

DESIGNING BEHAVIORAL HEALTH FACILITIES



STEVE HINDS / SMITH SECKMAN REID

A group room at the Texas Health Recovery & Wellness Center, in Mansfield. Note the significant use of natural light and vandal- and ligature-resistant furniture. Behavioral health patients spend much of their time out of their rooms.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- + **DESCRIBE** the chief differences between designing for behavioral health and designing for general health.
- + **UNDERSTAND** ligature risk and why gravity is irrelevant when identifying a ligature risk.
- + **LIST** the ways that improper interior design can negatively impact behavioral health patients.
- + **DISCUSS** how technology can assist behavioral health facilities to achieve greater patient safety.

Behavioral health facility construction is experiencing a spike in the U.S., due in part to enhanced benefit provisions in the Affordable Care Act that have widened access to mental health treatment. Recent gun violence, mass shootings, the opioid epidemic—these and other social issues with significant behavioral health implications have underscored the need for continued availability of mental health services and well-designed facilities in which to conduct them.

The 2017 Hospital Construction Survey (bit.ly/2FMkAyt), released jointly by *Health Facilities Management* and the American Society for Healthcare Engineering of the American Hospital Association, reported that half of the specialty hospitals planned for the next three years are behavioral health centers or psychiatric hospitals.

Yet even as the demand for new and retrofitted space is growing, the supply of behavioral health

engineering and design experts is not keeping pace. The sector is also experiencing a decline of knowledge of leading practices in space design and technology integration.

This scenario—growing demand for behavioral health facility beds, accompanied by declining capacity of how to design them properly—is of particular concern when it comes to minimizing inpatient suicide in mental health settings. The Joint Commission (TJC) recognized inpatient suicide as the fourth most common sentinel event in 2016 (the most recent reporting year), with an average 85 inpatient suicides per year reported. Sentinel Event Alert Issue 56, “Detecting and treating suicide ideation in all settings,” February 24, 2016 (bit.ly/2FPDKnf), calls attention to the need for improved suicide prevention protocol in all healthcare settings, especially in emergency, primary, and behavioral health settings. While no facility is suicide-proof, there are many design decisions that could reduce the risk.



▲ Behavioral health patient bathroom with homelike wall and floor finishes (A); shatter-resistant mirror that will not produce loose shards when broken (B); ligature-resistant faucet (C); residential-style, ligature-resistant countertop-mounted sink with space for patient's toiletries (D); below-sink enclosure (E) conceals plumbing and houses bedpan washer behind the stainless steel door—special tool required to open door; ligature-resistant recessed push-button flush valve (F); and ligature-resistant grab bar (G).

It's dismaying to see hospital systems spend millions on behavioral health facilities that turn out to be unsafe for patients. With greater education led by experienced behavioral health design experts, owners of such facilities can improve their quality of care and maximize their financial resources.

This course examines ways design professionals can expand their knowledge of behavioral health design to help prevent inpatient suicides and improve patient outcomes.

DESIGNING FOR BEHAVIORAL HEALTH VERSUS DESIGNING FOR GENERAL HEALTH

Design professionals who have designed only for general health facilities are often initially mystified by the revelation that designing for behavioral health facilities requires a practical upending of their design knowledge. Behavioral health and prisons are the only facilities where staff members have to worry about people

intentionally hurting themselves. That always seems to come as a surprise to designers new to this field.

For example, in general health, the patient room includes extensive medical equipment, nurse communication hardware, and patient entertainment systems. In behavioral health patient rooms, there is none of this—no medical equipment (gas, sharps, IV poles), no nurse call, no TVs or telephones. The potential for harm and abuse that these systems introduce is too great.

In general health, the majority of care takes place in the patient room. In behavioral health, most care takes place in interview rooms, group therapy spaces, activity zones, and common areas. The time the patient spends in the room is intentionally kept to a minimum.

In general health, design focus is on the patient room; common area rooms are nonexistent or of little importance. In behavioral health, design focus extends to corridors, common areas, group rooms, and activity rooms, which are where patients spend most of their waking hours.

Similarly, in general health, it's not that important to be able to observe corridors and other common areas; in behavioral health, the ability to observe such areas is extremely important.

Table 1 provides additional areas of distinction between general health design and behavioral health design.

ROOM SAFETY FEATURES THAT REDUCE RISK OF SELF-HARM TO PATIENTS

Behavioral health patient rooms are Spartan in appearance; they look more like college dorm rooms than hospital rooms. General hospital rooms, on the other hand, are cluttered with contents—medical gases, monitors, cables, IV poles, sharps, and grab bars designed for general health purposes—that can pose serious hazards for behavioral health patients.

