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Hospital, Outpatient Facilities & Medical Office Buildings Summit

What's Next for Healthcare Facilities in These Unsettled Times?

The Future of
Acute Care | Outpatient | Tele-Health | Life Science
Hospitals | Clinics | MOBs | Retail | Mobile | Non-Clinical | Academic & Research



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Agenda

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Confronting Healthcare's New Reality after COVID, Enduring Drivers, Distributors, and Opportunism

Abha Argawal, MD, FACP, FACHE, Chief Medical Officer, Humboldt Park Health

Deb Sheehan, Healthcare Market Strategy Leader, DPR Construction and former Managing Director of Center for Healthcare Excellence and Innovation

Deb Sheehan, a long-standing professional veteran in facilities management, discussed challenges and opportunities and outlined drivers of change. Some of the areas she discussed include that people no longer solely rely on their doctors for health care recommendations. The physician's influence is weakening as people do their own research, have other options to choose from, and rely on friends and family for advice. To further muddy the market, there are meaningful alternative choices offering healthcare, including retail facilities. Wal-Mart, Target, and CVS offer care and are not held to the same regulatory standards of hospitals. This lack of regulatory oversight makes these entities challenging to compete with on a peer-to-peer level. Illinois is one state that is working to alleviate this regulatory disparity. As a result, consumers are more informed about their options, are more price-sensitive, and are willing to shop around for treatments. Furthermore, the pricing transparency in the field makes this easier for them to do. These realities further erode the thin margins of health care facilities.

The population demographic of Cook County aged 75 to 84 is expected to grow by over 20% and will require the greatest amount of healthcare services. The second-largest demographic is aged 40 to 50 and is expected to grow 5%. This demographic can substantially benefit and reduce the risk of chronic illness through lifestyle and environmental change. Each segment has its own mindset and expectation of how healthcare service should be provided, which complicates the healthcare facility's ability to provide consistent care and maximize efficiencies. All demographics are adopting digital use. However, they are all doing so at different rates and in varying manners. Online searches occur at a very high rate across all demographics. However, those that are categorized as "vulnerable," meaning they earn less than \$25,000 a year, and Chronically Ill Seniors are only likely to adopt the use of wearable technology by 12 to 14%.

In contrast, the Worried Well, those aged 18 to 35 will adopt wearable use technology and a whopping 63%. Aging Adults earn more than \$50,000 annually, who will do so at 41%. Those who adopt technology use through access and opportunity will potentially have more advantages than those who don't. Since COVID occurred, there have been no predictive analytics available. Ms. Sheehan adds that consumers have more influence over their healthcare choices, and the younger generation is influencing, the older generation's decisions.

Ms. Sheehan shared that facilities managers must continually evaluate every opportunity noting that Amazon.com, now the third-largest logistics company, has turned every cost center into an opportunity. She shares that hospitals CAN use properties to create cash flow. Ms. Sheehan

notes we need to "change the conversation - not race to the bottom" We need to address the client by discussing the benefit - this is the language the C-suite understands and what they expect. Impact drives revenue -- there needs to be an evolution from "fees for service" CEOs and CFOs understand this. Providers MUST show the value. Transparency of data allows people to influence decisions. *Change* the conversation.

Ms. Sheehan highlighted that we are all paying more for healthcare, and as a result people are shopping for value. There is more transparency available, and people have more healthcare choices. The ages of 76 to 84 are the highest demographic per capita for chronic illness case management. The Latinx community predominantly uses Medicaid and Medicare. The government pays for 65% of all healthcare. Ms. Sheehan declared that serving the communities in ways they deserve and need is tough with such small margins.

Ms. Sheehan further shared that with budget being so scarce, facilities decisions now require C-suite approval. She counsels that facility managers must learn how to communicate to the C-suite and change their presentations from asking for budget to providing investment and value-based discussions, which is a language the C-Suite understands. She relays that investing in operational strength and strategic decisions is the way to engage the C-suite, ultimately securing additional and much needed capital. She adds that capital has become "precious" in these difficult times.

Dr. Abha Argawal introduced herself by clarifying that she is a medical doctor and joked that she wasn't sure why she was asked to speak. It was soon clear to all in attendance that Dr. Argawal's insights were extremely valuable in healthcare facilities management and planning. Dr. Argawal noted that workflow positively or negatively impacts the patient's experience.

