



# Mental & Behavioral Health Design

Insights from 2017 CIHF Roundtable



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# Mental and Behavioral Health Design

## Insights from 2017 CIHF Roundtable



Reported by Sherrie Negrea

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Roundtable chaired by Mardelle Shepley

**N**early 25 percent of all adults in the United States have a mental illness and nearly 50 percent will develop at least one mental disorder during their lifetime, according to the Centers for Disease Control and Prevention. About one in five youths between the ages of 13 and 18 lives with a mental health condition. And as people with mental illness age, they are at greater risk of developing chronic medical conditions, such as cardiovascular disease, diabetes, obesity, asthma, epilepsy, and cancer.

With a broad swath of the population affected by mental and behavioral illness, there is a growing focus on how facilities that treat these patients are designed. The current approach in designing mental and behavioral health facilities has been to develop safe and functional environments for patients. Beyond that model, however, recent trends in the design and the operation of inpatient and outpatient settings also emphasize autonomy and psychologically supportive environments.

The effect of design on mental and behavioral health programs and facilities was explored at a roundtable sponsored by the Cornell Institute for Healthy Futures (CIHF) from October 16 to 17 at Cornell University. The roundtable was led by 21 panel members who work in the mental and behavioral health fields, including researchers, architects, designers, healthcare planners, and providers.

“People in the design field are fully aware that to create a good experience in one of these settings, it’s really the individuals who are providing the care and the nature of the program that are the most important factors,” said Mardelle Shepley, who led the roundtable and chairs the Department of Design and Environmental Analysis at Cornell. “However, we look at design and the physical environment as a means of allowing the associated activities to take place.”

The roundtable examined the role of design in mental and behavioral health programs and facilities by discussing recent projects in the field, research studies, impediments to developing successful programs, and opportunities for improvement. The conference ended with a glimpse of the future, with the emergence of telehealth programs and community-based facilities that integrate primary care and mental health services.

## Recent Mental and Behavioral Health Design Projects

One critical factor in developing mental and behavioral health facilities is adapting the design to the predominant culture of the surrounding region. For architectural firms that design projects throughout the world, that means incorporating elements of the cultural landscape into their facilities.

HDR, an international architectural firm, for example, designed a 200-bed psychiatric nursing



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home in Saudi Arabia that used modern abstract shapes in the furnishings in communal waiting areas, in the nursing stations, and in the glass façade on the building. “A lot of these shapes and features you see may not even be accepted here — they may even be deemed to be abstract or inappropriate for people in the behavioral setting,” said Brian Giebank, an architect with HDR. “But they’re actually very comforting to people in Saudi Arabia because that’s what they’re familiar with. We’re creating a homelike environment for them.”

In another project designed by HDR, the Valleyview Mental Health Building in Coquitlam, British Columbia, a residence for children, youth and adults, incorporated design features reflecting the cultural heritage of Canada’s First Nations, since the facility was built on their land, Giebank said.

One dilemma with using culturally oriented design, however, is that many cities where treatment centers are located are home to a diverse range of ethnic groups. When developing facilities in these urban areas, a more neutral design can ensure that it is respectful of all the cultures in the region, said Lynne Orr, principal of Parkin Architects Limited, a Canadian firm specializing in institutional architecture.

“This idea of incorporating culture into our environments is very challenging,” Orr said. “Whether it is culture or color or visual images, it has to be something that is respectful of a wide variety of people because our cities are changing. As a result, some of what we do may look somewhat neutral because we cannot reflect all of the cultures that we need to be respectful of.”

Another key trend in mental and behavioral health facility design is creating small residential communities within large hospitals. The architectural firm ERDMAN, for example, is designing a medical facility in Havre de Grace, Maryland that includes a 40-bed crisis center divided into three household groups. The living areas of these residences would be completely separated from service components of the unit, said Mike McKay, vice president of architecture at ERDMAN.

“I think we need to break these facilities down and make them smaller because the larger they are, the less homelike they can be, no matter what we try to do,” McKay said. “We try to do these design interventions to make it feel more residential and human scale, and the fact of the matter is we are designing these buildings around processes and operations and not around patient experience from a patient perspective.”



