



ACUITY ADAPTABILITY

Innovative Planning and Design for Responsive Healthcare Delivery

BY MIKE ZORICH, PE, LEED AP, AND COREY GAARDE, FHIMSS, CPHIMS

Since the onset of the COVID-19 pandemic, the traditional delivery of patient care has been challenged as never before, spurring many healthcare organizations to seek a better model for the future. Though it may not be the answer for every healthcare facility or system, the acuity-adaptable design concept could lead the way to better care in many situations.

The idea of acuity-adaptable healthcare design has been around for decades. However, because it is dependent on the specialty, location, configuration, and staff culture of each facility, it has not experienced widespread adoption outside of pilot programs, specialty programs, and adjacent models like universal rooms, flex-up or flex-down rooms, or single-stay units. Today, though, several factors – COVID-19,

the physician and nurse shortage, cash flow pressures, outpatient care paradigms, and digital models of healthcare consumption – make acuity adaptability seem less like a novelty and more like a possible necessity for many healthcare facilities whose reactive response to the pandemic has come at a huge cost, financially and operationally. As a result, the downsides of the model begin to look less like fatal flaws and more like challenges to be overcome through cross-training, technological innovation, and ingenuity.

This executive guide provides a high-level exploration of acuity adaptability, including its origins and characteristics, potential benefits and liabilities, and key steps for organizations considering the model's adoption through renovation or new construction.

Defining acuity adaptability

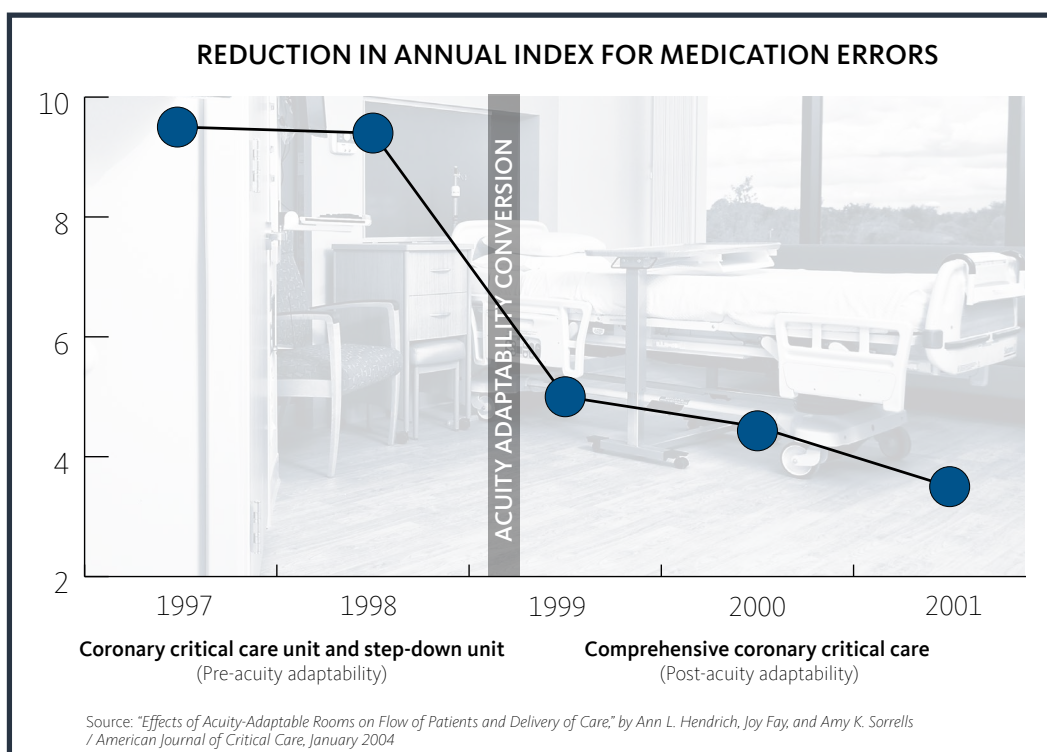
Traditional models of healthcare design involve transferring the patient to different rooms, different departments, even different hospitals to be treated by different specialist physicians and nurses as the patient's condition improves or worsens. With the acuity adaptability model of healthcare design, however, the patient remains in the same room from admission to discharge, regardless of changes in acuity – potentially leading to better patient outcomes and reductions in the cost of care over the long term.

The acuity adaptability model was developed in the 1990s by Ann Hendrich, PhD, RN, FAAN, a respected researcher, quality and safety expert, as well as the author of the Hendrich II Fall Risk Model study. In 2004 Hendrich, along with Joy Fay, RN, MS, and Amy K. Sorrells, RN, BSN, [published a report](#) on the effectiveness of the acuity adaptability model based on a pre/post

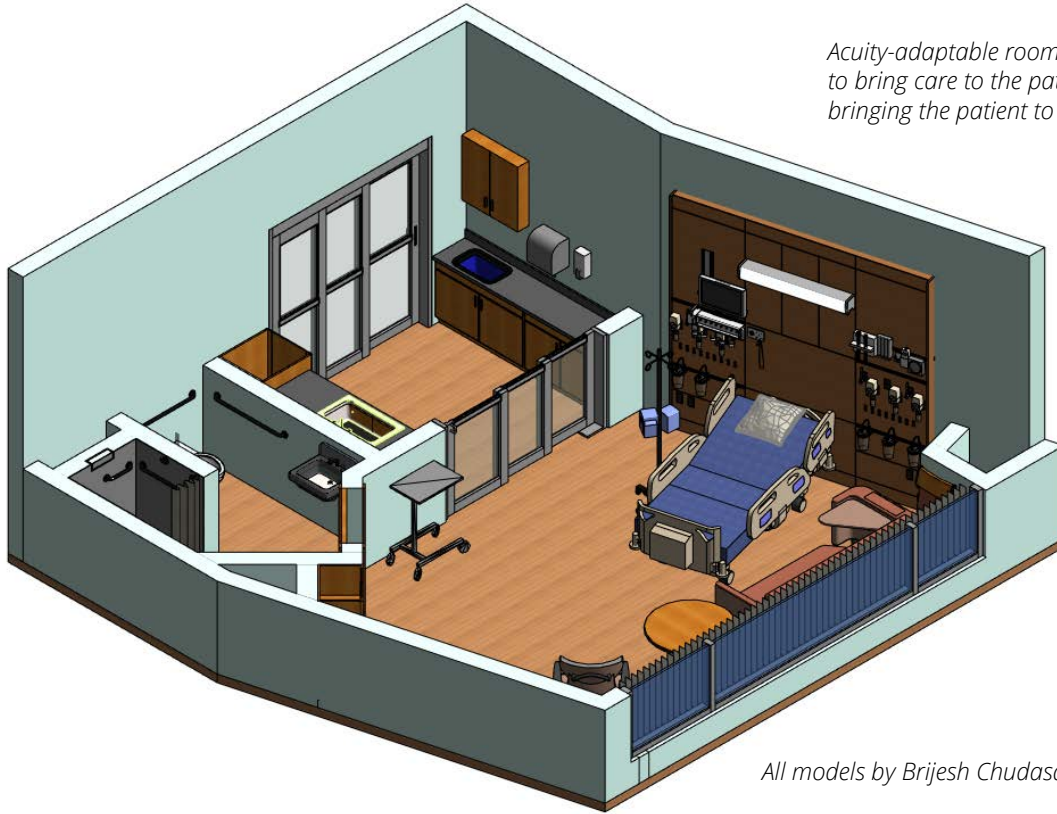
study of two years of baseline data and three years of data in acuity-adaptable conditions. The study revealed significant improvements in quality of care and reductions in cost of care for patients in acuity-adaptable environments. Routes of improvement included:

- Fewer clinician handoffs and transfers
- Fewer medication errors (*see chart below*)
- Fewer patient falls
- Increased patient satisfaction
- Fewer budgeted nursing hours per patient
- Increased available nursing time without additional cost
- More patient days per bed without an increase in bed base

Other studies also have supported the potential benefits of acuity adaptability. A [pilot study](#) at a 1,500-bed tertiary hospital in the Houston metropolitan area examined the implementation of four acuity-adaptable rooms in the facility's



Acuity-adaptable rooms are designed to bring care to the patient rather than bringing the patient to the care.



All models by Brijesh Chudasama/IMEG

30-bed multi-organ transplant unit. The study discovered recipients of kidney transplants spent an average of 4.1 days in the hospital when cared for in acuity-adaptable rooms compared to an average of 9.6 days for transplant recipients cared for in traditional beds.

While the results of the study were encouraging, the authors noted that the complexity of a hospital system makes it difficult to isolate a single cause for any given outcome.

Components of acuity-adaptable healthcare design

Acuity adaptability places demands not only on the adaptable rooms but on the healthcare providers themselves and the entire hospital in terms of capability and equipment inventory. The most critical component is the ability to bring care to the patient rather than bringing the

patient to the care. This could necessitate the introduction of portable diagnostic and telemetry equipment, procedural-based care, meds-to-beds, telemedicine, as well as sufficient space to operate the equipment within the care room.

“I would say a dream of every nurse and probably every clinician is to never have to move a patient from the minute they get to the hospital – once they're past the ER – to the day they get discharged,” says Janet Hanley, RN, BSN, Chief Nursing Information Officer and Vice President of Patient Technology, Innovation, Efficiencies at Sharp Healthcare.

Other important acuity-adaptable components include:

- **Spacious rooms** designed for a variety of functions and the ability to treat patients of varying acuity. This could involve anything from a light renovation to a complete restructuring of

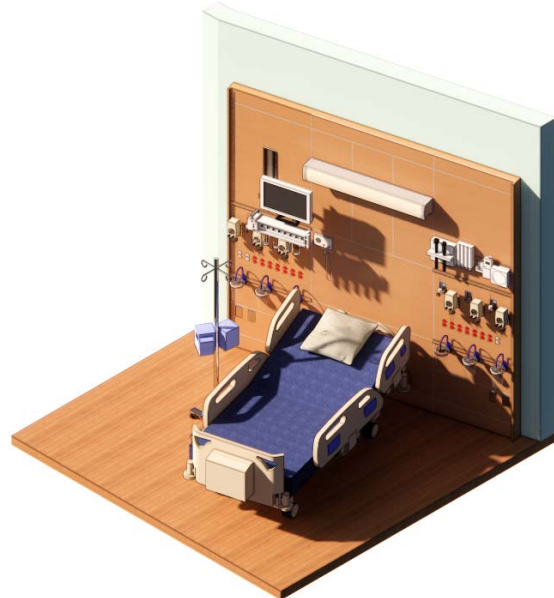
the unit to include fewer rooms, depending on the level of adaptability.

- **Rooms that have everything the patient may need**, including various medical gases that might have only been needed in an intensive care unit. Acuity-adaptable rooms may need access to medical air, oxygen, carbon dioxide, nitrogen, nitrous oxide, and other medical gases. This is in addition to medical equipment, medication administration, IT/technology, and general supplies.
- **Technology that is focused on the experience** of the patient, their family, and the care team, enabling an engaged and empowered level of care and awareness
- **Dynamic supply and medication management** that maximizes resources while maintaining point-in-time care
- **A flexible staff** able to provide both routine and intensive care as well as specialty care as needed

Benefits of acuity-adaptable healthcare design

Flexibility is the primary benefit of acuity-adaptable healthcare design, allowing facilities to adapt to the needs of the patients and communities they serve. *(See flexible floor models on page 5.)*

"Due to the space constraints most medical facilities are under, anything that could flex,



Acuity-adaptable rooms provide access to ICU-level medical gases and equipment.

whether it be for patient care or for something else, is important," says Luke Leyden, AIA, Assistant Director and Chief Architect for Capital Management at University of Iowa Health Care. "I see a tremendous value in creating an acuity adaptable model both for inpatient rooms and 'soft' spaces that could be flexed into during surge situations."

Required level of care where needed is also a major benefit. Patients who arrive at acuity-adaptable facilities are less likely to need to be transferred to another facility – and incur the incumbent risks of transfer – since the staff likely has the training and capability to treat conditions of varying severity, especially in remote, rural, or small hospitals.

"Operationally, a pod/unit of beds that can convert from intermediate to high acuity would help preserve capacity to care for higher acuity patients who otherwise may need to be turned away by a hospital on bypass," says Ryan Walsh

(Continued on page 6)

Flexibility of an acuity adaptable floor

The models below demonstrate an acuity-adaptable floor with flexibility to handle incremental patient acuity, surge capacity, disaster planning and/or optimal bed and caregiver management.