Dr. Argawal stated while environment is important to a patient's overall perception of their care only two questions on their satisfaction survey address environment. She adds that facilities are currently judged by medical efficiency. Dr. Argawal continued that the surveys are now supplemented by social media reviews.

The staffing shortage is affecting operating costs. The labor cost for a travel nurse is \$284 per hour, while a nurse on staff is \$65.00. She laments that operating costs are soaring. To recruit effectively, healthcare facilities must have efficient workflow and accommodations and amenities for the staff. Healthcare facilities do not make money on inpatient beds. Only 6% of investments are allocated to facilities. 65 - 70% is dedicated to labor costs.

Humboldt Park Health was renamed to reflect the community in 2021. It was formally known as Norwegian American Hospital. The community now consists of people who are Latinx, Polish, Black, and Dr. Argawal added "one Indian" referring to herself. The payer mix is predominantly provided by Medicare and Medicaid. The facility nearly closed their doors 10 years ago which would have been tragic as they are an economic and social anchor for the community.

Dr. Argawal was recruited specifically to turn the facility around. She shares that her focus is on quality and safety of care, followed by finances. Dr. Argawal discussed the unfortunate fact that when traveling on Chicago's red line EI if one goes seven stops South, the community is behind seven decades in health care opportunities. Conversely, as one travels seven stops North, the

health of the community significantly increases. She relays that COVID brought these stark realities into the general consciousness.

Dr. Argawal discussed the importance of health equity ensuring that underserved communities have access to facilities and opportunities for self-care. She shared that only 10% of healthcare services contribute to a person's overall health. The other factors are lifestyle and individual behavior leading the way, followed by genomics and societal and environmental factors. Dr. Argawal strongly advocates for avoiding chronic illnesses in the community by endorsing healthy living practices.

Nearly 30% of the community experiences social determinants of health (SDOH) factors, including transportation issues, physical safety concerns, inadequate housing, and lack of access to food. The hospital is partnering with the community and has created a committee to address these issues.

The Advancing Health Equity Committee at Humboldt Park Health uses a four-pronged approach to advancing the community's overall health. The factors include using dashboards to set a baseline and measure variances; operationally aligning the staff and the organization to the principles of health equity; improving patient access to their information; and implementing an LGBTQ inclusivity pilot in Behavioral Health. These strong community partnerships are a strong step forward in minimizing the issues facing this underserved community.

They are measuring the community positivity rate focusing on the goal of quality and equity. It's important to Dr. Argawal that health care professionals speak and report data analytics in plain language. In addition, students and medical professional volunteers provide nutrition counseling and health counseling.

Affordable and acceptable housing is an issue for the community. Real estate has been donated to Humboldt Park Health and they are evaluating how to best use these assets. It's essential to the hospital that the property is used to significantly benefit the community. The property is currently held in a Community Trust. Dr. Argawal shares they will also need grants to continue their work.

Insights from the C-Suite New Challenges as Healthcare Emerges from the Pandemic

Jim Landman, Senior Vice President, Thought Leadership, Kaufman Hall

Healthcare facilities are recovering from the pandemic. There has been \$5 trillion of stimulus spending, and credit management is becoming increasingly important.

Facilities are operating at a negative margin, and contract labor is increasing at significant rates. In addition, inflation forces the need for higher salaries, further complicating the situation.

Partnership models are emerging. The philosophy is, "it's better to get 30% of something vs 100% of nothing."

In addition, the idea of creating hospitals at home is an "interesting concept."

With the financial challenges, debt governance is a major concern. It is true now, and it was also true at the beginning of the pandemic.

There has been a shift from inpatient to outpatient settings from 2016 to 2020. In 2020 outpatient revenue exceeded inpatient revenue by more than 50%. In order to recover, evaluate how much operational cost can be minimized?

However, real estate can be monetized. There are creative uses of real estate for hospitals. There is a strong influence from venture capital. However, there are loan covenants and cash constraints.

Aligning Real Estate with Strategy:

- Prioritize and grow core business functions
- Enhance consumer access and convenience
- Provide flexibility for changing care delivery models
- Optimize utilization of assets
- Lower costs to access needed space

To evaluate portfolio options you will need strategic framework.

Health systems across the U.S. must consider solutions to address housing accessibility and improving the welfare of their employees.

The average tenure of a hospital administrator is 4.5 years - so Facility Managers have to start new with people who have new visions, insights, perceptions, and ideas. They'll want to prioritize which projects are essential and non-essential.

