ICC AD HOC COMMITTEE ON HEALTHCARE
MEETING #2
June 29 - 30, 2011

DRAFT MINUTES

Hyatt Rosemont
6350 North River Road
Rosemont, IL 60018

June 29: **8:00 am – 5:00 pm**
June 30: **8:00 am – 2:00 pm**

1.0 Welcome and introductions

1.1 Chair Williams - Call to order; introductions

Chair Williams called the meeting to order at approximately 8:05 am, noting:

- Thanks to the Work Groups for their active participation in numerous conference calls since AHC #1.
- The meeting will be conducted as informally as possible, with all final decisions resting with the committee members.
- The discussion needs to focus on the issues raised, and keep the re-visiting of issues to a minimum.
- Discussion will start with the committee members then interested parties.

Self introductions were made. See Appendix A.

2.0 Approve agenda (posted)

Two items added; 6.1 Existing Buildings; 6.2 Parking Lot

3.0 Administration

3.1 Approval of April 20 - 21, 2011 minutes (posted)

Approved

3.2 Resource documents posted: ASHE Code Summary Report (ASHE site); 2012 I-Code Text (draft); Fire Safety Survey report (HHS/CMS); Work Group logistics/topics

It was noted that the CMS Survey Report for Ambulatory Surgical Centers should be posted. As with all documents to be posted/distributed to the AHC/interested parties, permission to post/distribute must be secured. Distributions need to go through staff.

4.0 Work Group (WG) Reports

Chairman Williams briefly outlined the report format noting that the objective of the AHC is one of the development of supportable/substantiated code changes for submission in the 2012/2013 Cycle.

4.1 Fire/Fire Safety WG (IBC Chs 7 - 9, 14, 15; IFC; IMC) (posted)

a. Working meeting of the AHC

See Appendix B for the WG report with meeting notes indicated.

4.2 Egress WG (IBC Chs 10-11; IFC Section 4604) (posted)

a. Working meeting of the AHC

See Appendix C for the WG report with meeting notes indicated.

4.3 General WG (IBC Chs 3 – 6, 12, 13, 27 – 34) (posted)
a. Working meeting of the AHC

See Appendix D for the WG report with meeting notes indicated.

5.0 Identification of Work Group cross over issues

See Appendix B – D for notes.

6.0 Review of Work Group topics- identification of additional topics

See Appendix b – D for notes.

6.1 Existing Buildings

Discussion on survey inspections for existing buildings

- The ICC website has the CMS Fire Life Safety report posted. ICC will also post the report for ambulatory care facilities.
- Divide CMS Fire Life Safety report by work group.
- Have each Work Group look at the K tags to see if they felt the provisions/topic were covered or not in the I-Codes. Include I-Code section references.
- Chair Williams will provide the Work Groups with the relevant K tag numbers and assignments.
- The Work Groups will look at both new and existing construction relative to the 2012 IBC/IFC.
- AHC # 3 will include a report from ASHE on K tags and whether or not the issues are addressed in the IFC/IBC. See agenda item 7.0 – ASHR research requests.

6.2 Parking lot items

The following were noted as beyond the scope of the AHC effort:

- Existing facility survey tool. Create a single "document" to be used in existing facility surveys. ICC Guides could be used as a method to create the fire code survey tool. Guideline development is regulated by ICC Council Policy 33.
- Residential care facilities. The ICC CTC study group on Care Facilities will continue to work on this area. We should monitor code requirements for nursing homes and other healthcare facilities to ensure that there is no overlap.
- Educational tools. Encourage the creation of educational/interpretive material for healthcare codes to foster consistency in application.
    - Develop tools to aid code enforcement.
    - Develop clearer way of determining occupancy classification
    - Clarify how to deal with changes of use and renovations within existing buildings
    - The relaxation of hard standards in lieu of a fire plan must be accompanied by an expectation of regular governmental oversight and survey
- Ongoing involvement. Need to stay current with new developments within the healthcare industry. Monitor code activity.
- Work of other code bodies. The AHC effort is limited to the development of code changes to the I-Codes. This can include the reference to standards where deemed appropriate.

7.0 New business

- Reference standards. The determination to reference a standard is within the scope of this effort. Proposed referenced standards must meet the requirements of ICC (CP-28 compliance). The scope and application of the standard must be clearly identified in the code text.
- Which edition of the codes are we comparing with? Latest edition

- Language for egress through smoke compartments – are you being prevented from returning through the smoke compartment of fire origin or the smoke compartment of egress origin (assigned to MOE work group)
- NFPA 99: should part of this standard be referenced?
    - Laboratory ventilation requirements
    - Operational necessities/physical requirements for health care facilities
    - Medical gasses and hyperbolic facilities in the I-Codes currently reference NFPA 99C (IPC 1202.1). NFPA 99C is being renamed/absorbed into NFPA 99 – to be completed by mid-September.
    - Get an overview of NFPA 99 to see what we might want to reference (assigned to General)
- ASHE research requests. As noted at AHC #1, ASHE is willing and capable of providing research resources in support of code change issues/substantiation. The following will be investigated by ASHE and reported back to the AHC and Work Groups. It is anticipated that report outlines will be presented at AHC #3.
    - Fire modeling around corridor decorations (for Fire Safety)
    - Smoke migration through ceiling tiles (for Fire Safety)
    - Smoke migration through ductwork – smoke dampers (for General)
        - Catastrophic event with failure of one sprinkler head (for General)
    - Hazardous materials required for daily use in patient rooms (for Fire Safety)
    - Travel distance: size of patient room, suite size, size of smoke compartment (for General and MOE)
    - CMS survey reports will be reviewed for topic coverage in the IBC/IFC
    - Develop health care improvement over time as part of the justification for proposed revisions (i.e., inspection, training of staff for evacuation, no smoking, fully sprinklered buildings, separation, fire history)
- Code change process dates. Staff went over the 2012/2013 Cycle schedule which is posted, noting the following key dates:
    - 2012 Group A Codes: IBC, IFGC, IMC, IPC
        - Code change deadline: January 3, 2012
        - Code Development Hearing (CDH), Dallas: April 29 – May 6, 2012
        - Final Action Hearing (FAH), Portland: October 24 – 28, 2012
    - 2013 Group B Codes: All others (including the IFC)
        - Code change deadline: January 3, 2013
        - Code Development Hearing (CDH), Dallas: April 21 – 28, 2013
        - Final Action Hearing (FAH), Atlantic City: October 2 – 9, 2013

  It was noted that the AHC will need to meet, either face-to-face or via conference call (or both), as follows:
    - Prior to each CDH to review code change submittals related to the scope of the AHC and to develop modifications, if any
    - Following each CDH to develop Public Comments in response to committee action at the CDH
    - Prior to each FAH to review Public Comments related to the scope of the AHC

8.0 Old business

- Occupancy questions:
    - AHJ's and officials need a clearer way of determining occupancy classification.
    - A hospital building is a combination of several different types of spaces
        - Admin offices
        - Outpatient services
        - ASC/ Emergency dept

        - Inpatient Care
        - Storage, Mercantile, Assembly
        - Are the current rules regarding mixed use appropriate?
- Report from ASHE on the difference between hospitals and nursing homes is not yet complete.
- Code change format:
    - Group I-2 be split to separate hospitals as a Group I-5?
    - Possibly create conditions of care categories within Group I-2 (similar to I-3)?

9.0 Meeting wrap – up

9.1 Progress assessment

Progress assessments noted in the WG reports indicate a timely completion in support of the 2012/2013 cycle.

9.2 Assignments

Eugene Jaques will join the Fire Safety work group.

It was noted that the WG's need to focus on the development of code change proposals for the AHC to consider at AHC #3.

10.0 Future Meetings

10.1 AHC Meeting #3: August 10 – 11, 2011; Chicago, IL

Same hotel as AHC # 2 – Hyatt Rosemont

AHC Meeting #4: October 5 – 6, 2011; Chicago, IL

AHC Meeting #5: December 14 – 15 (13th if needed), 2011, Location TBD

10.2 Work Group telecons:

The following is the typical schedule of calls. It should be noted that these may change based on member availability – an email notice will be sent in conjunction with each call.

- General - Tuesdays – 1:00 EST
- Fire Safety - Thursday – 10:00 EST
- MOE – Friday – 10:00 EST

11.0 Adjourn

Chairman Williams adjourned the meeting at approximately 1:15 pm on June 30th

AHC website for posted materials: http://www.iccsafe.org/cs/ahc/Pages/default.aspx
ASHE website for posted materials: http://www.ashe.org/resources/tools

AHC #2 Meeting Minutes - Appendix A

Meeting Attendees

AHC Committee and Staff

Committee

Brooks Baker, III	University of Alabama at Birmingham; Rep: ASHE
Tom Baldwin	Benton Harbor Township, MI
Jack Chamblee	Carolinas Healthcare System; Rep: ASHE
Jonathan Flannery	University of Arkansas for Medical Sciences; Rep: ASHE
Dave Howard	Pentors – St. Francis Health Services; Rep: ASHE
Eugene Jaques	Town of Wallkill, Middletown, NY
Henry Kosarzycki	State of Wisconsin – Dept. of Health Services
Sharon Meyers	State of Ohio – Ohio Dept. of Commerce
Jeff O'Neill	University of Pennsylvania Health System; Rep: ASHE
Tim Peglow	MD Anderson Cancer Center; Rep: ASHE
Brad Pollitt	Shands Healthcare; Rep: ASHE
John Williams	Washington State Dept. of Health

Staff

Chad Beebe	ASHE
Doug Erickson	ASHE
Tom Frost	ICC
Kim Paarlberg	ICC
Mike Pfeiffer	ICC
Bill Rehr	ICC

Interested Parties

Lynn Manley	IDPH
Dave Collins	AIA
John Woestman	BHMA
Jeff Harper	Rolf Jensen & Assoc.
Robert Davidson	Davidson Code Concepts
Jim Dolan	NFPA
Jim Peterk	Heery Intl.
Mark Goska	UAB
Frank Van Overmeiren	FP&C Consultants
Michael Crowley	Rolf Jensen & Assoc.
Edward Hite	Assa Abloy
Len Pursell	Besam/Ass Abloy
Carl Hellman	Assa Abloy
Vickie Lovell	Intercode Inc.
Thom Zaremba	Toetzel & Andress
Dave Dratnol	Isolatek Intl.
Steve Carr	H&L Architecture

AHC #2 Meeting Minutes - Appendix B

FIRE/FIRE SAFETY WORK GROUP (FSWG) REPORT & NOTES FROM AHC #2
(IBC Chapters 7 – 9, 14, 15; IFC; IMC)

This appendix is based on the AHC's review of the noted Work Group Report at AHC Meeting #2. Notes from the meeting are indicated in red.

CURRENT CODE ISSUES

(based on issues identified at AHC #1)

ISSUE 1. DECORATIONS ON WALLS (Gary Lewis)

Discussion: The Work Group considered current language in IBC, IFC, NFPA 101 and NFPA 1 related to decorations on walls. There is general consistency in approach between the various documents. A specific area of concern raised in the discussion is the subjectivity of Section 806.1 of the IBC, which reads as follows:

> **806.1 General requirements.** In occupancies in Groups A, E, I and R-1 and dormitories in Group R-2, curtains draperies, hangings and other *decorative materials* suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with section 806.2 or be noncombustible.
> In Groups I-1 and I-2, combustible *decorative materials* shall meet the flame propagation performance criteria of NFPA 701 **unless the *decorative materials*, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present.** In Group I-3, combustible decorations are prohibited. (**Emphasis** added for clarity)

The application of this section was noted to vary widely from jurisdiction to jurisdiction. A related issue, and one much easier to address, is the list of decorative materials exempt from the flame propagation performance criteria of NFPA 701. The list is currently narrow in scope, although it does utilize the phrase 'including but not limited to'. A suggestion to the Committee is to consider adding to the laundry list items such as "bulletin boards, artwork and posters". A potential code change to this effect follows:

> **806.1 General requirements.** In occupancies in Groups A, E, I and R-1 and dormitories in Group R-2, curtains draperies, hangings and other *decorative materials* suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with section 806.2 or be noncombustible.
> In Groups I-1 and I-2, combustible *decorative materials* shall meet the flame propagation performance criteria of NFPA 701 unless the *decorative materials*, including, but not limited to, bulletin boards, artwork, posters, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorations are prohibited.