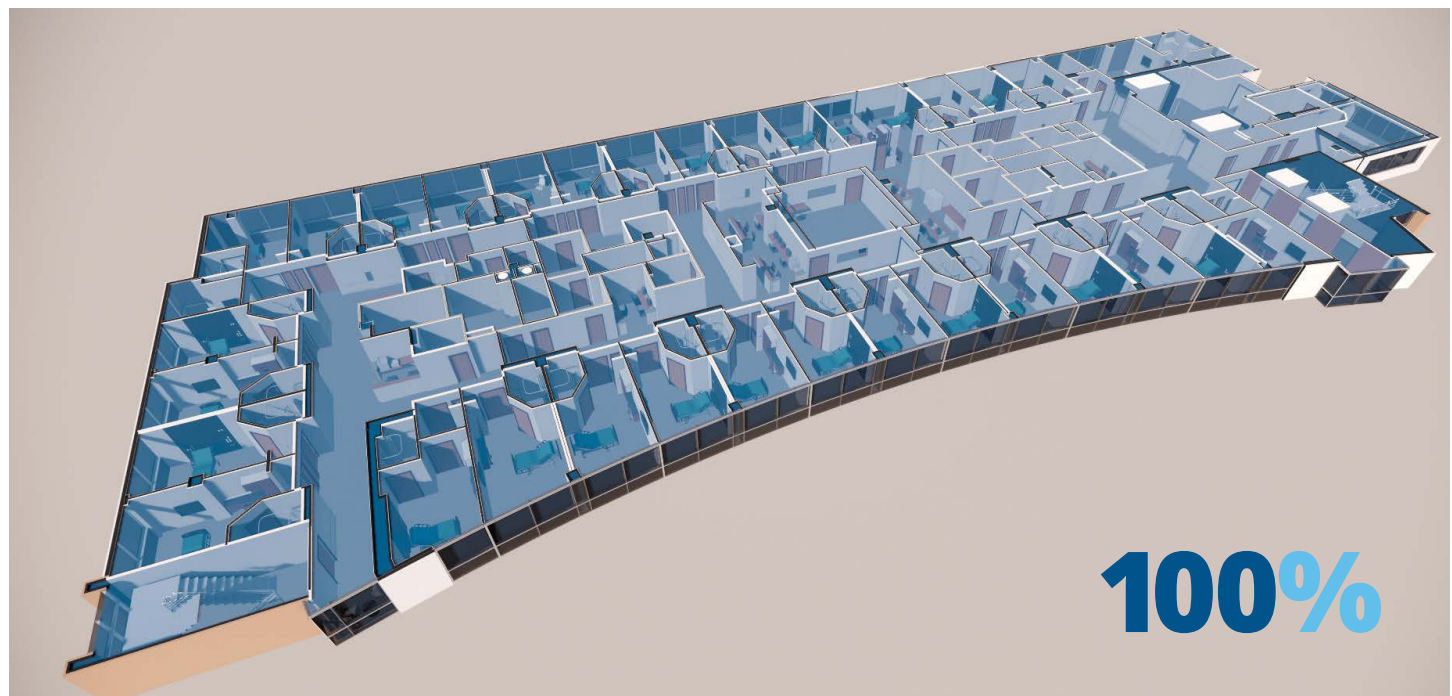
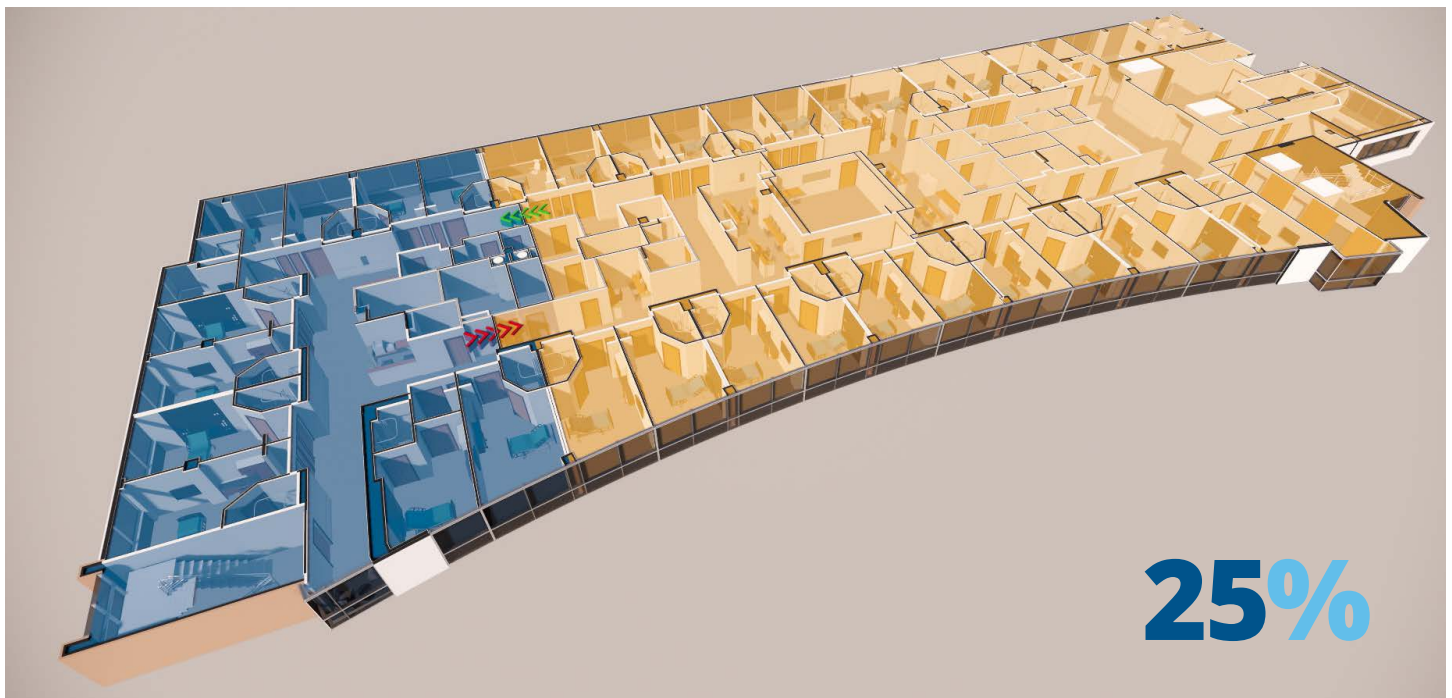
The first model shows the floor at 25 percent transition to higher acuity care and the second model shows the floor at 100 percent transition.

