

Boston | June 8, 2022

Hospital, Outpatient Facilities & Medical Office Buildings Summit

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

The Future of
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Confronting Healthcare's New Reality after COVID: Enduring Drivers, Disrupters and Opportunities

Deb Sheehan, Healthcare Market Strategy Leader, DRP Construction.

Kirsten Waltz, Director, Facilities Planning & Design, Baystate Health-Facilities Planning & Engineering. (Effective June 27, Waltz will be joining Johns Hopkins.)

Sheehan identified challenges healthcare facilities face in our post-pandemic world by noting that each crisis also presents opportunities. "In the Chinese language, the word for 'crisis' is composed of two characters: one represents danger, the other, opportunity," she said. "Post-pandemic, we need to find new ways of working more purposefully."

Identifying Challenges

Sheehan outlined these challenges:

- A weakening of physician recommendations resulting in new primary care options and transparency that could undermine traditional PCP relationships.
- Increase in self-referrals, and more steerage of provider referrals.
- Shift in patient demographics, evolving consumer expectations, rising health care costs, and new market entrants and technologies present additional challenges.
- Increased influence of social media reviews resulting in more patients shopping for healthcare services.
- Tomorrow's workforce is composed of four generations – Baby Boomers, Gen X, Millennials, and Gen Z. Each represents four sets of workplace expectations.
- Financially, hospitals still face a long road to recovery due to lower patient volumes and revenue sources, high fixed cost structures, and debt obligations

Seizing Opportunities

Sheehan recommended seizing these opportunities:

- In the workplace of tomorrow, shift to an agile culture.
- Agility isn't just about being faster and more patient-centric; it's about finding new ways of working more purposefully.
- Purposeful agility includes adaptability; doing more with less; navigating disruption; collaborating-functionally and with external partners to keep

- health care staff engaged, inspired and productive; promoting prompt responses and flexibility.
- Focusing on getting things done removes friction and improves outcomes and has weighty implications for value-based care in the post-COVID world.
 - Adopt a care model of innovation that leverages people, processes and technology to address evolving needs.
 - An organization's accessibility, team, credentials, quality and experience scores, virtual health network, online presence, mobile solutions, and physical environment: these are an extension of the care model experience.

Navigating Market Drivers

Waltz noted that healthcare facilities today face a host of challenges. She identified these facilities as follows:

- Ambulatory surgery centers (ASCs)
- Medical Office Buildings (MOBs)
- Retail Clinics
- Urgent Care Centers
- Freestanding EDs
- Post-acute care facilities

Each facility faces challenges in payer reimbursement policies, consumer preferences, and facility regulations and accreditation, among others. Waltz said that each facility must be aware of market drivers that include public and private payers pushing procedures, consumers rating costs in surgical care decisions, as well as challenges from state, federal and other accreditation concerns, and plan accordingly. How well each facility navigates these challenges will ultimately determine their success in the post-pandemic marketplace, Waltz noted.

Post Pandemic Planning & Design: What's the Same and What's Different?

Stephen J. Carbery, Vice President, Facilities, Yale New Haven Health (YNHHS)

Wendy Weitzner, Partner, The Innova Group

Stephen J. Carbery who represents Connecticut's largest health care system that includes seven hospitals, joined by co-presenter Wendy Weitzner, discussed how, during the unsettled times brought on by the pandemic, by streamlining processes and delivery networks and upgrading facilities, YNHHS has retained and strengthened existing processes while also implementing necessary improvements.

Carberry said "it begins with a process which uses analytic tools that examines four levels of uncertainty: a clear enough future, an alternative future, range of futures, and areas of true ambiguity." This approach enabled the YNHHS team to "do the right thing, not the easy thing," and to "hit the mark" to achieve their goals.

Weitzner noted that the analytic tools "combined detailed internal workload data and market data to enable the hospital to quickly develop different strategic, care management, and operational scenarios to estimate future need for inpatient beds by service line, operating rooms, and emergency department bays. The tools not only provide a mechanism for flexible need forecasting, but also a platform for generating a discussion about strategic and operational targets at the hospital."

