999." The publication is adopted by reference in this rule and may be obtained at no cost from the American College of Nurse Midwives, 818 Connecticut Avenue, NW, Suite 900, Washington, DC 20006 or at <http://www.midwife.org>. The publication also is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P. O. Box 30670, Lansing, MI 48909.

(ii) If initially certified after January 1, 1996, have obtained recertification or maintained certification, within the 2-year period immediately preceding the application, that meets the requirements of the American College of Nurse-Midwives Certification Council, Inc.

(ACC) set forth in the publication entitled "Certificate Maintenance," December 2002.

The publication is adopted by reference in this rule and may be obtained at no cost from the ACC, 8201 Corporate Drive, Suite 550, Landover, MD 20785 or at <http://www.accmidwife.org>. The publication also is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(iii) Have completed 20 continuing education units in the nursing specialty field within the 2-year period immediately preceding the application. The board approves and adopts by reference in this rule the standards listed in paragraphs (i) and (ii) of this subdivision for approving continuing education offerings for the nurse midwife.

(c) For the nurse practitioner, the applicant shall meet the following requirements appropriate to his or her current source of certification:

(i) Those holding national certification as a nurse practitioner shall have obtained recertification or maintained certification, within the 2-year period immediately preceding the application that meets the requirements of the following organizations. The following publications are adopted by reference in this rule and may be obtained from the specific organization, as listed below. These publications also are available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(A) The American nurses credentialing center as set forth in the publication entitled "Recertification Catalog", 2003. This publication is adopted by reference in this subrule and may be obtained at no cost from the American Nurses Credentialing Center, 600 Maryland Avenue, SW, Suite 100 West, Washington, DC 20024-2571 or at <http://www.nursecredentialing.org>.

(B) The national certification board of pediatric nurse practitioners and nurses as set forth in the publication

entitled "National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc. National Qualifying Exam and Certification Maintenance Program, 2003". This publication is adopted by reference in this subrule and may be obtained at no cost from the National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc., 800 South Frederick Avenue, Suite 104, Gaithersburg, MD or at <http://www.pnpcert.org>.

(C) The national certification corporation (ncc) for obstetric, gynecologic, and neonatal nursing specialties set forth in the publication entitled "NCC Certification Maintenance Program" 2003 Edition. This publication is adopted by reference in this subrule and may be obtained at no cost from the National Certification Corporation, P.O. Box 11082, Chicago, IL 60611 or at <http://www.nccnet.org>.

(ii) Those applicants who obtained Michigan board certification as a nurse practitioner before 1991, shall have completed 40 continuing education units in the nursing specialty field within the 2-year period immediately preceding the application. The board approves and adopts by reference in this rule the standards listed in paragraph (i) of this subdivision for approving continuing education offerings for the nurse practitioner.

(3) An applicant or licensee shall maintain evidence of his or her compliance with the requirements of this rule for a period of 4 years after the date of application, during which time the board may require the licensee to submit such evidence for audit.

History: 1986 MR 2, Eff. Feb. 22, 1986; 1991 MR 10, Eff. Oct. 26, 1991; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10406 Expired certification.

Rule 406. (1) If the nursing license has expired, the requirements for a registered nurse license shall be satisfied before applying for certification in a specialty field.

(2) The board shall certify a licensee who has allowed certification to expire if the applicant submits evidence that the current initial certification requirements have been met.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10601 License renewals; relicensure; requirements; applicability.

Rule 1. (1) This part applies to applications for renewal of a nursing license and applications for relicensure pursuant to 333.16201(3) that are filed 2 years or more after the effective date of these rules.

(2) An applicant for license renewal who has been licensed for the 2-year period immediately preceding the expiration date of the license or an applicant for relicensure shall accumulate not less than 25 continuing education contact hours that are approved by the board pursuant to these rules during the 2 years preceding an application for renewal or relicensure.

(a) An applicant for license renewal shall complete at least 1 continuing education contact hour in pain and pain symptom management in each renewal period. Continuing education contact hours in pain and pain symptom management may include, but are not limited to, courses in behavior management, psychology of pain, pharmacology, behavior modification, stress management, clinical applications, and drug interactions. This subrule will take effect with the April 1, 2005 renewal cycle.

(3) Submission of an application for renewal or relicensure shall constitute the applicant's certification of compliance with the requirements of this rule. A nurse shall retain documentation of meeting the requirements of this rule for a period of 4 years from the date of applying for license renewal or relicensure. Failure to comply with this rule is a violation of section 16221(g) of the act.

History: 1996 MR 4, Eff. May 4, 1996; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10602 Acceptable continuing education; limitations.

Rule 2. The board shall consider any of the following as acceptable continuing education:

(a) One continuing education contact hour, without limitation, may be earned for each 50 or 60-minute attendance at a continuing education program that is in compliance with the standards set forth in R 338.10603(1),(2),(3), (4),(5), and (6).

(b) Three continuing education contact hours may be earned for each 50 or 60-minute presentation of a continuing education program that is not a part of the licensee's regular job description that is in compliance with the standards set forth in R 338.10603(1), (2), (3), (4), and (5). Credit may be earned for the same program only once in each renewal period. A maximum of 6 continuing education contact hours may be earned pursuant to this subdivision.

(c) Five continuing education contact hours may be earned for each semester credit earned for academic courses related to nursing practice offered in an educational program approved by the board pursuant to R

338.10201(1)(c)(i) and (ii) and (d)(i) and (ii).

(d) Three continuing education contact hours may be earned for each quarter credit earned for academic courses related to nursing practice offered in an educational program approved by the board pursuant to R

338.10201(1)(c)(i) and (ii) and (d)(i) and (ii).

(e) Twenty-five continuing education contact hours may be earned by specialty certification or recertification as 1 of the following:

(i) nurse midwife

(ii) nurse anesthetist

(iii) nurse practitioner.

(f) One continuing education contact hour may be granted for each 50 or 60 minutes of program attendance, without limitation, at a continuing education program which has been granted approval by another state board of nursing.

(g) One continuing education contact hour may be granted for each 50 or 60-minute attendance, without limitation, at a continuing education program related to nursing practice offered by an educational program approved by the board pursuant to R 338.10201(1)(c)(i) and (ii) and (d) (i) and (ii).

(h) Ten continuing education contact hour may be granted for publication, in a nursing or health care journal or textbook, of an article or chapter related to the practice of nursing or allied health.

(i) One continuing education contact hour may be granted for each documented hour of reading articles or viewing or listening to media devoted to nursing practice. A maximum of 4 hours may be credited pursuant to this subdivision.

(j) Ten continuing education contact hours may be granted in the year in which an applicant is advised he or she successfully completed a national nursing specialty examination.

(k) One continuing education contact hour may be granted for each 50 or 60 minutes of participation documented in a health care organization committee dealing with patient care related issues. A maximum of 4 credit hours may be earned.

(l) A maximum of 10 continuing education contact hours may be earned for participation in a workshop dealing with patient care issues, with 1 continuing education contact hour granted for each 50 to 60-minute segment offered by a health care organization or a professional organization that falls outside the methods of approval references specified in R 338.10603.

(m) One continuing education contact hour may be granted for each 50 to 60 minutes of reading a journal and completing a test which has been developed for continuing nursing practice education.

History: 1996 MR 4, Eff. May 4, 1996.

R 338.10603 Continuing nursing education programs; methods of approval.

Rule 3. (1) The board approves and adopts by reference the standards of the American nurses credentialing center's commission on accreditation that are set forth in the publications entitled "The 2001-2002 American Nurses Credentialing Center's Manual for Accreditation as a Provider of Continuing Nursing Education" and "The 2001-2002 American Nurses Credentialing Center's Manual for Accreditation as an Approver of Continuing Nursing Education." A copy of these publications may be purchased from the American Nurses Credentialing Center, Accreditation Program, 600 Maryland Avenue, Suite 100W, Washington, DC 20024, or at <http://www.nursingworld.org/ancc> at a cost of \$50.00 per manual as of the adoption of these rules. A copy of these publications also is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(2) The board approves and adopts by reference the standards and criteria of the national association for practical nurse education and service, inc. that are set forth in the publication entitled "NAPNES Criteria for Approval of Continuing Education," January 2003. A copy of the publication may be obtained from the National Association for Practical Nurse Education and Service, Inc., 8607 2nd Avenue, Suite 404A, Silver Spring, MD 20910, at a cost of \$3.00 as of the adoption of these rules or at <http://www.napnes.org> at no cost. A copy of this publication is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(3) The board approves and adopts by reference the guidelines adopted by the national league for nursing in September 2001 and set forth in the document entitled "National League for Nursing (NLN) Continuing Education Provider Program." A copy of the guidelines may be obtained at no cost from the National League for Nursing, 61 Broadway, 33rd floor, New York, NY 10006 or at <http://www.nln.org>. A copy of this document is available for inspection and distribution at cost at the Michigan Board of Nursing, Department of Consumer

and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(4) The board approves and adopts by reference the standards, criteria, and guidelines adopted by the American College of Nurse-Midwives in March 1988 and set forth in the publication entitled "The Continuing Education Unit Criteria and Guidelines," 2002, from the International Association for Continuing Education and Training. A copy may be obtained at no cost from the American College of Nurse-Midwives, 818 Connecticut Ave., NW, Suite 900, Washington, DC 20006 or at <http://www.midwife.org>. A copy of this document is available for inspection and distribution at cost at the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(5) The board approves and adopts by reference the standards and criteria of the American association of nurse anesthetists as set forth in the "American Association of Nurse Anesthetists (AANA) Continuing Education Program 2002" whi

Michigan Public Health Code (www.michiganlegislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-172&highlight=>

Occupational Board Information:

The Michigan Board of Nursing was originally created with the enactment of the Nurse Practice Act, Public Act 319 of 1909, and authority was transferred to the Nursing Practice Act of 1967 by Public Act 149 of 1967. On September 30, 1978, authority was again transferred to the Public Health Code, Public Act 368 of 1978, as amended.

The Michigan Public Health Code defines the practice of nursing in Michigan and empowers the Board to establish qualifications for nurse licensure; to establish standards for education and approve nurse education programs; develop and implement criteria for assurance of continued competency; and take disciplinary action against licensees when the health, safety, and welfare of the public has been adversely affected.

The Public Health Code establishes the Board of Nursing to consist of 23 members: 9 registered nurses (RNs), 1 nurse midwife, 1 nurse anesthetist, 1 nurse practitioner, 3 licensed practical nurses (LPNs), and 8 public member.

The enactment of the Public Health Code permitted LPN board members to act upon all matters except those that relate to standards for the education and training of RNs. Decisions on such matters are concurred in solely by a majority of the RN and public board members.

The Board currently oversees the practice of approximately 114,123 RNs, 4,648 Nurse Specialists, and 27,319 LPNs.

EDUCATION

Nursing is a rewarding but highly technical field. Nurses must know not only the health sciences, but also how to plan, organize, and educate patients and their families. Students who wish to prepare for a nursing career should give particular attention to math, biology, and chemistry; computer science; and the behavioral and social sciences.

Registered nurses must graduate from an accredited school of nursing. Nursing education includes study in nursing theory and techniques, the science and treatment of disease, and several specialty areas. It also includes hands-on clinical practice in hospitals or other settings.

Practical nursing training programs are offered in community colleges, technical and vocational centers, and hospitals. The programs usually take one year to complete and certify the graduate to take the state licensure examination. Most programs require applicants to have a high school diploma or the equivalent and pass a physical exam. Classroom instruction covers basic nursing concepts, anatomy, physiology, nutrition, first-aid, and other related subjects. Supervised clinical experience is provided in hospitals and other settings.

The bachelor of science in nursing (BSN) is a four-year university-based degree. It is strongly recommended as the base for the full range of nursing practice and responsibilities, in the widest number of settings.

The associate degree in nursing (AND) is a two-year program that prepares individuals for a more defined range of practice settings and roles. It is usually offered through community colleges.

Advanced-practice nurses (APNs) have received further education, usually at the master's level, in advanced roles,

specialty areas, or research.

Not all people enter nursing studies directly from high school. Today's students often enter nursing later in life, have degrees in other fields, or are changing careers. Many can only attend college part-time. For this reason, many nursing schools offer joint degree or ladder programs, or credit for relevant experience. Flexible scheduling is also more common. Check with your nursing school for exact requirements.

For a list of TRANSFERABLE SKILLS related to this occupation, visit
America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or
O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

National Association for Practical Nurse Education and Service -- <http://www.napnes.org>

State Association:

Michigan Licensed Practical Nurses Association -- <http://www.mlpna.org>

National Association:

American Nurses Association -- <http://www.nursingworld.org/>

State Association:

Michigan Nurses Association -- <http://www.minurses.org/>

RESOURCES

National Association for Practical Nurse Education and Service -- <http://www.napnes.org/pna.org>

Medical & Clinical Laboratory Technician

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow about as fast as average (increase 10 to 20 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$11.64	\$24,210.00
Benton Harbor MSA	\$13.94	\$29,000.00
Detroit MSA	\$10.46	\$21,750.00
Flint MSA	\$14.72	\$30,610.00
Grand Rapids-Muskegon-Holland MSA	\$12.84	\$26,700.00
Kalamazoo-Battle Creek MSA	\$15.57	\$32,380.00
Lansing MSA	\$12.42	\$25,830.00
Saginaw MSA	\$14.61	\$30,390.00
Balance of State - South Central Lower Peninsula	\$17.27	\$35,920.00
Balance of State - Upper Peninsula	\$15.47	\$32,180.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

In addition to having your GED or high school diploma, you'll need to complete an accredited medical lab technician program, usually a one- to- two-year associate's degree or certificate program. In the training programs, students receive a combination of classroom and laboratory instruction. Coursework usually includes laboratory mathematics, chemistry, microbiology, pathology, microscopy, and immunology.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Society for Clinical Laboratory Science -- <http://www.ascls.org>

RESOURCES

American Association of Bioanalysts, Board of Registry -- <http://www.aab.org>

American Association of Blood Banks -- <http://www.aabb.org>

American Society for Clinical Pathology -- <http://www.ascp.org>

American Society for Clinical Pathology, Board of Registry -- <http://www.ascp.org/bor>

American Society for Cytopathology -- <http://www.cytopathology.org>

National Accrediting Agency for Clinical Laboratory Sciences -- <http://www.naacls.org>

National Credentialing Agency for Laboratory Personnel -- <http://www.nca-info.org>

Medical & Clinical Laboratory Technologist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Clinical Laboratory Workers, also known as Medical Laboratory Workers, perform scientific fact-finding tests in the clinical laboratories of hospitals, doctors' offices, and independent clinics for use in the diagnosis and treatment of disease. Because the level of their skill and education varies widely, their duties may range from routine testing to highly complicated analyses.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow about as fast as average (increase 10 to 20 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$21.25	\$44,200.00
Ann Arbor MSA	\$21.98	\$45,720.00
Benton Harbor MSA	\$20.23	\$42,070.00
Detroit MSA	\$21.65	\$45,020.00
Flint MSA	\$23.39	\$48,650.00
Grand Rapids-Muskegon-Holland MSA	\$19.91	\$41,400.00
Kalamazoo-Battle Creek MSA	\$20.85	\$43,370.00
Lansing MSA	\$21.97	\$45,690.00
Saginaw MSA	\$21.37	\$44,450.00
Balance of State - Northeast Lower Peninsula	\$16.59	\$34,500.00
Balance of State - Northwest Lower Peninsula	\$21.57	\$44,860.00
Balance of State - South Central Lower Peninsula	\$19.13	\$39,790.00
Balance of State - Upper Peninsula	\$19.95	\$41,490.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

Clinical laboratory technologists generally have a bachelor's degree in medical technology or in one of the life sciences, or they have a combination of formal training and work experience. They perform complex chemical, biological, hematological, immunologic, microscopic, and bacteriological tests. Technologists microscopically examine blood, tissue, and other body substances. They make cultures of body fluid and tissue samples, to determine the presence of bacteria, fungi, parasites, or other microorganisms. Clinical laboratory technologists analyze samples for chemical content or a chemical reaction and determine blood glucose and cholesterol levels. They also type and cross match blood samples for transfusions.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Medical Technologists -- <http://www.amt1.com/>

National Association:

American Society for Clinical Laboratory Science -- <http://www.ascls.org/>

RESOURCES

American Association of Bioanalysts, Board of Registry -- <http://www.aab.org>
American Association of Blood Banks -- <http://www.aabb.org>
American Society for Clinical Pathology -- <http://www.ascp.org>
American Society for Clinical Pathology, Board of Registry -- <http://www.ascp.org/bor>
American Society for Cytopathology -- <http://www.cytopathology.org>
Clinical Laboratory Management Association -- <http://www.clma.org>
National Accrediting Agency for Clinical Laboratory Sciences -- <http://www.naacls.org>
National Credentialing Agency for Laboratory Personnel -- <http://www.nca-info.org>

Medical Assistant

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding for insurance purposes.

Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by a physician.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

Medical assistants is projected to be the fastest growing occupation over the 2002-2012 period.

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Balance of State - Northwest Lower Peninsula	\$10.92	\$22,720.00
Balance of State - South Central Lower Peninsula	\$12.00	\$24,950.00
Balance of State - Upper Peninsula	\$11.69	\$24,300.00
Michigan	\$12.04	\$25,040.00
Ann Arbor MSA	\$12.18	\$25,330.00
Benton Harbor MSA	\$11.32	\$23,550.00
Detroit MSA	\$12.30	\$25,580.00
Flint MSA	\$11.41	\$23,730.00
Grand Rapids-Muskegon-Holland MSA	\$12.25	\$25,480.00
Jackson MSA	\$10.90	\$22,670.00
Kalamazoo-Battle Creek MSA	\$13.08	\$27,210.00
Lansing MSA	\$11.73	\$24,390.00
Saginaw MSA	\$11.49	\$23,890.00
Balance of State - Northeast Lower Peninsula	\$9.67	\$20,110.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

There are two types of medical assistant programs, two-year programs that result in an associate's degree and a one-year program resulting in either a certificate or diploma.

Employers prefer to hire medical assistants who have received formal training after high school. Medical assistant

training programs are provided by community colleges and vocational/technical schools. These programs can last one year, resulting in a certificate or diploma, or two years, resulting in an associate's degree. A two-year program lets medical assistants receive additional training during their education.

Do I need to be licensed to be a medical assistant?

Certification is optional, but highly recommended because many employers require it. After you've graduated from an accredited medical assistant program you can take a national certification exam. The American Association of Medical Assistants awards the Certified Medical Assistant (CMA) credential and the American Medical Technologists awards the Registered Medical Assistant (RMA) credential.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Association of Medical Assistants -- <http://www.aama-ntl.org/>

State Association:

Michigan Society of Medical Assistants -- <http://www.altrue.net/site/msma03/>

RESOURCES

Accrediting Bureau of Health Education Schools -- <http://www.abhes.org>

Commission on Accreditation of Allied Health Education Programs --

http://www.caahep.org/caahep/programs.asp?doc=MA_PD&pcode=MA

Nuclear Medicine Technologist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies utilizing a variety of radioisotope equipment. Prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists. Subject patients to radiation. Execute blood volume, red cell survival, and fat absorption studies following standard laboratory techniques.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$22.73	\$47,290.00
Ann Arbor MSA	\$24.10	\$50,120.00
Detroit MSA	\$23.18	\$48,200.00
Flint MSA	\$22.54	\$46,880.00
Grand Rapids-Muskegon-Holland MSA	\$21.65	\$45,030.00
Balance of State - South Central Lower Peninsula	\$21.60	\$44,930.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

In addition to having your GED or high school diploma, you'll need to complete an accredited NMT program, either a two-year associate's degree program or a four-year bachelor's degree program. Certificate programs are offered for experienced technologists who wish to specialize in nuclear medicine. In the training programs, students receive a combination of classroom and clinical instruction. Coursework generally includes, nuclear physics, statistics, health physics, anatomy, biochemistry, radiopharmacology, radiation biology, clinical nuclear medicine, radionuclide therapy, and immunology.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

Society of Nuclear Medicine -- <http://www.snm.org>

RESOURCES

American Registry of Radiologic Technologists -- <http://www.arrt.org>

American Society of Radiologic Technologists -- <http://www.asrt.org>

Joint Review Committee on Educational Programs in Nuclear Medicine Technology -- <http://www.jrcnmt.org>

Nuclear Medicine Technology Certification Board -- <http://www.nmtcb.org>

Occupational Therapist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assess, plan, organize, and participate in rehabilitative programs that help restore vocational, homemaking, and daily living skills, as well as general independence, to disabled persons.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$23.81	\$49,530.00
Ann Arbor MSA	\$23.40	\$48,680.00
Benton Harbor MSA	\$23.62	\$49,140.00
Detroit MSA	\$25.36	\$52,760.00
Flint MSA	\$24.46	\$50,890.00
Grand Rapids-Muskegon-Holland MSA	\$23.16	\$48,180.00
Kalamazoo-Battle Creek MSA	\$22.24	\$46,250.00
Lansing MSA	\$23.77	\$49,450.00
Saginaw MSA	\$24.02	\$49,950.00
Balance of State - Northeast Lower Peninsula	\$22.96	\$47,750.00
Balance of State - Northwest Lower Peninsula	\$16.11	\$33,500.00
Balance of State - South Central Lower Peninsula	\$23.14	\$48,140.00
Balance of State - Upper Peninsula	\$23.92	\$49,750.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33801191&Dpt=CH&RngHigh=):

R 338.1191 Definitions.

Rule 1. As used in these rules:

- (a) "Board" means the board of occupational therapists.
- (b) "Code" means Act No. 368 of the Public Acts of 1978, as amended, being S333.1101 et seq. of the Michigan Compiled Laws.
- (c) "Department" means the department of commerce.

History: 1993 MR 12, Eff. Jan. 4, 1994.

R 338.1192 Registration requirement; effective date.

Rule 2. (1) Pursuant to the provisions of section 18303 of the code, a person shall discontinue using the following titles or similar words which indicate that the person is a certified occupational therapist unless the person is granted an occupational therapist registration pursuant to these rules:

- (a) "Occupational therapist."
- (b) "O.T."
- (c) "Occupational therapist registered."
- (d) "O.T.R."

(e) "Certified occupational therapist."

(f) "C.O.T."

(2) Pursuant to the provisions of section 18303 of the code, a person shall discontinue using the following titles or similar words which indicate that the person is a certified occupational therapy assistant unless the person is granted an occupational therapy assistant registration pursuant to these rules:

(a) "Certified occupational therapy assistant."

(b) "C.O.T.A."

(c) "Occupational therapy assistant."

(d) "O.T.A."

History: 1993 MR 12, Eff. Jan. 4, 1994.

R 338.1194 Application for occupational therapist registration; requirements.

Rule 4. An applicant for an occupational therapist registration, in addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, shall comply with all of the following provisions:

(a) Submit a completed application on a form provided by the department, together with the requisite fee.

(b) Demonstrate a working knowledge of the English language in accordance with the provisions of R 338.1200.

(c) Have graduated from an occupational therapist educational program that is acceptable to the board pursuant to the provisions of R 338.1198.

(d) Have passed the certification examination for occupational therapists, registered, which is conducted and scored by the national board for certification in occupational therapy.

History: 1993 MR 12, Eff. Jan. 4, 1994; 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1196 Application for occupational therapy assistant registration; requirements.

Rule 6. An applicant for an occupational therapy assistant registration, in addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, shall comply with all of the following provisions:

(a) Submit a completed application on a form provided by the department, together with the requisite fee.

(b) Demonstrate a working knowledge of the English language in accordance with the provisions of R 338.1200.

(c) Have graduated from an occupational therapy assistant educational program that is acceptable to the board pursuant to the provisions of R 338.1198.

(d) Have passed the certification examination for occupational therapy assistants which is conducted and scored by the national board for certification in occupational therapy.

History: 1993 MR 12, Eff. Jan. 4, 1994; 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1197 Registration by endorsement; occupational therapist.

Rule 7. (1) An applicant for occupational therapist registration by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated under the code, an applicant shall satisfy the requirements of this rule.

(2) If an applicant was registered or licensed as an occupational therapist in another state before January 3, 1995, and has been registered or licensed as an occupational therapist in the other state for a minimum of 5 years before the date of filing an application for Michigan registration, then it will be presumed that the applicant meets the requirements of section 16186(1)(A) and (B) of the code.

(3) If an applicant does not meet the requirements of subrule (2) of this rule, then the applicant, in addition to meeting the requirements of the code, shall have been registered or licensed as an occupational therapist in another state after having graduated from an occupational therapy education program acceptable to the board pursuant to R 338.1198 and having passed the certification examination for occupational therapist that is conducted and scored by the national board for certification in occupational therapy.

History: 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1197a Registration by endorsement; occupational therapy assistant.

Rule 7a. (1) An applicant for occupational therapy assistant registration by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated under the code, an applicant shall satisfy the requirements of this rule.

(2) If an applicant was registered or licensed as an occupational therapy assistant in another state before January 3, 1995, and has been registered or licensed as an occupational therapy assistant in the other state for a minimum of 5 years before the date of filing an application for Michigan registration, then it will be presumed that the applicant meets the requirements of section 16186(1)(A) and (B) of the code.

(3) If an applicant does not meet the requirements of subrule (2) of this rule, then the applicant, in addition to meeting the requirements of the code, shall have been registered or licensed as an occupational therapy assistant in another state after having graduated from an occupational therapy education program acceptable to the board pursuant to R 338.1198 and having passed the certification examination for occupational therapy assistant that is conducted and scored by the national board for certification in occupational therapy.

History: 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1198 Educational program standards; adoption by reference.

Rule 8. (1) The board approves the standards for accrediting occupational therapist educational programs adopted by the American medical association and the American occupational therapy association, incorporated, in 1983 and set forth in the document entitled "Essentials and Guidelines of an Accredited Educational Program for the Occupational Therapist." Copies of these standards may be obtained, at no cost, from the Michigan Board of Occupational Therapists, P.O. Box 30018, Lansing, Michigan 48909, or from the American Medical Association, 515 North State Street, Chicago, Illinois 60610. An occupational therapist educational program that is accredited by the committee on allied health education and accreditation of the American medical association is an occupational therapist educational program that is acceptable to the board.

(2) The board approves and adopts by reference the standards set forth in the document entitled "Recommended Minimum Standards for the Education of Occupational Therapists," published by the council of the world federation of occupational therapists in 1985. Copies of the standards may be obtained, at no cost, from the Michigan Board of Occupational Therapists, P.O. Box 30018, Lansing, Michigan 48909, or from the American Occupational Therapy Association, Incorporated, P.O. Box 1725, Rockville, Maryland 20850-0822. An occupational therapist educational program that meets these standards is an occupational therapist educational program that is acceptable to the board. An occupational therapist educational program that is approved by the world federation of occupational therapists is an occupational therapist educational program that is acceptable to the board.

(3) The board approves and adopts the standards for approving occupational therapy assistant educational programs adopted by the American occupational therapy association, incorporated, in 1983 and set forth in the document entitled "Essentials and Guidelines of an Approved Educational Program for the Occupational Therapy Assistant." Copies of these standards may be obtained, at no cost, from the Michigan Board of Occupational Therapists, P.O. Box 30018, Lansing, Michigan 48909, or from the American Occupational Therapy Association, Incorporated, P.O. Box 1725, Rockville, Maryland 20850-0822. An occupational therapy assistant educational program that meets these standards is an occupational therapy assistant program that is acceptable to the board. An occupational therapy assistant program that is approved by the American occupational therapy association is an occupational therapy assistant program that is acceptable to the board.

History: 1993 MR 12, Eff. Jan. 4, 1994.

R 338.1200 English language requirement.

Rule 10. An applicant whose occupational therapist educational program or occupational therapy assistant educational program was taught in a language other than English shall demonstrate a working knowledge of the English language, in addition to meeting the other requirements of these rules. To demonstrate a working knowledge of the English language, an applicant shall establish that he or she has obtained a score of not less than 550 on the test of English as a foreign language that is administered by the educational testing service and obtained a score of not less than 50 on the test of spoken English that is administered by the educational testing service or passed other substantially equivalent English language proficiency examinations that assess all of the

following:

- (a) Reading comprehension.
- (b) Speaking skills.
- (c) Listening skills.
- (d) The ability to write clearly, using complete sentences with correct spelling, punctuation, and word usage.

History: 1993 MR 12, Eff. Jan. 4, 1994

Michigan Public Health Code (www.michiganlegislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-183&highlight=>

Occupational Board Information:

Public Act 473 of 1988 amended the Public Health Code, Public Act 368 of 1978, creating the Michigan Board of Occupational Therapists.

The Public Health Code mandates certain responsibilities and duties for a health professional registration board. Underlying all duties is the responsibility of the Board to promote and protect the public's health, safety and welfare. This responsibility is implemented by ascertaining minimal entry level competency of occupational therapists and occupational therapy assistants. The Board also has the obligation to take disciplinary action against registrants who have adversely affected the public's health, safety, and welfare.

The Michigan Board of Occupational Therapists consists of 9 voting members: 5 occupational therapists and 4 public members.

The board currently oversees approximately 3,955 Occupational Therapists and 932 Occupational Therapy Assistants.

EDUCATION

Educational requirements for an occupational therapy career may take place at either the professional or the technical level. The professional-level education prepares one to become an occupational therapist, while the technical-level education prepares one to become an occupational therapy assistant.

Preparing for a career as an occupational therapist requires a student to complete either a bachelor's degree or postbaccalaureate degree (i.e., professional master's degree or entry-level doctoral degree). Beginning January 1, 2007, all new occupational therapy candidates will need a postbaccalaureate degree. Preparing for a career as an occupational therapy assistant requires completion of a two-year associate's degree. In addition to these degrees, all candidates will be required to complete a period of supervised fieldwork and pass a national certification exam.

Other requirements: If you are interested in applying to an occupational therapy program, you must obtain specific requirements, prerequisites, and program content from the schools to which you are applying. Both occupational therapy and occupational therapy assistant candidates will be required to fulfill a number of prerequisites, which may include biology, psychology, and sociology. Most programs also require volunteer or paid work experience with persons with disabilities.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

State Association:

Michigan Occupational Therapy Association -- <http://www.mi-ota.com>

National Association:

American Occupational Therapy Association -- <http://www.aota.org/>

RESOURCES

Occupational Therapy Aide

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Under close supervision of an occupational therapist or occupational therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing patient and treatment room.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

No information available.

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$11.41	\$23,720.00
Detroit MSA	\$11.56	\$24,040.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

EDUCATION

Occupational therapy aides must have a high school diploma. There are no licensing requirements. They receive most of their training on the job, and volunteer experiences are beneficial in getting a job.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Occupational Therapy Association -- <http://www.aota.org/>

State Association:

Michigan Occupational Therapy Association -- <http://www.mi-ota.com>

RESOURCES

Occupational Therapy Assistant

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assist occupational therapists in providing occupational therapy treatments and procedures. May, in accordance with state laws, assist in development of treatment plans, carry out routine functions, direct activity programs, and document the progress of treatments. Generally requires formal training.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$15.77	\$32,790.00
Detroit MSA	\$14.72	\$30,610.00
Grand Rapids-Muskegon-Holland MSA	\$15.73	\$32,720.00
Saginaw MSA	\$16.63	\$34,590.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules:

R 338.1191 Definitions.

Rule 1. As used in these rules:

- (a) "Board" means the board of occupational therapists.
- (b) "Code" means Act No. 368 of the Public Acts of 1978, as amended, being S333.1101 et seq. of the Michigan Compiled Laws.
- (c) "Department" means the department of commerce.

History: 1993 MR 12, Eff. Jan. 4, 1994.

R 338.1192 Registration requirement; effective date.

Rule 2. (1) Pursuant to the provisions of section 18303 of the code, a person shall discontinue using the following titles or similar words which indicate that the person is a certified occupational therapist unless the person is granted an occupational therapist registration pursuant to these rules:

- (a) "Occupational therapist."
- (b) "O.T."
- (c) "Occupational therapist registered."
- (d) "O.T.R."
- (e) "Certified occupational therapist."
- (f) "C.O.T."

(2) Pursuant to the provisions of section 18303 of the code, a person shall discontinue using the following titles or similar words which indicate that the person is a certified occupational therapy assistant unless the person is granted an occupational therapy assistant registration pursuant to these rules:

- (a) "Certified occupational therapy assistant."
- (b) "C.O.T.A."
- (c) "Occupational therapy assistant."
- (d) "O.T.A."

History: 1993 MR 12, Eff. Jan. 4, 1994.

R 338.1194 Application for occupational therapist registration;

requirements.

Rule 4. An applicant for an occupational therapist registration, in addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, shall comply with all of the following provisions:

- (a) Submit a completed application on a form provided by the department, together with the requisite fee.
- (b) Demonstrate a working knowledge of the English language in accordance with the provisions of R 338.1200.
- (c) Have graduated from an occupational therapist educational program that is acceptable to the board pursuant to the provisions of R 338.1198.
- (d) Have passed the certification examination for occupational therapists, registered, which is conducted and scored by the national board for certification in occupational therapy.

History: 1993 MR 12, Eff. Jan. 4, 1994; 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1196 Application for occupational therapy assistant registration; requirements.

Rule 6. An applicant for an occupational therapy assistant registration, in addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, shall comply with all of the following provisions:

- (a) Submit a completed application on a form provided by the department, together with the requisite fee.
- (b) Demonstrate a working knowledge of the English language in accordance with the provisions of R 338.1200.
- (c) Have graduated from an occupational therapy assistant educational program that is acceptable to the board pursuant to the provisions of R 338.1198.
- (d) Have passed the certification examination for occupational therapy assistants which is conducted and scored by the national board for certification in occupational therapy.

History: 1993 MR 12, Eff. Jan. 4, 1994; 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1197 Registration by endorsement; occupational therapist.

Rule 7. (1) An applicant for occupational therapist registration by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated under the code, an applicant shall satisfy the requirements of this rule.

(2) If an applicant was registered or licensed as an occupational therapist in another state before January 3, 1995, and has been registered or licensed as an occupational therapist in the other state for a minimum of 5 years before the date of filing an application for Michigan registration, then it will be presumed that the applicant meets the requirements of section 16186(1)(A) and (B) of the code.

(3) If an applicant does not meet the requirements of subrule (2) of this rule, then the applicant, in addition to meeting the requirements of the code, shall have been registered or licensed as an occupational therapist in another state after having graduated from an occupational therapy education program acceptable to the board pursuant to R 338.1198 and having passed the certification examination for occupational therapist that is conducted and scored by the national board for certification in occupational therapy.

History: 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1197a Registration by endorsement; occupational therapy assistant.

Rule 7a. (1) An applicant for occupational therapy assistant registration by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated under the code, an applicant shall satisfy the requirements of this rule.

(2) If an applicant was registered or licensed as an occupational therapy assistant in another state before January 3, 1995, and has been registered or licensed as an occupational therapy assistant in the other state for a minimum of 5 years before the date of filing an application for Michigan registration, then it will be presumed that the applicant meets the requirements of section 16186(1)(A) and (B) of the code.

(3) If an applicant does not meet the requirements of subrule (2) of this rule, then the applicant, in addition to meeting the requirements of the code, shall have been registered or licensed as an occupational therapy assistant

in another state after having graduated from an occupational therapy education program acceptable to the board pursuant to R 338.1198 and having passed the certification examination for occupational therapy assistant that is conducted and scored by the national board for certification in occupational therapy.

History: 1997 MR 1, Eff. Feb. 15, 1997.

R 338.1198 Educational program standards; adoption by reference.

Rule 8. (1) The board approves the standards for accrediting occupational therapist educational programs adopted by the American medical association and the American occupational therapy association, incorporated, in 1983 and set forth in the document entitled "Essentials and Guidelines of an Accredited Educational Program for the Occupational Therapist." Copies of these standards may be obtained, at no cost, from the Michigan Board of Occupational Therapists, P.O. Box 30018, Lansing, Michigan 48909, or from the American Medical Association, 515 North State Street, Chicago, Illinois 60610. An occupational therapist educational program that is accredited by the committee on allied health education and accreditation of the American medical association is an occupational therapist educational program that is acceptable to the board.

(2) The board approves and adopts by reference the standards set forth in the document entitled "Recommended Minimum Standards for the Education of Occupational Therapists," published by the council of the world federation of occupational therapists in 1985. Copies of the standards may be obtained, at no cost, from the Michigan Board of Occupational Therapists, P.O. Box 30018, Lansing, Michigan 48909, or from the American Occupational Therapy Association, Incorporated, P.O. Box 1725, Rockville, Maryland 20850-0822. An occupational therapist educational program that meets these standards is an occupational therapist educational program that is acceptable to the board. An occupational therapist educational program that is approved by the world federation of occupational therapists is an occupational therapist educational program that is acceptable to the board.

(3) The board approves and adopts the standards for approving occupational therapy assistant educational programs adopted by the American occupational therapy association, incorporated, in 1983 and set forth in the document entitled "Essentials and Guidelines of an Approved Educational Program for the Occupational Therapy Assistant." Copies of these standards may be obtained, at no cost, from the Michigan Board of Occupational Therapists, P.O. Box 30018, Lansing, Michigan 48909, or from the American Occupational Therapy Association, Incorporated, P.O. Box 1725, Rockville, Maryland 20850-0822. An occupational therapy assistant educational program that meets these standards is an occupational therapy assistant program that is acceptable to the board. An occupational therapy assistant program that is approved by the American occupational therapy association is an occupational therapy assistant program that is acceptable to the board.

History: 1993 MR 12, Eff. Jan. 4, 1994.

R 338.1200 English language requirement.

Rule 10. An applicant whose occupational therapist educational program or occupational therapy assistant educational program was taught in a language other than English shall demonstrate a working knowledge of the English language, in addition to meeting the other requirements of these rules. To demonstrate a working knowledge of the English language, an applicant shall establish that he or she has obtained a score of not less than 550 on the test of English as a foreign language that is administered by the educational testing service and obtained a score of not less than 50 on the test of spoken English that is administered by the educational testing service or passed other substantially equivalent English language proficiency examinations that assess all of the following:

- (a) Reading comprehension.
- (b) Speaking skills.
- (c) Listening skills.
- (d) The ability to write clearly, using complete sentences with correct spelling, punctuation, and word usage.

History: 1993 MR 12, Eff. Jan. 4, 1994

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

OTAs need to receive a two-year associate's degree or one-year certificate from an accredited college/technical school. Most students complete two years of study that cover medical terminology, physiology, mental health, and gerontology. Students in training also need to undertake supervised fieldwork in clinics or community organizations in order to gain hands-on experience before completing their program.

Do I need to be licensed to be an occupational therapy assistant?

OTAs need to pass national certification exams before they can practice in most states as certified occupational therapist assistants. Your program advisor will be able to give you more information about these tests.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Occupational Therapy Association -- <http://www.aota.org/>

State Association:

Michigan Occupational Therapy Association -- <http://www.mi-ota.com>

RESOURCES

characteristics described in section 17412(2)(a) of the code. Not less than 30 of the 60 classroom hours of the course of study shall be allocated to ocular pharmacology and shall emphasize the systemic effects of, and reactions to, topical ocular diagnostic pharmaceutical agents, including the emergency management and referral of any adverse reactions that may occur.

(f) "Course of study relating to the didactic and clinical use of therapeutic pharmaceutical agents" means a course of study which is comprised of a minimum of 10 quarter hours or 7 semester hours of credit or 100 classroom hours of study, which is completed in a board-approved school or college, and which is in subjects relating to the didactic and clinical use of therapeutic pharmaceutical agents related to optometry.

(g) "Department" means the Michigan department of consumer and industry services.

(h) "Emergency treatment plan for management and referral of patients who experience an adverse drug reaction" means a plan which is submitted to the board on a board-approved form and in which the optometrist agrees to do all of the following:

(i) Refer patients who notify the optometrist of an adverse drug reaction to an appropriate medical specialist or facility.

(ii) Routinely advise patients to immediately contact the optometrist if the patient experiences an adverse drug reaction.

