

MICHIGAN DEPARTMENT OF COMMUNITY HEALTH

HEALTHCARE FACILITY PROJECTS:

PROJECT PLANNING TO OPENING SURVEY

RECOMMENDATIONS



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Form Rev. 04/05/10
Authority: P.A. 368 of 1978, as amended

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INTRODUCTION

The Health Facilities Engineering Section (HFES) strives to ensure that safe, efficient and effective delivery of healthcare is accommodated through the review and inspection of healthcare facilities. To a large degree this is accomplished through the review of plans and oversight of healthcare construction and modernization projects. Healthcare facilities include hospitals, nursing homes, homes for the aged, outpatient hemodialysis units, freestanding outpatient surgical facilities, and hospice residences.

This document is largely the result of meetings held in the fall of 1999 with various representatives from hospitals, architectural firms, and construction management companies in cooperation with the HFES. The purpose of these meetings was to look for and develop improvements in the opening survey process, whereby the HFES makes the final inspection of healthcare projects and reviews all necessary documentation to insure that the projects are complete, comply with all applicable regulations, and ready to facilitate patient/resident care. From these meetings it became apparent that many of the problems that arise throughout the course of planning, design, and construction adversely impact the final stages of project close-out.

This booklet is an attempt to list and address the most common challenges found in healthcare related construction and integrate those concerns with the requirements for opening of a healthcare construction project for patient/resident care use. It is our hope that the dissemination of this booklet will help avoid many of the possible pitfalls associated with healthcare construction.

Other documents used by the HFES are available at [MDCH - Health Facility Engineering Section](#).

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ACKNOWLEDGMENTS

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Note that this booklet supersedes the previous Recommended Procedures for Opening of a Health Care Facility Project booklet, last revised January 1998.

Process Overview

Routine maintenance, surface treatments work, or equipment replacement normally don't require plan review or an opening survey. **Plan review** (leading to the issuance of a construction permit) is recommended for all patient/resident care related projects in all types of healthcare facilities and *is required for*:

- § hospital projects with patient care related capital expenditure of \$1 million or more;
- § nursing home projects including major alterations in excess of \$50,000 or a major alteration to expand or change services;
- § home for the aged projects involving the construction of new buildings, additions, major building changes and conversion of existing facilities to use as a home for the aged
- § all freestanding outpatient surgical facility projects of \$50,000 or more, or involving major alterations including changing interior configurations;
- § all hospice residence projects.

The first submittal of plans must include completed application form, fee, and operational narrative (see operational narrative booklet at [MDCH - Health Facility Engineering Section](#)) Typically plan review comments are issued within 6 weeks and ask that written response along with revised drawings be submitted. The review process repeats until comments have been substantially resolved. Note that plan review approval of the Office of Fire Safety, (517) 322-1123, and compliance with applicable Certificate of Need, (517) 241-3344, rules is also required before a construction permit is issued.

At least 30 days before the expected completion of the work the HFES should be contacted to schedule the required opening survey.

As consistent with issuance of a Construction Permit, the authority for evaluation of construction prior to occupancy is based on Act 368, Public Act of 1978 as amended. Furthermore, state approvals do not supersede the authority of local units of government that may require a local occupancy permit.

Five days before the opening survey documentation must be submitted which indicates the project as being ready for patient/resident care use. It is expected that the facility will be ready for final cleaning and placement of furnishings at the time of opening survey.

Opening surveys of construction and remodeling projects do not constitute a licensing and certification visit. The **Michigan Department of Community Health (MDCH), Bureau of Health Systems, Division of Nursing Home Monitoring**, is responsible for issuance of initial state licenses and/or Medicare/Medicaid certifications for new facilities or amended licenses for expansion of existing facilities, including, nursing homes, country medical care facilities, and hospital long term care units. The **Division of Licensing and Certification**, is responsible for the same licensing functions for hospitals, freestanding surgical outpatient facilities (FSOF), hospice residences, and end-stage renal dialysis units (ESRD).

The **Department of Human Services, Home for the Aged Division** is responsible for licensing homes for the aged.

Prior to opening the facility for patient or resident use, the owner, or the owner’s representative, must contact the proper bureau to request information of the procedure and forms to apply for initial or amended licensure or certification at one of the offices noted below. All opening surveys, other than surveys by the Office of Fire Safety, will be handled out of the Lansing Office.

