SMHE Educational Conference

Code Updates and Frequently Identified Regulatory Survey Findings

April 12, 2023

Presented By:

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HFES Updates

- **HFES staff includes**

  *Andrea Wiggins, HFES Manager
  * Riyadh Almuktar, Engineer
  * Austin Webster, Engineer
  * Kasra Zarbinian, P.E., Engineer
  * Pier-George Zanoni, P.E., Engineer
  * Jenna Engle, Department Technician
  * Open HFES plan review/surveyor position

- **HFES is looking to replace old "project" permit system with newer computer system compatible with Accela and based on licensed facility ID number.**

Summary of Todays Topics

Code Updates and Frequently Identified Regulatory Survey Findings

Code updates from the State of Michigan from the Bureau of Community and Health Systems and frequent Code questions answered from the Health Facilities Engineering Division (HFES). Attendees will learn specifics of latest changes in the Health Facilities codes adopted in Michigan including items such as proposed changes to the FGI Guidelines.

- Building Code cycle updates
- HFES Plan review FAQs
- FGI Guidelines recent 2022 changes and future 2026 edition
- Update on state and federal regulatory changes related to health care facilities
- ASHRAE 188 vs proposed ASHRAE 514p water management
- The new ICRA 2.0
- Common issues
- Barrier free
- Dead ends & backflow prevention
- Ventilation air flows, temperature & humidity
- Some hot fire safety issues

Michigan Building Code Updates

- State of Michigan on **2018 Mi Plumbing Code** but now working on 2021 adoption.
- State of Michigan on **2017 Mi Electrical Code** but now working on 2021 adoption. Comment period is open.
- The rest of the Michigan Codes are still on **2015** but will migrate to 2021 once the rule making process is complete. Note that public comment period has ended for the following rules: **Building, Mech, Rehab, & Residential**.

HFES FAQs

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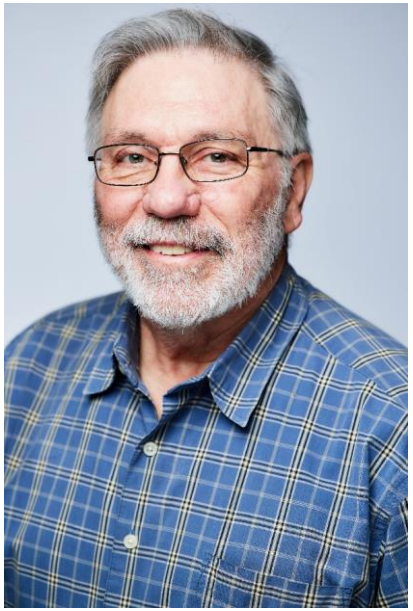


- Email questions any time.
- Usually we will return email with clarification with supportive background references.

Frequently Asked Question: Will HFES be adopting the 2022 FGI?

Answer: It is not likely.

There is no language in the Public Health Code or our Licensing Rules that allows us to use the most current version of the FGI, but there is language that we can evaluate new technology, etc. to allow equivalencies to the rules.

Thus, HFES would evaluate any request for a variance from the FGI or licensing rules on a case-by-case basis, weighing the merits of the information submitted for justification of the request.

Since it is difficult to change any State rule (e.g., typically required to follow strict rule making process with public comment, etc.) HFES would not expect to see any formal rule change adopting later versions of FGI anytime soon.

FAQ Question: Do existing hospital buildings need to comply with the new FGI codes?

Answer: “It depends.” In general, you must follow building related standards based on what was in effect at the time of your plan approval. As long as there are no major renovations or changes in use, you don’t have to worry about newer codes. This is almost always true when it comes to the ICC codes (building, mechanical, electrical & plumbing).

The FGI Guidelines also generally follow this principle. You can find this in the very beginning of the FGI books, section 1.1-1.1.

FAQ Continued

The 2020 Michigan Health facilities Licensing Rules (Rule 265 & Rule 267) also follow this principle. They are worth quoting:

Rule 265. (1) To assure compliance with the code and these rules, a health facility shall submit to the department for review and approval or disapproval complete plans and specifications for all the following projects: (a) New buildings. (b) Additions. (c) Building change. (d) Conversion of existing structures for use as a health facility.

PGZ note: "Replacement in kind" of existing equipment is also usually allowed without requiring plan review.

Rule 267. An existing licensed health facility that is not in compliance with the provisions of these rules may be permitted to continue in use so long as the facility is sufficient to protect patient health and safety and provide services, unless the department determines that such use constitutes a hazard.

There are a few notable exceptions:

1. **NFPA 101 Life Safety Code.** The NFPA 101 LSC has different chapters for existing and new construction. With NFPA LSC there is technically no grandfathering, you just have to follow the standards for existing. However, the requirements in the existing chapters do change over time and the bar does get higher. For example, the requirement for being fully sprinklered or the requirement to have smoke barriers.
2. **NFPA 99.** CMS has adopted the 2012 edition of NFPA 99. Many sections of NFPA 99 apply to both new and existing facilities.

Question: Can a handwash sink be omitted from a NH resident room.

Answer: The 2020 Health Facilities Licensing Rules Rule 275 (5) does require a handwash sink in both resident room and adjacent toilet room. Possible equivalency if the room is a private and there is no toilet room door.

The 2018 FGI for Residential section 3.1-2.2.2.5 on Hand-washing station states: A hand-washing station shall be provided in each resident room. (1) Omission of this station shall be permitted in a single-bed or two-bed room where a hand-washing station is located in an adjoining toilet room that serves that room only. **HFES note: Although this standard is in the 2018 FGI adopted by Michigan, the Michigan 2020 health facilities licensing rules is more strict and takes precedence.**

2026 FGI What's Coming ?

- Possibly move Mobile Units to Outpatient Book
- Creation of Handbook in addition to Guidelines and appendix

FGI Guidelines 2018 vs 2022

ASHE coming out with article by Russ Olmstead highlighting changes between 2018 and 2022 FGI editions.

- Added definitions to Class 1, 2, 3 imaging rooms
- Added DEVA (Disaster, Emergency, and Vulnerability Assessment to SRA
- ASHRAE 170 now included in all 3 FGI books (Hosp, Residential, Outpt)
- Permits modular/prefab laminar ceilings in ORs in lieu of monolithic
- Added detailed rqmnts for dialysis treatment areas

2026 Public Proposal Period for FGI Guidelines Now Open until June 30th Industry Participation is Essential

The proposal period is your one and only opportunity to recommend changes to the 2022 Guidelines. If you miss the June 30th deadline, you will have to wait 4 years for the next revision cycle.

During the proposal period, FGI encourages all users of the Guidelines documents to suggest where Guidelines language could be improved for clarity, outdated requirements should be removed, or new types of facilities should be added.

Proposals should support clinical practices, infection prevention measures, and minimum design requirements for additional and evolving care spaces to advance safe and effective patient and resident health care.

The FGI proposal site will be accessible at **https://www.fgiguidelines.net**.

Rural Emergency Hospitals (REH)

- Rural Emergency Hospitals (REHs) are a new provider type established by the Consolidated Appropriations Act, 2021 to address the growing concern over closures of rural hospitals.
- The REH designation provides an opportunity for Critical Access Hospitals (CAHs) and certain rural hospitals to avert potential closure and continue to provide essential services for the communities they serve.
- Conversion to an REH allows for the provision of emergency services, observation care, and additional medical and health outpatient services, that do not exceed an annual per patient average of 24 hours.
- This new provider type, was effective January 1, 2023 and promotes equity in health care for those living in rural communities by facilitating access to needed services.
- REHs are facilities that convert from either a critical access hospital (CAH) or a rural hospital (or one treated as such under section 1886(d)(8)(E) of the Social Security Act) with less than 50 beds, and that do not provide acute care inpatient services with the exception of skilled nursing facility services furnished in a distinct part unit.

Rural Emergency Hospitals (REH) cont'd

- The Non-Long-Term-Care State Licensing Section (NLTCSLS) of LARA-BCHS began to accept rural emergency hospital (REH) applications on January 1, 2023 after changes to Part 215 that were enacted under Public Act 265 of 2022.
- This allows a hospital to apply to reduce their bed licenses by 100% temporarily for up to five years.
- Once the reduction of beds occurs the hospital can then be recognized by the federal government as a REH.
- Federal requirements are that a hospital demonstrate a license that shows the temporary de-licensure and the non-use, of 100% of the hospital beds at the license location.

Other LARA Changes Coming

- Revise Psychiatric Hosp Rules
- Revise Home for the Aged rules

HFES - What We Do:

- **Our primary duty is to enforce licensing and certification requirements**
- **But most of our efforts are spent on plan review & inspection of construction/renovation projects**

A few tips orientation to CMS surveys

CMS uses State Agency inspectors to conduct their surveys

1. Hospital surveys every 2 years (or if Hosp is deemed status/accredited no surveys except random Validation surveys – approx. 2% of hospital facilities each year).
2. Nursing Home surveys (including fire safety)
3. Ambulatory Surgical Centers (ASCs)
4. Dialysis centers (ESRDs) LSC exempt unless 2 story

The Key to a Successful Survey is Being Well Prepared

Typical Day on CMS surveys – what we cover

- **Survey starts with Opening Conference and a Physical Environment Building Tour.**
- **Document review is typically later in the day but can be earlier.**
- **HFES engineers Survey Hospitals for Physical Environment but not for Life Safety. This is now being completed by the nursing home fire safety inspectors in BCHS. Previously was done by BFS.**
- **HFES engineers survey Ambulatory Surgery Centers for Physical Environment, Life Safety and Emergency Preparedness.**
- **HFES engineers do not assist with CMS Nursing Home (LTC) surveys, although they do nursing home plan reviews and also the on-site inspections for construction/renovation projects.**

CMS Principles of Documentation

- **CMS trains the State surveyors in how to survey for them.**

- **State surveyors also must follow the "See it – cite it" rule.**
- **When there are issues the facility should document that they have already identified the issue and are addressing it properly in a timely manner.**

- **Each citation written must include both a**
  - **Deficient practice statement that follows the format" "Based on observation, interview and record review, the facility failed to ___, resulting in harm ___.**
  - **Specific findings which typically read: Findings include: On ___ date, at ___ time, observed XYZ deficiency. ....**
  - **Interview quotes. The findings will often describe or quote facility staff responses to surveyor questions.**

CMS Principles of Documentation - continued

- **When the facility is cited, the CMS surveyor is not allowed to tell you how to correct but can tell you what standard was deficient.**

- **When the facility submits a plan of correction (POC), the surveyor will approve or disapprove to POC. Sometimes there are several tries before the facility comes up with acceptable plan. It helps if the surveyor is specific in the code requirement that the facility failed to meet which helps clarify what exactly the health care facility needs to do to correct the deficient practice.**

- **CMS also requires surveyors to quantify the extent of the deficiency. CMS Nursing Home inspectors have been identifying scope & severity through the matrix for many years. Recently TJC has adopted a similar "Safer Matrix."**

Common Issues Found on HFES and CMS surveys

HVAC Maintenance

Filters blown out – wet or overloaded.

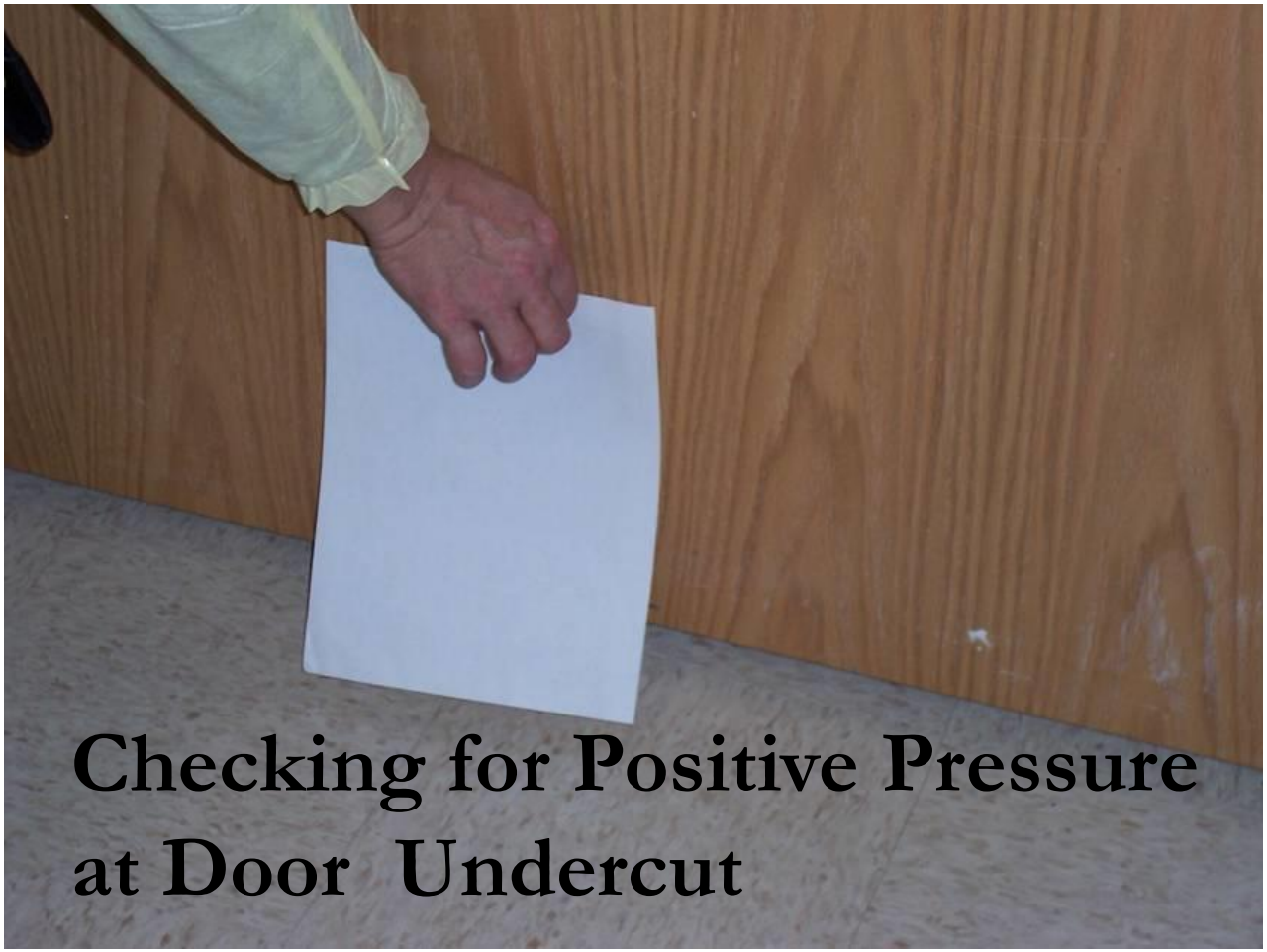
Surveyor will check for documentation of HVAC PM including filter changes.

