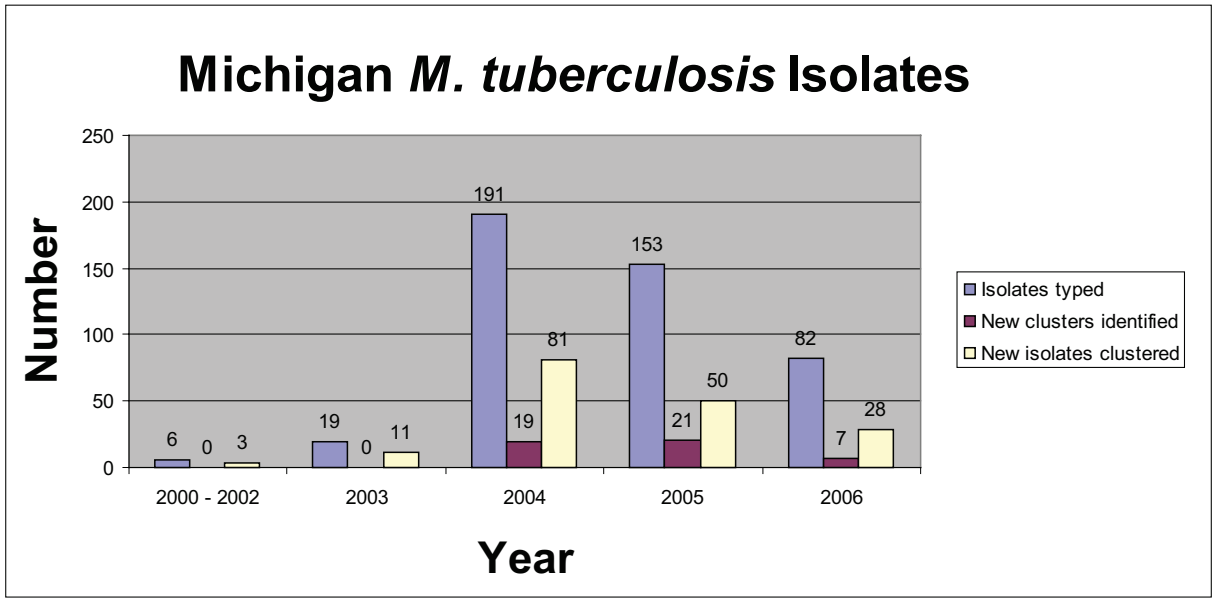
Michigan Department of Community Health
MDCH
Jennifer M. Granholm, Governor
Janet Olszewski, Director

EPI Insight
Bureau of Epidemiology
Fall 2006

Tuberculosis Genotyping in Michigan

By: Andrew Knecht, MPH

In 2004, the Centers for Disease Control and Prevention (CDC) initiated a program to provide genotyping services to tuberculosis control programs in the United States. The Michigan and California state laboratories are under contract with the CDC to provide genotyping services. These laboratories utilize two primary methods to genotype all new *Mycobacterium tuberculosis* isolates. These two methods are called spoligotyping and mycobacterial interspersed repetitive units (MIRU) analysis. Both of these tests are based on the polymerase chain reaction (PCR). These two methods are efficient tests to use because they provide rapid turnaround and digital results, which are easily interpreted.



When two or more tuberculosis isolates have spoligo and MIRU patterns that match, they are assigned a cluster number. The local health department(s) from which the matching cases originated is then notified that their case clusters with at least one other case from their own jurisdiction, or with at least one case from another jurisdiction. This information can be used to strengthen tuberculosis control programs. Through use of the genotyping information, earlier detection and control of tuberculosis outbreaks can occur, unsuspected links between cases can be identified, and identification of transmission within and between different jurisdictions can occur more rapidly[1].

The figure indicates the number of Michigan *M. tuberculosis* isolates genotyped each year since the start of the program, as well as the number of new clusters identified, the number of new isolates clustered each year. Although the CDC genotyping program was initiated in 2004, some isolates from 2000 through 2003 were included for typing in 2004. The 2006 data reflects numbers of isolates typed and clustered as of October 2006.

[1] *National Tuberculosis Controllers Association/Centers for Disease Control and Prevention Advisory Group on Tuberculosis Genotyping. Guide to the Application of Genotyping to Tuberculosis Prevention and Control. Atlanta, GA: U.S. Department of Health and Human Services, CDC; June 2004.*

TABLE OF CONTENTS

The New Human Papilloma Vaccine

By: Katie Macomber, MPH and Pat Vranesich, RN

On June 8, a vaccine for a sexually transmitted infection, human papilloma virus (HPV), was licensed by the Food and Drug Administration (FDA). This vaccine protects against four types of HPV, including two that cause most cervical cancers (types 16, 18), and two that cause most exterior genital warts (types 6, 11).

Although Michigan does not collect standardized data on the incidence of HPV infections and associated cervical cancers, it is believed that at least 50% of sexually active people will get HPV at some time in their lives. The highest prevalence is found among young women age 14-25 years. The Centers for Disease Control and Prevention (CDC) also states that about one percent of sexually active adults (one million people) have visible genital warts at any given time. These types of HPV infections are not associated with cervical cancer, however. Types 16 and 18 cause nearly 70% of cervical cancers in the United States. Not all of those who are infected with HPV types 16 or 18 go on to develop cancer. In many cases, the person's own immune system can clear the viral infection. In 2006, the American Cancer Society estimates that over 9,700 women will be diagnosed with cervical cancer and 3,700 women will die from this cancer.

The new vaccine, called Gardasil, is manufactured by Merck. Due to the population studied during the clinic trial, the vaccine is licensed for use in females 9-26 years of age. On June 29, 2006, the Advisory Committee on Immunization Practices (ACIP) voted to routinely vaccinate 11-12 year old girls, to conduct "catch-up" vaccination for females age 13-26 years, and to give physicians discretion in vaccinating girls ages 9 and 10. It is important to vaccinate girls **before** they become sexually active to receive the full benefit of vaccination. Sexually active adolescents and women can still derive some protection from the vaccine and therefore should be immunized. Only small percentages are likely to have been infected with all four HPV types. For those infected with one or more vaccine HPV types, the vaccine will protect against the other HPV types contained in the vaccine.

