**Questions Log – AAH1601 webinar “Patient Safety Fundamentals for HC Architects”**

Q: Relationship of NFPA to IBC?

A: They are independent of each other and publish competing codes. Most jurisdictions use IBC as the building code. CMS has chosen to adopt NFPA over IBC which has caused most state healthcare jurisdictions to adopt NFPA as well. The two codes conflict in some instances leaving it to the authority having jurisdiction to make the final call. When a conflict occurs it is best to use the more stringent of the two unless all authorities having jurisdiction say otherwise.

Q: Has The Joint Commission ever closed a hospital for a code violation?

A: The Joint Commission doesn’t close hospitals. In the worst case scenario it will inform CMS of noncompliance which in turn can suspend a hospital’s participation in Medicaid and Medicare. Very few hospitals can survive financially without access to Medicaid or Medicare patients.

Q: What does it mean that a facility has to comply with the 2012 codes by November?

A: See the ASHE monograph exploring the specific differences between the 2000 and 2012 editions of the Life Safety Code at http://www.ashe.org/management\_monographs/mg2013crowley.shtml.

Q: Are Observation Rooms considered "Sleeping Rooms" that would require a window?

A: Observation Rooms are used for patient stays under 24 hours and are not considered Sleeping Rooms.

Q: Under past building codes and fire codes, there were not consistent requirements for fire barriers and smoke barriers. With the adoption of the 2012 NFPA 101 Life Safety Code, has this lack of consistency been minimized? Are the IBC code and NFPA requiring the same types of rated wall components?

A: The two codes continue to conflict in some instances leaving it to the authority having jurisdiction to make the final call. When a conflict occurs it is best to use the more stringent of the two unless all authorities having jurisdiction say otherwise. With regard to manufactured components, the authority having jurisdiction has discretion in recognizing rating agency(s) such as UL, FM, ETL SEMKO, etc.

Comment: Do you want to respond? Allow me to specify that the demonstrated sketch for fire wall is normally used to separate buildings so each side of the wall can structurally stay independent of the other. However, fire barriers may also be used as only one wall providing occupancy separation, incidental use area separation, creating horizontal exit, as you mentioned.

A: Agree

Q: Since the adoption of Defend in Place, has there been an increase or decrease in casualties?

A: Hospitals have become safer over the past quarter century. The number of fires in hospitals has dropped substantially since 1989, due largely to automatic fire extinguishing systems, reductions in flammable materials and improved staff training. Another factor is that smoking is no longer permitted except in specific circumstances. During 2009-2013, U.S. fire departments responded to an estimated average of 1,200 fires per year in hospitals or hospices. These fires caused an average of 40 civilian injuries and $9 million in direct property damage annually. There was an estimated average of less than one death per year during this period. Hospices accounted for only 3%, of the fires in these properties.

Q: Can you clarify "Corridor" vs. "passage" as relates to required ratings?

A: Exit passageways are usually extensions of required stair enclosures. As such, they may be one hour, two hour, and most assuredly are far more protected than a fire rated corridor. The doors carry a higher rating than rated corridors, and NO openings are permitted in the exit passageway unless they serve the exit passageway directly. This means no doors other than normally occupied spaces, no MEP penetrations (not even fire-stopped ones, unless they directly serve the passageway systems), etc.

Q: Examples of limiting smoke ceilings?

A: There does not appear to be a nationally recognized standard to evaluate the ability of suspended acoustical ceilings to act as smoke barriers in case of fire. The ICC Ad Hoc Committee on Healthcare made the following recommendation for the 2012 code: “A lay-in ceiling system that is designed to limit the transfer of smoke shall be permitted. Hold-down clips for such ceilings shall not be required where the ceiling tiles will resist an uplifting force of at least one pound per square foot of tile.” This appears to be another area subject to the discretion of the Authority Having Jurisdiction.

Comment: Just a note: the videos don't seem to come through as intended. They are choppy and I don't see the whole video before the presenter moves on.