The floor can be transitioned to any percentage needed.

Gold areas represent neutral air pressure zones with low to medium acuity care and patient precautions.

Blue areas represent negative air pressure zones with medium to high acuity care and heightened patient precautions.

Green arrows represent safe/clean-in patient and caregiver flow, and *red arrows* represent decontamination/clean-out patient and caregiver flow.

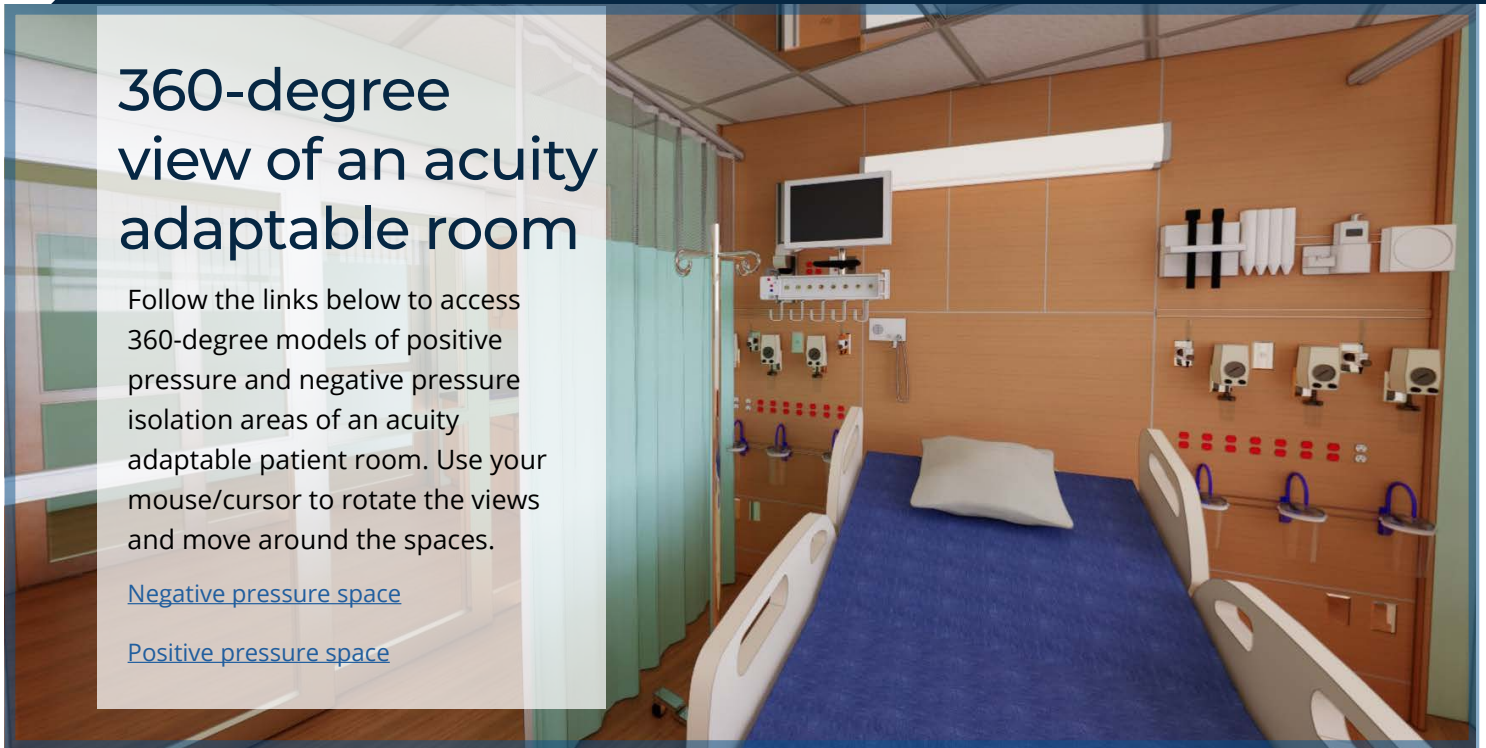


360-degree view of an acuity adaptable room

Follow the links below to access 360-degree models of positive pressure and negative pressure isolation areas of an acuity adaptable patient room. Use your mouse/cursor to rotate the views and move around the spaces.

[Negative pressure space](#)

[Positive pressure space](#)



MD, CMIO-Ambulatory and Population Health at Memorial Hermann. “Additional capacity for elective surgery is also highly beneficial, including additional critical care beds. These beds are often needed for complex cardiac, spine, neurosurgical, and transplant cases. Having flexibility here not only helps financially but helps improve patient care by reducing waits for scarce resources.”

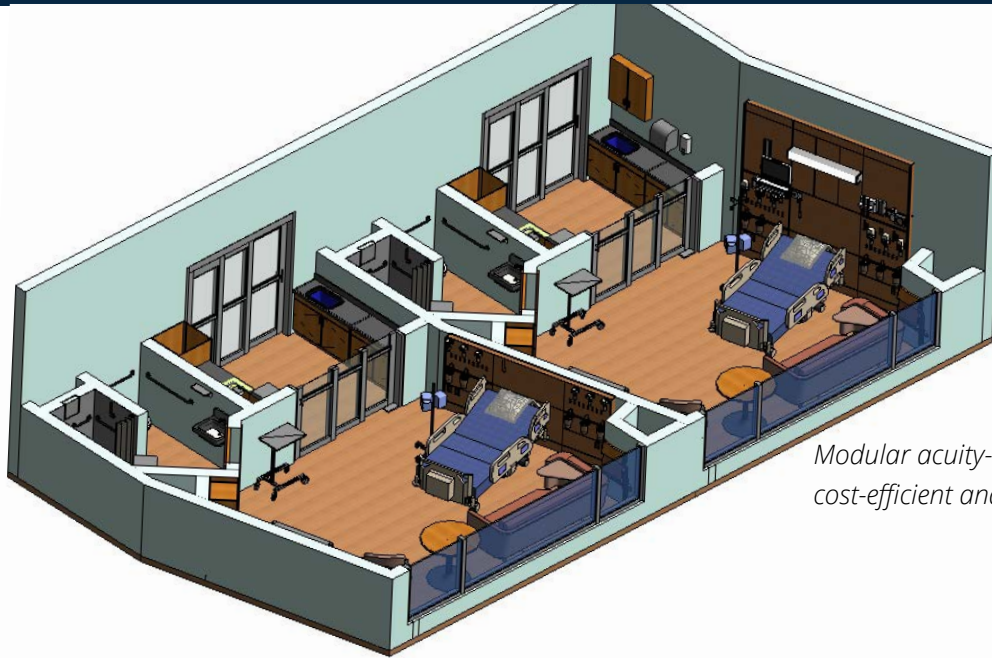
Additional benefits of acuity adaptability in healthcare design include:

- **Emergency responsiveness and resiliency.**

Acuity-adaptable healthcare design allows hospitals a greater capacity to respond to emergencies. Without having to incur the risk of moving a patient in crisis, they can quickly bring care to them with accessible medications and medical gases, as well as portable equipment. The ability to respond to emergencies with agility improves the resiliency of hospitals, units, or departments,

which sometimes risk closure or financial loss due to obsolescence or inability to meet community demands. “The increased ability to provide care during an emergency in a space that is well thought out and designed to handle it is a huge benefit,” says UIHC’s Leyden.