Feedback is sought from Committee members on the relative benefits of having a specific threshold for these otherwise unspecified decorative materials that do not meet 701 (that may be less than is currently allowed by a number of jurisdictions), versus continuing to live with a lack of guidance, consistency and objectivity that exists in the current language.

If a threshold is the preferred approach, it was identified that the IFC currently specifies an upper limitation of 20% of a wall in a corridor for things like artwork and teaching materials in Group E and I-4 occupancies. A commenter noted that any 20% threshold ought to be allowable only in fully sprinklered I-2 occupancies, acknowledging that there remain a substantial number of older facilities still in the process of installing automatic sprinkler protection.

If a threshold is desired, a potential code change to this effect follows:

> **806.1 General requirements.** In occupancies in Groups A, E, I and R-1 and dormitories in Group R-2, curtains draperies, hangings and other *decorative materials* suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with section 806.2 or be noncombustible. In Groups I-1 and I-2, combustible *decorative materials* shall meet the flame propagation performance criteria of NFPA 701 ~~unless the *decorative materials*, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present~~. In Group I-3, combustible decorations are prohibited.
>
> **Exception:** In Groups I-1 and I-2, decorative materials, including, but not limited to, photographs and paintings, covering less than 20 percent of the wall area.

Conclusion: Submit the above-suggested code changes if the AHC agrees.

Notes:

- Provide justification/substantiation for 20% of wall area based on need –
  - I-2 is not the same as schools.
  - Examples are staff communications.
  - Wall space is very limited in patient care/nursing areas.
  - Or clarify that wall surface includes doors, windows, surface area
  - Information on where fire starts
  - Current 10% limit is in 806.1.2
  - Look at past code change proposals for justification
- The current language is subjective – the proposal is quantitative
- Possibly add 'list' in 2nd option to exception in 3rd option.
- Direction of proposal is expectable. Possibly look at putting exception in 806.1.2.

ISSUE 2. ELEVATOR RECALL PROCEDURES WHEN THERE IS SMOKE IN MACHINE ROOM/ELEVATOR LOBBY (Tim Peglow)

Discussion: There has been no discussion of this issue.

Conclusion: The exact nature of the issue is unclear. AHC guidance is requested.

Notes:

- Elevator lobbies/smoke compartment evacuation is being discussed by the MOE committee
- Should separate machine rooms be required for different banks or elevators, so that different banks can remain active during a fire event?
- Part of defend-in-place and maintaining operations
- Common machine rooms at the roof over several banks of elevations could result in losing all elevators with a fire in the machine room – should there be a separate machine room requirement
- Move to MOE committee

ISSUE 3. INTERCOMMUNICATION BETWEEN FLOOR OPENINGS (Sharon Myers**)**

Discussion:

1. IBC, NFPA 101, CMS-2786 all permit compliant atriums – verify atrium requirements
2. IBC exceptions to vertical opening enclosures is extensive but inclusive of many Use Groups – need to verify if any adversely affect I-2
3. Need to verify IFC text specific to openings
4. IFC requires sprinklers in existing I-2; typically this will happen when renovations occur anyway to take advantage of code benefits – language makes requirement clear

It was noted that these issues need coordination with the on-going CTC project on unenclosed stairs. It was suggested that carbon monoxide migration should be a consideration in these issues. (See Meeting #4 Notes and "New Code Issues" in this report.)

Conclusion: Additional work is needed on this issue. A code comparison matrix is being prepared to facilitate discussions in future teleconferences.

Notes:

- Sharon is working on comparison matrix
- Allowance of 2 story opening (i.e., not an atrium) should also be investigated
- Look at current options in CMS or convenience openings, mezzanines, atriums, stairs, etc.
- Concern is fumes, exhaust and smoke, not just carbon monoxide migration
- Continue with current direction

ISSUE 4. MECHANICAL SYSTEMS/SMOKE CONTROL (Brooks Baker/Mark Goska, Alternate)

4A.SMOKE DAMPER EFFECTIVENESS

4B.SHUTDOWN PARAMETERS
4C.SMOKE CONTROL IN OPERATING ROOMS
4D.NFPA 99

4A Smoke Damper Effectiveness discussion: Because of the reports of the fires that occurred at the MGM Grand Hotel in Las Vegas, NV, and the World Trade Center in NY City, NY, there has been a discussion regarding the effectiveness of smoke dampers and whether a combination fire/smoke damper should be used instead in healthcare occupancies.

4 A Conclusion: Section 18.3.7.3 and 19.3.7.3 of NFPA 101 Life Safety Code are adequate. Suggest that further studies of the current IBC be undertaken to change and to possibly to expand the exception for smoke dampers in I-2 Occupancies. Note that this is a direction that the General Group is moving to and will be reviewed in greater detail in Chicago.

Notes:
- Also being discussed by General work group
- Look at catastrophic events

4B Shutdown Parameters discussion: Often times there is a misinterpretation between a smoke control system and a smoke evacuation system especially at it pertains to operating rooms within hospitals. This misinterpretation is requiring the use of a smoke evacuation system that when activated shuts down the supply air side of an HVAC system thus causing OR's to go negative pressure to the corridor instead of allowing ventilation air to remain flowing in OR's and allowing a separate room exhaust system to evacuate smoke from the room. This scenario is putting patients at a greater risk for infection.

4B Conclusion: Recently the NFPA 99 Committee adopted the elimination of the requirement for a smoke exhaust within healthcare occupancies. A preliminary consideration is suggested that we include the following exceptions which can be discussed further in Chicago:

Exception: Smoke Control Systems are not required in Group I-2 occupancies where the following conditions are met:

1. The building is equipped throughout with an automatic sprinkler using quick response automatic sprinklers.
2. The building has a closed, fully ducted HVAC system in all patient areas.

Notes:
- Confusion between smoke control and smoke evacuation systems
- May jeopardize infection control in operating wards
- Suggest limited exceptions in Group I-2 – 717.5.5 (2009) – see also General report
- Look at IMC for where smoke control and smoke exhaust systems are required
- Look at specifics to Group I-2 occupancies – smoke removal for individual operating rooms (look at NFPA 99 for ventilation)
- Smoke removal systems are not required in IBC for Group I-2 – interface with other codes

4C Smoke Control in Operating Rooms discussion: Should a smoke control system be required in OR's? Currently there are no requirements to provide smoke control systems within operating rooms or suites of operating rooms within IBC, NFPA 101 or NFPA 99.
4C Conclusion: The requirement to provide smoke control in OR's appear to be rooted in the misperception of some that life safety systems are to comply w/ NFPA 92A or IBC 909. With the changes made in the type of anesthetics being administered in OR's to a non-flammable type, and the fact that healthcare personnel are trained in the movement of patients to other compartments and how to close doors to contain byproducts of a fire within the room of origin, smoke control for life safety purposes would generally not be necessary. However, a means to remove any remaining smoke would be beneficial for a number of reasons. Currently, NFPA 99 requires that the HVAC system be arranged to automatically shift into an exhaust mode. Based on this, we are recommending further study which will consider alternatives to the automatic activation of the HVAC shutdown.
Notes:
- This is really an misinterpretation of the types of system required
- Number of staff in the room & type of fires results in very low hazard
- Smoke control systems may be outdated and no longer needed – should not be added to IBC/IFC

- A HVAC ventilation control system is not a smoke control system
- Identify what ventilation systems utilized in Group I-2 for specific areas are and what it should comply with.
- 901.2 exception is an example of where installed systems must comply with the code, even if not required

4D NFPA 99 discussion: It is not clear what the issues with NFPA 99 are. We are open to comments.
4D Conclusion: Further understanding of the issues with NFPA is required in order understand the issues.

Notes:
- See new business

ISSUE 5. CORRIDOR WALLS/SMOKE PARTITIONS (Sharon Myers**)**
5A.CEILING SMOKE RESISTANT MEMBRANE

Discussion: A discussion of smoke-resistant ceilings took place. It was pointed out that a single layer of drywall taken to the deck above coupled with the proposed ceiling could alleviate concern about ceiling tiles being displaced during a fire condition.

Penetration protection was discussed and it was pointed out that since the partition has no formal FR rating that no listed penetration protection is required. The type of penetration protection used would depend on the size of the annular space needing protection. It was emphasized that these continuity criteria are only intended to *limit* the transfer of smoke, not to *prevent* it.

It was suggested that the issue of ceiling tile uplift under fire conditions should be studied before final submittal a code change proposal. Some research has been done with both standard response and QR sprinklers with no significant problems noted. This is an item that should be submitted for additional ASHE research work.

Conclusion: The following code change proposal to the IBC is recommended:

Revise IBC as follows:

710.4 Continuity. Smoke partitions shall extend from the top of the foundation or floor below to the underside of the floor or roof sheathing, deck or slab above or to the underside of the ceiling above where the ceiling membrane is constructed to limit the transfer of smoke.

Exception:

A monolithic or suspended ceiling is permitted where allof the following conditions exist:

1. The ceiling system forms a continuous membrane, including around ceiling fixtures.
2. A smoke-tight joint is provided between the smoke partition and the suspended ceiling.
3. The space above the ceiling is not used as a plenum.
4. The room is not classified as a hazardous use.

Reason:
The purpose of this proposal is to differentiate between smoke barriers and smoke partitions. Smoke barriers are intended to *prevent* the passage of smoke and are also fire-rated assemblies, in which case an unrated suspended ceiling is not sufficient to maintain continuity. Smoke partitions are intended to *limit* the transfer of smoke and are not required to be fire-rated assemblies. While the code language in Sections 709.4 and 710.4 are fairly clear regarding this distinction, common enforcement and the current Commentary language for the two are nearly the same.

This language will clarify the intent and provide industry with cost savings and maintain the life safety features intended by the Code. It also helps clarify the difference and intent for designers, ultimately making design intent clear for enforcers. This proposed change does not affect the language in related IBC Sections 407.2 and 407.3. The proposed change more closely aligns the IBC with the Fire Safety Survey Report.

Additional substantiation is available and intended to be presented at the hearing, including tests conducted to demonstrate lay-in tile reaction and smoke movement given standard response and quick response sprinkler protection. In both cases, the lay-in ceiling was sufficient to limit smoke transfer until sprinkler activation and beyond.

Notes:

- Proposed language could result in same misinterpretation problem
- Lay in ceiling grid without clips or caulk should be an alternative
- Define 'smoke tight ceiling' to limit the transfer of smoke
- Data needed to substantiate allowance
- What is permitted in the ceiling (i.e., light fixtures, sprinkler heads, ventilation system openings)
- Relate this horizontal system to vertical systems (i.e., smoke barrier walls) as far as percentage of openings
- Needs to be health care specific – maybe exceptions in 407.3 where smoke partitions are required for corridor walls in Group I-2.
- No requirement in smoke partitions for how much smoke is permitted to pass – limit the transmission of smoke vs. prevent the passage or smoke
- Further investigation/modeling could be done to determine smoke hazard for corridor ceiling

ISSUE 6. VENTILATON RATES (Brooks Baker/Mark Goska, Alternate)
Discussion: Currently ventilation rates are outlined in Table 403.3 of the IMC, Table 2.1-2 of the Guidelines for the Design and Construction of Health Care Facilities, and ASHRAE 170. These tables are used to calculate the minimum requirements for outside air ventilation and exhaust rates for the specified occupancy groups under normal operating conditions.

Conclusion: It is not clear that the I-codes need to address this issue. More studies are necessary to determine what level of detail if any should be included in the I-codes.

Notes:

- Reference ASHRAE 170 for health care specific ventilation rates for Group I-2
- IMC Table 403.3 does not include enough options
- Need to identify specific scope of reference to ASHRAE 170

ISSUE 7. COOKING FACILITIES IN BREAK ROOMS – APPLICATION OF COMMERCIAL EXHAUST PROVISIONS (Tom Baldwin)
Discussion: The text of the IMC was reviewed for purposes of determining the adequacy and clarity of the code language. The concern appears to center on what triggers the need for commercial hood installation, with several committee members citing AHJ demands for providing Type I or Type II hoods over microwaves and light duty appliances within break rooms.