(iii) Place in the patient's permanent record information describing any adverse drug reaction experienced by the patient and the date and time that any patient referral was made.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 1985 MR 7, Eff. Aug. 1, 1985; 1995 MR 8, Eff. Sept. 6, 1995; 2003 MR 1, Eff. Jan. 17, 2003.

R 338.252 Licensure by examination.

Rule 2. (1) An applicant for a Michigan optometry license by examination shall submit a completed application on forms provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall satisfy the requirements of this rule.

(2) An applicant shall have graduated from a college of optometry or school of optometry approved by the board.

(3) An applicant shall have achieved a minimum scaled score of 75 on each part of the Michigan board of optometry examination.

(4) An applicant shall have achieved a minimum scaled score of 75 on all parts of the examination given by the national board of examiners

in optometry, or its successor organization or the testing agency currently recognized or endorsed by the association of regulatory boards of optometry or its successor organization.

History: 1944 AC; 1944 ACS 14; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 1990 MR 6, Eff. June 30, 1990; 2003 MR 1, Eff. Jan. 17, 2003.

R 338.253 Licensure by endorsement.

Rule 3. (1) An applicant for a Michigan optometry license by endorsement shall submit a completed application on forms provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall have graduated from a school or college of optometry approved by the board and satisfy the requirements of this rule.

(2) If an applicant was first licensed in another state and had engaged in the practice of optometry for a minimum of 5 years before the date of filing an application for a Michigan optometrist license, it will be presumed that the applicant meets the requirements of section 16186(1)(a) and (b) of the code. In addition, an applicant shall have achieved a minimum scaled score of 75 on the examination of Michigan laws and rules related to the practice of optometry that is administered by the department.

(3) If an applicant does not meet the requirements of subrule (2) of this rule, the applicant shall satisfy the following requirements as applicable:

(a) An applicant who was first licensed in another state shall have achieved a minimum scaled score of 75 on all parts of the examination given by the national board of examiners in optometry or its successor organization, or the testing agency currently recognized or endorsed by the association of regulatory boards of optometry or its successor organization.

(b) An applicant who has not been licensed in another state for a minimum of 5 years and engaged in the

practice of optometry for a minimum of 5 years before the date of filing an application for a Michigan optometrist license shall achieve a minimum scaled score of 75 on each part of the Michigan board of optometry examination.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 1990 MR 6, Eff. June 30, 1990; 2003 MR 1, Eff. Jan. 17, 2003.

R 338.254 School or college approval standards.

Rule 4. (1) The board approves and adopts by reference in these rules the standards of the council on optometric education of July, 1976, which govern school or college of optometry accreditation.

(2) A school or college of optometry accredited by the council on optometric education may be approved by the board.

(3) A school or college of optometry that is not accredited by the council on optometry education may be approved by the board if it meets the standards in subrule (1) of this rule.

(4) Copies of the standards of the accreditation council on optometric education are available free of charge from the American Optometric Association, 243 N. Lindbergh Blvd., St. Louis, MO 63141 or from the association's website at <http://www.aoanet.org>. Printed copies also are available for inspection and distribution from the Department of Consumer and Industry Services, Ottawa Building, 611 W. Ottawa, P.O. Box 30670, Lansing, MI 48909, for a cost of \$6.00 as of the time of adoption of these rules.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 2003 MR 1, Eff. Jan. 17, 2003.

R 338.255 Michigan board of optometry examination; eligibility.

Rule 5. (1) To be eligible to sit for the Michigan board of optometry examination, an applicant shall file a completed application on a form provided by the department, together with the requisite fee, and shall submit evidence of having completed a program in optometry from a dean of a school or college of optometry approved by the board not less than 30 days before the date of the examination and shall establish that he or she has achieved a minimum scaled score of 75 on all parts of the examination given by the national board of examiners in optometry or its successor organization, or the testing agency currently recognized or endorsed by the association of regulatory boards of optometry or its successor organization. Final transcripts shall be submitted to the department before a license is issued.

(2) An applicant who fails to achieve a minimum scaled score of 75 on each part of the Michigan board of optometry examination within 2 attempts shall be required to retake and achieve a minimum scaled score of 75 on all parts of the examination in each subsequent sitting.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 1990 MR 6, Eff. June 30, 1990; 2003 MR 1, Eff. Jan. 17, 2003.

R 338.256 Continuing education.

Rule 6. (1) An applicant for license renewal who has been licensed for the 2-year period immediately preceding the expiration date of the license shall accumulate not less than 24 hours of board-approved continuing education.

(2) An applicant for license renewal who holds certification to administer topical ocular diagnostic pharmaceutical agents or certification to administer and prescribe therapeutic pharmaceutical agents, or both, shall accumulate not less than 12 hours of board-approved continuing education in addition to the 24 hours required under subrule (1) of this rule.

(3) Submission of an application for renewal constitutes the applicant's certificate of compliance with the requirements of this rule. The optometrist shall retain documentation of meeting the requirements of this rule for a period of 4 years from the date of applying for license renewal.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 1995 MR 8, Eff. Sept. 6, 1995; 1998 mR 3, Eff. Apr. 22, 1998.

R 338.256a Acceptable continuing education; limitations.

Rule 6a. (1) The board shall consider any of the following as board- approved continuing education:

(a) Successful completion of a course or courses offered for credit in an optometry school approved by the board under R 338.254, without limitation.

(b) Successful completion of a continuing education program offered by an optometry school approved by the board under R 338.254, without limitation.

(c) Attendance at a continuing education program approved by the board under R 338.256b, without limitation.

(d) Renewal of a license held in another state that requires continuing education for license renewal which is substantially equivalent to the requirements of these rules if the applicant resides and practices in that state.

(e) One hour of continuing education may be earned for each hour involved in the presentation of a continuing education program approved by the board.

(2) The board will consider requests for approval of continuing education programs by sponsors who submit applications on a form provided by the department. The board may evaluate applications for approval based upon all of the following:

(a) Program content as it relates to the practice of optometry.

(b) Instructor credentials for conducting the specific program.

(c) The number of lecture hours of the program, with a minimum of 1 hour being submitted for consideration.

(d) Attendance monitoring plan.

(3) A total maximum of 18 hours may be granted in board-approved programs in either of the following areas:

(a) A maximum of 6 hours relating to practice management.

(b) A maximum of 12 hours relating to self evaluation journal tests and multimedia education.

History: 1998 MR 3, Eff. Apr. 22, 1998.

R 338.256b Adoption of standards and criteria by reference.

Rule 6b. The board approves and adopts by reference the standards and criteria of the council on optometric practitioner education (cope) that are set forth in the publication entitled "Information and Application for Course Qualification." A copy of the publication may be obtained at no cost from either the Michigan Board of Optometry, P. O. Box 30670, Lansing, MI 48909, or from the Council on Optometric Practitioner Education, Suite 401, 4340 East West Highway, Bethesda, MD 20814.

History: 1998 MR 3, Eff. Apr. 22, 1998.

R 338.257 Relicensure.

Rule 7. (1) An individual whose license has been null and void for less than 3 years under section 16201(3) of the code may be relicensed upon satisfying both of the following requirements:

(a) Submission of the application and fees.

(b) Submission of 36 hours of continuing education in programs approved by the board that have been earned within the 2-year period immediately preceding the date of the application.

(2) An individual whose license has been null and void for more than 3 years under section 16201(4) of the code may be relicensed upon compliance with subrule (1) of this rule and upon satisfying either of the following requirements:

(a) Establish that the applicant has been licensed and engaged in the practice of optometry in another state and successfully completed the board's jurisprudence examination.

(b) Take and pass the board's clinical examination.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 1998 MR 3, Eff. Apr. 22, 1998.

R 338.258 Limited licenses.

Rule 8. (1) All of the following provisions apply to a clinical academic limited license:

(a) An application for a clinical academic limited license shall be made on forms provided by the department and approved by the board.

(b) To be eligible for a license, the applicant shall have graduated from a college or school of optometry approved by the board and meet all of the requirements of the code and rules promulgated thereto.

(c) To be eligible for a license, the applicant shall provide evidence of holding an appointment to a clinical academic position in a college of optometry or school of optometry approved by the board, which college or school is located in the state of Michigan.

(d) The certificate of licensure issued by the department shall clearly state "clinical academic limited license" on its face and shall also show the college or school at which the licensee holds an appointment.

(e) Applicants for renewal of the clinical academic limited license shall submit evidence of having met the continuing education requirements of R 338.256.

(f) The practice of a licensee holding a clinical academic limited license shall be limited to the college or school of optometry identified in subdivision (d) of this subrule. The licensee shall not hold himself or herself out to the public as being actively engaged in the practice of optometry and shall not directly solicit patients.

(2) All of the following provisions apply to a nonclinical limited license:

(a) An application for a nonclinical limited license shall be made on forms provided by the department and approved by the board.

(b) To be eligible for a nonclinical limited license, the optometrist shall be involved in research, administration, or other scientific activities not involving direct patient care.

(c) To be eligible for a nonclinical limited license, the applicant shall have graduated from a college or school of optometry approved by the board and meet all of the requirements of the code and rules promulgated thereto.

(d) Applicants for renewal of the nonclinical limited license shall submit evidence of having met the continuing education requirements of R 338.256.

(e) The holder of a nonclinical limited license shall not provide direct patient care and shall not hold himself or herself out to the public as being actively engaged in the practice of optometry.

(3) All of the following provisions apply to a postgraduate educational limited license:

(a) An application for a postgraduate educational limited license shall be made on forms provided by the department and approved by the board.

(b) To be eligible for a postgraduate educational limited license, the applicant shall provide evidence of being accepted into, or presently enrolled in, a postgraduate educational program in a college or school of optometry approved by the board, which school or college of optometry is located in the state of Michigan.

(c) To be eligible for a postgraduate educational limited license, the applicant shall have graduated from a school or college of optometry approved by the board.

(d) The certificate of licensure issued by the department shall clearly state "postgraduate educational limited license" on its face and shall designate the school or college at which the licensee will be involved in the postgraduate educational program.

(e) The holder of a postgraduate educational limited license shall not hold himself or herself out to the public as being actively engaged in the practice of optometry and shall not directly solicit patients.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983.

R 338.259 Patient records.

Rule 9. (1) Patient records shall contain all of the following information:

(a) The name of the examining optometrist.

(b) The chief complaint or reason for the examination.

(c) The results of each procedure performed.

(d) The assessment of findings.

(e) The management disposition.

The records shall be retained by the licensee or assignee for not less than 7 years.

(2) If, in the course of the examination of a patient, an optometrist, in his or her professional judgment, determines the presence of a condition that requires evaluation or treatment which is outside the scope of practice of optometry, then it is the professional responsibility of the optometrist to refer the patient for further care.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; 1994 MR 4, Eff. May 14, 1994.

R 338.260 Rescinded.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983; rescinded 1995 MR 8, Eff. Sept. 6, 1995.

R 338.261 Assessment of fines.

Rule 11. (1) When a fine has been designated as an available sanction for a violation of sections 16221 to 16226 of the code, in the course of assessing a fine, the board shall take into consideration the following factors without limitation:

(a) The extent to which the licensee obtained financial benefit from any conduct comprising part of the violation found by the board.

(b) The willfulness of the conduct found to be part of the violation determined by the board.

- (c) The public harm, actual or potential, caused by the violation found by the board.
- (d) The cost incurred in investigating and proceeding against the licensee.
- (2) A fine shall not exceed the sum of \$5,000.00 for each violation found to have been committed by the licensee.

History: 1944 AC; 1954 AC; 1979 AC; 1979 ACS 16, Eff. Dec. 1, 1983.

R 338.270 Advertising; name of optometrist.

Rule 20. Whenever professional services are advertised by any unregistered person, firm, or corporation maintaining an optometric department, the name of the optometrist in charge must appear in sufficiently large type and in a prominent place so as to afford the public the opportunity of easily ascertaining it. This rule also applies to signs both inside and outside of the office or building wherein the optometrist practices.

History: 1944 AC; 1954 AC; 1979 AC.

R 338.271--R 338.273 Rescinded.

History: 1944 ACS 2; 1954 AC; 1979 AC; rescinded 1979 ACS 16, Eff. Dec. 1, 1983.

R 338.274 Emergency treatment plan.

Rule 24. (1) An emergency treatment plan for the management and referral of patients who experience an adverse drug reaction shall include the names of not less than 3 physicians, physician clinics, or hospitals to which the optometrist agrees to refer patients who experience an adverse drug reaction. At least 1 of the physicians shall be skilled in the diagnosis and treatment of diseases of the eye or the named physician clinic or hospital shall specialize in the diagnosis and treatment of diseases of the eye. An optometrist may substitute the patient's primary care physician for a physician named in the plan, but shall not substitute the patient's primary care physician for a physician named in the plan who specializes in the diagnosis and treatment of diseases of the eye.

(2) A licensee shall not be certified as qualified to administer topical ocular diagnostic pharmaceutical agents or to administer and prescribe therapeutic pharmaceutical agents unless the plan is approved by the board.

History: 1985 MR 7, Eff. Aug. 1, 1985; 1995 MR 8, Eff. Sept. 6, 1995.

R 338.275 Certification to administer topical ocular diagnostic pharmaceutical agents; application; qualifications; adoption of standards.

Rule 25. An applicant for certification to administer a topical ocular diagnostic pharmaceutical agent in the practice of optometry shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the code and the rules promulgated pursuant thereto, an applicant shall satisfy all of the following requirements:

(a) Successfully complete a course of study in general and clinical pharmacology. The applicant shall be considered to have successfully completed the required course of study upon being granted the credit hours designated for the course of study by the teaching institution where the course is offered.

(b) Establish a board-approved emergency treatment plan for the management and referral of patients who experience any adverse drug reaction.

(c) Submit to a board-approved examination on the subject of general and ocular pharmacology as it relates to the practice of optometry, and achieve a score on the examination of not less than 75%. If an applicant fails the examination, it may be retaken upon payment of the requisite fee.

(d) Successfully complete a course in advance cardiac life support or a course in basic life support that is offered by an organization or institution approved by the board. The board approves and adopts by reference the training standards and guidelines for cardiopulmonary resuscitation and emergency cardiac care courses published in the journal of the American medical association, volume 268, no. 16, on October 28, 1992.

A copy of the standards and guidelines may be obtained from the Michigan Board of Optometry, 611 West Ottawa, P.O. Box 30018, Lansing, Michigan 48909, at no cost, or the American Heart Association, 7320 Greenville Avenue, Dallas, TX 75231, at a cost as of the time of adoption of these rules of \$1.04.

History: 1985 MR 7, Eff. Aug. 1, 1985; 1995 MR 8, Eff. Sept. 6, 1995.

R 338.276 Administering diagnostic pharmaceutical agents without certification by board prohibited.

Rule 26. A licensed optometrist shall not use diagnostic pharmaceutical agents in the practice of optometry unless the optometrist has been certified by the board as being qualified to administer topical ocular diagnostic pharmaceutical agents.

History: 1985 MR 7, Eff. Aug. 1, 1985; 1995 MR 8, Eff. Sept. 6, 1995.

R 338.277 Certification to administer and prescribe therapeutic pharmaceutical agents; application; qualifications.

Rule 27. An applicant for certification to administer and prescribe a therapeutic pharmaceutical agent in the practice of optometry shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the code and the rules promulgated pursuant to the code, an applicant shall satisfy all of the following requirements:

- (a) Meet the certification requirements to administer diagnostic pharmaceutical agents under R 338.275.
- (b) Successfully complete a course of study relating to the didactic and clinical use of therapeutic pharmaceutical agents.
- (c) Establish a board-approved management plan that is in compliance with R 338.251(h) and R 338.274.

History: 1995 MR 8, Eff. Sept. 6, 1995.

R 338.278 Administering and prescribing of therapeutic pharmaceutical agents without certification by board prohibited.

Rule 28. A licensed optometrist shall not administer or prescribe therapeutic pharmaceutical agents in the practice of optometry unless the optometrist has been certified by the board as being qualified to administer and prescribe therapeutic pharmaceutical agents.

History: 1995 MR 8, Eff. Sept. 6, 1995.

Michigan Public Health Code (www.michigan legislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-174&highlight=>

Occupational Board Information:

The Michigan Board of Optometry was originally formed with the enactment of Public Act 71 of 1909. On September 30, 1978, this authority was transferred to the Public Health Code, Public Act 368 of 1978, as amended.

On March 26, 1984, the Governor signed Public Act 42, which allowed optometrists to be certified to administer topical ocular diagnostic pharmaceutical agents to the anterior segment of the human eye. Rules allowing the board to certify optometrists to administer diagnostic agents were promulgated on July 13, 1985.

The Public Health Code mandates certain responsibilities and duties for a health professional licensing board. Underlying all duties is the responsibility of the board to promote and protect the public's health, safety, and welfare. This responsibility is implemented by the Board by ascertaining minimal entry level competency of health practitioners and verifying continuing education during licensure. The Board also has the obligation to take disciplinary action against licensees who have adversely affected the public's health, safety, and welfare.

The Board of Optometry consists of 9 voting members: 5 optometrists and 4 public members.

The Board currently oversees approximately 1,510 optometrists.

EDUCATION

Optometrists are required to complete a four-year post-graduate degree program to earn their doctor of optometry (O.D.) titles. The four-year program includes classroom and clinical training in geometric, physical, physiological and ophthalmic optics, ocular anatomy, ocular disease, ocular myotology, ocular pharmacology, neuroanatomy and neurophysiology of the vision system, color, form, space, movement and vision perception, design and

modification of the visual environment, and vision performance and vision screening.

For a list of TRANSFERABLE SKILLS related to this occupation, visit
America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or
O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

State Association:

Michigan Optometric Association -- <http://www.mioptassn.org>

National Association:

American Optometric Association -- <http://www.aoa.org/>

RESOURCES

Pharmacist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medications and their use. May advise physicians and other health practitioners on the selection, dosage, interactions, and side effects of medications.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$35.37	\$73,570.00
Ann Arbor MSA	\$34.63	\$72,030.00
Benton Harbor MSA	\$36.46	\$75,830.00
Detroit MSA	\$35.83	\$74,520.00
Flint MSA	\$35.65	\$74,150.00
Grand Rapids-Muskegon-Holland MSA	\$34.60	\$71,970.00
Jackson MSA	\$35.06	\$72,930.00
Kalamazoo-Battle Creek MSA	\$34.36	\$71,480.00
Lansing MSA	\$35.48	\$73,790.00
Saginaw MSA	\$35.84	\$74,540.00
Balance of State - Northeast Lower Peninsula	\$34.66	\$72,090.00
Balance of State - Northwest Lower Peninsula	\$33.45	\$69,570.00
Balance of State - South Central Lower Peninsula	\$35.45	\$73,730.00
Balance of State - Upper Peninsula	\$36.30	\$75,490.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33800471&Dpt=CH&RngHigh=):

R 338.471a Definitions.

Rule 1a. As used in these rules:

(a) "Board" means the board of pharmacy.

(b) "Code" means Act No. 368 of the Public Acts of 1978, as amended, being S333.1101 et seq. of the

Michigan Compiled Laws.

(c) "Department" means the department of licensing and regulation.

(d) "Unconventional internship" means an educational program of professional and practical experience involving those pharmacy or related pharmaceutical experiences which, by practical, on-the-job training, provide knowledge useful to the practice of the profession of pharmacy without meeting all of the criteria of a conventional internship.

R 338.472 Prescription drugs and devices; return or exchange for resale prohibited.

Rule 2. For the protection of the public health and safety, prescription drugs or devices which have been

dispensed and which have left the control of the pharmacist shall not be returned or exchanged for resale.

R 338.473 Intern licensure; eligibility; renewal; limitations.

Rule 3. (1) An applicant for a pharmacy intern license shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall establish that he or she is admitted to and enrolled in a professional program of study within a college or school of pharmacy.

(2) An intern shall engage in the practice of pharmacy only under the supervision of a pharmacist preceptor as defined in section 17708(1) of the code and only under the personal charge of a pharmacist.

R 338.473a Interns; eligibility; limited license; qualifications; supervision; notice of position change; duties; professional and practical experience; denial, suspension, or revocation of license.

Rule 3a. (1) An individual is eligible for intern licensure at the beginning of the first professional year or third year, if appropriate, of study in an accredited college or school of pharmacy.

(2) Upon application and payment of appropriate fees, a limited license shall be issued by the department to qualified applicants. The limited license shall remain active while the applicant is actively pursuing a degree in an accredited college or school of pharmacy and until licensure as a pharmacist or for not more than 1 year from the date of graduation from such college or school of pharmacy, unless extended by the board upon written request of the intern.

(3) An intern shall complete not less than 1,000 hours of internship experience, 500 hours of which shall be completed during the 18 months immediately preceding the examination for pharmacist licensure. The minimum number of hours of internship experience may be satisfied by complying with any of the following provisions:

(a) Obtaining the minimum number of hours of experience under the personal charge of a qualified, approved preceptor.

(b) Completing a board-approved, structured practical experience program within the college or school of pharmacy curriculum.

(c) Through a combination of subdivisions (a) and (b) of this subrule.

(4) When eligible, a student shall apply for licensure as an intern.

(5) Hours of internship experience shall be computed from the date of board certification as a licensed intern. In computing the hours of internship experience, all of the following provisions shall apply:

(a) Experience shall be granted only upon verification by an approved pharmacy preceptor or other person previously approved by the board.

(b) The board may grant internship experience gained in unconventional internship programs. Up to 400 hours of internship experience may be granted for such unconventional education experiences.

(c) A maximum of 40 hours of internship experience shall be granted per calendar week served by the intern.

(d) A maximum of 16 hours of non-college-sponsored internship experience shall be granted per calendar week while the intern is a full-time student in a college or school of pharmacy, except during authorized vacation periods.

(e) The board may grant credit for internship experience obtained through practice as an intern in another jurisdiction if the experience was comparable to the minimum standards set forth in these rules.

(f) The board may accept experience as a licensed pharmacist in another jurisdiction as the equivalent of internship experience.

(6) An intern shall be supervised by an approved pharmacist preceptor and shall, at all times, practice only under the personal charge of a pharmacist. The intern shall be responsible for verifying board approval of his or her pharmacy preceptor.

(7) Interns shall notify the board, in writing and within 30 days, upon accepting a position of practice, changing or leaving a position of practice, or changing home address.

(8) Interns shall complete and submit such forms or examinations, or both, as deemed necessary by the board.

(9) Interns shall receive professional and practical experience in at least all of the following areas:

(a) Pharmacy administration and management.

(b) Drug distribution, use, and control.

(c) Legal requirements.

(d) Providing health information services and advising patients.

(e) Pharmacists' ethical and professional responsibilities.

(f) Drug and product information.

(10) Interns shall keep abreast of current developments in the internship program and the pharmacy profession.

(11) The board may deny, suspend, or revoke the license of an intern or may deny hours of internship for failure to comply with pharmacy law or rules relating to pharmacy practice or internship.

R 338.473c Preceptors; approval; qualifications; duties; denial, suspension, or revocation of preceptor approval.

Rule 3c. (1) Before training an intern, a licensed pharmacist in this state shall apply to the board for approval as a preceptor. A pharmacist shall have at least 1 year of practice before being approved as a preceptor.

(2) There shall be not more than 2 interns per pharmacist on duty at the same time. However, the approved preceptor is responsible for the overall internship program at the pharmacy.

(3) A preceptor is responsible for arranging the intern's training in areas of practice as defined in R 338.473a(9).

(4) A preceptor shall annually submit internship training affidavits on forms provided by the board.

(5) The preceptor shall determine the degree of professional skill possessed by the intern and shall develop a training program whereby the intern will be able to improve upon and develop his or her ability in the practice of pharmacy.

(6) The preceptor shall allow sufficient time to instruct the intern in the practice of pharmacy and to frequently review and discuss his or her progress.

(7) Upon completion of the intern training, the preceptor under whom the training was obtained shall give the preceptor's opinion on the ability of the intern to practice pharmacy without supervision. If the preceptor's report is not satisfactory, the board may require further training before allowing the intern to take the examination for licensure as required by R 338.474.

(8) The board may deny, suspend, or revoke the preceptor's approval for failure to properly supervise the intern during the internship training program or for violation of the laws and rules relating to the practice of pharmacy or the internship program.

(9) The board may deny, suspend, or revoke the preceptor's approval of a pharmacist who has been convicted of any violation of a federal, state, or local law, ordinance, or rules relating to pharmacy practice within 5 years of the application for approval as a preceptor.

R 338.473d Foreign pharmacy graduates; requirements; internship.

Rule 3d. (1) An applicant who is a graduate of a foreign pharmacy school may be granted an intern license to comply with the requirements of R 338.473a(3) upon making application, payment of appropriate fees, and satisfying the board as to all of the following:

(a) Verification that the foreign pharmacy school has a curriculum of not less than 4 years.

(b) Verification that the applicant obtained a pharmacy degree or certificate of graduation. A photocopy of the degree or certificate is acceptable. If the pharmacy degree or certificate is not in English, it shall be accompanied by an English translation prepared and certified to be correct by a pharmacy school official, a government official, or other recognized translation service. The translation shall be signed and dated by the official and transmitted directly to the board office.

(c) Verification that the applicant has successfully passed the foreign pharmacy graduate equivalency examination (FPGEE) offered by the Foreign Pharmacy Graduate Examination Commission, 1300 Higgins Road, O'Hare Corporate Center, Park Ridge, Illinois 60068.

(d) Verification that the applicant has obtained a total score of not less than 550 on the test of English as a foreign language, TOEFL, as administered by the Educational Testing Service (ETS), Princeton, New Jersey 08541, or other test of English as a foreign language as approved by the board.

(2) An intern license issued in accordance with this rule is valid for not more than 2 years from the date of issuance, unless extended by the board upon written request by the intern.

R 338.474 Pharmacist licensure; eligibility; examination.

Rule 4. (1) An applicant for licensure as a pharmacist shall submit a completed application on a form provided by the department, together with the appropriate fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall comply with all of the following requirements:

(a) Have completed the requirements for a degree in pharmacy from a program of pharmacy education approved by the board. The board adopts and incorporates by reference the standards of the American

council on pharmaceutical education adopted January 1, 1985. Copies of the standards are available, without cost, from the American Council on Pharmaceutical Education, 311 West Superior Street, Suite 512, Chicago, Illinois 60610, or the Michigan Board of Pharmacy, P.O. Box 30018, Lansing, Michigan 48909.

(b) Have completed a program of internship pursuant to these rules.

(c) Pass the board's jurisprudence examination on state and federal law with a score of not less than 75.

(d) Pass an examination, approved by the board, which measures an applicant's theoretical and practical knowledge of pharmacy with a score of not less than 75.

(2) Upon the filing of an application and payment of appropriate fees, an applicant who has not achieved a passing score after 6 attempts on either the jurisprudence examination or the examination identified in subrule (1)(d) of this rule shall be reexamined after meeting the requirements set forth in R 338.474a.

R 338.474a Licensure; reexamination.

Rule 4a. An applicant may take the examination required by these rules on 6 separate occasions. An applicant who has not received a passing score on the examination after 6 attempts shall not take the examination a seventh or subsequent time, unless the applicant can demonstrate to the board that the applicant has complied with all of the following:

(a) Has enrolled as a student in a pharmacy education program approved by the board.

(b) Has taken courses which would provide a thorough review of those areas failed on the applicant's most recent examination.

(c) Has submitted certification to the board from the pharmacy education institution that the courses have been satisfactorily completed.

R 338.475 Licensure by endorsement; examination.

Rule 5. An applicant for licensure by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and administrative rules promulgated pursuant thereto, an applicant shall satisfy both of the following requirements:

(a) Pass an examination on Michigan jurisprudence with a score of not less than 75.

(b) Satisfy those requirements in existence in this state at the time he or she was licensed in another state.

R 338.477 Pharmacy licenses; applications; notice of changes; self-inspection reports.

Rule 7. (1) Each separate pharmacy location where drugs are prepared or dispensed shall be licensed by the board under section 17741 of the code. If multiple locations under the same ownership exist at a single street address and share a central inventory, then only 1 license is required.

(2) A licensee who is moving to a new location shall apply and be approved for a new license for each location before moving. The department shall provide license applications. A licensee shall pay a license fee to the department for each new location.

(3) An applicant that is a partnership or corporation or that operates under an assumed name shall file, with its application for a pharmacy license, certified copies of its partnership certificates, corporate articles, or assumed name certificate. This requirement shall be waived if the application is for additional units and the additional units will be under the same ownership.

(4) A partnership, corporation, or entity operating under an assumed name shall provide the board with written notification of a change in any of the following entities:

(a) Partners.

(b) Stockholders.

(c) Officers.

(d) Members of the board of directors.

(e) The individual pharmacist who is designated as the pharmacy licensee of a licensed pharmacy.

A partnership or corporation shall notify the board within 30 days of the change.

A publicly held corporate pharmacy need not report changes in stockholders.

(5) A person who applies for a new pharmacy license or pharmacy relocation shall send an application and a completed self-inspection report on forms provided by the department.

R 338.477a Application for license by governmental entity.

Rule 7a. An application by a governmental entity for a new or renewal pharmacy, drug manufacturer's, or wholesaler's license shall designate an individual to be the licensee. That individual and the pharmacist on duty are responsible for compliance with federal and state laws regulating the distribution of drugs and the practice of pharmacy.

R 338.477b Requirements for relicensure.

Rule 7b. (1) An applicant for relicensure who has had a lapsed license for 3 years or less under the provisions of section 16201(3) of the code may be relicensed upon compliance with both of the following requirements:

- (a) Submission of a completed application on a form provided by the department, together with the requisite fee.
- (b) Submission of proof of completion of 30 hours of continuing education that has been earned within the 2-year period immediately preceding the application for relicensure.

(2) An applicant for relicensure who has had a lapsed license for more than 3 years under the provisions of sections 16201(4) and 17733 of the code shall, in addition to the requirements set forth in subrule (1) of this rule, take and pass the board's jurisprudence examination with a score of not less than 75 and have been licensed and engaged in the practice of pharmacy in another state during the period that the applicant's Michigan license is expired or complete a program of practical pharmacy experience that is not less than 200 hours as follows:

- (a) The individual shall practice under the personal charge of a currently licensed pharmacist.
- (b) The individual shall notify the board, in writing, of the name of the supervising pharmacist and the name and address of the pharmacy before beginning the required practical experience.
- (c) When an applicant has completed the required practical experience, the supervising pharmacist shall provide the board with verification of the applicant's completion of the experience.

(3) For purposes of subrule (2) of this rule, "completion of a program of practical pharmacy experience" means professional and clinical instruction in at least all of the following areas:

- (a) Pharmacy administration and management.
- (b) Drug distribution, use, and control.
- (c) Legal requirements.
- (d) Providing health information services and advising patients.
- (e) Pharmacist's ethical and professional responsibilities.
- (f) Drug and product information.

(4) For purposes of complying with the provisions of subrule (2) of this rule, an applicant may be granted a temporary, nonrenewable license to complete the practical experience.

R 338.478 "Person" defined.

Rule 8. The word "person," as used in all statutes, rules, and regulations relating to the profession of pharmacy, shall be construed to include individuals, partnerships, firms, corporations, associations, and governmental institutions.

R 338.490 Professional responsibility; "caregiver" defined.

Rule 20. (1) A pharmacist has a professional responsibility for the strength, quality, purity, and the labeling of all drugs and devices dispensed under a prescription. In discharging this responsibility, a pharmacist shall utilize only those drugs and devices that are obtained from manufacturers and wholesale distributors licensed under section 17748 of the code or from other lawful channels of distribution.

(2) A pharmacist shall not fill a prescription order if, in the pharmacist's professional judgment, any of the following provisions apply:

- (a) The prescription appears to be improperly written.
- (b) The prescription is susceptible to more than 1 interpretation.
- (c) The pharmacist has reason to believe that the prescription could cause harm to the patient.
- (d) The pharmacist has reason to believe that the prescription will be used for other than legitimate medical purposes.

(3) A prescription drug shall only be dispensed when the pharmacy is open and under the personal charge of a pharmacist.

(4) To encourage intended, positive patient outcomes, a pharmacist shall communicate, to the patient or the patient's caregiver, necessary and appropriate information regarding safe and effective medication use at the time a prescription is dispensed. As used in this subrule, "caregiver" means the parent, guardian, or other individual who has assumed responsibility for providing a patient's care. All of the following provisions apply to communicating medication safety and effectiveness information:

- (a) The information shall be communicated orally and in person, except when the patient or patient's caregiver is not at the pharmacy or when a specific communication barrier prohibits oral communication. In either situation, providing printed material designed to help the patient use the medication safely and

effectively satisfies the requirements of this subrule.

(b) The information shall be provided with each prescription for a drug not previously prescribed for the patient.

(c) If the pharmacist deems it appropriate, the information shall be provided with prescription refills.

(d) The information shall be provided if requested by the patient or patient's caregiver or agent for any prescription dispensed by the pharmacy.

This subrule does not require that a pharmacist provide consultation if a patient or a patient's caregiver refuses consultation. This subrule does not apply to prescriptions dispensed for administration to a patient while the patient is in a medical institution.

(5) Pharmacist delegation of acts, tasks, or functions shall be in compliance with section 16215 of the code and under the personal charge of the delegating pharmacist, except as provided in R 338.486(3). A pharmacist who delegates acts, tasks, or functions to a licensed or unlicensed person shall do all of the following:

(a) Determine the knowledge and skill required to safely and competently complete the specific act, task, or function to be delegated.

(b) Before delegating an act, task, or function, make a determination that the delegatee has the necessary knowledge and skills to safely and competently complete the act, task, or function.

(c) Provide written procedures or protocols, or both, to be followed by the delegatee in the performance of the delegated act, task, or function.

(d) Supervise and evaluate the performance of the delegatee.

(e) Provide remediation of the performance of the delegatee if indicated.

(6) A delegating pharmacist shall bear the ultimate responsibility for the performance of delegated acts, tasks, and functions performed by the delegatee within the scope of the delegation.

Michigan Public Health Code (www.michigan legislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-177&highlight=>

Occupational Board Information:

The Public Health Code defines the practice of pharmacy as a health service, the clinical application of which includes the encouragement of safety and efficacy in the prescribing, dispensing, administering and use of drugs and related articles for the prevention of illness and the maintenance and management of health.

Professional functions associated with the practice of pharmacy include the interpretation and evaluation of prescriptions; drug product selection; compounding, dispensing, safe storage, and distribution of drugs and device maintenance of legally required records; advising the prescriber and the patient as required regarding contents, therapeutic action, utilization, and possible adverse reactions and interactions of drugs.

The Public Health Code, by section 17722, grants authority to the Board of Pharmacy to regulate, control, and inspect the character and standards of pharmacy practice and of drugs manufactured, distributed, prescribed, dispensed, and administered or issued in this State and procure samples, and limit or prevent the sale of drugs that do not comply with this section's provisions; prescribe minimum criteria for the use of professional and technical equipment in reference to the compounding and dispensing of drugs; grant pharmacy licenses for each separate place of practice of a dispensing prescriber who meets requirements for drug control licensing; and granting licenses to manufacturer/ wholesaler distributors of prescription drugs. The Board also has the obligation to discipline licensees who have adversely affected the public's health, safety, and welfare.

The Michigan Board of Pharmacy consists of 11 voting members: 6 pharmacists and 5 public members.

The board currently oversees approximately 11,174 Pharmacists, 2,490 Pharmacies and 625 Manufacturer/Wholesalers.

EDUCATION

To become a pharmacist, you must have at least five years of study beyond high school. Admission to pharmacy programs is usually contingent upon successful completion of a predetermined prepharmacy curriculum. Once admitted to pharmacy school, future pharmacists build upon their strong prepharmacy education in chemistry, biological sciences, mathematics, physical sciences, social-behavioral sciences, and the humanities.

Pharmacists can earn two professional degrees: the bachelor of science in pharmacy, which requires a five-year

course of study, or the doctor of pharmacy (Pharm.D.), which customarily requires a six-year course of study. The Pharm.D. program may also be completed following the B.S. pharmacy degree, in which case the combined period of study is usually longer than six years. You may also earn a master of science degree or Ph.D. in pharmaceutical sciences.

To become licensed to practice, a student must graduate from an accredited program (either B.S. or Pharm.D.), complete a prescribed number of hours of internship training, and pass a state board licensing examination. (<http://www.aphanet.org/>)

Accrediting body: Accreditation Council for the Association of Pharmacy Education (<http://www.acpe-accredit.org/>)

For a list of TRANSFERABLE SKILLS related to this occupation, visit
America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or
O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

State Association:

Michigan Pharmacists Association -- <http://www.mipharm.com/>

National Association:

American Pharmacists Association -- <http://www.aphanet.org/>

RESOURCES

Pharmacy Technician

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Prepare medications under the direction of a pharmacist. May measure, mix, count out, label, and record amounts and dosages of medications.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$10.89	\$22,650.00
Ann Arbor MSA	\$11.91	\$24,770.00
Benton Harbor MSA	\$9.28	\$19,300.00
Detroit MSA	\$11.05	\$22,980.00
Flint MSA	\$11.22	\$23,330.00
Grand Rapids-Muskegon-Holland MSA	\$10.63	\$22,110.00
Jackson MSA	\$11.03	\$22,930.00
Kalamazoo-Battle Creek MSA	\$10.29	\$21,400.00
Lansing MSA	\$10.85	\$22,570.00
Saginaw MSA	\$10.69	\$22,230.00
Balance of State - Northeast Lower Peninsula	\$9.84	\$20,470.00
Balance of State - Northwest Lower Peninsula	\$11.05	\$22,990.00
Balance of State - South Central Lower Peninsula	\$10.32	\$21,470.00
Balance of State - Upper Peninsula	\$10.50	\$21,840.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

The federal government has not regulated training programs, but employers favor pharmacy technicians who have received certificates or associate's degrees from community/technical colleges. Longer programs provide in-depth training that can increase your salary and career options.

The majority of certificate and degree programs require students to intern with community or hospital pharmacies, which helps them gain hands-on experience that employers prefer. In addition, formal programs instruct students in pharmaceutical calculations, medical terminology, computer systems, and pharmacy billing.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit
America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or
O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Association of Pharmacy Technicians -- <http://www.pharmacytechnician.com/>

National Association:

National Pharmacy Technician Association -- <http://www.pharmacytechnician.org/>

RESOURCES

American Society of Health-Systems Pharmacists -- <http://www.ashp.org>
Pharmacy Technician Certification Board -- <http://www.ptcb.org>

Physical Therapist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and decrease or prevent deformity of patients suffering from disease or injury.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$29.77	\$61,920.00
Ann Arbor MSA	\$28.85	\$60,000.00
Benton Harbor MSA	\$30.27	\$62,960.00
Detroit MSA	\$31.72	\$65,970.00
Flint MSA	\$27.82	\$57,870.00
Grand Rapids-Muskegon-Holland MSA	\$25.67	\$53,380.00
Jackson MSA	\$27.92	\$58,080.00
Kalamazoo-Battle Creek MSA	\$27.55	\$57,310.00
Lansing MSA	\$29.95	\$62,290.00
Saginaw MSA	\$30.66	\$63,780.00
Balance of State - Northeast Lower Peninsula	\$29.43	\$61,210.00
Balance of State - Northwest Lower Peninsula	\$24.27	\$50,470.00
Balance of State - South Central Lower Peninsula	\$26.75	\$55,640.00
Balance of State - Upper Peninsula	\$26.04	\$54,160.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33807101&Dpt=CH&RngHigh=):

R 338.7101 Definitions.

Rule 1. As used in these rules:

(a) "Board" means the board of physical therapy.

(b) "Code" means Act No. 368 of the Public Acts of 1978, as amended, being S333.1101 et seq. of the Michigan Compiled Laws.

(c) "Completed a physical therapist educational program acceptable to the board" means that the applicant has completed a physical therapist educational program of not less than 120 weeks' duration, of which not less than 60 weeks are devoted to a professional curriculum which includes studies in all of the following areas:

(i) The scientific rationale underlying physical therapy, including all of the following:

(A) The basic sciences of anatomy and physiology.

(B) Clinical sciences.

(C) Physical therapy.

(D) Related therapies and technology.

(E) Changes in movement dysfunctions and disease.