Q: Can you re-review the second major difference between the 2000 code and the 2012 code you discussed early-on?

A: “2. In consideration of a recommendation by the state survey agency or accrediting organization, CMS may waive specific provisions of the Life Safety Code that would result in unreasonable hardships but only if the waiver will not adversely affect the health and safety of the patients.” See the ASHE monograph exploring the specific differences between the 2000 and 2012 editions of the Life Safety Code at http://www.ashe.org/management\_monographs/mg2013crowley.shtml.

Q: Can lay in ceilings be used in lieu of extending smoke partitions to underside of deck? What are the requirements?

A: Smoke partitions are designed to limit the movement of smoke and are not as substantial as smoke barriers. Smoke partitions generally do not have a fire-resistance rating and may terminate at a ceiling. Walls enclosing a sprinkler-protected hazardous area can constitute smoke partitions. Per NFPA 101 2012 Appendix A.19.3.6.2.6 “An architectural exposed suspended-grid acoustical tile ceiling with penetrating items, such as sprinklers; ducted HVAC supply and return diffusers; speakers; and recessed lighting fixtures is capable of limiting the transfer of smoke.”.

Q: How does one calculate the amount of area required to accommodate the evacuated patients moved to the smoke separated area?

A: Per ASHE Code Summary for NFPA 101 2012: “Provide at least 30 net sq. feet per patient within corridors, patient rooms, lounge or dining, other low hazard areas on each side of the smoke barrier (18.3.7.5.1).

Q: Is it possible to achieve a 1 hour fire separation with a lay-in acoustical ceiling in an existing healthcare facility, when it is not possible to evacuate the patient floors to undertake typical spray fireproofing applications?

A: We would need much more detail about the specific situation to give a proper answer.

Q: How is FGI figuring in the CMS / NFPA "battle"? Is there anything in the changes that would impact FGI?

A: FGI as an organization is more focused on programming and design than life safety building code details. They typically reference NFPA standards, but no one expects them to take sides.

Q: Can you please clarify "horizontal exit"?

A: in my oral response I mistook two similarly worded questions to be the same. An “exit passageway” is also known as a “horizontal exit enclosure”. My error in responding to this question was to refer back to my previous answer regarding the “exit passageway”. A “horizontal exit” is not at all the same as a “horizontal exit enclosure”. Per 2012 IBC: “A horizontal exit creates refuge areas such that smoke protectives are also required.” Horizontal exits have specific special requirements and are typically used to resolve a code issue that most likely warrants seeking advice from a code consultant.

Comment: No questions. You are doing a great job!

Q: What about suites as it relates to defend in place and the various fire / smoke assemblies?

A: Per ASHE Code Summary for NFPA 101 2012: “Compartment sizes may not exceed 22,500 sf. and the travel distance from any point in a smoke compartment to a smoke barrier door may not exceed 200 feet. Smoke barriers must comply with Section 8.5 and be no less than 1 hour rated (18.3.7.1 and 18.3.7.3). Each floor must have at least two smoke compartments. Suites are another matter, typically provided to resolve travel distance requirements to exit doors. Think of a suite as nothing more than a large room, with a lot of smaller rooms inside. There are two primary types of suites: 1) Suites of sleeping rooms cannot exceed 7,700 sf., or 10,000 sf. if direct visual supervision and automatic smoke detection in common areas is provided (18.2.5.7.2.3). 2) Suites of rooms other than patient sleeping rooms cannot exceed 10,000 sf. (18.2.5.7.3.3). The walls for a suite need to conform to the requirements for corridor walls.

Q: Is an exit passage the same as an exit corridor?

A: No. As stated earlier, exit passageways are usually extensions of required stair enclosures. As such, they may be one hour, two hour, and most assuredly are far more protected than a fire rated corridor. The doors carry a higher rating than rated corridors, and NO openings are permitted in the exit passageway unless they serve the exit passageway directly. This means no doors other than normally occupied spaces, no MEP penetrations (not even fire-stopped ones, unless they directly serve the passageway systems), etc.