The code is very explicit in determining the type of hood within commercial kitchens dependent on the appliance hazard served. Sections 506 through 507 of the IMC detail the criteria for the hoods and exhaust requirements.

The confusion among the AHJ's appears to begin in definitions of Chapter 2 wherein Commercial Cooking Appliances are defined as follows: *"Appliances used in acommercial food service establishment for heating or cooking food and which produce grease vapors, steam, fumes, smoke or odors that are required to be removed through a local exhaust ventilation system. Such appliances include deep fat fryers; upright broilers; griddles; broilers; steam-jacketed kettles; hot-top ranges; under fired broilers (charbroilers); ovens; barbecues; rotisseries; and similar appliances. For the purpose of this definition, a food service establishment shall include any building or a portion thereof used for the preparation and serving of food."* Continuing from definition, ***"Section 507.2.3 Domestic cooking appliances used for commercial purposes****. Domestic Cooking appliances utilized for commercial purposes shall be provided with Type I or Type II hoods as required for the type of appliances and processes in accordance with Sections 507.2, 507.2.1 and 507.2.2."*

The last sentence of the definition *"…a food service establishment shall include any building or a portion thereof used for the preparation and serving of food*", causes a platform of an AHJ to be set, requiring commercial hoods in all facilities other than dwelling units. The IMC Commentary provides a realistic approach to determining the need for

commercial hoods, however, the code text does not. However, exempting all break rooms **in any facility** from the hood/exhaust provisions of the Code will be unrealistic.

Conclusion: Whether to submit a code change to attempt to resolve the confusion on this issue will need further study going forward.

Notes:

- Current text is clear
- Clarify that this does not include mircrowaves, toaster, crockpots, popcorn popper and coffee pots. Use PMC 403.3 text.
    - "Devices such as coffee pots and microwave ovens shall not be considered cooking appliances."
- Investigate reason for code change to IMC 507.2.3
- Should possibly include cooktops
- Investigate specific hospital uses – nutrition rooms, training areas, family visitation areas

ISSUE 8. IMPACT OF AUTOMATIC GUIDED VEHICLES (Enrique Unanue)

8A.CHARGING LOCATIONS
8B.PLACEMENT OF HAZARDOUS MATERIALS IN CORRIDOR
8C.IMPACT ON CORRIDOR WIDTH

Discussion: At meeting #3, a discussion of some of the issues of concern with these systems took place and included:

- They can create hazardous conditions in corridors if battery charging stations are located there.
- Staging of items for robotic delivery in non-patient room corridors can encroach on the means of egress and create unacceptable fire loads in the means of egress access space.
- Multiple paths of robot travel in corridors can encroach on the means of egress.
- Queuing stations for multiple robots in the corridors can encroach on the means of egress.
- The robot turning radius can encroach on the means of egress.
- The presence of robots could hamper response to hospital "codes" (e.g., code blue, code red, etc)
- Robotic systems must be coordinated with fire and smoke doors so that they do not prevent or obstruct door operation.
- Robotic systems must be coordinated with fire alarm and sprinkler systems (i.e., shut-down on alarm but return to a neutral position) and arranged so as not to capture elevators.
- There are currently no known performance standards that include fire and life safety issues.

Issue 8C was also referred to the MOE Work Group as a cross-over issue.

Conclusion: None. Further study needed.

Notes:

- Incorporation needs to be part of building plan – not just added after
- Break down elements of the system and address issues
- Charging areas open to corridors and corridor width has been referenced to the MOE work group
    - Viewed as part of a broader picture of equipment stored/kept in corridors

ISSUE 9. FIRE ALARMS - AUDIBLE AND VISIBLE (Tom Baldwin)

Discussion: The text of the IBC, IFC and NFPA 72 have been reviewed for purposes of determining whether the various documents cited are uniform in scope.

The common concern appears to center in notification within operating rooms and similar uses where distraction of the occupants by visible and/or audible alarms presents a practical issue during medical procedures.

In all cases of Group B, Ambulatory Care and Group I-2, Hospitals, alarms are required. Notification, once an alarm activates is granted a range of options, including: notification at a constantly attended location with general notification broadcast over the overhead page; pre-signal feature allowing notification to that constantly attended location; visual alarms provided in lieu of audible alarm appliances in critical care units of I-2 occupancies (907.5.2.1)

The concerns of the Committee, cited above, may in fact be a nuisance issue for the attending staff/personnel within operating rooms, however, notification during an emergency event is critical in assuring the safety of both the health care professionals as well as the life safety of the patient. The jeopardy placed on those individuals by not requiring responsible notification in those spaces far outweighs the factor of nuisance.

Conclusion: The following code change is suggested:

Section 907.5.2.1 Audible alarms. Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm.

Exception: Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in critical care and surgical areas of Group I-2 occupancies and within surgical and recovery areas of Group B, Ambulatory Care facilities.

Notes:

- Staff must be notified of emergency event
- Defend in place scenario is unique for Groups I-2 and I-3 and ambulatory care facilities –
  - If you don't want people to evacuate, what is the purpose of the evacuation alarms
- Coordination with Fire and Safety evacuation plans to allow for private mode alarm (NFPA 72)
- Should be expanded to patient care areas with sufficient staff supervision?
- Possible limitation of audible and visible alarms in other patient care areas in Group I-2
- Define the terms 'critical care' and 'patient care' areas for purposes of providing notification alarms (see NEC)
- Staff vs. patient/visitor notification is the key element for implementation of evacuation plan

ISSUE 10. NEW AND EXISTING FACILITIES TO BE FULLY SPRINKLERED
10A.TESTING PARAMETERS (Gary Lewis)

Discussion: In issue #10, the current IBC and IFC Section 903.2.6 requires new I-2's to be sprinklered and current IFC Section 4603.4.2 requires existing I-2's to be retroactively sprinklered. It is unclear what else this item may have had in mind.

In issue #10A, a major issue was identified as the frequency of fire pump and sprinkler system testing. It was pointed out that the IFC/2012 does not contain specific fire pump or sprinkler system testing requirements but, rather, in Section 901.6.1, refers users to NFPA 25-2011. It was noted that the current requirement of The Joint Commission for quarterly testing of sprinkler systems is based on the 2000 Life Safety Code referencing the 1998 Edition of NFPA 25. More recent editions of NFPA 25, including 2011, have requirements for semi-annual testing of water flow switches, although mechanical devices must still be tested quarterly.
Conclusion: There does not appear to be an IBC/IFC action issue with #10. For #10A, review of, and proposed changes to, NFPA 25 should be placed in the "Parking Lot".

Notes:

- Time constraints not indicated – needs to be worked out with jurisdiction regarding phasing in of the building being fully sprinklered
- Original reaction for requiring sprinklers may have been nursing homes, not hospitals
- Can sprinkler trade-offs be permitted in sprinklered fire areas and/or smoke compartments as the building is phased in to being fully sprinklered?
- Look at exceptions for sprinklers – building vs. fire area/smoke compartment
- Agree that testing is the purview of NFPA25

2012 IFC
1103.5.2 Group I-2. An *automatic sprinkler system* shall be provided throughout existing Group I-2 *fire areas.* The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the *level of exit discharge*

ISSUE 11. HAZARDOUS MATERIAL LOCATIONS (Jack Chamblee)

Discussion: Hospital and Ambulatory Care occupancies have a specific listing of areas that are considered

hazardous. These areas all elate to the operation of the facility, and include placement of medical gases such as tanked oxygen or medical air (piped systems or individual use), storage of small quantities of medical waste from patient care areas, and laboratories with material of both severe and less than severe hazard.

The listing we are regulated on include the following, with recommended barrier ratings around each. This list is based on the LSC and the JCAHO assessment form, and is summarized below:

- Boiler / Fuel Fired Heater Rooms – 1 hour (non-rated smoke tight partition with sprinkler system)
- Central / bulk laundries of greater than 100 sf – 1 hour (non-rated smoke tight partition with sprinkler system)
- Flammable gas storage rooms (i.e., manifold rooms, bulk tank storage) – 2 hour
- Flammable liquid storage rooms – 2 hour
- Laboratories: less than severe hazard (1 hour) and severe hazard (2 hour)
- Maintenance and repair shops – 1 hour (non-rated smoke tight partition with sprinkler system)
- Piped oxygen tank supply rooms – 1 hour (regardless of sprinkler coverage)
- Paint Shops (low quantities, in proper storage cabinets) – 1 hour (non-rated smoke tight partition with sprinkler system)
- Soiled linen rooms – 1 hour (non-rated smoke tight partition with sprinkler system)
- Storage rooms for combustibles, greater that 50 sf – 1 hour (non-rated smoke tight partition with sprinkler system)
- Trash collection rooms – 1 hour (non-rated smoke tight partition with sprinkler system)

The purpose of raising this issue is to clarify these hazardous areas in the IBC and IFC, to help define which areas are being considered in terms of fire rating of barriers within a healthcare occupancy.
Specific requirements for systems and handling of materials can best be refered out to other codes. NFPA 99 describes detail of set-up of piped systems, and NFPA 30 covers allowances for maximum allowable quantites (MAQ's) of liquid hazards and their distribution in control areas. If there are I-code equivalents, then they can certainly be reviewed.

Another aspect to review is the consideration of the additive quantities within the control area. Examples include whether patients personal oxygen tank, or ABHR for liquids. This is a source of confusion for those enforcing and for the facility. If there is clarity on this in the I-codes, it would be important to spell it out as part of this task.

In the conference call on 6/23/2011, it was noted that currently CMS has different requirements for new incidental use areas and existing incidental use areas. This concept potentially could be reproduced in the I-codes by modifying the current incidental use area Table 508 (2012 edition 509) and creating something similar in IFC chapter 11 as construction requirements for existing buildings. The MAQ table is already in both IBC and IFC, but should be reviewed in detail to ensure that the MAQs restrictions for oxidizing gases are appropriate, given the use of O_2 in high rise Group I-2.

See also under Cross-Over Issues, Item 2.

Conclusion: This issue requires a more detailed code text review and comparison going forward and will likely result in code change proposals to the IBC (probably Chapters 3, 4 and 5) and the IFC (probably Chapters 11 and 50 at a minimum)

Notes:

- Crossover with General work group with incidental use table
  - Move item 6 from General to Fire/Fire Safety
- Are these spaces covered in the incidental use table and the hazardous materials information?
  - Are these requirements too restrictive for hospital operation?
- Are there other areas that need to be addressed?
  - Containment/control areas in upper floors of highrise buildings (General work group #5)
  - Table 307.1(1) and 307.1(2) and Table 414.2.2 for limitations – are these adequate?
  - Oxygen tanks dispersed throughout care areas
  - Define the need specific to Group I-2 to justify increases in specific areas of the tables
- Given the protection in Group I, would a Group H classification add many requirements/limitations?

11A.MEDICAL GASES (Jack Chamblee)

Discussion: The principle issue with #11A is that some states require medical gas outlets to be installed in out-patient care facilities on the same basis as in-patient care facilities. It was pointed out that the IAPMO Uniform Plumbing Code (UPC) does require medical gas outlets and could be interpreted to require them in both in- and out-patient facilities. It was also noted that the IPC does not contain medical gas outlet requirements but, rather, refers the user to NFPA 99C. It was concluded that this item is not an IBC or IFC issue but, rather, an item that could be added to licensing guidelines and may need to be addressed in the UPC code development process.

Conclusion: Moved to the "parking lot".

Notes:

- Issue is resolved

ISSUE 12. ALCOHOL DISPENSERS IN PATIENT ROOMS (Jack Chamblee)

Discussion:

1. Alcohol-based hand rubs IFC 5705.5, 5001.1, 5702.1, 202

Appropriately placed alcohol- based hand rub locations have been interpreted to be compliant to the referenced codes in different ways.

a. Installed in Corridors must comply with code. Other locations outside of the corridors as appropriate are installed/placed as determined by the Owner.
b. Installed anywhere within the Hospital/Facility (corridors, rooms, etc.) has to comply with the code.
c. Installation height of the dispenser above the floor in a corridor is established, however when the dispenser is placed within a room (not the Corridor) over a countertop or shelf, various Code interpretations have been made ranging from approved as installed to not approved as the clear dimension to the floor is interrupted even though the code reference is noted as applying only to a corridor installation.