(F) The effect of social needs and demands on various patient populations.

- (ii) The biomedical sciences basic to physical therapy.
- (iii) The clinical areas of physical therapy, including all of the following:
 - (A) Neurology.
 - (B) Orthopedics.
 - (C) Pediatrics.
 - (D) Gerontology.
 - (E) Cardiopulmonary.
- (iv) Ethical and socioeconomic concepts pertinent to physical therapy.
- (v) Laboratory or other practical experience which includes quantitative and qualitative observations of biomedical phenomena and critical analyses of data.
- (vi) Physical therapy modalities, including all of the following:
 - (A) Physical agents.
 - (B) Therapeutic exercises.
 - (C) Developmental activities.
 - (D) Functional activities.
 - (E) Prosthetics.
 - (F) Orthotics.
- (vii) Research methodology, including review and critical analysis of research reports.
- (viii) Methods of formulating and solving problems.
- (ix) Physical therapy administration, education, and consultation.
- (d) "Prescription" means a written order for physical therapy which contains all of the following:
 - (i) The name of the patient.
 - (ii) The patient's diagnosis.
 - (iii) The signature of an individual who is licensed or otherwise authorized to prescribe physical therapy in Michigan.

History: 1979 ACS 14, Eff. May 12, 1983; 1991 MR 3, Eff. Apr. 16, 1991.

R 338.7102 Prescription; renewal.

- Rule 2. (1) Renewal of a prescription by a physician is required at least once every 30 calendar days, unless the termination date is otherwise stated by the physician on the prescription.
- (2) The renewed prescription shall be maintained as part of the patient's record.

History: 1979 ACS 14, Eff. May 12, 1983.

R 338.7103 Assessment of fines.

Rule 3. When a fine has been designated as an available sanction for a violation of sections 16221 to 16226 of the code, in the course of assessing a fine, the board may take into consideration the following factors:

- (a) The extent to which the licensee obtained financial benefit from any conduct comprising part of the violation found by the board.
- (b) The willfulness of the conduct found to be part of the violation determined by the board.
- (c) The public harm, actual or potential, caused by the violation found by the board.
- (d) The cost incurred in investigating and proceeding against the licensee.
- (e) A fine shall not exceed the sum of \$10,000.00 for each violation found to have been committed by the licensee.

History: 1979 ACS 14, Eff. May 12, 1983.

R 338.7104 Program accreditation standards; adoption of standards by reference.

Rule 4. (1) The board approves and adopts by reference in these rules the standards and evaluative criteria for accreditation of physical therapy educational programs set forth by the commission on accreditation in physical therapy education effective January 1, 1998. The standards and criteria are available from the Michigan Board of Physical Therapy, P.O. Box 30670, Lansing, Michigan 48909, or from the American Physical Therapy Association, 1111 North Fairfax Street, Alexandria, Virginia 22314, at no charge.

(2) The board shall consider any educational program for the physical therapist that is accredited by the American physical therapy association as a physical therapist educational program approved by the board.

History: 1979 ACS 14, Eff. May 12, 1983; 1991 MR 3, Eff. Apr. 16, 1991; 1999 MR 9, Eff. Sep. 27, 1999.

R 338.7105 Licensure by examination; requirements.

Rule 5. An applicant for a physical therapist license by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall meet both of the following requirements:

(a) The applicant shall establish that he or she meets the eligibility requirements to sit for the examinations set forth in R 338.7107(2).

(b) The applicant shall pass a physical therapist licensure examination that is approved by the board and the examination on laws and rules related to the practice of physical therapy in Michigan which is administered by the department.

History: 1979 ACS 14, Eff. May 12, 1983; 1991 MR 3, Eff. Apr. 16, 1991.

R 338.7106 Rescinded.

History: 1979 ACS 14, Eff. May 12, 1983; rescinded 1991 MR 3, Eff. Apr. 16, 1991.

R 338.7107 Examinations; passing scores; eligibility requirements.

Rule 7. (1) The board approves the physical therapist licensure examination developed by the committee on licensure examinations for the American physical therapy association. A passing score on the physical therapist licensure examination developed for the American physical therapy association shall be a converted score of not less than 75 on each part obtained in 1 sitting.

(2) The board approves the physical therapist licensure examination developed by the committee on licensure examinations for the federation of state boards of physical therapy. The passing score on the physical therapist licensure examination developed for the federation of state boards of physical therapy shall be a converted score of not less than 75.

(3) The board approves the examination on laws and rules related to the practice of physical therapy administered by the department. The passing score on the law and rules examination shall be a converted score of not less than 75.

(4) To assure eligibility for examination, an applicant shall submit a completed application on a form provided by the department, together with the requisite fee, not less than 60 days before the date of the examination. To be eligible for examination, an applicant shall satisfy the following requirements as applicable:

(a) An applicant who graduated from a postsecondary institution that is located in the United States shall have completed a physical therapist educational program that is approved by the board pursuant to R 338.7104.

(b) An applicant who graduated from a postsecondary institution that is located outside of the United States shall establish all of the following:

(i) That he or she has completed a physical therapist educational program acceptable to the board as defined in R 338.7101(c).

(ii) That he or she is authorized to practice as a physical therapist without limitation in the legal jurisdiction in which the postsecondary institution from which the applicant has graduated is located or in the legal jurisdiction in which the applicant is a citizen.

(iii) That an applicant whose physical therapist educational program was taught in a language other than English demonstrate a working knowledge of the English language. To demonstrate a working knowledge of the English language, an applicant shall establish that he or she has obtained a score of not less than 550 on the test of English as a foreign language administered by the educational testing service and obtained a score of not less than 50 on the test of spoken English administered by the educational testing service or passed other substantially equivalent English language proficiency examinations that assess all of the following:

(A) Reading comprehension.

(B) Speaking skills.

(C) Listening skills.

(D) The ability to write clearly, using complete sentences with correct spelling, punctuation, and word usage.

History: 1979 ACS 14, Eff. May 12, 1983; 1991 MR 3, Eff. Apr. 16, 1991; 1995 MR 10, Eff. Nov. 4, 1995.

R 338.7107a Rescinded.

History: 1995 MR 10, Eff. Nov. 4, 1995; rescinded 1999 MR 9, Eff. Sep. 27, 1999.

R 338.7108 Reexamination.

Rule 8. An applicant who fails to achieve passing scores on both of the examinations required in R 338.7105(b) may retake either or both of the failed examinations without limitation. To assure eligibility for reexamination, an applicant shall submit a completed application on a form provided by the department, together with the requisite fee, not less than 60 days before the date of the next scheduled examination.

History: 1979 ACS 14, Eff. May 12, 1983; 1991 MR 3, Eff. Apr. 16, 1991.

R 338.7109 Rescission.

Rule 9. R 338.1131 to R 338.1151 of the Michigan Administrative Code, appearing on pages 2469 to 2472 of the 1979 Michigan Administrative Code, are rescinded.

History: 1979 ACS 14, Eff. May 12, 1983.

R 338.7110 Licensure by endorsement; requirements.

Rule 10. An applicant for a physical therapist license by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant who satisfies the following requirements and certifies that he or she has read and understands the laws and rules governing the practice of physical therapy in Michigan shall be deemed to meet the requirements of section 16186(a) and (d) of the code:

(a) An applicant shall have either graduated from a postsecondary institution that is located in the United States and completed a physical therapist educational program that is approved by the board pursuant to R 338.7104 or graduated from a postsecondary institution that is located outside of the United States and completed a physical therapy educational program acceptable to the board as defined in R 338.7101(c).

(b) An applicant shall have been first licensed as a physical therapist in another state before January 1, 1980, and engaged in the practice of physical therapy for not less than 10 years before the date of filing an application for a Michigan license or passed a physical therapist licensure examination that is approved by the board.

(c) An applicant whose physical therapist educational program was taught in a language other than English and who has not engaged in the practice of physical therapy for at least 5 years before the date of filing an application for a Michigan license shall have obtained a score of not less than 550 on the test of English as a foreign language administered by the educational testing service and obtained a score of not less than 50 on the test of spoken English administered by the educational testing service or other substantially equivalent English language proficiency examinations which assess all of the following:

(i) Reading comprehension.

(ii) Speaking skills.

(iii) Listening skills.

(iv) The ability to write clearly, using complete sentences with correct spelling, punctuation, and word usage.

History: 1991 MR 3, Eff. Apr. 16, 1991; 1995 MR 10, Eff. Nov. 30, 1995

Michigan Public Health Code (www.michiganlegislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-178&highlight=>

Occupational Board Information:

The Michigan Board of Physical Therapy was originally formed with the enactment of Public Act 164 of 1965. On September 30, 1978, authority was transferred to the Public Health Code by Public Act 368 of 1978, as amended. The practice of physical therapy, as defined in the Public Health Code, means: "the evaluation of treatment of an individual by the employment of effective properties of physical measures and the use of therapeutic exercises and rehabilitative physical or mental disability. It includes treatment planning, performance of tests and measurements, interpretation of referrals, instruction, consultative services, and supervision of personnel. Physical measures include massage, mobilization, heat, cold, air, light, water, electricity, and sound."

The Public Health Code mandates certain responsibilities and duties for a health professional licensing board. Underlying all duties is the responsibility of the board to promote and protect the public's health, safety, and

welfare. This responsibility is implemented by the Board by ascertaining minimal entry level competency of health practitioners. The Board also has the obligation to take disciplinary action against licensees who have adversely affected the public's health, safety, and welfare.

The Michigan Board of Physical Therapy consists of 9 voting members: 5 physical therapists and 4 public members.

The board currently oversees approximately 6,765 Physical Therapists.

EDUCATION

A PT must earn a bachelor's, master's, or doctor of physical therapy degree from a program accredited by the Commission on Accreditation in Physical Therapy Education and then must pass a licensing exam. If a student has a bachelor's degree in another subject, he or she should apply to master's-level programs. Admission to PT educational programs is very competitive so earning high grades in high school is imperative. Before granting admission, some schools require a student to volunteer in a Physical Therapy department of a hospital or clinic.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Physical Therapy Association -- <http://www.apta.org/>

State Association:

Michigan Physical Therapy Association -- <http://www.mpta.com/>

RESOURCES

Physical Therapy Aide

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Under close supervision of a physical therapist or physical therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing the patient and the treatment area.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Balance of State - South Central Lower Peninsula	\$10.82	\$22,510.00
Balance of State - Upper Peninsula	\$11.12	\$23,140.00
Michigan	\$11.35	\$23,610.00
Ann Arbor MSA	\$10.21	\$21,230.00
Detroit MSA	\$11.74	\$24,410.00
Flint MSA	\$11.98	\$24,910.00
Kalamazoo-Battle Creek MSA	\$9.49	\$19,740.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

Physical therapy aides must have a high school diploma. Most employers provide on-the-job training.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Physical Therapy Association -- <http://www.apta.org/>

State Association:

Michigan Physical Therapy Association -- <http://www.mpta.com/>

RESOURCES

Physical Therapy Assistant

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assist physical therapists in providing physical therapy treatments and procedures. May, in accordance with state laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. Generally requires formal training.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Balance of State - Northwest Lower Peninsula	\$15.05	\$31,310.00
Balance of State - South Central Lower Peninsula	\$15.74	\$32,730.00
Balance of State - Upper Peninsula	\$15.92	\$33,110.00
Michigan	\$16.23	\$33,750.00
Ann Arbor MSA	\$15.90	\$33,080.00
Benton Harbor MSA	\$14.24	\$29,620.00
Detroit MSA	\$16.02	\$33,320.00
Flint MSA	\$16.91	\$35,180.00
Grand Rapids-Muskegon-Holland MSA	\$16.05	\$33,380.00
Kalamazoo-Battle Creek MSA	\$17.64	\$36,690.00
Lansing MSA	\$17.89	\$37,210.00
Saginaw MSA	\$17.29	\$35,970.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

To work as a PTA in most states, one must complete an accredited associate's degree program. PTAs are required to have certification in CPR and other first aid and clinical experience.

Currently there are over 250 accredited physical therapy assistant programs in the country. Curriculum varies from program to program, but in addition to the theory and practice of physical therapy, you'll probably study the basic medical sciences and other general education courses. You'll also gain plenty of hands-on experience in a clinical internship.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Physical Therapy Association -- <http://www.apta.org/>

State Association:

Michigan Physical Therapy Association -- <http://www.mpta.com/>

RESOURCES

Physician's Assistant

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Provide health care services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment, and counsel patients. May, in some cases, prescribe medication. Must graduate from an accredited educational program for physician assistants.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow much faster than average (increase 36 percent or more)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$35.06	\$72,930.00
Ann Arbor MSA	\$36.27	\$75,440.00
Detroit MSA	\$36.93	\$76,800.00
Flint MSA	\$33.95	\$70,620.00
Grand Rapids-Muskegon-Holland MSA	\$30.27	\$62,970.00
Jackson MSA	\$34.93	\$72,660.00
Kalamazoo-Battle Creek MSA	\$29.25	\$60,840.00
Lansing MSA	\$33.14	\$68,930.00
Saginaw MSA	\$35.74	\$74,340.00
Balance of State - Northeast Lower Peninsula	\$42.77	\$88,960.00
Balance of State - Northwest Lower Peninsula	\$31.34	\$65,200.00
Balance of State - South Central Lower Peninsula	\$31.00	\$64,490.00
Balance of State - Upper Peninsula	\$40.57	\$84,380.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33806101&Dpt=CH&RngHigh=):

R 338.2301 Definitions.

Rule 1. As used in these rules:

- (a) "Board" means the board of medicine.
- (b) "Code" means Act No. 368 of the Public Acts of 1978, as amended, being S333.1101 et seq. of the Michigan Compiled Laws.
- (c) "Completed the requirements for a degree in medicine" means that the applicant shall have graduated from a medical educational program which is not less than 130 weeks and which does not award credit for any course taken by correspondence. The medical educational program shall include a core curriculum which includes, at a minimum, all of the following courses in the basic sciences and clerkships in the clinical sciences:
 - (i) Courses in the basic sciences, which shall include courses in all of the following:
 - (A) Anatomy.
 - (B) Physiology.
 - (C) Biochemistry.
 - (D) Microbiology.
 - (E) Pathology.
 - (F) Pharmacology and therapeutics.

- (G) Preventive medicine.
- (ii) Clerkships in the clinical sciences, which shall include clinical clerkships in all of the following:
 - (A) Internal medicine.
 - (B) General surgery.
 - (C) Pediatrics.
 - (D) Obstetrics and gynecology.
 - (E) Psychiatry.

All core clinical clerkships shall be completed either in a hospital or institution located in the United States, its territories, the District of Columbia or the Dominion of Canada that is approved by the board or in a hospital or institution that offers a postgraduate clinical training program in the content area of the clinical clerkship.

History: 1954 ACS 65, Eff. Nov. 30, 1970; 1954 ACS 87, Eff. June 15, 1976; 1979 AC; 1979 ACS 7, Eff. Sept. 16, 1981; 1986 MR 4, Eff. May 10, 1986; 1987 MR 12, Eff. Jan. 20, 1988.

R 338.2302 Name of practitioner; display of name; change of address.

Rule 2. (1) A person shall not engage in the practice of medicine under a personal name other than the name under which he is licensed by the board.

(2) A person shall conspicuously display the name under which he is licensed by the board at each facility where he regularly engages in the practice of medicine.

(3) A person shall conspicuously display his certificate of renewal in his principal place of medical practice.

(4) A person licensed or otherwise registered pursuant to the act shall inform the board in writing within 30 days of any change of residence address or place of practice.

History: 1954 ACS 87, Eff. June 15, 1976; 1979 AC.

R 338.2303 Standards of practice regarding schedule 2 sympathomimetic amine drugs, including amphetamines.

Rule 3. (1) The board of medicine has determined that any of the sympathomimetic amine drugs, except dextroamphetamine, designated in schedule 2 under the code or the rules promulgated by Michigan's board of pharmacy have negligible therapeutic value, have a high potential for physical and psychological addiction, have serious detrimental health effects when abused, are widely abused through intentional or misinformed acts in the medical and lay communities, and pose a health hazard and risk of improper medical treatment vastly disproportionate to any legitimate use of such drugs. The board has further determined that there are alternative treatment modalities to such drugs of at least comparable therapeutic value which do not pose similar risks. In accordance with these determinations, and except as provided in subrules (4) and (5) of this rule on the prescribing of dextroamphetamine, and except as provided in subrule (6) of this rule, the giving, selling, prescribing, or administering of any of the sympathomimetic amine drugs designated in schedule 2 under the code or the rules promulgated by Michigan's board of pharmacy constitutes a departure from, or failure to conform to, minimal standards of acceptable and prevailing medical practice.

(2) Except as provided in subrules (4) and (5) of this rule on the prescribing of dextroamphetamine, and except as provided in subrule (6) of this rule, the giving, selling, prescribing, or administering of any of the sympathomimetic amine drugs designated in schedule 2 under the code or the rules promulgated by Michigan's board of pharmacy is prohibited.

(3) A violation of this rule constitutes a violation of section 16221(a), (b)(i), (c)(iv), and (g) of the code.

(4) Recognizing that dextroamphetamine is therapeutically effective in the treatment of hyperkinetic children, a physician may, by issuance of a written order for dextroamphetamine, prescribe dextroamphetamine for a hyperkinetic child, if the physician, before writing a prescription for dextroamphetamine, has done all of the following:

(a) Taken a complete history.

(b) If the child is attending school, secured a report from the child's school regarding the child's current and past behavior.

(c) Completed a physical examination, including a neurological examination.

A prescription for dextroamphetamine ordered for a hyperkinetic child shall indicate on the prescription order, in the physician's own handwriting, the purpose for which the drug is being prescribed.

(5) Recognizing that dextroamphetamine is therapeutically effective in the treatment of narcolepsy, a physician may, by issuance of a written order for dextroamphetamine, prescribe dextroamphetamine for narcolepsy, if the physician, before writing the prescription for a patient, secures a waiver of this rule from the board. The application for the waiver shall include both of the following:

(a) A complete history and physical examination, with appropriate studies of the patient for whom the waiver is being requested, establishing that the patient suffers from narcolepsy.

(b) The written concurrence of another physician in the diagnosis and prescribing of dextroamphetamine for the patient involved.

A prescription for dextroamphetamine ordered to treat narcolepsy shall indicate on the prescription order, in the physician's own handwriting, the purpose for which the drug is being prescribed.

(6) Recognizing the need for innovative medical practices and the unpredictability of scientific developments, a physician may apply for a written waiver of the requirements of this rule by submitting a written request to the board. The request shall include all information necessary for a comprehensive evaluation of its merit. If the physician requesting the waiver demonstrates to the satisfaction of the board that a waiver would further legitimate medical purposes without undermining the purposes of this rule, the board may issue a written waiver with such terms and conditions as may be deemed appropriate.

History: 1954 ACS 95, Eff. Apr. 5, 1978; 1979 AC; 1979 ACS 7, Eff. Sept. 16, 1981; 1985 MR 3, Eff. Mar. 21, 1985.

R 338.2304 Delegation of prescribing of controlled substances to physician's assistants; limitation.

Rule 4. (1) A physician who supervises a physician's assistant under sections 17048 and 17049 of the code may delegate the prescription of controlled substances listed in schedules 3 to 5 to a physician's assistant if the delegating physician establishes a written authorization that contains all of the following information:

(a) The name, license number, and signature of the supervising physician.

(b) The name, license number, and signature of the physician's assistant.

(c) The limitations or exceptions to the delegation.

(d) The effective date of the delegation.

(2) A delegating physician shall review and update a written authorization on an annual basis from the original date or the date of amendment, if amended. A delegating physician shall note the review date on the written authorization.

(3) A delegating physician shall maintain a written authorization in each separate location of the physician's office where the delegation occurs.

(4) A delegating physician shall ensure that an amendment to the written authorization is in compliance with subrule (1)(a) to (d) of this rule.

(5) A delegating physician may delegate the prescription of schedule 2 controlled substances only if all of the following conditions are met:

(a) The supervising physician and physician's assistant are practicing within a health facility as defined in section 20106(d), (g), or (i) of the code; specifically, freestanding surgical outpatient facilities, hospitals, and hospices.

(b) The patient is located within the facility described in subdivision (a) of this subrule.

(c) The delegation is in compliance with this rule.

(6) A delegating physician may not delegate the prescription of schedule 2 controlled substances issued for the discharge of a patient for a quantity for more than a 7-day period.

(7) A delegating physician shall not delegate the prescription of a drug or device individually, in combination, or in succession for a woman known to be pregnant with the intention of causing either a miscarriage or fetal death.

History: 1999 MR 11, Eff. Nov. 17, 1999.

R 338.2305 Delegation of prescribing of controlled substances to nurse practitioners or nurse midwives; limitation.

Rule 5. (1) A physician may delegate the prescription of controlled substances listed in schedules 3 to 5 to a registered nurse who holds specialty certification under section 17210 of the code, with the exception of a nurse anesthetist, if the delegating physician establishes a written authorization that contains all of the following information:

(a) The name, license number, and signature of the delegating physician.

(b) The name, license number, and signature of the nurse practitioner or nurse midwife.

(c) The limitations or exceptions to the delegation.

(d) The effective date of the delegation.

(2) A delegating physician shall review and update a written authorization on an annual basis from the original

date or the date of amendment, if amended. A delegating physician shall note the review date on the written authorization.

(3) A delegating physician shall maintain a written authorization in each separate location of the physician's office where the delegation occurs.

(4) A delegating physician shall ensure that an amendment to the written authorization is in compliance with subrule (1) (a) to (d) of this rule.

(5) A delegating physician may delegate the prescription of schedule 2 controlled substances only if all of the following conditions are met:

(a) The delegating physician and nurse practitioner or nurse midwife are practicing within a health facility as defined in section 20106(d), (g), or (i) of the code; specifically, freestanding surgical outpatient facilities, hospitals, and hospices.

(b) The patient is located within the facility described in subdivision (a) of this subrule.

(c) The delegation is in compliance with this rule.

(6) A delegating physician may not delegate the prescription of schedule 2 controlled substances issued for the discharge of a patient for a quantity for more than a 7-day period.

(7) A delegating physician shall not delegate the prescription of a drug or device individually, in combination, or in succession for a woman known to be pregnant with the intention of causing either a miscarriage or fetal death.

History: 1999 MR 11, Eff. Nov. 17, 1999.

R 338.2308 Assessment of fines.

Rule 18. When a fine has been designated as an available sanction for a violation of sections 16221 to 16226 of the code, in the course of assessing a fine the board shall take into consideration all of the following factors without limitation:

(a) The extent to which the licensee obtained financial benefit from conduct comprising part of the violation found by the board.

(b) The willfulness of the conduct found to be part of the violation determined by the board.

(c) The public harm, actual or potential, caused by the violation found by the board.

(d) The cost incurred in investigating and proceeding against the licensee.

History: 1979 ACS 7, Eff. Sept. 16, 1981; 1990 MR 7, Eff. Aug. 15, 1990.

R 338.2309 Rescission.

Rule 9. The rules of the board, being R 338.51 to R 338.76 of the Michigan Administrative Code and appearing on pages 2601 to 2604 of the 1954 volume of the Code and pages 1459 to 1462 of the 1960 Annual Supplement to the Code, are rescinded.

History: 1954 ACS 65, Eff. Nov. 30, 1970; 1979 AC.

R 338.2313 Standards for approval of medical schools, hospitals, and postgraduate clinical training programs; adoption by reference.

Rule 13. (1) The board approves and adopts by reference the standards for accrediting schools of medicine developed by the liaison committee on medical education on February 19, 1985, and ratified by the council on medical education of the American medical association on March 1, 1985, and ratified by the executive council of the association of American medical colleges on April 4, 1985, entitled "Functions & Structure of a Medical School." The board shall consider any school of medicine that is accredited by the liaison committee on medical education as a school approved by the board.

(2) The board approves and adopts by reference the standards for accrediting hospitals which were adopted in April, 1986, by the joint commission on accreditation of hospitals and which were effective January 1, 1987. The board shall consider any hospital or institution that is accredited by the joint commission on accreditation of hospitals as a hospital or institution approved by the board.

(3) The board approves and adopts by reference the standards for approving postgraduate clinical training programs which were adopted in 1987 by the accreditation council for graduate medical education and which were effective July 1, 1987, entitled "The Essentials of Accredited Residencies in Graduate Medical Education," and the board shall designate any program of postgraduate clinical training approved by the accreditation council for graduate medical education as a program approved by the board.

(4) The board approves and adopts by reference the standards for approving postgraduate clinical training programs which were adopted in April, 1985, by the national joint committee on accreditation of preregistration physician training programs of the Canadian medical association and which were effective July, 1985, and the board shall consider any program of postgraduate clinical training approved by the national joint committee on accreditation of preregistration physician training programs as a program approved by the board.

History: 1954 ACS 65, Eff. Nov. 30, 1970; 1979 AC; 1979 ACS 7, Eff. Sept. 16, 1981; 1986 MR 4, Eff. May 10, 1986; 1987 MR 12, Eff. Jan. 20, 1988.

R 338.2314 Examinations; passing scores; eligibility; reexamination; limitations.

Rule 14. (1) The board approves and accepts the 3-part examination developed and scored by the national board of medical examiners, hereinafter identified as the NBME part I, the NBME part II, and the NBME part III. The board approves and adopts the 3-part examination prepared by the federation of state medical boards of the United States, inc., before January 1985, hereinafter identified as FLEX, the 2-part examination prepared by the federation of state medical boards of the United States, inc., after January 1985, hereinafter identified as FLEX component 1 and FLEX component 2, and the 3-part examination prepared by the federation of state medical boards of the United States, inc., hereinafter identified as USMLE step 1, USMLE step 2, and USMLE step 3.

(2) A passing score on FLEX shall be a truncated weighted average of not less than 75 based on a single sitting that includes all 3 parts of FLEX.

A passing score on FLEX component 1 shall be not less than 75. A passing score on FLEX component 2 shall be not less than 75. A passing score on USMLE step 1 shall be not less than 75. A passing score on USMLE step 2 shall be not less than 75. A passing score on USMLE step 3 shall be not less than 75.

(3) To sit for USMLE step 3, an applicant shall submit a completed application, on a form provided by the department, together with the requisite fee.

(4) To be eligible to sit for USMLE step 3, an applicant shall establish both of the following:

(a) That the applicant has passed 1 of the following examinations or combinations of examination parts:

(i) FLEX component 1.

(ii) NBME part I and NBME part II.

(iii) NBME part I and USMLE step 2.

(iv) USMLE step 1 and NBME part II.

(v) USMLE step 1 and USMLE step 2.

(b) That the applicant has completed not less than 6 months of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution.

(5) An applicant who fails to achieve a passing score on USMLE step 3 within 5 years from the first time he or she sat for USMLE step 3 shall not be eligible to again sit for USMLE step 3 until the applicant has completed 1 year of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution. If the applicant thereafter fails USMLE step 3, the applicant may repeat the examination without limitation if the applicant, subsequent to each failure, first completes 1 year of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution before sitting for the USMLE step 3.

(6) The examination sequence as specified in this rule is subject to the limitations set forth in section 17012(2) of the code.

History: 1954 ACS 65, Eff. Nov. 30, 1970; 1979 AC; 1979 ACS 7, Eff. Sept. 16, 1981; 1986 MR 4, Eff. May 10, 1986; 1987 MR 12, Eff. Jan. 20, 1988; 1989 MR 2, Eff. Mar. 15, 1989; 1994 MR 4, Eff. Apr. 20, 1994.

R 338.2315 Rescinded.

History: 1954 ACS 65, Eff. Nov. 30, 1970; 1979 AC; rescinded 1979 ACS 7, Eff. Sept. 16, 1981.

R 338.2316 Licensure by examination; applications; qualifications for graduates of foreign medical schools.

Rule 16. (1) An applicant for Michigan medical licensure by examination from a medical school located other than in the United States, its territories, the District of Columbia, or the Dominion of Canada shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall satisfy the requirements of this rule.

- (2) An applicant shall establish that he or she has completed the requirements for a degree in medicine.
- (3) An applicant shall have passed 1 of the following examinations or combinations of examination parts:
 - (a) FLEX.
 - (b) FLEX component 1 and FLEX component 2.
 - (c) FLEX component 1 and USMLE step 3.
 - (d) USMLE step 1, USMLE step 2, and FLEX component 2.
 - (e) USMLE step 1, USMLE step 2, and USMLE step 3.
- (4) An applicant shall have passed an examination in the basic and clinical medical sciences conducted by the educational commission for foreign medical graduates and satisfy either of the following requirements:
 - (a) An applicant who has passed the visa qualifying examination, the foreign medical graduate examination in the medical sciences, parts I and II of the examination developed by the national board of medical examiners and conducted by the educational commission for foreign medical graduates, or USMLE step 1 and USMLE step 2 shall have satisfactorily completed 2 years of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution.
 - (b) An applicant who has passed the educational commission for foreign medical graduates examination conducted by the educational commission for foreign medical graduates before July 1, 1984, shall have satisfactorily completed 3 years of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution. Certification of satisfactory completion of postgraduate clinical training shall be accepted by the board 15 days before completion of the training.

History: 1954 ACS 65, Eff. Nov. 30, 1970; 1979 AC; 1979 ACS 7, Eff. Sept. 16, 1981; 1986 MR 4, Eff. May 10, 1986; 1987 MR 12, Eff. Jan. 20, 1988; 1989 MR 2, Eff. Mar. 15, 1989; 1994 MR 4, Eff. Apr. 20, 1994.

R 338.2317 Licensure by examination; applications; qualifications for graduates of schools located in the United States, its territories, the District of Columbia, or the Dominion of Canada.

Rule 17. (1) An applicant for Michigan medical licensure by examination from a medical school located in the United States, its territories, the District of Columbia, or the Dominion of Canada shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall satisfy the requirements of this rule.

- (2) An applicant shall establish that he or she is a graduate of a medical school approved by the board.
- (3) An applicant shall have passed 1 of the following examinations or combination of examination parts:
 - (a) FLEX.
 - (b) FLEX component 1 and FLEX component 2.
 - (c) FLEX component 1 and USMLE step 3.
 - (d) One of each of the following examination parts:
 - (i) NBME part I or USMLE step 1.
 - (ii) NBME part II or USMLE step 2.
 - (iii) NBME part III, USMLE step 3, or FLEX component 2.
- (4) An applicant shall have satisfactorily completed 2 years of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution. Certification of satisfactory completion of postgraduate clinical training shall be accepted by the board 15 days before completion of the training.

History: 1986 MR 4, Eff. May 10, 1986; 1987 MR 12, Eff. Jan. 20, 1988; 1989 MR 2, Eff. Mar. 15, 1989; 1994 MR 4, Eff. Apr. 20, 1994.

R 338.2318 Licensure by endorsement; applications; qualifications.

Rule 18. (1) An applicant for a Michigan medical license by endorsement shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall satisfy the requirements of this rule.

- (2) If an applicant was licensed in another state and has been engaged in the practice of medicine a minimum of 10 years before the date of filing an application for Michigan medical licensure, it will be presumed that the applicant meets the requirements of section 16186(1)(a) and (b) of the code.
- (3) If an applicant does not meet the requirements of subrule (2) of this rule, the applicant, in addition to meeting the requirements of the code, shall satisfy the following requirements:

(a) The applicant shall have been licensed in another state after having passed an examination deemed by the board to have been conducted in accordance with standards substantially equivalent to those which were applicable to examinations given by the board in the same year, as provided by R 338.2319.

(b) An applicant who is a graduate of a medical school located in the United States, its territories, the District of Columbia, or the Dominion of Canada shall satisfy either of the following requirements:

(i) If the applicant was first licensed in another state before September 1, 1989, the applicant shall have satisfactorily completed 1 year of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution.

(ii) If the applicant was first licensed in another state after August 31, 1989, the applicant shall have satisfactorily completed 2 years of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution.

(c) In addition to meeting the examination requirement of subdivision (a) of this subrule, an applicant who is a graduate of a medical school located other than in the United States, its territories, the District of Columbia, or the Dominion of Canada shall have passed an examination in the basic and clinical medical sciences conducted by the educational commission for foreign medical graduates and satisfy 1 of the following requirements:

(i) An applicant who was first licensed in another state before May 10, 1986, shall have satisfactorily completed 1 year of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution.

(ii) An applicant who was first licensed in another state on or after May 10, 1986, and who has passed the visa qualifying examination, the foreign medical graduate examination in the medical sciences, parts I and II of the examination developed by the national board of medical examiners and conducted by the educational commission for foreign medical graduates, or USMLE step 1 and USMLE step 2 shall have satisfactorily completed 2 years of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution.

(iii) An applicant who was first licensed in another state on or after May 10, 1986, and who has passed the educational commission for foreign medical graduates examination conducted by the educational commission for foreign medical graduates before July 1, 1984, shall have satisfactorily completed 3 years of postgraduate clinical training in a program approved by the board in a board-approved hospital or institution.

History: 1954 ACS 65, Eff. Nov. 30, 1970; 1954 ACS 98, Eff. Jan. 23, 1979; 1979 AC; 1987 MR 12, Eff. Jan. 20, 1988; 1989 MR 2, Eff. Mar. 15, 1989; 1994 MR 4, Eff. Apr. 20, 1994.

R 338.2319 Licensure by endorsement; substantially equivalent examinations.

Rule 19. (1) In assessing substantial equivalency of examinations, the board shall consider all of the following factors:

(a) Subject areas included.

(b) Detail of material.

(c) Comprehensiveness of material.

(d) Length of the examination.

(e) Degree of difficulty.

(2) To demonstrate substantial equivalency, an applicant may be required to submit, or cause to be submitted, such materials as the following:

(a) A certified copy of the examination.

(b) An affidavit from a responsible official from the appropriate state agency describing the examination and setting forth the legal standards that were in effect at the time of the examination.

(c) An affidavit describing the examination from a responsible official within a state medical society or other organization who has knowledge of the examination.

(d) Other credible evidence.

(3) The examination given by the national board of medical examiners is deemed by the board to be substantially equivalent to the examination conducted by the board.

(4) The licentiate examination given by the medical council of Canada is deemed by the board to be substantially equivalent to the examination conducted by the board.

(5) Applicants for Michigan medical licensure by endorsement shall be considered to have passed an examination deemed by the board to have been conducted in accordance with standards substantially equivalent to those which were applicable to examinations given by the board if the applicant passed the FLEX examination with a FLEX-weighted average of 75.0 at 1 sitting, except that applicants who, between June 1974

and June 1981, achieved a FLEX-weighted average of 75.0 based on 1 partial retake of the FLEX examination after initial failure shall be considered to have passed an examination in accordance with standards substantially equivalent to those that were applicable to examinations given by the board between June 1974 and June 1981.

R 338.2326 Availability of standards.

Rule 26. (1) The standards ratified on March 1, 1985, by the council on medical education of the American medical association and ratified on April 4, 1985, by the executive council of the association of American medical colleges are available for inspection at the office of the Board of Medicine, 611 West Ottawa Street, North Ottawa Tower, Lansing, Michigan 48909. Copies may be obtained, upon request and payment of \$10.00, from either the offices of the board or the Liaison Committee on Medical Education, American Medical Association, 535 N. Dearborn Street, Chicago, Illinois 60610.

(2) The standards adopted in April, 1986, by the joint commission on accreditation of hospitals and effective on January 1, 1987, are available for inspection at the offices of the board. Copies may be obtained, upon request and payment of \$50.00, from either the offices of the board or the Joint Commission on Accreditation of Hospitals, 875 North Michigan Avenue, Chicago, Illinois 60611.

(3) The standards adopted by the accreditation council for graduate medical education in 1987 and effective July 1, 1987, are available for inspection at the offices of the board. Copies may be obtained, upon request and payment of \$30.00, from either the offices of the board or the Accreditation Council for Graduate Medical Education, American Medical Association, 535 N. Dearborn Street, Chicago, Illinois 60610.

(4) The standards adopted by the national joint committee on accreditation of preregistration physician training programs of the Canadian medical association in April, 1985, and effective July, 1985, are available for inspection at the offices of the board. Copies may be obtained, upon request and payment of \$5.00, from either the offices of the board or the Canadian Medical Association, P.O. Box 8650, Ottawa, Ontario, Canada K1G 0G8.

R 338.2327a Clinical academic limited licenses.

Rule 27a. An applicant for a clinical academic limited license shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the code and the administrative rules promulgated pursuant thereto, an applicant for a clinical academic limited license shall establish both of the following:

(a) That he or she has either graduated from a medical school which is located in the United States, its territories, the District of Columbia, or the Dominion of Canada and which is approved by the board or has graduated from a medical school that is located other than in the United States, its territories, the District of Columbia, or the Dominion of Canada and has completed the requirements for a degree in medicine as defined in R 338.2301(c).

(b) That he or she has been appointed to a teaching or research position in an academic institution as defined in section 17001(1)(a) of the code.

R 338.2329a Educational limited licenses.

Rule 29a. (1) An educational limited license authorizes the holder thereof to engage in the practice of medicine as part of a postgraduate educational training program.

(2) An applicant for an educational limited license shall submit a completed application, on a form provided by the department, together with the requisite fee.

(3) In addition to meeting the other requirements of the code and the administrative rules promulgated pursuant thereto, an applicant for an educational limited license from a medical school located in the United States, its territories, the District of Columbia, or the Dominion of Canada shall establish both of the following:

(a) That the applicant has graduated, or is expected to graduate within the following 3 months, from a medical school approved by the board.

(b) That the applicant has been admitted to a training program approved by the board that is offered at a board-approved hospital or institution.

(4) After December 31, 1988, in addition to meeting the other requirements of the code and the administrative rules promulgated pursuant thereto, an applicant for an educational limited license from a medical school located other than in the United States, its territories, the District of Columbia, or the Dominion of Canada shall establish all of the following:

(a) That the applicant has completed the requirements for a degree in medicine.

(b) That the applicant has been admitted to a training program approved by the board that is offered at a board-approved hospital or institution.

(c) That the applicant has passed an examination in the basic and clinical medical sciences conducted by the educational commission for foreign medical graduates.

History: 1987 MR 12, Eff. Jan. 20, 1988; 1989 MR 2, Eff. Mar. 15, 1989.

R 338.2371 Continuing medical education as prerequisite for license renewal or relicensure.

Rule 71. (1) An applicant for license renewal who held a license for the 3-year period preceding the expiration date of the license or an applicant for relicensure pursuant to section 16201(3) of the code shall have earned, within the 3-year period immediately preceding the date of the application, 150 hours of continuing medical education credit in courses or programs approved by the board. In place of the examination requirements established in section 16201(4) of the code, an applicant for relicensure pursuant to section 16201(4) of the code shall have earned, within the 3-year period immediately preceding the date of the application, 150 hours of continuing medical education credit in courses or programs approved by the board.

(2) Credit for medical ethics shall be earned in a category 1 activity.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC; 1991 MR 12, Eff. Dec. 21, 1991.

R 338.2372 Categories of creditable continuing medical education activities; maximum credit hours for the 3-year period.

Rule 72. The categories of creditable continuing medical education activities approved by the board, and the maximum credit hours that may be earned in each category, are as follows:

(a) Category 1: Continuing medical activities with accrediting sponsorship; tutorial experience; medical ethics; specialty board certification and recertification 150 hours

(b) Category 2: Continuing medical activities with nonaccredited sponsorship 36 hours

(c) Category 3: Tutoring medical physicians under category 1; teaching medical physicians; teaching the allied health services 48 hours

(d) Category 4: Books, papers, publications, and exhibits 48 hours

(e) Category 5; Nonsupervised education; self-assessment; self- instruction and participation on a hospital medical staff committee dealing with quality patient care or utilization review 36 hours

(f) Category 6: Full-time participation in a graduate training program 150 hours

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC.

R 338.2373 Categories and period in which credit hours to be earned; clock hour equivalents to credit hours.

Rule 73. (1) A minimum of 50% of the continuing medical education requirement shall be earned in category 1 or category 6.

(2) One clock hour substantively spent meeting the requirements of category 1, 2, 4, or 5 equals 1 credit hour.