Q: What is the best resource to use to determine the modifications that CMS makes to the Life Safety Code?

A: The ASHE monograph exploring the specific differences between the 2000 and 2012 editions of the Life Safety Code at http://www.ashe.org/management\_monographs/mg2013crowley.shtml

Q: When there is a conflict between the local code (such as California Building Code which is based on IBC) and the NFPA code, which governs?

A: For acute care in California, OSHPD trumps everything. Elsewhere you need to research to determine which Authority has Jurisdiction over what at your project locale.

Q: What would be the architect's liability, if the Joint Commission Inspector finds an issue in the building while the building approved by AHJ and up and running for years?

A: Remember those unreadable indemnity clauses in your contract with the Owner? That is likely your point of vulnerability, compelling you to assist the Owner in resolving the issue with the Joint Commission. The AHJ determines if the building can be occupied, while the Joint Commission determines if the building can be used by Medicaid and Medicare patients after it is occupied. AHJ approval has no bearing on your ability to get an exemption from CMS requirements. For example, since roller latches are permitted in special applications by NFPA, but banned outright by CMS, I would not use roller latches period.

Q: We’re using a fire separation wall and the exterior insulation is rigid. Confirm how NFPA code to exterior wall and interior wall connect if exterior wall is not a smoke barrier and smoke could enter from exterior wall penetrations.

A: A fire separation must run from exterior wall to exterior wall – not exterior insulation to exterior insulation. However, there are other conditions that determine if the exterior wall need be rated.

Q: Why no mention of the FGI?

A: FGI as an organization is more focused on programming and design than life safety building code details, but more importantly the role of FGI is a sufficiently deep topic to warrant another separate session in the future.

Q: Will CMS consider a NICU patient room as a sleeping room in terms of requiring a window to the exterior?

A: While not for certain it could very well take that position.

Q: Will you talk about dampers in the air handling system?

A: Not this time, but use and positioning of fire and smoke dampers is a deep enough subject to warrant its own separate session in the future.

Comment do you want to respond? Q: Shady Grove in MD lost its accreditation for a period a couple years ago.

A: I am only peripherally familiar with this case. I understand it to be a case of being sufficiently out of compliance with CMS requirements to cause it to loose accreditation to care for Medicaid and Medicare patients. In this case, the CMS stick was removal of the carrot. CMS did not directly close the facility but certainly provided a compelling incentive to make the corrections necessary to restore the hospital’s financial viability.

Q: Are Smoke Barriers only required at locations forming the boundary of a Smoke Compartment/Zone?

A: That is the primary use but there are other special applications such as for occupancies with security measures not under occupant control (IBC i-3).

Q: Is there any definition for "limiting the passage of smoke"? In my opinion, almost anything limits the passage of smoke even a screen or duct tape!

A: This appears to be another area subject to the discretion of the Authority Having Jurisdiction. I am not aware of a nationally recognized standard to evaluate the ability of suspended acoustical ceilings to act as smoke barriers in case of fire. The ICC Ad Hoc Committee on Healthcare made the following recommendation for the 2012 code: “A lay-in ceiling system that is designed to limit the transfer of smoke shall be permitted. Hold-down clips for such ceilings shall not be required where the ceiling tiles will resist an uplifting force of at least one pound per square foot of tile.”

Q: Do these codes used by CMS also apply to skilled nursing facilities?

A: Yes.

Q: I'm involved in a project where a violation resulted in evacuation of a quarter of a hospital. CMS has sent federal surveyors to implement that. Does joint commission get any information about that and how they communicate with CMS? What does deem status mean?

A: Deemed status essentially means that having been approved by CMS as having standards and a survey process that meets or exceeds Medicare’s requirements, The Joint Commission is deputized to act in lieu of a state agency on behalf of CMS in certification of a healthcare organization’s compliance with Conditions of Participation (CoPs) or Conditions for Coverage (CfCs), which are set forth in federal regulations.