The retail price of the vaccine in the private sector will be $360.00 for the three-dose series. This is the most expensive vaccine series to date. The federal program, Vaccines for Children, will cover the vaccine for those 18 years and under that are uninsured, Medicaid-eligible, American Indian, or Alaskan Native. Those who are underinsured may receive the vaccine in federally qualified health centers or local health departments in Michigan. For those who are insured, insurance companies may cover the cost of the vaccine.

There are many issues to address with this new vaccine, including surveillance, access, cost, and administration. The Michigan Department of Community Health has assembled a task force with representatives from Immunizations, Sexually Transmitted Diseases (STD), Family Planning, Women's Health, and Cancer Prevention to discuss the impact of this vaccine in Michigan.

In the meantime, some key messages to communicate to others about the HPV vaccine include:

- HPV4 vaccine does not replace routine screening for cervical cancer;
- This vaccine will not provide protection against any HPV types to which an individual has already been exposed;
- All three doses are needed to provide protection; and
- This vaccine does not protect against other sexually transmitted diseases, including HIV and herpes virus.

For more information visit: www.cdc.gov/std/HPV/STDFact-HPV-vaccine-hcp.htm.

A Case Study

A 57-year-old white female presents to her local ophthalmologist in the fall of 2005 with a foreign body sensation in her left eye. Two weeks later she presents again with severe ocular pain. Other symptoms include redness, blurred vision, and photophobia. Upon examination, she is found to have a corneal ulcer and is referred to a corneal specialist at a referral hospital. She is prescribed several antibiotics including gentamycin, cephalexin, and vancomycin. These treatments fail and a corneal scraping is done.

The patient is a smoker and has cats in her home. She has no travel or recent swimming history. She has used soft contact lenses for the past ten years. Her medical history is positive for arthritis but negative for any eye trauma.

What are the possible outcomes of the corneal culture and implications for the patient and any disease investigation?

Please refer to "The Answer" on page 11 for more information.

The Prevalence of Osteoporosis in Michigan: Results from the 2004-2005 Michigan Diabetes, Arthritis, and Osteoporosis Survey

By: Molly Polverento, M.S.Ed.[a] Judi Lyles, Ph.D.[b] Ann Rafferty, Ph.D.[c] Sarah Lyon-Callo, M.S., M.A.[c]

[a] Michigan Public Health Institute
[b] Division of Chronic Disease and Injury Control, MDCH
[c] Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology, MDCH

Osteoporosis is a condition in which bones are porous and weakened. People with osteoporosis are more likely to suffer a fracture, often of their hip, wrist, or spine. These fractures are painful and lead to more permanent disability, discomfort, and sometimes death (1). Osteoporosis can be prevented in many people simply by ensuring that adequate levels of calcium, vitamin D, and physical activity are maintained throughout the life span (2). Progression of osteoporosis can be slowed or stopped through detection and treatment. It is therefore important to identify those at-risk for this condition and screen them to ensure that treatment is started in a timely and appropriate manner.

The Michigan Diabetes, Arthritis, and Osteoporosis Survey (DAOS) was a population-based survey of Michigan adults conducted between November 2004 and September 2005. The DAOS utilized random-digit-dialing telephone survey methodology and oversampled African Americans, Hispanics, and those aged 45 years and older. Staff from the Division of Chronic Disease and Injury Control (DCDIC) and the Michigan Public Health Institute (MPHI) developed the questionnaire. Data were collected by the Office of Survey Research, Institute of Public Policy and Social Research at Michigan State University. Staff from the Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology collaborated with DCDIC and MPHI staff on the analysis of the osteoporosis data from the DAOS. The total sample size for the DAOS was 2,656. Estimates were weighted to represent the adult population of Michigan.

The prevalence of osteoporosis was defined as a positive response to the question, "Has a doctor, nurse, or other health care provider ever told you that you have osteoporosis?" and osteopenia by "Have you ever been told by a doctor, nurse, or other health professional that you have osteopenia or low bone mass?" The prevalence of osteoporosis was estimated to be 5.7% of all Michigan adults (Table 1). The prevalence increased consistently with age from < 0.1% among 18-29-year-olds to 21.2% among those aged 70 years or older; was higher among women compared to men (9.7% vs 1.4%); and higher among whites compared to blacks (6.5% vs. 2.4%). The prevalence of osteopenia (or low bone mass) was 2.1% of all adults, and similar to osteoporosis, the prevalence of osteopenia was higher among older adults, women, and whites.

continued on page 4

Table 1. Prevalence of Osteoporosis, Osteopenia, and At-Risk for Osteoporosis by Demographic Characteristics, 2004-2005 Michigan Diabetes, Arthritis, and Osteoporosis Survey (n = 2,656)

Demographic Characteristics	Osteoporosis[a]	Osteopenia[b]	At Risk for Osteoporosis[c]
	%	%	%
Total	5.7	2.1	18.8
Age			
18-39	< 0.1	< 0.1	11.4
40-49	1.4	0.7	19.5
50-59	9.0	5.0	27.4
60-69	13.1	4.9	25.1
≥ 70	21.2	5.1	25.3
Sex			
Male	1.4	0.7	4.5
Female	9.7	3.5	32.2
Race-Ethnicity			
White non-Hispanic	6.5	2.5	22.2
Black non-Hispanic	2.4	0.8	7.1
Other non-Hispanic	4.6	1.6	9.2
Hispanic	2.2	0.4	4.3

[a] Responded yes to the question, "Has a doctor, nurse, or other health care provider ever told you that you have osteoporosis?"
[b] Responded yes to the question, "Have you ever been told by a doctor, nurse, or other health professional that you have osteopenia or low bone mass?"
[c] Reported five or more risk factors for osteoporosis, but not diagnosed with osteoporosis or osteopenia.