Unlike general hospital patients, behavioral health patients spend most of their time in common areas with other patients and staff. Time spent in their private rooms is typically just for sleeping, as well as the time just before and after

sleeping. The Joint Commission’s data shows that most inpatient suicide attempts occur in patient rooms and patient bathrooms, where there is the perception of privacy. Despite an industry-standard room check every 15 minutes, even throughout the night, the patient room or bathroom is still the most likely place for a suicide attempt.

Therefore, patient room design must employ certain important features. While opinions regarding the use of cameras in patient rooms are polarized, there

are other room features that experts agree on:

- Doors should be designed to resist efforts of patients to barricade themselves into any room they may enter.
- All mirrors and windows should use a shatter-resistant material that stays in the frame when broken and does not yield sharp shards of glass that patients might use to harm themselves or others. A product that has been developed for hurricane areas is highly suitable. It has a layer

TABLE 1. DESIGNING FOR GENERAL HEALTH VS. DESIGNING FOR BEHAVIORAL HEALTH

DESIGN FACTOR	GENERAL HEALTH	BEHAVIORAL HEALTH
> Primary treatment focus	Treat medical condition	Treat mental illness while keeping the patient safe from self-harm and protecting other patients and staff
> Treatment location	Primarily in patient rooms	In interview rooms, group rooms, and activity rooms
> Family visit location	In patient rooms	In common areas or interview rooms
> Patient’s location	In room most of the time	Encouraged NOT to be in patient room except at night and during rest periods
> Access to unit	Largely unrestricted	Highly restricted
> Ability to observe corridors and common areas	Relatively unimportant	Highly important
> Direction of door swing	Relatively unimportant	Critically important to resist barricading
> Staff workflow	Organized around path from service core to patient rooms	More circular path around various dayrooms with far less traffic to patient rooms during daytime hours
> Medical equipment in patient rooms	High concentration of medical equipment (medical gases, monitors and cables, sharps containers, IV poles and tubing)	No medical equipment (medical equipment can present risk to the patient)
> Nurse call system	In use	Minimal to none
> Ligature points	Numerous	Ligature-resistant lavatories, faucets, grab bars, door handles, door hinges, light fixtures, furniture, windows
> Furniture	Can be moved	Must be secured in place
> HVAC systems, grilles, light fixtures	Standard	Must be vandal-resistant
> Windows and mirrors	Standard	Must be shatter-resistant
> Telephones, TVs	In rooms	None in rooms

SOURCE: BEHAVIORAL HEALTH FACILITY CONSULTING, LLC

of annealed glass on each side of a polycarbonate core, sometimes called “glass/poly/glass security glazing.”

- Furniture should be secured to the floor or wall (or both). Furniture should not be susceptible to being broken into pieces that can be used as weapons.
- All features of the room and its contents should be vandal-resistant and ligature-resistant.

LIGATURES: A LIFE-AND-DEATH PROBLEM

Probably the most important consideration in patient bedrooms, patient bathrooms, and other places where behavioral health patients may not be directly supervised at all times is the attention given to ligatures. The Joint Commission newsletter (bit.ly/2oDx1Fz) published the following definition of “ligature resistant” as adopted by a TJC expert panel (including an author of this course): “Without points where a cord, rope, bedsheet, or other fabric/material can be looped or tied to create a sustainable point of attachment that may result in self-harm or loss of life.”

Fixtures and hardware, even those that are low to the floor or on the floor, must be resistant to ligature. Gravity is not necessary for self-harm, so designers must avoid any point where a patient can securely attach a material that can be anchored and twisted. Door closers have been used in this manner. Manufacturers now offer door weight-sensing alarms that issue a signal should a patient attempt to use the door to pinch and anchor a ligature. Similarly, wardrobes and dressers should have only open fixed shelves rather than doors and drawers.

Last year, communication and activity from TJC and the Centers for Medicare & Medicaid Services (CMS) regarding ligature attachment issues was copious. Most of it focused on the urgency of correcting ligature risk but much less on the guidelines for doing so. At the end of August, CMS announced a six-month timeline for developing useful “direction,

clarity and guidance regarding the definition of what constitutes a ligature risk.” Last December, CMS released the memo, “Clarification of Ligature Risk Policy” (go.cms.gov/2oOMfqy), which provides a summary update of existing ligature definitions and interim guidance as surveyors and providers await final guidance. Final guidance is anticipated to be issued in late spring.