Healthcare Real Estate Report

Michael Carney, Vice President, Investment Research/North American Heitman

Mr. Carney was not present at the conference due to COVID-19

B. Alan Whitson, RPA provided a high-level overview of Mr. Carney's material in his absence.

Medical office delivered steady net operating income (NOI) even with the COVID-induced recession.

On a positive note, Medical Office Buildings are steadily gaining confidence with investors. The consistent outperformance of MOBs during recessions is drawing attention from investors. They are considering MOBs as an appealing alternative during recessions.

Medical Real Estate Investment Trusts (REIT) outperformed the index in 2022. This positive trajectory has intrigued off-shore investors. Offshore capital is now flowing directly into US MOB assets. New private operators are emerging to chase opportunities as well. Fueling demand for healthcare real estate assets.

Additionally, there is continued growth. MOB starts are ticking up and outpacing completions. While, new construction is trending toward larger buildings. This is creating opportunity and liquidity at both ends of the spectrum.

Solutions Spotlight:

High Performance Sliding Doors

Tom Barnard, AD Systems/Allegion

Sliding doors can maximize usable space in medical facilities. Swing doors need from 9 to 15 useable square feet in clearance as they open and close. In contrast, sliding doors can minimize the square feet required significantly.

- Typical applications:
 - Emergency Rooms
 - Exam Rooms
 - Patient Rooms
 - Patient Bathrooms
 - Quiet Rooms
- Other applications include Pharmacies, Medication rooms, and Labs:
 - Spaces that require access control technology
 - UL 1784 smoke ratings
 - Pressurized spaces with seals
- New applications:
 - 45 Minute Fire-Rated Doors
 - Automatic Operator
 - Bi-parting Automatic Operator
 - Matching dual swing doors

Clean Air

David Harris, Healthcare Segment Manager, Camfil

Language in ASHRAE 170 language created confusion by listing the **"MERV" value for filters** in the tables 7-1, 8-1, and 9-1; then saying in the footnotes of Table D-1 **"Where listed, MERV rating is assumed to be non-degrading."** To be classified as non-degrading the filter must be tested according to ASHRAE 52.2 appendix J and be certified with a **"MERV-A" rating**. A filter **with a "MERV-A" rating will** outperform a **"MERV" rated** filter.

The energy cost of pushing air through an air filter is 8 times the cost of the filter itself. Filters with the longest effective life save energy, reduce labor and disposal costs, while providing the cleanest air at the lowest total costs.

The high-efficiency particulate air systems (HEPA) filter was created for the Manhattan project in 1943 and because of its utility is still in use today.

Lessons Learned from the Field When Selecting Prefabricated Components

Bernie Sublette, CHC, Vice President AECOM Hunt

There is more work than the current workforce can handle. It will worsen because of increasing need for speed to market and the shrinking pool of skilled labor.

Productivity in construction has been trending downward for decades. Increasing productivity requires fewer people to do the same amount of work. Utilizing prefabricated components minimizes running back and forth, reducing the risk of error, and potential for injury. Working in a factory is more productive than outside on a job site.

The solution is increasing the use of manufactured (or prefab) components. There are many opportunities for implementation in healthcare. However, this requires the combined efforts of the:

- Design & Construction Team
- Vendor & Manufactures
- Trades
- Authorities Having Jurisdiction

Bernie detailed six lessons learned from the field:

1. Locate Industry Resources
2. Understanding Basics of Prefab
3. Why Prefab?
4. Prefabricated Bathrooms
5. Project Delivery Methods
6. Other Considerations

There are two multi-trade approaches to offsite manufacturing:

- Prefabricated Offsite Construction (local)
- Prefabricated Modular Manufacturing (remote)

Many of the vendors of prefabricated modular components are located in non-union areas. Non-union employees does not mean they are less qualified.

Having a detailed transportation and onsite logistics plan is a must. Avoid shipping air and watch out for low bridges.