(3) One clock hour spent as an instructor or as a tutor, or both, equals 2 credit hours.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC.

R 338.2374 Category 1: Continuing medical activities including medical ethics with accredited sponsorship; tutorial experience; specialty board certification and recertification.

Rule 74. (1) Continuing medical activities with accredited sponsorship are category 1 activities. The board approves the standards adopted by the committee on continuing medical education accreditation of the Michigan state medical society on December 6, 1984, in accrediting organizations and institutions offering continuing medical education programs, and the board may accept a maximum of 150 credit hours under category 1 for attendance at programs offered by organizations and institutions so accredited as credit toward the licensee's continuing medical education requirement if the programs are designed to further the medical education of licensees. The board may deny approval of programs offered by institutions and organizations approved by the Michigan state medical society if it appears to the board that the programs offered by those institutions or organizations fail to demonstrate compliance with the legislative intent to further educate licensees on subjects related to the practice of medicine.

(2) The board approves and adopts the standards adopted by the accreditation council for continuing medical education on October 29, 1982, in accrediting organizations and institutions offering continuing medical education programs, and the board may accept a maximum of 150 credit hours for attendance at those programs

offered by organizations and institutions so accredited as credit toward the licensee's continuing medical education requirement if the programs are designed to further the medical education of licensees. The board may deny approval of programs offered by institutions and organizations approved by the liaison committee on continuing medical education if it appears to the board that the programs offered by those institutions or organizations fail to demonstrate compliance with the legislative intent to further educate licensees on subjects related to the practice of medicine.

(3) Receiving tutorial experience is a category 1 activity. A maximum of 150 credit hours may be earned during the 3-year period immediately preceding the application for being tutored in a hospital or institution. Notwithstanding any additional requirement of these rules, the board will not give credit for being tutored unless information on the tutorial program and the qualifications of the tutor, as well as any other data requested by the board, is first submitted to the board to establish the quality of the tutorial program and the board approves the tutorial program before the commencement thereof.

(4) Specialty board certification and recertification are category 1 activities. A maximum of 50 credit hours may be earned for taking and passing a specialty board recertification or certification examination approved by the board. Credit may be earned only during the year in which the licensee is advised that he or she passed the certification or recertification examination.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC; 1991 MR 12, Eff. Dec. 21, 1991.

R 338.2375 Category 2: Continuing medical activities with nonaccredited sponsorship.

Rule 75. Category 2 activities consist of continuing medical activities with nonaccredited sponsorship. A maximum of 36 credit hours during the 3-year period may be earned by attendance at continuing medical education programs offered by organizations or institutions that are not approved under category 1 if the program is submitted to the board to establish the quality of the program, and if the board approves the program in accordance with R 338.2380.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC.

R 338.2376 Category 3: Tutoring medical physicians under category 1; teaching medical physicians; teaching the allied health services.

Rule 76. (1) Tutoring medical physicians under category 1 is a category 3 activity. A maximum of 48 credit hours may be earned in the 3-year period preceding the application for tutoring medical physicians in a tutorial program approved by the board pursuant to the provisions of R 338.2374(3).

(2) Teaching medical physicians and teaching the allied health services are category 3 activities. A maximum of 48 credit hours may be earned in the 3-year period preceding the application for serving as an instructor of medical students, house staff, or other physicians or allied health professionals in a hospital or institution with a postgraduate clinical training program that is approved by the board pursuant to the provisions of R 338.2313, if the hospital or institution has approved the instruction. A maximum of 48 credit hours may be similarly obtained in the 3-year period preceding the application in a hospital or institution that does not have a postgraduate clinical training program that is approved by the board if the sponsor of the program first submits such information as the board determines to be necessary to establish the quality of the instructional programs approved by that hospital or institution.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC; 1991 MR 12, Eff. Dec. 21, 1991.

R 338.2377 Category 4: Books, papers, publications, and exhibits.

Rule 77. (1) Category 4 activities comprise books, papers, publications, and exhibits. A maximum of 48 credit hours in the 3-year period may be earned under this category, with specific maximum credits indicated in the subcategories described below. Credit may be earned only during the year of presentation or publication.

(2) A maximum of 24 credit hours in the 3-year period may be earned for preparation and initial presentation of a scientific exhibit at a professional meeting.

(3) A maximum of 24 credit hours in the 3-year period may be earned for preparation and initial presentation of a formal original scientific paper before a professional meeting.

(4) A maximum of 24 credit hours in the 3-year period may be earned for preparation and initial publication of

an original scientific article or paper, or a chapter in a book, or a portion of a chapter in a book, that is authored and published in a journal or other periodical publication listed in "Index Medicus," or that is published by a medical publisher recognized by the board.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC.

R 338.2378 Category 5: Nonsupervised education; self-assessment; self-instruction; participation on a hospital staff committee dealing with quality patient care or utilization review.

Rule 78. (1) Nonsupervised learning is a category 5 activity. A maximum of 36 credit hours in the 3-year period may be earned under this category, with specific maximum credit hours indicated under the subcategories described below. Credit may be earned only for the year in which the study, committee, or review activity occurred.

(2) Self-assessment is a category 5 activity. A maximum of 18 credit hours in the 3-year period may be earned for completion of a multi-media program if sufficient information regarding the program is approved by the board.

(3) Self-instruction is a category 5 activity. A maximum of 18 credit hours in the 3-year period may be earned for the independent reading of scientific journals listed in "Index Medicus."

(4) Participation on a hospital staff committee dealing with quality patient care or utilization review, or both, are category 5 activities. A maximum of 18 credit hours in the 3-year period may be earned for participation on a hospital staff committee dealing with quality patient care or utilization review.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC.

R 338.2379 Category 6: Full-time participation in postgraduate clinical training program.

Rule 79. Full-time participation in a postgraduate clinical training program is a category 6 activity. A maximum of 50 credit hours per year may be earned for satisfactorily participating, in the 3-year period immediately preceding the application, in a postgraduate clinical training program in a hospital or institution that is approved by the board pursuant to the provisions of R 338.2313. A minimum of 5 months of participation per year is required for 50 hours of credit.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC; 1991 MR 12, Eff. Dec. 21, 1991.

R 338.2380 Requests for approval of continuing medical education credit; monitoring of programs.

Rule 80. (1) A person who seeks board approval of continuing medical education credit pursuant to these rules shall request forms and instructions from the department.

(2) The board shall not consider a request for approval until such time as the information indicated in the forms and instructions is submitted.

(3) The board shall deny a request for approval if it appears that the request fails to demonstrate compliance with the legislative intent to further educate licensees on subjects related to the practice of medicine.

(4) All continuing medical education programs may be personally monitored by the board or its authorized agent.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC; 1991 MR 12, Eff. Dec. 21, 1991.

R 338.2381 Certification of compliance; additional evidence.

Rule 81. (1) By submitting an application for license renewal, a licensee certifies that he or she has complied with the continuing medical education requirement.

(2) The board may require an applicant or licensee to submit evidence to demonstrate compliance with the continuing medical education requirement.

It is the responsibility of an applicant or licensee to maintain evidence of his or her compliance with the continuing medical education requirement for a period of 4 years from the date of application. Failure to provide such evidence creates a rebuttable presumption that the licensee has made a false and fraudulent statement in applying for a license to practice medicine.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC; 1991 MR 12, Eff. Dec.

21, 1991.

R 338.2382 Availability of adopted standards.

Rule 82. (1) The standards adopted by the committee on continuing medical education accreditation of the Michigan state medical society on December 6, 1984, are available for inspection at the offices of the Michigan Board of Medicine, P.O. Box 30018, Lansing, Michigan 48909.

Copies may be obtained, at no cost, from either the office of the Michigan board of medicine or the Committee on Continuing Medical Education Accreditation, Michigan State Medical Society, 120 East Saginaw, East Lansing, Michigan 48823.

(2) The standards adopted by the accreditation council for continuing medical education on October 29, 1982, are available for inspection at the offices of the Michigan board of medicine. Copies may be obtained, at no cost, from either the offices of the Michigan board of medicine or the Accreditation Council for Continuing Medical Education, P.O. Box 245, Lake Bluff, Illinois 60044.

History: 1954 ACS 91, Eff. Mar. 22, 1977; 1954 ACS 97, Eff. Nov. 4, 1978; 1979 AC; 1991 MR 12, Eff. Dec. 21, 1991

Michigan Public Health Code (www.michiganlegislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-170&highlight=>

Occupational Board Information:

The Committee on Physician's Assistants was formed with the enactment of Public Act 420 of 1976, signed by the Governor on January 9, 1977. The Act regulated the practice of physician's assistants in the State of Michigan, providing a system to determine and approve the qualifications of physician's assistants, creating a committee on physician's assistants, prescribing its powers and duties, and prescribing penalties. On September 30, 1978, this authority was transferred to the Public Health Code, Public Act 368 of 1978, as amended and became the Task Force on Physician's Assistants.

The practice as a physician's assistant, as defined in the Public Health Code, means the practice of allopathic or osteopathic medicine under the supervision of an allopathic or osteopathic physician.

The Public Health Code mandates certain responsibilities and duties for a health professional licensing board. Underlying all duties is the obligation of the Board or Task Force to promote and protect the public's health, safety, and welfare. This responsibility is implemented by the Task Force by ascertaining minimal entry level competency of health practitioners. The Task Force also has the obligation to take disciplinary action against licensees who have adversely affected the public's health, safety, and welfare.

The Task Force on Physician's Assistants consists of 9 voting members: 5 physician's assistants, 1 physician member from each of the Boards of Medicine and Osteopathic Medicine and Surgery, and 2 public members.

The task force currently oversees approximately 2,197 Physician's Assistants.

EDUCATION

Graduates from physician assistant master's degree programs accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) or its predecessors are eligible to seek NCCPA certification by taking the Physician Assistant National Certifying Examination (PANCE). The multiple-choice test is comprised of 360 questions that assess basic medical and surgical knowledge. Preregistration is required, but candidates may choose from among over 300 testing sites during one of the examination periods.

After passing PANCE, physician assistants are issued an NCCPA certificate, entitling them to use of the PA-C designation until the expiration date printed on the certificate (approximately two years).

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

State Association:

Michigan Academy of Physician Assistants -- <http://www.michiganpa.org>

National Association:

The American Academy of Physician Assistants -- <http://www.aapa.org/>

RESOURCES

Association of Physician Assistant Programs -- <http://www.apap.org>
National Commission on Certification of Physician Assistants -- <http://www.nccpa.net>

Podiatrist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Diagnose and treat diseases and deformities of the human foot.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow about as fast as average (increase 10 to 20 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$66.99	\$139,340.00
Detroit MSA	\$73.92	\$153,750.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33808101&Dpt=CH&RngHigh=):

R 338.8101 Definitions.

Rule 101. (1) As used in these rules:

- (a) "Board" means the Michigan board of podiatric medicine and surgery.
 - (b) "Code" means Act No. 368 of the Public Acts of 1978, as amended, being S333.1101 et seq. of the Michigan Compiled Laws.
 - (c) "Department" means the department of licensing and regulation.
- (2) Terms defined in article 15 of the code have the same meanings when used in these rules.

R 338.8103 Licensure by examination; requirements.

Rule 103. An applicant for licensure by examination shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall satisfy all of the following requirements:

- (a) Have graduated from a school of podiatric medicine approved by the board.
- (b) Have achieved a score of not less than 75 on part I and a score of not less than 75 on part II of the examination developed and scored by the national board of podiatric medical examiners.
- (c) Have achieved a score of not less than 75 on the podiatric examination administered by the department.
- (d) Have satisfactorily completed 1 year of postgraduate education in a residency or preceptorship program approved by the board. Certification of completion of postgraduate education shall be accepted by the board not more than 15 days before completion of the training.

R 338.8104 Examinations; applications; eligibility.

Rule 104. (1) The podiatric examination administered by the department shall consist of 2 parts. Part 1 of the examination shall assess the applicant's knowledge of the laws and administrative rules governing the practice of podiatric medicine and surgery in Michigan and part 2 of the examination shall assess the applicant's knowledge, skills, and abilities related to the clinical practice of podiatric medicine and surgery. A passing score on the examination shall be not less than 75 on each part.

(2) To sit for the podiatric examination administered by the department, an applicant shall submit a completed application, on a form provided by the department, together with the requisite fee, and establish that he or she has graduated from a school of podiatric medicine approved by the board. To assure eligibility to sit for the examination, an applicant shall submit his or her completed application not less than 30 days before the date of the examination.

(3) An applicant who fails to achieve a passing score on part 1 of the examination may repeat part 1 of the examination without limitation. An applicant who fails after 3 attempts to achieve a passing score on part 2 of the examination shall not again be eligible to sit for part 2 of the examination until the applicant has completed a program of study in podiatric medicine and surgery acceptable to the board. If the applicant thereafter fails part 2 of the examination, the applicant may repeat part 2 of the examination without limitation if the applicant, subsequent to each failure, first completes a program of study in podiatric medicine and surgery acceptable to the board. As used in this subrule, "a program of study in podiatric medicine and surgery acceptable to the board" means any of the following:

(a) A course or courses in podiatric medicine and surgery offered by a school of podiatric medicine which is approved by the board.

(b) A program of study in podiatric medicine and surgery developed and offered by a sponsor of a preceptorship or residency program approved by the board.

(c) A course or courses in podiatric medicine and surgery offered by a sponsor of a continuing education program approved by the board.

R 338.8107 Licensure by endorsement; requirements.

Rule 107. (1) An applicant for licensure by endorsement shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant who satisfies the requirements of this rule shall be deemed to meet the requirements of section 16186(1)(a) and (d) of the code.

(2) An applicant shall have graduated from a school of podiatric medicine approved by the board.

(3) An applicant who graduated from a school of podiatric medicine after December 31, 1964, shall have satisfactorily completed 1 year of postgraduate education in a residency or preceptorship program approved by the board.

(4) An applicant who was first licensed in another state on or after January 1, 1980, shall have achieved a score of not less than 75 on part I and a score of not less than 75 on part II of the examination developed and scored by the national board of podiatric medical examiners.

(5) In addition to meeting the examination requirement of subrule (4) of this rule, an applicant who was first licensed in another state less than 3 years before filing an application for Michigan licensure shall obtain a score of not less than 75 on each part of the podiatric examination administered by the department.

R 338.8108 Approval of preceptorship programs; application.

Rule 108. To obtain approval of a preceptorship program which is not conducted under the supervision and control of a board-approved school of podiatric medicine, a sponsor shall submit a completed application, on a form provided by the department, and demonstrate that the preceptorship program substantially meets the standards adopted by the board in R 338.8113(3).

R 338.8109 Educational limited licenses.

Rule 109. (1) An educational limited license authorizes the holder of the license to engage in the practice of podiatric medicine and surgery as part of a postgraduate education program.

(2) An applicant for an educational limited license shall submit a completed application, on a form provided by the department, together with the requisite fee. In addition to meeting the requirements of the code and the administrative rules promulgated pursuant thereto, an applicant shall satisfy all of the following requirements:

(a) Have graduated from a school of podiatric medicine approved by the board.

(b) Have been appointed to a residency or preceptorship program approved by the board.

(c) Have achieved either a score of not less than 75 on part I and a score of not less than 75 on part II of the examination developed and scored by the national board of podiatric medical examiners or a score of not less than 75 on each part of the podiatric examination administered by the department.

R 338.8113 Standards for approval of schools of podiatric medicine, residency programs, and preceptorship programs; adoption of standards by reference.

Rule 113. (1) The board approves and adopts by reference the standards for accrediting colleges of podiatric medicine developed and adopted by the council on podiatric medical education of the American podiatric medical association in October, 1986, entitled "Criteria and Guidelines for Colleges of Podiatric Medicine." The board shall consider any school of podiatric medicine accredited by the council on podiatric medical education of the American podiatric medical association as a school of podiatric medicine approved by the

board.

(2) The board approves and adopts by reference the standards for approval of residency programs developed and adopted by the council on podiatric medical education of the American podiatric medical association in August, 1987, entitled "Requirements for Approval of Residencies in Podiatric Medicine." The board shall consider any residency program approved by the council on podiatric medical education of the American podiatric medical association as a residency program approved by the board.

(3) The board approves and adopts by reference the standards for establishing preceptorship programs developed and approved by the council on podiatric medical education of the American podiatric medical association in February, 1986, entitled "Guidelines for Preceptorship Programs in Podiatric Medicine." The board shall designate any preceptorship program which substantially meets the standards for establishing preceptorship programs developed and approved by the council on podiatric medical education of the American podiatric medical association as a preceptorship program approved by the board.

(4) The board approves and adopts by reference the standards for recognizing preceptorship sponsors developed and approved by the council on podiatric medical education of the American podiatric medical association in August, 1986, entitled "Criteria for Recognition of Preceptorship Sponsors." The board shall consider any preceptorship program sponsored by a preceptor recognized by the council on podiatric medical education of the American podiatric medical association as a preceptorship program approved by the board.

(5) Copies of the standards for accrediting colleges of podiatric medicine developed and adopted by the council on podiatric medical education of the American podiatric medical association in October, 1986, entitled "Criteria and Guidelines for Colleges of Podiatric Medicine," the standards for approval of residency programs developed and adopted by the council on podiatric medical education of the American podiatric medical association in August, 1987, entitled "Requirements for Approval of Residencies in Podiatric Medicine," the standards for establishing preceptorship programs developed and approved by the council on podiatric medical education of the American podiatric medical association in February, 1986, entitled "Guidelines for Preceptorship Programs in Podiatric Medicine," and the standards for recognizing preceptorship sponsors developed and approved by the council on podiatric medical education of the American podiatric medical association in August, 1986, entitled "Criteria for Recognition of Preceptorship Sponsors" may be obtained at no cost from the Board of Podiatric Medicine and Surgery, Post Office Box 30018, Lansing, Michigan 48909, or at no cost from the Council on Podiatric Medical Education, American Podiatric Medical Association, 20 Chevy Chase Circle, N.W., Washington, DC 20015.

Michigan Public Health Code (www.michiganlegislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-180&highlight=>

Occupational Board Information:

The Michigan Board of Podiatric Medicine and Surgery was originally formed with the enactment of Public Act 115 of 1915. On September 30, 1978, this authority was transferred to the Public Health Code, Public Act 368 of 1978, as amended.

The practice of podiatric medicine and surgery, as defined in the Public Health Code, means the examination, diagnosis, and treatment of abnormal nails, superficial excrescences occurring on the human hands and feet, including corns, warts, callosities, and bunions, and arch troubles or the treatment medically, surgically, mechanically, or by physiotherapy of ailments of human feet or ankles as they affect the condition of the feet. It does not include amputation of human feet, or the use or administration of anesthetics other than local.

The Public Health Code mandates certain responsibilities and duties for a health professional licensing board. Underlying all duties is the responsibility of the Board to promote and protect the public's health, safety, and welfare. This responsibility is implemented by the Board by ascertaining minimal entry level competency of health practitioners and verifying continuing education during licensure. The Board also has the obligation to take disciplinary action against licensees who have adversely affected the public's health, safety, and welfare.

The Michigan Board of Podiatric Medicine and Surgery consists of 9 voting members: 5 podiatrists and 4 public members.

The board currently oversees approximately 826 Podiatrists.

EDUCATION

To become a podiatrist a doctorate degree is required.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:
American Podiatric Medical Association -- <http://www.apma.org/>

RESOURCES

American Association of Colleges of Podiatric Medicine -- <http://www.aacpm.org>

Radiation Therapist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Provide radiation therapy to patients as prescribed by a radiologist according to established practices and standards. Duties may include reviewing prescription and diagnosis; acting as liaison with physician and supportive care personnel; preparing equipment, such as immobilization, treatment, and protection devices; and maintaining records, reports, and files. May assist in dosimetry procedures and tumor localization.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

No information available.

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$23.59	\$49,070.00
Ann Arbor MSA	\$25.27	\$52,560.00
Detroit MSA	\$24.75	\$51,480.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

EDUCATION

1. The employee is a graduate of a formally organized hospital or college affiliated medical dosimetry program with clinical and classroom curriculum and other training and/or experience as a medical dosimetrist so that the total duration of study, training and experience is at least 18 months, OR
2. The employee possesses a bachelor of arts or bachelor of sciences degree with a major in the physical or biological sciences, or is a registered radiation therapy technologist. Together with either of these credentials, the applicant also demonstrates completion of two or more years of on-the-job training and work experience in medical dosimetry under the supervision of a certified medical dosimetrist or medical physicist, OR
3. The employee possesses an associate of science, a bachelor of arts, or a bachelor of science degree in a field other than those of the physical or biological sciences. Together with this degree, the applicant also demonstrates completion of on-the-job training in medical dosimetry under the supervision of a certified medical dosimetrist or medical physicist and has a subsequent period of supervised work experience in medical dosimetry of a minimum of four years.
4. This job description does not supersede existing national or state laws or institutional policies.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Association of Medical Dosimetrists -- <http://www.medicaldosimetry.org/>

RESOURCES

Radiologic Technologists and Technicians

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Take X-rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$18.81	\$39,110.00
Ann Arbor MSA	\$20.45	\$42,530.00
Benton Harbor MSA	\$18.22	\$37,890.00
Detroit MSA	\$20.17	\$41,960.00
Flint MSA	\$17.40	\$36,190.00
Grand Rapids-Muskegon-Holland MSA	\$17.50	\$36,390.00
Jackson MSA	\$18.48	\$38,440.00
Kalamazoo-Battle Creek MSA	\$18.05	\$37,540.00
Lansing MSA	\$18.65	\$38,800.00
Saginaw MSA	\$17.22	\$35,820.00
Balance of State - Northeast Lower Peninsula	\$15.00	\$31,190.00
Balance of State - Northwest Lower Peninsula	\$17.53	\$36,470.00
Balance of State - South Central Lower Peninsula	\$16.96	\$35,280.00
Balance of State - Upper Peninsula	\$17.44	\$36,270.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

At minimum, you'll need an associate's degree or certificate from an accredited one-to-two-year program in radiography. However, most practicing radiographers have a bachelor's degree and certification from a program accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). In addition to radiologic technology procedures and radiation physics and protection, coursework generally includes medical terminology, biology, chemistry, physiology, anatomy, and medical ethics. Radiographers may also specialize in advanced-practice areas such as mammography, magnetic resonance, computed tomography, and cardiovascular intervention.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit
America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or
O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

State Association:

Michigan Society of Radiologic Technologists -- <http://www.msrt.org/>

National Association:

American Society of Radiological Technologists -- <http://www.asrt.org/>

RESOURCES

American Registry of Radiologic Technologists -- <http://www.arrt.org>
Joint Review Committee on Education in Radiologic Technology -- <http://www.jrcert.org>

Registered Nurse

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$24.06	\$50,040.00
Ann Arbor MSA	\$23.77	\$49,440.00
Benton Harbor MSA	\$18.11	\$37,660.00
Detroit MSA	\$25.60	\$53,250.00
Flint MSA	\$26.78	\$55,690.00
Grand Rapids-Muskegon-Holland MSA	\$23.15	\$48,150.00
Jackson MSA	\$19.78	\$41,130.00
Kalamazoo-Battle Creek MSA	\$23.68	\$49,260.00
Lansing MSA	\$22.53	\$46,860.00
Saginaw MSA	\$22.64	\$47,090.00
Balance of State - Northeast Lower Peninsula	\$18.87	\$39,250.00
Balance of State - Northwest Lower Peninsula	\$20.71	\$43,070.00
Balance of State - South Central Lower Peninsula	\$21.42	\$44,540.00
Balance of State - Upper Peninsula	\$20.14	\$41,880.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules

(http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33810101&Dpt=CH&RngHigh=):

R 338.10101 Definitions.

Rule 101. (1) As used in this part:

- (a) "Act" means 1978 PA 368, MCL 333.1101 et seq.
 - (b) "Authorized representative" means the chairperson, vice chairperson, or such other member of the board or staff as the board may formally designate.
 - (c) "Board" means the Michigan board of nursing.
- (2) Terms defined in the act have the same meanings when used in these rules.

History: 1989 MR 2, Eff. Mar. 1, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10102 Request for board action.

Rule 102. (1) A person who desires to submit a request for declaratory ruling under 1969 PA 306, MCL 24.201 et seq. shall make that request in writing. The request shall be filed with the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(2) The board or its authorized representative may require the person to submit additional information necessary to make an appropriate resolution of the matter.

History: 1989 MR 2, Eff. Mar. 1, 1989; rescinded 2001 MR 12, Eff. Jun 26, 2001; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10103 Assessment of fines.

Rule 103. (1) The board shall make a determination as to the amount of a fine based on the following factors:

(a) The extent to which the licensee obtained financial benefit from any conduct comprising part of the violation found by the board.

(b) The willfulness of the conduct found to be part of the violation determined by the board.

(c) The cost incurred in investigating and proceeding against the licensee.

(2) A fine shall not exceed the sum of \$2,500.00 for each violation found to have been committed by the licensee.

History: 1989 MR 2, Eff. Mar. 1, 1989.

R 338.10104 Delegation.

Rule 104. (1) Only a registered nurse may delegate nursing acts, functions, or tasks. A registered nurse who delegates nursing acts, functions, or tasks shall do all of the following:

(a) Determine whether the act, function, or task delegated is within the registered nurse's scope of practice.

(b) Determine the qualifications of the delegatee before such delegation.

(c) Determine whether the delegatee has the necessary knowledge and skills for the acts, functions, or tasks to be carried out safely and competently.

(d) Supervise and evaluate the performance of the delegatee.

(e) Provide or recommend remediation of the performance when indicated.

(2) The registered nurse shall bear ultimate responsibility for the performance of nursing acts, functions, or tasks performed by the delegatee within the scope of the delegation.

History: 1989 MR 2, Eff. Mar. 1, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10199 Rescission.

Rule 199. R 338.1201 of the Michigan Administrative Code, appearing on page 2479 of the 1979 Michigan Administrative Code, is rescinded.

History: 1989 MR 2, Eff. Mar. 1, 1989.

R 338.10201 Definitions.

Rule 201. (1) As used in this part:

(a) "Act" means 1978 PA 368, MCL 333.1101 et seq.

(b) "Board" means the Michigan board of nursing.

(c) "Completed a practical nurse education program acceptable to the board" means 1 of the following:

(i) That the applicant is a graduate of a practical nurse education program which is located in this state and which is approved by the board.

(ii) That the applicant is a graduate of a practical nurse education program which is located in another state or territory of the United States, as required by § 333.16186, and that program is substantially equivalent to the program requirements of article 15 of the act and the rules promulgated by the board.

(iii) That the applicant is a graduate of a nurse education program that is substantially equivalent to a practical nurse education program approved by the board. The applicant has completed the core curriculum for practical nurse applicants in a nurse education program which is not less than 30 weeks in duration and which includes courses in both theory and clinical practice.

(d) "Completed a registered nurse education program acceptable to the board" means 1 of the following:

(i) That the applicant is a graduate of a registered nurse education program which is located in this state and which is approved by the board.

(ii) That the applicant is a graduate of a registered nurse education program which is located in another state or territory of the United States, as required by § 333.16186, and that program is substantially equivalent to the program requirements of article 15 of the act and the rules promulgated by the board.

(iii) That the applicant is a graduate of a nurse education program which is located outside of the United States and that the applicant is in compliance with the requirements for a certificate from the commission on graduates of foreign nursing schools (cgfns) pursuant to the requirements set forth in the document entitled "Path to CGFNS Certification: Applicant Handbook, Edition 29" August, 2001. A copy of the guidebook can be obtained, at no cost, from the Commission on Graduates of Foreign Nursing Schools, 3600 Market Street, Suite 400, Philadelphia, PA 19104-2651 or from the commission's website at <http://www.cgfns.org>. A copy of the handbook is available for inspection or distribution at cost from the Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(A) If the applicant is a graduate of a nurse education program that is located outside of the United States, has passed the NCLEX examination, and has maintained an active license, with no disciplinary sanctions in this country for at least 5 years immediately preceding the application for a Michigan license, then the applicant shall be exempt from completing the requirements for a certificate from the commission on graduates of foreign nursing schools.

(iv) That the applicant is a graduate of a Canadian registered nurse program that is approved by a province in Canada and is taught in English. The applicant shall hold a license to practice nursing in Canada that is active and has not been sanctioned.

(e) "Core curriculum for practical nurse applicants" means courses in both didactic instruction and planned clinical learning in each of the following 4 areas of nursing:

(i) Medical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is in the acute or chronic phases of a medical illness.

(ii) Obstetrical nursing, which consists of the study of nursing care for women in the antepartum, labor/delivery, and postpartum phases of pregnancy, and includes the care of the newborn infant and may be referred to as maternal-child nursing. Gynecological nursing alone does not fulfill this obstetric nursing education requirement.

(iii) Pediatric nursing, which consists of the study of nursing care for children whose ages range from birth through adolescence and who are receiving nursing care for both medical and surgical reasons. This education does not include newborn nursing education.

(iv) Surgical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is receiving nursing care for a surgical procedure.

(f) "Core curriculum for registered nurse applicants" means courses in both didactic instruction and planned clinical learning in each of the following 5 areas of nursing:

(i) Medical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is in the acute or chronic phases of a medical illness.

(ii) Obstetrical nursing, which consists of the study of nursing care for women in the antepartum, labor/delivery, and postpartum phases of pregnancy, and includes the care of the newborn infant and may be referred to as maternal-child nursing. Gynecological nursing alone does not fulfill this obstetric nursing education requirement.

(iii) Pediatric nursing, which consists of the study of nursing care for children whose ages range from birth through adolescence and who are receiving nursing care for both medical and surgical reasons. This education does not include newborn nursing education.

(iv) Psychiatric nursing, which consists of the nursing care of patients who are receiving nursing care for an acute or chronic psychiatric disorder.

It may also be referred to as mental health nursing. Education that covers only areas of mental retardation, organic brain syndromes, or neurological diseases does not fulfill the psychiatric nursing education requirement.

(v) Surgical nursing, which consists of the study of nursing care for the adult patient, both male and female, who is receiving nursing care for a surgical procedure.

(g) "Department" means the Michigan department of consumer and industry services.

(2) Terms defined in the act have the same meanings when used in these rules.

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10202 Examination; adoption; passing scores.

Rule 202. The board approves and adopts the examinations developed by the national council of state boards of nursing, inc., hereafter identified

as the "NCLEX-RN" for the registered nurse and the "NCLEX-PN" for the practical nurse. Examinees shall achieve a score of pass on the NCLEX computerized adaptive test (cat).

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10203 Licensure by examination; requirements.

Rule 203. (1) An applicant for licensure by examination shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the act and the administrative rules promulgated pursuant thereto, an applicant shall satisfy the requirements of this rule.

(2) An applicant for a registered nurse license shall establish that he or she meets the eligibility requirements to sit for the NCLEX-RN set forth in R 338.10204 and shall pass the NCLEX-RN.

(3) An applicant for a practical nurse license shall establish that he or she meets the eligibility requirements to sit for the NCLEX-PN set forth in R 338.10204 and shall pass the NCLEX-PN.

(4) Notwithstanding the provisions of section 16307(3) of the act, the fees paid by an applicant who has not completed all requirements for licensure by examination within 3 years after receipt of the application by the department shall be forfeited to the department and the application shall be void.

History: 1990 MR 6, Eff. July 6, 1990.

R 338.10204 Examinations; eligibility; reexaminations.

Rule 204. (1) To assure eligibility for the examination, an applicant shall submit a completed application on forms provided by the department, together with the requisite fee.

(2) To be eligible to sit for the NCLEX-RN, an applicant shall establish that he or she has completed a registered nurse education program that is acceptable to the board.

(3) To be eligible to sit for the NCLEX-PN, an applicant shall establish that he or she has completed a practical nurse education program that is acceptable to the board.

(4) To be eligible to sit for the NCLEX-PN, an applicant whose nursing education was taught in a language other than English shall demonstrate a working knowledge of the English language in addition to meeting the other requirements of this rule. To demonstrate a working knowledge of English, an applicant shall document that he or she has obtained a scaled score of not less than 550 on the paper-based test or a scaled score of not less than 213 on the computer-based test of English as a foreign language that is administered by the educational testing service and obtained a score of not less than 50 on the test of spoken English that is administered by the educational testing service.

(5) An applicant shall complete the NCLEX-RN within 12 months of his or her first attempt at the test in this state or another state. The first attempt at the test shall occur within 2 years of graduation from a registered nurse education program. An applicant who has not achieved a passing score on the examination within the 12-month period shall not be eligible to sit again for the NCLEX-RN until the applicant has completed a registered nurse education program that is acceptable to the board.

Thereafter, an applicant may sit for the examination an additional cycle of 3 times after repeating the required registered nurse education program. An applicant may sit for the NCLEX-RN a maximum of 6 times total.

(6) If an applicant is a graduate of a Canadian registered nurse program that is approved by a province in Canada and is taught in English and the applicant holds a current license in Canada, the first attempt at taking the NCLEX-RN will not have to occur within 2 years of graduation.

(7) An applicant shall complete the NCLEX-PN within 12 months of his or her first attempt at the test in this state or another state. The first attempt at the test shall occur within 2 years of graduation from a practical nurse education program. An applicant who has not achieved a passing score on the examination within the 12-month period shall not be eligible to sit again for the NCLEX-PN until the applicant has completed a practical nurse education program that is acceptable to the board.

Thereafter, an applicant may sit for the examination an additional cycle of 3 times after repeating the required practical nurse education program. An applicant may sit for the NCLEX-PN a maximum of 6 times total.

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 1996 MR 2, Eff. Feb. 22, 1996; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10206 Licensure by endorsement; requirements.

Rule 206. (1) An applicant for licensure by endorsement shall submit a completed application on a form provided by the department, together with the requisite fee. In addition to meeting the other requirements of the act and the administrative rules promulgated pursuant thereto, an applicant who satisfies the requirements of this rule shall be deemed to meet the requirements of section 16186(1)(a) and (d) of the code.

- (2) An applicant for a registered nurse license shall meet both of the following requirements:
- (a) The applicant shall establish that he or she has completed a registered nurse education program that is acceptable to the board as defined in R 338.10201 or that he or she meets all of the following requirements:
 - (i) Was first licensed in another state before the effective date of this amendatory rule.
 - (ii) Is a graduate of a nurse education program that is located outside the United States.
 - (iii) Is a graduate of a nurse education program which is not less than 60 weeks in duration and which includes courses in both theory and clinical practice for registered nurse applicants.
 - (iv) Has completed the core curriculum for registered nurse applicants.
 - (b) An applicant shall establish 1 of the following:
 - (i) That he or she was first licensed as a registered nurse in another state pursuant to an examination that was taken before July 13, 1982.
 - (ii) That he or she was first licensed as a registered nurse in another state pursuant to an examination that was taken on or after July 13, 1982, but before February 14, 1989, and achieved a score of not less than 1600 on the NCLEX-RN.
 - (iii) That he or she was first licensed as a registered nurse in another state pursuant to an examination that was taken on or after February 14, 1989, and achieved a score of pass on the NCLEX-RN.
- (3) An applicant for a practical nurse license shall meet both of the following requirements:
- (a) The applicant shall establish that he or she has completed a practical nurse education program that is acceptable to the board.
 - (b) An applicant shall establish 1 of the following:
 - (i) That he or she was first licensed as a practical nurse in another state pursuant to an examination that was taken before October 19, 1982.
 - (ii) That he or she was first licensed as a practical nurse in another state pursuant to an examination that was taken on or after October 19, 1982, but before October 18, 1988, and achieved a score of not less than 350 on the NCLEX-PN.
 - (iii) That he or she was first licensed as a practical nurse in another state pursuant to an examination that was taken on or after October 18, 1988, and achieved a score of pass on the NCLEX-PN.

History: 1990 MR 6, Eff. July 6, 1990; 1994 MR 9, Eff. Oct. 1, 1994; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10299 Rescission.

Rule 299. R 338.1201 to R 338.1235 of the Michigan Administrative Code, appearing on pages 2479 to 2482 of the 1979 Michigan Administrative Code, are rescinded.

History: 1990 MR 6, Eff. July 6, 1990.

R 338.10301 Definitions.

Rule 301. As used in this part:

- (a) "Act" means 1978 PA 368, MCL 333.1101 et seq.
- (b) "Clinical experience" means direct nursing care experiences with patients or clients which offer students the opportunity to integrate, apply, and refine specific skills and abilities which are based on theoretical concepts and scientific principles.
- (c) "Clinical laboratory hours" means those hours of the curriculum which are assigned to laboratory practice, simulated learning, and observational experiences which offer the student the opportunity to meet educational objectives.
- (d) "Conceptual framework" means the distinct, systematic organization of concepts which is derived from the philosophy and purposes of the program and gives direction to the curriculum.
- (e) "Cooperating agency" means an individual, organization, or institution which, by written agreement or letter of intent, accepts students and faculty for nursing educational experiences.
- (f) "Curriculum" means implementation of the philosophy, purposes, program objectives, and conceptual framework of the nursing program through the systematic arrangement of courses, including objectives stated in measurable terms and accomplished through appropriate learning experiences planned for a clearly defined group of students and extending over a period of time. Systematic and ongoing evaluation within the context of measurable objectives is inherent in the curriculum.
- (g) "Director of the nursing program" means a qualified nurse who is delegated the authority and accountability for the nursing program by the sponsoring agency.

- (h) "Full approval" means approval of a program granted after satisfactory demonstration to the board of compliance with these rules.
- (i) "Initial approval" means approval which is granted by the board to inaugurate a program of nursing education.
- (j) "Instruction" means educational methodology for achieving curriculum objectives in a classroom.
- (k) "Learning experiences" means planned learning situations, which may include clinical experiences, clinical laboratory hours, or classroom instruction.
- (l) "Major program change" means revision of the program's philosophy, conceptual framework, or objectives; curriculum revision relating to a revision of the program's philosophy, conceptual framework, or objectives or change in primary instructional method; the elimination of separate course content for an integrated approach; or a permanent expansion in the number of students served.
- (m) "Nursing process" means the ongoing assessment, analysis, planning, implementation, and evaluation of nursing care.
- (n) "Observational experience" means a planned learning situation which is nonparticipatory and does not require intervention by the student. Experience shall meet preplanned stated objectives and provide for faculty and student evaluation.
- (o) "Philosophy" means the stated beliefs of a faculty about nursing education and practice which determine the design of the curriculum and the evaluation of the program and which are consistent with the educational philosophy of the sponsoring agency.
- (p) "Practical nurse program" means a nursing program to prepare students for practical nurse licensure. The program is approximately 1 year in duration and awards a certificate of completion.
- (q) "Program of nursing education" means a plan or design indicating the relationship of the components necessary to achieve the goal of preparing persons for licensure as registered or practical nurses under the act.
- (r) "Progress report" means a document to be submitted to the board at a specified interval to respond to definitive questions and requirements of the board as outlined in written form by the board to the sponsoring agency.
- (s) "Registered nurse program" means a nursing program to prepare students for initial registered nurse licensure.
- (t) "Self-study report" means a report of all aspects of a program of nursing education based upon the requirements of this part and prepared by the sponsoring agency. The report follows thorough review of all aspects of the program of nursing education by persons who are knowledgeable about the program.
- (u) "Site visit" means a physical inspection of an institution and all the components of its program of nursing education for the purpose of determining compliance with the requirements of this part.
- (v) "Sponsoring agency" means the organization or institution of which the nursing program is a component.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, eFF. dEC. 19, 2003.

R 338.10302 Applicability.

- Rule 302. (1) An applicant for a license to practice as a registered nurse shall have completed an approved registered nurse program or a program deemed by the board to be equivalent thereto.
- (2) An applicant for a license to practice as a practical nurse shall have completed an approved practical nurse program or a program deemed by the board to be equivalent thereto.

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10303 Program approval; procedure.