Section 3405.5 of the IFC referencing the Alcohol-based hand rubs needs to be clarified. The specific clarification shall address:

a. Specification as to the exact requirements for the installation of the Alcohol-based hand rub dispensers in a corridor versus rooms off of the corridor.
b. Countertops and shelves can be installed under dispensers if these items are not in a corridor, but located in a room separated from the corridor by a wall.

Conclusion:
The following code change proposal to the 2012 IFC is recommended:

5705.5 Alcohol-based hand rubs classified as Class I or II liquids. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids shall be in accordance with all of the following:

1. The maximum capacity of each dispenser shall be 68 ounces (2 L).

2. The minimum separation between dispensers shall be 48 inches (1219 mm).

3. The dispensers shall not be installed directly adjacent to, directly above or below an electrical receptacle, switch, appliance, device or other ignition source. The wall space between the dispenser and the floor or intervening counter top shall remain clear and unobstructed.

4. Dispensers shall be mounted so that the bottom of the dispenser is a minimum of 42 inches (1067 mm) and a maximum of 48 inches (1219 mm) above the finished floor.

5. Dispensers shall not release their contents except when the dispenser is manually activated. Facilities shall be permitted to install and use automatically activated "touch free" alcohol-based hand-rub dispensing devices with the following requirements:

5.1. The facility or persons responsible for the dispensers shall test the dispensers each time a new

refill is installed in accordance with the manufacturer's care and use instructions.

5.2. Dispensers shall be designed and must operate in a manner that ensures accidental or malicious activations of the dispensing device are minimized. At a minimum, all devices subject to or used in accordance with this section shall have the following safety features:

5.2.1. Any activations of the dispenser shall only occur when an object is placed within 4 inches (98 mm) of the sensing device.

5.2.2. The dispenser shall not dispense more than the amount required for hand hygiene consistent with label instructions as regulated by the United States Food and Drug Administration (USFDA).

5.2.3. An object placed within the activation zone and left in place will cause only one activation.

6. Storage and use of alcohol-based hand rubs shall be in accordance with the applicable provisions of Sections 5704 and 5705.

7. Dispensers installed in occupancies with carpeted floors shall only be allowed in smoke compartments or fire areas equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

5705.5.1 Corridor installations. Where wall-mounted dispensers containing alcohol-based hand rubs are installed in corridors, they shall be in accordance with all of the following in addition to the requirements of Section 5705.5:

1. Level 2 and 3 aerosol containers shall not be allowed in corridors.

2. The maximum capacity of each Class I or II liquid dispenser shall be reduced to 41 ounces (1.21 L) and the maximum capacity of each Level 1 aerosol dispenser shall be 18 ounces (0.51 kg).

3. The maximum quantity allowed in a corridor within a control area shall be 10 gallons (37.85 L) of Class I or II liquids or 1135 ounces (32.2 kg) of Level 1 aerosols, or a combination of Class I or II liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gallons (37.85 L) or 1,135 ounces (32.2 kg) such that the sum of the ratios of the liquid and aerosol quantities divided by the allowable quantity of liquids and aerosols, respectively, shall not exceed one.

4. The minimum corridor width shall be 72 inches (1829 mm).

5. Projections into a corridor shall be in accordance with Section 1003.3.3.

Reason: The proposed change at Section 5705.5, Item 3 addresses the issue with installations over counter tops which is common in many types of occupancies in addition to health care.
The proposed change to Section 5705.5.1 makes it clear that the general safety items above are still applicable with the exception of Section 5705.5.1, Item 2 where the individual container size is reduced when it is located in a corridor. Section 5705.5, Items 2 thru 7 are just as important for corridor installations as room or space installations.
Notes:

- 'directly adjacent' could be measurable as one inch separation – look for technical justification
- Address alcohol dispensers/amounts within a suite or smoke compartments
- Review latest edition because it will allow for one dispensers per room and that amount will not count towards the 10 gallon limit within a smoke compartment

ISSUE 13. CLINICAL LABS/HAZARDOUS EXHAUST (Jack Chamblee)

Discussion: It was reported that there had been no input from WG members or interested parties on item #13 and that it was unclear if there is a true code problem or simply an interpretation problem to be resolved. ASHE was supposed to provide additional clarity on this issue.

Conclusion: It was suggested that perhaps the code needs to reference NFPA 45 and also NFPA 99 for labs and that IMC Section 510 does not provide the level of specificity needed for labs.

Notes:

- Need NFPA 99 for laboratory fume hoods criteria – Group I-2 laboratories and pharmacies
- IMC 510 should include cross-contamination or clinical need
- Look at NFPA 45
- Might be able to address in the future through ASHE 170

Issue 14. Fire Safety and Evacuation Plans: (Sharon Myers)
14A. IFC fire safety and evacuation plans issues need to be more clearly understood vis-à-vis health care occupancies.

14B. Should fire safety and evacuation plans be prepared and submitted during the plan review stage of a project?

14C. Section 408 of the IFC should be reviewed with an eye toward possible expansion to include Group B ambulatory care facilities.

14D.Should the IFC require the posting of evacuation plans and should it establish a minimum size for them since they seem to get overlooked?

Discussion: Most of the elements of these plans are accomplished by facility management policy but they need to be an on-going "policing" function. They should also be in the IBC for building commissioning and in the IFC for maintenance. Industry support is needed on this topic.

Questions to address:

What are the current CMS requirements? It was noted that CMS requirements seem to be vague on this issue. Input from the hospital interests was requested. How detailed should such a document be?

Are there widely accepted models for how to do this (RACE, etc) and do these models NEED to be codified? It was noted that NFPA 101, Section 18.7.2.1 uses RACE. Any plan should be performance-based so as not to conflict with NFPA 101. It was also suggested that the need for flexibility in the plan should outweigh the tendency to be very specific.

How much should we address special egress condition (infant abduction, dementia wandering control, etc.)? A discussion took place regarding the need for a clear explanation on submitted drawings for plans review of how the building will operate with respect to precautions against infant abductions, Alzheimer unit wandering prevention, etc. or, alternatively, a clear explanation on the fire safety plan that could be submitted along with drawings. Additional discussion took place regarding egress control by occupants versus egress control by staff. It was noted that special locking arrangements such as delayed egress locks under the IBC Section 1008.1.9.7 are occupant-controlled but require a higher level of staff supervision because of the hardware not re-locking after a person passes through the door, creating a security issue. Ed Hite will work on a code change proposal to address the security issues with delayed egress locking arrangements and after review, it was determined that, since the current text proposed for revision exists in Chapter 10 of the IBC and IFC, the topic was transferred to the MOE Work Group as a cross-over item.

How much discussion should there be regarding egress issues during a non-fire event (earthquake, tornado, flood, etc.) in the FIRE code? It was generally felt that non-fire events could be mentioned only generally in the fire safety plan and that the plan should not go into great detail. More detail could be provided in a CMS Guide on the IFC. Too much specificity could be viewed as "scope-creep" in that the IFC does not now cover external events that are outside of its stated scope.

Current code required that the fire safety and evacuation plans be "approved" by the fire official. If we are asking the plans to be submitted during plan review – is this going to cause any conflicts between building/fire code officials? Should this be clarified? It was pointed out that IBC/2012 Section 1001.4 was added to ensure that fire safety plans get reviewed before it's time to issue the C of O and to correlate the IBC and IFC. It was felt that the text should be more explicit in mandating that FS plans be submitted with the plan review. The issue of the FS plans being approved by the fire code official and it was noted that IFC Section 401.2 requires it.

Notes/concepts to address:

1. The General work group suggests that the Fire Safety workgroup consider the following items when drafting the fire evacuation plan requirements:

- Occupant condition
- Maximum number of people incapable of self preservation at any one time
- "Defend in place" or evacuation plan
- Assessment of existing building means of egress as it relates to the above.

The purpose of this is to provide enough information for the plan reviewer to accurately assess the building's occupancy and construction requirements.

2. Consider adding clarity in maintenance of fire safety systems and MOE systems so that could be translated into a lease. This probably is most related to the requirements for Group B. Note that this could be addressed in an ICC guide or other explanatory material that may be out of the scope of this committee.

3. Add requirements for Group B - Ambulatory Healthcare Facilities. Limited scope, i.e tenant space and MOE to exit discharge?

4. Review placarding of fire evacuation maps.
5. Note need to address the option of occupant evacuation elevators. Clarify the use of regular elevators in disaster conditions.

6. Evacuation plan should clarify that immediate evacuation outside of building is not necessarily required, it is the final "stage" of evacuation.

7. We've discussed the concept that code officials need to be aware of both the construction and the evacuation methods of the space when reviewing a new application.

8. This will require coordination with the GEN WG Topic #2 "Defend in place" definition.

Conclusions:
Subitem 14A: Needs further work.

Subitem 14B: Need to formulate IFC proposed code change.

Subitem 14C: Submit the following code change proposal:

SECTION 404
FIRE SAFETY AND EVACUATION PLANS

404.1 General. Fire safety, evacuation and lockdown plans and associated drills shall comply with the requirements of Sections 404.2 through 404.5.1.

404.2 Where required. An *approved* fire safety and evacuation plan shall be prepared and maintained for the following occupancies and buildings:

1. Group A, other than Group A occupancies used exclusively for purposes of religious worship that have an *occupant load* less than 2,000.
2. Group B.
2.1 . Buildings having an ambulatory health care facility use or tenant space regardless of occupant load.
2.2. Buildings having an *occupant load* of 500 or more *persons* or more than 100 *persons* above or below the lowest *level of exit discharge*.
3. through 15. (No change to current text.)

Reason: The justification for placing the ambulatory healthcare facility use or tenant space first is that the "fire evacuation plan" is always required when this use is within a Group B building. Therefore, it should be listed first – and all other B-buildings with or without a 'healthcare use' would be required to have an egress plan. The "tenant" notification and provisions of the fire evacuation plans would be provided /modified for the existing tenants of the building that did not previously have an ambulatory healthcare facilities within them.

Subitem 14D: Need to formulate IFC proposed code change.

Notes:

- Deal with non-fire events (i.e., exterior disasters such as tornado, hurricane, flood) in the fire code only when they will affect the fire safety plan and the defend in place approach to protection
- Interior disaster (i.e., biological hazard, power outage) may result in different evacuation plan
- Disaster evacuation plans (other than fire) should be an operational issue, not a fire code issue
- Define in the IFC how the defend-in-place scenario would be utilized in the fire and safety evacuation plans
- Look at ambulatory care facilities and documentation needed to clarify allowance for defend-in-place
- Look at what is already required by the Joint Commission for guidance

NEW CODE ISSUES

(Issues that have arisen beyond the issues raised by the AHC at AHC #1. Identify the issue and note which WG should be charged with review and resolution. Again, needs to be comprehensive enough to have the AHC act on it.)

1. Add to Issue #1 for Fire/Fire Safety WG going forward: It was suggested that natural cut trees should be prohibited in Group B Ambulatory Care Facilities in IFC Section 806 as they are in Group I-2.
Note: Add to items for Fire Safety work group

2. Add to Issue #3 for Fire/Fire Safety WG going forward: It was suggested that carbon monoxide migration should be a consideration in the issue of floor openings. (See Meeting #4 Notes.)
Note: Addressed as part of Item #3

3. In conjunction with Issue #4, the question was raised as a point of discussion whether humidity levels in operating rooms should be regulated. It was noted that humidity is not regulated in the IMC but that it could be considered as long as conflicts were not created. It was suggested to consider the input that the AHC could have to other codes and to decide whether to create I-codes text or simply reference other codes/standards. The WG seeks AHC guidance on this item.
Note: Mechanical requirement that is included in ASHE 170 tables. Not to be included for the work group at this time.