continued from page 3

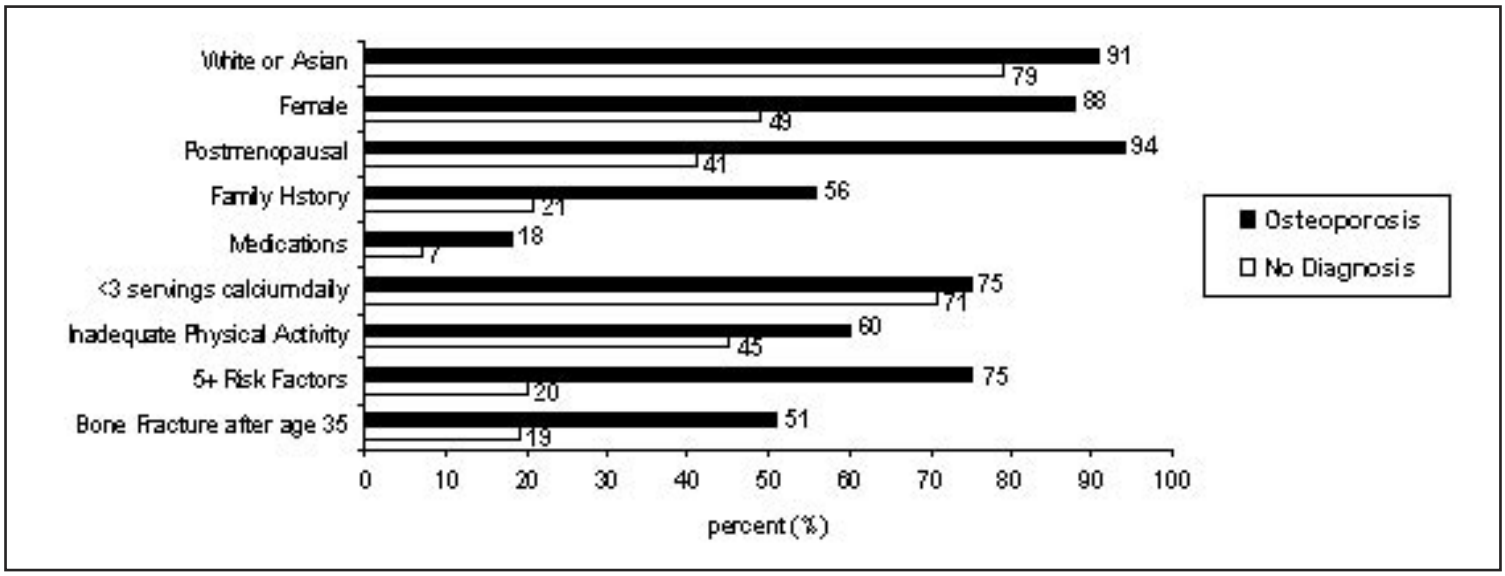


Figure 1: Prevalence of Selected Risk Factors by Osteoporosis Status

Population studies have identified the following risk factors for developing osteoporosis: being Caucasian or Asian, female, postmenopausal, having a family history of osteoporosis, using medications associated with bone loss, having one or more bone fractures after the age of 35, weighing less than 127 pounds, getting inadequate physical activity, consuming inadequate calcium, smoking cigarettes, and consuming alcohol heavily (3). Although some risk factors cannot be changed, others can be reduced or eliminated through behavior change. For example, 60% of those with osteoporosis reported inadequate levels of leisure-time physical activity while 45% of those not diagnosed obtained inadequate physical activity. This lack of physical activity is a risk factor that could be modified relatively easily. Figure 1 summarizes the prevalence of selected risk factors among those diagnosed with osteoporosis and those not diagnosed with either osteoporosis or osteopenia.

Among adults who had not been diagnosed with either osteoporosis or osteopenia, we estimated that nearly one in five (18.8%) had five or more risk factors for developing osteoporosis (Figure 1). Furthermore, less than half of those with five or more risk factors had discussed osteoporosis with their primary physician or had a bone mineral density (BMD) test, which is necessary for the diagnosis of osteoporosis. Among those with three or fewer risk factors, who are considered at lower risk for developing osteoporosis, approximately one in ten had talked to a physician about osteoporosis (11.9%) or received a bone mineral density test (11.3%).

The DAOS provides us with the foundation necessary to identify areas of need in osteoporosis prevention, and allows us to better understand the scope of the problem. As our population ages, we will have an increased number of individuals with osteoporosis, putting a further strain on our health care services. Although we have identified many risk factors for developing osteoporosis, less than half of those most at risk for developing this disease reported receiving the preventive services that could lessen the impact of osteoporosis by providing treatment before a fracture occurs. It is important that we work with our health care providers and the general population to increase knowledge about osteoporosis, its risk factors, and what can be done to prevent and treat this disease.

The Michigan Osteoporosis Project includes activities such as community osteoporosis education, bone density screening for underserved populations, and support for voluntary bone density screening standards. The Michigan Osteoporosis Project also provides support for the Michigan Coalition for Bone Health, a voluntary organization of stakeholders statewide committed to reducing the impact of osteoporosis on Michigan residents.

For more information about osteoporosis and current activities, please contact Molly Polverento by phone at 517-324-7397 or by email at mpolvere@mphi.org. You can also find more information about osteoporosis on the web at www.michiganosteoporosisconnection.org.

References

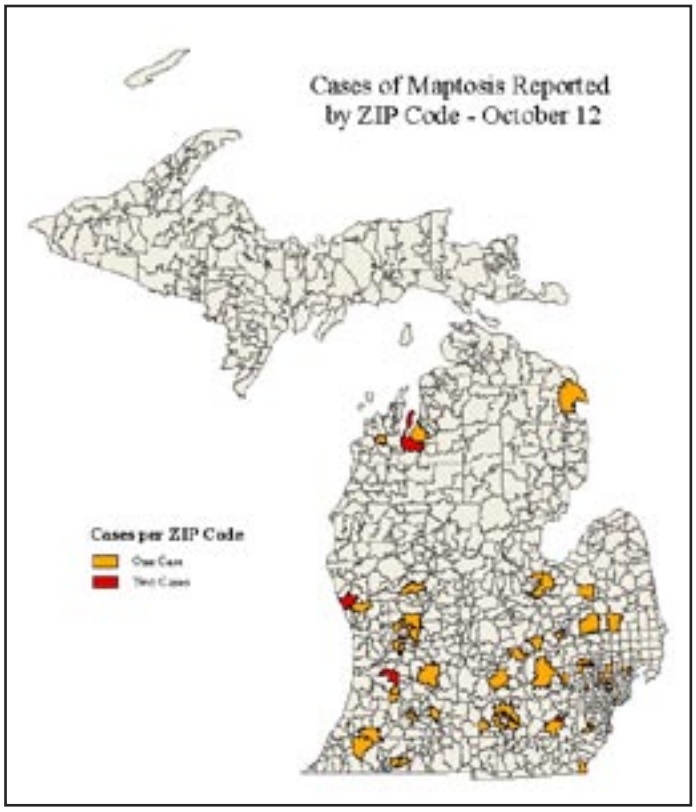
1. National Osteoporosis Foundation (2006). *Osteoporosis: What Is It?* [On-line]. Available at http://www.nof.org/osteoporosis/index.htm.