- Rule 303. (1) The following requirements are established for initial approval of a program of nursing education:
- (a) The sponsoring agency shall submit all of the following to the board:
- (i) A letter of intent to initiate a program of nursing education.
- (ii) Evidence that the mission of the sponsoring agency is consistent with provision of a program to prepare students for the practice of nursing as defined in the act.
- (iii) Evidence that the sponsoring agency will provide funding and other support for a nursing education program which meets the requirements defined in this part.
- (iv) If the sponsoring agency is an institution requiring approval of the Michigan department of career development to conduct a nursing education program or to confer a particular degree or certificate upon the graduates of the program, a copy of the Michigan department of career development approval shall be submitted to the board.

- (v) Evidence of the availability of sufficient cooperating agencies which meet the requirements of R 338.10307(5), (6), (7), and (8) to provide clinical experiences for the program.
 - (vi) Proposed number of students to become enrolled in the program annually.
 - (vii) Proposed first date of admission of students to the nursing sequence of the program.
 - (viii) Plans to recruit and employ a qualified director for the program and other faculty members sufficiently in advance of admitting students to the nursing sequence to assure consistency in the planning and implementation of the curriculum. If already appointed, the names and qualifications of the director of the program and other faculty members shall be provided.
- (b) The board shall require a site visit to the program by the nurse consultant of the board in advance of considering initial approval. A report of the site visit shall be prepared by the nurse consultant and provided to the board and the sponsoring agency.
- (c) Following initial approval from the board and before initiating the nursing sequence, the program shall submit a self-study report which is approved by the board. The report shall set forth evidence of plans for compliance with the educational requirements of this part.
- (d) Annually, the program director shall submit a progress report during the period of initial approval. When applicable, the progress report shall include information about each of the following:
- (i) Admission, progression, and retention of students.
 - (ii) Student achievement on the required licensure examination.
 - (iii) Program evaluation.
 - (iv) Program changes.
- (2) The sponsoring agency may apply to the board for full approval of the program after graduation of the second class, but shall apply not later than graduation of the fourth class. One class shall be counted for each 12-month period. The following requirements are established for full approval of a program of nursing education:
- (a) The sponsoring agency shall make application to the board in the form of a letter.
 - (b) The sponsoring agency shall submit a self-study report. The report shall set forth evidence of compliance with the educational requirements of this part.
 - (c) The board shall require a site visit to the program by the nurse consultant of the board before considering full approval. A report of the site visit shall be prepared by the nurse consultant and provided to the board and the sponsoring agency.
 - (d) When granted full approval for the program of nursing education, the sponsoring agency shall continue to meet all of the requirements of this rule. Every 4 years the sponsoring agency shall submit a report to the board which is accepted by the board. The report will alternate a self-study report with an abbreviated report on a form prepared by the board so that a self-study report is submitted every 8 years for non-accredited programs and at least every 10 years for accredited programs. A self-study report prepared for accreditation or re-accreditation by a nationally recognized accrediting agency of nursing education programs may be submitted in place of the self-study report prepared for the board. The schedule for submission of self-study reports for accredited programs shall follow the schedule of the nationally recognized accrediting agency. These reports shall be submitted to the board within 1 month following receipt of the nationally recognized accrediting agency's decision on accreditation of the nursing education program.
- (3) Major program changes shall be submitted to the board in writing and shall be approved by the board before implementation. The type of approval, initial or full, under which a program is conducted shall not be altered when the board approves major program changes. All of the following information shall be submitted when requesting approval of a major program change:
- (a) A comparative description of the current and proposed program or portion of the program which is proposed for change.
 - (b) Rationale for the change.
 - (c) Plans to evaluate the effect of the change.
 - (d) Any supporting documents.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10304 Program approval; decision.

Rule 304. (1) Within 90 days after all materials requested by the board have been received, the board shall do either of the following:

- (a) Grant initial or full approval of the program or approve the program change when the board finds that the

requirements of this part are substantially met.

(b) Deny initial or full approval or approval of the program change when the board finds that the requirements of this part are not substantially met.

(2) The board shall issue its decision in writing.

(3) If approval is denied, the sponsoring agency may request a hearing which shall be conducted pursuant to the provisions of 1969 PA 306, MCL 24.201 et seq.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10305 Program requirements; generally.

Rule 305. (1) Programs of nursing education shall meet all of the following requirements:

(a) Comply with the curriculum requirements established by the board and with other requirements set forth in this part.

(b) Contribute to the safe practice of nursing by including the standards of practice, nursing behaviors, and other skills and knowledge in the curriculum to prepare persons for the practice of nursing as defined in the act.

(c) Prepare students to meet the requirements for eligibility to take the required licensure examination.

(2) The director of the program of nursing education and the faculty who provide the nursing sequence shall comply with the following requirements as applicable:

(a) Hold current licenses to practice as registered nurses in Michigan.

(b) For registered nurse programs, the following requirements shall be complied with by September 1, 1989:

(i) The director of the nursing program shall hold a minimum of a master's degree with a major in nursing.

(ii) Every member of the nursing faculty providing didactic instruction shall hold a minimum of a master's degree, the majority of which shall hold a master's degree with a major in nursing. If the master's degree is not in nursing, the faculty member shall hold a minimum of a baccalaureate degree in nursing science.

(iii) Every member of the nursing faculty who provides instruction in the clinical laboratory or cooperating agencies shall hold a minimum of a baccalaureate degree in nursing science.

(c) For practical nurse programs, the following requirements shall be complied with by September 1, 1989:

(i) The program director shall hold a minimum of a baccalaureate degree in nursing science.

(ii) Every member of the nursing faculty shall hold a minimum of a baccalaureate degree in nursing science.

(d) The director of the nursing program and full-time nursing faculty who were employed on or before May 4, 1989, shall be exempt from meeting the requirements of subdivisions (b) and (c) of this subrule.

(3) Any exception made to the provisions of subrule (2) of this rule for full-time or part-time nursing faculty shall be based on the faculty member's progress toward meeting the requirements of these rules during each year for which the exception is requested. A maximum of 5 yearly exceptions shall be granted to any 1 full-time or part-time faculty member.

(4) Nursing faculty shall be sufficient in number to prepare students to achieve the objectives of the program. The maximum ratio of students to faculty in clinical areas involving direct care of patients shall be not more than 10 students to 1 faculty member.

(5) Requirements for admission, progression, and graduation shall be established and shall be made known and available in written form to prospective and current students.

(6) A system for the permanent maintenance of records shall be established and shall include all of the following:

(a) Course outlines.

(b) Minutes of faculty and committee meetings.

(c) Student files, which shall be maintained in the nursing offices for each student.

(d) Student and graduate transcripts, which shall be retained for each student and graduate by the sponsoring agency in perpetuity and which shall evidence achievement and, when accomplished, program completion.

History: 1989 MR 4, Eff. May 4, 1989; 1996 MR 2, Eff. Feb. 22, 1996.

R 338.10306 Curriculum requirements generally.

Rule 306. (1) A statement of philosophy shall be established which is consistent with the philosophy of the sponsoring agency and which is implemented in the program of nursing education.

(2) There shall be course, level, and terminal objectives to serve as a guide in the development, implementation, and evaluation of the curriculum. The objectives shall be reviewed periodically and revised as necessary.

(3) The stated conceptual framework for the curriculum shall reflect the philosophy of the educational program

and shall be identifiable in the objectives of the program of nursing education.

(4) Learning experiences and methods of instruction shall be selected to fulfill the stated objectives of each nursing course.

(5) Related clinical experiences and clinical laboratory hours shall be provided concurrently with, or immediately after, the theoretical presentation of the course content.

(6) Evaluation methods and tools to be used for measuring student achievement shall be determined by the faculty in keeping with the assessment methods of the sponsoring agency. These methods and tools shall be known to the students in the program.

(7) The director and faculty shall evaluate all aspects of the curriculum on a systematic basis. Records of the results of the evaluation shall be maintained for board review, if requested.

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10307 Curriculum; organization, development, implementation, control, and evaluation.

Rule 307. (1) The curriculum shall be organized, developed, implemented, controlled, and evaluated on a regularly scheduled basis by the director and the faculty within the framework of the philosophy, purposes, and objectives of the sponsoring agency and those approved by the board.

(2) The curriculum objectives shall identify the behavioral expectations of the graduate of the program and shall be used for the following purposes:

(a) Developing, organizing, implementing, and evaluating the curriculum.

(b) Identifying objectives for levels of progression and course and program completion.

(c) Providing to the student an organized pattern to follow in which the sequence of learning is from the simple to the complex and from the known to the unknown, with each learning experience built on previously learned information of nursing and related scientific knowledge.

(d) Organizing the courses so as to approximate, as closely as possible, the schedules of the sponsoring agency in terms, quarters, semesters, or trimesters.

(e) Distributing the courses throughout the curriculum so that an unreasonable overload does not exist in any segment of the sequence.

(3) The statement of the conceptual framework or rationale for the program shall be the basis for the organization of the nursing content of the curriculum.

(4) The course content and other learning experiences shall promote student growth in all of the following areas:

(a) The understanding of the roles and responsibilities of the members of the nursing profession.

(b) The application of the principles of nursing and the sciences which are basic to nursing practice in the development of plans of care for the patient or client.

(c) The provision of direct and indirect nursing care.

(d) The understanding of effective human relations and demonstrating the ability to use these principles in nursing situations.

(e) The recognition of physical, psychosocial, and spiritual needs of diverse patient/client populations in the provision of nursing care.

(f) The understanding of health, including the manifestations of disease and the initiation, organization, and application of the principles underlying the nursing care provided.

(g) Developing skills and abilities in the administration of all aspects of nursing care, including all of the following:

(i) Communications.

(ii) Problem solving.

(iii) Understanding legal and professional responsibilities.

(iv) The working relationships with other health care providers.

(h) Understanding and protecting the rights of patients or clients.

(5) All cooperating agencies selected for clinical and laboratory experiences shall have standards of nursing care which demonstrate concern for the patient or client and evidence the skillful application of all measures of safe nursing practice.

(6) All cooperating agencies shall have a current license, if required, for their operation and adhere to the local zoning ordinances governing their operation.

(7) When a site visit is made, cooperating agencies may be surveyed as a part of the review process to determine the contribution each makes to the course and program objectives. Selection shall be made by the site

visitor.

(8) Each resource selected to provide clinical experience shall indicate a willingness to cooperate in the curriculum by providing a letter of intent, a written agreement, or a formal contract. Each resource shall provide experiences of a quality and quantity which will enable the student to meet the objectives established for the clinical experience.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10308 Registered nurse program; curriculum; implementation.

Rule 308. The director and faculty of a program of nursing education leading to licensure as a registered nurse shall comply with all of the following provisions:

(a) Select courses and assure teaching concepts for basic content in the biological, physical, behavioral, and other courses supportive of the nursing major which shall assist the student to improve abilities in all of the following areas:

(i) Communication.

(ii) Interviewing.

(iii) Problem solving.

(iv) Interpersonal relationships.

(v) Using scientific principles in providing individualized nursing care to the patient or client. Such courses shall have credits conferred consistent with the policies of the sponsoring agency.

(b) Provide courses and clinical experiences in the care of all age groups and sexes in medical, surgical, pediatric, geriatric, obstetrical, and psychiatric nursing. Opportunities for learning experiences in community aspects of nursing shall be made available. The elements of the nursing process shall be emphasized in all nursing courses. Clinical laboratory and clinical experience hours shall be sufficient in number to meet the course and program objectives.

(c) Assure that courses include content relating to all of the following:

(i) The legal scope of practice of a registered nurse.

(ii) The standards of conduct for members of the nursing profession.

(iii) Historical perspectives of nursing and current legal-ethical issues.

(iv) Licensure requirements.

(d) Select cooperating agencies which meet the requirements of R 338.10307(5), (6), and (8).

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10309 Practical nurse program; curriculum; implementation.

Rule 309. The director and faculty of a program of nursing education leading to licensure as a practical nurse shall comply with all of the following provisions:

(a) Select courses and assure teaching concepts on which the theory and practice of practical nursing is based. The basic principles of the natural and applied sciences which are fundamental to the theory and practice of practical nursing and which are applied in the planning and implementation of nursing care shall be included.

(b) Provide courses and clinical experiences in the care of all age groups and both sexes in medical, surgical, pediatric, obstetrical, and geriatric nursing and provide supervised practice in the administration of medications, exclusive of intravenous medications. Clinical laboratory and clinical experience hours shall be sufficient to meet the objectives of the curriculum.

(c) Assure that courses include content relating to all of the following:

(i) The legal scope of practice of a licensed practical nurse.

(ii) The standards of conduct for members of the nursing profession and, in particular, a licensed practical nurse.

(iii) Historical perspectives of nursing and current legal-ethical issues.

(iv) Licensure requirements.

(d) Select cooperating agencies which meet the requirements of R 338.10307(5), (6), and (8).

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10310 Board evaluation of nursing education program.

Rule 310. (1) The board may evaluate a program of nursing education when any of the following occurs:

(a) A request for initiating a program of nursing education is submitted.

(b) A request for full approval of a program is submitted.

- (c) A request for approval of a major program change is submitted.
 - (d) The failure rate on the required licensure examination reaches or exceeds 25% for any 1 year of compiled statistics or reaches or exceeds 15% for any 2 of 3 years of compiled annual statistics. A program of nursing education shall report compiled annual data on NCLEX pass rates to the board at the meeting following the end of the first quarter of the calendar year.
 - (e) Complaints regarding the conduct of the program are received and it is necessary to validate the complaints.
- (2) Evaluation processes may include any combination of the following:
- (a) A self-study report.
 - (b) A site visit.
 - (c) A progress report.
 - (d) A follow-up study of graduates and employers.

History: 1989 MR 4, Eff. May 4, 1989; 1998 MR 8, Eff. Sep. 9, 1998.

R 338.10311 Failure of program to comply with rules; withdrawal of approval.

Rule 311. (1) The board shall proceed under section 17242 of the act if the board determines that a program of nursing education does not meet the requirements of this part.

(2) The board shall offer consultation with the nurse consultant of the board for guidance in correcting nursing education program deficiencies identified by the board.

(3) Withdrawal of board approval of the program of nursing education for stated deficiencies which were not remediated does not necessarily make any bona fide student enrolled in the program at the time of withdrawal of approval ineligible for the required licensure examination upon satisfactory completion of that program or another program of nursing education which has been approved by the board.

(4) Failure of a nursing program to meet all of the requirements of this part shall not, in and of itself make a graduate from the program ineligible for licensure in this state. Approval of the program in a jurisdiction which maintains substantially equivalent requirements shall be deemed in compliance with these rules.

History: 1989 MR 4, Eff. May 4, 1989.

R 338.10312 Program termination; interruption or reduction of admissions.

Rule 312. (1) The board shall be informed if a date is established for termination of the program of nursing education.

(2) The board shall be informed regarding the system of retention of student records which are needed for endorsement purposes and proof of scholastic achievement. The board shall retain this information in the closed program files so that graduates may be given the source of information upon request.

(3) The board shall be informed if admissions to the program of nursing education are to be reduced or interrupted.

History: 1989 MR 4, Eff. May 4, 1989; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10401 Temporary certification.

Rule 401. Temporary certification in a nursing specialty field is not available in Michigan.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10402 Automatic suspension or revocation of specialty certification.

Rule 402. The suspension or revocation of a license as a registered nurse shall automatically cause the suspension or revocation of the specialty certification.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10403 Advertisement of services.

Rule 403. Only nurses certified in a nursing specialty field may hold themselves out to the public as nurse specialists using the title nurse anesthetist, nurse midwife, or nurse practitioner. Conduct contrary to this rule is deemed a violation of section 16221(g) of the act.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10404 Certification qualifications; nurse anesthetist, nurse midwife, and nurse practitioner.

Rule 404. (1) A specialty certification for a nurse anesthetist shall be granted to a registered nurse who satisfies all of the following requirements:

- (a) Holds a current and valid license to practice nursing in Michigan.
- (b) Submits an application for certification in a specialty area of nursing, on a form provided by the department, and the required fee.
- (c) Meets the standards set forth by either the American association of nurse anesthetists council on certification of nurse anesthetists or the council on recertification of nurse anesthetists. The standards are adopted by reference in these rules and are set forth in the publications entitled "Certification Examination for Nurse Anesthetists, Candidate Handbook," 2003, and "Council on Recertification of Nurse Anesthetists Criteria for Recertification," 2002. These publications may be obtained from the American Association of Nurse Anesthetists 222 South Prospect Avenue, Suite 202, Park Ridge, IL 60068, or from the association's website at <http://www.bookstore@aana.com>, at no cost. A copy of the standards is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O.

Box 30670, Lansing, MI 48909.

(2) A specialty certification for nurse midwife shall be granted to a registered nurse who satisfies all of the following requirements:

- (a) Holds a current and valid license to practice nursing in Michigan.
- (b) Submits an application for certification in a specialty area of nursing, on a form provided by the department, and the required fee.
- (c) Meets the standards set forth by the American college of nurse midwives certification council, inc. The standards are adopted by reference in these rules and are set forth in the publication entitled "Information for Candidates Handbook," effective October 2002. The standards may be obtained at no cost from the American College of Nurse Midwives Certification Council, 8201 Corporate Drive, Suite 550, Landover, MD 20785 or at <http://www.accmidwife.org>. A copy of the standards is available for inspection or distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(3) A specialty certification for nurse practitioner shall be granted to a registered nurse who satisfies all of the following requirements:

- (a) Holds a current and valid license to practice nursing in Michigan.
- (b) Submits an application for certification in a specialty area of nursing, on a form provided by the department, and the required fee.
- (c) Meets the advanced practice certification standards of 1 of the following certification organizations:
 - (i) The American nurses credentialing center, whose standards are adopted by reference and are set forth in the publication entitled "American Nurses Credentialing Center (ANCC) Certification, Advanced Practice and Informatics Nurse, Computer-Based Testing" 2002, which may be obtained at no cost from the American Nurses Credentialing Center, 600 Maryland Avenue SW, Suite 100 West, Washington, DC 20024-2571 or at <http://www.nursecredentialing.org>.
 - (ii) The national certification board of pediatric nurse practitioners and nurses, inc. whose standards are adopted by reference in these rules and are set forth in the publication entitled National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc. National Qualifying Exam and Certification Maintenance Program, 2003" which may be obtained at no cost from the National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc., 800 South Frederick Avenue, Suite 104, Gaithersburg, MD 20877 or at <http://www.pnpcert.org>.
 - (iii) The national certification corporation (ncc) for obstetric, gynecologic, and neonatal nursing specialties, whose standards are adopted by reference in these rules and are set forth in the publication entitled "NCC Registration Catalog" 2003 edition, which may be obtained at no cost from the National Certification Corporation, P.O. Box 11082, Chicago, IL 60611 or at <http://www.nccnet.org>.
 - (iv) The American academy of nurse practitioners, whose standards are adopted by reference in these rules and are set forth in the publication entitled "American Academy of Nurse Practitioners Report on Certification Methodologies 1997," which may be obtained at no cost from the Academy of Nurse Practitioners, Certification Program, Capitol Station, P.O. Box 12926, Austin, TX 78711.
 - (v) Oncology nursing certification corporation, whose standards are adopted by reference in these rules and are set forth in the publication entitled "The 2003 Oncology Nursing Certification Corporation Certification

Bulletin," which may be obtained at no cost from The Oncology Nursing Certification Corporation, 125 Enterprise Drive, Pittsburgh, PA 15275-1214 or at <http://www.oncc.org>.

(4) The standards listed in subrules (i), (ii), (iii), (iv), and (v) also are available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

History: 1986 MR 2, Eff. Feb. 22, 1986; 1990 MR 6, Eff. July 6, 1990; 1998 MR 8, Eff. Sep. 9, 1998; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10405 Certification renewal or reregistration; schedule; requirements; maintenance of evidence of compliance.

Rule 405. (1) Certification renewal shall correspond with the same schedule as the license renewal.

(2) An applicant for renewal who held a specialty certification for the 2-year period immediately preceding license renewal or an applicant for reregistration of a specialty certification pursuant to section 16201(3) or (4) of the code shall meet the following requirements, as applicable:

(a) For the nurse anesthetist, the applicant shall have obtained recertification, within the 2-year period immediately preceding the application, that meets the requirements of the council on recertification of nurse anesthetists set forth in the publication entitled "Council on Recertification of Nurse Anesthetists Criteria for Recertification," 2002.

The publication is adopted by reference in this rule and may be obtained at no cost from either the Council on Recertification of Nurse Anesthetists, 222 South Prospect Avenue, Park Ridge, IL 60068, or from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(b) For the nurse midwife, the applicant shall meet 1 of the following requirements:

(i) If initially certified before 1996, have completed, within the 2-year period immediately preceding the application, the continuing competency assessment requirements of the American College of Nurse-Midwives set forth in the publication entitled "The Continuing Competency Assessment Program of The American College of Nurse-Midwives, 1999." The publication is adopted by reference in this rule and may be obtained at no cost from the American College of Nurse Midwives, 818 Connecticut Avenue, NW, Suite 900, Washington, DC 20006 or at <http://www.midwife.org>. The publication also is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P. O. Box 30670, Lansing, MI 48909.

(ii) If initially certified after January 1, 1996, have obtained recertification or maintained certification, within the 2-year period immediately preceding the application, that meets the requirements of the American College of Nurse-Midwives Certification Council, Inc.

(ACC) set forth in the publication entitled "Certificate Maintenance," December 2002.

The publication is adopted by reference in this rule and may be obtained at no cost from the ACC, 8201 Corporate Drive, Suite 550, Landover, MD 20785 or at <http://www.accmidwife.org>. The publication also is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(iii) Have completed 20 continuing education units in the nursing specialty field within the 2-year period immediately preceding the application. The board approves and adopts by reference in this rule the standards listed in paragraphs (i) and (ii) of this subdivision for approving continuing education offerings for the nurse midwife.

(c) For the nurse practitioner, the applicant shall meet the following requirements appropriate to his or her current source of certification:

(i) Those holding national certification as a nurse practitioner shall have obtained recertification or maintained certification, within the 2-year period immediately preceding the application that meets the requirements of the following organizations. The following publications are adopted by reference in this rule and may be obtained from the specific organization, as listed below. These publications also are available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(A) The American nurses credentialing center as set forth in the publication entitled "Recertification Catalog", 2003. This publication is adopted by reference in this subrule and may be obtained at no cost from the American Nurses Credentialing Center, 600 Maryland Avenue, SW, Suite 100 West, Washington, DC 20024-2571 or at <http://www.nursecredentialing.org>.

(B) The national certification board of pediatric nurse practitioners and nurses as set forth in the publication entitled "National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc. National Qualifying Exam and Certification Maintenance Program, 2003". This publication is adopted by reference in this subrule and may be obtained at no cost from the National Certification Board of Pediatric Nurse Practitioners and Nurses, Inc., 800 South Frederick Avenue, Suite 104, Gaithersburg, MD or at <http://www.pnpcert.org>.

(C) The national certification corporation (ncc) for obstetric, gynecologic, and neonatal nursing specialties set forth in the publication entitled "NCC Certification Maintenance Program" 2003 Edition. This publication is adopted by reference in this subrule and may be obtained at no cost from the National Certification Corporation, P.O. Box 11082, Chicago, IL 60611 or at <http://www.nccnet.org>.

(ii) Those applicants who obtained Michigan board certification as a nurse practitioner before 1991, shall have completed 40 continuing education units in the nursing specialty field within the 2-year period immediately preceding the application. The board approves and adopts by reference in this rule the standards listed in paragraph (i) of this subdivision for approving continuing education offerings for the nurse practitioner.

(3) An applicant or licensee shall maintain evidence of his or her compliance with the requirements of this rule for a period of 4 years after the date of application, during which time the board may require the licensee to submit such evidence for audit.

History: 1986 MR 2, Eff. Feb. 22, 1986; 1991 MR 10, Eff. Oct. 26, 1991; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10406 Expired certification.

Rule 406. (1) If the nursing license has expired, the requirements for a registered nurse license shall be satisfied before applying for certification in a specialty field.

(2) The board shall certify a licensee who has allowed certification to expire if the applicant submits evidence that the current initial certification requirements have been met.

History: 1986 MR 2, Eff. Feb. 22, 1986.

R 338.10601 License renewals; relicensure; requirements; applicability.

Rule 1. (1) This part applies to applications for renewal of a nursing license and applications for relicensure pursuant to 333.16201(3) that are filed 2 years or more after the effective date of these rules.

(2) An applicant for license renewal who has been licensed for the 2-year period immediately preceding the expiration date of the license or an applicant for relicensure shall accumulate not less than 25 continuing education contact hours that are approved by the board pursuant to these rules during the 2 years preceding an application for renewal or relicensure.

(a) An applicant for license renewal shall complete at least 1 continuing education contact hour in pain and pain symptom management in each renewal period. Continuing education contact hours in pain and pain symptom management may include, but are not limited to, courses

in behavior management, psychology of pain, pharmacology, behavior modification, stress management, clinical applications, and drug interactions. This subrule will take effect with the April 1, 2005 renewal cycle.

(3) Submission of an application for renewal or relicensure shall constitute the applicant's certification of compliance with the requirements of this rule. A nurse shall retain documentation of meeting the requirements of this rule for a period of 4 years from the date of applying for license renewal or relicensure. Failure to comply with this rule is a violation of section 16221(g) of the act.

History: 1996 MR 4, Eff. May 4, 1996; 2003 MR 23, Eff. Dec. 19, 2003.

R 338.10602 Acceptable continuing education; limitations.

Rule 2. The board shall consider any of the following as acceptable continuing education:

(a) One continuing education contact hour, without limitation, may be earned for each 50 or 60-minute attendance at a continuing education program that is in compliance with the standards set forth in R 338.10603(1),(2),(3), (4),(5), and (6).

(b) Three continuing education contact hours may be earned for each 50 or 60-minute presentation of a continuing education program that is not a part of the licensee's regular job description that is in compliance with the standards set forth in R 338.10603(1), (2), (3), (4), and (5). Credit may be earned for the same program only once in each renewal period. A maximum of 6 continuing education contact hours may be earned pursuant to this subdivision.

(c) Five continuing education contact hours may be earned for each semester credit earned for academic

courses related to nursing practice offered in an educational program approved by the board pursuant to R 338.10201(1)(c)(i) and (ii) and (d)(i) and (ii).

(d) Three continuing education contact hours may be earned for each quarter credit earned for academic courses related to nursing practice offered in an educational program approved by the board pursuant to R 338.10201(1)(c)(i) and (ii) and (d)(i) and (ii).

(e) Twenty-five continuing education contact hours may be earned by specialty certification or recertification as 1 of the following:

(i) nurse midwife

(ii) nurse anesthetist

(iii) nurse practitioner.

(f) One continuing education contact hour may be granted for each 50 or 60 minutes of program attendance, without limitation, at a continuing education program which has been granted approval by another state board of nursing.

(g) One continuing education contact hour may be granted for each 50 or 60-minute attendance, without limitation, at a continuing education program related to nursing practice offered by an educational program approved by the board pursuant to R 338.10201(1)(c)(i) and (ii) and (d) (i) and (ii).

(h) Ten continuing education contact hour may be granted for publication, in a nursing or health care journal or textbook, of an article or chapter related to the practice of nursing or allied health.

(i) One continuing education contact hour may be granted for each documented hour of reading articles or viewing or listening to media devoted to nursing practice. A maximum of 4 hours may be credited pursuant to this subdivision.

(j) Ten continuing education contact hours may be granted in the year in which an applicant is advised he or she successfully completed a national nursing specialty examination.

(k) One continuing education contact hour may be granted for each 50 or 60 minutes of participation documented in a health care organization committee dealing with patient care related issues. A maximum of 4 credit hours may be earned.

(l) A maximum of 10 continuing education contact hours may be earned for participation in a workshop dealing with patient care issues, with 1 continuing education contact hour granted for each 50 to 60-minute segment offered by a health care organization or a professional organization that falls outside the methods of approval references specified in R 338.10603.

(m) One continuing education contact hour may be granted for each 50 to 60 minutes of reading a journal and completing a test which has been developed for continuing nursing practice education.

History: 1996 MR 4, Eff. May 4, 1996.

R 338.10603 Continuing nursing education programs; methods of approval.

Rule 3. (1) The board approves and adopts by reference the standards of the American nurses credentialing center's commission on accreditation that are set forth in the publications entitled "The 2001-2002 American Nurses Credentialing Center's Manual for Accreditation as a Provider of Continuing Nursing Education" and "The 2001-2002 American Nurses Credentialing Center's Manual for Accreditation as an Approver of Continuing Nursing Education." A copy of these publications may be purchased from the American Nurses Credentialing Center, Accreditation Program, 600 Maryland Avenue, Suite 100W, Washington, DC 20024, or at <http://www.nursingworld.org/ancc> at a cost of \$50.00 per manual as of the adoption of these rules. A copy of these publications also is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(2) The board approves and adopts by reference the standards and criteria of the national association for practical nurse education and service, inc. that are set forth in the publication entitled "NAPNES Criteria for Approval of Continuing Education," January 2003. A copy of the publication may be obtained from the National Association for Practical Nurse Education and Service, Inc., 8607 2nd Avenue, Suite 404A, Silver Spring, MD 20910, at a cost of \$3.00 as of the adoption of these rules or at <http://www.napnes.org> at no cost. A copy of this publication is available for inspection and distribution at cost from the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(3) The board approves and adopts by reference the guidelines adopted by the national league for nursing in September 2001 and set forth in the document entitled "National League for Nursing (NLN) Continuing Education Provider Program." A copy of the guidelines may be obtained at no cost from the National League for Nursing, 61 Broadway, 33rd floor, New York, NY 10006 or at <http://www.nln.org>. A copy of this document

is available for inspection and distribution at cost at the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(4) The board approves and adopts by reference the standards, criteria, and guidelines adopted by the American College of Nurse-Midwives in March 1988 and set forth in the publication entitled "The Continuing Education Unit Criteria and Guidelines," 2002, from the International Association for Continuing Education and Training. A copy may be obtained at no cost from the American College of Nurse-Midwives, 818 Connecticut Ave., NW, Suite 900, Washington, DC 20006 or at <http://www.midwife.org>. A copy of this document is available for inspection and distribution at cost at the Michigan Board of Nursing, Department of Consumer and Industry Services, 611 West Ottawa, P.O. Box 30670, Lansing, MI 48909.

(5) The board approves and adopts by reference the standards and criteria of the American association of nurse anesthetists as set forth in the "American Association of Nurse Anesthetists (AANA) Continuing Education Program 2002" which

Michigan Public Health Code (www.michiganlegislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-172&highlight=>

Occupational Board Information:

The Michigan Board of Nursing was originally created with the enactment of the Nurse Practice Act, Public Act 319 of 1909, and authority was transferred to the Nursing Practice Act of 1967 by Public Act 149 of 1967. On September 30, 1978, authority was again transferred to the Public Health Code, Public Act 368 of 1978, as amended.

The Michigan Public Health Code defines the practice of nursing in Michigan and empowers the Board to establish qualifications for nurse licensure; to establish standards for education and approve nurse education programs; develop and implement criteria for assurance of continued competency; and take disciplinary action against licensees when the health, safety, and welfare of the public has been adversely affected.

The Public Health Code establishes the Board of Nursing to consist of 23 members: 9 registered nurses (RNs), 1 nurse midwife, 1 nurse anesthetist, 1 nurse practitioner, 3 licensed practical nurses (LPNs), and 8 public members.

The enactment of the Public Health Code permitted LPN board members to act upon all matters except those that relate to standards for the education and training of RNs. Decisions on such matters are concurred in solely by a majority of the RN and public board members.

The Board currently oversees the practice of approximately 114,123 RNs, 4,648 nurse specialists, and 27,319 LPNs.

EDUCATION

Nursing is a rewarding but highly technical field. Nurses must know not only the health sciences, but also how to plan, organize, and educate patients and their families. Students who wish to prepare for a nursing career should give particular attention to math, biology, and chemistry; computer science; and the behavioral and social sciences.

Registered nurses must graduate from an accredited school of nursing. Nursing education includes study in nursing theory and techniques, the science and treatment of disease, and several specialty areas. It also includes hands-on clinical practice in hospitals or other settings.

The bachelor of science in nursing (BSN) is a four-year university-based degree. It is strongly recommended as the base for the full range of nursing practice and responsibilities in the widest number of settings.

The associate degree in nursing (AND) is a two-year program that prepares individuals for a more defined range of practice settings and roles. It is usually offered through community colleges.

Advanced-practice nurses (APNs) have received further education, usually at the master's level, in advanced roles, specialty areas, or research.

Not all people enter nursing studies directly from high school. Today's students often enter nursing later in life, have degrees in other fields, or are changing careers. Many can only attend college part-time. For this reason, many nursing schools offer joint degree or ladder programs, or credit for relevant experience. Flexible scheduling

is also more common. Check with your nursing school for exact requirements.

For a list of TRANSFERABLE SKILLS related to this occupation, visit
America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or
O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at
<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at
<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:
American Nurses Association -- <http://www.nursingworld.org/>

State Association:
Michigan Nurses Association -- <http://www.minurses.org/>

RESOURCES

Respiratory Therapist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$19.35	\$40,250.00
Ann Arbor MSA	\$20.73	\$43,130.00
Benton Harbor MSA	\$19.18	\$39,890.00
Detroit MSA	\$19.48	\$40,520.00
Flint MSA	\$20.67	\$42,990.00
Grand Rapids-Muskegon-Holland MSA	\$17.50	\$36,410.00
Kalamazoo-Battle Creek MSA	\$19.54	\$40,640.00
Saginaw MSA	\$18.91	\$39,320.00
Balance of State - Northeast Lower Peninsula	\$16.12	\$33,530.00
Balance of State - Northwest Lower Peninsula	\$18.60	\$38,690.00
Balance of State - South Central Lower Peninsula	\$18.22	\$37,900.00
Balance of State - Upper Peninsula	\$17.89	\$37,220.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

STATE LICENSING IS REQUIRED FOR THIS OCCUPATION.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.legislature.org):

<http://michiganlegislature.org/mileg.asp?page=getObject&objName=mcl-368-1978-15-187.&highlight=>

Occupational Board Information:

Act 368 of 1978

333.18705 Michigan board of respiratory care; creation; membership.
Sec. 18705.

The Michigan board of respiratory care is created in the department and consists of the following 7 members who meet the requirements of part 161:

- Four individuals who meet the requirements of section 16135(2).
- One medical director.
- Two public members.

History: Add. 2004, Act 3, Eff. July 1, 2004 .

Popular Name: Act 368

EDUCATION

Advanced-level respiratory therapists evaluate, treat, and manage patients of all ages with respiratory illnesses and other cardiopulmonary disorders. They are employed in a variety of settings that include acute-care, subacute-care, extended-care, and rehabilitation facilities, educational institutions, clinics, physician's offices, home care, sleep labs, diagnostic and research labs, and pharmaceutical companies. They participate in clinical decision making and patient education, develop and implement respiratory care plans, participate in health promotion, disease prevention, and disease management. They may be required to exercise considerable independent judgment, under the supervision of a physician, in the respiratory care of patients.

Advanced-level respiratory therapists complete two or more years of formal training and education leading to an associate's degree, baccalaureate degree, or graduate degree.

Respiratory Therapist (entry level)

The entry-level respiratory therapist performs general respiratory care procedures. They are employed in hospitals, nursing care facilities, clinics, physician's offices, home care companies, pulmonary function laboratories, and sleep labs. Entry-level therapists may assume clinical responsibility for specified respiratory care modalities involving the application of therapeutic techniques under the supervision of an advanced level therapist and/or a physician.

Educational programs for entry-level therapists are usually two years in length leading to an associate's degree.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

American Association for Respiratory Care -- <http://www.aarc.org/>

State Association:

Michigan Society for Respiratory Care -- <http://www.michiganrc.com/>

RESOURCES

Commission on Accreditation for Allied Health Education Programs -- <http://www.caahep.org>

National Board for Respiratory Care -- <http://www.nbrc.org>

Respiratory Therapy Technicians

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Provide specific, well-defined respiratory care procedures under the direction of respiratory therapists and physicians.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

No information available.

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$14.96	\$31,110.00
Detroit MSA	\$16.25	\$33,810.00
Grand Rapids-Muskegon-Holland MSA	\$14.78	\$30,740.00
Balance of State - Northeast Lower Peninsula	\$10.23	\$21,270.00
Balance of State - South Central Lower Peninsula	\$14.58	\$30,320.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.www.michigan.gov/mdch/0,1607,7-1327417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

EDUCATION

High school diploma and training program required.

For a list of TRANSFERABLE SKILLS related to this occupation, visit

America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or

O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

State Association:

Michigan Society for Respiratory Care -- <http://www.michiganrc.com/>

National Association:

American Association for Respiratory Care -- <http://www.aarc.org/>

RESOURCES

Surgical Technologist

As defined by the state of Michigan (www.michlmi.org or www.michigan.gov/careers):

Assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. May help set up operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeon's assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments.

OUTLOOK

As determined by the US Bureau of Labor Statistics (www.bls.gov/oco/home.htm):

Grow faster than average (increase 21 to 35 percent)

WAGES

Michigan Office of Labor Market Information, 2002 (www.michlmi.org):

	Mean Hourly Wage	Mean Annual Wage
Michigan	\$15.65	\$32,560.00
Ann Arbor MSA	\$15.14	\$31,480.00
Benton Harbor MSA	\$20.29	\$42,210.00
Detroit MSA	\$16.30	\$33,890.00
Flint MSA	\$15.80	\$32,850.00
Grand Rapids-Muskegon-Holland MSA	\$14.43	\$30,020.00
Kalamazoo-Battle Creek MSA	\$17.24	\$35,860.00
Balance of State - South Central Lower Peninsula	\$14.02	\$29,160.00
Balance of State - Upper Peninsula	\$14.03	\$29,180.00

CREDENTIALING

Michigan Department of Community Health, Bureau of Health Professions (www.michigan.gov/mdch/0,1607,7-13_27417_27529---,00.html):

State licensing is NOT required for this occupation.

Michigan Administrative Rules:

There are no Michigan Administrative Rules associated with this occupation.

Michigan Public Health Code (www.michigan.gov/legislature):

There is no Public Health Code Information available for this occupation.

Occupational Board Information:

There is no Board for this occupation.

EDUCATION

According to the Association of Surgical Technologists, many employers prefer to hire graduates from two-year associate's degree programs that have been accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Shorter, one-year programs lead to certificates or diplomas, but these may limit your employment options.

Surgical technologist students receive a combination of academic and hands-on education. Programs may include courses in anatomy, medical terminology, and sterilization techniques. In addition, instructors teach students to sterilize instruments and to prepare equipment for operations.

Do I need to be licensed as a surgical technologist?

Employers prefer certification because it lets them know that the surgical technologist has met field standards that have been set by a national certifying body. Students can receive certification by completing a CAAHEP-accredited program and passing the national certification exam. Students who obtain certification are known as certified surgical technologists (CST), and must renew their certification after six years.