4. Relative to the discussion on hazardous material use areas (Issue #11), it was suggested that the issue be expanded to examine new technology batteries (e.g., as lithium-ion) and their charging stations as incidental use areas needing protection. These widely used, rechargeable batteries can be found in computers, health care instrumentation and maintenance equipment to name a few applications. This concern was based on the fire incident history of such batteries and their potential impact on health care facilities.
Note: Is this type of battery considered a hazard? No. IFC allows such a substantial amount it never would occur in a hospital setting.

WG CROSS OVER ISSUES

(Issues that need to be coordinated or transferred from one WG to another)

1. The issue of the impact of automated/robotic vehicles in corridors upon egress width (Item 8C) was referred to the MOE Work Group.

2. Issue #11 on hazardous materials locations is also being reviewed as Items 5 and 6 on the GEN WG agenda.

3. A cross over issue referred from the General WG regarding fire safety and evacuation plans (see Meeting #3 Agenda, Item 6.0 and Meeting #3 Notes, Item 4.0) was reviewed and a new task list item was created and assigned in the FS/WG as Issue #14, shown above in this report.

4. A cross over issue referred from the MOE WG is to consider adding clarity in maintenance of fire safety systems

and MOE systems so that could be translated into a lease. Note that this could be addressed in an ICC guide or other explanatory material that may be outside of the scope of this committee. [*Staff note: Two sections on this are already in Chapter 10. Section 1001.4 is new for 2012. Fire code calls for review of the fire and safety evacuation plan on an annual basis or sooner if needed (i.e., major tenant switch).* No activity on this issue at this time.

Note: Other committees have been notified of issues.

FURTHER RESEARCH ISSUES

(At AHC #1, ASHE noted that resources could be made available to the AHC for purposes of detailed studies. Identify such issues, with enough detail and clarity, in order for the AHC to make a reasoned assessment as to whether such an issue warrants an ASHE review component)

ISSUE 5A: It was suggested that the issue of ceiling tile uplift under fire conditions should be studied before final submittal of a code change proposal. Some research has been done with both standard response and QR sprinklers with no significant problems noted. This is an item that should be referred for additional ASHE research work.

ISSUE #13: It was reported that there had been no input from WG members or interested parties on item #13 and that it was unclear if there is a true code problem or simply an interpretation problem to be resolved. ASHE was supposed to provide additional clarity on this issue.

Add: No additional items to add at this time.

OUT-OF-SCOPE ISSUES/"PARKING LOT"

Issue #10: The major issue was identified as the frequency of fire pump and sprinkler system testing. It was pointed out that the IFC/2012 does not contain specific fire pump or sprinkler system testing requirements but, rather, in Section 901.6.1, refers users to NFPA 25-2011. Review of, and proposed changes to, NFPA 25 should be placed in the "Parking Lot" for future action in the NFPA code development process.
Issue #11A: It was concluded that this item is not an IBC or IFC issue but, rather, an item that could be added to licensing guidelines and may need to be addressed in the UPC code development process.
Note: Addressed in discussion of items above.

ADDITONAL ISSUES TO BE BROUGHT TO AHC ATTENTION

(Identify issues not covered in previous comments that require AHC input and direction.)

See "New Code Issues" above

WG PROGRESS ASSESSMENT

(Identify progress to date. How many calls/total duration of calls? Identify logistics issues/concerns such as inadequate participation on the calls. Spinning your wheels with no resolution of issues? Note progress in terms of issues resolved; issues to resolve; time frame for resolution coordinated with remainder of AHC meetings.)

The Fire/Fire Safety Work Group has had 7 teleconference calls --- every Thursday at 10:00 AM EDT, from May 12 through June 23, 2011. Typically there have been 3 – 4 assigned members of the AHC on the calls and the interested parties range from 5 to 10. The call durations last from 1 hour to a little over 2 hours.

The FSWG progress has shown fairly steady improvement over the 7 teleconferences to date. The often- vague nature of some of the issues assigned to the WG caused a somewhat slow start but once some assumptions were made and topics assigned and volunteered for, things started moving along and the WG appears to have found its pace.

WG member and interested party participation has been constructive. John Williams, the AHC chair, has participated in many of the teleconferences of this and the other WG's which has assisted in keeping the work group on track by providing some "big picture" insights and background information on what the AHC discussed at its first meeting and what the issues are.

As seen in the report, several issues have come to a tentative conclusion and many more still need deeper investigation going forward. If the pace continues, the FSWG should be able to complete all assigned tasks as planned and needed.

A common thread that seems to run through several of the discussions that have taken place is that some of the

issues may not be code problems at all but, rather, code misinterpretation or misapplication. The WG will have to carefully consider whether a code change on a given issue will truly result in an improved situation for health care facilities.

AHC #2 Meeting Minutes - Appendix C

MOE WORK GROUP REPORT & NOTES FROM AHC #2
(IBC Chapters 4, 10 & 11)

This appendix is based on the AHC's review of the noted Work Group Report at AHC Meeting #2. Notes from the meeting are indicated in red.

CURRENT CODE ISSUES: (based on issues identified at AHC #1)

MEANS OF EGRESS WORK GROUP

CODES:
IBC: Ch 10 and 11

ISSUES:

- EGRESS THROUGH ELEVATOR LOBBY (NEED TO COORDINATE WITH CTC EFFORTS)
- GENERAL EGRESS
  - WIDTH – 8' CORRIDOR VS 5' CLEAR;
  - COMMON PATH OF TRAVEL
  - TRAVEL DISTANCE
  - SLIDING DOORS
- SPECIAL LOCKING DEVICES
  - DELAYED EGRESS
  - LATCHES ON SMOKE BARRIER DOORS
  - STAFF CONTROL IN PSYCH WARDS
  - INFANT CONTROL
- OCCUPANT EVACUATION VIA ELEVATORS
- PATIENTS AS PART OF OCCUPANT LOAD CALCULATION/REFUGE AREAS
- SUITE SIZE AND SUPERVISION
  - MEANS OF EGRESS
- WAITING SPACES OPEN TO CORRIDOR
- ACCESSIBILITY - MAXIMUM 18" CLEAR MAX ON THE SIDE OF TOILET FOR CARE-GIVER ACCESS

CHAIR: FLANNERY

AHC MEMBERS: POLLITT, KOSARZYCKI, ALTIZER, NICHOLS

INTERESTED PARTIES: WOESTMAN, MANLEY, BEBE, KOFFEL, JAQUES, HELLMAN, PURSELL, CHRIS, COLLINS

The Means of Egress Work Group chose to subdivide the issues identified at the April 20 and 21, 2011 meeting into 5 areas of study:

1. Elevators –
   - EGRESS THROUGH ELEVATOR LOBBY
   - OCCUPANT EVACUATION VIA ELEVATORS

2. Corridors-
   - GENERAL EGRESS
     - WIDTH – 8' CORRIDOR VS 5' CLEAR;
     - COMMON PATH OF TRAVEL
     - TRAVEL DISTANCE
   - PATIENTS AS PART OF OCCUPANT LOAD CALCULATION/REFUGE AREAS
   - WAITING SPACES OPEN TO CORRIDOR

3. Security and locking arrangements –
   - SPECIAL LOCKING DEVICES

- DELAYED EGRESS
- LATCHES ON SMOKE BARRIER DOORS
- STAFF CONTROL IN PSYCH WARDS
- INFANT CONTROL
- SLIDING DOORS

4. Suites
   - SUITE SIZE AND SUPERVISION
     - MEANS OF EGRESS SUITE

5. Accessibility -
   - ACCESSIBILITY - MAXIMUM 18" CLEAR ON THE SIDE OF TOILET FOR CARE-GIVER ACCESS

Following are the reports on each topic:

Issue #1:

1. Elevators –
   - EGRESS THROUGH ELEVATOR LOBBY
   - OCCUPANT EVACUATION VIA ELEVATORS

Discussion #1 (Elevators):

The following questions and answers were developed to assess needs:

- Are the elevators to be used for fire events?
  - Yes – as a secondary evacuation element.
  - Two options – when the elevator is in the smoke compartment where the fire is (fire escape); when the elevator is outside of the smoke compartment where the fire is (secondary/alternate means of evacuation).
  - Consider entourage factor – nurses and attendants moving with patient in beds/wheelchair.
  - Add to the fire-safety plan to allow for assisted evacuation by trained staff. An evacuation plan shall be developed using elevators before fire department recall. See NFPA7.2.13.1.
  - Do not want a trade off for required general egress stairways when elevators can be used.
  - Do you need a lobby or could you use the corridor to provide the smoke separation? Moving into a smoke compartment would provide a large protected area. Should it be sized for how many beds?
- Are the elevators to be used for non-fire events? Which ones?
  - Yes – hurricane, facility failure, chemical contamination, tornado, flood, security threat
- Is there a capacity for elevators used for occupant evacuation? [i.e. car size or # of cars based on occupant load, time goals, etc.]
  - At least one elevator sized for beds – in 2010 facility guidelines 2.1-8.7.2
  - Maybe more based on occupant load of patient floor
  - Performance base based on evacuation plans
- Are there additional negatives brought to a building when elevators are used in emergencies? [Unintended smoke movement, electrical integrity and reliability issues]
  - Smoke movement down corridor or up shaft from other floors
  - Elevator needs to have standby power – 60 seconds start-up
- Has there been any other work done on the issue?
  - CTC elevator lobby group
  - ASME committee for fire service and occupant evacuation elevators
  - Occupant evacuation models? Check with NIST or ASME elevator work groups

Conclusions #1 (Elevators):

The CTC elevator lobby group seems to be moving towards the elimination of elevator lobbies in sprinklered buildings with the exception of fire service access elevators and occupant evacuation elevators.

If someone wanted to be able to use the elevator to evacuate patients there would need to be two scenarios to look at:

- Emergency evacuations other than fire events
- For fire events - all other avenues of defend in place would have to be exhausted before a patient evacuation plan would be put into action. Elevator evacuation would not be possible from a smoke compartment where the fire event was located.

Neither of these scenarios fits with the fire service access elevators or occupant evacuation elevator systems currently in the IBC.

Since patients would be moved in beds and wheelchairs with staff, elevators would have to be sized accordingly. Standby power should be provided.

Corridors could possibly be utilized as staging areas for evacuation. Lobbies just would not be large enough. Would the doors to the lobbies being held open by people waiting? Would staff education to not hold open the doors unless assisting evacuees be sufficient?

AHC could check with NIST or ASME to see if there has been any occupant evacuation models with hospitals either during a general evacuation (i.e., flood, hurricane) or during a fire event. Is there any history on a hospital needing to do a building evacuation for a fire event?

No proposed text changes at this time.

Notes:

- CTC committee on elevator lobbies is still in process – this committee could suggest specific Group I-2 criteria
- Elevator doors are not smoke tight – therefore this is an issue when elevators open into hospital corridors where smoke partitions are required.
- Provide information on how the elevator lobby works with the defend-in-place concept, or not.
- Elevator lobbies may complicate evacuation from one smoke compartment to another
- Having elevator lobbies would also complicate evacuation using the elevators in non-fire events.
- What would be the purpose of the elevator lobby protection in a Group I-2? Is the vertical transmission of smoke not already addressed by a combination of the sprinkler, smoke barrier corridors and the smoke compartmentation on the floor?
- Suggest deletion of the elevator lobby requirement in Group I-2. John Williams has possible code change proposals to use starting points.
- Provide for CTC elevator study group a statement on how elevator lobbies are not part of the defend-in-place strategy. Need before the July 2011 CTC meeting.
- Also revise 711.9

713.14.1 Elevator lobby. …
Exceptions:
4. Enclosed elevator lobbies are not required where the building is protected by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. This exception shall not apply to the following:
   ~~4.1. Group I-2 occupancies;~~
   4.2. Group I-3 occupancies; and
   4.3. Elevators serving floor levels over 75 feet above the lowest level of fire department vehicle access in high-rise buildings.

711.9 Smoke barrier. Where *horizontal assemblies* are required to resist the movement of smoke by other sections of this code in accordance with the definition of *smoke barrier*, penetrations and joints in such *horizontal assemblies* shall be protected as required for *smoke barriers* in accordance with Sections 714.5 and 715.6. Regardless of the number of *stories* connected by elevator shaft enclosures, doors located in elevator shaft enclosures that penetrate the *horizontal assembly* shall be protected by enclosed elevator lobbies complying with Section 713.14.1. Openings through *horizontal assemblies* shall be protected by shaft enclosures complying with Section 713. *Horizontal assemblies* shall not be allowed to have unprotected vertical openings.