Based on experience with prefabrication on eight hospital projects, Bernie did a deep dive into the main benefits of manufactured (or prefab) components:

- Schedule
- Quality

- Productivity
- Safety
- Cost Control

However, to get these benefits owners, architects and construction teams must work together to utilize resources effectively and ensure a viable design. Some **of Bernie's** insights include:

- Understand the project delivery method may be the single most important decision on the project and needs to be made early
- Effective prefabrication planning is key
- Early involvement of modular manufacturer is critical
- Quicker occupancy allows for faster revenue generation
- Owners always fear the unknown
- Added certainty is better than cost savings
- The devil hides along the unanticipated critical path
- Designers must change their process – embrace the “Design Freeze”
- **Utilize a “special teams” playbook**
- Higher upfront costs affects funding model and the cash flow for everyone
- You are better off finding the right person to do the work - then get the money. There's a labor shortage, so plan the resources, then align funding
- Anything that can be built offsite should be

Case Example of a New Hospital Ground Up

Steve Howard, Project Executive, Intermountain Health

Andrew Jennings, MFP and Prefabrication Manager, Barton Malow | Haseldon

Jim Thompson, Vice President, HDR

*Larry Arndt, Senior Director, Barton Malow | Haseldon **

*Jason Pociask, Senior Preconstruction Manager, Barton Malow | Haseldon **

** Did not attend due to COVID-19 issues.*

The task was clear: create a medical district with a 640,000-square-foot hospital, 100,000-square-foot medical office building and an attached parking structure for the SCL Health System in suburb of Denver, Colorado. This is the first of a three-hospital expansion. The lessons learned would be applied to future projects.

The terms made it a bit harder — **the owner's top concerns were speed** to market and budget - \$415 million, two factors that sometimes work against each other.

Key Challenges:

- Speed to market when starting the project
- Budget – fast, with low cost
- Authority having jurisdiction
 - Largest project every done in city
 - First hospital in city
 - AHJ was a contracted resource by city, unfamiliar with healthcare and complex projects
- Covid restrictions
- Supply chain
- The site was far tighter than it appears

The Process

Those demands led the team to choose prefabrication construction as the best way to accomplish the building in a set time frame and set dollar amount.

The team quickly created an on-site manufacturing facility. Although the land totaled 20 acres, that space was taken up as buildings started to form.

To keep the collaborative atmosphere going, the group assembled a “big room complex” in trailers where planning could happen each day. The design team members, construction team, and owner were all working together. **That's what was really driving the modular and prefabrication aspects of the project—the desire to work together to come up with lean concepts.**

The art of the prefab matrix: “As the construction manager, we carried this matrix and started off with all of the concepts that we have seen in the market for prefab and modular construction,” said Jennings of Haselden. “We had cluster groups for interiors, for prefabrication, for mechanical electrical systems, and we assigned concepts to those groups to vet out ideas and see if they were feasible. Along the way, we started to be able to track some of the ancillary items, like were there cost-savings and whether it would add or deduct time from the project schedule.”

Decide before you build: Early on, the team decided that they would manufacture what they could offsite. “You have to make that decision on day one, as the owner, design team, and construction team,” said Thomson of HDR. “If we had made that decision six months down the road, when we were already done with our design, we’d have to start all over again.”

Is the client willing to innovate? Prefabricated operating rooms were “a fairly untested item in the marketplace,” according to Jennings. That was one of the conversations they had to have with their clients.

“Do they want to be first?” he said. “How far do they want to go with that innovative approach?”

Some things don’t work out: One of the team’s goals was to prefabricate an entire patient room that could be replicated for any of the company’s medical complexes. But logistics made that difficult.

Trying to move a room that is literally 14 feet tall across the country with overpasses — it just wouldn’t work. There were certain things that just didn’t make it to the project because of concerns over its newness or the inability to get it there logistically and fit within the budget.

Beware the supply chain: The team made sure to check on certain materials before they planned a design. If they knew there was enough tile in stock for 192 patient bathrooms, then they factored that into their decision-making process. That helped them stay on track for their project timeline.

Have outside help: Conflict will always arise when you’re working with a team of people. The key is to stay on top of it and not be afraid to ask for help.

Utilizing a clinical psychologist that’s employed by our company, they would come out once a quarter, and do team health assessments to see how well the team is doing. “We’re above all the metrics, and that’s why we’re successful.”

Specific Project Challenges

- The team noted it has been difficult to get both product and the warehouse space to store it. Forcing them to use more available area for storage than anticipated, making it difficult to work in tight spaces.
- The construction team had to meet weekly with the city to ensure compliance, understanding, and to uncover potential obstacles. This included having SCL contact the city’s mayor to deal with roadblocks and delays by the city’s contract AHJ.