2. U.S. Department of Health and Human Services (2004). Bone Health and Osteoporosis: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, Office of the Surgeon General.

3. National Osteoporosis Foundation (2006). *Fast Facts on Osteoporosis.* [On-line]. Available at http://www.nof.org/osteoporosis/diseasefacts.htm.

Geographical Analysis: Issues of Scale

By: Ed Hartwick, M.S.



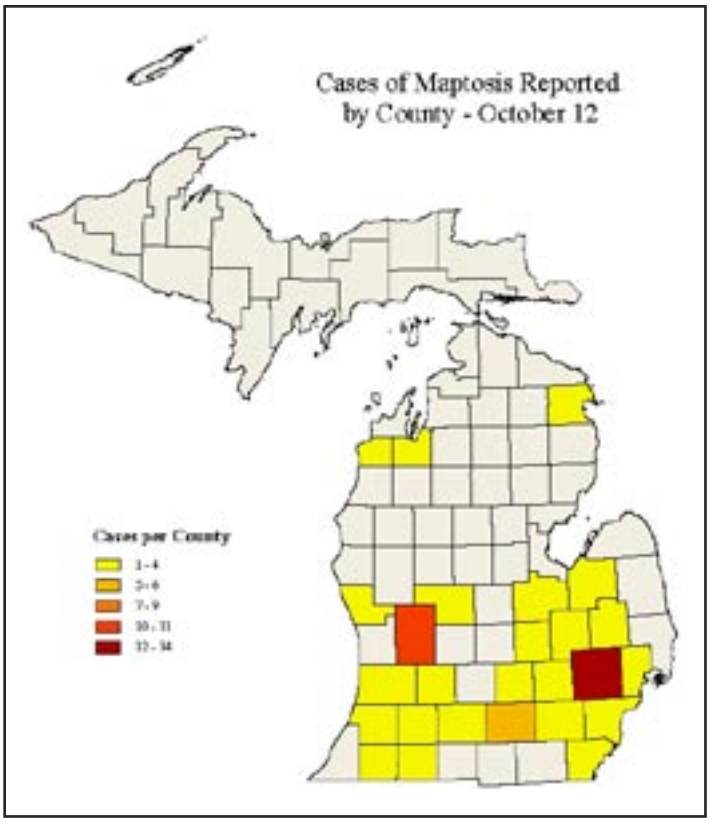
Due to the nature of disease, geography has always played a key role in epidemiology. As far back as John Snow's mapping of the 1854 cholera outbreak in London, geography and mapping have been used as a vital tool by the epidemiologist. And as important as this tool is, maps and spatial analysis alone cannot do an epidemiologist's job, but rather allow them to visualize the distributions of disease more effectively. It's also an important tool in explaining the patterns in the data to others.

When looking at spatial data, it is important to note the scale of the data. Both the scale at which the data was taken (the attribute or data scale) and the scale at which the data is aggregated or shown (the physical or display scale) are important. Frequently, in epidemiology, the data scale is not a concern, as the data is plotted by the subjects' address. The only time that the data scale is of a concern is when it is extrapolated to a smaller scale. For example, taking data that was collected at the personal, address-by-address, level and then aggregating it to the county level is perfectly acceptable, but it is not acceptable to use data taken at the county level and apply it to ZIP codes. Data can be correctly interpreted when examining an individual point, or when moving from a smaller unit to a larger one, such as the relationship between a township and a county; however, it is incorrect to apply data findings from a larger area to a smaller one.

Another main point to address with scale is the display scale. When looking for patterns in spatial data, it is important to look at different spatial levels. It is possible for correlations and visual associations to change at different levels of aggregation. This is a result of imposing artificial boundaries (such as school districts) on data that is continuous in nature. This should not be considered a warning to caution people away from making maps of disease outbreaks, but if an intensive analysis is being conducted it is recommended that more than one level of aggregation be examined if the results seem somewhat surprising.

A good example of how visual aggregation helps convey information is seen in the two example maps. The first map shows cases of a fictional disease, Maptosis, by ZIP code. The second map shows the exact same data, but aggregated by county. As seen in the first map, the small number of cases in each ZIP code and the varying sizes of ZIP code areas make it difficult to get a grasp on any real spatial distribution of Maptosis. In the second map, the cases are aggregated out to the county level and it is easy to see that generally there are very few cases throughout the state, but it appears as though Oakland and Kent counties have more cases than expected, and there may be a need for further investigation as to possible explanations. The same conclusions drawn from the county map could be done from the ZIP code map, as they are the same data, but the pattern is seen more easily in the county map.

In summary, geographical analysis is a much more frequently applied tool in epidemiology. Similar to all types of analysis, it is important to recognize issues such as confounders and bias that may alter assumptions. The same types of caution should be applied to geographical analysis.



New Asthma Strategic Plan

On June 14th of this year, the Asthma Initiative of Michigan (AIM) released its strategic plan for reducing the asthma burden in Michigan. AIM is a collaborative effort involving multiple partners from the public and private sectors across the state to reduce the burden of asthma in Michigan. AIM is supported by staff from the Michigan Department of Community Health (MDCH), the Michigan Public Health Institute, and the American Lung Association of Michigan. AIM's new strategic plan, Asthma in Michigan 2010: A Blueprint for Action, is designed to meet the Healthy People 2010 asthma targets, and includes the following six goals: 1) identify and eliminate asthma disparities in Michigan; 2) assess Michigan's asthma burden to identify disparities, high-risk populations and trends; 3) support awareness of and partnerships to address asthma in Michigan; 4) improve systems of asthma care in Michigan; 5) reduce barriers to self-management for people with asthma in Michigan; and 6) reduce exposure to environmental factors that cause and/or exacerbate asthma in Michigan. AIM work groups and asthma coalitions developed objectives, strategies, and performance indicators within each goal area, and prioritized proposed objectives and strategies based on their expected impact and feasibility. The plan has been endorsed by both MDCH and the American Lung Association of Michigan. Copies of the plan are available at www.GetAsthmaHelp.com or by calling 1-866-EZLUNG (1-866-395-8647).