For a list of **TRANSFERABLE SKILLS** related to this occupation, visit America's Career InfoNet at http://www.acinet.org/acinet/skills_home.asp or O*NET Online at http://online.onetcenter.org/gen_skills_page

FUNDING

National information available at

<http://studentaid.ed.gov> or <http://bhpr.hrsa.gov/dsa>

State information available at

<http://www.michiganworks.gov>

ASSOCIATIONS

National Association:

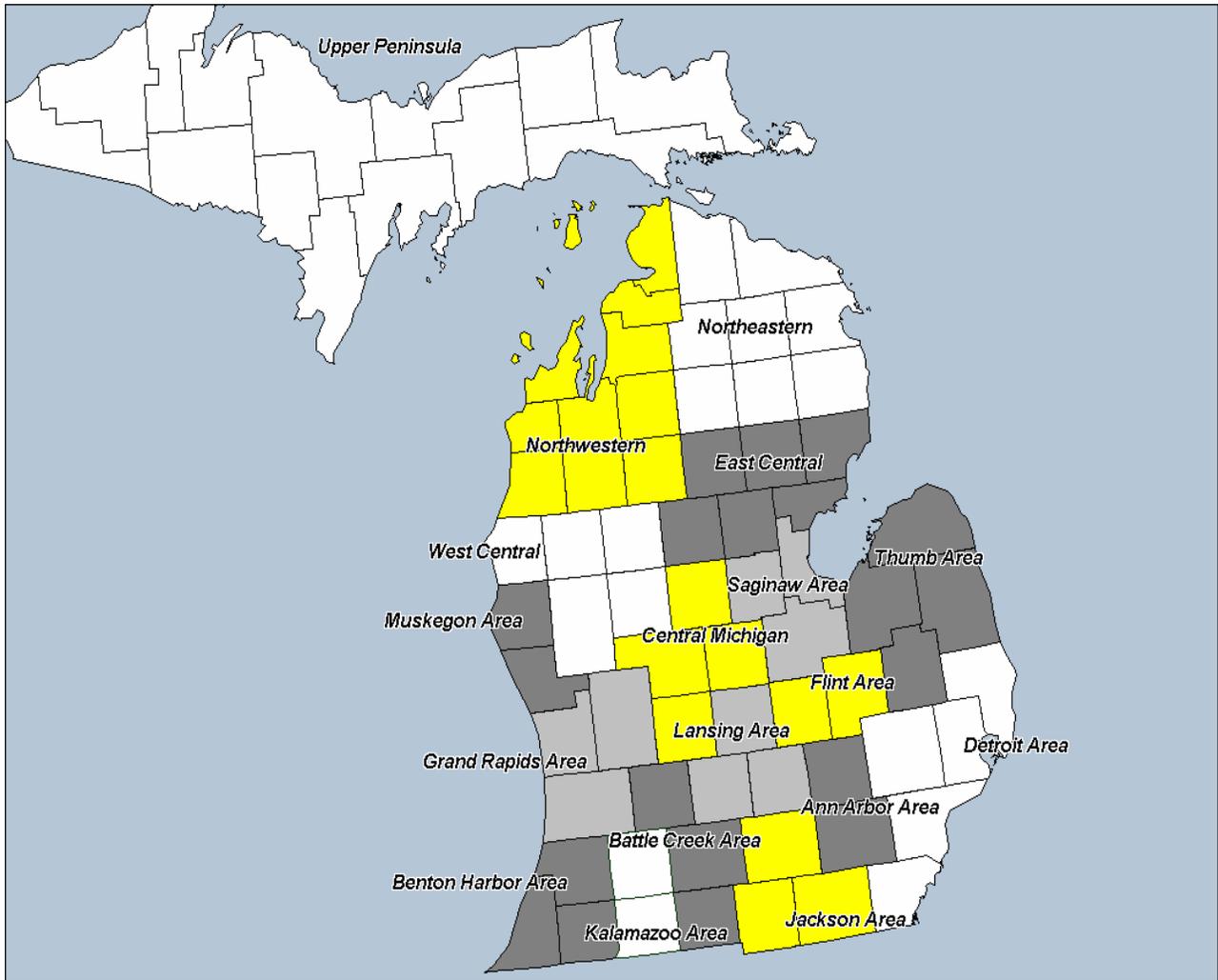
Association of Surgical Technologists -- <http://www.ast.org/>

RESOURCES

Liaison Council on Certification for Surgical Technologists -- <http://www.lcc-st.org>

Appendix C: Occupational Forecasts

MDLEG LABOR MARKET AREAS



Printed from BusinessMAP by ESRI

Statewide Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Preliminary)
MICHIGAN
 (All Counties)

	Active practitioners in Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	76,850	81,434	87,689	99,777
Chiropractors	3,470	3,677	3,959	4,505
Dentists	6,390	6,771	7,291	8,296
Optometrists	1,140	1,208	1,301	1,480
Pharmacists	7,220	7,651	8,238	9,374
Physician Assistants	1,850	1,960	2,111	2,402
Podiatrists	320	339	365	415
<i>Therapists</i>				
Occupational Therapists	3,910	4,143	4,461	5,077
Physical Therapists	5,010	5,309	5,717	6,505
Radiation Therapists	370	392	422	480
Respiratory Therapists	2,980	3,158	3,400	3,869

Labor market area totals may exceed statewide totals due to rounding and due to the inclusion of base occupational data for Lapeer County as part of both the Detroit and Thumb Area Labor Markets.

Statewide Labor Market

	Active practitioners in Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Allied Health--Technicians, Technologists</i>				
Cardiovascular Technologists/Technicians	1,910	2,024	2,179	2,480
Dental Hygienists	6,580	6,973	7,508	8,543
Diagnostic Medical Sonographers	1,650	1,748	1,883	2,142
Emergency Medical Tech & Paramedics	5,180	5,489	5,911	6,725
Medical & Clinical Laboratory Technicians	3,250	3,444	3,708	4,220
Licensed Practical Nurses	18,730	19,847	21,372	24,318
Medical Records/Health Info Technicians	5,260	5,574	6,002	6,829
Medical/Clinical Laboratory Technologists	5,790	6,135	6,607	7,517
Nuclear Medicine Technologists	650	689	742	844
Pharmacy Technicians	8,190	8,679	9,345	10,633
Radiologic Technologists & Technicians	6,380	6,761	7,280	8,283
Respiratory Therapy Technicians	470	498	536	610
Surgical Technologists	2,140	2,268	2,442	2,778
<i>Health Care Support Occupations</i>				
All Health Care Support Occupations	119,480	126,607	136,331	155,126
Dental Assistants	10,720	11,359	12,232	13,918
Medical Assistants	14,720	15,598	16,796	19,112
Occupational Therapist Aides	240	254	274	312
Occupational Therapist Assistants	560	593	639	727
Physical Therapist Aides	1,480	1,568	1,689	1,922
Physical Therapist Assistants	1,790	1,897	2,042	2,324

Employment forecasts prepared by Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health, 2004.

Forecasts are based upon occupational data provided by the Michigan Department of Labor & Economic Growth, Division of Labor Market Information and Strategic Direction, and population projections from the Census 2000 Project at Michigan State University.

Ann Arbor Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)
ANN ARBOR AREA
 (Livingston and Washtenaw Counties)

	Active practioners in the Ann Arbor Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	7,055	7,598	9,076	11,319
Chiropractors *	n.a.	121	144	180
Dentists	185	199	238	297
Optometrists	95	102	122	152
Pharmacists	300	323	386	481
Physician Assistants	400	431	515	642
Podiatrists *	n.a.	121	144	180
<i>Therapists</i>				
Occupational Therapists	215	232	277	345
Physical Therapists	285	307	367	457
Radiation Therapists	30	32	39	48
Respiratory Therapists	215	232	277	345

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Ann Arbor Area Labor Market

	Active practioners in the Ann Arbor Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	121	144	180
Dental Hygienists	460	495	592	738
Diagnostic Medical Sonographers *	n.a.	121	144	180
Emergency Medical Tech & Paramedics *	n.a.	121	144	180
Medical & Clinical Laboratory Technicians	1,005	1,082	1,293	1,612
Licensed Practical Nurses	830	894	1,068	1,332
Medical Records/Health Info Technicians *	n.a.	121	144	180
Medical/Clinical Laboratory Technologists	1,125	2,835	2,957	3,329
Nuclear Medicine Technologists	25	387	404	455
Pharmacy Technicians	600	3,943	4,114	4,632
Radiologic Technologists & Technicians	130	3,410	3,557	4,005
Respiratory Therapy Technicians *	n.a.	121	144	180
Surgical Technologists *	n.a.	121	144	180
Health Care Support Occupations				
All Health Care Support Occupations	6,695	7,210	8,613	10,742
Dental Assistants	535	576	688	858
Medical Assistants	875	942	1,126	1,404
Occupational Therapist Aides *	n.a.	121	144	180
Occupational Therapist Assistants	80	86	103	128
Physical Therapist Aides *	n.a.	121	144	180
Physical Therapist Assistants *	n.a.	121	144	180

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Employment forecasts prepared by Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health, 2004.

Forecasts are based upon occupational data provided by the Michigan Department of Labor & Economic Growth, Division of Labor Market Information and Strategic Direction, and population projections from the Census 2000 Project at Michigan State University.

Battle Creek Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

BATTLE CREEK AREA

(Barry, Branch, and Calhoun Counties)

	Active practitioners in the Battle Creek Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	1,395	898	948	1,061
Chiropractors *	n.a.	96	102	114
Dentists	185	119	126	141
Optometrists	65	42	44	49
Pharmacists	155	100	105	118
Physician Assistants	55	35	37	42
Podiatrists	n.a.	9	9	11
<i>Therapists</i>				
Occupational Therapists	140	90	95	106
Physical Therapists	75	48	51	57
Radiation Therapists *	n.a.	10	11	12
Respiratory Therapists *	n.a.	83	87	98

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Battle Creek Area Labor Market

	Active practitioners in the Battle Creek Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	53	56	63
Dental Hygienists	110	71	75	84
Diagnostic Medical Sonographers *	n.a.	46	48	54
Emergency Medical Tech & Paramedics	135	87	92	103
Medical & Clinical Laboratory Technicians	40	26	27	30
Licensed Practical Nurses	480	309	326	365
Medical Records/Health Info Technicians	125	80	85	95
Medical/Clinical Laboratory Technologists	50	32	34	38
Nuclear Medicine Technologists *	n.a.	18	19	21
Pharmacy Technicians	155	100	105	118
Radiologic Technologists & Technicians	100	64	68	76
Respiratory Therapy Technicians *	n.a.	13	14	15
Surgical Technologists *	n.a.	59	63	70
Health Care Support Occupations				
All Health Care Support Occupations	3,415	2,199	2,321	2,597
Dental Assistants	180	116	122	137
Medical Assistants	210	135	143	160
Occupational Therapist Aides *	n.a.	7	7	8
Occupational Therapist Assistants *	n.a.	16	16	18
Physical Therapist Aides *	n.a.	41	43	49
Physical Therapist Assistants	30	19	20	23

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Employment forecasts prepared by Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health, 2004.

Forecasts are based upon occupational data provided by the Michigan Department of Labor & Economic Growth, Division of Labor Market Information and Strategic Direction, and population projections from the Census 2000 Project at Michigan State University.

Benton Harbor Area
Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

BENTON HARBOR AREA

(Berrien, Cass, and Van Buren Counties)

	Active practitioners in the Benton Harbor Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	1,750	1,833	1,933	2,145
Chiropractors *	n.a.	119	125	139
Dentists	100	105	110	123
Optometrists	20	21	22	25
Pharmacists	205	215	226	251
Physician Assistants *	n.a.	63	67	74
Podiatrists	n.a.	11	12	13
<i>Therapists</i>				
Occupational Therapists	50	52	55	61
Physical Therapists	80	84	88	98
Radiation Therapists *	n.a.	13	13	15
Respiratory Therapists *	n.a.	102	107	119

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Benton Harbor Area
Labor Market

	Active practitioners in the Benton Harbor Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	65	69	76
Dental Hygienists *	n.a.	225	237	263
Diagnostic Medical Sonographers *	n.a.	56	59	66
Emergency Medical Tech & Paramedics	315	330	348	386
Medical & Clinical Laboratory Technicians *	n.a.	111	117	130
Licensed Practical Nurses	405	424	447	497
Medical Records/Health Info Technicians	165	173	182	202
Medical/Clinical Laboratory Technologists	90	94	99	110
Nuclear Medicine Technologists *	n.a.	22	23	26
Pharmacy Technicians	120	126	133	147
Radiologic Technologists & Technicians	185	194	204	227
Respiratory Therapy Technicians *	n.a.	16	17	19
Surgical Technologists *	n.a.	73	77	86
Health Care Support Occupations				
All Health Care Support Occupations	3,130	3,279	3,457	3,837
Dental Assistants *	n.a.	366	386	429
Medical Assistants	280	293	309	343
Occupational Therapist Aides *	n.a.	8	9	10
Occupational Therapist Assistants *	n.a.	19	20	22
Physical Therapist Aides *	n.a.	51	53	59
Physical Therapist Assistants *	n.a.	61	64	72

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Employment forecasts prepared by Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health, 2004.

Forecasts are based upon occupational data provided by the Michigan Department of Labor & Economic Growth, Division of Labor Market Information and Strategic Direction, and population projections from the Census 2000 Project at Michigan State University.

Central Michigan Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

CENTRAL MICHIGAN

(Gratiot, Ionia, Isabella, and Montcalm Counties)

	Active practitioners in Central Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	1,045	1,062	1,145	1,297
Chiropractors *	n.a.	72	78	88
Dentists	150	152	164	186
Optometrists	60	61	66	74
Pharmacists	180	183	197	223
Physician Assistants	30	30	33	37
Podiatrists *	n.a.	7	7	8
<i>Therapists</i>				
Occupational Therapists	120	77	83	94
Physical Therapists	25	16	17	20
Radiation Therapists *	n.a.	8	8	9
Respiratory Therapists *	n.a.	62	67	76

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Central Michigan Labor Market

	Active practitioners in Central Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	40	43	49
Dental Hygienists	105	107	115	130
Diagnostic Medical Sonographers *	n.a.	34	37	42
Emergency Medical Tech & Paramedics	215	219	236	267
Medical & Clinical Laboratory Technicians	55	56	60	68
Licensed Practical Nurses	490	498	537	608
Medical Records/Health Info Technicians	50	51	55	62
Medical/Clinical Laboratory Technologists	35	36	38	43
Nuclear Medicine Technologists *	n.a.	14	15	17
Pharmacy Technicians	145	147	159	180
Radiologic Technologists & Technicians	90	91	99	112
Respiratory Therapy Technicians	25	25	27	31
Surgical Technologists	25	25	27	31
Health Care Support Occupations				
All Health Care Support Occupations	2,275	2,312	2,492	2,825
Dental Assistants	175	178	192	217
Medical Assistants	155	158	170	192
Occupational Therapist Aides *	n.a.	5	5	6
Occupational Therapist Assistants *	n.a.	12	13	14
Physical Therapist Aides	20	20	22	25
Physical Therapist Assistants *	n.a.	37	40	46

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Detroit Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

DETROIT AREA

(Lapeer, Macomb, Monroe, Oakland, St.Clair, and Wayne Counties)

	Active practioners in the Detroit Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	35,880	37,529	39,150	44,079
Chiropractors	2,100	2,197	2,291	2,580
Dentists	2,910	3,044	3,175	3,575
Optometrists	400	418	436	491
Pharmacists	3,010	3,148	3,284	3,698
Physician Assistants	400	418	436	491
Podiatrists	90	94	98	111
<i>Therapists</i>				
Occupational Therapists	215	232	277	345
Physical Therapists	285	307	367	457
Radiation Therapists	30	32	39	48
Respiratory Therapists	215	232	277	345

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Detroit Area Labor Market

	Active practioners in the Detroit Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians	1,910	1,998	2,084	2,346
Dental Hygienists	3,240	3,389	3,535	3,980
Diagnostic Medical Sonographers	850	889	927	1,044
Emergency Medical Tech & Paramedics	1,800	1,883	1,964	2,211
Medical & Clinical Laboratory Technicians	1,240	1,297	1,353	1,523
Licensed Practical Nurses	6,630	6,935	7,234	8,145
Medical Records/Health Info Technicians	2,660	2,782	2,902	3,268
Medical/Clinical Laboratory Technologists	2,710	2,835	2,957	3,329
Nuclear Medicine Technologists	370	387	404	455
Pharmacy Technicians	3,770	3,943	4,114	4,632
Radiologic Technologists & Technicians	3,260	3,410	3,557	4,005
Respiratory Therapy Technicians	130	136	142	160
Surgical Technologists	870	910	949	1,069
Health Care Support Occupations				
All Health Care Support Occupatations	52,060	54,453	56,804	63,957
Dental Assistants	5,330	5,575	5,816	6,548
Medical Assistants	7,700	8,054	8,402	9,460
Occupational Therapist Aides *	n.a.	113	120	135
Occupational Therapist Assistants	240	251	262	295
Physical Therapist Aides	810	847	884	995
Physical Therapist Assistants	650	680	709	799

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Employment forecasts prepared by Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health, 2004.

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East Central Michigan
Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

EAST CENTRAL MICHIGAN

(Arenac, Clare, Gladwin, Iosco, Ogemaw, and Roscommon Counties)

	Active practitioners in East Central Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	675	804	892	1,009
Chiropractors *	n.a.	99	109	124
Dentists	95	113	125	142
Optometrists *	n.a.	32	36	41
Pharmacists	70	83	92	105
Physician Assistants	25	30	33	37
Podiatrists	40	48	53	60
<i>Therapists</i>				
Occupational Therapists	n.a.	111	123	139
Physical Therapists	25	22	24	27
Radiation Therapists *	n.a.	11	12	13
Respiratory Therapists *	n.a.	85	94	106

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

East Central Michigan
Labor Market

	Active practitioners in East Central Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	54	60	68
Dental Hygienists	65	77	86	97
Diagnostic Medical Sonographers *	n.a.	47	52	59
Emergency Medical Tech & Paramedics	n.a.	147	163	185
Medical & Clinical Laboratory Technicians	n.a.	92	102	116
Licensed Practical Nurses	340	405	449	508
Medical Records/Health Info Technicians	25	30	33	37
Medical/Clinical Laboratory Technologists	85	101	112	127
Nuclear Medicine Technologists *	n.a.	18	20	23
Pharmacy Technicians	95	113	125	142
Radiologic Technologists & Technicians	70	83	92	105
Respiratory Therapy Technicians *	n.a.	13	15	17
Surgical Technologists *	n.a.	61	67	76
Health Care Support Occupations				
All Health Care Support Occupations	1,510	1,800	1,995	2,258
Dental Assistants	100	119	132	150
Medical Assistants	190	226	251	284
Occupational Therapist Aides *	n.a.	7	8	9
Occupational Therapist Assistants *	n.a.	16	18	20
Physical Therapist Aides *	n.a.	42	47	53
Physical Therapist Assistants *	n.a.	51	56	64

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Flint Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)
FLINT AREA
 (Genesee and Shiawassee Counties)

	Active practitioners in the Flint Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	3,920	4,170	4,460	4,982
Chiropractors	40	43	46	51
Dentists	420	447	478	534
Optometrists	60	64	68	76
Pharmacists	415	441	472	527
Physician Assistants	80	85	91	102
Podiatrists *	n.a.	17	18	20
<i>Therapists</i>				
Occupational Therapists	105	166	178	199
Physical Therapists	435	689	737	823
Radiation Therapists *	n.a.	19	20	23
Respiratory Therapists	210	333	356	397

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Flint Area Labor Market

	Active practitioners in the Flint Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	99	106	118
Dental Hygienists	465	495	529	591
Diagnostic Medical Sonographers *	n.a.	85	91	102
Emergency Medical Tech & Paramedics	340	362	387	432
Medical & Clinical Laboratory Technicians	85	90	97	108
Licensed Practical Nurses	915	973	1,041	1,163
Medical Records/Health Info Technicians	325	346	370	413
Medical/Clinical Laboratory Technologists	260	277	296	330
Nuclear Medicine Technologists	55	59	63	70
Pharmacy Technicians	500	532	569	635
Radiologic Technologists & Technicians	630	670	717	801
Respiratory Therapy Technicians *	n.a.	24	26	29
Surgical Technologists *	n.a.	111	118	132
Health Care Support Occupations				
All Health Care Support Occupations	5,325	5,665	6,058	6,768
Dental Assistants	380	404	432	483
Medical Assistants	500	532	569	635
Occupational Therapist Aides *	n.a.	12	13	15
Occupational Therapist Assistants *	n.a.	29	31	35
Physical Therapist Aides	190	202	216	241
Physical Therapist Assistants	135	144	154	172

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Grand Rapids Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

GRAND RAPIDS AREA

(Allegan, Kent, and Ottawa Counties)

	Active practitioners in the Grand Rapids Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Licensed Health Care Practitioners				
Registered Nurses (includes Advanced Practice Nurses)	5,410	5,350	5,842	6,855
Chiropractors *	n.a.	269	293	344
Dentists	100	99	108	127
Optometrists	40	40	43	51
Pharmacists	600	593	648	760
Physician Assistants	560	554	605	710
Podiatrists *	n.a.	25	27	32
Therapists				
Occupational Therapists	530	1,259	1,374	1,613
Physical Therapists	620	1,473	1,608	1,887
Radiation Therapists *	n.a.	29	31	37
Respiratory Therapists	200	475	519	609

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Grand Rapids Area Labor Market

	Active practitioners in the Grand Rapids Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	148	162	190
Dental Hygienists	520	514	562	659
Diagnostic Medical Sonographers	150	148	162	190
Emergency Medical Tech & Paramedics *	n.a.	401	438	514
Medical & Clinical Laboratory Technicians	230	227	248	291
Licensed Practical Nurses	2,240	2,215	2,419	2,838
Medical Records/Health Info Technicians	310	307	335	393
Medical/Clinical Laboratory Technologists	430	425	464	545
Nuclear Medicine Technologists *	n.a.	50	55	64
Pharmacy Technicians	700	692	756	887
Radiologic Technologists & Technicians	310	307	335	393
Respiratory Therapy Technicians *	n.a.	36	40	47
Surgical Technologists	110	109	119	139
Health Care Support Occupations				
All Health Care Support Occupations	10,940	10,819	11,814	13,863
Dental Assistants	1,040	1,029	1,123	1,318
Medical Assistants	980	969	1,058	1,242
Occupational Therapist Aides *	n.a.	19	20	24
Occupational Therapist Assistants	160	158	173	203
Physical Therapist Aides	80	79	86	101
Physical Therapist Assistants	250	247	270	317

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Jackson Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

JACKSON AREA

(Jackson, Hillsdale, and Lenawee Counties)

	Active practitioners in the Jackson Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	1,745	1,793	1,904	2,138
Chiropractors *	n.a.	114	121	136
Dentists	300	308	327	368
Optometrists	20	21	22	25
Pharmacists	230	236	251	282
Physician Assistants	35	36	38	43
Podiatrists *	n.a.	11	11	13
<i>Therapists</i>				
Occupational Therapists	75	76	80	90
Physical Therapists	135	136	145	163
Radiation Therapists *	n.a.	12	13	15
Respiratory Therapists	60	61	64	72

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Jackson Area Labor Market

	Active practitioners in the Jackson Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	63	67	75
Dental Hygienists	150	154	164	184
Diagnostic Medical Sonographers	30	31	33	37
Emergency Medical Tech & Paramedics *	n.a.	171	181	203
Medical & Clinical Laboratory Technicians	60	62	65	74
Licensed Practical Nurses	570	586	622	698
Medical Records/Health Info Technicians	70	72	76	86
Medical/Clinical Laboratory Technologists	100	103	109	123
Nuclear Medicine Technologists *	n.a.	21	23	26
Pharmacy Technicians	300	308	327	368
Radiologic Technologists & Technicians	165	169	180	202
Respiratory Therapy Technicians *	n.a.	16	16	18
Surgical Technologists *	n.a.	71	75	84
Health Care Support Occupations				
All Health Care Support Occupations	3,235	3,323	3,530	3,963
Dental Assistants	315	324	344	386
Medical Assistants	375	385	409	459
Occupational Therapist Aides *	n.a.	8	8	9
Occupational Therapist Assistants *	n.a.	18	20	22
Physical Therapist Aides	65	67	71	80
Physical Therapist Assistants	60	62	65	74

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Kalamazoo Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)
KALAMAZOO AREA
 (Kalamazoo and St. Joseph Counties)

	Active practitioners in the Kalamazoo Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	2,405	2,426	2,624	3,008
Chiropractors *	n.a.	102	111	127
Dentists	190	192	207	238
Optometrists	35	35	38	44
Pharmacists	250	252	273	313
Physician Assistants *	n.a.	54	58	67
Podiatrists *	n.a.	9	10	12
<i>Therapists</i>				
Occupational Therapists	65	58	63	72
Physical Therapists	145	130	140	161
Radiation Therapists *	n.a.	11	12	13
Respiratory Therapists *	n.a.	87	94	108

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Kalamazoo Area Labor Market

	Active practitioners in the Kalamazoo Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	56	60	69
Dental Hygienists	190	192	207	238
Diagnostic Medical Sonographers *	n.a.	48	52	60
Emergency Medical Tech & Paramedics *	n.a.	135	136	147
Medical & Clinical Laboratory Technicians	210	212	229	263
Licensed Practical Nurses	505	509	551	632
Medical Records/Health Info Technicians	150	151	164	188
Medical/Clinical Laboratory Technologists	200	202	218	250
Nuclear Medicine Technologists *	n.a.	19	20	23
Pharmacy Technicians	145	146	158	181
Radiologic Technologists & Technicians *	n.a.	186	201	231
Respiratory Therapy Technicians *	n.a.	14	15	17
Surgical Technologists *	n.a.	62	68	77
Health Care Support Occupations				
All Health Care Support Occupations	3,980	4,015	4,342	4,978
Dental Assistants	305	308	333	381
Medical Assistants	460	464	502	575
Occupational Therapist Aides *	n.a.	7	8	9
Occupational Therapist Assistants *	n.a.	16	18	20
Physical Therapist Aides *	n.a.	43	47	54
Physical Therapist Assistants *	n.a.	52	56	65

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Lansing Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

LANSING AREA

(Clinton, Eaton, and Ingham Counties)

	Active practitioners in the Lansing Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	3,295	3,268	3,636	4,284
Chiropractors *	n.a.	127	141	167
Dentists	120	119	132	156
Optometrists	55	55	61	72
Pharmacists	355	352	392	462
Physician Assistants	140	139	154	182
Podiatrists *	n.a.	12	13	15
<i>Therapists</i>				
Occupational Therapists	170	191	213	250
Physical Therapists	155	174	194	228
Radiation Therapists *	n.a.	14	15	18
Respiratory Therapists	185	183	204	241

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Lansing Area Labor Market

	Active practitioners in the Lansing Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	70	78	92
Dental Hygienists	505	501	557	657
Diagnostic Medical Sonographers	40	40	44	52
Emergency Medical Tech & Paramedics *	n.a.	190	211	249
Medical & Clinical Laboratory Technicians	325	322	359	423
Licensed Practical Nurses	670	664	739	871
Medical Records/Health Info Technicians	240	238	265	312
Medical/Clinical Laboratory Technologists *	n.a.	212	236	278
Nuclear Medicine Technologists *	n.a.	24	26	31
Pharmacy Technicians	425	421	469	553
Radiologic Technologists & Technicians	350	347	386	455
Respiratory Therapy Technicians *	n.a.	17	19	23
Surgical Technologists *	n.a.	78	87	103
Health Care Support Occupations				
All Health Care Support Occupations	4,935	4,894	5,446	6,417
Dental Assistants	595	590	657	774
Medical Assistants	720	714	795	936
Occupational Therapist Aides *	n.a.	9	10	12
Occupational Therapist Assistants *	n.a.	21	23	27
Physical Therapist Aides	25	25	28	33
Physical Therapist Assistants	140	139	154	182

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Muskegon Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

MUSKEGON AREA

(Muskegon and Oceana Counties)

	Active practitioners in the Muskegon Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	1,370	1,386	1,426	1,566
Chiropractors	70	71	73	80
Dentists	170	172	177	194
Optometrists *	n.a.	24	25	27
Pharmacists	130	132	135	149
Physician Assistants *	n.a.	39	41	44
Podiatrists *	n.a.	7	7	8
<i>Therapists</i>				
Occupational Therapists	25	25	26	29
Physical Therapists	40	40	42	46
Radiation Therapists *	n.a.	8	8	9
Respiratory Therapists *	n.a.	63	65	72

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Muskegon Area Labor Market

	Active practitioners in the Muskegon Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	41	42	46
Dental Hygienists	115	116	120	131
Diagnostic Medical Sonographers *	n.a.	35	36	40
Emergency Medical Tech & Paramedics	70	71	73	80
Medical & Clinical Laboratory Technicians *	n.a.	69	71	78
Licensed Practical Nurses	500	506	520	571
Medical Records/Health Info Technicians *	n.a.	112	115	126
Medical/Clinical Laboratory Technologists	120	121	125	137
Nuclear Medicine Technologists *	n.a.	14	14	16
Pharmacy Technicians	115	116	120	131
Radiologic Technologists & Technicians *	n.a.	136	140	153
Respiratory Therapy Technicians *	n.a.	10	10	11
Surgical Technologists *	n.a.	46	47	51
Health Care Support Occupations				
All Health Care Support Occupations	2,200	2,226	2,290	2,514
Dental Assistants	190	192	198	217
Medical Assistants	325	329	338	371
Occupational Therapist Aides *	n.a.	5	5	6
Occupational Therapist Assistants	20	20	21	23
Physical Therapist Aides	30	30	31	34
Physical Therapist Assistants	45	46	47	51

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Northeastern Lower Michigan Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

NORTHEASTERN LOWER MICHIGAN

(Alcona, Alpena, Cheboygan, Crawford, Montmorency, Oscoda, Otsego, and Presque Isle Counties)

	Active practitioners in Northeastern Lower Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	850	1,087	1,224	1,395
Chiropractors *	n.a.	95	107	122
Dentists	90	115	130	148
Optometrists *	n.a.	31	35	40
Pharmacists	115	147	166	189
Physician Assistants	50	64	72	82
Podiatrists *	n.a.	9	10	11
<i>Therapists</i>				
Occupational Therapists	35	45	50	57
Physical Therapists	80	102	115	131
Radiation Therapists *	n.a.	10	11	13
Respiratory Therapists *	n.a.	82	92	105

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Northeastern Lower Michigan Labor Market

	Active practitioners in Northeastern Lower Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	52	59	67
Dental Hygienists	70	89	101	115
Diagnostic Medical Sonographers *	n.a.	45	51	58
Emergency Medical Tech & Paramedics *	n.a.	142	160	182
Medical & Clinical Laboratory Technicians *	n.a.	89	100	114
Licensed Practical Nurses	265	339	381	435
Medical Records/Health Info Technicians	55	70	79	90
Medical/Clinical Laboratory Technologists	80	102	115	131
Nuclear Medicine Technologists *	n.a.	18	20	23
Pharmacy Technicians *	n.a.	224	253	288
Radiologic Technologists & Technicians *	n.a.	175	197	224
Respiratory Therapy Technicians *	n.a.	13	15	17
Surgical Technologists *	n.a.	59	66	75
Health Care Support Occupations				
All Health Care Support Occupations	1,930	2,467	2,778	3,167
Dental Assistants	115	147	166	189
Medical Assistants	55	70	79	90
Occupational Therapist Aides *	n.a.	7	7	8
Occupational Therapist Assistants *	n.a.	15	17	20
Physical Therapist Aides *	n.a.	41	46	52
Physical Therapist Assistants *	n.a.	49	55	63

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Northwestern Lower Michigan Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

NORTHWESTERN LOWER MICHIGAN

(Antrim, Benzie, Charlevoix, Emmet, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, and Wexford Counties)

	Active practitioners in Northwestern Lower Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses	2,600	3,055	3,451	4,111
Chiropractors *	n.a.	141	159	190
Dentists	165	194	219	261
Optometrists	25	29	33	40
Pharmacists	230	270	305	364
Physician Assistants *	n.a.	75	85	101
Podiatrists *	n.a.	13	15	18
<i>Therapists</i>				
Occupational Therapists	205	241	272	324
Physical Therapists	205	241	272	324
Radiation Therapists	30	35	40	47
Respiratory Therapists	75	88	100	119

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Northwestern Lower Michigan Labor Market

	Active practitioners in Northwestern Lower Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	78	88	104
Dental Hygienists *	n.a.	267	302	360
Diagnostic Medical Sonographers *	n.a.	67	76	90
Emergency Medical Tech & Paramedics *	n.a.	211	238	283
Medical & Clinical Laboratory Technicians *	n.a.	132	149	178
Licensed Practical Nurses	505	593	670	798
Medical Records/Health Info Technicians *	n.a.	214	242	288
Medical/Clinical Laboratory Technologists	130	153	173	206
Nuclear Medicine Technologists *	n.a.	26	30	36
Pharmacy Technicians	200	235	265	316
Radiologic Technologists & Technicians	325	382	431	514
Respiratory Therapy Technicians *	n.a.	19	22	26
Surgical Technologists	60	70	80	95
Health Care Support Occupations				
All Health Care Support Occupations	3,250	3,819	4,313	5,138
Dental Assistants *	n.a.	436	492	586
Medical Assistants	630	740	836	996
Occupational Therapist Aides *	n.a.	10	11	13
Occupational Therapist Assistants *	n.a.	23	26	31
Physical Therapist Aides	30	35	40	47
Physical Therapist Assistants	90	106	119	142

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

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Saginaw Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

SAGINAW AREA

(Bay, Midland, and Saginaw Counties)

	Active practitioners in the Saginaw Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	3,800	4,047	4,391	4,960
Chiropractors*	n.a.	165	179	202
Dentists	225	240	260	294
Optometrists	70	75	81	91
Pharmacists	395	421	456	516
Physician Assistants	50	53	58	65
Podiatrists*	n.a.	15	17	19
<i>Therapists</i>				
Occupational Therapists	235	250	272	307
Physical Therapists	215	229	248	281
Radiation Therapists*	n.a.	18	19	22
Respiratory Therapists	170	181	196	222

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Saginaw Area Labor Market

	Active practitioners in the Saginaw Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians	185	197	214	241
Dental Hygienists	160	170	185	209
Diagnostic Medical Sonographers	75	80	87	98
Emergency Medical Tech & Paramedics*	n.a.	247	267	302
Medical & Clinical Laboratory Technicians	80	85	92	104
Licensed Practical Nurses	1,105	1,177	1,277	1,442
Medical Records/Health Info Technicians	195	208	225	255
Medical/Clinical Laboratory Technologists	160	170	185	209
Nuclear Medicine Technologists	30	32	35	39
Pharmacy Technicians	455	485	526	594
Radiologic Technologists & Technicians	255	272	295	333
Respiratory Therapy Technicians *	n.a.	22	24	27
Surgical Technologists	230	245	266	300
Health Care Support Occupations				
All Health Care Support Occupations	5,290	5,634	6,113	6,905
Dental Assistants	430	458	497	561
Medical Assistants	390	415	451	509
Occupational Therapist Aides*	n.a.	11	12	14
Occupational Therapist Assistants*	n.a.	27	29	33
Physical Therapist Aides	40	43	46	52
Physical Therapist Assistants	235	250	272	307

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Employment forecasts prepared by Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health, 2004.

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Thumb Area Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)
THUMB AREA
 (Huron, Lapeer, Sanilac, and Tuscola Counties)

	Active practitioners in the Thumb Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	1,000	1,076	1,190	1,362
Chiropractors *	n.a.	91	101	115
Dentists	185	199	220	252
Optometrists	n.a.	30	33	38
Pharmacists	255	274	303	347
Physician Assistants *	n.a.	49	54	61
Podiatrists *	n.a.	8	9	11
<i>Therapists</i>				
Occupational Therapists	30	32	36	41
Physical Therapists	35	38	42	48
Radiation Therapists *	n.a.	10	11	12
Respiratory Therapists	30	32	36	41

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using *statewide* occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Thumb Area Labor Market

	Active practitioners in the Thumb Area, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	50	55	63
Dental Hygienists	105	113	125	143
Diagnostic Medical Sonographers *	n.a.	43	48	55
Emergency Medical Tech & Paramedics	210	226	250	286
Medical & Clinical Laboratory Technicians	30	32	36	41
Licensed Practical Nurses	700	753	833	954
Medical Records/Health Info Technicians	60	65	71	82
Medical/Clinical Laboratory Technologists	85	91	101	116
Nuclear Medicine Technologists *	n.a.	17	19	22
Pharmacy Technicians	150	161	179	204
Radiologic Technologists & Technicians	205	221	244	279
Respiratory Therapy Technicians	25	27	30	34
Surgical Technologists	20	22	24	27
Health Care Support Occupations				
All Health Care Support Occupations	3,605	3,880	4,290	4,912
Dental Assistants	170	183	202	232
Medical Assistants	65	70	77	89
Occupational Therapist Aides *	n.a.	6	7	8
Occupational Therapist Assistants *	n.a.	15	16	19
Physical Therapist Aides	25	27	30	34
Physical Therapist Assistants	50	54	60	68

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Upper Peninsula Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

UPPER PENINSULA

(Alger, Baraga, Chippewa, Delta, Dickenson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, and Schoolcraft Counties)

	Active practitioners in the Upper Peninsula, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	2,505	2,592	2,653	2,933
Chiropractors *	n.a.	155	158	175
Dentists	125	129	132	146
Optometrists	105	109	111	123
Pharmacists	255	264	270	299
Physician Assistants	75	78	79	88
Podiatrists *	n.a.	14	15	16
<i>Therapists</i>				
Occupational Therapists	50	52	53	59
Physical Therapists	150	155	159	176
Radiation Therapists	60	62	64	70
Respiratory Therapists	70	72	74	82

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

Upper Peninsula Labor Market

	Active practitioners in the Upper Peninsula, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	85	87	96
Dental Hygienists *	n.a.	293	300	332
Diagnostic Medical Sonographers	40	41	42	47
Emergency Medical Tech & Paramedics	50	52	53	59
Medical & Clinical Laboratory Technicians	130	135	138	152
Licensed Practical Nurses	1,230	1,273	1,303	1,440
Medical Records/Health Info Technicians	130	135	138	152
Medical/Clinical Laboratory Technologists	165	171	175	193
Nuclear Medicine Technologists	20	21	21	23
Pharmacy Technicians	165	171	175	193
Radiologic Technologists & Technicians	155	160	164	181
Respiratory Therapy Technicians *	n.a.	21	21	24
Surgical Technologists	65	67	69	76
Health Care Support Occupations				
All Health Care Support Occupations	5,735	5,934	6,074	6,715
Dental Assistants	415	429	440	486
Medical Assistants	145	150	154	170
Occupational Therapist Aides *	n.a.	11	11	12
Occupational Therapist Assistants *	n.a.	80	82	90
Physical Therapist Aides	40	41	42	47
Physical Therapist Assistants	30	31	32	35

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West Central Michigan
Labor Market

HEALTH CARE WORKFORCE OCCUPATIONAL FORECASTS (Adjusted)

WEST CENTRAL MICHIGAN

(Lake, Mason, Mecosta, Newaygo, and Osceola Counties)

	Active practitioners in West Central Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
<i>Licensed Health Care Practitioners</i>				
Registered Nurses (includes Advanced Practice Nurses)	735	740	795	902
Chiropractors *	n.a.	62	67	76
Dentists	125	126	135	153
Optometrists *	n.a.	20	22	25
Pharmacists	105	106	114	129
Physician Assistants *	n.a.	33	36	40
Podiatrists *	n.a.	6	6	7
<i>Therapists</i>				
Occupational Therapists	30	30	32	37
Physical Therapists	30	30	32	37
Radiation Therapists *	n.a.	7	7	8
Respiratory Therapists	20	20	22	25

* Estimates of incumbents in occupations marked with an asterisk (*) are not available for this Labor Market Area for the year 2000. Forecasts of demand in these occupations for future years (2005, 2010, 2015) are prepared using statewide occupation rates per 100,000 residents ages 65 and older that are applied to the older population in this labor market area.