Lansing Offices:

Opening Surveys for Licensed Facility Projects (all):

Telephone..... (517) 241-3408
Fax..... (517) 241-3423

Nursing Homes & Other Long Term Care Unit Licensing:

Telephone..... (517) 334-8408
Fax..... (517) 334-8473

Hospital, FSOF, Hospice Residences, ESRD licensing (all):

Telephone..... (517) 241-4160
Fax..... (517) 241-2635

Homes for the Aged licensing (all):

Telephone..... (517)241-3838

Detroit Office:

Nursing Homes & Other Long Term Care Unit Licensing

Telephone..... (313)256-3687
Fax..... (313)256-3689

Gaylord Office:

Nursing Homes & Other Long Term Care Unit Licensing

Telephone..... (517)732-8062
Fax..... (517)732-8958

Licensing offices should be notified 60 to 90 days in advance of expected occupancy and use of the project by the owner.

SUGGESTIONS FOR PROJECT SUCCESS

1. Project team needs to set realistic expectations as they relate to schedule and how much function can fit into a given amount of space.
2. Thorough planning and use of healthcare experienced individuals by the owner, designer, and builder which will help avoid/minimize most problems.
3. Projects should fit into an overall master facility plan, yet be flexible enough to accommodate program/function changes and building additions in the years to come.
4. Designs should follow standard practices to avoid obsolescence and not be over programmed by separating different functions into multiple/small spaces, limiting flexibility.
5. The owner's representative should be pro-active and experienced, be on-board throughout the entire process, and have the time necessary to be involved during key phases of the work.
6. Selection of designers and contractors should be based on a performance value, and not cost alone.
7. Maintain good communications and an environment of teamwork among all parties including introduction of the project team to the community and regulatory agencies, keeping all parties involved, keeping the overall project intent in mind, being ready to work together to solve unforeseen problems, and keeping communications open and timely.
8. Utilize exploratory demolition and pre-design air balance testing to avoid unforeseen problems.
9. Have 2 sets of as-built drawings made (one for owner's records and one for use by the maintenance staff). Update if needed, before design of the next project.
10. Use of room mock-ups on larger, more complex projects.
11. Request that the HFES conduct consultative pre-opening surveys on larger projects.
12. Project designers should be encouraged to visit the site a year later to critique for operational issues not addressed within the scope of the work.

MOST COMMON PROJECT PITFALLS

1. Unrealistic expectations, especially in terms of cost, extremely tight schedules, attempts to fit more function into spaces that are too small, failure to provide the necessary lead time for owner purchased items.
2. Inexperience among various participants relative to the specific type of healthcare facility or project, or the various design requirements applicable in Michigan.
3. Changes relating to project design, especially at the last minute that change design intent or scope of project which subsequently cause delay in occupancy.
4. Personnel changes during the project which result in deviations from the original operational intent.
5. Operational issues not fully understood or communicated e.g. designs that do not provide for what is necessary to support good care.
6. Plans not submitted for HFES review in a timely fashion (not submitted until ready for bids).
7. Incomplete first submittals (without detailed operational narrative, application or fee).
8. Failure to effectively communicate design changes (addenda, bulletins, etc.), often the changes are difficult to understand, don't get sent out in a timely fashion or at all, and/or are not fully thought out.
9. Contingency plans not made for construction related incidents, unforeseen problems, and emergencies.
10. Storage space is often reduced during the design/construction phase of projects.
11. Documents are misdirected when submitted to the HFES without making consistent use of project number and name.
12. Projects not patient/resident ready at time of opening survey often caused by late delivery of owner furnished items, missing/incomplete/incorrect documentation, lack of code compliant air balance report, outstanding punch list items, and the owner's rush to occupy.