New Grants

Sarah Lyon-Callo was recently awarded a grant of $600,000 a year for three years to address asthma from a public health perspective. This grant will support the implementation of the Michigan Asthma Strategic Plan and the activities of the Asthma Initiative of Michigan.

Healthcare Professional's Guide to the Michigan Communicable Disease Rules

The Michigan Department of Community Health recently updated a guide for healthcare professionals that summarizes the Michigan Communicable Disease Rules. Updated topics include: new reportable diseases, such as West Nile Virus, Severe Acute Respiratory Syndrome (SARS), Creutzfeldt-Jakob Disease (CJD), and orthopox viruses among others; the use of the Michigan Disease Surveillance System, Michigan's web-based reporting system; the change in required reporting time for most diseases to within 24 hours after discovery or diagnosis; and a clarification of the role of HIPPA in public health disease reporting. The new guide was published in late July 2006, and sent to all local health departments for distribution to their communities. Please contact Shannon Andrews Johnson (andrewssh@michigan.gov) to request copies of the guide.

2004 Annual Report on Asthma Deaths Among Individuals Age 2-34 in Michigan

By: Betsy Wasilevich, MPH

For the last five years, the Michigan Department of Community Health and Michigan State University have partnered in an Asthma Mortality Review Project. The project entails the collection of detailed information about the care and management of asthma in individuals between ages 2 and 34 years who have died due to their asthma. From available medical records, next of kin interviews, autopsy reports, and pharmacy claims reports, case summaries for each death are summarized for review by expert panels. These two panels, one addressing deaths among adults and one for child deaths, review the blinded case summaries, identify the reasons for the asthma death, and make recommendations to avoid future deaths. Recently, the annual report for this project has been published: 2004 Annual Report on Asthma Deaths Among Individuals Age 2-34 in Michigan.

The expert panels determined the primary causal factor was the lack of compliance by patients with good asthma management techniques, including regular use of inhaled steroids rather than dependence on β-agonists and elimination of asthma triggers, such as cigarette smoke and pets. Some of the deficiencies noted in asthma management were from inadequate prescription of inhaled steroids particularly in emergency departments. The low percentage of decedents with management plans (only nine percent) would suggest that more can be done by the health care system to provide information to patients to better manage their asthma.

Report recommendations include: case management for high-risk patients, pharmacy notification to doctors regarding repeated or excessive prescription use of patients, emphasis on the chronic and potentially severe nature of asthma and importance of inhaled steroids, provision of more comprehensive asthma care in the emergency department setting, and self-management education for individuals with asthma.

The report is available on the Asthma Initiative website at www.getasthmahelp.org/reports.asp. If you would like an electronic copy emailed to you, please contact the Chronic Disease Epidemiology Section at the Michigan Department of Community Health: 517-335-9080

Employee Focus: Brad Carlson

Brad Carlson, MPH, began his career at the Michigan Department of Community Health (MDCH) in 1998 as an HIV epidemiologist in the HIV Surveillance Section within the Division of Communicable Disease. At that time, there were only five people conducting HIV surveillance in the Lansing office in addition to a staff in Detroit. He came to this position after completing his Bachelor of Science degree in Microbiology and a Master of Public Health in Hospital and Molecular Epidemiology, both from the University of Michigan. After graduation and prior to coming to MDCH, Brad worked in Dr. John Maassab's laboratory at the University of Michigan School of Public Health. This laboratory is nationally known for its work to perfect an attenuated live-virus influenza vaccination delivered via nasal spray. The laboratory's work resulted in FluMist, the new inhaled flu vaccine being produced and marketed by MedImmune Inc.

In January of 2000, Carlson moved into a position as a Bioterrorism Epidemiologist in the newly-formed BT Program within the Division of Communicable Disease. Over time, this program moved into its own section, the Surveillance Systems Section. Earlier this year, Carlson became the Surveillance Systems Coordinator within the Surveillance Section. He is now responsible for all issues related to the Michigan Disease Surveillance System (MDSS) including system troubleshooting, quality, enhancements, and the MDSS maintenance contract. Carlson works with many partners to facilitate reporting of communicable diseases to MDCH and then onto the Centers for Disease Control and Prevention. He has been instrumental in bringing partners from various venues to the table to make the MDSS a better system for users. Carlson truly sees his work on the MDSS as his most significant contribution to the department, since he has been involved with its development from a prototype to its current status of over 900 users reporting most communicable diseases in Michigan.

Carlson and his wife, Jennifer, live in Ypsilanti and have two children, Joshua (3) and Rebecca (1). His hobbies include spending time with his family, the Mount Brighton Ski Patrol, and anything having to do with sports. He is also involved, as a community member, with the University of Michigan Institutional BioSafety Committee, which deals with approving university projects using recombinant DNA technology and other select agents.

Brad Carlson helps demonstrate the use of a Powered Air Purifying Respirator (PAPR) during training in 2003.

Altarum Partner to Enhance the Michigan Disease Surveillance System

Altarum Institute has been awarded a $750,000, three-year program to enhance and maintain the web-based Michigan Disease Surveillance System (MDSS) housed within the Michigan Department of Community Health (MDCH). Altarum Institute, a nonprofit research institution, has provided technical support and program management services to the MDSS since it was first piloted in 2002. Since 2004, MDSS has given Michigan capabilities to track emerging infections. The MDSS system has more than 700 users across Michigan, including state and local public health officials, health care providers, and laboratories. The system provides a web-based disease surveillance tool that allows for the electronic gathering and geographic mapping of disease data, disease reports, and case assignments.

"In partnership with the Michigan Department of Community Health and the Michigan Department of Information Technology, we will be making the MDSS an even more potent tool for Michigan decision makers and health providers," said Jim Lee, Altarum's Program Manager for the MDSS.

"Among several initiatives we will undertake is programming the system to track the introduction and potential spread of tuberculosis. We also will make it possible for hospital and commercial laboratories to securely and electronically report disease data, which improves health and saves money."

For more information on the Altarum Institute, please visit www.altarum.org. The MDSS can be accessed by visiting www.michigan.gov/emergingdiseases. (MDCH news release, Sept. 20, 2006)

Recent Presentations

Janice Bach, Debra Duquette, Mary Teachout, and **Ann Annis Emeott** gave multiple genomics presentations, including three oral presentations and four posters, at the CDC's 2006 National Health Promotion Conference in Atlanta, on September 12th-14th, 2006.