Key Learnings

1. The decision to include prefabricated design must occur on day 1
2. It's critical to work with the right people at the right time and it is essential that the team work well together.
3. A key tool was "Target Value Design," noting not every decision is solely cost-based. The team constantly evaluated budget decisions.
4. LEAN tools can improve the prefabrication process including: waste elimination matrix, A3, and root cause analysis
5. Decisions must be made quickly with the understanding that there will be more decisions ahead.
6. The learning process is continual; making the right decision at the right time eliminates waste and rework.
7. At times, reorganization of delivery was required to keep the project moving forward.

Using prefabrication, integrated project delivery, and lean tools has allowed SCL to added scope to the project while enhancing patient and staff experience. The project is on time and slightly under budget.

Prefabrication & Modular in Chicagoland - Where & How it's Being Applied

Christine Strom, Director of Planning & Construction, Northwestern Healthcare

Steve Nargang, Principal, TLC Engineering Solutions

Prefabrication and modular construction techniques can be applied to outpatient facilities too and is becoming a popular tool to increase speed to market in projects. Strom cited two examples, a renovation and new construction project:

1. The Bloomingdale Medical Building is 40 miles west of the main Northwestern Campus. The renovation included 50,000 square feet with two existing buildings, which were formerly non-descript retail spaces.
 - The program included: Multi-specialty Clinics, Immediate Care, Imaging Services, and Rehab Facilities.
This project incorporated 71 modular exam rooms.
2. The Old Irving Medical Office Building on the Northwest Side of Chicago is eight miles west of the downtown Northwestern Campus. The 300,000 square foot ground-up structure includes a 150,000 square foot clinic building with 150,000 square feet of parking.
 - The program included: Multi-specialty clinics, Immediate Care, Imaging Services, and Oncology/infusion.
This project incorporated 69 modular exam rooms.

Nargang noted modular construction might be used when there is limited construction space in regulated safety areas. He advises making modular decisions as soon as possible and sticking with them as it will reduce both the design and construction cost of the MEP systems.

Strom added that the modular approach adds efficiency to the overall design process for a healthcare system. Specifically, modular is a very good solution for in-patient examination pods as it increases standardization of exam pods across medical specialties and among facilities.

It's also advantageous to work out space limitations in advance as this is also beneficial to the design process. Strom also shared that technology needs must be assessed before projects begin. Additionally, prefab and modular is becoming an increasingly important consideration in remodeling projects in existing hospitals.

How PDC & Facilities Team Met the COVID Challenge in 160 Hospitals

Gil Manalo, Director of Construction Programs, Medical

Mark Schultz, Regional Director, TN/St. Thomas Health Ministry, Medical

Mark began that after a very trying two years, he will no longer use the word "COVID"; it seemed as if everyone in the audience was nodding in agreement.

SEEING THE SURGE COMING: When COVID-19 began to spread, Schultz likened it to seeing "a slow train coming down the tracks at us. But we didn't really gear up. Then we got our first positive patient" at a Nashville hospital, and everything went into overdrive mode. "We were stressed out at every level of the organization," said Schultz. "Sometimes people at those stress levels don't make the best decisions."

INCIDENT COMMAND CENTER: The first step was to create an incident command center, and the questions poured in. Hospital leadership wanted immediate solutions, not a 48 or 72-hour wait. The coronavirus was so new that how it spread and how long it lived on surfaces were unknowns.

TIME IS OF THE ESSENCE: As the pandemic ushered in changes at the blink of an eye, Schultz directed his team to be able to respond quickly, sometimes as soon as within hours.

FOCUS ON SHARED TEAM VALUES: Imparting to the entire medical system that everyone had the same goal — to support the delivery of patient care — went a long way to creating a team-like mentality. "Their goals were our goals," Schultz said. "It's my job to make sure the clinicians that are taking care of the patients are doing so in a safe environment, unencumbered by the environment and undistracted while they're doing that."

PREPARE FOR THE UNEXPECTED: One of the hospitals in Schultz's coverage area, St. Thomas Hospital Midtown in Nashville, delivers about 7,500 to 8,000 babies a year. They wanted more isolation rooms in case two COVID-positive women went into labor at the same time. Schultz was initially skeptical. "What are the odds of two women going into labor simultaneously that are both COVID-positive?" he said. "It's actually pretty high. We've had three or four simultaneously COVID-positive women giving birth at the same time."

THE PARKING LOT BECAME A MEDICAL SPACE: The team was forced to use spaces in innovative ways, like parking lots. The parking lot became a triage center for COVID-19 patients to get tested and treated. Another is conducting pre-admission in patients' vehicles. "We would have never done these things two years ago," he said.