This led to taking steps that included:

- Simplifying activity, determining what's the same, what's different.
- Examining the ecosystem/market to determine the big picture and to arrive at improved population health, improved quality of care and patient experience, and achieve a lower cost of care.

These steps led to implementing and/or improving:

- Outpatient and diagnostic procedures
- Adoption of telemedicine and remote monitoring
- Private inpatient/ED rooms and greater ICU percent
- Staff shortages
- Creating shared offsite logistical and administrative spaces and work from home options

By further engaging in this process, the YNHHS team was able to determine more effective timelines and priorities that included:

- Move outpatient services out of the hospital footprint to a Medical Office Building (MOB) setting.
- Create bed placement flexibility through improved room standardization.
- Move outpatient services.
- Optimize infrastructure capabilities to respond to future pandemics.
- Adjust key department locations to ensure optimal care delivery.

YNHHS has gone further by documenting “lessons learned” from the pandemic as it related to architectural and MEP. Furthermore, they have outlined multiple levels where improvements could be implemented as we gain momentum and move further past the post-pandemic era.

Clean Air: Real Science, Best Practices, Lesson Learned from Pandemic

Paul Cantrell, V.P, Facility Operations, Lahey Health Systems

David Harris, Health Segment Manager, Camfil

Cantrell and Harris said that the COVID pandemic “created a global sense of fear, uncertainty, and doubt.” However, they said, “science, innovative thinking, and proven methods” to combat the scourge won the day. They advised: “Dig into what worked, lessons learned, and prepare for the next airborne pathogen.” They shared best practices in “design, engineering, facilities, infection and control,” adding, “manufacturers can work together effectively as a team.”

Takeaways included:

- Four pillars for providing clean air to facilities, and each of these pillars has degrees of effectiveness:
 - Filtration - MERV-A & HEPA Both filters have same reported efficiency of MERV 13, but only one filter is MERV 13 A.
 - Dilution by ventilation
 - Pressure relationships – Airborne Infection Isolation (AII) and temporary negative pressure rooms & wings
 - Disinfection – UVGI.

Healthcare facility practitioners are advised to “plan for future pandemics”:

- Designate a wing or unit to be surge isolation infection units
- Surge isolation infection wings or units should be designed to have their own air handling unit (AHU) and dedicated exhaust fan (EF) with extra capacity
- Employ lessons learned in the temporary isolation infection unit when designing future plans.
- Conduct an Infection Control Risk Assessment (ICRA); explore PPE supply issues; develop Business Contingency Planning, so that the public does not fear going to emergency department, or avoids seeking needed care.

2022 FGI Guidelines Update: What's Changed from 2018

David B. Uhaze, RA, Chairman, FGI Guidelines Revisions Committee

Uhaze introduced Facility Guidelines Institute (FGI) as “an authoritative source for guidance on health and residential care facility planning, design, and construction in the United States.”

He noted that “[FGI’s] consensus-based, research-informed guidelines are used by regulators, designers, builders, and facility owners around the country and abroad to protect public health, safety, and welfare.”

Uhaze explained that the mission of the FGI’s signature publication, *Guidelines for Design and Construction*, updated every four years, is to be the “go-to” source of useful information. As such, for the 2022 edition, to keep the publication up-to-date, the revision process commenced in 2018 when FGI’s Steering Committee began reviewing new member candidates. Concurrently, the FGI is invested in development of a new online proposal/comment platform to support collection of input from the industry.

Uhaze shared a few of the changes from 2018 to the new 2022 edition of the *Guidelines* that include:

- Burn Trauma Critical Care Unit
FGI defines this as “an operating room that meets the requirements for a standard OR shall be readily accessible to the BTCCU. Temperature in operating rooms used for burn patients shall be able to be increased to 95°F, as burn patients are unable to regulate their body temperature and are susceptible to hypothermia.
- Neonatal Couplet Room
FGI defines this as a “room [that] accommodates a hospitalized mother and a NICU patient to be cared for in the same room...[with] 300 sf min. clear area, including 150 square feet for the infant care station and 150 square feet for the mother’s bed.”
- ER Low Acuity Treatment Area
FGI defines this as “patient treatment stations are intended to complement single- and multiple patient treatment rooms and fast-track areas. The size and ratio of low acuity treatment bays or cubicles provided in an emergency department will depend on the expected patient acuity mix and planned use of the facility.”