Katie Macomber presented "Sexually-Transmitted Infections: Comparing Detroit, Michigan and the United States" at the Detroit VA Hospital on September 25, 2006 as part of the Sexually Transmitted Diseases: Identifying Risk Factors and Managing the Epidemic Seminar.

The following Bureau of Epidemiology employees presented at the 4th Annual Public Health Information Network Conference in Atlanta, on September 24th - 28th, 2006:

Brad Carlson presented "Electronic Laboratory Reporting."

Jim Collins presented "Syndromic Surveillance, the Michigan Experience."

Dawn Sievert presented "MRSA: Epidemiology and Infection Control" at a conference on MRSA in St. Ignace, on October 5th, 2006.

The following Bureau of Epidemiology employees presented at the Michigan Society of Infection Control, on October 12th - 13th, 2006:

Steve Cali and **Dawn Sievert** presented "Michigan Department of Community Health, Streptococcus pneumoniae Report, 2005."

Steve Cali, Dawn Sievert, and Martha Boehme presented the poster "Michigan Department of Community Health, Results from 2004 Antibiogram Data."

The following Bureau of Epidemiology employees presented at the Michigan Premier Public Health Conference in Gaylord, on October 17 and 18, 2006:

Stephen Borders, **Violanda Grigorescu,** and Federico Mariona presented the poster "Strategies for High-Risk Mothers and High-Risk Babies II: Lessons Learned from 2005 Perinatal Survey."

Michelle L. Cook and **Ann Rafferty** presented the poster "Binge Drinking in Michigan."

John Dowling, Jeannie Byrne, and **Robert Wahl** presented the talk "Addressing Asthma in Local Public Health."

Debra Duquette and Julie Zenger-Hain presented the talk "Cancer Genomics for Local Public Health."

Joan Ehrhardt, Nelda Mercer, Carol Wilson, and **Violanda Grigorescu** presented the poster "Folic Acid Outreach and Multivitamin Distribution in Selected Michigan Counties at High Risk for Neural Tube Defects."

Ann Annis Emeott, Robin Roberts, and Velma Theisen presented the poster "Family History of Premature Heart Attack and Stroke Among Michigan WISEWOMAN Participants, 2001-2004."

Cassandre C. Larrieux, Kobra Eghtedary, and **Violanda Grigorescu** presented the posters "Effect of WIC Participation on Very Low Birthweight Infants Among Medicaid Participants in Michigan" and "Post-Neonatal Infant Mortality Among Medicaid WIC and Non-WIC Participants in Michigan."

Tom Vogel and **Teri Lee Dyke** presented the talk "Antibiotic Resistant S. aureus Outbreaks in Institutional Settings."

Elizabeth A. Wasilevich, Sarah K. Lyon-Callo, Elizabeth Hanna, and Kenneth D. Rosenman presented the poster "Asthma Deaths among Individuals Aged 2-34 in Michigan."

Eden V. Wells presented the talk "Unintended Consequences Due to the Implementation of Public Health Measures During a Pandemic."

Hazardous Substances Report

The first annual report summarizing data from the Michigan Department of Community Health (MDCH) Hazardous Substances Emergency Events Surveillance (HSEES) system has just been completed and is available on the MDCH website at: www.michigan.gov/mdch-toxics. Scroll down to "Products and Services" and click on "What's New".

The HSEES system, maintained by the Agency for Toxic Substances and Disease Registry (ATSDR), actively collects and compiles information about acute releases of hazardous substances and their public health consequences in 15 participating states, including Michigan. A total of 383 reported events met HSEES criteria for inclusion in 2005 in Michigan. Sixty-seven percent of the events occurred at fixed facilities and the remainder were associated with transportation. The most commonly reported substances were carbon monoxide, ammonia, and sodium hydroxide. During this reporting period, 82 events (21.4% of all reported events) resulted in an injury, involving a total of 209 victims, three (1.4%) of whom died. The most frequently reported injuries were respiratory irritation, headache, and dizziness. Evacuations were ordered for 29 (7.6%) events. Decontaminations took place for 36 injured and 251 uninjured individuals, involving 17 events.

A number of activities are underway in Michigan to address public health issues identified by these data. These include the establishment of a system to alert local public health officials of significant releases in their jurisdictions, as part of the integration of Michigan HSEES into the State's public health emergency preparedness systems. Additionally, MDCH has initiated rulemaking to mandate reporting of chemical poisonings, which will improve identification of HSEES qualifying events.

For more information or a copy of the report, contact Martha Stanbury* (stanburym@michigan.gov) *or Noreen Hughes* (hughesn@michigan.gov) *or 517-335-8364.

New Employees

Beth Anderson, MPH, is the new Project Manager for the PBB Endocrine Disruptor Project. Anderson graduated from Kalamazoo College with a BA in Chemistry and Math and went on to receive a Master of Public Health in Occupational and Environmental Epidemiology from the University of Michigan.

Lynn Blavin, MD, MPH, is a Preventive Medicine resident from the University of Michigan School of Public Health. She is a native Michigander. She grew up in the Detroit area and currently lives in Oak Park with her husband and four children. Dr. Blavin attended medical school at the University of Michigan, and completed a Family Practice residency at Providence Hospital in Southfield. She recently received her Master of Public Health degree.

Kevin Brooks, PhD, was recently hired as the MCH epidemiologist assigned to PRAMS and Family Planning. Brooks earned his PhD in Epidemiology and Biostatistics from Michigan State University. Before joining the MDCH team, Brooks worked as a research associate at The Arnold School of Public Health, University of South Carolina (USC). While at USC he coordinated a variety of research projects assessing the impact of maternal factors on child health, primarily the impact of in utero exposure to sex steroid hormones on childhood allergies. Brooks' current responsibilities include, but are not limited to, using PRAMS data to identify factors that may be associated with adverse maternal and child health outcomes. Public health recommendations are then drawn from the findings and shared with the programs and different partners/providers for further use. He also provides epidemiologic support to The Women's and Reproductive Health Unit by developing metrics to be used in assessing the efficacy of various family planning programs.

Kevin Coles, MPH, is the new HIV Clinical Epidemiology Coordinator. He is responsible for coordinating the statewide Medical Monitoring Project. Coles is based at the Detroit Department of Health and Wellness Promotion (DHWP). He earned his Master of Public Health degree from the University of Michigan School of Public Health.