Issues #2:

2. Corridors-

- GENERAL EGRESS
  - WIDTH – 8' CORRIDOR VS 5' CLEAR;
  - COMMON PATH OF TRAVEL
  - TRAVEL DISTANCE
- PATIENTS AS PART OF OCCUPANT LOAD CALCULATION/REFUGE AREAS
- WAITING SPACES OPEN TO CORRIDOR

Discussion #2 (Corridors):

General –

- Need to look at FGI document - room size seems to be covered, but maybe the corridor needs to be wider?
- Consider operational vs. minimum width requirements.
- Take look at transport teams and bed/equipment size, turning radius for evacuation width.
- What is different for health care that is different from a standard application? (i.e., Defend in place, limited evacuation, full evacuation)
- Need to look at MOE for other types of care suites without movement of beds (i.e., psychiatric, addiction)
- Should the storage of equipment take away from area considered for refuge areas during a defend in place scenario?
- Should this be in IFC maintenance of MOE?

Width –

- Should we consider equipment in the hallway as possible obstructions for the corridor width?
- Can some equipment, such as crash carts, be located in corridors within the minimum width?
- Can items be stored in the corridor if the operational width of 5 feet is maintained?
- Do percentage of corridor, or require passing space in minimal intervals?

Travel distance –

- Travel distance should be related to suite/smoke compartment size.

Areas open to corridors –

- How about alcoves for equipment open to the corridor?
- What other types of spaces should be permitted to be open to the corridor?
- Corridor width is based on operation of unit – not all hospital areas have bed movement.
- Should wait areas, alcoves for equipment, charging stations, chart stations, nurse stations be open to the corridor?
- Being open to the corridor and what is allowed in the corridor could be two different concerns.
- Other areas brought up included food/coffee shops, pharmacies, nutrition rooms, small lab areas.
- 2012 IBC Section 509 requires incidental areas to be separated and not considered accessory.
- Try a list for things that should not be allowed (patient rooms, hazardous areas, soiled/clean linen rooms > 50 or 100 sq.ft., treatment areas), rather than list of what was allowed.
- Should rehab areas be permitted to be open to corridors?
- The new trend is to have nurses in the patient rooms rather than at the nursing station – thus the need for more charting nitches and the fact that the nurse station is not always staffed.
- Are smoke detection and sprinklers enough as a trade-off for direct supervision/continually manned?
- NFPA allows for a broader exception for what can be open to the corridor.
- Typically, due to defend in place strategies, fires in fully sprinklered hospitals are occurring in individual rooms – not support areas.
- Charging stations for items like crash carts need to be in the corridor.
- Other support mechanized equipment should be in a separate room so that they don't have groups on a corridor.
- Concerns for corridor width with these devices: fuel load/hazard from batteries, effective operational width during parking and/or during operation
- Crash carts, due to timing issues in an emergency, should be immediately available
- Planning should allow equipment that are transient in nature in the corridor, but not storage in the corridor

Smoke compartments –

- Should suite size/smoke compartment size be increased due to increased sizes of patient care areas?
- Is increasing the size of smoke compartments consistent with the philosophy of defend in place?
- Two compartments are required per floor at a minimum, even if one suite.
- You don't want to divide a function.
- Bigger patient rooms would affect occupant load – so maybe compartments should be larger
- Size of smoke compartment (2500 sq.ft.) came from 150 ft. travel distance.

Other –

- Should the door width be increased?

Conclusions #2 (Corridors):

Direction of discussions – No specific language at this time.

Corridor widths and use areas open to corridors – the following has been proposed.

- 8 foot corridor with an effective clear path of 5' that allows the passage of staff, patents and equipment under normal operating conditions
- Conditions. Low hazard equipment, carts, and devices that are transient or planned for and do not encroach upon an effective 5' clear path are allowed provided the organization has a management plan to address egress in emergency situations.
- Design niches/space in corridor for permanent/necessary equipment needs (i.e., crash cart). Allow only temporary/moveable items to obstruct corridor width.

Notes:

- Committee did focus in on right topics.
- Continue in direction of current discussion.
- New door width of 48" for patient rooms desirable
- 5 feet effective path is an operational issue that would be a result of a 8 feet corridor width
- Corridors are part of the hospital work space.
- Possibility of trade off for smoke detection when there is additional equipment in the hall – what is justification/incidence that would require smoke detection
- Look at committee reason for not approving 2006 code change proposal from John Williams on IFC for maintenance for Group I-2 corridor width
- For what use and in what conditions should the allowance be okay – define allowable obstructions; quantitative need; limit size or number of items; dependent on fire evacuation plan; medical equipment, patient lift and transport equipment, & equipment in consistent use.
- Substantiation for allowing some obstructions in the corridor?
- Address areas open to corridors

Issue #3

3. Security and locking arrangements –
   - SPECIAL LOCKING DEVICES
     - DELAYED EGRESS
     - LATCHES ON SMOKE BARRIER DOORS
     - STAFF CONTROL IN PSYCH WARDS
     - INFANT CONTROL
     - SLIDING DOORS

Discussion #3 (Security and locking arrangements):

Delayed egress –

- Should 1 second delay be increase to 3 seconds to avoid nuisance alarms
- Appropriate for Alzheimer wards, psychiatric, drug treatment, security concerns?
- Strobe warnings rather than audible more appropriate in certain areas? Different than color and flash used for fire alarm.

Special locks –

- Latches on smoke barrier doors
- Section 1008.1.9.9 Electromagnetically locked egress doors – often used in hospitals – allow in Group I-2. This is not a security locking arrangement; it is a type of lock.

Discussion of security areas –

- Psychiatric wards – similar to restraint situations, not hospitals.
- If you are using special locking arrangement, could you put the limit on just getting out of the smoke compartment, not the building.
- The one delayed egress lock & special locking limit would not allow for a locked door on the unit and a second delayed egress lock & special locking on the stair tower.
- Clarify what can be used on exit access doors vs. exit doors
- "places or restraint" covers I-2 and I-3? Could restraint areas in Group I-2 use the locking arrangements in Group I-3 for same level of restraint.
- Some Alzheimer patients have aggression issue
- Need to include drug and alcohol rehab
- Allow for Group I-3 locking arrangements where needed rather than move use group
    - Conditions 4 (unit) and 5 (building) in 308.5.5 might address issues.
    - Condition 3 would address room for cool down in emergency rooms.
- New section where in hospitals need security to use Group I-3 locking arrangements.
- See Section 1008.1.9.10 Locking arrangements in correctional facilities - to allow for secure areas in Group I-2 building, but put in new section.
- Section 1008.1.9.6.1 Special locking arrangements in Group I-2 should adequately address infant control.

Conclusion #3 (Security and locking arrangements):

Need to look at provisions for :

- 1008.1.9.6, Special locking arrangement in Group I-2.
- 1008.1.9.7, Delayed egress locks
- 1008.1.9.8 Access-controlled egress locks
- 1008.1.9.9 Electromagnetically locked egress doors – allow in Group I-2
- 1008.1.9.10 Locking arrangement in correction facilities (as guide for what would work in secure areas)
- New section for secure areas in Group I-2 following guidelines in 1008.1.9.10

Notes:

- Operational issue results in wanting to lock a unit and have delayed egress locks on the door into the stair and sometimes a security lock at the bottom of the stiarway. Need to be able to go through more than one security lock in the path to the exit.
- Document controlled/locked egress paths. Fire and safety evacuation plans.
- Conditions of control/care similar to Group I-3 brought into the Group I-2. Set tiers of performance in a unit – not names/classification of patients. Suggestion – secured for clinical needs or secured for security needs.
- Balance security and life safety in locking arrangements.
- Consider areas temporarily locked for safe equipment operation – MRI, x-ray.
- If you egress through a courtyard, would secured gates from that courtyard need to be considered as a lock in the path for means of egress?
- Sometimes locked into a space but allow free egress vs. locked both ways (access controlled egress doors)

Issue #4

4. Care Suites

- SUITE SIZE AND SUPERVISION
    - MEANS OF EGRESS SUITE

Discussion #4 (Care Suites)

Size –

- Does the suite size/smoke compartment size need to increase with the move towards private rooms in future health care (36 to 42 beds).

Intervening rooms –

- Address rooms with intervening rooms – such as isolation rooms with ante room; or toilet room through a patient room is not an intervening room.
- Should the intervening room be deleted?
- When the exit goes through another suite, it should not be considered an intervening room or a restart of travel distance.Ante rooms and small unprotected corridors/vestibules in the suite should not be considered intervening rooms – i.e., only habitable rooms should be considered intervening rooms; the ante room is part of the patient room.
- Need to clarify unrated corridors/hallways from rated corridors. Maybe put a definition for hallway back in the code. Perhaps a better chance to evaluate as a corridor within a suite.
- Should sleeping room rules apply to other areas – critical care, intensive care, cardiac observation areas, pediatric units, maternity units, emergency rooms. Or should critical care allowances be extended to other areas where more continual supervision is needed?
- If we take out the requirement, would that be interpreted to mean no intervening room?
- Suggested leaving in two intervening rooms (i.e., accessory), increase to 100' and define to not include non-habitable spaces.
- Other situations to be considered – sleep study suite with common control room, MRI with control room in front, non-patient areas in suites, psychiatric suites.
- Add smoke detection throughout for both types of suites, not just in patient rooms – balances concerns for sprinklers maybe not working after earthquake or other natural disaster.

Travel distance/suite size –

- Travel distance should be related to suite/smoke compartment size.
- What is the justification for the size of care suites?
- The 5,000 sq.ft. was arbitrary – study efficiency, occupant load, staffing for suite sizes needed.
- If the suite size increases, will the travel distance still work? Is there a chance to look at travel distance for patients only – not all spaces?
- What is the justification? Is there statistical data on average area per patient? Will the increase in patient area justify the increase in suite size.
- NFPA 101 will be increasing the suite size 7,500/10,000 sq.ft with smoke detection/staff notification. Should the travel distance within the suite be increased if it is suggested to increase size in IBC? Does the number of doors slow down travel?

Other –

- Need to look at MOE for other types of care suites without movement of beds (i.e., psychiatric, addiction)
- Should the suite size translate to the ambulatory care facilities?

Conclusion #4 (Suites means of egress)

Revisions to Section 407. No proposal at this time.

Notes:

- Need modeling of patient rooms commonly found in suites – with the goal to determine is the suite size needs to be increased
- Types of suites to look at are ICU, CCU, rehab, dialysis
- Need modeling of total suite for number of rooms and care space
- Do special care suites such as phsych and rehab suites, as patient care suites, have different suite requirements/allowances?

Issue #5

5. Accessibility -

- ACCESSIBILITY - MAXIMUM 18" CLEAR ON THE SIDE OF TOILET FOR CARE-GIVER ACCESS

Discussion #5 (Accessibility)

In patient care areas where nurse assistance is needed to go to the bathroom (i.e., bariatric), the 18" clearance from the toilet to the wall does not allow enough room for a nurse to get next to the patient on each side to offer assistance.

IBC and the 2010 ADA standard ask for 10% of hospital patient rooms to be Accessible units. The current DOJ regulations now ask for the Accessible units to be dispersed by type of unit. Wards/facilities that specialize in mobility treatment are required to be 100% Accessible units. There is an exception from the accessibility requirements for bathrooms in ICU and CCU patient rooms, but not other patient bathrooms associated with Accessible units.

The CTC has a committee looking at accessibility coordination items between IBC and 2010 ADA Standard for Accessible Design.

The new provisions for access to medical equipment from the Access Board might affect room/suite sizes.

Conclusion #5 (Accessibility)

The Access-Board is sponsoring a free webinar titled *Accessible Hospitals and Other Health Care Facilities on* July 7, 2011 2:30 - 4:00 (ET). Info is at http://www.access-board.gov/webinars.htm. Committee members can sign up to get additional information.