WHERE TO DON AND DOFF PPE: Schultz knew that healthcare professionals had to have a designated area where they could don and doff their personal protective equipment. Not only

was this good for safety, but it gave doctors and nurses a chance to “drop their shoulders, sit down and catch their breath.”

RED FLAGS RISING: Compliance issues were not taken into account during this crisis. We were being asked to do things that were not in the best interest of the patients or staff. When the conversation turned to creating negative airflow operating rooms, “that’s when really the flags went up and I said, ‘Hey, we really need some more controls on this.’ We needed a group to come in and kind of slow things down,” Schultz said.

ENTER THE FAST TEAM: Manalo’s Facility Assessment Support Team developed plans with Schultz’s staff. “What it gave me is a timeout,” Schultz said. “It gave me the ability to take a very emotional situation, put some guardrails around it, have a very dedicated group of subject matter experts look at what we wanted to do.” Pushing proposals up to the national level ensured safety for patients and staff as well as provided a check on economic feasibility.

FAST TEAM ADVANTAGES: As soon as a hospital emailed the documentation for a proposal, the FAST team met within hours. The team then placed a conference call back with its advice. The process got “control of some of these requests that were coming down the line. Because if you were the hospital facility guy, the first couple of weeks [of COVID], we were getting really creative with what we were doing,” Schultz said.

ALGEBRA PROBLEM: The FAST team includes staffers from facility operations, energy, facility performance, safety, compliance, and infection prevention. “We’re literally on the phone within three or four hours to talk about the issue” once a request comes in, Manalo said. By talking to the person who made the request, “we get a better idea of what it is they’re feeling. And again, no emotions. We’re looking at this from the perspective that we’ve got an algebra problem we’ve got to solve.”

ISOLATION ROOMS - 1: Prior to the pandemic, each hospital had about two isolation rooms per unit. At one point, they even added a third. “For years and years, we patted ourselves on the back. We were really proud of ourselves.” Once COVID-19 broke out, it became clear that two isolation rooms were not enough.

ISOLATION ROOMS - 2: The isolation rooms were scattered throughout the hospital rather than grouped together. That created problems because it wouldn’t work for one nurse to take care of one COVID-19 patient and five non-COVID patients. It also meant that the hospital burned through more PPE. Ironically, this required PPE that came from Wuhan, China, the very place where the virus originated.

ISOLATION ROOMS - 3: Each isolation room is an investment of \$40,000. For 160 hospitals nationwide that was not feasible on any level. So instead of more isolation rooms, “we created rooms that had negative airflow.” This solution create negative pressure rooms, where contaminated air would flow into exhaust pipes and new air would still filter in.

FUTURE BUILDING DESIGN: Gil added that COVID has affected building design in many ways. He shared that all the challenges and adjustments caused everyone to be very emotional in the hospital at the time. Now break rooms are no longer buried in the middle of the facility.

Another issue is that oxygen was being consumed at a rate the buildings was not designed to handle.

RESULTS: “During the first 100 days, the majority of what we're working on was negative air pressure conversions,” Manalo said. “So in that 100 days, we ended up with 1,000 converted rooms across our entire system.

What we're seeing now is more requests to decommission or restore these things back to normal operations, **which is great.**” Energy consumption rose significantly to comply with COVID requirements. Energy efficiency was a victim of COVID.

TEMPORARY CHANGES THAT BECAME PERMANENT: “Here we sit two years later, and COVID is part of everything we do every day,” Schultz said. “A lot of the things we put into place are now permanent measures.”

High Rise Urban Hospitals: Rising Above Time, Money, & Space Challenges

Lamar Davis, CHSP, CHRM, CHC, Director Facilities & Support Services Shirley Ryan Ability Lab

Eric Hoffman, Vice President Facility Services, Lurie Children's Hospital of Chicago

Doug King, Vice President AIA NCARB, ACHA Chicago, Project Management Advisors

Doug King shared that high-rise hospitals are especially necessary in urban environments where land is limited. Doug began to blog about his experiences, with the help of his nephew and to his surprise, the blog went viral: <https://www.bdcnetwork.com/blog/are-you-ready-high-rise-hospitals>. The tallest hospital in the world is Memorial Herman Tower in Houston, TX at 542 feet. Lurie Hospital in Chicago comes in at number 9 at 442 feet. The Shirley Ryan Ability Lab is number 12 at 430 feet.

