OSHPD Office of Statewide Health Planning and Development

Hospital Building Safety Board
400 R Street, Suite 200
Sacramento, California 95811-6213
(916) 440-8453
Fax (916) 324-9118
www.oshpd.ca.gov/Boards/HBSB/index.html

HOSPITAL BUILDING SAFETY BOARD
Technology Committee

Thursday, June 30, 2016
10:00 a.m. - 4:00 p.m.

Office of Statewide Health Planning and Development
400 R Street, Suite 452
Sacramento, CA 95811

and

Metropolitan Water District Headquarters
700 N. Alameda Street, Suite 2-546
Los Angeles, CA 90012

Board Members
Michael O'Connor, Chair
Deepak Dandekar
Enid Eck
Mike Hooper
Eric Johnson
Bruce Macpherson
Carl Scheuerman
Joe La Brie, Consulting Member
Scott Karpinen, HBSB Chair

OSHPD Staff
Paul Coleman, FDD Director
Hussain Bhatia, Ph.D.
Glenn Gall
Roy Lobo, Ph.D.
Diana Scaturro
Richard Tannahill
Chris Tokas
Elizabeth Wied

HBSB Staff
Kathi Zamora
Krista Harrington
Evett Torres

1. Welcome and Introductions

Michael O'Connor, Committee Chair, welcomed everyone and invited them to introduce themselves.

2. Review the May 11, 2016 meeting report/minutes

Mr. O'Connor reviewed the May meeting, whose focus had been on recapping the workshops. Mr. Johnson had coordinated the effort. Mr. O'Connor commented that in reviewing all the technologies, the common denominator had been their basis of robust Internet connectivity, data structures and systems within the hospitals, and the increasing dependence as we further engage these technologies.

At the meeting's conclusion, the committee had discussed looking at the codes' applicability to the data systems within hospitals. Mr. Tokas had suggested an objective for the Technology Committee: to focus on a white paper as a deliverable. It would offer recommendations from national sources for OSHPD, drawing from the cross-disciplinary nature of the HBSB members. Potential results would be how to move ahead to a Policy Intent Notice (PIN) or regulations.

MOTION: (M/S/C/) [Hooper/Johnson]

The Committee voted unanimously to approve the meeting minutes of May 11, 2016.

3. Review of 2014 Facility Guidelines Institute's guidelines for Main Distribution Frame rooms (technology equipment centers) and Intermediate Distribution Frame rooms (technology distribution rooms), regarding:

a. Location of rooms
b. Mechanical, Engineering, Plumbing requirements
c. Fire Suppression

Mr. O'Connor gave a presentation for the committee. He stated that today the committee would look at what different codes have to offer as guidance.

- A great number of systems are involved and inter-related in health care delivery. The committee's focus would be the physical side of the systems. What are the vulnerabilities; what issues have caused interruption?
- Mr. O'Connor shared a quote from the Guidelines for *Design and Construction of Hospitals and Outpatient Facilities 2014 Edition* regarding technology and medical communication rooms. He emphasized the importance of the systems as essential and life-critical for hospitals.
- He presented the committee's goal of developing the white paper.

- He presented a list of the many national standards to review for the white paper.
- Mr. O'Connor began the review with the 2014 Facility Guidelines Institute (FGI) as the first resource; it begins at a fundamental level and becomes more advanced. He had listed the guidelines for the following:
    - **Spatial** (appropriate location of rooms and equipment within a hospital).

      The committee agreed that requirements should be performance-based.

      They noted the trend that equipment is getting smaller, while networks are becoming larger – including space needed for cables.

      Mr. Coleman noted the importance of scalability in requirements for varying hospital sizes.

      Mr. Scheuerman emphasized that what is best for the patient must come first – the committee must keep in mind the distances nurses must walk

      The group noted the need for foresight to build in enough space for future use. Mr. Dandekar and Mr. Gall discussed "soft space" planning.

      Mr. O'Connor said that the committee should define the equipment that is acceptable in a room – design criteria.

      Mr. Tokas pointed out that today we have a framework with specific requirements, but that it is problematic; there needs to be scalability. This committee needs both to define where we need to expand, and to provide flexibility. This should be the basis of the white paper.

      Mr. Karpinen noted that retrofits are where the issues arise.

      Mr. La Brie pointed out the need to define the nature of the data in a room.

      Mr. Coleman mentioned the California statutory requirement that hospitals need to remain functional after an event. We need to look at which systems in hospitals must remain functional, and the physical environment that its equipment needs to reside in.

      Mr. Scheuerman mentioned electronic health records (EHRs), which need to be available to the care provider regardless of where the patient is receiving care. Most of the large systems in the state operate data

systems offsite from the hospital and have equipment in the hospital capable of communicating and operating. The question is not only what the data is for but also how it works and is backed up.

Mr. Coleman stated that currently we ask hospitals to have a dedicated space where manual files and records can be kept in the event the system goes down.

Mr. Tokas mentioned building information systems, which require controllers, CPUs, and a whole set of other items.