Rosalind Lewis McPhaul, LPN, is the new Departmental Technician for the Newborn Screening Program. Lewis McPhaul became a Licensed Practical Nurse after graduating from Hartnell College in Salinas, CA. Recently she completed a nursing home administrator's course at Michigan State University. Lewis McPhaul previously spent 16 years in the U.S. Army (disabled retired). During the past eight years, she worked as Director of Admissions for a nursing home facility. In her current position, she is responsible for reporting positive enzyme disorders, hemoglobinopathies, unsatisfactory transfused cases, and early and retest negative newborn screening results to physicians and medical management centers. Additionally, she responds to routine questions from the public and health care professionals concerning newborn screening and the newborn screening program.

Alice Penrose, MD, MPH, is a Preventive Medicine resident from the University of Michigan School of Public Health. Dr. Penrose completed her undergraduate degree in English Literature from Queen's University in Kingston, Ontario. After two years at Thomas Jefferson Medical School, she transferred to the University of Minnesota Medical School and graduated in 1982. Dr. Penrose did two years of residency in internal medicine at Michigan State University, and completed her training at Brackenridge Hospital in Austin, Texas. She was boarded in Internal Medicine in 1986. Dr. Penrose worked for the Public Health Service as a medical officer at the Federal Correctional Institution at Bastrop, Texas for three years. Since that time, she has worked for the Texas Department of Mental Health and Mental Retardation, the University of Illinois McKinley Health Service, Christie Clinic in Champaign, Illinois, and the Danville, Illinois VA facility. In September 2005, Dr. Penrose entered the University of Michigan Preventive Medicine Residency, and completed the course work for her Master of Public Health in July 2006. She is married, and has one daughter who attends the University of Michigan. In her spare time, she enjoys volunteer work at Hope Clinic in Ypsilanti, drawing lessons at the Washtenaw Community College, and long walks in Gallup Park.

Katie Sheline, MPH, is a new CSTE Applied Epidemiology Fellow working in the area of foodborne infectious disease within the MDCH Division of Communicable Disease. She is a Michigan native, raised in Grand Blanc, MI. Sheline completed her undergraduate training in Microbiology at Michigan State University in 2004, and graduate training in Hospital and Molecular Epidemiology at the University of Michigan in 2006. While at the University of Michigan, Sheline conducted molecular research on Mycobacterium tuberculosis under the direction of Dr. Zhenhua Yang. She also became a member of the student Public Health Action Support Team (PHAST) and traveled to Bogalusa, Louisiana for a Hurricane Katrina relief effort in February 2006. In her spare time, Sheline enjoys watching and playing sports of all kinds (especially hockey), reading, camping, and exploring music. She is looking forward to a career as an epidemiologist at the state level, and is eager to strengthen her skills and make contributions to improving the public health during her two-year fellowship opportunity.

Michael Stafford is the new MMP Data Manager for the Medical Monitoring Project. He earned his Bachelors in Statistics from Grand Valley State. Prior to this position he was a statistician for the Detroit Department of Health and Wellness Promotion (DHWP).

Jyothi Thumma, MPH, is the new Maternal and Child Health Epidemiologist. Thumma earned her Bachelor of Veterinary Sciences in India, and her Master of Public Health in Epidemiology from the University of Michigan. Prior to graduating in Michigan, she worked as a computer programmer. In her current role, Thumma will be providing epidemiological support, including data management, surveillance,

continued on page 10

continued from page 9

epidemiologic study design and planning, statistical analysis, policy and program development, and program evaluation on matters concerning the Early Hearing Detection and Intervention (EHDI) and Birth Defects programs.

Diana Torres-Burgos, MD, MPH, is a Preventive Medicine Practicum resident from the University of Michigan School of Public Health (UMSPH). Dr. Torres-Burgos earned her medical degree from the Albert Einstein College of Medicine in New York City and practiced General Pediatrics for fifteen years. She is board certified in pediatrics and recently received her Master of Public Health degree in Health Behavior and Health Education from UMSPH. In 2007, she will complete a National Hispanic Medical Association Leadership Fellowship for public health policy and community advocacy.

Elizabeth (Betsy) Wasilevich, MPH, was recently hired as the Asthma Epidemiologist for the Chronic Disease Epidemiology Section. Wasilevich is currently a Ph.D. Candidate in Epidemiology at Tulane University – she expects to complete her degree requirements in May 2008. She received her Master of Public Health in Epidemiology from Tulane University School of Public Health and Tropical Medicine in 2000 and graduated with a B.S. in biology from Hope College in 1998. Prior to coming back to Michigan, she had experience as a Clinical Trial Coordinator for a novel anti-malarial trial at the Center for Infectious Disease at Tulane University Health Science Center, and as a Research Assistant working on lead surveillance in Tulane University School of Public Health and Tropical Medicine. Wasilevich has been working with the Asthma Program since February 2002 through a contract with the Michigan Public Health Institute. In her current position, she conducts asthma surveillance and reporting, provides assistance and expertise to the Asthma Prevention and Control Program and its partners, and oversees epidemiological activities such as the Michigan Asthma Mortality Review. She also coordinates the Bureau's Epidemiology Seminar Series and is a counselor in the Michigan Public Health Association's Epidemiology Section.

Derrick Willis is the new Behavioral Surveillance Assistant Coordinator for Behavioral Surveillance. He is a PhD candidate in Medical Anthropology from Wayne State University and has extensive past experience in HIV prevention.

Andrew Knecht, MPH, was recently hired as the TB epidemiologist for the Infectious Disease Epidemiology Section. He received his MPH in Epidemiology from The Ohio State University School of Public Health in August of 2006 and graduated with a BS in Exercise and Health Science with a concentration in Public Health from Alma College in 2003. While at Ohio State, Andrew worked as a Graduate Research Assistant on an injury prevention project focusing on youth who work on farms. Andrew also held an internship at Ohio Department of Health where he worked on the development of a zoonotic disease surveillance system. Andrew has been working with the TB Prevention and Control Program since September 2006. In his current position, Andrew will be providing epidemiologic support to the TB Prevention and Control Program.