Time to Change Pre-filters?

Air filters do not fit tightly – allow bypass

- Recommend use of foam… on door be sure to achieve full seal
- Often filler strips in filter bank don’t fit if new filters are slightly different size
- More critical of an issue with final filters as opposed to pre-filters
- Also helps keep coils clean

High Density Rubber foam makes for a better seal


Checking for Positive Pressure
at Door Undercut

Rule of Thumb: Air flow must always be from clean to less clean

Often air flow between decontam and central sterile processing clean room is wrong.

Operating rooms must always be positive in pressure relationship to all adjacent areas.

What about other rooms…?

- **Corridor outside OR (less than OR and less than clean room)**
- **Operating Rm pressure +++**

  (pos to all adjacent areas**)**
- **Sterile supply room ++**
- **Central Sterile Processing clean rm +**
- **Decontam room - -**

  (neg to all adjacent areas)

No Discernible Exhaust – Problem Found

CMS Temperature & Humidity Concerns

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop C2-21-16
Baltimore, Maryland 21244-1850

Center for Clinical Standards and Quality/Survey & Certification Group

Ref: S&C: 13-25-LSC & ASC

DATE: April 19, 2013

TO: State Survey Agency Directors

FROM: Director
Survey and Certification Group

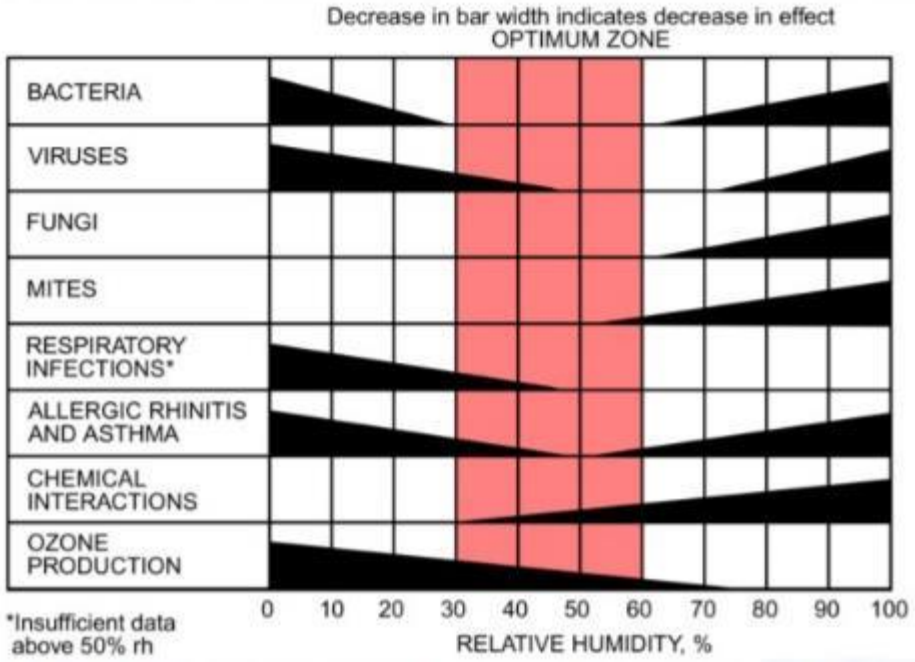
SUBJECT: Relative Humidity (RH): Waiver of Life Safety Code (LSC) Anesthetizing Location Requirements; Discussion of Ambulatory Surgical Center (ASC) Operating Room Requirements

Memorandum Summary

- ***RH of ≥20 Percent Permitted in Anesthetizing Locations:*** The Centers for Medicare & Medicaid Services (CMS) is issuing a categorical LSC waiver permitting new and existing ventilation systems supplying hospital and critical access hospital (CAH) anesthetizing locations to operate with a RH of ≥20 percent, instead of ≥35 percent. We are also recommending that RH not exceed 60 percent in these locations.
- ***This Waiver Does Not Apply:***
  - When more stringent RH control levels are required by State or local laws and regulations; or
  - Where reduction in RH would negatively affect ventilation system performance.
- ***Hospitals & CAHs Must Elect to Use the Categorical Waiver:***
  - Individual waiver applications are not required, but facilities are expected to have written documentation that they have elected to use the waiver.
  - At the entrance conference for any survey assessing LSC compliance, a facility that has elected to use this waiver must notify the survey team.
- ***Ongoing Requirements:***
  - Facilities must monitor RH in anesthetizing locations and take corrective actions when needed to ensure RH remains at or above 20 percent.
- ***ASCs:*** ASCs are not subject to all of the same LSC requirements as hospitals, but are required, consistent with 42 CFR 416.44(a)(1), to maintain RH in operating rooms in accordance with nationally accepted guidelines.
- ***State Operations Manual (SOM) Appendices A, I, L & W are being updated accordingly.***

Historical Humidity and Health Research

- **Research primarily started in 1960s with a focus on allergies**
- **The Sterling Chart was first published in 1985[1]**
  - Focus is allergens, pathogens, chemicals and ozone
- **Updated by ASHRAE [2]**
  - Common reference for building design criteria
  - Mid-range humidity 30-60% is optimal for occupancy



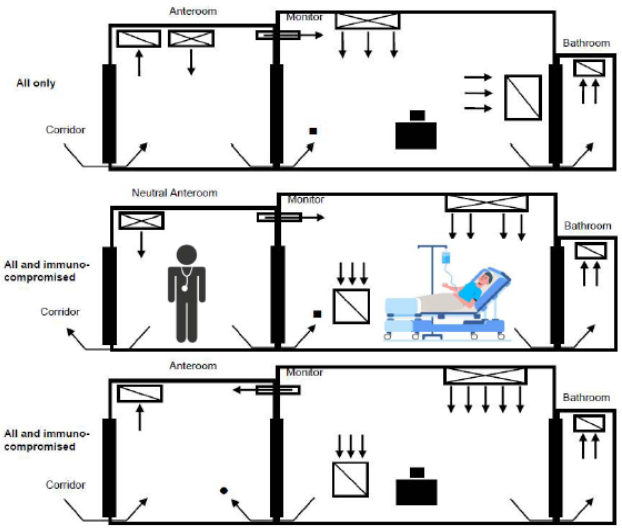
[2]2016 ASHRAE HVAC Systems and Equipment Handbook – Ch 22

[1] E.M. Sterling, A. Arundel, and T.D. Sterling, *Criteria for Human Exposure to Humidity in Occupied Buildings* (ASHRAE Transactions, 1985), Vol. 91, Part 1

What do you think of these 3 CDC approved options

Isolation Room Design

Figure 4. Example of airborne infection isolation (AII) room with anteroom and neutral anteroom* + §



Protects people outside of room from patient and patient inside room from people in Hallway

Source: CDC Guidelines for Environmental Infection Control in Health-Care Facilities https://www.cdc.gov/infectioncontrol/pdf/guidelines/environmental-guidelines-P.pdf

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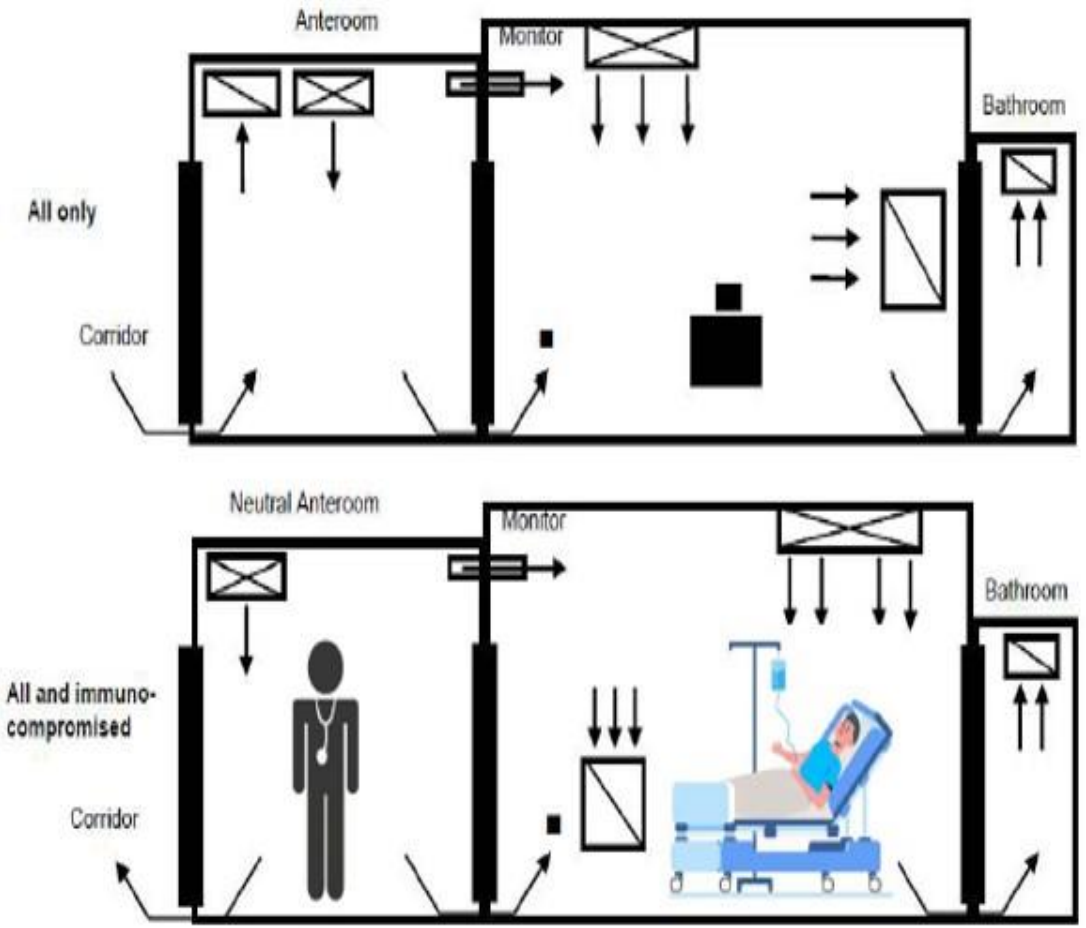
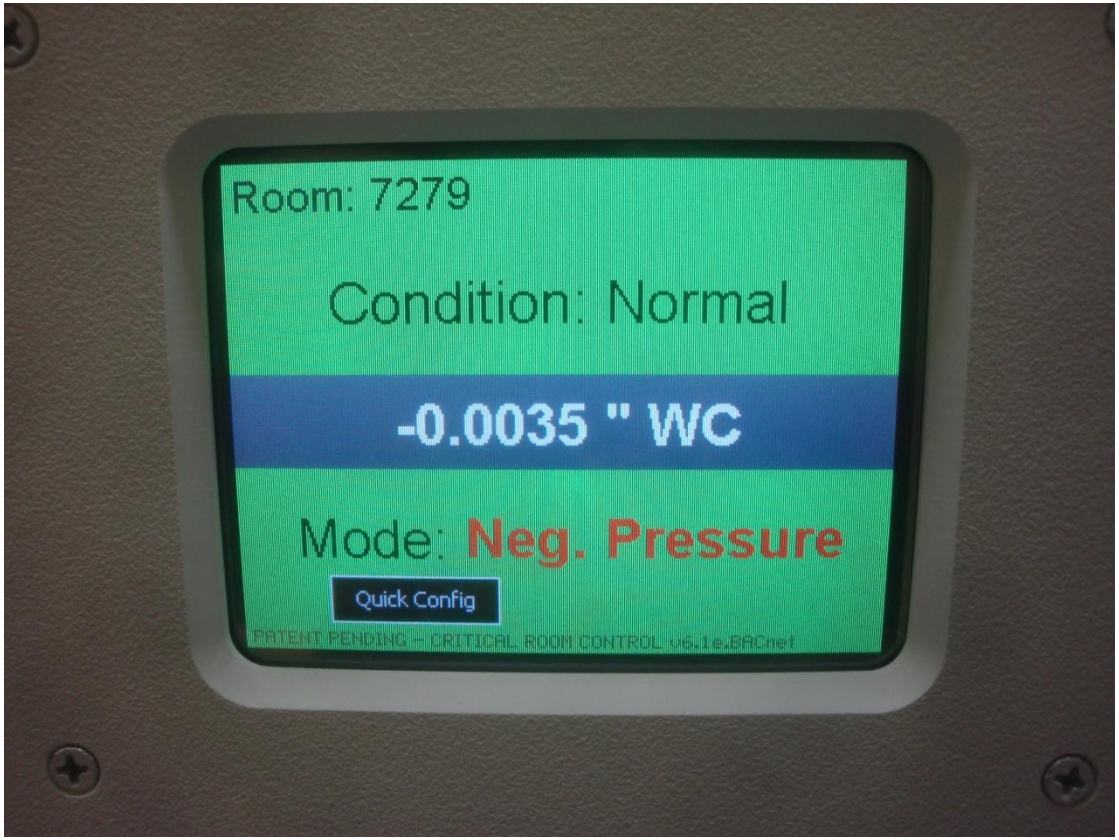
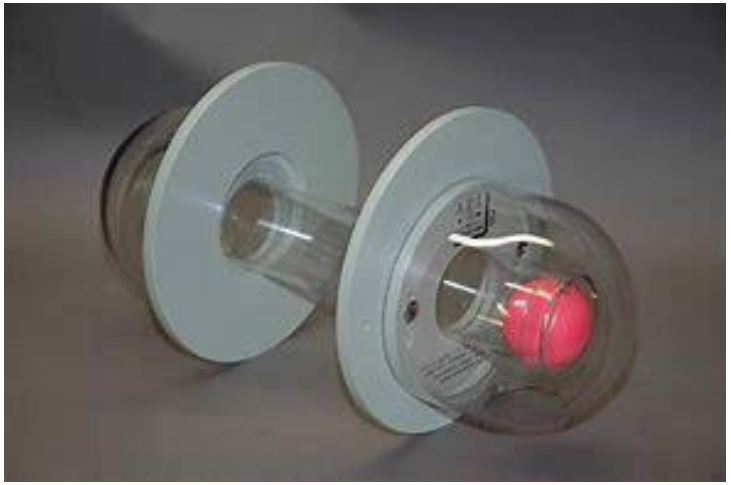
Protects people outside of room from patient and patient inside room from people in Hallway



What's Wrong with this Picture?