Eric Hoffman noted they regret not designing access to outside space for patients and staff. However, he added that they would definitely include access to outdoor space in any future design.

Because of the importance of security, a benefit of going up is that a reduced ground perimeter can equate to better security.

As hospitals get taller, some elements become increasingly critical:

- Structural bay size and floor-to-floor heights
- Optimizing and coordinating MEP, fire protection, and IT spaces/shafts
- Future replacement of large pieces of equipment
- The "**Stack Effect**" - special attention needs to go into minimizing this effect, because it can be a "monster to deal with" - **especially with elevators...**
- Healthcare has undervalued the importance of vertical transportation in day-to-day operations and staff morale, while overvaluing the actual cost benefits of value engineering elevators.

FGI Guidelines Update: What's Changed from 2018

Kevin Matuszewski, AIA, LEED, AP, FGI Healthcare Guidelines Revision Committee

Mr. Matuszewski gave a detailed overview of **what's** in the updated 2022 FGI Guidelines, including updates that resulted from the lessons learned during COVID-19 pandemic.

Here are key additions, updates, and useful information from the new edition by topic / facility type below.

- **Sustainable Design:** The FGI publications refer to standards and guidelines already issued rather than duplicating those already published by other entities. Otherwise, they recommend a variety of references, such as ANSI / ASHRAE / IES 90.1 in the absence of a locally or state adopted energy code.
- **Palliative Care:** These design considerations is a recommended holistic approach to symptom management, treatment side effects as well as accommodations for and support of quality of life for the patient, their family, friends, and caregivers.
- **Lighting:** FIT offers guidelines via two (2) IES publications: ANSI / IES RP28 and ASI/IES RP-29. These address, for example, the special lighting needs of older adult care populations as well as practices for lighting for the general population in health care facilities and special lighting for medical procedures). These are more recommendations than requirements.
- **Burn Trauma Critical Care Unit (NEW):** This new section includes guidelines from regarding such design specifications as the temperature of burn patient operating rooms, the inclusion of radiant heat panels over patient beds, and the design of the patient room as a protective environment.
- **Hospice Patient Care:** Guidelines have been updated with requirements for family care / patient-centered care and comfort, such as clear floor area, and inclusion of a chair for long term sitting, a space for overnight family stay, a patient toilet room, bathing facilities and an outside window. Some items are required, others are recommendations.
- **Neonatal Couplet Room:** These design standards specify that the hospitalized mother and NICU patient need to be cared for in the same room to foster critical bonding between mother and baby, as well as clear floor area for the adult bed and neonatal care station, among others.
- **Emergency Departments:** Guidelines address the area of hospitals that have seen the most growth. Guidance includes pediatric areas, and revised Behavioral Health requirements — and involves not only mental health, but also drug addiction and people coming in from the street.
- **ER Low Acuity Treatment Area:** Developed for people going to **ER's**, changing the previous approach from whole cubicles in favor of low-acuity treatment stations, because whole cubicles are not always needed, and the stations enable patients to be treated and fast tracked. The stations cannot be used to replace other ED

treatment room types in their entirety. Ratio of bays / stations to cubicles depends on the expected patient acuity mix and planned facility use. A list of requirements to support the standard of care, such as handwashing stations and privacy, is included.

- **ER Behavioral Health Area:** Addresses secure holding rooms with a min. clear floor area of 60 SF, minimum ceiling height, guidelines to limit the patient's ability to convert architectural features or equipment into weapons, and ligature-resistant design criteria for all spaces, among others.
- **Decontamination (INTERIOR):** Specifies that the outside entry door be located 10 feet minimum in any direction from the closest other entrance, with a separate external entrance next to ambulance entrance lighted and protected from the environment in the same way as the ambulance entrance.
- **Decontamination (EXTERIOR):** Specific requirements include inclusion of at least two temperature-controlled shower heads, separated by at least 6 feet, provision for containment of the contaminant/infectious agents, and water runoff capability to prevent contaminated water from entering community drainage systems, among others.
- **Behavioral Health Crisis Unit (NEW):** This detailed section specifies guidelines for a separate, dedicated emergency services unit to respond to behavioral and mental health crisis unit. Means for visual observation of unit corridors and patient care areas shall be provided. Electronic surveillance shall be permitted only as means of visual observation. Includes guidelines for an observation room, room size and toilet room.
- **Behavioral and Mental Health Hospitals:** Includes updates to environmental safety and prevention of harm. Privacy is not required for Behavioral Health, as observation can be critical. No shower curtains are to be included for safety reasons, but a toilet room must be included for each patient room. There is an emphasis on security and elopement prevention.
- **Geriatric Patient Care (NEW):** The published standards specify that each room must have access to a bathtub, and that a Geriatric Patient Care Unit must exist as a separate from Adult and Pediatric Units.
- **Transcranial Magnetic Stimulation Rooms (NEW):** Guidelines specify a minimum clear floor area of 980 SF, and a hand washing station. Consideration of light dimming controls are very important for patient relaxation. RF shielding may be necessary. Accommodations for documentation are required.