- **Fast response at low cost.** By reducing the need for patient transfers and increasing the available hours for nurses and providers to offer direct care, acuity adaptability increases the ability of a hospital to offer fast care without an increase in cost.
- **Reduction in the number of hours** rooms are vacant due to patient transfers
- **Standardization and prefabrication.** All rooms and units can be designed in a modular fashion and prefabricated, improving quality and saving on construction time and cost.



Modular acuity-adaptable rooms allow for cost-efficient and quality prefabrication.

- **Maximization of technology investment.**

Similar to the unit design standardization is a strategic focus by IT and clinical engineering departments to minimize variability and maximize investments. This enables continuity in delivery, improved resource management, as well as opportunities for cost savings. "There's so much technology out there you can put in that would be usable and a wealth of assistance to the clinicians," says Sharp Healthcare's Hanley. "Every room should be telehealth capable. We used to beg people to use telehealth, and now, as a result of COVID, everybody loves it. The use of technology will stay much higher than it was before. It just has to."

Drawbacks and challenges

Acuity adaptability is not a perfect solution, nor is it a universal cure-all. Hospitals often face challenges in implementing acuity-adaptable design concepts. Some facilities or specialties are better able to absorb these drawbacks or overcome these challenges than others.

Indeed, one size does not fit all, and acuity adaptability may not be the right choice for every facility. The problems of acuity adaptability may become more pronounced in larger facilities, where the introduction of acuity-adaptable design may reduce the number of beds and increase the time doctors and nurses spend on their feet walking from one wing of the acuity-adaptable unit to another.

"One liability is simply the level of demand for higher acuity beds weighed against the potential increase in construction or retrofitting expense," says Walsh of Memorial Hermann. "Demand will be significantly higher in tertiary and quaternary medical centers. There will be some need in community hospitals, but to a lesser degree."

Other challenges may be presented by:

- **Increased room size.** A fully acuity-adaptable room may need to be up to twice the size of a standard room. The renovation cost of doubling room sizes may be more than a hospital's budget can absorb, and the hospital might wind up with

fewer total rooms. A more realistic plan may involve the creation of rooms with limited acuity adaptability, or “acuity-changeable” rooms that could be outfitted for intermediate care, intensive care, surgical care, etc. This would reduce the required footprint of the room, requiring only 20 square feet of minimum clear floor area, as well as adequate access to medical gases in each room. Many hospitals can accomplish this model of acuity adaptability with only light renovations.

- **Portable equipment.** Since all care must come to the patient, every piece of diagnostic and telemetry-monitoring equipment must be able to come to the patient as well. This could entail transitioning, at significant cost, the facility’s equipment inventory from a stationary paradigm to a portable paradigm. Technological advances help make this possible, having spawned a revolution in portable medical devices of increased sophistication and reduced cost, as well as devices that make certain diagnostic and telemetric functions portable for the first time. For example, Siemens recently achieved FDA approval for a wheeled, bedside CT scanner, an all-in-one unit with built-in computers and batteries that can be wheeled directly to the patient’s bed to examine the heads of critically ill patients rather than having to bring the patient to a CT scanner. Hospitals may also have to increase their inventory of IV pumps, ventilators, and other portable devices that may be needed to adjust care to changing acuity.

- **Maintaining adequate infection control.** Maintaining the appropriate sound and light

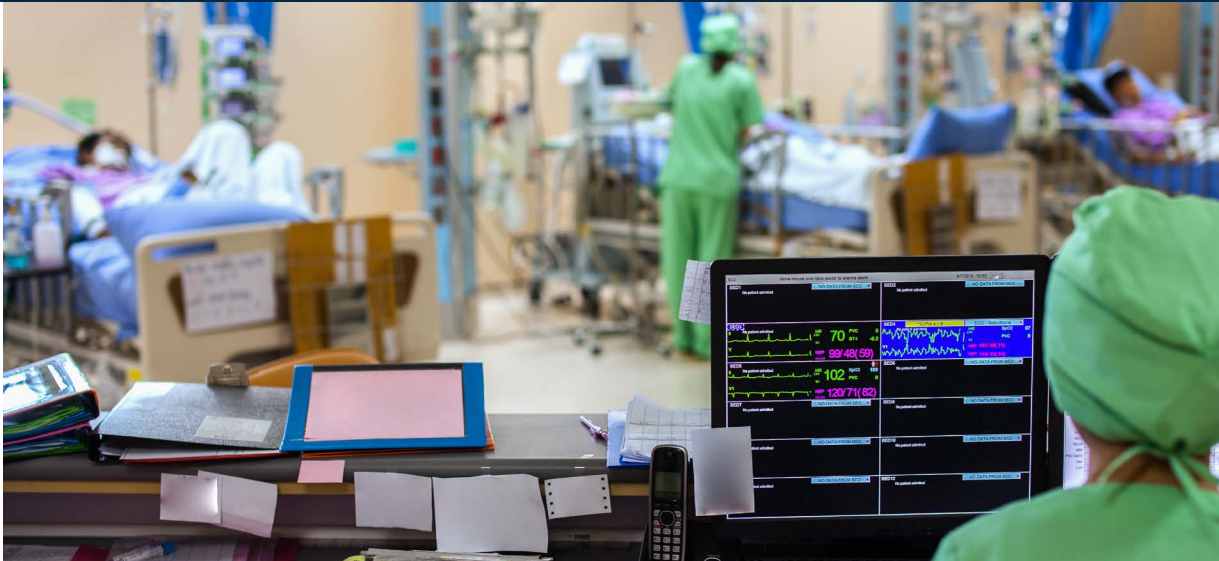
hygiene between spaces of varying acuity also will be challenging, says Walsh.