West Central Michigan
Labor Market

	Active practitioners in West Central Michigan, 2000 (MDLEG/LMI)	Projected demand for practitioners, 2005	Projected demand for practitioners, 2010	Projected demand for practitioners, 2015
Allied Health--Technicians, Technologists				
Cardiovascular Technologists/Technicians *	n.a.	34	37	42
Dental Hygienists	60	60	65	74
Diagnostic Medical Sonographers *	n.a.	30	32	36
Emergency Medical Tech & Paramedics	50	50	54	61
Medical & Clinical Laboratory Technicians *	n.a.	58	63	71
Licensed Practical Nurses	240	242	259	295
Medical Records/Health Info Technicians	25	25	27	31
Medical/Clinical Laboratory Technologists	30	30	32	37
Nuclear Medicine Technologists *	n.a.	12	13	14
Pharmacy Technicians	70	70	76	86
Radiologic Technologists & Technicians	40	40	43	49
Respiratory Therapy Technicians *	n.a.	8	9	10
Surgical Technologists *	n.a.	38	41	47
Health Care Support Occupations				
All Health Care Support Occupations	1,240	1,248	1,341	1,522
Dental Assistants	100	101	108	123
Medical Assistants	105	106	114	129
Occupational Therapist Aides *	n.a.	4	5	5
Occupational Therapist Assistants *	n.a.	32	34	39
Physical Therapist Aides *	n.a.	27	29	32
Physical Therapist Assistants *	n.a.	32	34	39

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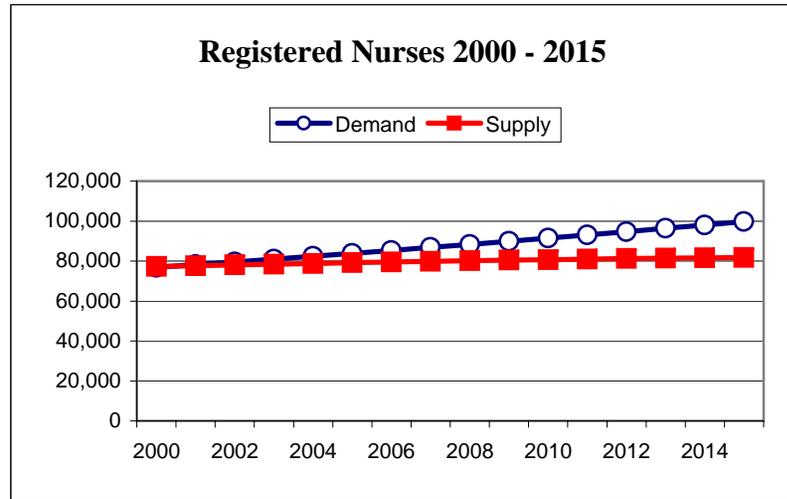
Employment forecasts prepared by Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health, 2004.

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Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

REGISTERED NURSES

	2000	2005	2010	2015
Supply		79,142	80,702	81,823
Demand	76,850	81,434	87,689	99,777
Projected Surplus or Deficit		<u>-2,292</u>	<u>-6,987</u>	<u>-17,954</u>

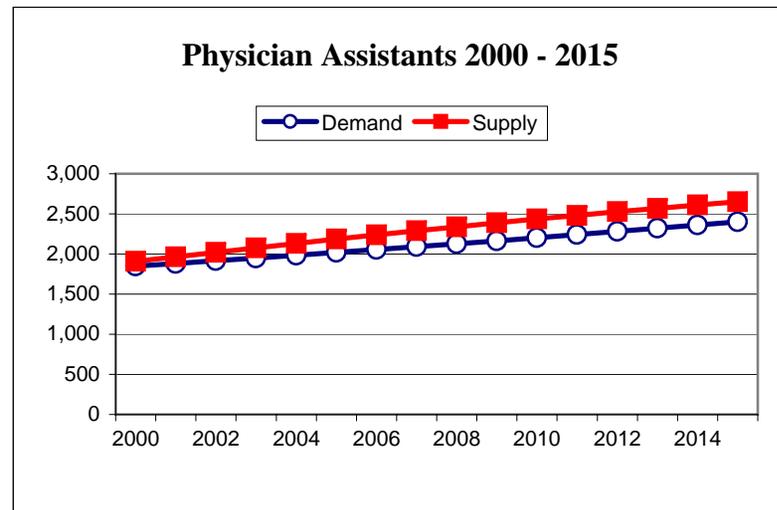


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

PHYSICIAN ASSISTANTS

	2000	2005	2010	2015
Supply		2,185	2,436	2,649
Demand	1,850	1,960	2,111	2,402
Projected Surplus or Deficit		225	325	247

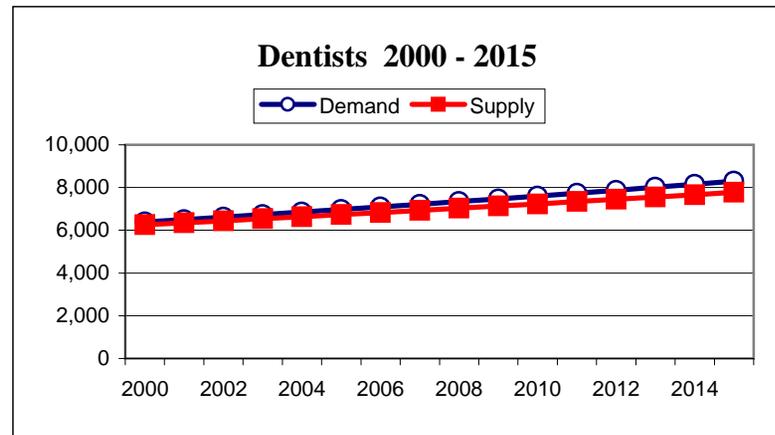


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

DENTISTS

	2000	2005	2010	2015
Supply		6,729	7,235	7,779
Demand	6,390	6,771	7,290	8,296
Projected Surplus or Deficit		-42	-55	-517



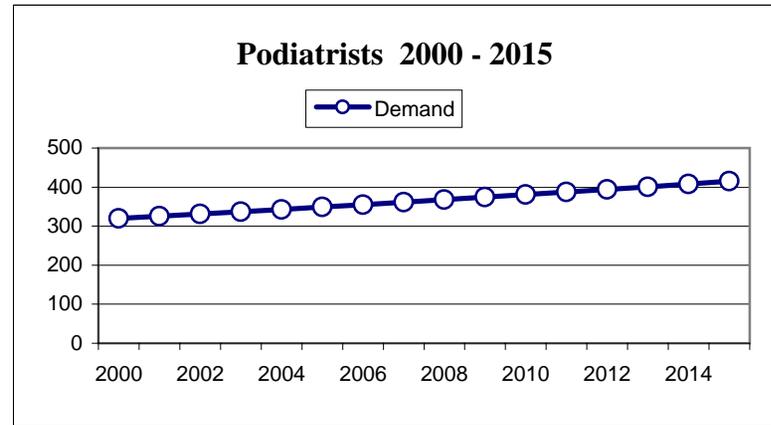
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

PODIATRISTS

	2000	2005	2010	2015
Supply		n.a.	n.a.	n.a.
Demand	320	339	365	415

Projected Surplus or Deficit n.a. n.a. n.a.

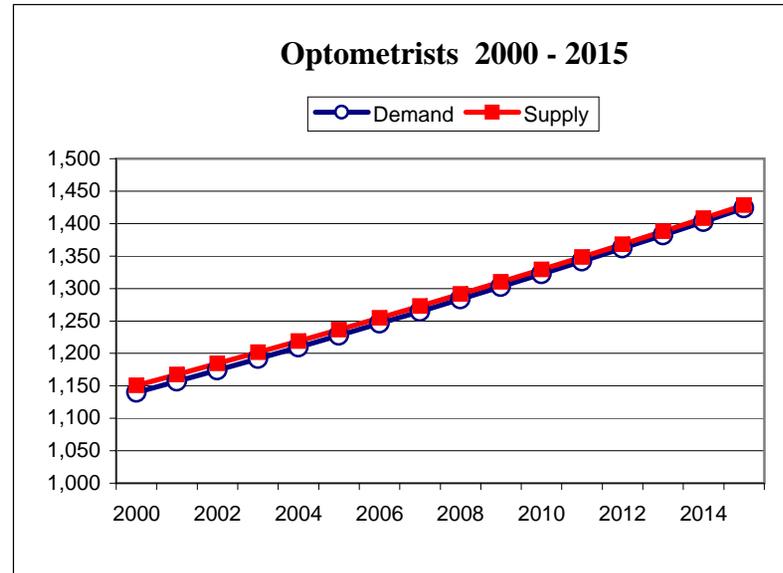


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

OPTOMETRISTS

	2000	2005	2010	2015
Supply		1,238	1,347	1,466
Demand	1,140	1,208	1,301	1,480
Projected Surplus or Deficit		30	46	-14

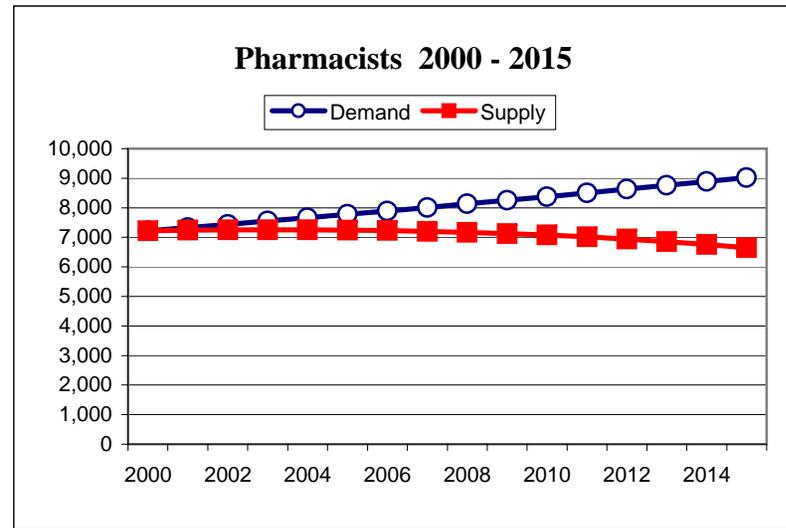


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

PHARMACISTS

	2000	2005	2010	2015
Supply		7,227	7,014	6,524
Demand	7,220	7,651	8,238	9,374
Projected Surplus or Deficit		-424	-1,224	-2,850



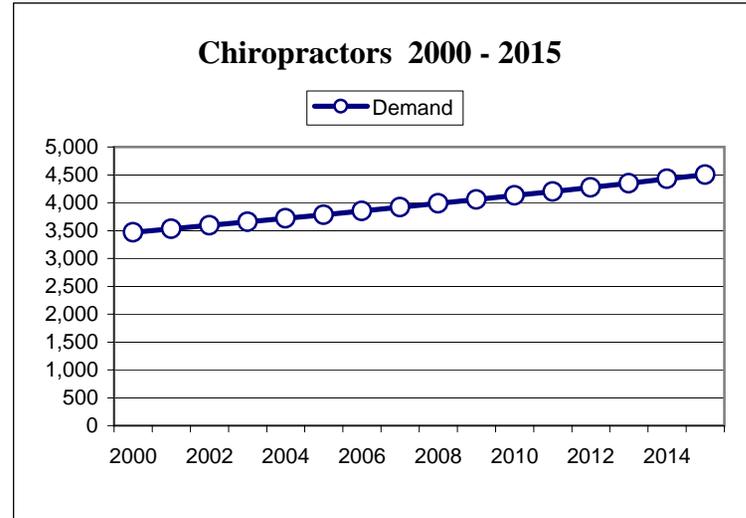
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

CHIROPRACTORS

	2000	2005	2010	2015
Supply		n.a.	n.a.	n.a.
Demand	3,470	3,677	3,959	4,505

Projected Surplus or Deficit n.a. n.a. n.a.



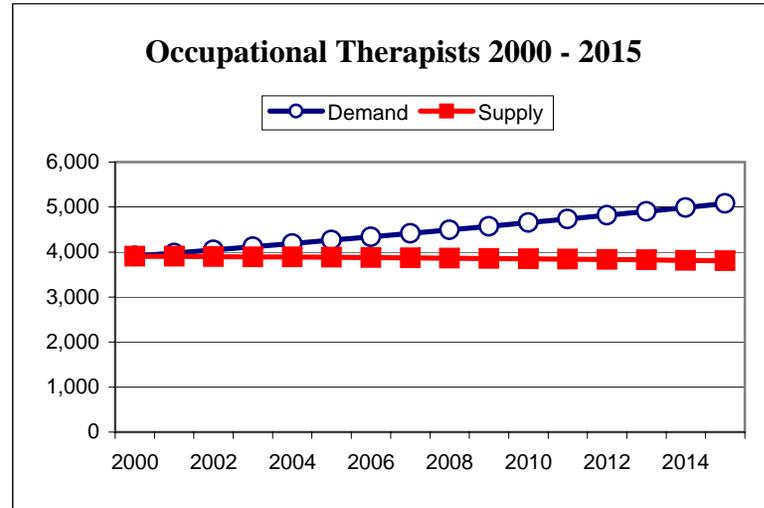
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

OCCUPATIONAL THERAPISTS

	2000	2005	2010	2015
Supply		3,884	3,851	3,804
Demand	3,910	4,143	4,461	5,077

Projected Surplus or Deficit -259 -610 -1,273



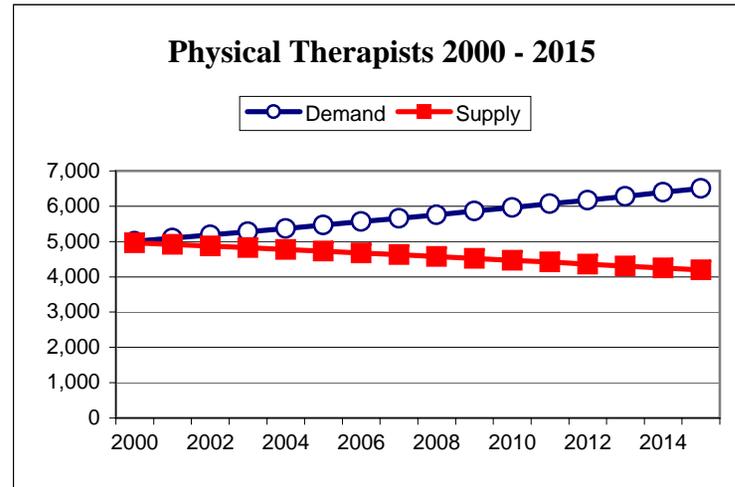
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

PHYSICAL THERAPISTS

	2000	2005	2010	2015
Supply		4,724	4,469	4,192
Demand	5,010	5,309	5,717	6,505

Projected Surplus or Deficit -585 -1,248 -2,313



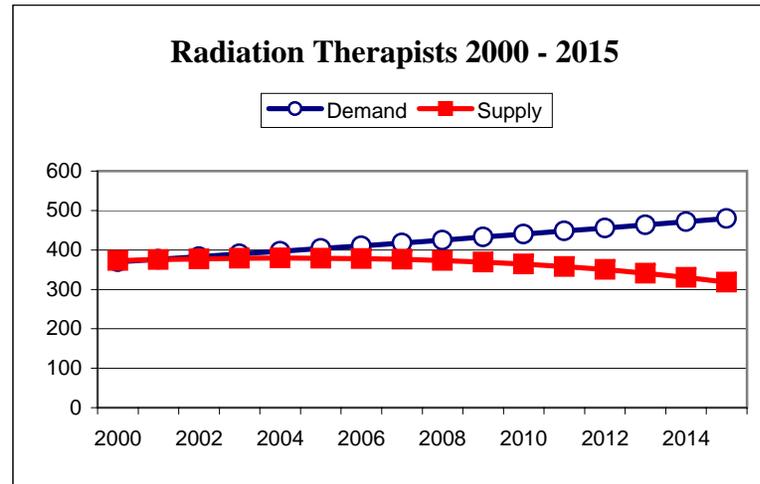
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

RADIATION THERAPISTS

	2000	2005	2010	2015
Supply		379	364	318
Demand	370	392	422	480

Projected Surplus or Deficit -13 -58 -162



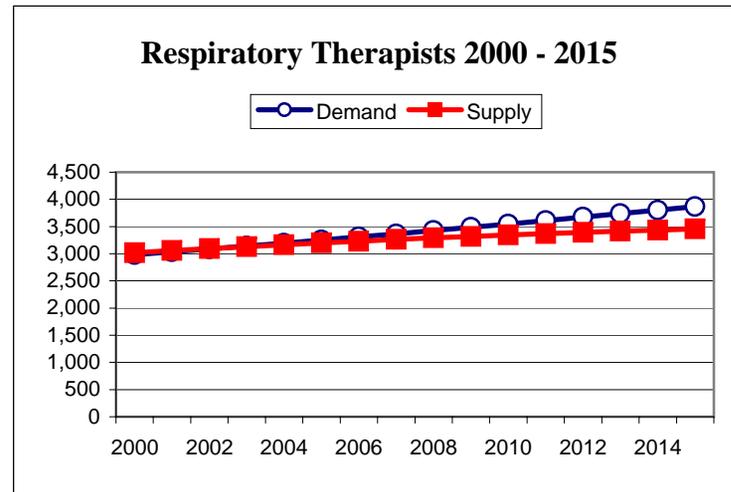
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

RESPIRATORY THERAPISTS

	2000	2005	2010	2015
Supply		3,199	3,346	3,455
Demand	2,980	3,158	3,400	3,869

Projected Surplus or Deficit 41 -54 -414



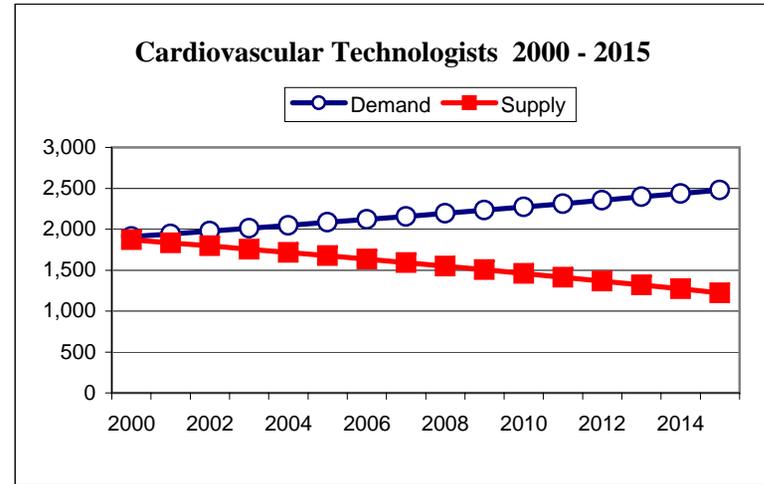
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

**CARDIOVASCULAR TECHNOLOGISTS
 AND TECHNICIANS**

	2000	2005	2010	2015
Supply		1,676	1,460	1,221
Demand	1,910	2,024	2,179	2,480

Projected Surplus or Deficit -348 -719 -1,259



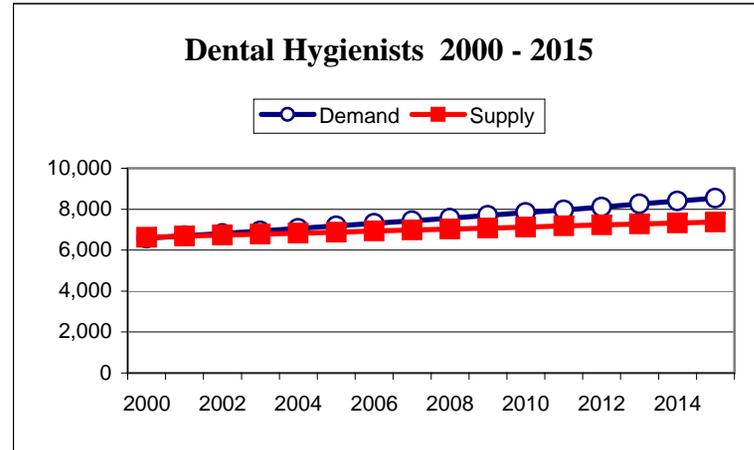
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

DENTAL HYGIENISTS

	2000	2005	2010	2015
Supply		6,882	7,129	7,373
Demand	6,580	6,973	7,508	8,543

Projected Surplus or Deficit -91 -379 -1170

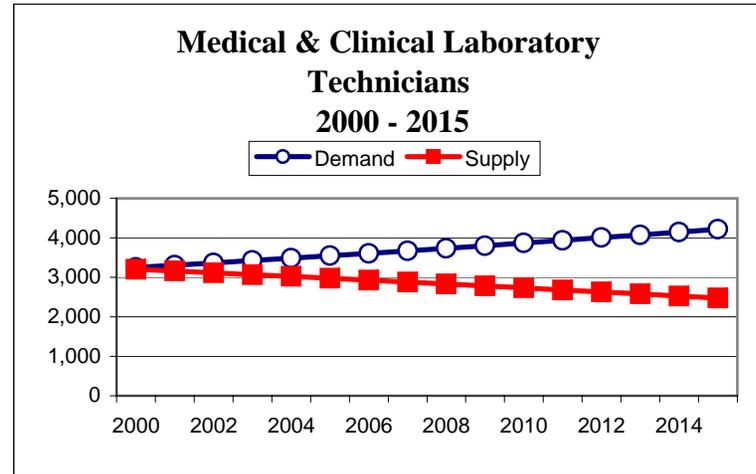


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

**MEDICAL & CLINICAL
LABORATORY TECHNICIANS**

	2000	2005	2010	2015
Supply		2,973	2,730	2,472
Demand	3,250	3,444	3,708	4,220
Projected Surplus or Deficit		-471	-978	-1,748

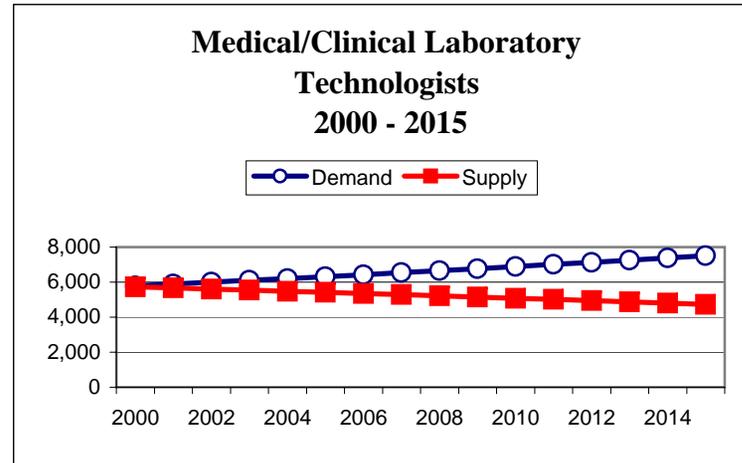


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

**MEDICAL & CLINICAL
LABORATORY TECHNOLOGISTS**

	2000	2005	2010	2015
Supply		5,414	5,081	4,728
Demand	5,790	6,135	6,607	7,517
Projected Surplus or Deficit		-721	-1,526	-2,789



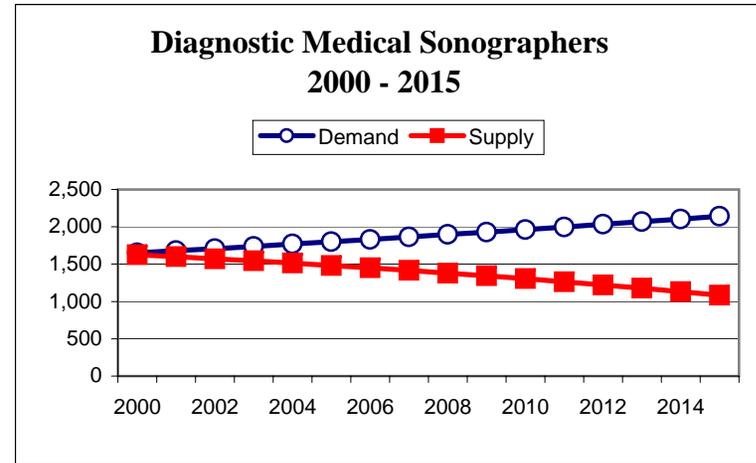
Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

DIAGNOSTIC MEDICAL SONOGRAPHERS

	2000	2005	2010	2015
Supply		1,482	1,304	1,085
Demand	1,650	1,748	1,883	2,142

Projected Surplus or Deficit -266 -579 -1057

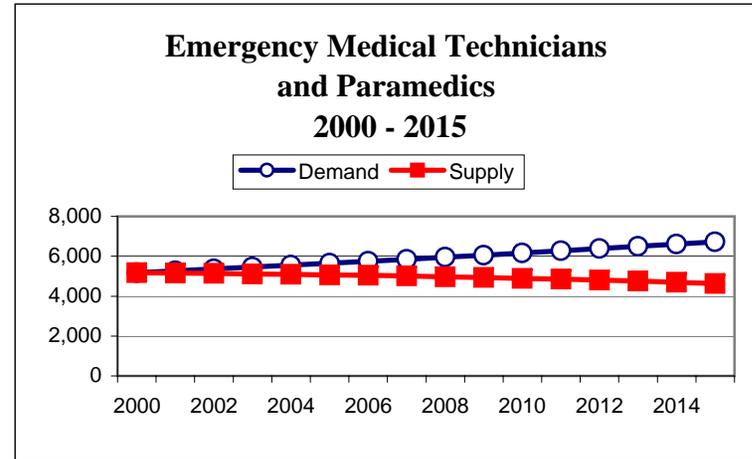


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

**EMERGENCY MEDICAL TECHNICIANS
 AND PARAMEDICS**

	2000	2005	2010	2015
Supply		5,067	4,894	4,638
Demand	5,180	5,489	5,911	6,725
Projected Surplus or Deficit		-422	-1,017	-2,087

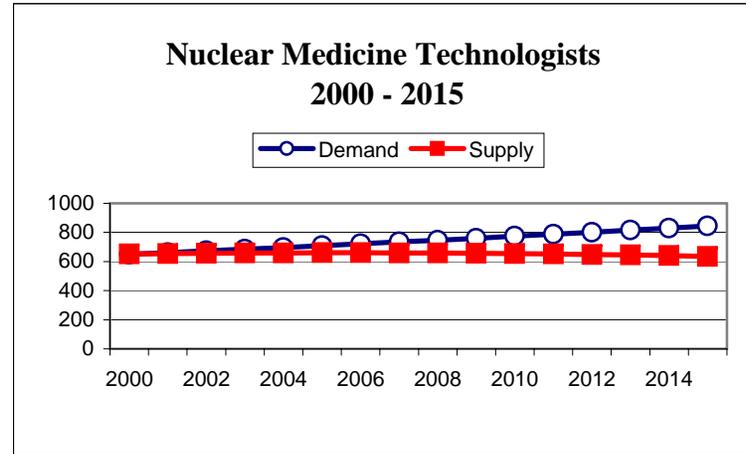


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

NUCLEAR MEDICINE TECHNOLOGISTS

	2000	2005	2010	2015
Supply		660	655	634
Demand	650	689	742	844
Projected Surplus or Deficit		-29	-87	-210

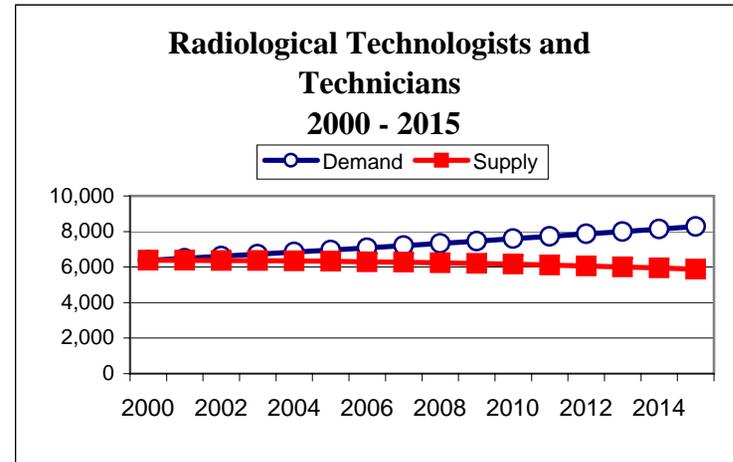


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

**RADIOLOGICAL TECHNOLOGISTS
AND TECHNICIANS**

	2000	2005	2010	2015
Supply		6,323	6,159	5,874
Demand	6,380	6,761	7,280	8,283
Projected Surplus or Deficit		-438	-1,121	-2,409

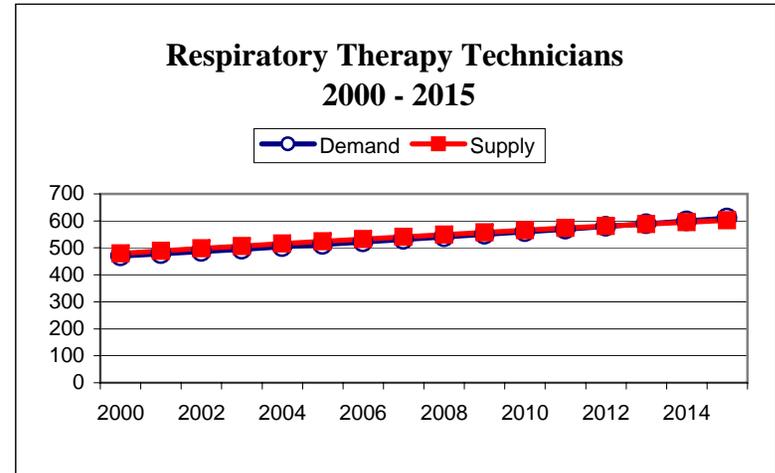


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

RESPIRATORY THERAPY TECHNICIANS

	2000	2005	2010	2015
Supply		524	565	602
Demand	470	498	536	610
Projected Surplus or Deficit		26	29	-8

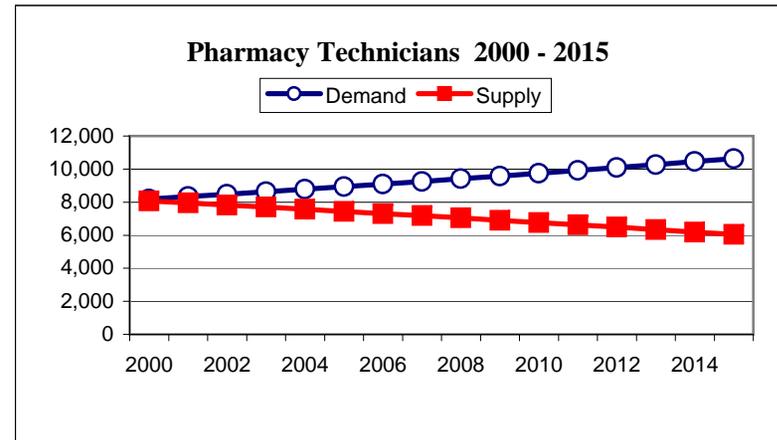


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

PHARMACY TECHNICIANS

	2000	2005	2010	2015
Supply		7,439	6,766	6,043
Demand	8,190	8,679	9,345	10,633
Projected Surplus or Deficit		<u>-1,240</u>	<u>-2,579</u>	<u>-4,590</u>

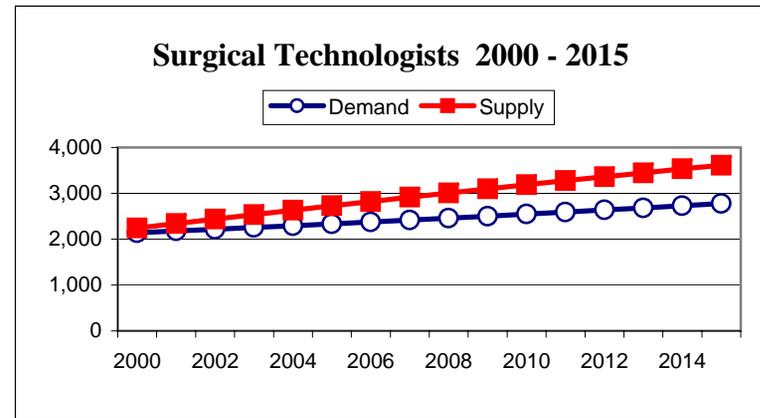


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

SURGICAL TECHNOLOGISTS

	2000	2005	2010	2015
Supply		2,727	3,186	3,614
Demand	2,140	2,268	2,442	2,778
Projected Surplus or Deficit		459	744	836

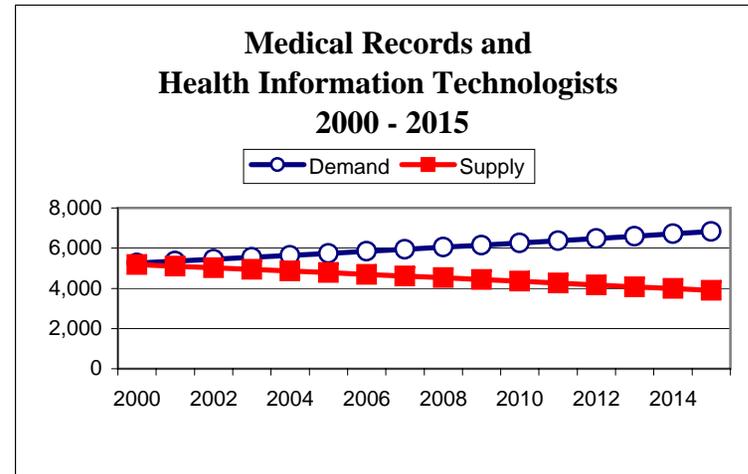


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

**MEDICAL RECORDS AND HEALTH
 INFORMATION TECHNOLOGISTS**

	2000	2005	2010	2015
Supply		4,777	4,349	3,893
Demand	5,260	5,574	6,002	6,829
Projected Surplus or Deficit		-797	-1653	-2936

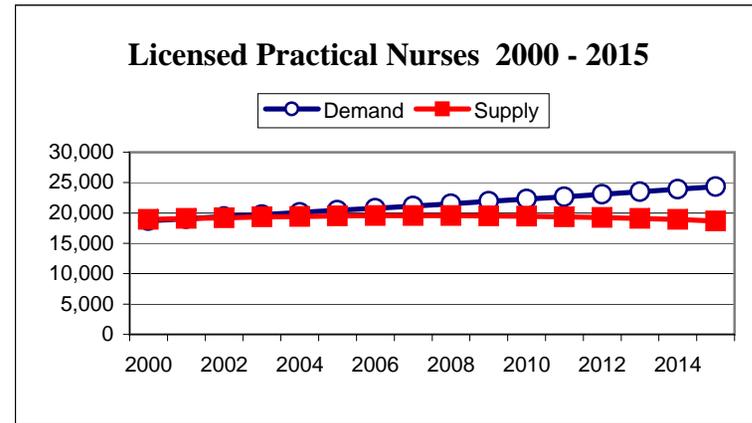


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

LICENSED PRACTICAL NURSES

	2000	2005	2010	2015
Supply		19,499	19,454	18,694
Demand	18,730	19,847	21,372	24,318
Projected Surplus or Deficit		-348	-1,918	-5,624

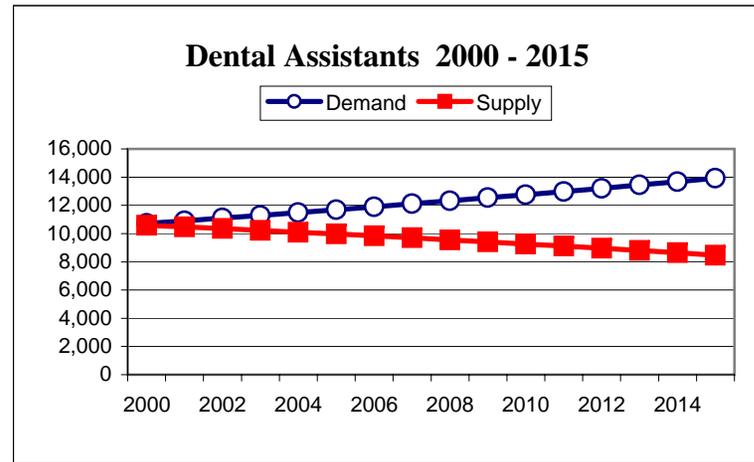


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

DENTAL ASSISTANTS

	2000	2005	2010	2015
Supply		9,964	9,262	8,468
Demand	10,720	11,359	12,232	13,918
Projected Surplus or Deficit		<u>-1,395</u>	<u>-2,970</u>	<u>-5,450</u>

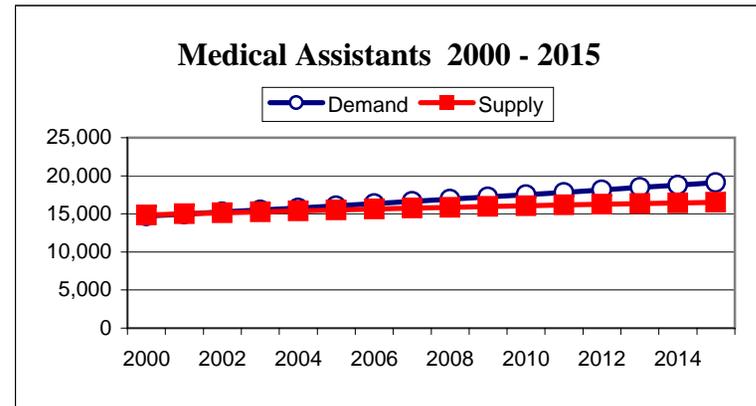


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

MEDICAL ASSISTANTS

	2000	2005	2010	2015
Supply		15,512	16,073	16,530
Demand	14,720	15,598	16,796	19,112
Projected Surplus or Deficit		-86	-723	-2,582

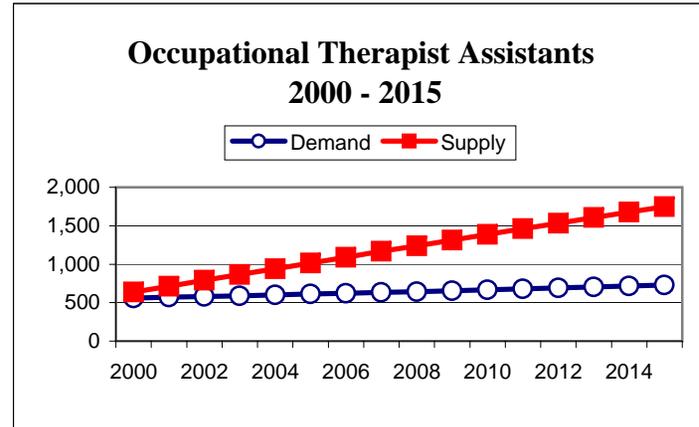


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

OCCUPATIONAL THERAPIST ASSISTANTS

	2000	2005	2010	2015
Supply		1,016	1,387	1,748
Demand	560	593	639	727
Projected Surplus or Deficit		423	748	1,021

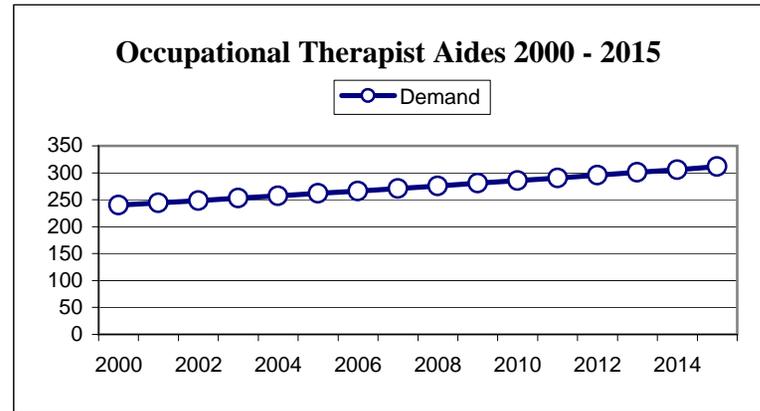


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

OCCUPATIONAL THERAPIST AIDES

	2000	2005	2010	2015
Supply		n.a.	n.a.	n.a.
Demand	240	254	274	312
Projected Surplus or Deficit		<u>n.a.</u>	<u>n.a.</u>	<u>n.a.</u>

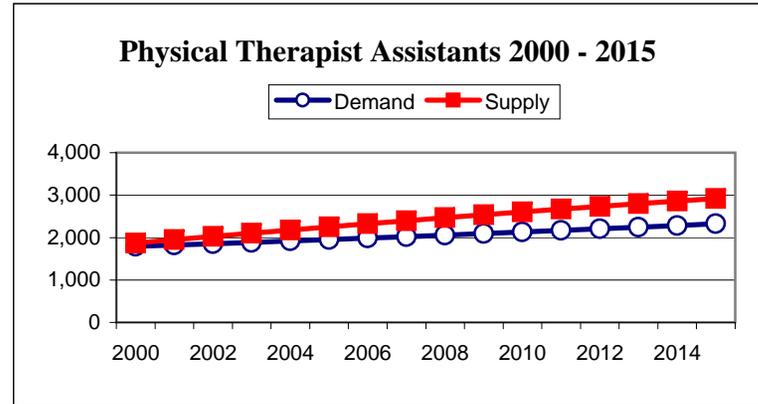


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

PHYSICAL THERAPIST ASSISTANTS

	2000	2005	2010	2015
Supply		2,251	2,604	2,919
Demand	1,790	1,897	2,042	2,324
Projected Surplus or Deficit		354	562	595

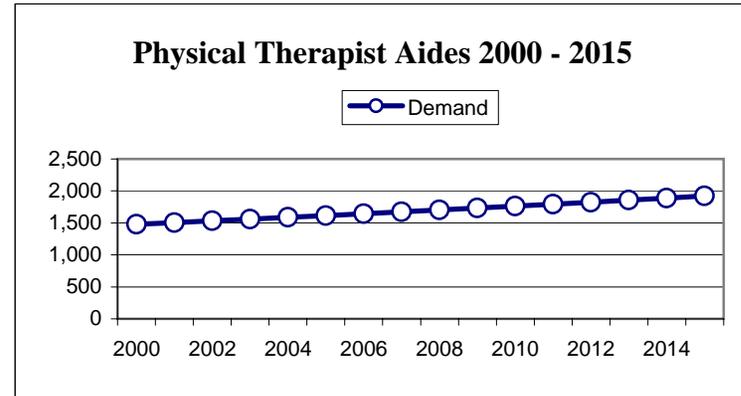


Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Michigan Health Care Occupations
SUPPLY DEMAND FORECASTS

PHYSICAL THERAPIST AIDES

	2000	2005	2010	2015
Supply		n.a.	n.a.	n.a.
Demand	1,480	1,568	1,689	1,922
Projected Surplus or Deficit		<u>n.a.</u>	<u>n.a.</u>	<u>n.a.</u>



Source: Public Policy Associates, Incorporated for the Michigan Department of Labor & Economic Growth and the Michigan Department of Community Health.