Room Pressure Monitors (visual or audible type required by FGI 2.1-2.4.2.5)



- Must have - 0.01 in wc for neg pressure airborne infection isolation rooms (AIIRs)
- Note: Recommend – 0.01 to - 0.03 inch wc for construction zones. See ICRA 2.0

Isolation Rms - to ante or not to ante?

- Ventilation (12 ACH, 0.01 in wc neg)
- To Ante or not (Ante rooms not required but recommended) 2022 FGI added appendix info to guide where anterooms are needed.
- Pressure alarms: audible or visual
- All isolation room exit doors required to have self-closers (unless you have audible alarm) 2.1-2.4.2.4

Infection Prevention

Isolation Exhaust Signage A-OK

Isolation Fan Signage – Not OK

Just Saying "Isolation Fan" is not a warning.

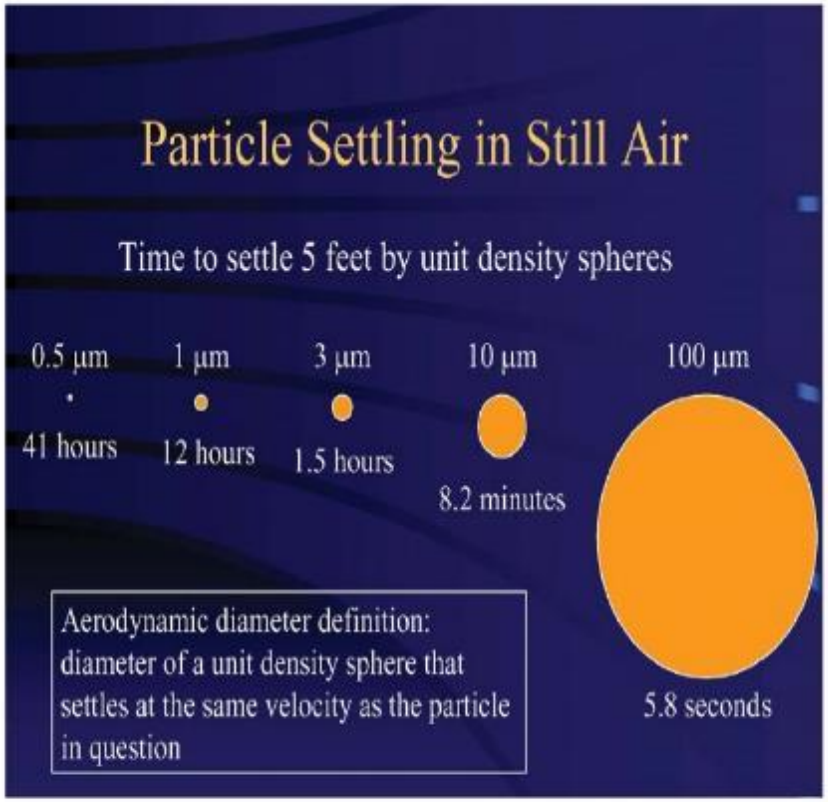
- **No biohazard sign**
- **No cautionary statements**
- **Etc.**

Infectious Aerosols: ASHRAE Whitepaper

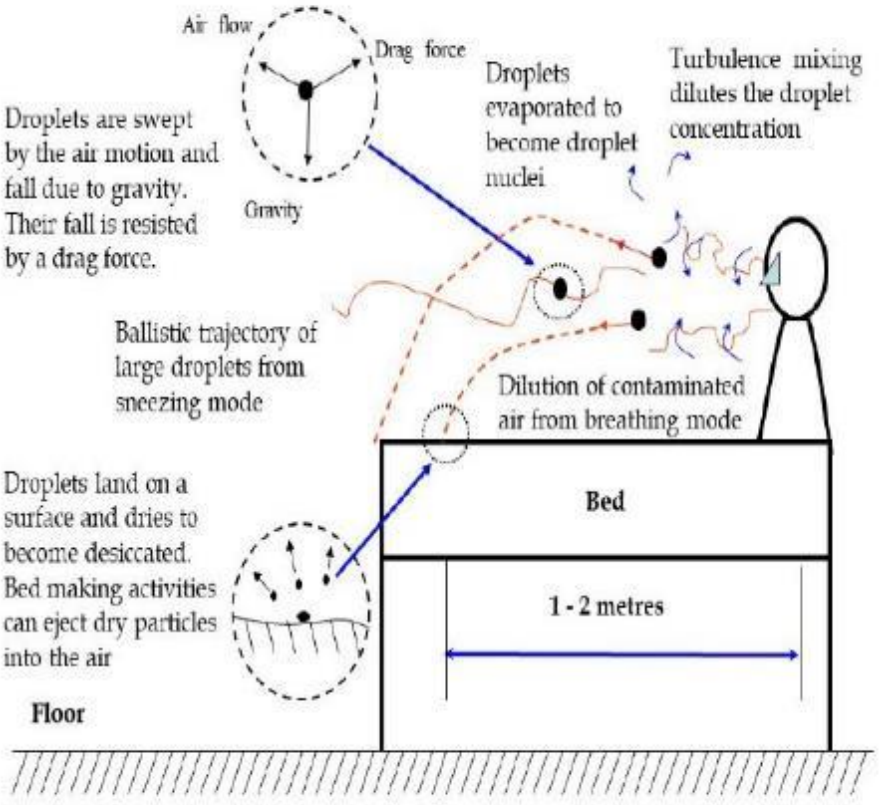
* The minimum filtration efficiency typically occurs for particles in the vicinity of **0.3 µm** in diameter.

- Those smaller than this "**most penetrating particle size**" are captured with greater efficiency because their Brownian motion (allowing diffusion at an atomic level) causes them to collide with fibres in the filter at a high rate.
- Particles larger than this limiting diameter are efficiently removed through impaction and interception.

Infectious Aerosols



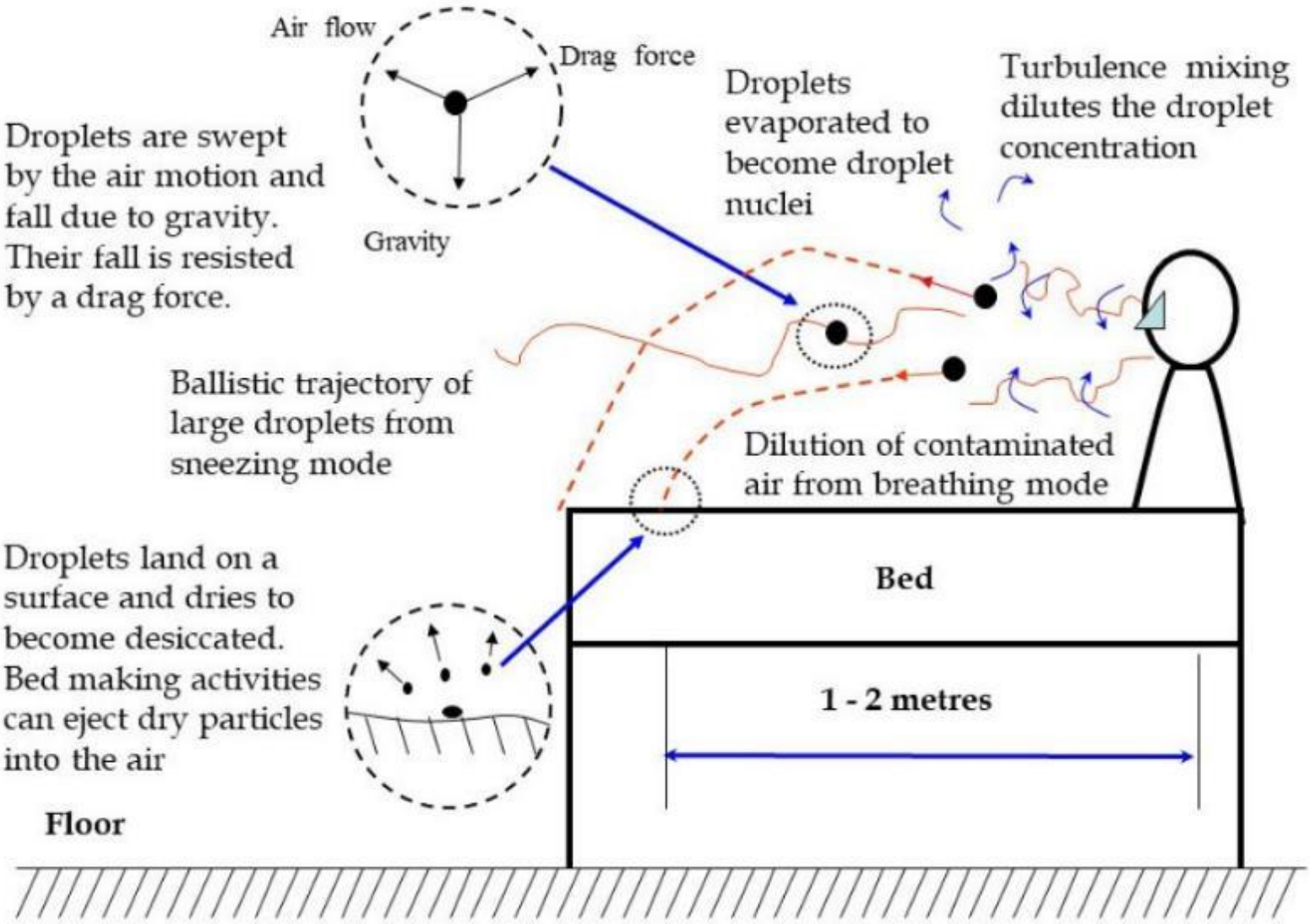
(a)



(b)

Figure 1 (a) Comparative settling times by particle diameter for particles settling in still air (Baron n.d.) and (b) theoretical aerobiology of transmission of droplets and small airborne particles produced by an infected patient with an acute infection (courtesy Yuguo Li).

Infectious
Aerosols

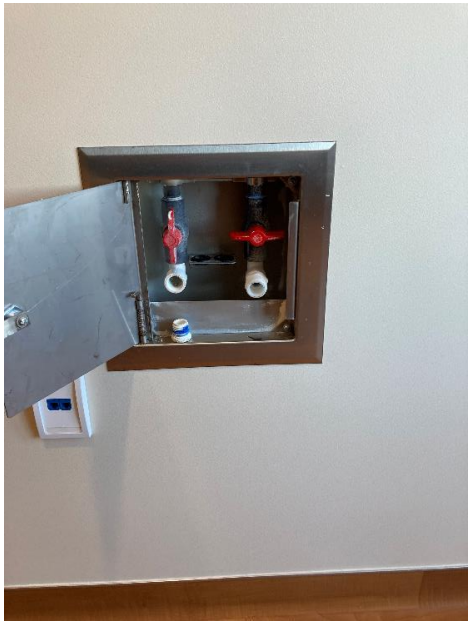


2.1 Airborne Dissemination

Pathogen dissemination through the air occurs through droplets and aerosols typically generated by coughing, sneezing, shouting, breathing, toilet flushing, some medical procedures, singing, and talking (Bischoff et al. 2013; Yan et al. 2018). The majority of larger emitted droplets are drawn by gravity to land on surfaces within about 3–7 ft (1–2 m) from the source (see Figure 1). General dilution ventilation and pressure differentials do not significantly influence short-range transmission.

Conversely, dissemination of smaller infectious aerosols, including droplet nuclei resulting from desiccation, can be affected by airflow patterns in a space in general and airflow patterns surrounding the source in particular. Of special interest are small aerosols (<10 µm), which can stay airborne and infectious for extended periods (several minutes, hours, or days) and thus can travel longer distances and infect secondary hosts who had no contact with the primary host.

Many diseases are known to have high transmission rates via larger droplets when susceptible individuals are within close proximity, about 3–7 ft (1–2 m) (Nicas 2009; Li 2011). Depending on environmental factors, these large (100 µm diameter) droplets may shrink by evaporation before they settle, thus becoming an aerosol (approximately <10 µm). The term *droplet nuclei* has been used to describe such desiccation of droplets into aerosols (Siegel et al. 2007). While ventilation systems cannot interrupt the rapid settling of large droplets, they can influence the transmission of droplet nuclei infectious aerosols. Directional airflow can create clean-to-dirty flow patterns and move infectious aerosols to be captured or exhausted.



Inpatient Dialysis water boxes

- Required in ICU patient rooms.
- Water supply must be protected with RPZ backflow.
- OK to have one RPZ protect series of water boxes, but can't loop back into potable water supply, thus it is essentially dead ended since not used often. **(Some AHJs require one RPZ per water box)**
- Recommend plumbing past last water box to a janitor closet or other drain and install automatic valve to open and flush water at least weekly.
- **Note: FGI 2022 does not allow shared water boxes.**

RPZ Not Tested Annually

Date on tag is over 12 months.

Eyewash Flow Too Low ?