USING INTERIOR DESIGN TO MAXIMIZE PATIENT SAFETY AND WELLNESS

With regard to floor and wall patterning, busy, bold, or random patterns can negatively stimulate the brain and cause hallucination, so care must be taken when designing walls, upholstery, and floors. Highly polished floors can create what is known as “veiled reflections,” which can be disorienting, especially for older patients. Art and photography depicting landscapes without animals are accepted as calming. Trees, flowers, woods, mountains, and similar imagery have been shown to have a soothing effect.

Designers can realize safety and wellness benefits for patients with proper lighting. From a safety perspective, uniform lighting that eliminates shadows and hot spots is helpful to staff using security monitors to observe patients. Ligature- and vandal-resistant light fixtures are critical, as is the mounting height, which should be nine feet or higher to minimize vandalism.

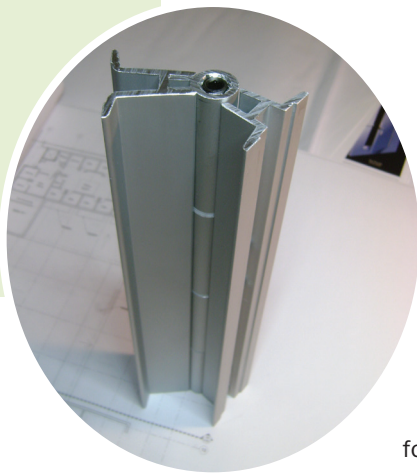
The shocking and over-stimulating nature of strobes and horns that come with typical fire safety alarms can be especially upsetting for behavioral health patients; however, such alarms continue to be required by building codes, even for use in behavioral health settings. There are protocols for evacuating patients properly, safely, and with the least possibility of upsetting patients during a drill or actual emergency.

From a wellness perspective, designers should aim to incorporate and mimic natural light as much as possible. For lighting systems that are able to depend heavily on natural light, the industry offers photosensors that will auto-adjust artificial lighting depending on outside weather conditions.

Circadian lighting design that uses tunable and dimmable LEDs can deliver a lighting system that changes color, angle, and intensity as the day progresses. This approach has a positive effect on patient sleep cycles and is especially important in long-term-care settings. Lighting that creates high contrast between bright and shadowy areas causes eye strain for patients (not to mention providers) and contributes to fatigue.

Happily, many of the lighting practices that are

Below: Ligature-resistant “crescent” door handle. **Bottom:** Ligature- and barricade-resistant door hinge allows the door to swing in both directions. Hardware like these can prevent patient suicides.



ideal for safety and wellness are also ideal for energy efficiency. Natural light is freely provided by nature, and photosensors can regulate artificial light to come on only when dictated by weather. Lighting for common areas can be automated and remain dim unless triggered by motion or sound. This is also good for security monitoring in these areas, as a change in brightness will alert personnel.

Proper lighting control systems can solve multiple problems. Designers should lean toward systems with fewer individual control panels to reduce tampering. Systems with automation and scheduling can reduce wasted energy, and a single point of control will reduce maintenance time.

The use of color in behavioral health has been debated for many years, but in recent years there has been less evidence that color has as much an impact on mental well-being as was previously thought. Designers still tend to avoid extremely hot colors such as red and magenta, but only from an anecdotal and “instinct” basis.

TAPPING TECHNOLOGY TO COMPLY WITH OBSERVATION REQUIREMENTS AND IMPROVE PATIENT SECURITY

Patient observation is of paramount concern in behavioral health facilities. Caregivers must be able to thoroughly observe patients in common areas, dayrooms, and corridors, a requirement that has determined much of floor plan design in behavioral health facilities for years.

However, in the push to accommodate more behavioral health patients, many hospitals are retrofitting existing space that was not initially designed for behavioral health. This can lead to poor (or nonexistent) line of sight from the nursing station down every corridor and into every common area. Of course the best thing to do would be to significantly remodel the unit, but sufficient funds are not always available.

An alternative is the use of live-stream cameras. This technology allows staff to keep an eye on patients even when they can't directly view them from the nursing station, thereby enabling the facility to comply with line-of-sight requirements in retrofitted space. In such a case, staff must be assigned to watch the monitors constantly, without interruption, and scheduled with frequent rotation to avoid “monitor fatigue.” For HIPAA compliance, these cameras may only live stream and not record.

Entertainment systems in common areas are an important feature of behavioral health units, yet the accompanying mounting brackets, cords, and wires have traditionally posed potentially deadly risks for patients.

Securing them within properly designed enclosures effectively addresses these concerns while also preventing overheating problems that used to plague older enclosed entertainment systems.