- **Billing processes.** Since room charges are based on a patient’s level of care, acuity adaptability adds a level of complexity to the billing process. “If we had one room the patient stayed in the whole time, we would either have to have a new acuity adaptable room charge code or we would have to assess the level of care being received each day – for example, an ICU day, med-surg day, etc.,” says Hanley. “This way we would not end up incorrectly billing.”

Staff culture also may present a major challenge if facility staff have trouble adapting their culture to an acuity-adaptable model. Physicians, for example, may want their intensive care patients to be in the same unit, preferring to build working relationships with specialist intensive-care nurses whom they can count on under pressure. In addition, since acuity adaptability requires nurses and care providers to be able to offer



SOMATOM On.site, a mobile head computed tomography (CT) scanner from Siemens Healthineers (©Siemens)



any level of care a patient might require, nurses must be cross-trained and become generalists. “Operating the clinical unit based on a higher acuity patient population would not only take a shift in equipment and supplies – it would also require a shift in clinical skill sets,” says Sarah Francis, MSN, RN, Clinical Lead/Director for Planning, Design & Construction at Atrium Health. While this may meet the needs of a hospital to have a lean staff and foster relationships of trust between patients and nurses, it may not meet the preferences of the nurses themselves. Some may not want to work in the high-pressure environment of intensive care, while ICU specialist nurses may choose to work somewhere else where they can practice their skills consistently. Parker Adventist Hospital in Parker, CO, for example, noticed an increase in nurse turnover within six months of implementing acuity-adaptable design.

“Critical care, surgical, cardiac, orthopedic, and oncology staff often require special certification and occasionally MS degrees to earn their titles,” says Walsh of Memorial Hermann. “Often, people

with these skills and certifications are in short supply and can command high compensation. They are also more likely to migrate between institutions in search of higher compensation or title.”

“This type of situation can also become a scheduling nightmare,” adds Hanley. “You have to make sure you have the right skill mix of nurses on the unit to be able to take care of whatever patient comes through the door.”

Settings that benefit

Certain specialties and settings have been theorized or observed to benefit more from acuity adaptability than others.

“Many large health systems are trending toward deploying the model across service lines,” says Walsh. “Considerations should especially be made in cardiovascular, neurosurgical, and orthopedic service lines. There is value in examining the approach in women’s services and oncology as well.”



Cardiology units benefit significantly from acuity-adaptable design. (Photo courtesy of UCHealth)

Cardiology is the specialty observed to benefit most significantly from acuity-adaptable healthcare design. Cardiac care is protocol-driven, with comparably predictable patient progress and a predictable number of patients within a population requiring intensive care for cardiac conditions. Recipients of cardiac surgery also have particularly predictable care pathways.

Other areas that could benefit from acuity adaptability include:

- **Community hospitals with fewer than 100 beds.** Small or remote community hospitals such as critical access hospitals are unlikely to contain multiple specialties under one roof, making flexibility and adaptability of care a high-return investment.
- **Organizations with limited staff.** Hospitals with a smaller complement of doctors and nurses on payroll often require that their personnel

be cross-trained generalists. Acuity adaptability enables this generalist staffing model by providing everything the provider needs to render any level of care within one room.

- **Environments with clustered acuity-adaptable rooms.** Acuity-adaptable rooms become cumbersome when they are scattered throughout a facility. By having the rooms in proximity to each other, doctors and nurses can preserve the time and energy that otherwise would be needed to run themselves and equipment all over the hospital from one acuity-adaptable room to the other.

What makes acuity adaptability important now

Historically, acuity adaptability may have been cost-prohibitive or counterproductive in certain settings. However, more demand and innovations toward acuity adaptability can be expected in the near

future due to a variety of current and future forces affecting healthcare. These forces include:

COVID-19. The healthcare industry was rocked to its core by the severity of the pandemic conditions created by SARS-CoV-2, the new coronavirus that causes the serious disease COVID-19. Several direct and indirect ramifications of the 2020 pandemic throw the benefits of acuity adaptability into stark relief.

Some of the immediate priorities of healthcare facilities facing an onslaught of patients contagious with a potentially fatal viral infection include:

- Reducing cross traffic
- Compartmentalizing
- Creating distance and barriers
- Separating infectious patients

Acuity-adaptable rooms have obvious advantages in achieving these goals. By transferring patients immediately upon admittance to a single room where they will receive all care until discharge,

there is little or no risk that they will infect other patients or healthcare personnel during multiple transfers from one unit to another.

Hanley says that the range of acuity that distinguishes COVID-19 patients has often caused the health system to move patients from unit to unit based on the point of their illness trajectory they are in.

“Talk about the burden to the patient and the family, but also the burden to the clinicians,” she says. “We ask questions like, ‘Where is my patient now?’ ‘Do I have a bed on that next unit?’ ‘Has EVS cleaned the rooms between patients?’ ‘Can the transporter easily find where that patient goes next?’ All of that could be eliminated if a patient could stay in the same room throughout their stay.”

COVID-19 patients in acuity-adaptable rooms also can be grouped together to be served by qualified nurses with adequate PPE, reducing the exposure to patients admitted for other reasons.



Maximizing resources, minimizing costs.

Healthcare facilities operate on notoriously slim margins. Acuity adaptability may present facilities with opportunities to retrofit their facilities for greater efficiency so that no space is wasted and no equipment is extraneous.

“We are designing all our spaces to be flexible and have the ability to adapt to whatever needs may arise,” says Francis of Atrium Health. “We also evaluate how we can leverage technology to expand clinical services where they may not currently be offered.”

Acuity adaptability design also has a proven propensity to lower costs, reduce time wasted in transit and the attendant patient injuries suffered, reduce complications, reduce lengths of patient stay, and increase the number of nurse hours available to render direct care.

Business resilience and continuity. The suspension of unnecessary treatments and admissions – a more indirect impact of the COVID-19 pandemic – led not only to suffering in communities but also care facility revenue declines of as much as 40 percent to 45 percent. Staff faced widespread furloughs right when they were gearing up to do their part in the midst of a health crisis.

Acuity adaptability empowers facilities and the doctors and nurses who staff them to adapt to changing community needs, including the ability to pivot to meet pandemic conditions and not see entire units or care sectors shut down. In

effect, acuity adaptability future-proofs healthcare facilities and entities, enabling them, as the name implies, to adapt.