Additional Hospital Guidelines Revisions:

Updated appendices for the behavioral and mental health risk portion of the safety risk assessments, and include providing an anteroom for airborne infections, and clarifications on clean and sterile storage in operating suites.

- **Emergency Department:** Includes new ED design guidance to improve flexibility, accessibility, and safety.
- **Outpatient Guidelines:** Freestanding ED requirements are now only included in the Outpatient Book. These include the removal of the clear floor area requirements

of several patient care stations, with clearances now determining their size. A new appendix table is now included with examples.

- **Birthing Rooms:** The updated standards reduce minimum birthing room size from 200 SF to 120 SF, among other guidelines.
- **Multiple Patient Exam Rooms:** Guidelines have been added to the Urgent Care Center chapter, and includes various room clearance requirement updates.
- **Sexual Assault Forensic Room:** The guidelines must meet the standards of a single patient room, but will include pelvic examination bed/table, a lockable storage area for forensic collection kits, private toilet and shower, and readily accessible consult room. Everything should be contained together in a grouping of rooms.
- **Hyperbaric Oxygen Room Facility (NEW):** Recommendations for Multi-place (Class A chamber) facilities, Mono-place (Class B chamber) facilities and Support Areas for the Infusion Center to be provided for the hyperbaric facility.

Residential Care Facilities Guidelines

- **Residential Care Facilities Guidelines:** Updates include some changes to spatial requirements for resident rooms in nursing homes, expanded telemedicine, and revised noise levels recommendations for rooms and kitchen and food service areas, among others. Also includes streamlined model typologies for assisted living facilities, revised noise level recommendations for resident rooms and kitchen spaces.
- **Food Service Types:** The type and size of the nursing home facility determines the dietary environment and the food service facilities provided, including Commercial kitchen, Retail kitchen, Household kitchen, Social activity kitchen, Outpatient therapy kitchen and Warming/serving kitchen.
- **Resident Room Sizes:** Now includes minimum standard sizes for rooms, based on clearances.
- **Dialysis Services:** Establishes minimum clear floor area for each station, minimum headwall length, and minimum space between treatment chairs. Treatment areas shall have privacy screens or cubicle curtains and handwashing. Sufficient storage shall be provided for each resident's dialysis supplies and dialysis machine when not in use. Dialysis areas shall be separate from day, dining, and activity space.
- **Telemedicine Services:** Specifies that a dedicated room shall be provided for telemedicine services, unless volume does not justify it, in which case an office, exam room, or conference room can be used. Addresses lighting and sound requirements and recommendations.
- **Acoustics:** New updates include noise criteria and acoustic treatment for dining rooms.
- **Inclusive Environments:** Provides inclusive design principles to support quality outcomes for older adults with varying degrees of health concerns that may impair mobility or vision. Design recommendations for inclusive environments include identification of formal and informal resident needs in health, care, and support settings and the related physical elements that support these needs. Long term care

settings often designed to look like a street, where each place has a front porch / facade, works especially for patients with dementia. Reflects the emphasis on patient-centered care.

- **Sustainability for Long Term Care:** Revisions have been made and extensive appendix language included regarding how to formulate a sustainability strategy.
- **ASHRAE 170 - 2021:** Includes changes to the Residential Guidelines (including residential health, care and support settings), is a separate publication, and includes revisited references for ASHRAE 62.1 and 62.2 nontransient vs. transient residents.

Additional Resources

- **Beyond Fundamentals:** FGI provides access to a growing collection of health care design resources that show what kinds of changes have taken place in healthcare since the last guide was published. These include white papers and the Illustrated Guide to FGI Guidelines.
- **Guidelines for Emergency Conditions:** Provides guidance on setting up temporary facilities and adapting existing facilities in response to the COVID-19 pandemic, but for weather emergencies, other pandemics, wildfires, and other emergency situations.