New Chief Medical Executive

Greg Holzman, MD, MPH, recently started as the Michigan Department of Community Health's new Chief Medical Executive. Dr. Holzman has Michigan connections. He grew up in Okemos and received his Bachelor of Science degree from Michigan State University. A graduate of the University of Florida College of Medicine, he completed a Family Medicine Residency in Charlotte, North Carolina, and a Preventive Medicine Residency in Seattle, Washington. Between his two residencies he practiced in Browning, Montana, with the Indian Health Service. He is board certified in both Family Medicine and Preventive Medicine.

Immediately prior to coming to Michigan he held academic positions (Central Maine Medical Center and University of North Dakota School of Medicine and Health Sciences) where he worked with residency and community health programs. He also provided consultation to state health departments, including the Montana Department of Public Health and Human Services and the Wyoming Diabetes Prevention and Control Program.

He and his wife Donna, a physician assistant, continue to return to Browning, Montana as volunteers. His areas of interest include chronic disease management and public health issues, including health disparities, health promotion and disease prevention. Dr. Holzman looks forward to meeting and working with all the bureau's diverse programs. Welcome Dr. Holzman!

New Publications

Asthma Initiative of Michigan. "Asthma in Michigan 2010: A Blueprint for Action." Lansing, MI. July 2006. (PDF available at www.GetAsthmaHelp.org).

Goei R, Boyson A, **Lyon-Callo S,** Schott C, Cannarile S, **Wasilevich E.** Developing an Asthma Tool for Schools: The Formative Evaluation of the Michigan Asthma School Packet. Journal of School Health. 2006;76(6):259-264.

Kieffer EC, Sinco BR, **Rafferty A,** Spencer MS, Palmisano G, Watt EE, Heisler M. Chronic disease-related behaviors and health among African Americans and Hispanics in the REACH Detroit 2010 communities, Michigan, and the United States. Health Promotion Practice. 2006;7(3):256S-264S.

Wasilevich EA, Lyon-Callo SK. "Targeting Asthma in Michigan: The Healthy People 2010 Objectives." July 2006. (PDF available at www.GetAsthmaHelp.org).

Zhu BP, **Grigorescu V, Le T,** Lin M, **Copeland G, Barone M,** Turabelidze G. Labor dystocia and its association with interpregnancy interval. American Journal of Obstetrics & Gynecology. 2006;195:121-8.

The Answer

On September 26 the patient had few *Fusarium* on culture and on October 10, the patient had many *Fusarium* present. This fungus is commonly found in the environment, especially in tropical climates. Upon realization that the patient's keritits was caused by a fungal infection, the patient began therapy with natamycin, intraconazole, and gatifloxacin in addition to corticosteroid eye drops. Despite treatment, the patient's vision with correction in the affected eye decreased to 20-60/100. A corneal transplant is scheduled for the patient.

This patient became part of a nationwide investigation that involved the Michigan Department of Community Health, many other states, and the Centers for Disease Control and Prevention (CDC). As of May 9, 2006, CDC had received reports of 106 confirmed cases, 12 possible cases and 80 cases still under investigation from 32 U.S. states and territories. The diagnosis of *Fusarium* has been highly linked to those using a Bausch & Lomb ReNu contact lens solution. On April 13, 2006, Bausch & Lomb announced that it was withdrawing all ReNu with MoistureLoc products and is recommending that consumers stop using ReNu with MoistureLoc immediately.

The patient is a confirmed user of Bausch and Lomb ReNu Multiplus Purpose Solution-No Rub.

You can view additional detailed information on the investigation at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm55d410a1.htm

Occupational Pesticide Illness and Injury Surveillance Report

The Michigan Department of Community Health (MDCH) Division of Environmental and Occupational Epidemiology is pleased to announce the publication of its third report on surveillance of acute, work-related pesticide illnesses and injuries in Michigan. This public health surveillance project is funded by the National Institute for Occupational Safety and Health (NIOSH). The full report, titled Occupational Pesticide Illness and Injury Surveillance in Michigan 2005, is available at: www.michigan.gov/mdch-toxics. Under the heading "Products & Services" click on "Pesticide Information." You can request a paper copy by calling or e-mailing Abby Schwartz at 517-335-9684 or schwartza@michigan.gov.

This report summarizes data collected from 2001 – 2005 and presents detailed data on 2005 case reports. During this time period, 415 individuals were reported with a known or suspected injury or illness from exposure to pesticides at work, and 284 (68.4%) were confirmed as cases according to the surveillance case definition. In 2005 there were 103 reported cases; 68 (66.0%) were confirmed. Brief case summaries of 2005 confirmed cases are included in the report appendix. Eighty-nine (86.4%) of the 2005 cases were reported through Michigan's Poison Control Centers (PCC).

In 2005, more than half of all confirmed cases were from exposure to antimicrobial pesticides, in contrast to 2004 where a third of the confirmed cases were from exposure to antimicrobials. Antimicrobial cases differed from other pesticide cases in several ways. The workers were more likely to be female, to work in service occupations, and to have an ocular exposure. The use of splash goggles while using antimicrobials would have prevented the majority of the confirmed cases of antimicrobial exposure.

Ten (15.6%) of the exposed workers in 2005 were employed in hospitals, eight (12.5%) were employed in providing services to dwellings and other buildings, which includes structural pesticide applicators, and six (9.4%) were landscapers. Where activity of the exposed person was known, 27.1% were exposed inadvertently while doing their regular work that did not involve pesticide application.

There are a variety of follow-up activities that occur in response to case reports, including education and enforcement. The program sends out fact sheets and an educational booklet What You Need to Know About Pesticides and Your Health (available on the website listed above or by contacting Abby Schwartz). With consent of the reported individual, referrals may be made to the Michigan Department of Agriculture (MDA) or the Michigan Occupational Safety and Health Administration (MIOSHA) in the Department of Labor and Economic Growth for investigation of possible pesticide use or other health and safety violations. In 2005, four events were referred to the MDA for investigation of possible pesticide use violations.

EPI INSIGHT is published quarterly by the Michigan Department of Community Health, Bureau of Epidemiology, to provide information to the public health community. If you would like to be added or deleted from the EPI Insight mailing list, please call 517-335-8165.

Bureau of Epidemiology Administrator
Corinne Miller, D.D.S., Ph.D.

Newsletter Committee
Ann Annis Emeott (Editor) • Kathryn Macomber (Editorial Review)
Rosemary Franklin • Jay Fiedler • Sarah Lyon-Callo • Carla Marten • Bridget Kavanagh-Patrick

MDCH is an Equal Opportunity Employer, Services & Programs Provider.