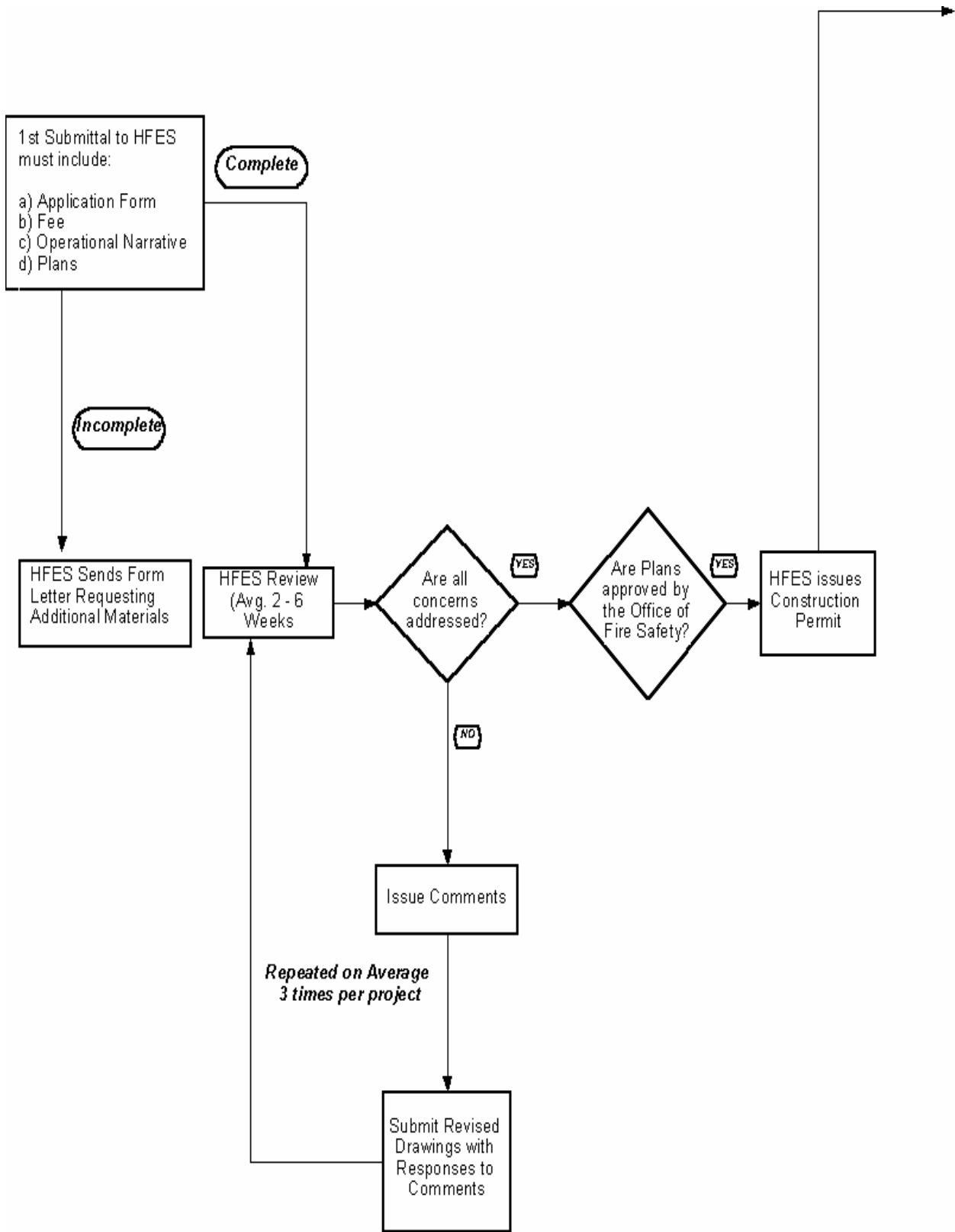
PROBLEMS OFTEN FOUND DURING CONSTRUCTION

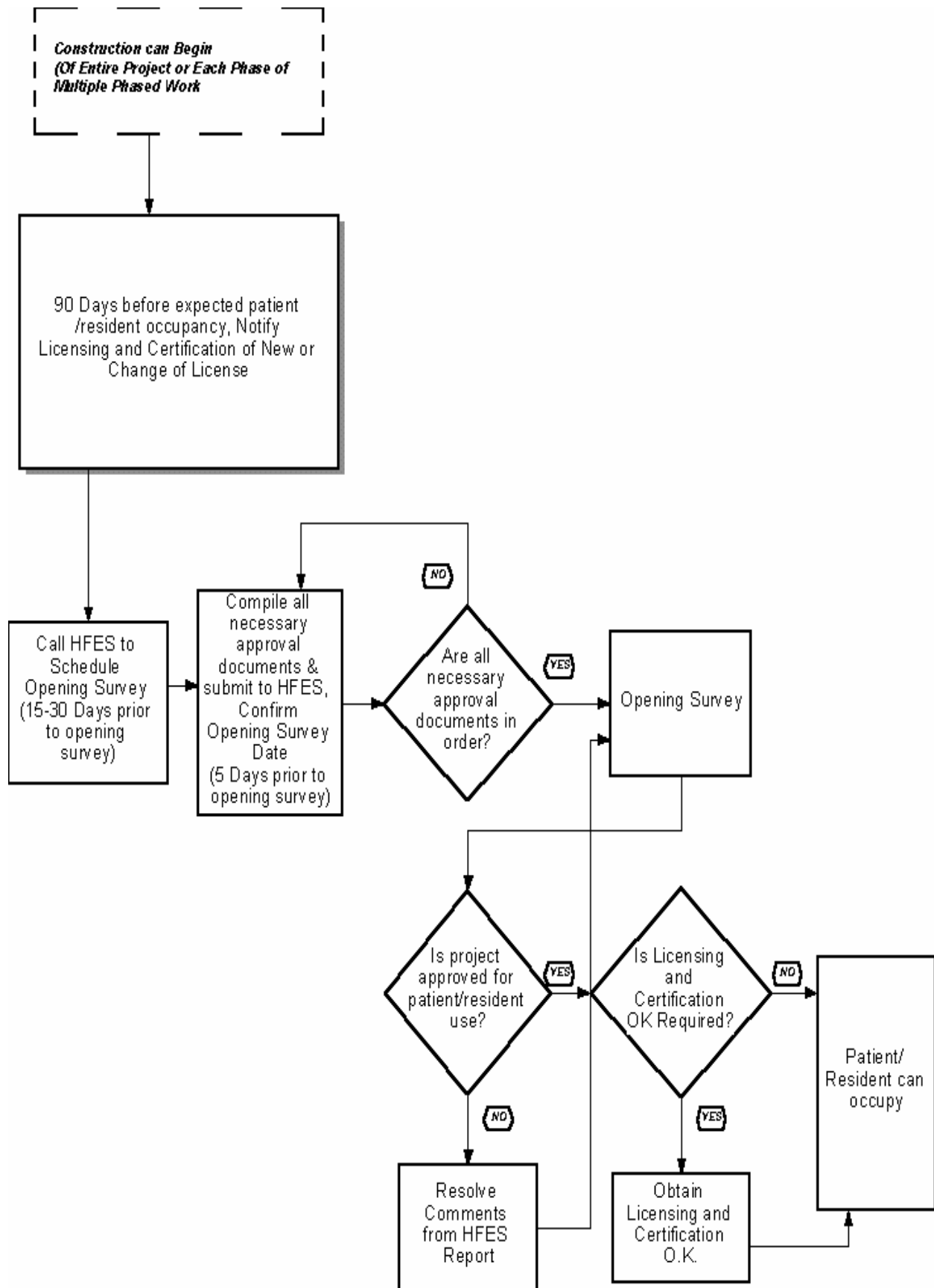
1. Existing conditions unknown due a lack of good as-built drawings, no testing conducted before design begins (including air balance), unknown underground conditions, hazardous materials not accounted for, shut-off valve locations unknown, etc.
2. Contamination, nuisance, and hazard issues which include:
 - a. Dust control (note: *Aspergillus*, a fungus which is commonly found in ductwork and the soil can lead to almost immediate pneumonia like disease and deaths among immunocompromised patients; additional filters/filter changes are needed on facility's air handling equipment);
 - b. Noxious fumes from welding, roofing work, or demolition activities;
 - c. Leaks from known/unknown piping or open roofs (note: *Stachybotrys*, a potentially lethal fungus, grows in wet drywall, ceiling tiles, mastic, etc.);
 - d. Dead-end plumbing lines (which are a source of *Legionella*);
 - e. Debris removal (should be covered with damp cloths, and gondola wheels wiped off);
 - f. Vibration/noise (nursing/medical staff should be able to shut down the work as needed);
 - g. Traffic patterns (minimize contact between construction personnel/materials and clinical/public functions, also consider how much elevator use contractors will need), maintain handicap access and emergency egress paths;
 - h. Barriers (cleanable, impervious, fire-rated, to be installed from floor to deck above with sealed joints);
 - i. All required means of egress and all required fire protection features (i.e. fire alarm and automatic sprinkler systems) are not in place and continuously maintained. A minimum of one hour fire rated separation is not provided between buildings or portions of buildings which are occupied and those areas under construction or renovation;
 - j. Protection of adjacent services (including on the floors above and below);
 - k. Maintenance of air flow from patient/resident care related areas into areas under construction;
 - l. Construction site not properly cleaned daily.