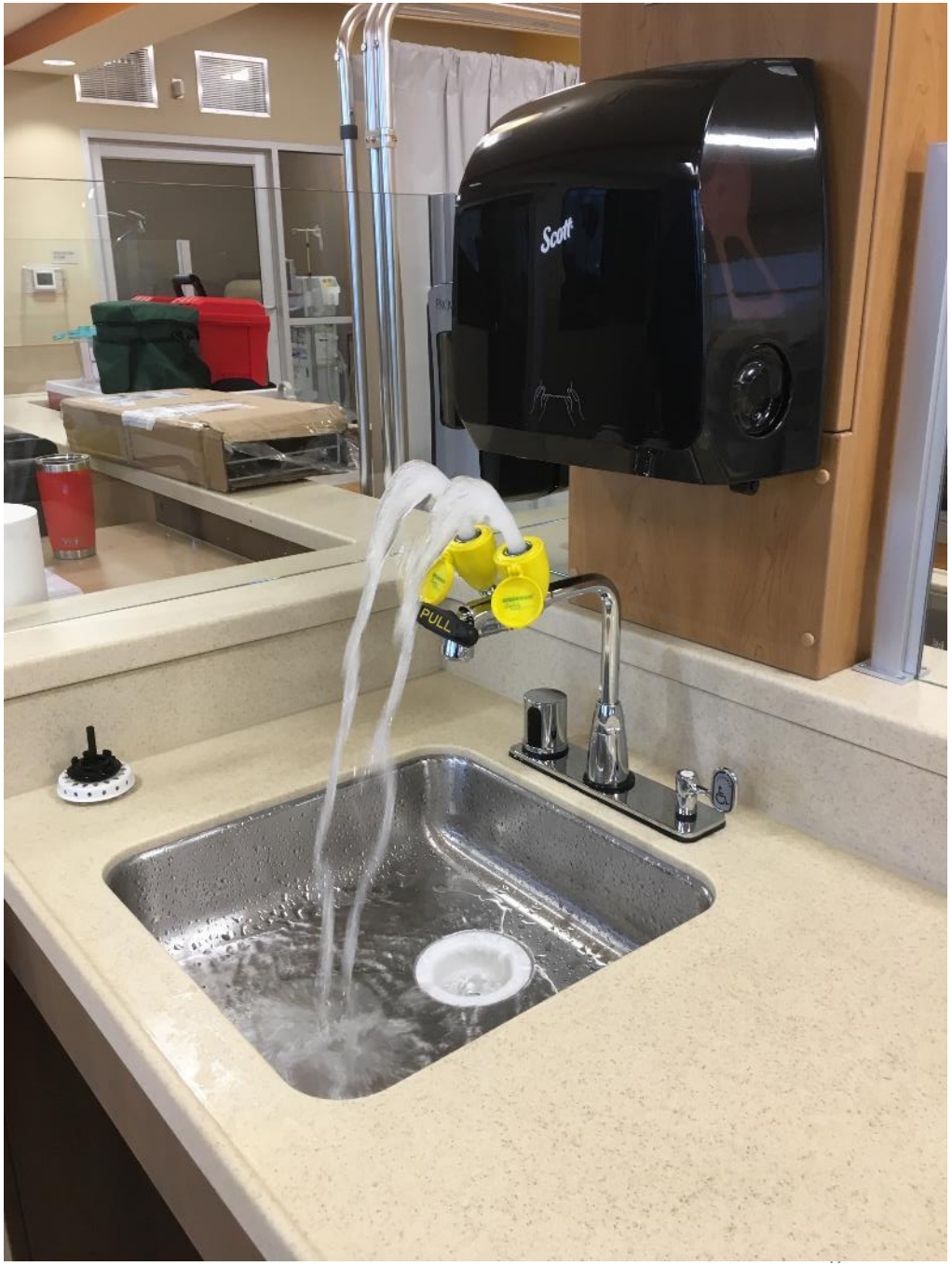
See MiOSHA Agency Instruction on emergency eyewash.

Revised April 2018

Eyewash with correct flow

Often staff conducting eyewash are not aware of actual requirements for eyewash testing:

- 3 min flush
- Don’t take dust caps off before testing – let test blow off dust caps,
- Adequate flow of water
- Tepid water 60 – 100 F
- Activate within 1 second and it must remain on for use hands free



Another Proper Eyewash Facility

Sample Wall hung sink with eyewash flow that doesn't flow over the rim of the sink when tested

- More likely to be tested by staff for full required time
- Flow meets OSHA requirements
- Activates in less than 1 second
- Tepid water (60 – 100 F)

MiOSHA Publishes Updated Emergency Eyewash/Shower Agency Instruction April 12, 2018

A revised Agency Instruction on Eyewash/Showers has several significant changes including changing the criteria for what triggers the need for an eyewash (no longer based on pH but utilizing the Safety Data Sheet to determine if the chemical is injurious or corrosive).

- Eliminate the 25 ft and 100 ft travel distances & now has a 10 sec travel distance rule consistent with ANSI Z358.1.
- Clarified that eyewash which requires two motions are acceptable if they are simple motions that can both be accomplished in less than 1 second.
- Kept the Housekeeping exception provisions which state:

Custodial/Housekeeping Activities. Custodial and housekeeping staff typically handle and may be exposed to chemical products (cleaning chemicals) that are injurious or corrosive. Emergency eyewash/shower facilities and PPE are required at the dispensing station for the injurious or corrosive chemicals. PPE is required when handling injurious or corrosive materials as part of the traveling portion of the job, for example when the custodian/housekeeper goes from room to room or machine to machine, as a custodian/housekeeper would in a hotel, school, nursing home, or factory. ***A standard eyewash station is not required in the traveling portion of a custodian/housekeeper's job.*** *Hazard Communication training is required for both the dispensing station and the traveling portion of typical custodial/housekeeping tasks.*

For a pdf copy of this Agency Instruction follow the MIOSHA link at

https://w2.lara.state.mi.us/ADMS/File/ViewDmsDocument/13234

Eyewash Portable Bottles not Compliant here

Nursing Home Dialysis Den

Review of Water Management Plan what surveyors look for:

- **For starters, CMS simply wants to verify you have a water mgt plan. There are also TJC standards.**
- **Next… Are you meeting as a committee and following the plan?**

- The **CMS June 2017 S&C 17-30 memo** states:

Surveyors will review policies, procedures, and reports documenting water management implementation results to verify that facilities:

• **Conduct a facility risk assessment** to identify where *Legionella* and other opportunistic waterborne pathogens (e.g. *Pseudomonas*, *Acinetobacter*, *Burkholderia*, *Stenotrophomonas*, nontuberculous mycobacteria, and fungi) could grow and spread in the facility water system.

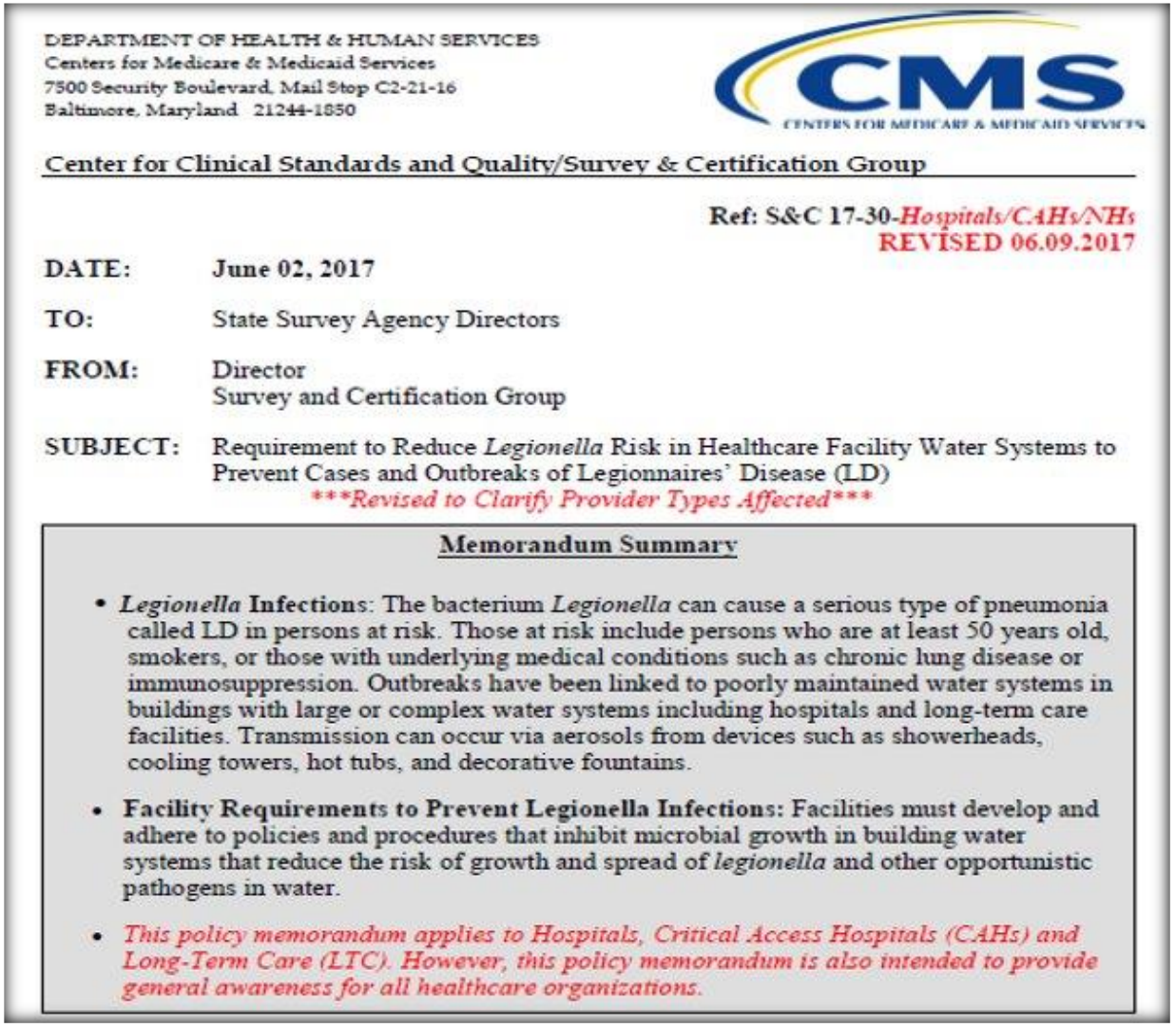
• **Implement a water management program** that considers the ASHRAE industry standard and the CDC toolkit, and includes control measures such as physical controls, temperature management, disinfectant level control, visual inspections, and environmental testing for pathogens.

• **Specify testing protocols and acceptable ranges for control measures**, and document the results of testing and corrective actions taken when control limits are not maintained.

PGZ Note: At this point testing does not necessarily include sampling for Legionella or other organisms, but whatever testing you are doing be sure to be consistent and to document action taken when you are above your action level.

DEQ also concerned that if you have an on-site water treatment system that you ensure it is running properly and if routine testing parameters are trending out of line, what corrective action are you taking and are you being responsible to ensure the safety of all building occupants using/drinking the water?

CMS Memorandum, QSO-17-30



DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
7500 Security Boulevard, Mail Stop C2-21-16
Baltimore, Maryland 21244-1850

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

Center for Clinical Standards and Quality/Survey & Certification Group

Ref: S&C 17-30-*Hospitals/CAHs/NHs*
REVISED 06.09.2017

DATE: June 02, 2017

TO: State Survey Agency Directors

FROM: Director
Survey and Certification Group

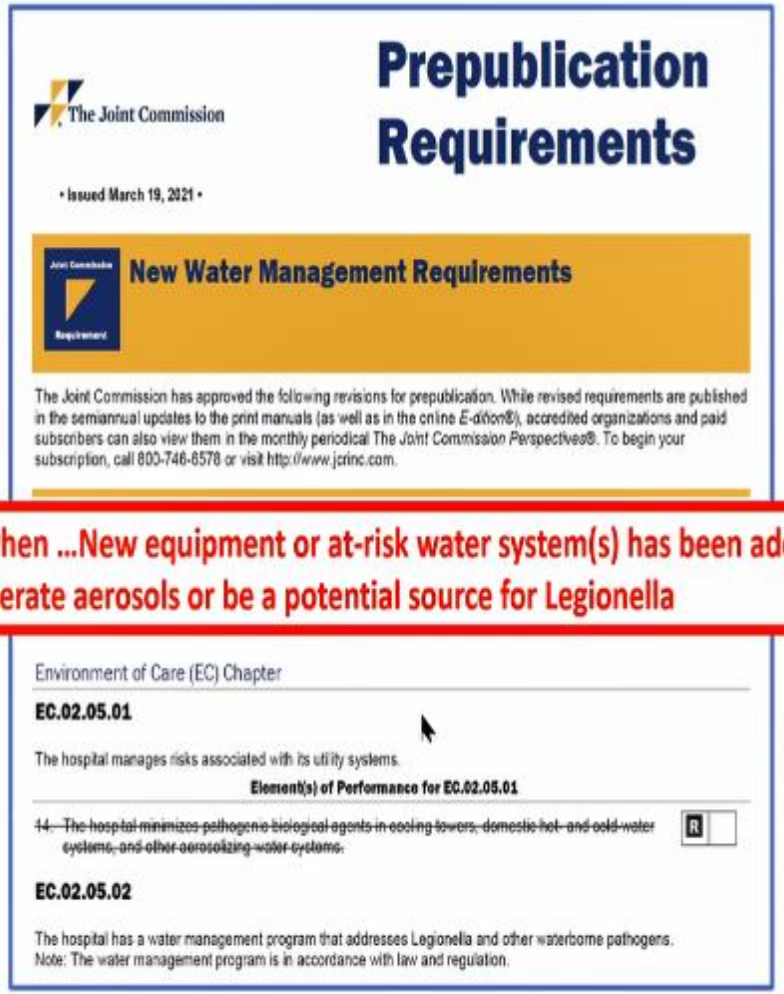
SUBJECT: Requirement to Reduce *Legionella* Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD)
****Revised to Clarify Provider Types Affected****

Memorandum Summary

- ***Legionella* Infections**: The bacterium *Legionella* can cause a serious type of pneumonia called LD in persons at risk. Those at risk include persons who are at least 50 years old, smokers, or those with underlying medical conditions such as chronic lung disease or immunosuppression. Outbreaks have been linked to poorly maintained water systems in buildings with large or complex water systems including hospitals and long-term care facilities. Transmission can occur via aerosols from devices such as showerheads, cooling towers, hot tubs, and decorative fountains.
- **Facility Requirements to Prevent Legionella Infections:** Facilities must develop and adhere to policies and procedures that inhibit microbial growth in building water systems that reduce the risk of growth and spread of *legionella* and other opportunistic pathogens in water.
- *This policy memorandum applies to Hospitals, Critical Access Hospitals (CAHs) and Long-Term Care (LTC). However, this policy memorandum is also intended to provide general awareness for all healthcare organizations.*

- **Released June 2017**
- **Requires healthcare facilities to develop and adhere to policies to inhibit microbial growth in building water systems (water management programs)**
- **Effective Immediately**

New Water Management Standards



The Joint Commission

Prepublication Requirements

• Issued March 19, 2021 •

New Water Management Requirements

The Joint Commission has approved the following revisions for prepublication. While revised requirements are published in the semiannual updates to the print manuals (as well as in the online *E-dition*®), accredited organizations and paid subscribers can also view them in the monthly periodical The *Joint Commission Perspectives*®. To begin your subscription, call 800-746-6578 or visit http://www.jcrinc.com.