- Behavior Health Crisis Unit

FGI defines this as a “dedicated emergency services unit to respond to behavioral health patients presenting in a state of crisis...or readily accessible to the emergency department...and configured to accommodate programmatic requirements for safety, security, and other clinical considerations.”

Uhaze said that further information – including how to obtain the 2022 *Guidelines*, digital licenses, and additional publications -- can be found by visiting their website at: shop.fgiguideines.org/.

Untangling the Supply Chain

Mitch Green, Healthcare Pre-Construction Executive, AECOM Tishman

Projecting an oft-seen image of a container vessel loaded with merchandise dry-docked at an overseas shipping port, Mitch Green explained how the COVID pandemic disrupted global supply chains. During the pandemic, he said, lockdowns and shortages of personnel slowed, and, in many cases, stopped the flow of materials and goods. Pre-pandemic projects aimed at building healthcare facilities fell prey to disruptions; many projects became derailed.

Green offered insights on how to “untangle” disrupted supply chains.

“During the pandemic, we really had to think about how we build buildings, starting with the completion and going backwards toward the beginning,” Green said. He added: “As a result, we now have an up-close-and-personal relationship with subcontractors, vendors, and vendors’ vendors looking at where we are on lead times.”

Post-pandemic, Green shared these recommendations:

- **Be ready to pay more for goods to get the job done:** “Maybe the cheapest thing isn’t the best,” Green said.
- **Weigh costs versus goals:** “The loss of not opening an ambulatory surgery center...is higher than the cost of putting the space together.”
- **Wait on acceptance testing:** “If we’re all sitting here not being able to do the testing because the thing hasn’t arrived from Taiwan...take the big widget, put it in the building, and as soon as the chip or controller shows up, we’ll deal with it.”
- **Gain (and keep) momentum with pre-fabrication:** “Pre-fabrication can shorten on-site time. You can get construction going a lot faster with pre-fabrication,” Green said.

The Art, Engineering, Management and Economics of Prefabrication and modular Construction of Medical Facilities

Chris Burke, Director, DIRT HealthCare

Chris Burke continued exploring the theme, introduced by Mitch Green, of construction challenges healthcare providers face during unsettled times. As evidenced by strains put on the industry during the pandemic, Burke identified several dominating factors:

- supply chain scarcity
- skilled labor shortage execution
- increased schedules
- cost impacts.

“Buildings must be designed and built to meet current and future needs,” Burke said, “and feature flexibility, adaptability and resilience. Health systems need to evaluate prefabricated construction options to solve these problems.”

Burke noted that when constructing buildings that use “flexible, scalable, and repeatable processes” they become “smart and sustainable assets.”

While design for manufacture and assembly (DfMA), a methodology that focuses on simplifying product design to improve ease of manufacture and efficiency of assembly, may indeed be a good place to start, “it doesn’t fully address lifecycle impact and sustainability,” Burke said.

Toward that end, since “productization drives performance,” Burke noted, healthcare providers should consider embracing the concept of DfMA+D -- design for manufacture and *disassembly*. He said this is a flexible approach that allows for adding “more components, connecting components/devices, the reinstallation or changing of components, and arriving at a connected infrastructure.”

After illustrating several projects that have successfully taken this approach, Burke concluded that by placing an emphasis in constructing outpatient facilities and medical office buildings that are “driven by use of multiple prefab types using DfMA+D,” healthcare providers will ultimately “meet organizational goals.”

Beyond Resilience: A Sustainable Recovery for Healthcare Facilities

David Evans, Global Healthcare Segment Director, Schneider Electric

Gary Hamilton, Senior V.P. and USA Healthcare Director, WSP

The “Beyond Resilience” session discussed our nation’s economic post-pandemic recovery and how healthcare leaders are shifting their focus to adaptability, cost control, resiliency and environmental targets. David Evans and Gary Hamilton shared insights into how to turn pandemic-mode gains into an action plan to support energy-efficient, resilient, healthcare facilities of the future.