- m. ALL THIS SHOULD BE COVERED IN DETAIL IN THE CONTRACT DOCUMENTS (and in pre-construction meetings).
- 3. Loss/failure of mechanical/electrical systems, including electricity, domestic water supply, medical gases, elevators, natural gas, heating and cooling systems, fire alarms, sprinklers, telephone, pneumatic tubes, data and patient monitoring systems, and paging systems
- 4. Designs that don't properly take phasing of the work into account (e.g. changing of the phasing scheme, loss of parking, loading dock access, HVAC can't be balanced, department relocation, temporary signage)

ALL THIS SHOULD BE INCLUDED IN THE CONTRACT DOCUMENTS.

- 5. Contractor related problems with security, construction storage, temporary fire protection, worker appearance/language, parking/staging space





OPENING SURVEYS

When the construction, renovation, or conversion of a health care facility (or any phase of which) subsequent to the issuance of a Michigan Department of Community Health (MDCH) Construction Permit, has been substantially completed, the designer, construction manager, or owner should request an opening survey from the Michigan Department of Community Health (MDCH). The department should be notified approximately thirty (30) days prior to the estimated completion date. An opening survey date will be scheduled during the initial notification. Requests for surveys of non-Construction Permit projects will be scheduled by the HFES as time permits.

ONE WEEK BEFORE THE ESTABLISHED SURVEY DATE, A STATUS REPORT SHALL BE SUBMITTED TO THE DEPARTMENT TO VERIFY THAT WORK HAS BEEN SUBSTANTIALLY COMPLETED. THE STATUS REPORT SHALL INCLUDE APPROVALS, CERTIFICATES, AND A PROJECT PUNCHLIST WHICH IDENTIFIES WORK ITEMS THAT REMAIN TO BE COMPLETED.

The project punchlist is an integral part of the status report submitted to the department. The punchlist should be recent and comprehensive, encompassing items from all trades. Each item which remains to be completed should be referenced by room number.

Upon receipt of the status report, the department will contact the facility representative and confirm the opening survey date. **SHOULD THE STATUS REPORT BE FOUND INCOMPLETE, THE OPENING SURVEY DATE MAY BE RESCHEDULED.**

To assure that a health care facility is in compliance with occupancy requirements, the following documents must be submitted to the Michigan Department of Community Health (MDCH). Where an approval or certificate not be applicable for the project, it should be noted in the status report. **THE OWNER SHOULD MAINTAIN COPIES OF APPROVALS AND CERTIFICATIONS FOR ALL PROJECTS.**

OPENING SURVEY DOCUMENTATION CHECKLIST

Facility Name: _____

Project Name: _____

HFES Project #: _____

The following items (as applicable) will be required in order to obtain Occupancy Approval for this project:

			Final punchlist which indicates the project is ready to facilitate patient/resident care
			Final approval of the Office of Fire Safety, State of Michigan
			Final approval of electrical system by authority having jurisdiction
			Certification that electrical installations, including alarm, nurse's call, and communication systems have been tested to demonstrate that equipment installation and operation is appropriate and functional
			Approval of elevators and dumbwaiters by the Michigan Department of Consumer and Industry Services or designated local authority having jurisdiction (AHJ)
			Air balance reported by a qualified, independent air balance contractor, with a list of deficiencies and itemized action plan to make all necessary corrections
			Certification for Bio-Safety cabinets/hoods
			Certification that piped medical gas systems have been installed and tested in accordance with NFPA 99. A test report should be submitted for each station outlet indicating product, purity, and pressures.
			Approval of boiler installation from the Michigan Department of Consumer and Industry Services
			Certification that operational permits have been obtained for boilers and incinerators from the Michigan Department of Environmental Quality
			Final approval of plumbing system by governing agency (AHJ)
			Certification that domestic water supply lines (on new or major construction projects) have been disinfected in accordance with State and local ordinances
			Test results of bacteriological analysis of the domestic water system prepared by a State approved laboratory indicating that water is safe for consumption
			Reports for all testable backflow devices
			Certification that installation and operation of the water systems of the hemodialysis unit shall comply with Class II Standards established by the Association for the Advancement of Medical Instrumentation (AAMI) and are FDA 510K approved
			Certification that operational permits have been obtained for ethylene oxide sterilizers from the Michigan Department of Environmental Quality
			Approval for occupancy from local authorities
			Report by radiation physicist certifying the adequacy of shielding from x-ray, gamma ray, and other sources of ionizing radiation
			Application for registration of new radiographic equipment with the Michigan Department of Consumer and Industry Services

In addition to the preceding approvals and certificates, the Office of Fire Safety will require the following items prior to issuing final occupancy approval.