Appendix D: Model Practices Database

Health Care Workforce Development in Michigan

Model Practices Matrix

Strategies to Reduce Turnover & Vacancies: Coaching & Mentoring

CNA Career Ladder Program

This model practice took place in: Wisconsin

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Wisconsin Hospital Association and Wisconsin Health Facilities created a career ladder to allow CNAs to obtain advanced degrees once they obtain a high school diploma and achieve skills standards in the four units of the health services curriculum.

No information regarding the funding for this particular model practice was provided.

CNA Recruitment & Retention Program

This model practice took place in: Santa Barbara City College, CA

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/publications/index.html>

Conducted a survey of CNAs with 3+ years on the job to determine characteristics of more steady employees in this high-cost-of-living area. Supervisors and frontline workers meet monthly to discuss recruitment and retention issues. Developed a mentor program for new employees and a referral bonus program. Also exploring child care and affordable housing issues. Key factor here is that this was done on a region-wide basis, including establishment of a distance learning CNA program approved by Centers for Medicare and Medicaid Services.

No information regarding the funding for this particular model practice was provided.

CNA to Nursing Degree Program

This model practice took place in: Wyoming

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Wyoming hospitals have a hospital-based program to allow CNAs to complete nursing degrees.

No information regarding the funding for this particular model practice was provided.

Distance Learning for Allied Health

This model practice took place in: Alaska

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Y-K Medical Center in Alaska has developed a career pathway outreach program that includes distance learning and training for RNs, LPNs, physician assistants, and related professions.

No information regarding the funding for this particular model practice was provided.

Recruiting Nontraditional Individuals to Health Care

This model practice took place in: Wayne Memorial Hospital, Goldsboro, NC

Information on this model practice was found through: American Hospital Association

More information can be found at: Sandi Morrisey, Workforce Development Coordinator, smorrisaey@waynehealth.org

Four North Carolina hospitals collaborated on a grant proposal to simultaneously address workforce shortage issues and to develop a more diversified workforce. Grant funds were matched by each hospital and used to hire either a workforce diversity coordinator or a workforce development coordinator to lead this effort. Target activities include: (1) recruit nontraditional individuals (males and minorities) into nursing, (2) expose young people to hospital careers and opportunities, and (3) develop a mentoring program to guide students interested in health care through the process.

Funding Information:

\$941,000 grant from the Duke Endowment, matched by approximately \$800,000 from the four hospitals.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

Collaboration with the University of Phoenix to train LPNs and to train LPNs to become RNs.

No information regarding the funding for this particular model practice was provided.

Strategies for Community Clinic Workers' Training, Education, Retention, and Advancement

This model practice took place in: Family Health Centers of San Diego, CA

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/Allied%20Health/projdescription.html>

Required trained bilingual staff to serve a diverse population; newly hired staff have highly varied skills and frequent turnover is a problem. Created five advisory boards of clinic staff to explore best practices to provide current workers with ongoing education and training as well as career development and advancement opportunities. Developed curricula and models to enable entry-level workers to strengthen job skills and increase pay. Included specific skills-building courses like basic medical terminology that were offered on site during regular working hours. Basic problem was cost of released time for class attendance.

No information regarding the funding for this particular model practice was provided.

Health First, Inc.

This model practice took place in: Brevard County, FL

Information on this model practice was found through: Voluntary Hospitals of America

More information can be found at:

Health First targeted nursing retention by implementing a certification pay program for nurses that recognizes individual skills and contributions and encourages learning additional skills.

Funding Information:

Funded internally.

Hospital Sponsorship of a Nursing Program and Student Mentoring

This model practice took place in: Lee Memorial Hospital, Fulton, NY and Oswego Hospital, Oswego, NY

Information on this model practice was found through: American Hospital Association

More information can be found at: Dennis Casey, Executive Director, dennis.casey@altee.org

Two hospitals in rural New York State convinced a nearby community college to create a new RN program in one of the hospitals' communities, enabling hospital employees and community residents to pursue RN education close to home and without leaving their jobs. RNs at the two hospitals mentor the students and sponsor dinners that provide opportunities for students to discuss issues with their sponsors in a group setting; they also provide an opportunity for health care employers to meet directly with prospective employees. Twenty students are enrolled and are scheduled to graduate in May 2005.

No information regarding the funding for this particular model practice was provided.

Nursing Success Through Excellence in Practice (STEPS)

This model practice took place in: Advocate Illinois Masonic Medical Center, Chicago, IL

Information on this model practice was found through: American Hospital Association, AHA News

More information can be found at: www.aha.org/ahanews/

STEPS—Four-tiered program for RNs designed to provide career advancement by differentiating levels of nurse practice, developing a pathway from level to level, and rewarding advancement financially. Step 1—recent nursing graduates work under close supervision, Step 2—nurses gain one to three years of experience or work part time, Step 3—RN demonstrate clinical knowledge at the unit level and apply this knowledge to specific patient populations, Step 4—nurses gain at least five years of experience and exhibit comprehensive knowledge and experience. To reach Step 3, RNs must have worked at least 6,000 hours and have a BSN or certification. Advancement from Step 2 to 3 earns an 8% pay raise; advancement from level 3 to 4 earns an additional 8% pay raise.

Funding Information:

Funded by a \$1.6 million grant through the Nurse Reinvestment Act.

"Grow Your Own" Program

This model practice took place in: California

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/publications/index.html>

"Grow Your Own" program to train multilingual and multicultural WIC staff as nutritional professionals, as it is rare for traditional nutrition students to choose WIC for internships. Project developed curricula and three internship programs to serve 18 local WIC programs. All were fully accredited from the Committee on Accreditation for Dietetics Education. Expanded capacity to train new nutritional professionals in California by 165%.

Funding Information:

WIC Program--Also raised \$130K for the California Nutrition Corps (a brand new program) to support, recruit, and retain diverse employees.

Educational Enrichment Through Creation of a Center for Learning

This model practice took place in: North Shore-Long Island Jewish Health System, Great Neck, NY

Information on this model practice was found through: American Hospital Association

More information can be found at: Kathleen Gallo, Ph.D., Chief Learning Officer, kgallo@nshs.edu

A decentralized 18-hospital collaboration established a corporate university center based on the model established by General Electric (GE) to upgrade the skills of all employees. This center is located at a separate location from all of the 18 facilities where 25+ enrichment courses, a 10-week core management program, and a 6-month Six Sigma program are offered free to employees. Courses are taught by the health system's executives, staff from GE Medical Systems, and faculty from the Harvard University School of Public Health.

No information regarding the funding for this particular model practice was provided.

Supplement ER Staff by Using Paramedics

This model practice took place in: St. Peter Community Hospital, St. Peter, MN

Information on this model practice was found through: American Hospital Association

More information can be found at: Valarie Campbell, HR Director, valk@stpeterhealth.org

ER staffing shortages have been addressed by hiring paramedics to supplement physician and nursing staff in the ER.

No information regarding the funding for this particular model practice was provided.

Train Certified Coders In House

This model practice took place in: Gunderson Lutheran Hospital, La Crosse, WI

Information on this model practice was found through: American Hospital Association

More information can be found at: Ann Bina, Mgr. of Coding and Reimbursement, ambina@gundluth.org

In response to a shortage of certified health billing and coding professionals, Gunderson Lutheran Hospital established its own professional medical coding program within the hospital. The manager of patient business services became a certified instructor and has implemented the American Academy of Professional Coders curriculum for hospital staff. Students who complete the program are qualified to sit for the certification exam. The result is that the hospital now can fill its coder positions from a larger pool of qualified individuals.

No information regarding the funding for this particular model practice was provided.

Improvement Model for Workforce Development in Rural Health Care

This model practice took place in: Minnesota

Information on this model practice was found through: Critical Resources: Forums Addressing Minnesota's Health Care Worker Shortage

More information can be found at:

Ridgewater College and regional health care providers formed a partnership to develop a workforce development model that would positively impact the educational and health care settings in their region. Their goal was to create a new way of educating, recruiting, and retaining workers.

Funding Information:

Grant support from the state's Job Skills Partnership programs.

Lab Technician Shortage

This model practice took place in: St. Peter Community Hospital, St. Peter, MN

Information on this model practice was found through: American Hospital Association

More information can be found at: Valarie Campbell, HR Director, valk@stpeterhealth.org

To address a regional shortage of medical laboratory technicians, one hospital hired and trained a local biology/chemistry graduate of a local college to work in the lab rather than a lab tech after a year in which a laboratory technician position remained empty.

No information regarding the funding for this particular model practice was provided.

Respiratory Care AAS

This model practice took place in: Grand Rapids, MI

Information on this model practice was found through: Interview with Dean Jacqueline Hooper, D.P.H.

More information can be found at: http://www.ferris.edu/htmls/fsucatlg/coursecatalog/programs.cfm?program_id=67

The respiratory care AAS degree program was completely repackaged in the winter 2003 semester to front-load key entry-level skills that are needed by employers, particularly those experiencing a workforce shortage of respiratory therapists. Through working with hospitals and long-term care facilities, knowledge and practical skills were identified that could be provided by a "respiratory aide" type position. Creation of an aide-type position is advantageous to the employer as well as the student. After three semesters of coursework, students are ready to assume an aide-type position that can provide rudimentary respiratory services and immediate relief to employers experiencing severe workforce shortages. The students can continue working in an aide capacity, receive tuition assistance as an employee benefit, and work toward completing the associate degree that is required to be eligible to sit for the licensure exam.

No information regarding the funding for this particular model practice was provided.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

Because of the great amount of flexibility needed (classes at worksites instead of educational institutions and classes at odd hours to accommodate 24-hour a day schedule at many health care organizations), SEIU sometimes asks the colleges to set up separate sections just for their (e.g., SEIU) students.

No information regarding the funding for this particular model practice was provided.

Indigent Care Trust Fund

This model practice took place in: Georgia

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Indigent care trust fund is allowing hospitals to use money allocated for primary care to support approved education, recruitment, and retention activities.

No information regarding the funding for this particular model practice was provided.

Retaining Older Nurses

This model practice took place in: Vermont

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Office of Nursing Workforce, Research, Planning & Development received a federal grant to study factors to promote retention of older nurses.

Funding Information:

Federal grant

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU has developed continuing education (CEU) programs—originally to meet their own professionals' (e.g., nurses, pharmacists, etc.) needs, but now serves the general professional community with online streaming video classes and live Web casts.

No information regarding the funding for this particular model practice was provided.

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU also emphasizes the need for career counseling and job search counseling—this is very important to the whole philosophy of this program.

No information regarding the funding for this particular model practice was provided.

"Mommy Hours" Nursing Program for RNs Raising a Family

This model practice took place in: St. Mary's Medical Center, Huntington, WV
Information on this model practice was found through: American Hospital Association
More information can be found at: Jennifer Gore, RN jennifer.gore@st-marys.org

In response to difficulty in hiring RNs, the hospital created a "Mommy Hours" program for nurses that had left nursing to raise a family but who were interested in working on a casual basis and making their own hours. 18 nurses were hired to assist regular staff employees. "Mommy Hours" nurses work less than 8 hours per day and fewer than 20 hours per week and are paid the minimum RN hourly rate. These nurses make their own schedules. They typically assist regular nursing staff with tasks such as nursing assessments of newly admitted patients.

No information regarding the funding for this particular model practice was provided.

Attract and Retain Older Workers

This model practice took place in: Royal Oak, MI; Richmond, VA; St. Louis, MO; Scottsdale, AZ
Information on this model practice was found through: American Hospital Association
More information can be found at: www.ahanews.com/ahanews/

Twelve hospitals—including William Beaumont Hospital in Royal Oak—have been identified by AARP as "Best Hospitals for Workers over 50." Practices include: (1) SSM Health Care in St. Louis, MO, "phased retirement" in which workers 60 and over can make a transition to retirement by working part time and still receiving their pension. 142 workers age 60-65 and 231 over 65 are participating. (2) Scottsdale Healthcare in Arizona allows older employees to work seasonally (6 months) during the winter while retaining their health benefits. (3) St. Mary's medical center in Huntington, WV offers employees 100% employer-paid health care benefits and provides free preventive and diagnostic screenings for various forms of cancer. (4) Bon Secours Richmond Health System recognizes older workers taking care of elderly parents; they provide a home health aide to assist with an aging parent, spouse, etc. for up to 10 days annually--allows older workers with these obligations to take a vacation or have a day off.

Funding Information:

Funded internally.

Orlando Regional Health Care

This model practice took place in: Orlando, FL
Information on this model practice was found through: Voluntary Hospitals of America
More information can be found at:

In a tight labor market, launched a compensation enhancement task force and provided managers with compensation training. Also collected extensive metrics on turnover, hours, etc., and instituted greater efforts to balance work life with family life.

Funding Information:

Internally funded.

UP Health Care Roundtable

This model practice took place in: Upper Peninsula, MI

Information on this model practice was found through: Site visit with Michigan Works! The Job Force Board

More information can be found at: <http://www.jobforce.org>

Due to local concern about the health care workforce shortage in the Upper Peninsula, Michigan Works! The Job Force Board developed the Health Care Roundtable as a broad-based partnership among a variety of health care providers, business leaders, and educators to research the health care workforce shortage and its implications on Upper Peninsula health care providers.

Funding Information:

Funded through member donations.

West Michigan Nursing Advisory Council

This model practice took place in: West Michigan

Information on this model practice was found through: Site visit to the West Michigan Nursing Advisory Council

More information can be found at: <http://www.afh.org/WMNAC.htm>

The purpose of the West Michigan Nursing Advisory Council is to provide a collective means for nurses in academia and a variety of service settings to address issues related to the provision of quality nursing care in West Michigan and to assist the Alliance for Health in achieving its goals.

No information regarding the funding for this particular model practice was provided.

BSNs and Clinical Training

This model practice took place in: Detroit, MI

Information on this model practice was found through: Site visit with University of Detroit - Mercy

More information can be found at:

University of Detroit - Mercy's program with Aquinas College in Grand Rapids is training selected BSNs to become preceptors for clinical training to address the clinical training shortage. One of the most innovative parts of this program is the restructuring of the curriculum to eliminate duplicative learning. You only need to learn some material once rather than repeating some materials from course to course as in more traditional programs.

No information regarding the funding for this particular model practice was provided.

Employee Retention and Career Ladder Program

This model practice took place in: Alaska

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu/>

Alaska Native Tribal Health Consortium started an employee retention project that includes career ladder development for entry-level workers.

No information regarding the funding for this particular model practice was provided.

Los Angeles County Health Care Workforce Development Program

This model practice took place in: California

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Los Angeles County Health Care Workforce Development Program is a five-year, \$40-million skills upgrade and retraining program as part of restructuring the Los Angeles County health care system.

No information regarding the funding for this particular model practice was provided.

No Repeat Courses for Nursing Advancement Program

This model practice took place in: Utah

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Established competency levels to differentiate nurses at associate, baccalaureate, and master levels. Universities are using this information to enable nurses to further their education without losing or having to repeat course credits, thus shortening the time to obtain a higher degree.

No information regarding the funding for this particular model practice was provided.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU 1199 NYC emphasizes the need for career counseling and job search counseling—this is very important to the whole philosophy of this program and is required for SEIU college funding recipients.

No information regarding the funding for this particular model practice was provided.

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

Local colleges, universities, and professional organizations rely extensively on standardized testing. As a result, SEIU spends a lot of time and resources on helping their members prepare to take the tests. SEIU does a lot (if not all) of the organizing work for some of these classes or programs.

No information regarding the funding for this particular model practice was provided.

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU has economic clout—as a purchaser of educational services. SEIU can be an important source of additional income for educational organizations that are willing to work with them and be flexible. In addition, SEIU's programs bring new and additional staff into the colleges and universities at no cost to them.

No information regarding the funding for this particular model practice was provided.

Strategies for Health Care Mobility: Career Coaching & Mentoring

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

A lot of the schools, colleges, and universities they work with initially do not want to make accommodations for nontraditional students. For example, respiratory and radiology tech programs are only offered as full-time programs to students at local colleges and universities. SEIU has had to convince local schools to set up part-time programs in these areas so that they can accommodate the full-time workers who will be the students in these programs.

No information regarding the funding for this particular model practice was provided.

Service Employees International Union (SEIU) 250

This model practice took place in: San Francisco, CA

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/publications/index.html>

Career path mapping and worksite training for low-level health care workers. Partnership between Kaiser Permanent and Health Care Workers local 250 (SEIU), mapped out career paths to enable Kaiser workers to advance in technical, clerical, and patient-care positions. Reviewed information on skills required, certification, etc., needed for advancement; developed a worksite curriculum outline. Advancement opportunity was approved for acute-care CNAs through the northern California Kaiser Permanent network.

No information regarding the funding for this particular model practice was provided.

North Dakota Health-Related Technical Skills Project

This model practice took place in: North Dakota

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: Jim Hirsch @ 701-328-5345

Provides career ladder training in nursing to entry-level workers in health-related occupations.

Funding Information:

Funded under H-1B grant.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU 1199 in New York City provides tuition benefits for members who want to go back to college and get a degree in a health care shortage occupation. These benefits include tuition reimbursement and stipends. Partnerships are mainly with units of the City University of New York, both senior colleges (e.g., Lehman College for nutrition training) and community colleges for some of the others (e.g., Borough of Manhattan Community College for RN training).

There is also full-time support (full tuition, books, and a weekly stipend) for qualified students who are pursuing career training in designated health care shortage occupations—even if studying social work at Columbia University. Note: This latter program allows union-member employees to go to college FULL TIME and be fully funded AND provides a stipend to live on. Must maintain minimum grade levels and complete within a limited amount of time. Programs in NURSING and PHARMACY.

No information regarding the funding for this particular model practice was provided.

Specialty Nurse Education and Training Pilot Program

This model practice took place in: New Jersey

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://www.nerwoen.org>

\$5-million Specialty Nurse Education and Training Pilot Program to provide financial support to hospitals, long-term care facilities, and home health care agencies for specialty training programs for RNs on staff.

No information regarding the funding for this particular model practice was provided.

Grow Your Own Program

This model practice took place in: Fresno, CA

Information on this model practice was found through: Voluntary Hospitals of America

More information can be found at:

Creative collaboration between health system and Fresno City College Nursing Dept. to provide additional spots in the nursing program for CHC employees. Hospital system paid for clinical and theory instructors. Upon graduation, CHC students agree to work for CHC for 18 months.

Funding Information:

Funded internally.

Online LPN Program

This model practice took place in: Vermont

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://www.vtc.vsc.edu>

Vermont Technical College offers an online LPN program that articulates with its associate's nursing degree program.

No information regarding the funding for this particular model practice was provided.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU 1199 has developed continuing education (CEU) programs—originally to meet their own professionals' (e.g., nurses, pharmacists, etc.) needs, but now serves the general professional community with online streaming video classes and live Web casts.

No information regarding the funding for this particular model practice was provided.

CNA to RN Program

This model practice took place in: Upstate New York

Information on this model practice was found through: American Hospital Association

More information can be found at: Robbin Scobie, RN, VP Nursing, Fox Memorial Hospital, rscobie@foxcarenetwork.com

Fox Memorial Hospital partnered with State University of New York to subsidize a local RN associates degree program for the hospital's CNAs. The hospital foundation pays for tuition and books with the hospital retaining the CNA as a full-time employee with benefits while he/she attends school. Students are required to work 3 weekends per month and full time during the summer. The hospital accommodates student class schedules by altering their work hours. Students have 5 semesters to complete the RN degree and must maintain a "C" average. Upon graduation, the nurses work on the medical-surgical unit of the hospital for five years.

Funding Information:

Funding is provided by the hospital's foundation.

H.O.T. Careers in Connecticut

This model practice took place in: Connecticut

Information on this model practice was found through: Toward Solving Connecticut's Health Care Workforce Shortages, Connecticut Department of Public Health (May 2002)

More information can be found at: <http://healthcareersinct.com/>

The Connecticut Area Health Education Center (AHEC) Program has provided training for guidance counselors on health careers and produced this comprehensive guide to health careers.

Funding Information:

Funded by Connecticut AHEC and sponsorships.

Nursing Education Certificate (Post-Baccalaureate)

This model practice took place in: Grand Rapids, MI

Information on this model practice was found through: Interview with Dean Jacqueline Hooper, D.P.H.

More information can be found at: http://www.ferris.edu/htmls/fsucatlg/coursecatalog/programs.cfm?program_id=445

A post-baccalaureate nursing education certificate and a three-option master's of science in nursing (MSN) degree were created with the goal of preparing more nurse educators, which has been identified as one of the barriers to solving the nursing shortage and an acute need being experienced by many institutions of higher learning including Ferris. The certificate, which was designed to allow an RN to retool to obtain employment as an educator in a clinical or academic setting, seamlessly articulates into the MSN degree. The 12 credits earned from completion of the certificate comprise the nursing education specialty concentration in the MSN degree. Creation of the certificate and master's degree was done collaboratively with College of Education and Human Services and College of Business, which allowed for existing courses in education and business to be utilized, resulting in lower instructional costs and the opportunity for students to earn dual degrees (MSN/MBA or MSN/Master in Information Systems Management).

No information regarding the funding for this particular model practice was provided.

RN to BSN Training

This model practice took place in: Detroit, MI

Information on this model practice was found through: Site visit with University of Detroit - Mercy

More information can be found at:

University of Detroit - Mercy has programs at several hospitals in the Detroit area where RN cohorts are receiving didactic training on site to obtain a BS in nursing.

No information regarding the funding for this particular model practice was provided.

Illinois Primary Health Care Association's Clinician Recruitment and Retention Program

This model practice took place in: Illinois

Information on this model practice was found through: Illinois Primary Health Care Association (IPHCA)

More information can be found at: <http://www.iphca.org/DSS/recruitment/default.htm>

IPHCA's Clinician Recruitment Services provide permanent recruitment services to health care facilities throughout and surrounding Illinois. Their mission is "to improve the status of the medically underserved" and their "commitment to this goal is unwavering. We increase access to health care in underserved communities one clinician at a time."

No information regarding the funding for this particular model practice was provided.

Meet Shortage of Speech-Language Pathologists

This model practice took place in: California

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/publications/index.html>

Loma Linda University addressed a shortage of speech-language pathologists by creating a Speech-Language Pathologist Assistant (SLPA) program. Got state certification for the less-rigorous program. Much of the coursework can be completed at the community college level. Also allows certified SLPAs to earn course credit towards a bachelor's degree with clinical time spent on the job. Partnership between Loma Linda University and nearby Crafton Hills Community College.

No information regarding the funding for this particular model practice was provided.

Accelerated Nursing Program

This model practice took place in: Omaha, NE

Information on this model practice was found through: American Association of Colleges of Nursing, Issue Bulletin "Accelerated Programs: The Fast-Track to Careers in Nursing," August, 2002

More information can be found at: <http://www.aacn.nche.edu/Publications/issues/Aug02.htm>

AACN cites partnerships between fast track nursing and hospitals: two Omaha health systems and four rural hospitals offer full tuition to accelerated nursing students at Creighton University in exchange for employment commitments. Half of the students in the UNC-Chapel Hill accelerated program get tuition scholarships from local hospitals in exchange for work commitments.

No information regarding the funding for this particular model practice was provided.

Accelerated Nursing Programs

This model practice took place in: 36 States and the District of Columbia

Information on this model practice was found through: American Association of Colleges of Nursing, Issue Bulletin "Accelerated Programs: The Fast-Track to Careers in Nursing," August, 2002

More information can be found at: <http://www.aacn.nche.edu/Publications/issues/Aug02.htm>

Accelerated nursing programs lasting 12-18 months, similar to University of Detroit - Mercy program. As of 2002, "accelerated programs are now offered in 36 states and the District of Columbia with the highest concentrations of programs found in Pennsylvania, California, New York, Massachusetts, Connecticut, Ohio, Michigan, and Maryland." Michigan programs include Grand Valley State University, University of Detroit - Mercy, University of Michigan, and Wayne State.

No information regarding the funding for this particular model practice was provided.

Bioscience and Health Careers

This model practice took place in: Bay Area (10 counties), CA

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/home.html>

Inform students, teachers, and parents about health care and bioscience careers. Bay Scan (Bay Areas School to Career Action Network) collected detailed information on health education programs in the area and posted them on their Web site. Also developed curricula, teaching, and guidance tools. Part of this effort was to eliminate students repeating coursework or experiencing other barriers due to lack of communication among teachers, counselors, etc.

No information regarding the funding for this particular model practice was provided.

Employer-Led Partnerships

This model practice took place in: Nebraska

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Establishing employer-led partnerships in health-related occupations with a strong focus on career ladders in nursing and allied health recruitment and training.

No information regarding the funding for this particular model practice was provided.

Florida Area Health Education Centers (AHEC) Network

This model practice took place in: Florida

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://www.flahec.org/index.html>

Florida AHEC Network targets some of its resources to programs that generate interest in health careers aimed at minority and disadvantaged youth.

No information regarding the funding for this particular model practice was provided.

Health Professions Career Ladders

This model practice took place in: Pierce County, WA

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Partnership with employers, educators, and labor to develop career ladders/maps for students to move up and to move laterally in the health professions. Also provides English as a second language components to health care courses.

No information regarding the funding for this particular model practice was provided.

Hospital Support of Nurse Education

This model practice took place in: Newburyport, MA

Information on this model practice was found through: American Hospital Association

More information can be found at: Stephen Salvo, VP for HR at Anna Jaques Hospital, ssalvo@ajh.org

The nursing program at Northern Essex Community College in Massachusetts was in jeopardy of closing due to state budget constraints. Four hospitals in and around Newburyport, MA jointly funded a vacant faculty position at the college, and each hospital also hired clinical instructors to monitor the students' clinical rotations at each hospital. As a result, there was no interruption to the nursing program and a potential workforce crisis was averted. The program continues to accept 50 new students per year; 52 students graduated in June 2003.

No information regarding the funding for this particular model practice was provided.

Minority Training for Health Careers

This model practice took place in: Santa Ana, CA

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/publications/index.html>

Promote Latino/Hispanic interest in allied health careers. Focused on English as a second language and computer skills as well as outreach to Hispanic community to increase awareness of allied health occupation opportunities and encourage interest among elementary and HS students. Also offered training to community members as PROMOTORES DE SALUD--noncertified individuals who provide health assistance, information, and wellness promotion in the Latino community.

No information regarding the funding for this particular model practice was provided.

Moving TANF Recipients Into Health Careers

This model practice took place in: New York State

Information on this model practice was found through: National Governors Association 3/2/2001

More information can be found at:

Collaboration between New York State health and labor departments is offering \$80 million in training grants to recruit, retain, and train health care workers from the TANF (Temporary Assistance for Needy Families) population. Hospitals, nursing homes, and home health agencies are eligible to apply, but preference is given to organizations that propose innovative strategies to get people into high-demand health care jobs that have long-range employment potential.

No information regarding the funding for this particular model practice was provided.

Pipeline for Health Careers

This model practice took place in: Fresno, CA

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/publications/index.html>

Developed pipeline program to attract Central Valley area high school and community college students to prepare for health careers in social work, medical technology, physical therapy, and others. "Health Academies"--schools within a school--established as a partnership among 13 high schools, 1 adult education provider, and 2 community colleges. Provide more motivation, focus, and continuity and can help attract and retain minority students by providing students with a "tangible link between academic studies and career opportunities than is usually provided by traditional high school coursework." Allied health students at CSU Fresno served as Allied Health Ambassadors, mentoring students in the high school health academies.

Funding Information:

This program succeeded and has expanded with financial help from the California Wellness Foundation.

Second Degree Program

This model practice took place in: Detroit, MI

Information on this model practice was found through: Site visit with University of Detroit - Mercy

More information can be found at:

Nursing program for qualifying students with a bachelor's degree and appropriate science prerequisites to receive a BSN after 12 months of very intensive didactic and clinical training. Program is starting its third year, enrollment has grown each year, and there have been virtually no dropouts or failures.

No information regarding the funding for this particular model practice was provided.

Service Employees International (SEIU) Union 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

At the college level, there are tuition benefits for members who want to go back to college and get a degree in a health care shortage occupation. These benefits include tuition reimbursement and stipends. Partnerships are mainly with units of the City University of New York, both senior colleges (e.g., Lehman College for nutrition training) and community colleges (e.g., Borough of Manhattan Community College for RN training).

There is also full-time support (full tuition, books, and a weekly stipend) for qualified students who are pursuing career training in designated health care shortage occupations—even if it's studying social work at Columbia University.

No information regarding the funding for this particular model practice was provided.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY
Information on this model practice was found through: Interview with Francine Boren-Gilkenson
More information can be found at: <http://www.1199seiu.org/>

Training foreign-born physicians to become registered nurses.
No information regarding the funding for this particular model practice was provided.

State Labor Task Force

This model practice took place in: Maine
Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany
More information can be found at: <http://chws.albany.edu>

Twenty-hour core curriculum for entry-level health workers that is transferable among educational programs for patient care associates and CNAs.
No information regarding the funding for this particular model practice was provided.

State of Florida

This model practice took place in: Florida
Information on this model practice was found through: National Governors Association 7/12/2001
More information can be found at:

Expanded student loan forgiveness and nursing scholarship program to include new places for graduates to work, including family practice teaching hospitals and specialty children's hospitals.
No information regarding the funding for this particular model practice was provided.

Statewide Collaboration for Health Careers

This model practice took place in: Georgia

Information on this model practice was found through: National Governors Association 7/25/2002

More information can be found at:

Collaboration among 13 institutions of higher education, Georgia Hospital Association, state chamber of commerce, Rural Development Council, and Georgia Department of Community Health to produce 500 new health care professionals (nursing, pharmacy, and medical technology) over 2+ years. Includes \$2.1 million in state funds for instruction and expenses and \$2.45 million in equipment, staff time, and laboratory and classroom space from providers.

Funding Information:

State of Georgia funds.

WV Works

This model practice took place in: West Virginia

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Career ladder in nursing for WV Works participants; provides financial assistance using WIA funds.

Funding Information:

Workforce Investment Act funds.

Community College Partners With State Rural Health Association

This model practice took place in: Northern California

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <http://www.futurehealth.ucsf.edu/publications/index.html>

Partnership of Regional Health Occupations Resource Center at Butte College in Oroville, California, and the California State Rural Health Association to implement a distance-learning project for community colleges and colleges in rural areas that cannot sustain their own allied health programs. Project was developed to help meet staffing shortages in 14 rural and remote northern California counties. Performed extensive needs analysis, inventoried distance-learning equipment and facilities at both ends, and did forums on distance education in each area. Established distance education courses in insurance billing and coding, medical terminology, medical assistant, basic caregiver skills, etc. Conducted workshops for community college faculty on distance learning.

No information regarding the funding for this particular model practice was provided.

Medical Lab Technician Program

This model practice took place in: California

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at: <https://www.hartnell.edu/relocators/link3.html?link=mlt>

Medical Lab Technician (MLT) program created by Hartnell College. Originally, it was the only MLT program in California; programs are expensive to set up and operate due to labs, etc. Developed a program to meet or exceed state MLT licensure (pending at the time) through collaboration with other community colleges. General education courses delivered on each individual campus, major lecture courses delivered via distance education, and lab courses offered at two campuses on weekends. Clinical experience provided through partnerships with labs and hospitals as close as possible to students' location.

No information regarding the funding for this particular model practice was provided.

Connecticut BioBus

This model practice took place in: Connecticut

Information on this model practice was found through: Toward Solving Connecticut's Health Care Workforce Shortages, Connecticut Department of Public Health (May 2002)

More information can be found at: <http://www.ctbiobus.org/>

Sponsored by 26 organizations, the BioBus visits schools throughout the state in order to enrich the scientific curriculum at middle and high schools with unique experimental experiences in order to improve academic preparation in mathematics and science.

Funding Information:

BioBus is supported by 26 organizations, including pharmaceutical companies, biotechnology companies, suppliers, and academic institutions.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at:

SEIU 1199 in New York City partners with New York City public schools to provide literacy, GED, and college prep work, including science and math, using TANF (Temporary Assistance for Needy Families) funds.

No information regarding the funding for this particular model practice was provided.

Sunshine Workforce Solutions Grant Program

This model practice took place in: Florida

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

Supporting exploratory programs in nursing at middle schools or at comprehensive career and technical education programs. House Bill 519 (enacted May 3, 2002) created the "Nursing Shortage Solution Act." Replaces the Careers for Florida's Future Incentive Grant Program with the Careers for Florida's Future Loan Forgiveness Program to provide loan forgiveness for nurses. Created the Sunshine Workforce Solutions Grant Program to provide grants to school districts to establish programs for studies in nursing to respond to critical workforce shortages in nursing. Authorized the Department of Health to issue professional or practical nursing licenses to qualified persons from other states.

No information regarding the funding for this particular model practice was provided.

Medical Science Academy

This model practice took place in: New Jersey

Information on this model practice was found through: National Governors Association 10/17/2002

More information can be found at:

Create Medical Science Academy as a public-private venture to foster student interest in health care careers. Joint project of governor's office and Pfizer Foundation working with a local school district. Academy provides teacher training, curriculum development, lab equipment, and interaction between students and working professionals through shadowing and mentor programs. Community colleges and local hospitals providing internship opportunity, curriculum enhancement, speakers, etc. This will be a four-year high school program. Freshman will use a computer-assisted assessment of their interests and abilities.

Funding Information:

Pfizer is providing \$500,000 to start program.

Young Cleveland Nurses Camp

This model practice took place in: East Cleveland, OH

Information on this model practice was found through: St. Vincent Charity Hospital

More information can be found at: http://www.svch.net/press_06112004_nurses.asp

Launched in 2003 as a means to increase the number of college-bound high school students pursuing nursing degrees, the Young Cleveland Nurses Camp is considered a viable approach to addressing future demands for nurses—predicted to be at severe critical shortage by the year 2020.

No information regarding the funding for this particular model practice was provided.

Rural Nursing Assistant Recruitment and Training

This model practice took place in: Rural Nebraska

Information on this model practice was found through: American Hospital Association

More information can be found at: Harold Krueger, CEO, Chadron Community Hospital, krug525@bbc.net

Chadron Community Hospital has been working since 1997 with the Pine Ridge Job Corps in rural Nebraska to train low-income young people as nursing assistants and to provide a guided long-term career path while reducing health care workforce shortages. In addition to learning basic nursing concepts and primary care skills, students explore various health care careers with the opportunity for first-hand experiences through job shadowing. The Pine Ridge program trains up to 36 students per year as nursing assistants, and about 125 students have graduated since 1999.

No information regarding the funding for this particular model practice was provided.

Kids Into Health Careers

This model practice took place in:

Information on this model practice was found through: Health Care at the Crossroads: Strategies for Addressing the Evolving Nursing Crisis by the Joint Commission on Accreditation of Healthcare Organizations

More information can be found at: <http://bhpr.hrsa.gov/kidscareers/>

Health Resources and Service Administration launched a campaign that is aimed at helping parents, teachers, and community organizations promote health care careers, especially to minority students. In FY 2000, all applicants were encouraged to work with school systems through the high school level, where there is a high percentage of minority and disadvantaged students. The objectives of developing this working relationship were to encourage and inform minority and disadvantaged teenage students of educational and career opportunities in health professions and assist minority and disadvantaged students in planning and preparing for postsecondary education in the health care professions.

No information regarding the funding for this particular model practice was provided.

Georgia Department of Labor

This model practice took place in: Georgia

Information on this model practice was found through: National Governors Association 7/25/02

More information can be found at:

Georgia Department of Labor is sponsoring career fairs to recruit displaced and midcareer professionals into the health care workforce.

No information regarding the funding for this particular model practice was provided.

HOPE Welfare to Work Program

This model practice took place in: New Haven, CT

Information on this model practice was found through: American Hospital Association

More information can be found at: Lynelle Abel, Hospital of St. Raphael, label@srhs.org

HOPE (Having an Opportunity to Prepare for Employment) is a 16-week program offered twice each year to individuals aged 17 to 50+ who are transitioning from welfare to work. Participants come to the hospital 4 days a week for 30 hours each week and participate in a number of job skills training classes as well as doing volunteer work in a particular department where they may have a career interest. St. Raphael Healthcare system has hired approximately 50% of the nearly 200 participants who have graduated from the program since 1996.

No information regarding the funding for this particular model practice was provided.

Jewish Vocational Services Health Tech Gateway Program

This model practice took place in: San Francisco, CA

Information on this model practice was found through: Center for Health Professions, University of California San Francisco

More information can be found at:

Train welfare and low-wage job occupants to prepare them for allied health career courses at San Francisco City College. 23-week program for 33 low-income individuals to gain basic skills; English proficiency; computer literacy; basic reading, writing, and math; intro to medical terminology; and CPR certification. Also provided career counseling, child care, and reemployment services. "This program was successful in providing insight for larger public policy efforts on addressing unemployment and reducing workforce shortages through the critical role of basic skills training and support services for at-risk individuals."

No information regarding the funding for this particular model practice was provided.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

Job security by providing “displaced” workers (e.g., laid off SEIU 1199 workers) up to 80% of their salaries while going to school or training for up to two years.

Funding Information:

SEIU 1199 training fund plus state and federal grants.

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU uses TANF (Temporary Assistance for Needy Families) funds for basic training in skills.

Funding Information:

TANF.

Phlebotomy Certificate

This model practice took place in: Grand Rapids, MI

Information on this model practice was found through: Interview with Dean Jacqueline Hooper, D.P.H.

More information can be found at: <http://www.ferris.edu/htmls/academics/atc/phlebotomy.htm>

A five-course program, three of which are available over the Internet. It can be completed with just 12 credits and may take less than two semesters. Course work transfers to the associate's and bachelor's degree programs in Clinical Laboratory Science should a student want to continue.

No information regarding the funding for this particular model practice was provided.

Service Employees International Union (SEIU) 1199 Education Trust

This model practice took place in: New York, NY

Information on this model practice was found through: Interview with Francine Boren-Gilkenson

More information can be found at: <http://www.1199seiu.org/>

SEIU 1199 uses TANF (Temporary Assistance for Needy Families) funds to train entry-level health care workers; also see joint effort of New York State Departments of Labor and Health, \$80 million to recruit, retain, and train health care workers from the TANF population; the SEIU program is a beneficiary of this.

Funding Information:

TANF.

WIA & TANF Funds for Training in Health Occupations

This model practice took place in: Florida

Information on this model practice was found through: Center for Health Workforce Studies, State University of New York - Albany

More information can be found at: <http://chws.albany.edu>

WIA and TANF (Temporary Assistance for Needy Families) funds available for training and upgrading in health occupations.

Funding Information:

WIA and TANF.