**Lynne Wilson Orr:** “Some of what we do may look somewhat neutral because we cannot reflect all of the cultures that we need to be respectful of.”



**Mike McKay:** “we need to break these facilities down and make them smaller because the larger they are, the less homelike they can be, no matter what we try to do.”

Although there is little research on the topic, color may also play a role in providing a soothing environment for patients in mental and behavioral health facilities. At Sinai Health System Holy Cross Hospital in Chicago, which opened in 2017, CannonDesign, an architecture, engineering and design firm, renovated an empty floor in the existing hospital into an inpatient program that will include a crisis stabilization unit.

Through a series of patient and family focus groups, residents from surrounding neighborhoods chose a color scheme — light green and dark blue — that was different from what the hospital had selected for the interior walls. “Color is very subjective, especially culturally,” said Elisabeth Perreault, senior vice president and Western New York Health Practice Leader for CannonDesign. “Different colors mean different things to different cultures.” Perreault said the firm also used focus groups to select artwork for space, which centered around a water theme, as the hospital is near Lake Michigan.

Designing individual residential rooms where patients feel safe is another key element in creating mental and behavioral health facilities that lead to successful outcomes. Frank Pitts,

president of architecture+, based in Troy, New York., said his firm won an international interior design award for the residential rooms in its design for the Vermont Psychiatric Care Center. “It’s a safe room that is wonderful to be in,” Pitts said. “It’s about comfort and familiarity. It’s very safe and very secure.”

Providing access to nature in medical facilities is not a new concept, but one that has gained traction in mental and behavioral health projects. Creating gardens near treatment centers, for example, allows patients to walk in a quiet sanctuary where they can exercise and engage in treatment outdoors.

“With healthcare, part of the reason that nature is so important is that it is normalizing,” said Naomi Sachs, a postdoctoral associate in design and environmental analysis at Cornell. “It is something that is familiar to people in an environment that is alien and frightening, where people have given up so much physical or emotional control whether they want to or not. So having either visual and or physical access to nature is something that feels like home.”

## Recent Research in Mental and Behavioral Health Design

While the projects highlighted at the roundtable demonstrate state-of-the-art design for mental and behavioral health facilities, many centers serving this population are older and in poor condition. Despite widespread problems in these older facilities, there has been little research about the role of design in improving mental and behavioral health settings.

Shepley, whose research focuses on healthcare design, presented the results of a study published in 2017 that identified the design features that critically impact staff and patients in facilities serving the mentally ill. Supported by the Foundation for the Academy of Architecture for Health, the study also developed a quantitative tool that can evaluate mental and



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behavioral health facilities.

“Part of this research project was to create some tools that would enable people to evaluate what was important in their facility and evaluate whether it was achieved effectively,” said Shepley, founder of the design research company ART+Science. Developing a measurement tool for facilities was essential because administrators could use it to justify funding requests to improve their centers.

To determine what the most pressing issues are in mental and behavioral health settings, Shepley and her research team reviewed more than 300 articles published since 2013 and came up with 17 topics covering staff and patient needs. The team then interviewed 19 experts in the field who had at least 20 years of experience as clinicians, researchers, or practitioners.

Four topics were identified by the experts as the most important issues to focus on in improving the quality of mental and behavioral health settings: deinstitutionalization, maximum daylight, private/low density rooms, and indoor and outdoor therapy.

Those issues, however, need further study to determine how they can be implemented in

healthcare facilities. For example, while every expert considered deinstitutionalization to be a critical aspect of a mental and behavioral health setting, Shepley said that the definition of “homelike” is unclear.

“One of the interesting things that came up is when you say ‘homelike,’ what do you mean?” Shepley said. “Many people’s homes were not good places to be, so we had to go back to the notion of what makes something feel homelike.” Choice and control are probably better indicators of a homelike environment than a particular aesthetic.

The next phase of the study was to survey clinicians at psychiatric nursing organizations and a behavioral health facility in New York City to determine what they identified as the most important quality and feature across all settings. The results showed that maintenance was the most important quality, and staff safety was the most important feature.