Q: Is the smoke baffle a hanging smoke partition? How does it actually work?

A: A Smoke Baffle, also known as a Draft Curtain, is a substantial, noncombustible curtain that is hung tightly against a ceiling. Smoke baffles cordon off sections of a large ceiling for fire prevention purposes. Smoke baffles are also known as “draft stops,” “draft curtains” and “curtain boards.” They are generally required by code where moving stairways, staircases or similar floor openings are unenclosed.

Q: What barrier is used to separate smoke compartment and can that barrier be used for a horizontal exit?

A: Smoke compartment construction is considerably less substantial than that required of a horizontal exit. While the smoke barrier wall of a smoke compartment must be of one-hour construction, the opening protection requirements are not the same as for a one-hour firewall. For this reason a smoke barrier is not a firewall. On the other hand, horizontal exits require firewalls rated at no less than 2 hours with opening protectives not less than 1½hours.

Q: Are corridor doors required to have smoke ratings?

A: Assuming a fully sprinklered building, requirements for doors in smoke barriers are defined in NFPA 18.3.7.6. Per NFPA 101 2012 Appendix A.18.3.6.3.1: “Gasketing of doors should not be necessary to achieve resistance to passage of smoke if the door is relatively tight fitting.” However, this appears to be another area subject to the discretion of the Authority Having Jurisdiction. IBC Section 407.3.1 states that these doors “shall provide an effective barrier to limit the transfer of smoke,” and I have seen some jurisdictions require gasketing.

Q: When do existing hospitals have to be fully sprinklered to comply with the 2012 NFPA?

A: According to provisions in this year’s CMS final rule, health care facilities located in buildings that are taller than 75 feet are required to install automatic sprinkler systems within 12 years after the rule’s effective date.

Q: Will state health licensing boards likely (or be required to) adopt the 2012 version of NFPA101 along with CMS?

A: Yes, if they have not already.

Q: Please explain the membership in Joint Commission and CMS. Are these voluntary memberships or if you provide Medicaid and Medicare services, CMS applies but not Joint Commission?

A: The Joint Commission is deputized to act in lieu of a state agency on behalf of CMS in certification of a healthcare organization’s compliance with Conditions of Participation (CoPs) or Conditions for Coverage (CfCs), which are set forth in federal regulations. This is known as “Deemed Status”. The Joint Commission is the largest and oldest, but not the only organization having Deemed Status with CMS.

Q: Please explain window requirements in sleeping rooms such as "On Call" rooms for staff or sleep lab spaces.

A: “Sleeping Rooms” are those used by patients held for longer than 24 hours.

Q: Don't Corridors imply certain ratings, where Passages would not? I'm thinking within a Suite primarily - what we would think of in practice as a corridor, we might not label as Corridor to avoid requiring smoke partitions.

A: An Exit Path within a Suite is not a “Corridor” by code terminology, neither is an Exit Path within a Suite an “Exit Passageway”.

Q: Isn't there a sq. footage per occupant requirement for zones rather than "approximately equal"?

A: Yes. We did not have the exact number top-of-mind during oral Q&A.

Comment do you want to respond? Tip - IBC 407.5 requires a refuge area within the compartment calculated at 30 sf per occupant.

A: Yes and the same is required per 18.3.7.5.1 of NFPA 101 2012.

Q: What were thought to be the 2 contributors to reduced fires/casualties? Banning smoking and \_\_\_?

A: Quick-response fire sprinkler systems.

Comment do you want to respond? 18.3.7.6.1 Not less than 30 net ft2 (2.8 net m2) per patient in a hospital or nursing home, or not less than 15 net ft2 (1.4 net m2) per resident in a limited care facility, shall be provided within the aggregate area of corridors, patient. Rooms, treatment rooms, lounge or dining areas, and other low hazard areas on each side of the smoke barrier.

A: In NFPA 101 2012 this paragraph is located in 18.3.7.5.1, and also requires 30 sf. for hospitals as you noted.