Environment of Care (EC) Chapter

EC.02.05.01

The hospital manages risks associated with its utility systems.

Element(s) of Performance for EC.02.05.01

~~14. The hospital minimizes pathogens biological agents in cooling towers, domestic hot- and cold-water systems, and other aerosolizing water systems.~~ R

EC.02.05.02

The hospital has a water management program that addresses Legionella and other waterborne pathogens.
Note: The water management program is in accordance with law and regulation.

Applies when …New equipment or at-risk water system(s) has been added that could generate aerosols or be a potential source for Legionella

https://www.jointcommission.org/-/media/tjc/documents/standards/prepublications/water_management_prepub_hap.pdf

The Joint Commission

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Review of Water Management Plan what surveyors look for:

- **For starters, CMS simply wants to verify you have a water mgt plan.**
- **Next… Are you meeting as a committee and following the plan?**

- The **CMS June 2017 S&C 17-30 memo** states:

Surveyors will review policies, procedures, and reports documenting water management implementation results to verify that facilities:

• **Conduct a facility risk assessment** to identify where *Legionella* and other opportunistic waterborne pathogens (e.g. *Pseudomonas*, *Acinetobacter*, *Burkholderia*, *Stenotrophomonas*, nontuberculous mycobacteria, and fungi) could grow and spread in the facility water system.

• **Implement a water management program** that considers the ASHRAE industry standard and the CDC toolkit, and includes control measures such as physical controls, temperature management, disinfectant level control, visual inspections, and environmental testing for pathogens.

• **Specify testing protocols and acceptable ranges for control measures**, and document the results of testing and corrective actions taken when control limits are not maintained.

Note: At this point testing does not necessarily include sampling for Legionella or other organisms, but whatever testing you are doing be sure to be consistent and to document action taken when you are above your action level.

DEQ also concerned that if you have an on-site water treatment system that you ensure it is running properly and if routine testing parameters are trending out of line, what corrective action are you taking and are you being responsible to ensure the safety of all building occupants using/drinking the water?

What do we see while on survey?

- Lack of a MWP team, not meeting as a team.
- A printed CDC Toolkit or a consultant template, but nothing is specific to the facility.
- No control measures specified.
- No corrective actions to be taken when control limits are not met.
- WMP has not been revisited or updated with current staff.

Management of Dead-End Plumbing per 2018 FGI Guidelines

- For renovation of existing HC facilities, per FGI, all dead-end piping must be removed. Note: 2007 Min Design Stds in Mi allowed dead legs up to 6 inches in length to remain.
- For new construction, dead end piping is not permitted (not even for future expansion).
- In new healthcare construction, unrecirculated hot water runs longer than 25 ft are prohibited (2022 FGI limits to 10 ft)

We Also See This

Issues with Low Water Flow and Water Age

Management of Low Use Fixtures

- ASHRAE 188 requires WMP which must address water age, low flow water lines.
- Draft ASHRAE 514 addresses disinfection and flushing of low use plumbing in construction
- Inadequate flushing of unused or minimally used fixtures can be cited during CMS surveys. Must be addressed in WMP and the facility must follow their WMP.

https://www.ashrae.org/technical-resources/standards-and-guidelines/public-review-drafts

Enteprise Citrix - IN... Accela Automation... GoToTraining | GoT... MILogin - Home Pa... QSEP - Driving Heal... RNP5838791AFF9E... ASHE Advocacy an... RNP5838791C0634... ComputerLine, Mo...

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DRAFT ASHRAE 514p *Risk Management for Building Water Systems: Physical, Chemical and Microbial Hazards,*

- Addresses Water age in Construction Start Up Procedures
- Includes requirements for flushing/disinfection of potable water premise plumbing in construction not yet occupied.

ASHRAE 514 Start-up Flushing and Disinfection Procedures

- **7.4 *Start-up* Procedures.** Instructions for placing all *building water systems* into operation, and for confirming that the systems are operating as designed, *shall* be provided to the building *owner* or *designee*, and *shall* include the following:

1. Procedures for flushing and *disinfection*:
2. Procedures *shall* comply with all applicable national, regional, and local codes and regulations.
3. Flushing, *disinfection*, and final flushing of *potable building water systems shall* be completed within three weeks prior to *beneficial occupancy*.
4. **If *beneficial occupancy* of any part of the building is delayed more than two weeks but less than four weeks after *disinfection*, flushing of all fixtures *shall* again be completed.**
5. If *beneficial occupancy* of any part of the building is delayed four weeks or more after *disinfection*, the need for *disinfection*, flushing, or both *disinfection* and flushing of unoccupied areas *shall* be determined by the *Program Team*.

Beneficial Occupancy defined

The term ***beneficial occupancy*** is defined in the glossary as: *stage of construction when all or part of a building is to be occupied for the purpose that the building was constructed, whether before or after completion.*

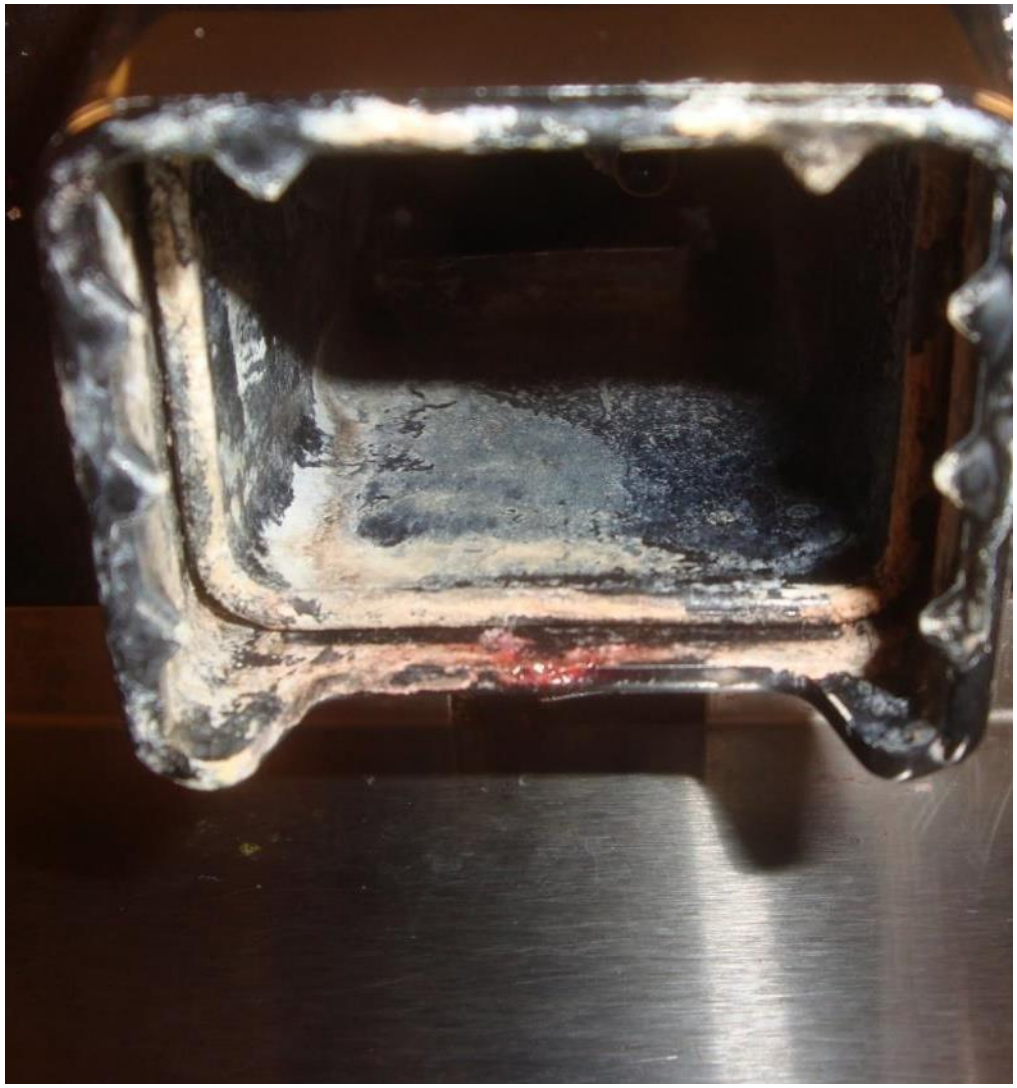
The requirement in section e.2.i essentially requires new construction projects to ensure timing of flushing and disinfecting the potable water system within 2 weeks of “beneficial occupancy.”

Editor’s note*: Although this recommended timeframe may change before the final version of ASHRAE 514 is approved, it seems to be consistent with other guidance current in the industry today.*

Monthly flushing of stagnant or unused plumbing fixtures in healthcare facilities now seems to be too long of a period to wait. Weekly flushing or maybe every other week seems more acceptable.

Proper Care & Feeding of Your Ice Machines

- Follow manufacture cleaning sched or MORE if you are not ultra-filtering (0.2 micron or less).
- Also, if not ultra-filtering do not use carbon filters unless you clean much more frequently.



Ultra Filters for Ice Machines

Recommend a minimum of 0.2 or 0.5 micron filter.

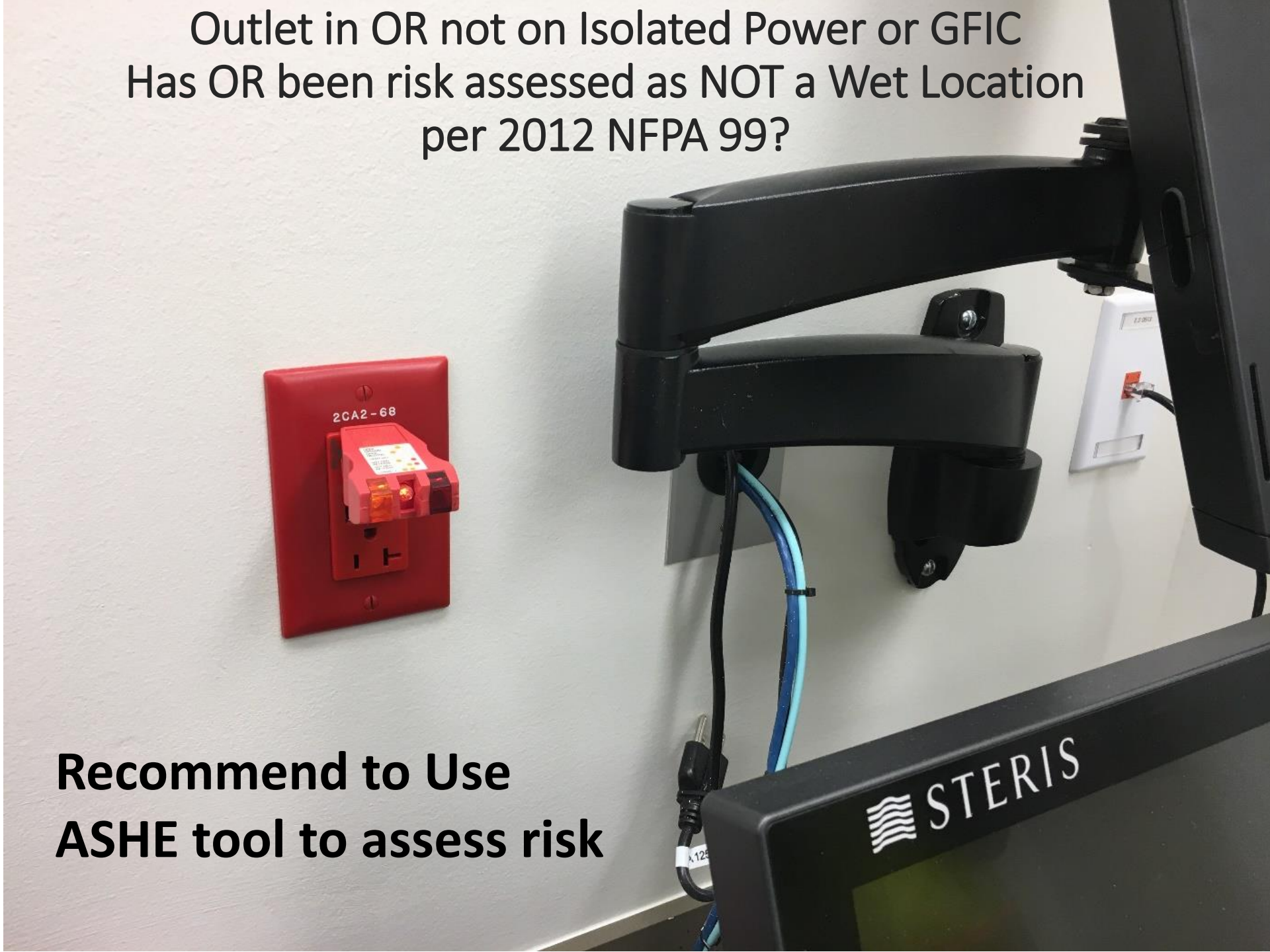
The Joint Commission FAQ on Ice Machine Cleaning

It is suggested that your facility should not just follow manufacturer's recommended maintenance schedule without first identifying known risks as described in this article. In fact, The Joint Commission considers ice machines to be high risk and offers the following FAQ:

Ice machines are considered utilities system components that require a maintenance strategy per The Joint Commission standard EC.02.05.01 EP 1 through 7, and EP 14. Per these elements of performance, the organization evaluates and determines maintenance activities and intervals of maintenance based upon manufacturer's recommendations or an alternate equipment maintenance (AEM) program. Ice machines that provide patient nutrition are high-risk utility system components since they have an infection control risk as described within EC.02.05.01, where the organization is to minimize pathogenic biological agents in domestic cold water systems. Therefore, the hospital should pay particular attention to evaluate the requirement for infection prevention through activities such as supply water filtration, disinfection of ice machine internal parts, cleanliness of ice machine bins, build-up of water deposits, etc. It is important for a hospital to know the quality of their water service, the condition of their domestic water distribution system, and the design/condition of their ice machine equipment in order to establish an effective maintenance strategy. If maintenance tasks and frequencies are not established by manufacturer's recommendations, assessment described by EC.02.05.01 is to be used to determine an AEM program to satisfy the organization's particular circumstances. Once established, schedule maintenance is to be completed in accordance with EC.02.05.05. [EC.02.05.01]

Correct Height of Vacuum Breaker for Clinical Sink ?