No proposals at this time.

Notes:

- Bring back information from the webinar
- Access to equipment may affect room size investigation for suites
- Look at possible code changes (i.e., door maneuvering clearance, bathroom configurations) specific to hospitals that could be passed forward to the CTC Accessibility study group

NEW CODE ISSUES:

- Evacuation for all hazards not just fire
- Doors – swing, size, corridor overlap, break out, smoke seal, maneuvering clearances
- Renovations for suites or smoke compartment vs. new construction

WG CROSS OVER ISSUES:

- The Fire Safety work group referred a proposal for delayed egress locks to the MOE work group. The MOE work group is looking at locking for security/wandering issues. Coordination/communication needs to be maintained in this area.

- If the General work group wants to increase the size of the Care Suites in 407, that will affect the MOE from that space. Coordination/communication needs to be maintained in this area.

- CMS Survey tool for existing buildings – Fire Code committee

Note:

- Need justification for increase of suite size
- CMS Survey tool may be in parking lot

FURTHER RESEARCH ISSUES:

Information on how elevators are used during different emergencies.

Study efficiency, occupant load and staffing needed for suite sizes.

From #1 Elevator comments above:

AHC could check with NIST or ASME to see if there has been any occupant evacuation models with hospitals either during a general evacuation (i.e., flood, hurricane, tornado) or during a fire event. Is there any history on a hospital needing to do a building evacuation for a fire event?

Notes: ASHE will provide general building evacuation studies

From #4 Suite Sizes above:

A study to statistically determine the area needed for "average patient care area" within a typical suite arrangement (i.e. area needed for an ICU care area – bed, equipment, staff movement, supplies, etc) - The 5,000 sq.ft. was an arbitrary number. Study should address

- If the suite size increases, will the travel distance still work? Is there a chance to look at travel distance for patients only – not all spaces?
- NFPA 101 will be increasing the suite size 7,500/10,000 sq.ft with smoke detection/staff notification. Should the travel distance within the suite be increased if it is suggested to increase size in IBC? Does the number of doors slow down travel?

OUT-OF-SCOPE ISSUES:
None at this time

ADDITONAL ISSUES TO BE BROUGHT TO AHC ATTENTION
Note at this time

WG PROGRESS ASSESSMENT:

The MOE work group has teleconferences every Friday, from approximately 10:00 to 11:30 EST. At the writing of this report we have had 8 teleconferences.

Most of the work group members have actively participated in most calls. There are always many interested parties on the calls.

John Williams' (Ad Hoc committee chair) participation has assisted in keeping the work group on track and helped provide background information on what the CTC care study group discussed/developed last cycle.

Some code change proposals were already submitted for committee review, however, discussions resulted in revisions to those proposals being needed before they went in front of the general Ad Hoc health care group. Substantial consensus on the direction of future work has been achieved. Development of specific code changes on several of the items are in progress.

AHC #2 Meeting Minutes - Appendix D

GENERAL WORK GROUP REPORT & NOTES FROM AHC #2
(IBC Chapters 3-6, 12, 13, 27 - 34)

This appendix is based on the AHC's review of the noted Work Group Report at AHC Meeting #2. Notes from the meeting are indicated in red.

PART I: CURRENT CODE ISSUES:

TOPIC #1:
Ambulatory Care. (Sharon Myers) Generally there was concern during previous meetings as to whether ambulatory healthcare facilities are appropriate to remain as a Group B occupancy with special provisions in Section 422 or if it needed to be considered as an I-2 occupancy. There was extensive discussions related to the following issues

- **Definition.** This definition can include a little as one person receiving care that are rendered incapable. This definition was felt to be sufficiently inclusive.

  > **AMBULATORY CARE FACILITY.** Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on less than 24 hour basis to individuals who are rendered incapable of self preservation by the services provided.

- **Separation requirements.** IBC Currently requires 1 hour fire partition from adjacent tenants.
- **Sprinkler and fire alarm provisions.** Note that the sprinkler provisions have changed from the fire area concept to instead sprinklering the entire floor from the 2009 to the 2012 edition.
- **Existing buildings and mixed used.** Section 422 seemed to be a better fit for implementing into existing buildings and mixed use based upon how the requirements were designed. Smoke compartments and other relevant safety features were still provided but flexibility in design was afforded.
- **Size concerns.** There was some concern that such facilities would be too extensive perhaps there should be a size limit. It was noted that the smoke compartment requirements and all the safety requirements would continue to apply so there was not an increase in hazard. [Comments were made that the size of the facilities would not become ***extremely large facilities*** *because it would not be economically feasible to run and would not likely be constructed as Ambulatory care facilities.]*

TOPIC #1 Conclusions:

- Provisions for Ambulatory healthcare provided in Section 422 of the IBC were sufficient and classification as a Group I-2 occupancy did not seem necessary.
- In addition it was felt that Section 422 was more flexible for mixed use and existing buildings than the requirements in Section 407.
- Life Safety issues seem adequately addressed and consistent with CMS guidelines.
- No further action necessary.

Notes:

- Agree with conclusion for ambulatory health care
- Ambulatory surgery centers and dialysis centers are licensed and therefore have additional concerns
- If this care area is required to be separated, should it have a separate mechanical system, redundant power, etc.?

TOPIC #2
Defend in place (David Howard, John Williams)

The topic of defend in placed was raised due to a concern that it is a concept not well addressed in the I-Codes currently. The IBC provides the necessary tools to undertake this strategy in the form of smoke compartments separated by smoke barriers, quick response sprinklers, refuge areas, corridor requirements, fire alarm systems and several other related construction requirements. Building evacuation is not an appropriate strategy for these facilities

and clarification within the code is necessary.

Evacuation strategies are not mandated for any type of building within the code so the best solution was to provide a definition of "defend in place" that could be referenced. Additionally, direction needed to be provided to the Fire Safety WG on possible provisions in Chapter 4 of the IFC. Chapter 4 of the IFC deals specifically with fire safety and evacuation planning. The topic of defend in place includes both Group I-2 occupancies and ambulatory care facilities.

TOPIC #2 Conclusions:
The following recommendations were passed along to Firesafety group regarding what should be addressed in a fire safety plan

- **Occupant condition**
- **Maximum number of people incapable of self preservation at any one time**
- **Defend in place or evacuation plan**
- **Assessment of existing building means of egress as it relates to the above.**

The general WG is also considering adding a provision to require submission of a fire safety plan during the permitting process. Note that section 1001.4 of the IBC and IFC already require the fire safety and evacuation plan be provided.

In addition to the above conclusions a definition was drafted for inclusion into the IBC and IFC for the terms "defend in place". It is understood that the term needs to be used within the code to be defined so it is anticipated that language would be included in 407 and 422 to reference the firesafety plan and the term "defend in place" The draft definition is as follows:

DEFEND IN PLACE. A method of emergency response that relies on the action of designated ~~occupants~~ staff and building components to ensure occupant safety during a fire that does not evacuate occupants from the building. Emergency response ~~may~~ involves remaining in place or relocating within or a both in the building without evacuating the building. Defend in place methods shall be described in the fire evacuation plan as described in International Fire Code Section 40x.x.

Notes:

- Use term in fire plan.
- Add term in 407, 422 and 1025 to establish what is involved for defend-in-place.
- Develop substantiation/reason.

TOPIC #3
Size of compartments (Enrique Unanue).
The focus of this issue is whether the current smoke compartment sizes are sufficient. It was pointed out that the current smoke compartment size of 22,500 sq feet simply came from the square of the 150 foot travel distance at the time the concept was developed. There were possible concerns with the current size related to the possible limitations imposed upon large ICUs. There was also a concern with smoke dampers and the inconveniences and added expense with limited benefit they provided when the HVAC system is fully ducted. ASHE was currently researching the smoke compartment size at the time of the 1st Ad Hoc meeting.

After extensive discussion there was not a large concern for smoke compartment size but instead the area of concerns seems to be more focused upon suite size limitations. Suite size is being addressed by the MOE WG. Without further concerns there did not seem to be a need to change the smoke compartment size limitations but two other issues were currently being addressed to make current smoke compartment more effective.

TOPIC #3 Conclusions:

The currently mandated smoke compartment sizes appeared appropriate unless more data or concerns were provided to the WG to make changes. However it was noted that the MOE WG is dealing with suite size where there does appear to be some size limitation problems. Two issues did surface from this group including the exemption of smoke dampers in fully ducted systems and prevention of unusable smoke compartments due to small size in ambulatory care facilities.

Smoke dampers. The following is a proposal developed for discussion and is based on language used for fire barriers to be consistent. The issue is to exempt smoke dampers in smoke barriers where the systems are fully ducted.

> **717.5.5 Smoke barriers.** A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *smoke barrier*. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 717.3.3.2.
>
> **Exceptions:**
>
> > **1.** *Smoke dampers* are not required where the openings in ducts are limited to a single smoke compartment and the ducts are constructed of steel.
> >
> > **2.** Smoke dampers are not required in Group I-2 occupancies where the HVAC system is fully ducted. For the purposes of this exception, a fully ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. [Smoke compartments are required to be sprinklered throughout in accordance with Section 903.3.1.1.]
> >
> > *Note: This last part in brackets is something that needs to be discussed in more detail as to whether this should be proposed in code text language. Also this topic of smoke dampers is also being addressed by the firesafety WG and correlation of these efforts is necessary.*

Note that the 2009 & 2012 IFC retroactively requires sprinklers in any I-2 Fire area and the entire floor where the I-2 is located. The sprinklers are required to be provided from that floor to the level of exit discharge. Some debate with the above proposed exception as to whether new construction requirements should address sprinkler requirements for existing buildings that may not be sprinklered in accordance with the IBC or IFC.

The following is a summary of why NFPA 101 has eliminated smoke dampers in fully ducted systems from smoke barriers:

1. Healthcare is a highly compartmented occupancy. These compartments include:
   a. Patient rooms
   b. Treatment rooms
   c. Suites
   d. Hazardous area rooms
   e. Corridor walls the resist the passage of smoke
   f. Smoke barrier walls
   g. Stair enclosures walls
   h. Shaft enclosures walls

2. Quick response sprinklers are required in the patient sleeping areas

3. The intent of LSC is to protect the person not intimate with a fire and improve the chances of survival of person intimate with the fire.
   a. Smoke dampers are not an issue for person intimate with a fire.
   b. Current fire records are showing smoke movement as a minimal effect in fully sprinklered healthcare buildings.

4. Quick response sprinklers and normal response sprinkler when activated:
   a. Reduce the temperature in the area of fire origin.
   b. Reduce the smoke generation rates by slowing the combustion or extinguishing the fire

c. Cause the smoke and products of combustion to mix with the room air and become less buoyant.
d. Less energy in the products of combustion means less movement of the smoke.

5. The LSC Technical Committee in 1991 felt this was adequate justification to remove smoke damper from the requirements of smoke barrier. Based on the items above significant amounts of smoke would not be transferred through a fully ducted system in amounts that would endanger persons not intimate with the fire.

Small smoke compartments. The following proposal was submitted by Rick Kabele for consideration of the concern of unusually small smoke compartments which could not accommodate relocation from the adjacent smoke compartment. Some concern that this was not a large issue but the concept had some merit. See proposal as follows:

> **422.3 Smoke compartments.** Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m2) on one *story*, the *story* shall be provided with a *smoke barrier* to subdivide the *story* into no fewer than two *smoke compartments*. All such separated smoke compartments shall be sufficient to provide for the relocation of patients from the largest adjacent patient care smoke compartment. The area of any one such *smoke compartment* shall be not greater than 22,500 square feet (2092 m2). The travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be installed in accordance with Section 709 with the exception that *smoke barriers* shall be continuous from outside wall to an outside wall, a floor to a floor, or from a *smoke barrier* to a *smoke barrier* or a combination thereof.

Note for future reference for existing facility requirements:
Number of smoke zones for ambulatory facilities less than 5000 square feet (NFPA 101 has exception for facilities less than 5000 square feet when detection is provided throughout) space is not required to be subdivided. Note IEBC change of occupancy would require compliance with special occupancy provisions for Ambulatory Care Facilities (Section 1002.1).