The takeaways of their discussion included:

- Call to action on climate change: “Climate change is still our greatest long-term threat,” Evans and Hamilton said, adding: “It’s one for which there will be no vaccine.”
- Senate Bill 9: The panelists said this Bill will create a next-generation roadmap for Massachusetts climate policy. It aims to achieve, by 2030, a reduction in emissions by at least 50% below 1990 levels; by 2040 to limit emissions by at least 75% below 1990 levels; and by 2050 to achieve net-zero emissions.
- A four-phased approach includes:
 1. Strategize and define success de-carbonization
 2. Digitize to measure baseline energy, identify opportunities, and modernize building systems
 3. De-carbonize to electrify operations, reduce amounts of wasted energy that are replaced with renewable, and engage value chain
 4. Optimize by continuing to report and benchmark progress while also pursuing certification

Building an Agile Design & Construction Team

Moderator: Anastasia Barnes, Publisher, *High Profile – New England Facilities Development News*

Melissa Aureli, Director of Facilities Planning and Space Management, Boston Children's Hospital

Joe Breen, Project Executive, Lee Kennedy Company

Kristi Dowd, Senior Vice President, Redgate

Nancy Hanright, Senior Director of Real Estate and Space Planning, Boston Medical Center (BMC)

Danielle M. Santos, Healthcare Practice Leader, Lavalley Bensinger Architects

Moderator Anastasia Barnes opened the discussion by noting that "in order to build a successful design/build team, companies have to be willing to put in a lot of time in the design phase." Barnes said that "people have to be trained properly and thoroughly and to get out of their comfort zone, get out of their silos, and work with other trades. This is the integrated project delivery approach, or IPD."

Barnes further defined the IPD model by describing it as one "that employs a different philosophy—the project participants accept and manage design and construction risks as a team. This means that a consultant or subcontractor might be pulled into the design phase much earlier than he/she expects."

Barnes said that "each project team member should have clear communication and accountability for the overall design and construction." She emphasized: "Communication is number one if you want to have a successful project using the IPD method."

The IPD approach is used in a diverse spectrum of projects. Danielle Santos' projects include ambulatory centers, medical office buildings, an adolescent psychiatric unit, and a clinical simulation center, among others. Kristi Dowd has guided large institutional clients through complex master plans, feasibility analyses, and capital project implementation, in healthcare and in academia, too, at Dartmouth College and Boston University, for example.

Melissa Aureli said the IPD approach has proved to be true especially during COVID when she and her team found themselves strained by the pandemic.

“We felt the full weight of the pandemic,” Aureli said. “Rather than relying on just on ourselves and our trusted design partners, we also learned to rely on our Infection Prevention Control team and the Family Advisory Council at Boston Children’s. We found these teams to be important stakeholders, and they brought a strong voice to the table.”

Joe Breen said the IPD model has its “advantages. When a team is built right, with a high level of buy-in, that team has a greater chance at success.” Breen noted that during the pandemic he and his teams “had to move fast. We did not have a lot of time for team building. Communication is key. Learning to communicate well while integrating new members into team is essential.”

Nancy Hanright said BMC has long embraced the IPD approach, she said, because “it allows, early on, for our team to bring plans to market with more efficiency. We’ve done it prior to the pandemic and have always found it to be an efficient delivery method contractually.”

The takeaway she has found, post-pandemic, is the need for more projects to provide better access to healthcare.

“BMC stands by its promise to provide exceptional care without exception,” she said. “If the pandemic taught us anything, is that we need more healthcare access – more beds and better facilities – going forward.”

In sum, panelists had these takeaways:

- *Collaboration:* While panelists stated, in many cases, they had established a comfort level with one another having worked on teams over many years, they stressed that it is important to not always rely on that comfort level as a given. The way forward on projects is to collaborate without assumptions.
- *Adaptability:* While the unsettled times strained the teams, panelists said they remained on task by taking flexible approaches to deadlines and responsibilities.
- *Integration:* Panelists said they when new personnel become involved and offer input to the project, it is important to integrate them into the team. The successful integration of new members into the team strengthens the organization as well as the planning and execution of the project.