“We found that people listed all the items as really important, but when we asked them, ‘Are they available in your facility?’ they were rarely available,” Shepley said. “So the difference between what people saw as being important and what they actually had access to was statistically significant.”



**Kayvan Madani-Nejad:** “Working with smaller pods of groups of patients works better because it increases the standard of care.”

Shepley said her research team is now hoping to work on a test with staff and patients in a Veterans Affairs facility. Future studies will focus on outcomes associated with private versus shared bedrooms; frequency of incidents associated with open versus closed nurse stations; the impact of noise, lighting, and access to nature; and the provision of staff respite areas.

## Emerging Issues in Mental and Behavioral Health Design Projects

While there is a growing trend toward creating clusters of patient households within larger mental and behavioral health facilities, it is unclear from the research how small those groupings should be. One factor that must be considered in determining the size of the households is its effect on the facility’s business operations, said Kayvan Madani-Nejad, senior healthcare architect in the Office of Construction and Facilities Management at the U.S. Department of Veterans Affairs.

“Even at the VA, you want to put as many veterans into as small a square footage as possible, just so it costs less to build it and there are fewer operational costs,” Madani-Nejad said. “We are moving to smaller pods of groups of patients. So where is that sweet spot? We know the smaller numbers work better because it increases the standard of care.”

Research in other domains suggests that the optimal number of patients living in one cluster is between 6 to 12, said Pitts, of architecture+. Drawing on his work with artists’ colonies, Pitts said that one residence he visited, which accommodates about 40 artists, had to post rules so that each person knew his or her responsibilities. But in a smaller household, that is not necessary, he said.

At an artist’s colony his firm designed for six to eight people, “the understanding was a small

group of people actually are going to work out among themselves, just like families do, how the relationship is going to be,” Pitts said.

While the focus in mental and behavioral health facilities is providing inpatient care, some patients, such as those with addiction, can be treated effectively on an out-patient basis, said Penny Mills, MBA '82, executive vice president and CEO of the American Society of Addiction Medicine. “Some of the more sophisticated addiction treatment providers may have started out as residential, but they’re realizing what they need to do is actually have a campus that has inpatient residential housing and outpatient opioid treatment services all on the same campus setting because patients may move across those levels,” Mills said. “We need to help patients and the community understand you don’t start at residential level. You need to start with an assessment to determine what level of care you need.”

One obstacle to providing the most effective treatment for patients is the level of care that health insurance companies are willing to cover. A patient admitted to a for-profit hospital, for example, may be allowed to stay for three or four days and then may be triaged to a less



**Heather Shangold:** “The big elephant in the room is the stigma...These wonderful designs are not going to come to fruition if we don’t get rid of the stigma and call it out and discuss it.”

restrictive setting such as a rehabilitation center for five to seven days, said James Spelman, Arts and Sciences, '73, senior social worker at Quincy Center of Arbour Hospital in Boston.

“Everybody who comes in for addiction treatment, the parents say, ‘My son or my daughter needs long-term treatment,’ ” Spelman said. “But who is paying for that? You can create these lovely models, but unless you answer that bold question of who’s paying for it, you can’t even begin to address how big should the place be.”

For-profit health care centers that treat addiction are no longer places of healing, Spelman added. “I work in an acute care stabilization setting where the idea is within three to five days — without good evidence to prove this is possible — we stabilize somebody and get them out of the hospital in a week. The insurance companies are saying, ‘That’s all you’ve got.’ ”

Another major obstacle impacting patients is the stigma associated with mental and behavioral health facilities, said Heather Shangold, local recovery coordinator and psychologist for the VA New Jersey Health Care System. “The big elephant in the room is the stigma,” she said. “The truth is that more nurses get assaulted on med-surge than mental health, but we don’t talk about the design in med-surge. We really have to be aware of that because it’s going to impact everything. These wonderful designs are not going to come to fruition if we don’t get rid of the stigma and call it out and discuss it.”

A patient with a mental illness is far more likely to be the victim of violence than the perpetrator, despite the stigma that such patients are violent, Shangold said. The persistence of this stigma also lowers the life expectancy of this population, because they are less likely to be referred to specialists such as cardiologists and oncologists, she said.