Notes:

- Trying to allow for larger nursing units because the occupant load has not changed, but the movement to single bed rooms has resulted larger square footage areas.
- Need substantiation – operations, nursing care, increase in square footage per patient, negative impact on 2 smoke compartments within a unit vs. floor.
- Look at smoke compartment size in three legacy codes – where did the 22,500 come from?
- Perhaps suites on ground level with specific uses – ex: emergency rooms, radiology suites
- Use information on fires and extent to show if the issue is room containment vs. smoke compartment
- Investigate life safety attributes and show how they will be effected by a larger smoke compartment size.
- Proposal for 717.5.5
    - System requirements proposed are too restrictive
    - Look at requirements for breach through the barrier
    - Fully ducted system should be robust, but not all steel
    - Need substantiation for NFPA removal of smoke dampers
    - Substantiation should include the multiple improvements in health care, not just sprinklers (i.e., redundancy in protection, regular inspections, staff training)
    - Limit the proposal to Group I-2 hospitals, not all Group I-2
    - Should look at this for ambulatory care and ambulatory surgery centers
- For smoke compartments – refer to discussion in Item 1

TOPIC #4
Use of facilities during renovations (Brad Pollit).
Discussed this issue and the primary focus was on Chapter 33 of the IFC and IBC. Many of the issues are fire related and thus being addressed by the Firesafety group. Some discussion on how these chapters might work with fire safety and evacuation plans.

TOPIC #4 Conclusions:
More work is needed on the fire safety and evacuation plans to perhaps generate language that would work with those provisions in Chapter 33 of the IBC. Of primary concern is how the defend in place strategies and general fire protection will function during construction/alterations. Some issues also related to HVAC shut down during construction.

Notes:

- Look at how the construction affects the following:
  - Maintain egress
  - Maintain positive/negative pressure between the construction area and the occupied area
  - Fire protection of area if sprinkler system is taken off line
- More information will be provided by ASHE and facilities people

TOPIC #5
Hazardous materials locations (Sharon Myers).
The only concerns were possibly related to difficultly in meeting MAQ limitations on upper floors for labs and portable oxygen. The specific concerns were unclear and further direction is needed.

TOPIC #5 Conclusions:
More direction, if any, is needed as to the particular concern with this topic in order to develop possible proposals to correct problems. **No resolution at this time based upon the need for additional feedback.**

Note:

- Hand off to Fire Safety

TOPIC#6
Incidental use areas.
This issue was discussed and more feedback is necessary from the Adhoc committee. Currently the table addresses "waste and linen collection rooms" of any size in Group I-2 and Ambulatory care facilities. These rooms are to be separated by one hour fire barriers.

TOPIC #6 Conclusions:
Need more feedback but the WG did generate the following questions for discussion as possible areas of concern.

1. Perhaps a minimum size is necessary?
2. Only addresses waste and collection of linens – should it deal with storage of clean linens and storage in general?
3. Would the general storage requirements elsewhere in the I-Codes be considered sufficient and no changes are needed here?

No resolution at this time based upon the need for additional feedback.

Note:

- Hand off to Fire Safety, Item #11

TOPIC #7
SEISMIC REQUIREMENTS & EXISTING BUILDINGS. This was placed in the parking lot initially due to the fact that existing building requirements were being dealt with later in the process. Generally seismic is dealt with in Chapter 34 and the IEBC throughout.

TOPIC #7 CONCLUSIONS. Topic is on hold for future assignment & currently in the 'parking lot' given the majority of issues are related to existing facilities. See Part II New code issues

Note:

- Move to parking lot since this deals with existing buildings

TOPIC #8

Smoke compartment alternative/tradeoff for fully suppressed buildings. (Bill Koffel and Sharon Myers/John Williams).

This issue was related to allowing sprinkler modifications for issues other than building construction type in existing buildings that are not fully sprinklered. Bill Koffel explained the concept and will be assembling draft code language to address these possible allowances. Note that the IFC requires retroactive sprinkler requirements for group I-2 by fire area, throughout the floor where the I-2 is located and all floors between the Group I-2 occupancy and the level of exit discharge. Therefore the only portions of a building that would be permitted to be unsprinklered would be above the existing Group I-2 occupancy.

TOPIC #8 Conclusions:

In process; no conclusions or recommendations to date.

Notes:

- Provide direction on when the building is not fully sprinklered, but other trade offs can be permitted.
- Allowances for trade offs could be based on
  - smoke compartments,
  - fire areas,
  - floor of renovation and all floors below sprinklered
  - building

PART II: NEW CODE ISSUES:

1. **Mixed Use and accessory occupancy provisions.** During our May 17th call this issue came to light that perhaps the requirements for non separated mixed use may not be satisfactory in addressing ambulatory care facilities and Group I-2 occupancies. Section 508.3.1 does not reference Sections 407 and 422 in the same way the high rise building requirements are referenced. This was placed on our list but after discussion realized that the bulk of the issues were in Chapter 9 which is already clearly addressed by Section 508.3.1.

   Based upon discussion there was still a need to address egress as it applies in a mixed occupancy building. This may be a larger problem in existing buildings where ambulatory care facilities are being constructed with many other uses. This issue with egress is an issue for both non separated and separated mixed use occupancies.

   Emergency rooms were also a topic of discussion as it relates to mixed occupancy and accessory occupancy. Some question as to whether they were accessory to the I-2? Also when they separate through fire resistance rated construction what the occupancy classification would be. Generally such facilities whether standalone or separated from an I-2 with fire resistance rated construction would be considered as an Ambulatory care facility.

   Conclusion: Section 508 is appropriate as written but perhaps specific requirements in Section 407 and 422 dealing with egress in mixed occupancy buildings is necessary. More work is needed to develop this concept. May mean possible pointer Sections in Sections 407 and 422 with technical provisions in chapter 10.

   The treatment of emergency rooms in I-2 with regard to mixed use buildings or as accessory occupancies needs to be clarified. In addition the classification of the occupancy type in general needs to be clarified when they are standalone facilities.

Notes:

- Look at where paths for patient egress relies on moving through areas that are not patient areas, such as office/support areas. Include if those areas would serve as refuge areas for the patients. Possibility of one way patient movement in corridor.
- How should free standing emergency centers be regulated – Group I-2 or B.

2. **Existing building issues.** Seismic requirements in existing buildings were initially part of our list but placed in the parking lot to defer existing building issues until later in the process. This item expands the existing building issues beyond simply seismic. The intention is that the General WG review the CMS survey to see

if there are any relevant changes that the General WG should address with the development of code changes. Seismic issues as initially noted in the work plan will also be addressed. **This issue had not been addressed at this time.**

Note:
- See discussion throughout report.
- Sound transmission & acoustical requirements

Note:
- Support requirements in the Guidelines regarding acoustic requirements
- Internal and external noises
- Only want to address physical construction requirements, not licensure requirements

PART III: WG CROSS OVER ISSUES:

1. **Defend in place.** Defend in place concern communicated to the Fire safety work group. See notes under Topic #2 "defend in place" above.
2. **Smoke Dampers.** See Topic #4 for smoke damper information; code language drafts.
3. **Egress Issues For Healthcare Occupancies.** Occupancy B & I-2. See Part II (New Code Issues) Item 1.
4. **Smoke Compartment size.** Related to work by MOE WG with their investigations on Suite Sizes; also see narrative under Topic #3 in this report.

PART IV: FURTHER RESEARCH ISSUES:

1. **OCC LOAD FACTORS (Topic #1, Subsection C., AMBULATORY HEALTHCARE FACILITIES)** Request data gathering from Doug and ASHE. ASHE documentation request to have this move forward under ASHE to develop data and technical size justifications for raising/lowering occupancy loads for specific use areas.

Note:
- Ambulatory care facility would use outpatient areas – 100 sq.ft. per occupant
- Remove

2. **OCC LOAD FACTORS (Topic #1, Subsection D., WITHIN I-2 HOSPITAL FACILITIES)** Request data gathering from Doug and ASHE. ASHE documentation request to have this move forward under ASHE to develop data and technical size justifications for raising/lowering occupancy loads for specific use areas.

Note:
- Existing numbers acceptable
- Remove

3. **COMPARTMENT SIZE.** Size of compartments and how big do they actually need to be and the need for the additional size requirements play in of the size of rooms compared with previous and current codes and past/present/future equipment requirements for care within the rooms. Reference to general topic #8. B.

Note:
- See discussions above

4. **INCIDENTAL USE AREAS.** Larger storage rooms; notations from phone conferences question whether ASHE data or information can be obtained to determine if there are size/quantity issues and limitations and what the current needs are for efficient and necessary care support.

Note:
- Are incidental areas large enough?
- No specific information needed at this time.

PART VI: OUT-OF-SCOPE ISSUES:

Independent Emergency rooms/Emergency Healthcare facilities.

An issue was discussed during several conference calls regarding emergency rooms that are independent of the Group I-2 occupancy or separated from the Group I-2. It was noted that these facilities would either still be classified

as I-2 or be classified as a Group B Ambulatory Care Facility; both classifications have been occurring across the country. Such facilities would not simply be considered Group B occupancies unless they were very small. The concern seemed to have more to do with licensing requirements; thus is outside the scope of this group.

Note that there is still some discussion in the mixed occupancy/ accessory occupancy requirements as to how these facilities, whether stand alone or in conjunction with a hospital, are classified (separated or non separated).

Statements were made by some workgroup members that this is possibly just one of many healthcare uses that may have individualized issues and/or requirements; however, given the rapidly increasing prevalence for the development of this type of facility, the General WG recommends that additional discussion, investigation and research is necessary to determine if possible code language would be advisable and emergency care facilities and requirements should be reviewed.

Note:

- Should free-standing emergency departments be considered a general doctor's office (Group B), an Ambulatory Care Center (Group B with protection) or a hospital (Group I-2)?
- The 24 hours is based on patient stay, not the fact that the facility might be open 24 hours a day.
- If licensure or risk category would require different systems – redundant power, separate mechanical systems, etc. – that should be addressed.
- Description of an urgent care facilities vs. an emergency care facility.
- Emergency care is an extension of a hospital.
- Urgent care is most likely an ambulatory care center.
- Let the licensure issues be addressed by the individual states.
- Add this issue to the Parking Lot.

PART VII: ADDITIONAL ISSUES TO BE BROUGHT TO AHC ATTENTION
Two issues for discussion

1. **Existing buildings. EXISTING BUILDING ISSUE WILL UNCOVER additional issues as will: & ISSUES IN 5&6 ABOVE.**

2. **Code development process and code change proposal substantiation (Sharon Myers)***:*

   A. *COMMENT:*
   It's understood that the2000 Edition of NFPA 101 is referenced due to licensure enforcement standards; however, the more recent standard development is relevant and, in my opinion, should carry more weight in our comparison and investigative processes.

   Just as we rely on our the ICC codes to improve over time by experience, wisdom, technology, comments and input, the reliance on a version of NFPA 101 that is a least 2 if not 3 full development cycles behind the current standard is an oversight at best.

   B. *OBSERVATION:*
   In a number of discussions, there are references to the 'newer' more recent standard to eliminate or be more liberal; however, when the new standard requirements are more stringent, there are comments that the 2000 edition requirements are more applicable and are what is required by licensure/accreditation.

   The changes that we are proposing, if successful, will be for the 2015 ICC Codes; therefore, the appropriate attention for consistency should be to the 2012 NFPA 101 and the most recent editions of the applicable referenced standards.

PART VIII: WG PROGRESS ASSESSMENT:
Progress is gaining momentum. The Adhoc General WG has had **7** calls all approximately 1 hour and 45 minutes in duration.

Participation has been decent though often we get caught up in issues that are not code related or that stray from the agenda. For instance how a building is maintained (in terms of responsibility or agreements between tenants and landlord) is not a building code issue, but the discussion has lead to identifying related code requirements and/or cross over issues.

The tools exist to address much of the maintenance issues noted during those discussions within the IFC already. More specifically the fire code in chapter 9 for fire protection requirements has many requirements related to maintaining fire protection systems and dealing with systems out of service for example.

Based upon work completed thus far the WG is probably 1/3 of the way through the process.