- Mi Plumbing Code requires min height of 6 feet for healthcare
- If Home for the Aged, may not be considered healthcare so the lower height may be accepted by local plumbing inspectors.
- Note: For purposes of Fire Safety and construction type, HFA are considered Health Care.


Outlet in OR not on Isolated Power or GFIC
Has OR been risk assessed as NOT a Wet Location per 2012 NFPA 99?
2CA2-68
STERIS
Recommend to Use
ASHE tool to assess risk

ASHE Wet Location Tool

This tool can be used to assess operating rooms to determine whether they are wet procedure locations. The tool can be used to help comply with the 2012 edition of NFPA 99. See https://www.ashe.org/resources/wetloctool

Wet Procedure Room Risk Assessment

Facility Name	
Facility Address	
Date of Assessment	
Room Name / Number	
How many procedures are performed at this location per year?	

(Press ALT+Enter for a second line)

Identify who was on the assessment group

- ☐ Facility Manager
- ☐ Surgery Staff
- ☐ Bio-Med
- ☐ Engineer
- ☐ Nurse Mng.
- ☐ Anesthesiologist
- ☐ CRNA
- ☐ Housekeeping

Others:

1	Have there ever been incidents of electrical shock to staff or patients in this area?	Select From List
1a	If so were those investigated and the source determined and fixed	Select From List
2	Do you perform procedures that generate standing fluid on the floor?	Select From List
3	Do you perform procedures that generate drenching of the work area?	Select From List
4	Do you have extracting systems to reduce the liquid on the floor?	Select From List
	Do you have line powered cords on the floor within 6 feet of the patient, or line power suspended	

See https://www.ashe.org/resources/wetloctool

Medical Gas Zone Valves not Labeled

Location of Med Gas Zone Valves – OK?

Med Gas Zone Valve box blocked by Door - Violation

2012 NFPA 99 Chapter 5 Med Gas Rqmnts

- 2012 NFPA 99 Health Care Facilities Code
- **5.1.4.8.6** Zone valve boxes shall not be located in closed or locked rooms, areas or closets.
- **5.1.4.8.7** A zone valve shall be ***located immediately outside*** each vital life support area, critical care area and anesthetizing location of moderate sedation, deep sedation or general anesthesia, in each medical gas or vacuum line, or both, located so as to be readily accessible in an emergency.
- **5.1.4.8.7.2** Zone valves shall be so arranged that shutting off the supply of gas to any one operating room or anesthetizing location will not affect the others.
- NFPA 99 commentary states: "The intent of the phrase "immediately outside" also means "near the primary door to".
- Note: Wording in **2021 NFPA 99** for zone valve location has been renumbered to **5.1.4.6.2** and reworded for clarity but still states "immediately outside" the area controlled.

Med Gas Master Alarm panel

Burned out bulbs.

Green light was NOT on before test button pushed.

Multiple Alarms were on with no staff response.

Findings Related to Emergency Generators

1. Heating system for HFAs or cooling for area of refuge in NH not on emergency power.
2. **No challenge testing sealed battery at least monthly.**
3. Generator starting battery not replaced within 5 years. Note: NFPA 110 nonmandatory annex mentions 24 to 30 months.
   A.5.6.4.5.1 It is recommended that lead-acid starting batteries be replaced every 24 to 30 months.
4. Not conducting 4-hour generator run on connected load every 3 yrs
   - Note: 4-hour run is required for natural gas (NG) generators even though load bank is NOT required for NG.
   - Is it OK to not fill out load calculations for natural gas generator runs. I would think so if the only purpose of load calcs is to determine if annual 1.5 hr load bank is needed.
5. On-site fuel tank not kept full enough to meet State 72-hour requirement. (existing hospitals may still only need 24-hour.)

Which location is acceptable?

Generator
Emergency Stop
Location A

Which location is acceptable?

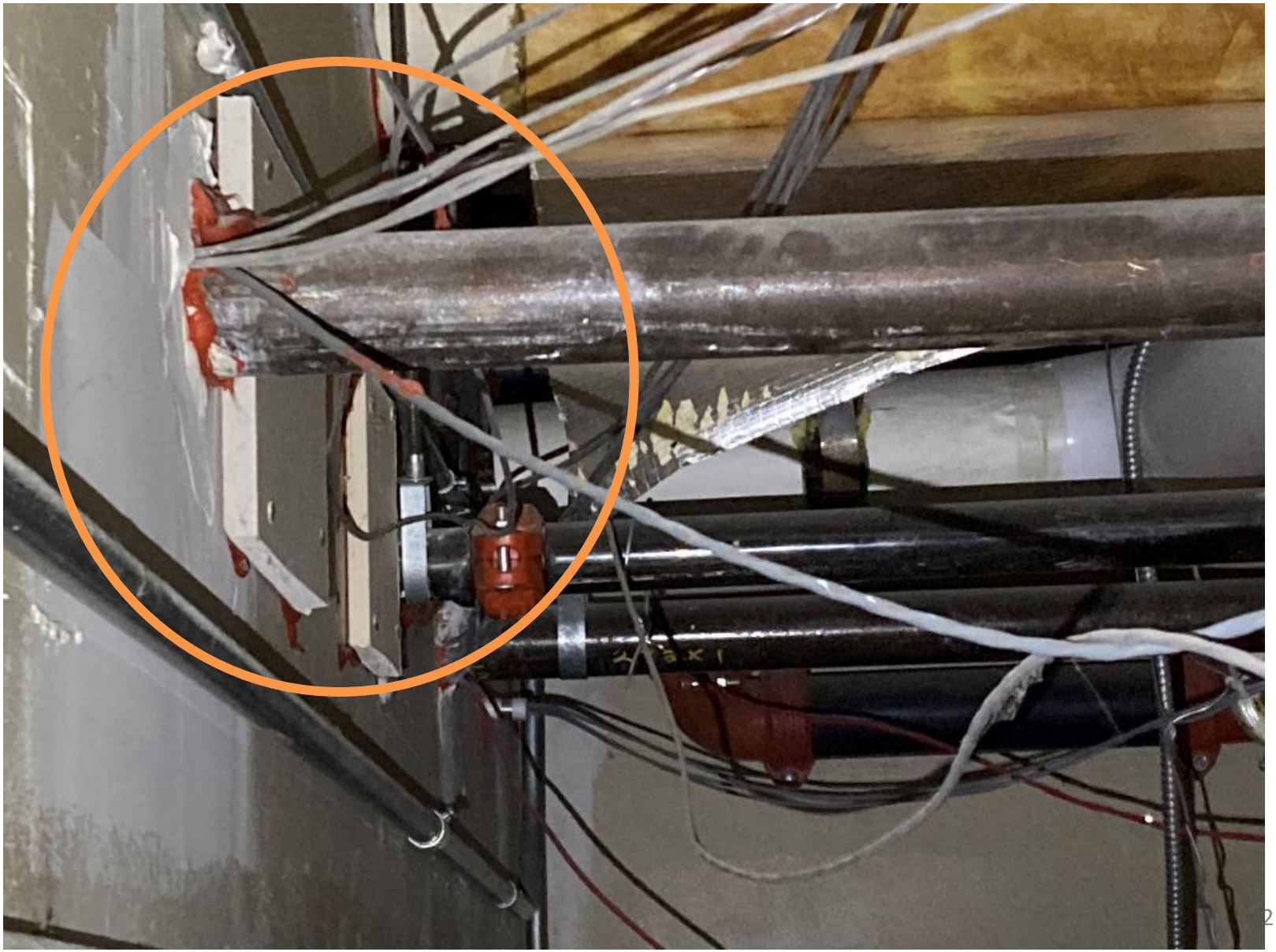
Generator
Emergency Stop
Location B

Paul Bunyan is interested in fire codes so we will have a few Life Safety Slides


Unsealed
Penetrations

Penetrations not sealed properly

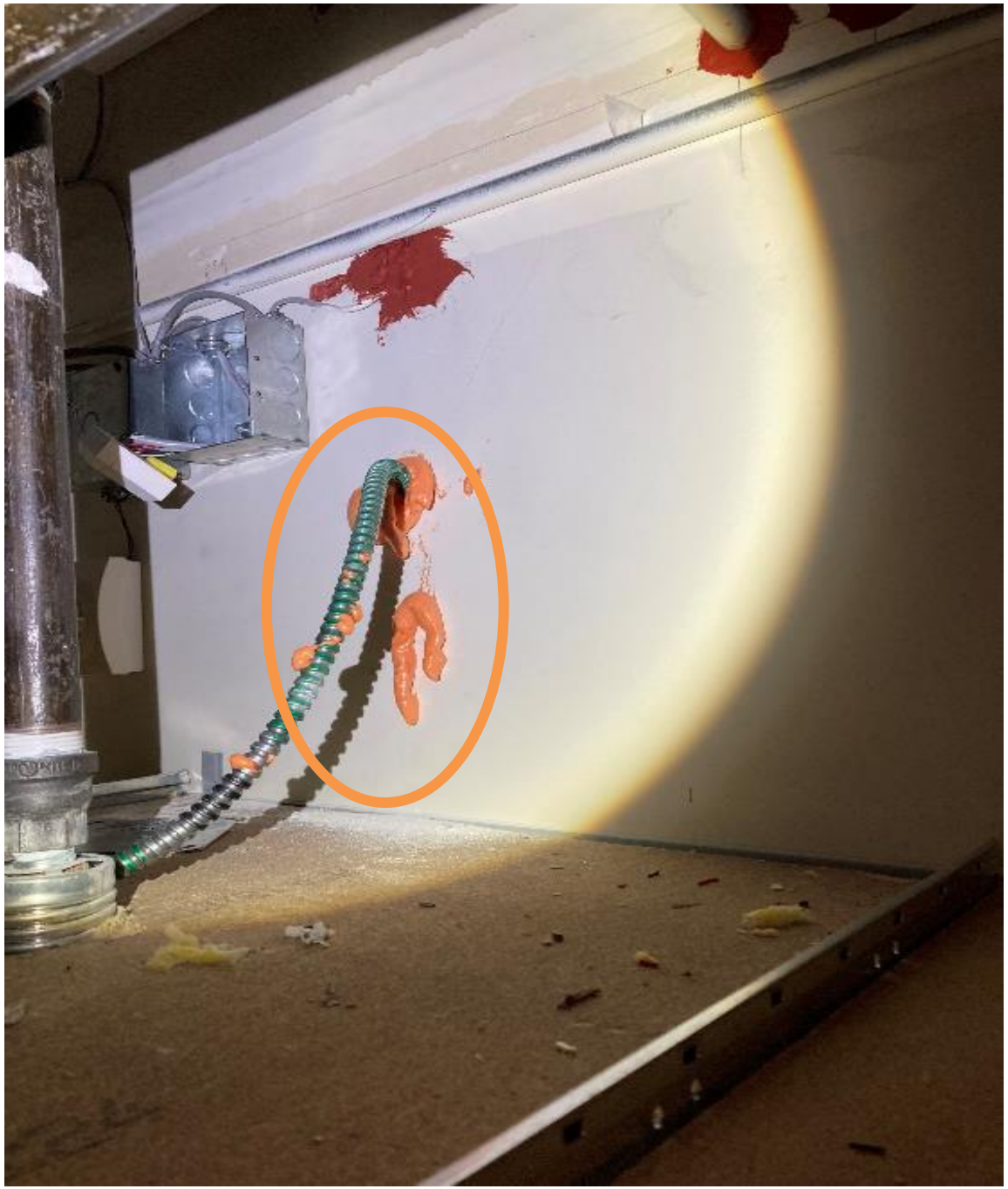
Board on Board patches



Drywall square cut out and put back
-No fire taping

Unsealed Penetrations

Penetrations in Fire Barrier Not Properly Sealed



Sample 1-hour fire rating (Proper vs Improper Fire stop methods)

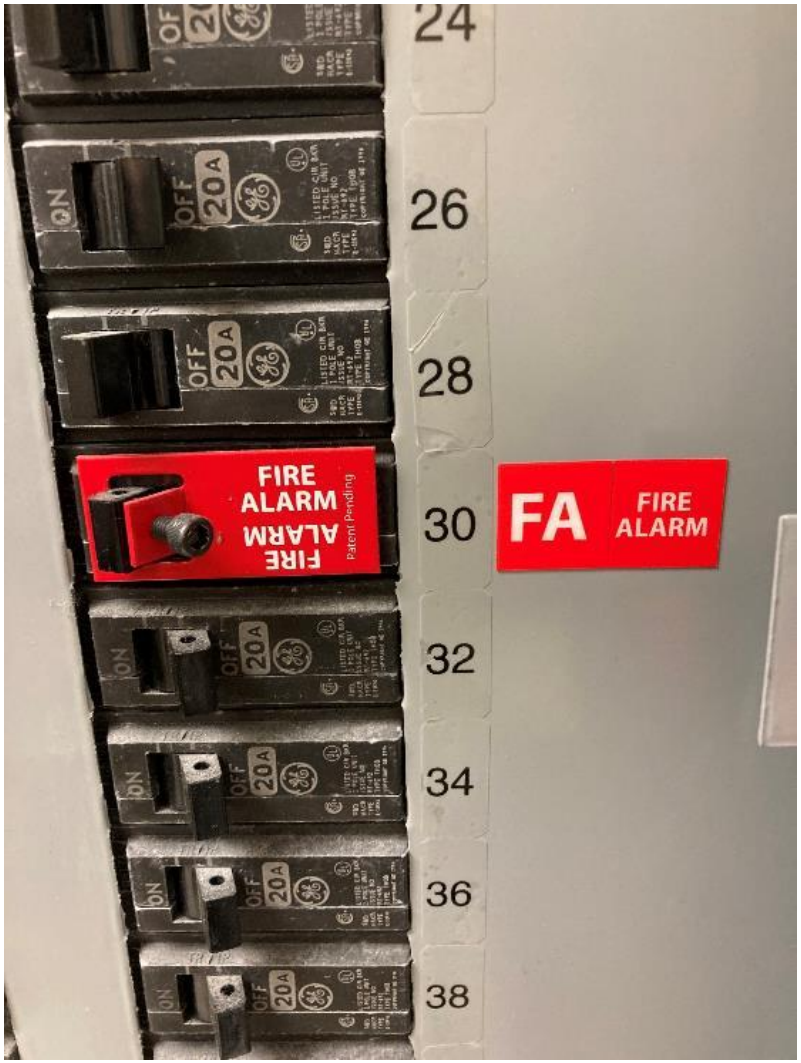
Use Fire Stop not Fire Block

Display by EV Firestop

So this is why we now have an Above Ceiling permit System

Fire Alarm Circuit
Not locked in “On” Position

Proper Color Coding/Labeling and locking FA Circuits



Color Coded Emergency Outlet

Is this acceptable?