## Opportunities for Successful Mental and Behavioral Health Programs

One strategy that offers promise for improving treatment is the integration of primary care and mental health services. That approach was used in the recent reconstruction of Cornell Health at Cornell University, which is now staffed with collaborative teams of medical providers, counselors, psychiatrists, and nutritionists who treat patients holistically.

“We went from having separate counseling units to units that we call integrated or collaborative,” said Nianne VanFleet, director of operations for Cornell Health. “We spent a lot of time with our support staff around the fact that the same patient who comes in tomorrow for a sore throat is the same patient who comes in today to see a counselor.”

Integrating services can eliminate the stigma associated with mental and behavioral health services because the approach doesn’t require patients to be labelled, Madani-Nejad said. “If you integrate primary care and outpatient mental health, you can avoid stigma because you don’t know whether the person sitting next to you is going for primary care or mental health or whether that building is for mental health,” he said.

On a broader level, the medical community, schools, and the public need to learn that mental illness is a disease that can often be diagnosed and treated at early ages, which produces better outcomes, Pitts said. He cited research being applied in Norway that is teaching physicians, educators, and families that mental illness can be diagnosed and treated early.

“We need to change our systems, and we need to change how we educate people about mental illness,” Pitts said. “But as designers, I think in every way that we possibly can, we need to help clinicians embrace the idea of an environment



**Frank Pitts:** “As designers, we need to help clinicians embrace the idea of an environment that is as normative as possible so that the environment isn’t reinforcing the message of the stigma.”

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When designing mental health facilities, however, Giebink, of HDR, said he has to plan for the worst-case scenario because of the need to create a safe environment for patients. “I would love to design behavioral health facilities that are totally normalized, that have no anti ligature attachments or things on the wall that you could hang yourself with or break or harm yourself, because most of the people are not going to harm themselves,” he said. “But we have to design for the worst case.”

Looking to the future, the treatment of mental and behavioral illness may not involve patients seeing clinicians in person but instead accessing care through a mobile app. The roundtable ended with a demonstration of an app developed by Lantern, a digital mental health technology company in San Francisco that delivers programs based on cognitive behavioral therapy.

Samantha Greenberg, College of Agriculture and Life Sciences ’10, who is the strategic partnership manager at Lantern, led roundtable

participants in a deep-breathing exercise that she played on her smart phone through Lantern's app. "The point of Lantern is for you to learn the skills you need to manage your care when you need it," she said. "You're really teaching yourself a wide variety of techniques, from mindfulness to cognitive behavior therapy to cognitive reframing."

Beyond telehealth, other developments discussed at the roundtable offer a picture of what mental and behavioral health treatment will look like in 20 years. Hospitals and inpatient facilities will focus more on family dynamics in the healing process and provide spaces for parents to stay in patients' rooms.



**James Spelman:** "There will always be in our society people who cannot provide for themselves and need kind, thoughtful, supported hospital-level care."

Larger mental health institutions will be replaced by treatment centers in community-based settings. The integration of primary care and mental health will help diagnose and treat mental disorders earlier so patient functioning will not be compromised.

"There will always be in our society people who cannot provide for themselves and need kind, thoughtful, supported hospital-level care," said Spelman, who spent his career working with hospitalized mentally ill patients. "The goal is to take those people who were warehoused and figure out some better way to treat them. The notion that you can do that in a community-based setting is really where we're heading and where we should be headed, where people feel listened to and provided for in a supportive setting and where they can become productive members of society."

*For additional information on CIHF programs, please contact the institute at [CIHF@cornell.edu](mailto:CIHF@cornell.edu).*





# Agenda

## Cornell Institute for Healthy Futures

*Innovating Across Health, Hospitality, and Design*

### 2017 Roundtable: Mental and Behavioral Health Design

#### Sunday, October 15, 2017

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5:30 - 7:00 p.m.     **Welcome Reception**     SHA Tower  
5th Floor Silver Birch Suite  
Statler Hall

**Roundtable Chair: Mardelle Shepley**, B.A., M.Arch., M.A., D.Arch., Associate Director, CIHF;  
Chair of Design + Environmental Analysis, College of Human Ecology, Cornell University