Ms. Eck pointed out that there is a difference between mission-critical data versus data that can be implemented in a paper version for 48 hours. What data is required for a clinical application? What matters is accessibility and usability of whatever data systems are applied to patient care. Beyond that, how do we keep the building functioning to deliver patient care? Whatever we decide needs to support that approach.

- **Minimum mechanical, electrical, plumbing requirements**
- **Fire suppression**

Mr. O'Connor stated that there are different approaches in the FGI Guidelines to mechanical/electrical equipment. Some of the Guidelines prohibit anything other than utilities serving the particular needs of the room (difficult in retrofit applications because of mechanical ductwork, etc.). Other Guidelines give room temperature and humidity operating ranges. Mr. Karpinen and Mr. Johnson noted that the various manufacturers choose their own requirements. As technology progresses, equipment requirements are becoming less finicky about temperature and humidity.

An Interested Party noted that insurance carriers will look at pipes passing through a room when they consider insuring the equipment in the room.

Mr. Johnson noted that when he starts with a new team, he gives a list of where *not* to put a room in terms of adjacent rooms; that list is more descriptive, as it includes stairwells, kitchens, bathrooms, major air

distribution ductwork, and so on. Mr. Hooper pointed out that in existing facilities, this becomes a big issue.

Mr. Gall pointed out that the Guidelines are intended for new construction.

Mr. Coleman pointed out that some things must be done regardless of whether the system is new or existing, such as protection of the system. For example, in an existing system with a room where water lines are running over electrical panels, special protection must be provided.

Mr. Macpherson asked why this kind of protection for existing systems could not be done when designing new construction to achieve the same goal. Mr. O'Connor responded that an existing building may have limitations or extraordinary costs. It is a judgment factor. Mr. Dandekar suggested handling these situations in a CAN or PIN.

Mr. Coleman gave the example of the remodel CAN, which allows you to grandfather nonconforming conditions in an existing building being remodeled, because bringing a 50-year-old building up to current standards in many cases is totally unfeasible. With new buildings, the designer must design to code.

Mr. La Brie commented that an outcome of the committee's work should be thresholds of acceptable conditions; if a condition is not acceptable (for example, a Life Safety issue), the committee should state what to do about it.

Mr. O'Connor noted that the Guidelines contained an emphasis on grounding of the data system.

Mr. O'Connor and Mr. Johnson pointed out the Appendix requirement for redundant outside pathway services for the hospital's network and communication systems.

4. Discussion on National Standards or other standards regarding Information Technology spaces/infrastructure

Mr. Johnson gave a presentation entitled "National Standards – Regarding I.T. Spaces/ Infrastructure." He addressed the American National Standards Institute/

Telecommunications Industry Association (ANSI/TIA) 569 (Pathways and spaces), which is the basis of sizing a basic office building; and ANSI/TIA 1179 (Healthcare), which is from 2010.

- They are not codes, but best practices and standards. They have been worked out over many generations of projects. They have much information about space and layouts.
- The overwhelming agreement among standards is growth; all spaces must accommodate for it. Spaces must accommodate new cabinets, power, mechanical capacities, and so on.
- The Building Industry Consulting Service International Telecommunications Distribution Methods Manual (BICSI TDMM) growth factor is 100%. Mr. Johnson showed the committee their concept drawing of a room.
- He showed the committee the ANSI/TIA-569-D concept drawing of a room.
- He addressed the issue of stacking and punching holes in a floor; routing backbone riser cables takes a great amount of space.
- He showed ANSI/TIA temperature and humidity requirements.
- He addressed cables running back to the room from various directions – all four sides of the room need to be available.
- He presented the article from Belden, “TIA 1170 and Beyond.” He presented the article from COMMSCOPE, “How Does the TIA – 1170 Cabling Standard Affect My Healthcare Facility?”
- He explained the *convergence* happening in the industry today: every device to come in the next five years will want to talk either to Wi-Fi or DataGen. All the devices have to talk to the network, and the networks need to be protected. What equipment houses confidential records? One cabinet may actually need to be protected by a fence from other cabinets. With convergence, all systems – fire alarm, nurse call, biomedical, security camera, door access control – have an Internet Protocol (IP) base and end up in the room in a cabinet. This is part of the challenge of what is and isn’t essential.
- The 1179 standard is a starting point.

Mr. O'Connor asked the group if there are other standards the committee should be looking at that we haven't talked about.

Mr. Johnson mentioned that when cable runs from a Telecomm room out to the workstation, a distance of 90 meters guarantees the full bandwidth. A distance beyond that is out of compliance and degradation occurs. Mr. Johnson and Ms. Scaturro commented that the actual travel path of the cable must be measured; inspectors look at that.

Ms. Eck asked about any applicable standards in AME on the instrumentation, such as sterile processing. Mr. Johnson answered that what he had presented was building standards only rather than medical equipment. The committee had not touched on the vendor side of these restrictions.

Ms. Eck and Mr. Johnson agreed that with the use of hybrid ORs increasing, the committee should factor them into the white paper.

Mr. O'Connor asked the committee about the next steps to take for producing a rough draft of the white paper.