Because the overall medical needs of most patients in behavioral health facilities is low, and because most patients are ambulatory, demand for nurse call systems in patient rooms is low. Nurse call function can be made in person, either through the patient visiting the nursing station or by a nurse during a 15-minute bed check.

While nurse call is not required by FGI Guidelines, some facilities have opted for nurse call buttons in the bathrooms, where the incidence of falls is high—and can be extremely costly medically to the patient and financially to the hospital. In these cases, nurse call is triggered not by a cord but by two buttons—one waist high and one at the floor—to accommodate all situations.

EMERGENCY DEPARTMENT RESPONSE TO MORE BEHAVIORAL HEALTH PATIENTS

Due to the shift of behavioral health treatment from large inpatient facilities in urban centers to outpatient community-based facilities and smaller residential centers, many patients in crisis present to the emergency department, where the treatment rooms are completely inappropriate for psychotic episodes.

With increasing pressure from TJC and CMS to improve care available in emergency departments, hospitals are creating various solutions, including:

- 1:1 monitoring (The Joint Commission's preferred term, which implies active participation by a trained individual, not simply observing) until the patient can be transferred to a psychiatric unit.
- Designing a few rooms that can be modified quickly for behavioral health patients. One solution is a roll-down door located two or three feet from the headwall of the room that can be closed and locked quickly to convert a standard room to one safer for psychiatric patients. This lets the room be converted quickly without requiring hazards to be moved from the room. Any items that cannot be made portable (sinks, window coverings, light fixtures, ceiling finishes, door hardware) and will not be located behind the roll-down door need to be replaced with ligature- and vandal-resistant items, which are also safe for general health patients.

THE CONSTRUCTION BOOM IN BEHAVIORAL HEALTHCARE IS EXPECTED TO LAST THROUGH TWO JOINT COMMISSION CYCLES.

- Building larger crisis centers within the emergency department that are better equipped to immediately treat behavioral health patients in a state of crisis. Until more psychiatric units can be equipped to directly admit patients in a state of crisis, the pressure will remain on emergency departments to increase their ability to care for mentally ill patients.

FLOOR PLAN CONSIDERATIONS FOR BEHAVIORAL HEALTH FACILITIES

In general health facilities, access to patient rooms, break rooms, waiting rooms, and other areas is generally unrestricted. In behavioral health, access is highly

restricted to all areas, for both incoming and outgoing traffic. Traffic restriction takes the form of card- or code-activated doors, which can be opened only with approval of a live monitor. The placement of these doors and the flow of traffic must be considered for optimal patient safety and clinical workflow. Because patients can barricade doors, all doors where patients may pass through should be barricade resistant.

Behavioral health facilities require a host of room types not necessary in general health settings, such as interview rooms, group rooms, activity rooms, visitation rooms, and seclusion rooms. When designing for new facilities, these room types must be included.

WHAT'S COMING UP NEXT FOR BEHAVIORAL HEALTH FACILITIES?

The wide range of differences between behavioral health and general health facilities raises the question of how to treat patients who have both behavioral needs and medical needs. Integrated inpatient care—facilities that can treat mentally ill patients who also have serious medical issues, such as cancer or heart disease—needs to become more accessible. The

industry has seen great results from integrated outpatient care, and significant strides have been made in recent years in the design of units that are much safer for patients who have both a primary behavioral health diagnosis and a co-existing medical condition.

Most behavioral health design standards for patient bathrooms are safe for all patients, so there is a strong argument for applying more behavioral health design standards to all inpatient bathrooms. On average, 30% of all adult inpatients are on some kind of behavioral health medication, underscoring the argument that patient bathrooms designed for behavioral health patients could reduce risks to patients in typical medical/surgical units. Be aware that some of the products needed for these designs are currently more expensive than their general health counterparts.

Technology offers some promising improvements to behavioral healthcare. Fifteen-minute room checks, while a standard of the industry, are ineffective at preventing suicide, which can be accomplished in as little as four minutes. Furthermore, the checks intrude on privacy and interrupt patients' sleep, which most of them desperately need. Technology that exists in simple and inexpensive tools similar to Fitbits could be modified for use in remote vital sign monitoring, satisfying both the clinician's need to confirm patient safety and the patient's need for privacy and high-quality sleep.

The construction boom in behavioral healthcare is expected to last through two Joint Commission cycles, indicating a demand for design that will not soon abate. New ligature guidelines from CMS are imminent, and assuming that these are clear and helpful, the design community will have a new, valuable resource at its disposal.+

+ EDITOR'S NOTE

This completes the reading for this course. To earn 1.0 AIA CES HSW learning units, study the article carefully and take the exam posted at BDCnetwork.com/BehavioralHealth

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