Posters on display are by students in Design & Environmental Analysis and Architecture, Art & Planning

#### Monday, October 16, 2017

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8:00 - 8:30 a.m.     **Registration and Networking Breakfast**     SHA Tower  
5th Floor Silver Birch Suite  
Statler Hall

8:30 - 9:15 a.m.     **Welcome and Introductions**

**Roundtable Chair: Mardelle Shepley**, B.A., M.Arch., M.A., D.Arch., Associate Director, CIHF;  
Chair of Design + Environmental Analysis, College of Human Ecology, Cornell University

9:15 - 9:30 a.m.     **Recent Research on Mental & Behavioral Health Design**

Presentation - Mental & Behavioral Health Environments: Critical Considerations for Facility Design (Shepley)

9:30 - 10:15 a.m.    **Recent Mental & Behavioral Health Design Projects**

**Presenters:**

Brian Giebink, HDR  
Mike McKay, ERDMAN  
Elisabeth Perreault, CannonDesign  
Frank Pitts, architecture+  
Naomi Sachs, Therapeutic Landscapes Network  
Lynne Wilson Orr, Parkin Architects Limited

10:15 - 10:30 a.m.    **Break + Group Photo**

10:30 - 11:45 a.m.    **Current Status of Mental & Behavioral Health Programs and Facilities**

**Moderator: Brooke Hollis**, MBA '78, Associate Director, CIHF; Associate Director, Sloan Program in Healthcare Administration, Cornell University

11:45 - 12:45 p.m.    **Networking Luncheon and Discussion**                      Rowe Room, Taverna Banfi  
Statler Hotel

Participants, Faculty Fellows, and students share their ideas and experience

12:45 - 1:45 p.m.    **Impediments to Successful Mental & Behavioral Health Programs and Facilities**                      SHA Tower  
5th Floor Silver Birch Suite  
Statler Hall

**Moderator: Rohit Verma**, Executive Director, CIHF; Dean of External Relations, Cornell SC Johnson College of Business, Cornell University

1:45 - 2:00 p.m.    **Break**

2:00 - 2:45 p.m.    **Opportunities for Successful Mental & Behavioral Health Programs and Facilities**

**Moderator: Mardelle Shepley**, B.A., M.Arch., M.A., D.Arch., Associate Director, CIHF; Chair of Design + Environmental Analysis, College of Human Ecology, Cornell University

2:45 - 3:00 p.m.    **Wrap-up and Next Steps**

*Hand in 2017 Roundtable Survey*



# Roundtable Chair

## Mardelle Shepley

Associate Director, Cornell Institute for Healthy Futures  
Professor and Chair, Department of Design + Environmental Analysis  
College of Human Ecology, Cornell University

# Participants

## Sheila Bosch

Assistant Professor, Department of Interior Design, University of Florida

## Serene Chen, MD

Resident Physician in Emergency Medicine Highland Hospital

## Brian Giebink

Architect, HDR

## Samantha Greenberg, CALS '10

Strategic Partnership Manager, Lantern

## Jim Hunt

President, Behavioral Health Facility Consulting, LLC

## Kayvan Madani-Nejad

Senior Healthcare Architect, Facilities Standards Services

## Mike McKay

Vice President, Architecture ERDMAN

## Penny S. Mills, MBA '82

Executive Vice President & CEO, American Society of Addiction Medicine

## Samira Pasha

Healthcare Project Architect, Cumming Construction Management

## Elisabeth Perreault

Senior Vice President, WNY Health Practice Leader, CannonDesign

## Frank Pitts

President, architecture+

## Naomi A. Sachs

Postdoctoral Associate, Department of Design & Environmental Analysis, Cornell University

## Heather Shangold

Local Recovery Coordinator, Psychologist, VA NJ Health Care System

## James Spelman, A&S '73

Senior Social Worker, Quincy Center of Arbour Hospital

## Mary Tabacchi

Professor Emerita, School of Hotel Administration, Cornell University

## Tammy Thompson

President and Founder, Institute for Patient-Centered Design

## Nianne VanFleet

Director of Operations, Cornell Health, Cornell University

## Lynne Wilson Orr

Principal, Parkin Architects Limited

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