Mr. Johnson suggested a matrix in light of all the competing codes. The committee could compare codes to decide what they agreed with. Mr. Coleman suggested selecting two or three standards to which to give serious consideration. Mr. Johnson agreed to take the ANSI and BICSI pieces.

Mr. Johnson noted that another list would consist of essential versus non-essential systems. Mr. Coleman stated that systems needed for continuing operation of the facility are essential; the hospital is the one to define that. Some specific ones can be defined in code.

Mr. Scheuerman agreed that this will differ from provider to provider, but systems essential for building operation in a way that maintains compliance with Title 22 are critical – we cannot go out of compliance with our license.

Ms. Scaturro pointed out that in rural hospitals, the EHRs may have backup systems that are paper; for them, EHRs may fall into the less essential category.

Mr. Coleman stated that there are different ways to develop building standards. One way is the basis of design for IT services. The hospital would identify its essential

services that are IT-driven, and the spaces for those systems would have certain standards regarding overhead plumbing, wall protection, etc. There could also be a performance code basis or a prescriptive code basis, or a combination of the two.

Mr. O'Connor said that as the committee proceeds with the codes analysis, areas showing consistency can move ahead more quickly than controversial areas showing a wide range of approaches.

Mr. Johnson noted that this new territory will generate much public comment – there is potential for people to react strongly to new standards. Mr. Coleman responded that OSHPD has the statutory requirement that hospitals must be functional after an event; it is OSHPD's responsibility to ensure that building standards enforce that requirement. IT services have become a very critical operation for hospitals where they had not been a few years ago.

He continued that this committee had been created to ensure that OSHPD does not overreach or underreach, but finds a balance that achieves the continuing functionality for hospitals that is required by law.

Mr. Tokas pointed out that another problem that the committee had to address was the number of inconsistent standards – some new and some old.

Mr. Coleman stressed that it is all about patient safety – what is going to ensure that patients can receive the needed medical care on an ongoing basis regardless of the event.

Mr. Johnson noted the huge industry interest in where the data resides for patient EHRs – the cloud, the hospital, where else? We need to address the question.

The group discussed having something ready for the mid-code cycle in December.

Mr. O'Connor stated that the committee can offer some clarity in terms of definitions tied in to this package.

An Interested Party asked if Title 22 states how a hospital is to keep its patient data, and what patient data to keep. Mr. Scheuerman answered that it was written in 1976 on this particular subject, when there was no medium other than paper. The Interested Party suggested adding a code section to Title 22 enabling one system to be able to

receive a pdf file from another system. Mr. Coleman replied that this was outside the authority of OSHPD and this committee.

Mr. O'Connor said that the matrix could be an evolving document; rather than relying on meeting intervals, the committee could look at ways to collaborate continuously. Mr. Coleman suggested collaborating via the website – OSHPD staff would work with Mr. Johnson on developing the matrix which could then be posted on the website, and input could be solicited. At the next meeting, the committee could discuss the matrix and the comments received, and start to agree on its parts.

Ms. Wied clarified that two committee members, but not more than two, are permitted to meet with OSHPD staff including by phone.

Mr. Karpinen commented that after any committee develops a white paper, they present it to the full Board for formalizing.

Mr. Coleman agreed to send out a blast when the matrix goes up on the website.

He said that OSHPD is first looking for minimum standards for the room or rooms pertaining to anything that could degrade the room, for example flooding from pipes, such that it could not remain functional. OSHPD would like to adopt a national standard, or parts and pieces from one or more, to the extent possible.

Mr. Hooper suggested including the National Fire Protection Association (NFPA) 101 Life Safety Code in the matrix. The committee agreed. Mr. Gall suggested both 99 and 101 – everyone needs to comply with them.

5. Consider potential topics for future Technology Committee meetings

Mr. O'Connor stated that although the committee has its hands full with the development of the white paper, members can nevertheless be considering the next topics and focus areas.

Mr. Tokas suggested the topic of Integration of Building Systems (IBS), a big issue.

Mr. O'Connor noted that the committee had heard interest in Title 22 updates.

Mr. La Brie mentioned the EMR issue and where it is going. He also mentioned the importance of not overlooking patient care and a hospital's function while the committee examines the standards.

Ms. Eck stated that in allowing hospitals to decide what is essential versus what is not, the committee and OSHPD have an opportunity and an obligation to make clear what they think is essential; the definition of *essential* can vary with one's pocketbook.

Mr. Scheuerman pointed out that much of that is connected to licensure, certification, and accreditation. If we are not satisfying them, we are not meeting our base goals. If we are meeting those, we are complying with the California Department of Public Health, the Centers for Medicare and Medicaid Services, and the Joint Commission.

Mr. Coleman noted that OSHPD had rolled out the Electronic Services Portal on Monday, June 27. So far it is functioning as expected. The project limit is $500,000 primarily because of the file size limit.

The committee decided on August 17 for the next meeting.

6. Comments from the Public/Board Members on issues not on this agenda

There were no comments from the public.

7. Adjournment

Mr. O'Connor adjourned the meeting at 12:11 p.m.