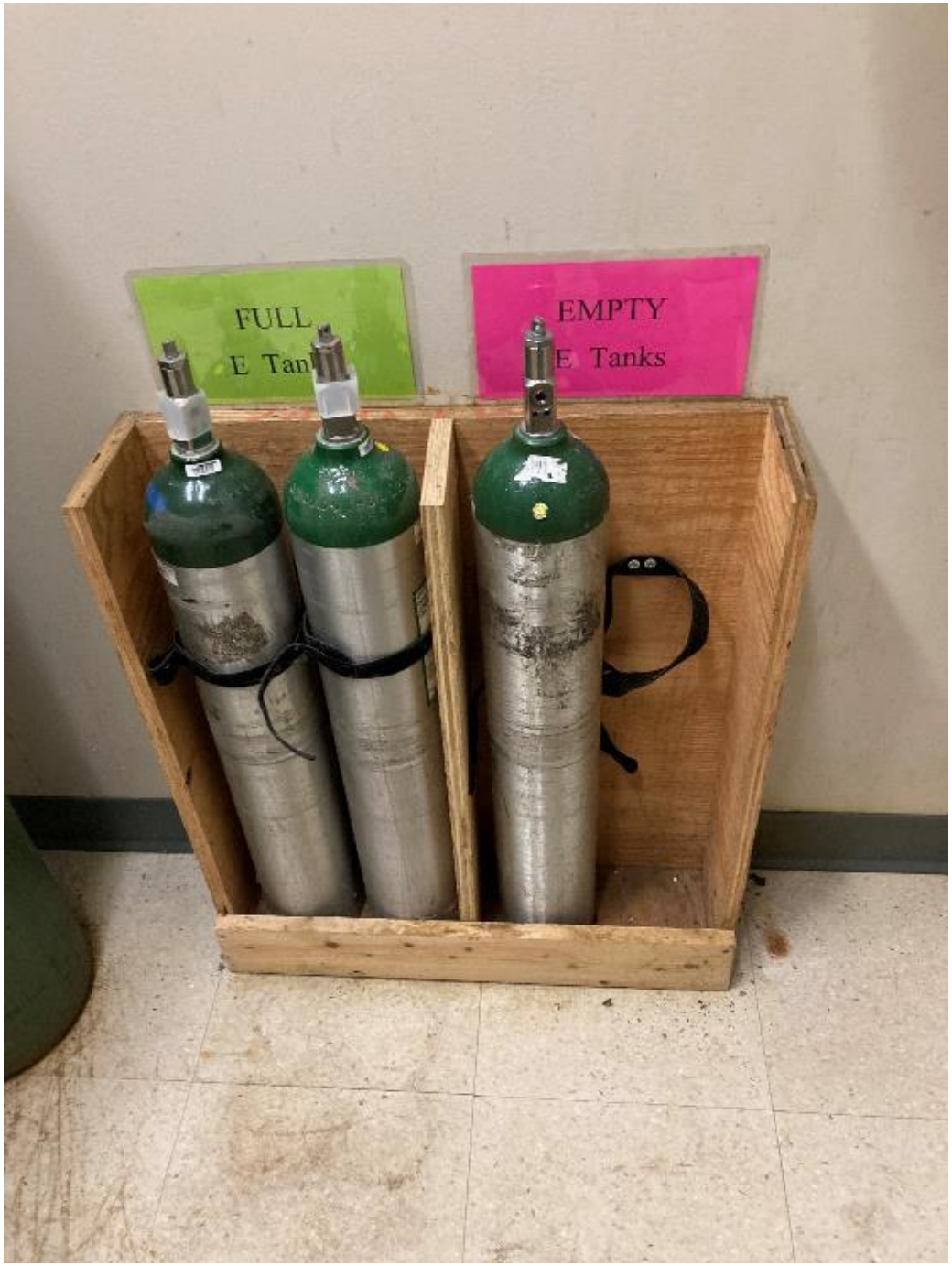
Answer: Yes.

Storage in Stairwell of an outpatient surgery center

A Tale of Two Oxygen Tanks

Another Unsecured Oxygen Tank

but Nice job on separating and labeling “Full” & “Empty”



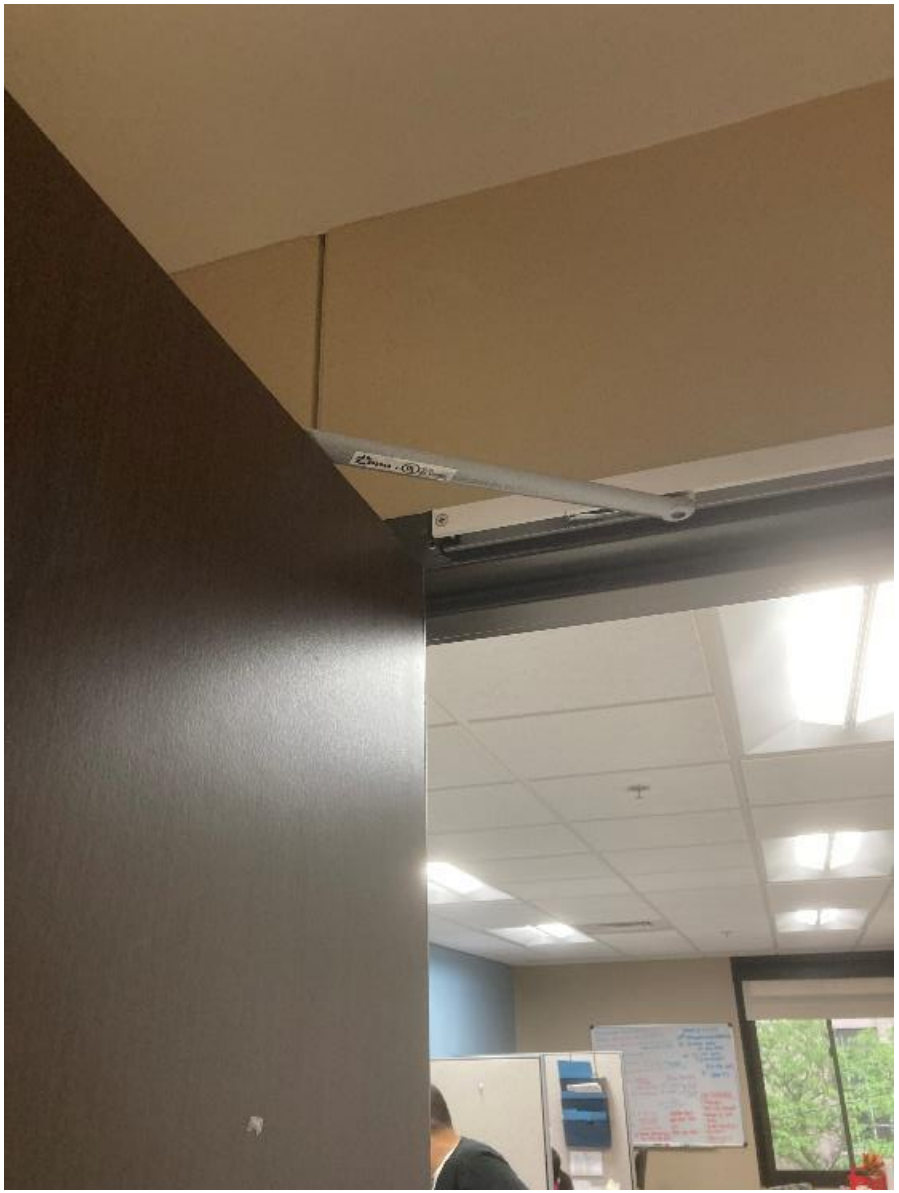
Linen Stored within 18 inches of the bottom of Sprinkler Head

Spare Sprinkler Head Box Missing one Sprinkler head


APPROVED
TYPE OF INSPECTION Hydrostatic Test
Phase II. DaVita Dialysis
Remodel
8-20-14
DATE
BRIGHTON AREA
FIRE DEPT.

Findings in Behavioral Health

Ligature free?



Risk Reduction for Behavioral Health / Ligature resistant built enviromt

- Design Guide updated.. Very good if you haven't read it.
- Psych patient toilet room doors often are Velcro type or completely removed
- Any portion of corridor not visible to Nurse station has solid ceilings (some exceptions for high ceilings)
- Usually ADA shower benches NOT installed, but need exception.

Break Away Nurse Call Pull Cord
- but can cord itself be used for harm?

Is USP 800 finalized?

The 2019 revision of USP 797 would have made USP 800 enforceable. Because the revision was remanded, USP 800 has been informational. **USP 797 & 795 became enforceable Nov 1, 2023**.

USP 800 may soon become enforceable, and organizations will need to become compliant with USP 800.

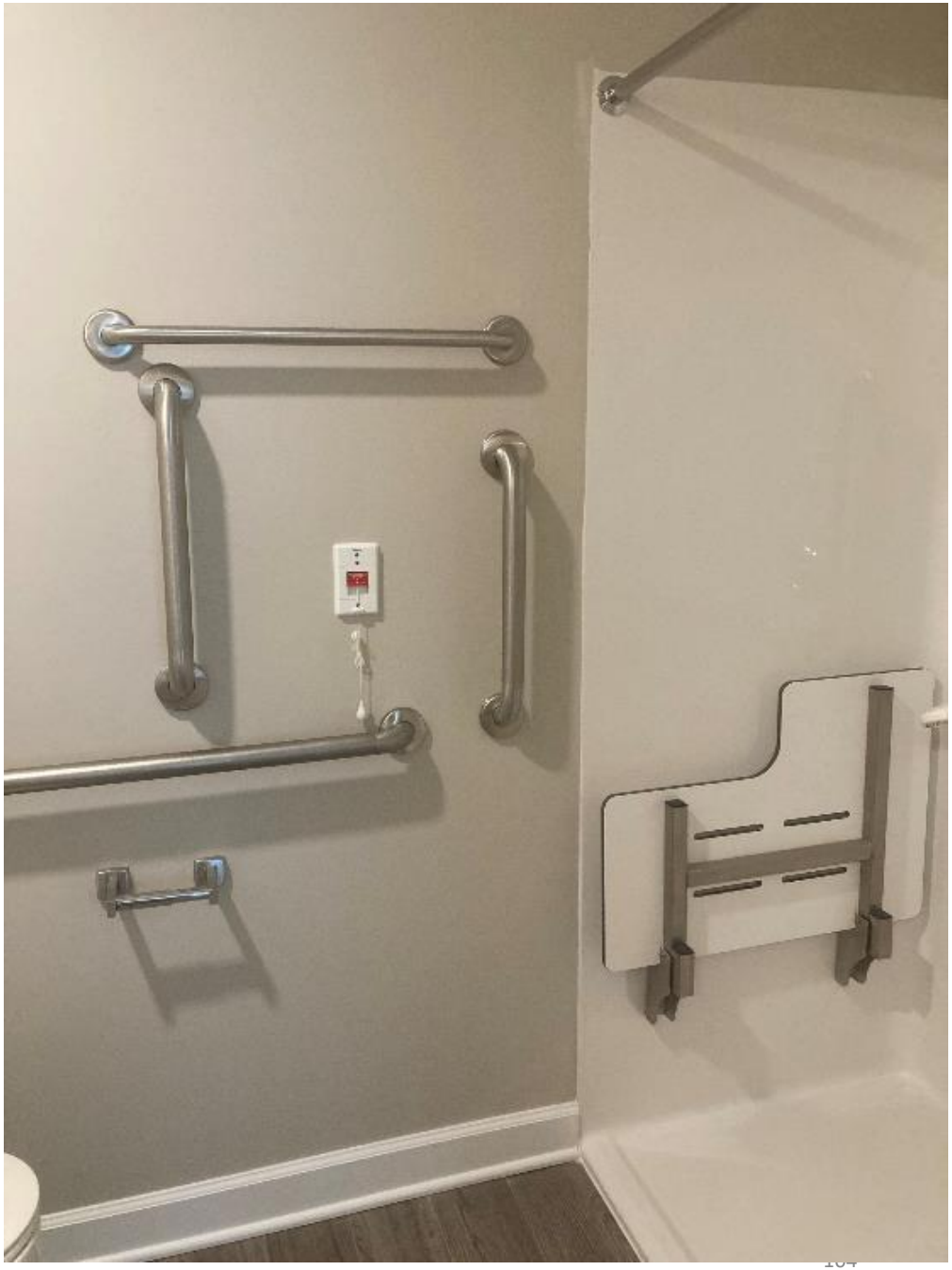
What States Adopted USP 800

- While the national implementation date will eventually go into effect, some states have already adopted some or all of these guidelines and are currently implementing and enforcing, such as **California, Kentucky, Indiana, Ohio, Pennsylvania, and Minnesota**.