“If we could turn rooms quickly to use for something that was unexpected or something that we were preparing for, then I could say, ‘OK, now we can make this the COVID unit or the PUI unit,’ or the influenza unit. That would be awesome,” says Hanley of Sharp Healthcare.

To be sure, healthcare facilities face a difficult business decision regarding the investment in adaptability.

“Judging capacity need for general medical and surgical beds over the next three- to five-year period will be extremely difficult,” says Walsh. “It will be challenging to decide on retrofitting existing structures as they come to end of life versus new construction. Combined with an uncertain legislative environment, health systems will be hard pressed to make large capital outlays unless the ROI case is a near certainty.”

Identifying the desired outcomes

In considering a potentially costly paradigm shift in design, it helps to understand what problems the shift is designed to overcome. If these problems don't exist, the shift to acuity adaptability might not be indicated. However, if these problems do exist – or might exist in the future – the shift to an acuity-adaptable design may be well worth the effort.



Less-crowded emergency departments is one of the desired outcomes of acuity adaptability.

The desired outcomes and solutions to common problems include:

Shorter waits in emergency departments.

Lack of available rooms leads to long waits and crowded waiting rooms in emergency departments. This leads to prolonged patient suffering as well as potential ambulance refusals and the increased chance of a super-spreading event within pandemic conditions like those created by SARS-CoV-2.

Acuity-adaptable design could play a role in alleviating this kind of crowding by providing all-purpose rooms that patients can be shuttled to quickly after a short boarding process. Once they are in the room, they stay put, reducing the amount of time that rooms stay empty due to turnover and sanitation.

More outpatient care and fewer hospital beds.

Even before the COVID-19 pandemic made distance and reduced contact important considerations, the healthcare industry was on

a trajectory toward outpatient care and fewer hospital beds. A consumer-based healthcare approach has led to less reliance on regional hospitals and more reliance on local clinics and private urgent care facilities.

A revolution in digital health also enabled providers to offer true “health care” instead of “sick care.” Thanks to telemedicine and remote monitoring through IoT devices, healthcare is no longer something that only happens in a hospital or clinic – it’s a year-round pursuit, which is fitting for an industry that governs our quality of life every waking and sleeping minute.

Hospitals must adapt to this evolving character of healthcare. The future of the hospital industry is likely smaller facilities with fewer beds that must be put to a variety of uses, depending on the acuity of the patient who arrives. This involves acuity adaptability almost by necessity.

An added benefit of this paradigm shift is the necessity for fewer beds. Under these

circumstances, it might become feasible for hospitals to expand room size to accommodate a fully acuity-adaptable design, whereas it may not have been feasible when the hospital required more beds.

Reduction of patient transfers. The core principle of acuity adaptability is to reduce the number of transfers a patient must endure as his/her level of acuity changes – from one room to another, from one department or unit to another, and even from one hospital to another. Eliminating the need for patient transfers obviously saves personnel hours incurred in these transfers, freeing up patient hours for direct treatment, and reducing the time patients spend in the hospital by more than half (as shown in the study of kidney transplant recipients previously mentioned).

Reduction of injuries during the transfer process. Moving patients incurs a hidden cost on most healthcare facilities in the form of injuries suffered by the patients and providers in the process.

A [study published by Marilyn T. Conti](#) in the Harvard Business Review revealed that across the 22



hospitals in the Intermountain Healthcare network, a yearly average of 205 injuries to personnel in the process of moving patients led to 25 to 30 permanent injuries or disabilities as well as \$1.5 million in extra costs. Injury to staff was revealed to be far more common than injuries to patients. Most injuries happened in the process of moving patients of average weight, likely due to the provider's underestimation of the challenge entailed in the move. This cost, in money and suffering, could be alleviated by reducing the need to move patients.

Fewer medication errors. Comparative studies of acuity-adaptable design demonstrated a reduction of medication errors in acuity-adaptable environments. The most likely explanation is the consistency of care providers, with nurses and doctors able to become familiar with each case over the long term and fewer instructions lost in the transfer from one provider to another.

Fewer infections and other complications. Comparative studies of acuity-adaptable design have also revealed a reduction in infections or other complications in acuity-adaptable environments. The most likely explanation is the ability to render care more quickly by bringing care to the patient rather than bringing the patient to the care. It also reduces the likelihood that the disruption of a transfer will bring on a complication or expose the patient to contagions or other vectors of infection.

More trust between patients and providers. Acuity-adaptable healthcare design allows a patient to enjoy consistent care by the same physician, nurse, or other healthcare provider.

This helps foster trust between patient and provider, leading to fewer mistakes, greater honesty, and better healthcare outcomes. Several studies have supported this assumption.

The journey to acuity adaptability

For architects and designers charged with adding acuity adaptability to a facility's design, the challenge in front of them depends on the state in which they find the current facility, both in terms of physical space and operations.

Most journeys to acuity adaptability, however, can be accomplished by completing the following actions:

1. IDENTIFY THE NEED. Determine if problems exist within the current facility, operational issues could be alleviated, or characteristics could be capitalized upon by a shift to acuity adaptability. Pain points and opportunities to look for include:

- Number of hours rooms spend vacant due to transfer
- Number of personnel hours consumed by transferring patients
- Vacant rooms despite long ED boarding time due to excessive specialization of rooms
- Rooms that are already oversized relative to their specialized use
- Specialties favorable to acuity adaptability, like cardiology
- Excessive injuries, medication errors, and infections or complications that may be due to transfers
- Rural, remote, or small facilities with 100 beds or less
- Small or versatile staff amenable to cross-training

2. DETERMINE THE SCOPE. If stakeholders determine that acuity adaptability is indicated, a plan of action can be formed. "You have to decide if every room in your hospital will be acuity adaptable or just a portion of the rooms, with the other rooms used more for in-and-outs, overnights, or less-acute patients," says Hanley.

Specific areas to address include:

- **The physical space.** Do rooms need to be retrofitted or expanded? Do medical gasses need to be re-plumbed to reach acuity-adaptable rooms? Will non-clinical areas be included? "I'm not sure all spaces hold the same value," says Walsh. "It's tempting to turn a lobby or waiting room into clinical space, but families want a place to wait and gather, especially those with critically ill loved ones. However, the ability to convert spaces that rarely generate revenue (e.g., conference rooms or gathering spaces for staff) into revenue-generating floor space is highly intriguing."
- **Departments.** Will certain departments receive acuity-adaptable design renovations? Will certain departments be merged or combined? Can acuity-adaptable units be effectively grouped together? "I believe it would be most successful if acuity adaptability were deployed across multiple service lines and departments, so as to not tax one group and allow for more flexibility," says Leyden of UIHC. "I see both inpatient and outpatient spaces potentially being used for this need."