1. Electrical system approval by governing agency.
2. Certification of alarm systems.
3. Certification of sprinkler systems.
4. Affidavits for interior finishes; which may include floors, walls, ceilings, partitions, curtains, draperies, paints, plastics, etc.
5. Affidavits for furnishings installed in a nurse station open to the corridor shall be minimum Class B interior finish classification.

OPENING SURVEY RELATED PROBLEMS

1. Lack of awareness of a series of additional requirements beyond contractor's substantial completion that are required prior to patient/resident care related use.
2. Inadequate time given at the end of the project for commissioning, air balance, installation of owner supplied items, which delays the planned move in date
3. Failure to submit proper/complete documentation prior to opening survey (this should be reviewed by owner and designer)
4. Failure to comply with various approval stipulations as stated in HFES construction permits or in some cases failure to submit for plan review at all
5. Failure to comply with Michigan Barrier Free **Standards** (construction not within acceptable tolerances, vendor supplied items not compliant, excessive shower stall threshold heights, etc.)
6. Having to re-schedule or repeat the opening survey resulting in occupancy delays
7. Failure to comply with illumination standards
8. Air balance report does not indicate compliance with minimum standards

Good communication between the designer, construction manager, or owner and the Michigan Department of Consumer and Industry Services regarding the status of the project will greatly expedite the opening survey and licensure process. All status reports should be mailed to:

**Michigan Department of Community Health (MDCH)
Bureau of Health Systems
Division of Health Facilities & Services - HFES Section
320 S. Walnut Street
Lewis Cass Building – 3rd Floor
Lansing, Michigan 48913**

The following list of items are commonly noted as needing additional attention at the time of the opening survey:

Architectural:

1. Patient room equipment, furniture, and furnishings not available.
2. Signs not available for room designations, handicapped facilities, etc.
3. Wall and floor surfaces not properly finished, i.e., paint, tile, etc.
4. Construction debris not removed and areas not thoroughly cleaned.
5. Pipe and ductwork penetrations not properly sealed.
6. Cover plates not provided for clean-outs, electrical and telephone outlets, etc.
7. Plumbing fixtures, window and door frames, kitchen and work counters, etc., not caulked to wall or floor surface.
8. Grab bars not installed for water closets and bathing fixtures.
9. Safe access to roof and attic areas not provided.
10. Cubicle curtains, shower curtains, and patient/sleeping room window treatments not installed.
11. Single use towel and soap dispensers not installed adjacent to handwashing fixtures. Waste receptacles not available next to handwashing fixtures.
12. National Sanitation Foundation (NSF) seals not attached to dietary equipment.
13. Emergency evacuation plans not posted throughout the facility.
14. Existing equipment relocated to a new construction area, or owner-purchased equipment, which is not cleanable or does not meet design requirements.

Mechanical:

15. Ventilation systems not operative, or do not produce the specified air quantities, especially in remodeling projects.
16. Filters not installed or properly fitted.
17. Manometers not installed or calibrated for each filter bank of 75% efficiency or higher.
18. The air handling systems not balanced within a 10% tolerance of approved plans, or air pressure relationships are incorrect.

19. Air intakes not separated from sources of contamination, i.e., exhaust fans, boiler or incinerator stacks, etc., by at least 25 feet horizontal distance.
20. Utility lines and pipes not identified.
21. Wristblades or foot water volume controls not properly adjusted on handwash lavatories.
22. Hot water temperatures at patient fixtures not adjusted between 105 degrees to 120 degrees Fahrenheit.
23. Water pressure and temperature not adjusted to meet manufacturer's criteria on dishwashers, sterilizers, etc.

Electrical:

24. Emergency circuits not properly designated.
25. Fans, air handing units, special equipment, etc., not identified on electrical circuitry.
26. The nurse call system not operative or not on emergency power system.
27. Light levels do not meet minimum illumination requirements established for health care facilities.
28. Light fixtures obstructed by shelving, ventilation ducts, or partitions.
29. Safety covers not installed over fluorescent or incandescent bulbs which may be contacted, causing breakage.

Operational:

30. Personnel not been trained regarding use of new equipment.
31. Operation manuals not available for mechanical and electrical systems, or specialized equipment.
32. The final project systems and equipment not been reviewed and approved by the facility infection control department.