Miscellaneous Concerns Identified on Surveys

Two barrier free issues here

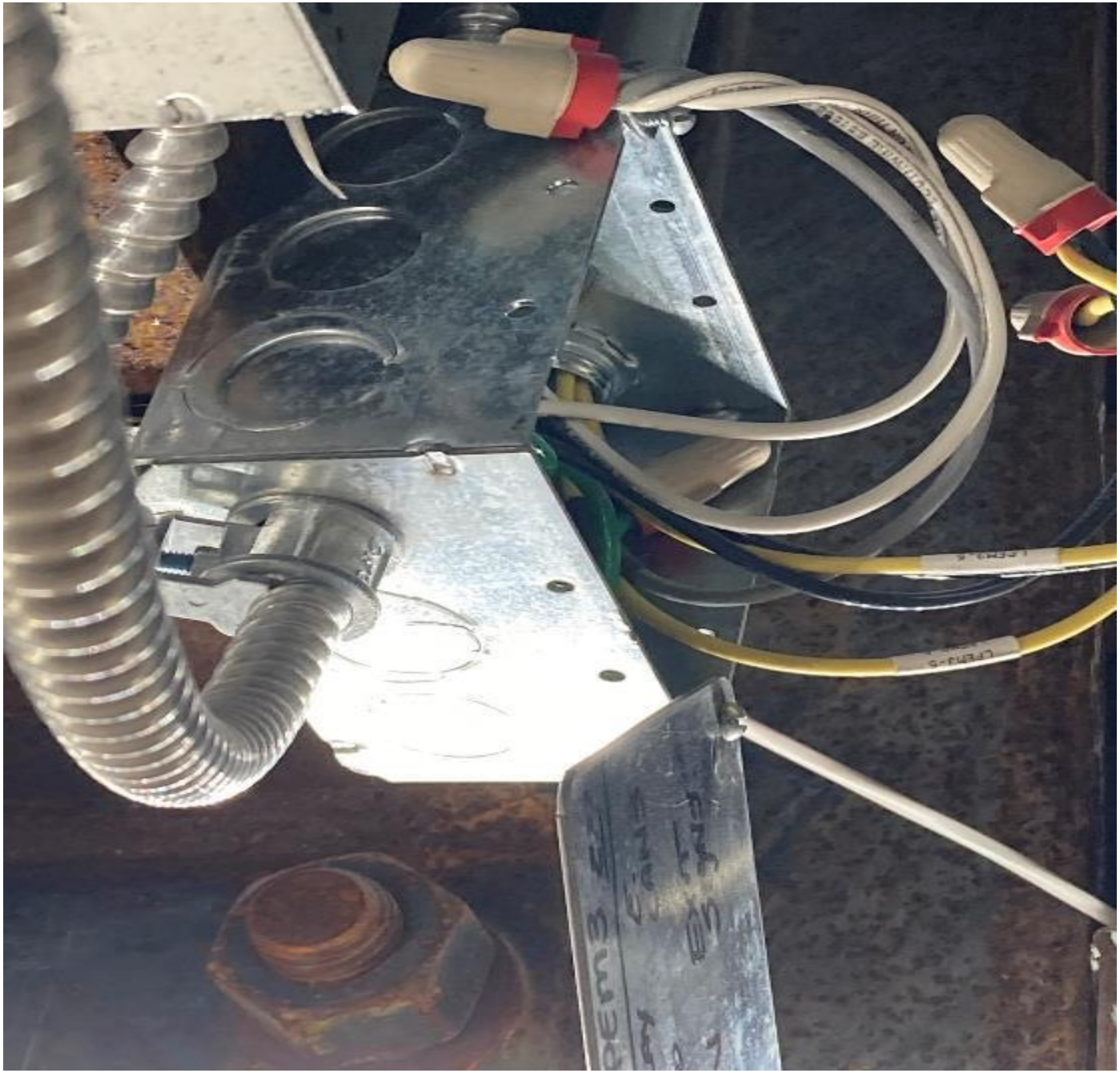
Too Many Grab Bars?



Why Sloped Tops or Soffits are a Good Idea

How does Housekeeping clean on top of these upper cabinets?

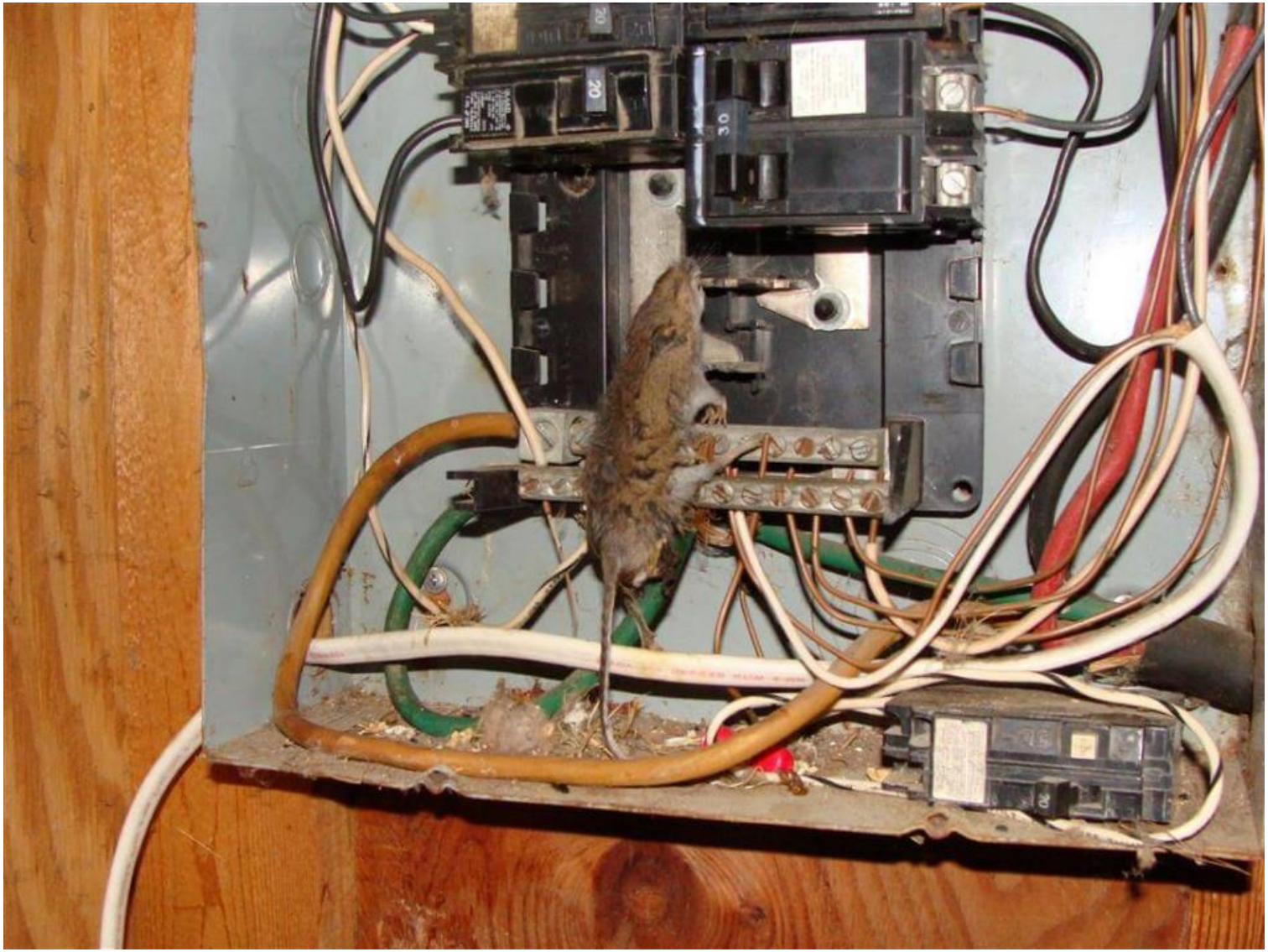
Another Junction box not covered



Clean Your Electrical Closets Please

written in dust: Wash ME

Be Sure to Train Your Maintenance Staff in Electrical Safety so they don't end up like this critter



Surge Suppressor in OR– Not UL Compliant

1363A or 60601-1
CMS Memo 9/26/2014

Patient care area - What's wrong with this picture ?

Extension cords in patient vicinity. May be proper UL but not fixed. Better to provide electrical outlets close enough so patient equipment can be used w/o need of extension cord.

Obstructed Access to Hand Wash Sink

How much On-Site Fuel do you Have?

- **72 Hours**
  - ❖2020 MI Health Care Facility Licensing Rule 301 (2) requires an emergency electrical serviceto be capable of providing a min of 72 hours of service. Existing hospitals might still have only 24 hours of on-site fuel.

- **Boiler Fuel Same as Emerg Power:**
  - ❖The old 2007 Min Design Standards for hospitals required in section 7.31.C4 that emergency fuel be provided for boilers. The fuel storage capacity shall be adequate to meet the operational needs of the facility for the same time period as emergency power.

- **96 Hours in Seismic risk area**
  - ❖Per TJC: The minimum required on-site fuel supply is determined by the licensing authority (typically the state health department). It is typically stated in hours, so the on-site fuel storage is based upon the peak building load connected to the generator, not necessarily the full load capacity of the generator unless required by the licensing authority. **Seismic risk area generators are required to operate for a minimum of 96 hours without refueling.**

Blanket Warmers

If have upper cabinet typically used for fluids should have warning signage to keep temp 110 F or below.

Sterile core ceiling: semi-restricted area

Ceilings finishes in Semi-restricted areas may be suspended ceiling if gasketed or ea tile 1 lb/sqft.

Also must be non-absorptive, non-perforated, smooth and scrubbable, NOT tegular.

See 2018 FGI Ceiling requirements for restricted and semi-restricted areas, 2.1-7.2.3.3

Green Roof by Drain

Green Roof 2

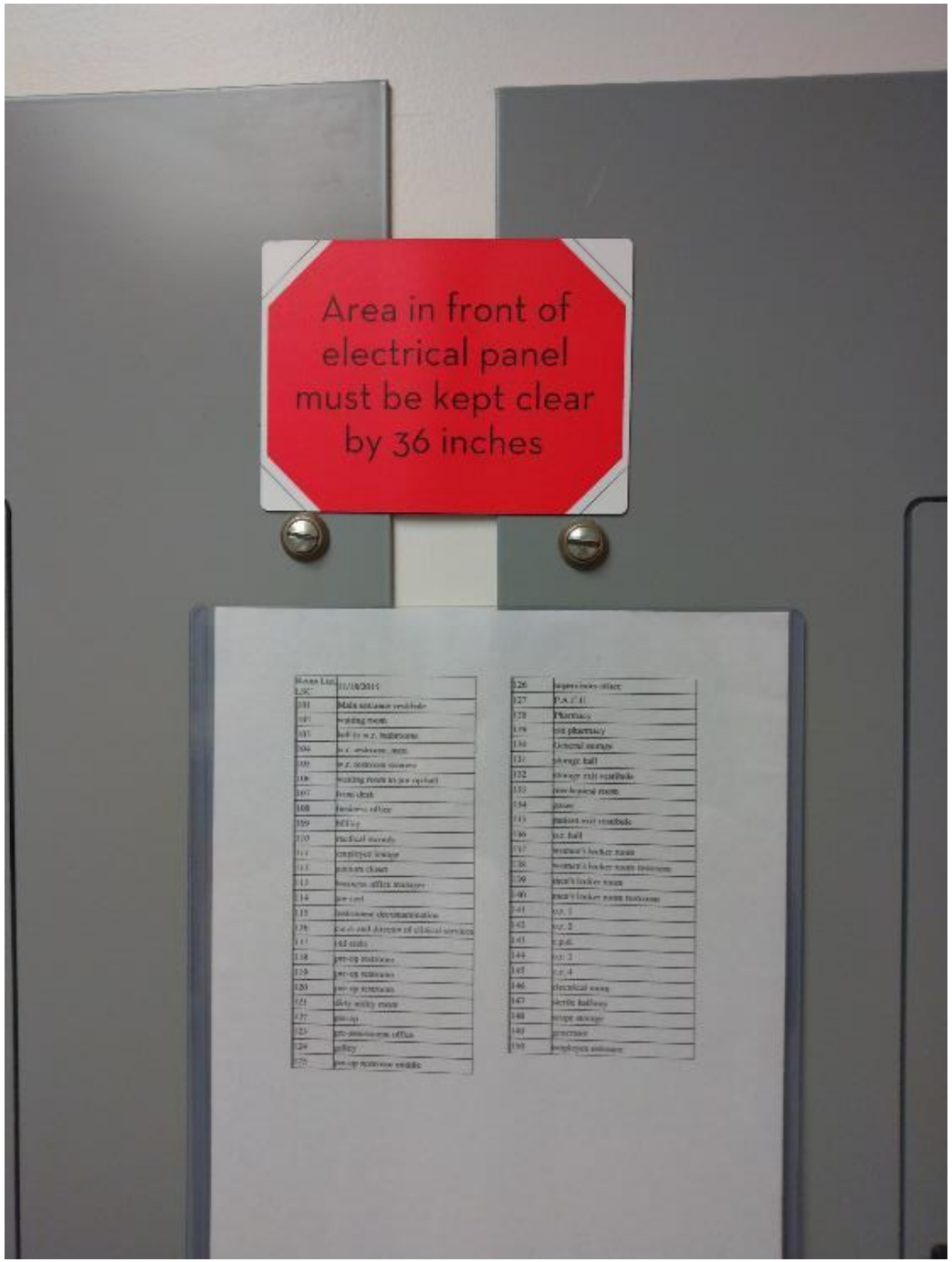
Roof Air Intake 3 ft Above roof?

Note: If at grade must be 6 ft above ground.

Debris accumulation under pallets in clean storage rooms

Circuit panels blocked by Trash Can

Trash can Violates Facilities' Own Policy



Another Blocked Electrical Panel

THE END