- **Conceptual design.** Will a reduction in the need for cross-traffic indicate a relocation or rethinking of design elements like ingress and egress points? How can the patient's physical journey be as short as possible?

The impact on infrastructure also needs to be considered. Can the current facility infrastructure support the desired clinical outcomes? Are there current locations in the facility where minimal infrastructure modifications would be required to support the intent? What approach should be taken to ensure flexible infrastructure in new construction design?

Common infrastructure being evaluated in acuity adaptability applications include medical gases, emergency power, and HVAC distribution. It's also critical to evaluate AHU zoning for patient bed floors and emergency departments. Consider having a dedicated patient floor or a portion of a patient wing designated as an "emergency non-recirculation" space. During an emergency, an exhaust fan would be enabled to draw the patient floor to negative pressure and motor-operated dampers would modulate to deny air from being recirculated to the central air handling station. (See Figure A.) This concept can also be utilized for individual room isolation in a similar fashion within the patient floor or an emergency department. (See Figure B.)

Hanley suggests reviewing your facility's primary patient types and volumes and using that to guide your scope. "If you look at the kinds of patients that you normally get over a year – take COVID out of it – you know what equipment you are



AHU zoning for emergency non-recirculation space

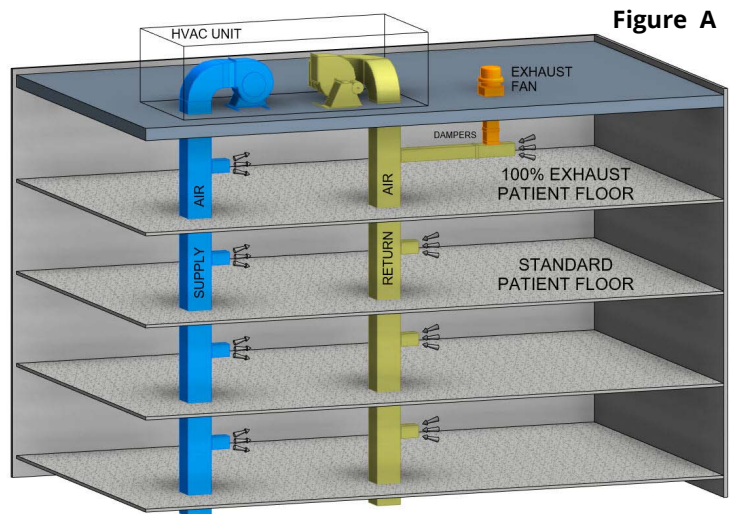


Figure A

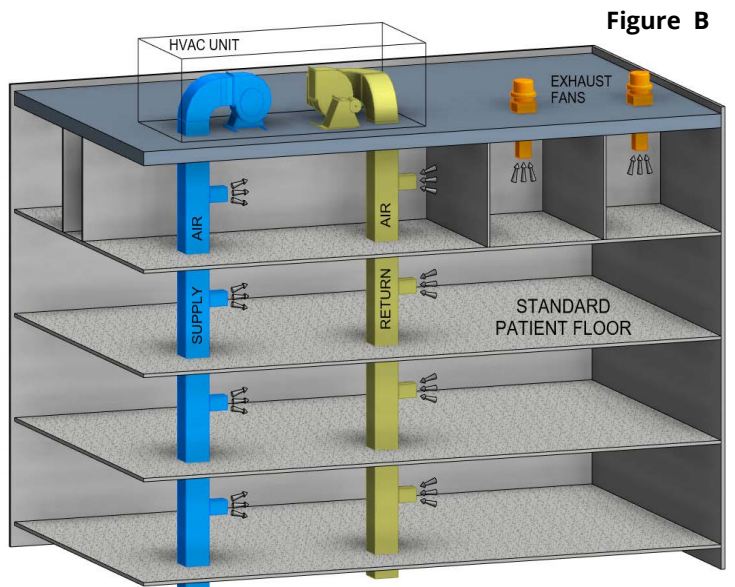


Figure B

using every single day and what equipment will end up sitting in a closet and rarely getting used. You need to seek that balance of what you really need and what you would like to have available.”

From a staffing standpoint, Hanley believes that acuity adaptability conversions should be done on all floors. This may be more attractive to staff, she says, since it gives them opportunities to learn new skills related to all acuity levels while remaining on the same units.

3. CREATE THE PLAN. Once the scope of the project is determined, a plan can be created for bringing the project to fruition. This includes:

- Budget and fundraising or financing needed
- Impact of the retrofit on patient experience and how to compensate
- Impact of the retrofit on caregiver and operational experience and how to compensate. Be sure to listen to the needs of clinicians and guard against value engineering that would compromise meeting these needs.
- Design of the concept for final review
- Developing a construction plan and obtaining the necessary civil and structural approvals and permits

4. DEVELOP THE SCHEDULE. A timeline must be constructed for the retrofit to meet the budget and permitting requirements, plan for operational and patient impact, and coordinate with marketing of new service lines enabled by the new acuity-adaptable design.

5. REALIZE THE VISION. Move the project along from concept to construction, with key actions including:

- Commissioning and testing models
- Activating the construction plan in phases
- Making provisions for operations and support

6. OBSERVE THE IMPACT AND OUTCOMES.

Once the design has been implemented, make careful observations of the impact and outcomes, adapting or adjusting the design plan where possible and paying special attention to:

- Performance under daily use and surge capacity
- Performance under emergency or mass-casualty conditions
- Quality of outcomes, including insurance reimbursement, patient satisfaction, caregiver satisfaction, and community satisfaction



Conclusion

Though COVID-19 exposed the need for acuity adaptability and sent healthcare systems searching for solutions, the benefits of the model go beyond treating patients during a global pandemic. In the right facility and circumstances, acuity adaptability can provide answers and improve patient care during all times and circumstances.

Understanding the role and purpose of acuity adaptability in the evolving landscape of healthcare will help facilities reap its benefits and prepare designers, architects, and stakeholders to mitigate its drawbacks. Above all, any acuity adaptable project should never lose sight of the ultimate goal: meeting the needs of patients and staff.

For more information about acuity adaptable healthcare design, contact the authors.



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