

# 2022 International Nursing Conference for Excellence in Healthcare Design

## Reimagining the Unimaginable: Designing for Readiness, Rapid Response, and Resilience

July 28-30, 2022

The Westin Poinsett Hotel  
120 South Main Street  
Greenville, SC 29601



*School of*  
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CLEMSON UNIVERSITY  
**ACADEMY OF NURSING**  
EXCELLENCE IN DESIGN

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## Planning Committee

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- Dr. Dina Batisto
- Ben Card
- Joyce Durham
- Jennie Evans
- Dr. Debbie Gregory
- Jessica Martin
- Brenda McDermott
- Frances Parrish
- Dr. Jaynelle Stichler
- Dr. Kathleen Valentine
- Dr. Terri Zborowsky

### Mission Statement

IFMA's Health Care Council is a specialized networking group within the association for professionals who manage health care facilities. Recognizing the critical role of FM in enabling health care operations, our mission is to effectively address the challenges of managing medical centers, hospitals, clinics, palliative care and related sites to enhance quality of caregiving.

- 250 Members Strong
- Annual Meeting at IFMA's World Workplace
- Topical Webinars
- White Papers to help deepen members knowledge of issues they face

[Healthcare.ifma.org](http://Healthcare.ifma.org)



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# From the Conference Chairs

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Dear Participants,

Welcome to the 2022 International Nursing Conference for Excellence in Healthcare Design in beautiful Greenville, South Carolina. We are excited that you are a part of this conference. This is a dream we have envisioned for years, and with the formation of the Clemson University Academy for Excellence in Healthcare Design in 2017, we took those first steps in creating this conference in 2019.

Nurses have a place at the design table and should be included when designing a health care facility. As nurses ourselves, we have worked to help bridge this gap and guide and encourage more nurses to become involved with the design process from concept to post occupancy, since they ultimately work in these spaces, whether inpatient, outpatient, or in the community setting. This year's theme: Reimagining the Unimaginable: Designing for Readiness, Rapid Response, and Resilience, reinforces the essential nature of nurses' and interdisciplinary colleagues' roles in the face of a pandemic and its consequential effects on the public's social determinants of health. We aim to have participants leave inspired by the innovative research in the field of healthcare design and the importance of interdisciplinary teams.

Over the next day and a half, leaders in nursing and healthcare design will call on us to learn from the COVID-19 pandemic and how this can lead to a healthful innovative future that promotes well-being through our build environments and service delivery models.

We are grateful to the support of the Academy members: Dr. Kathleen Valentine, former director of the Clemson University School of Nursing; Dr. Debbie Gregory, nurse executive and interior designer at Smith Seckman and Reid; Dr. Jaynelle Stichler, founding co-editor of HERD journal; Yolanda Keys, a research associate at the Center for Health Design; Joyce Durham, RN, AIA, EDAC, Director Facilities Strategic Planning, New York Presbyterian Hospital and immediate past president NIHD; Jennie Evans, Director of Business Development at Mazzetti; Susan Silverman, vice president of CannonDesign; Christine Staples, clinical planner with the Defense Health Agency; Dr. Terri Zborowsky, design researcher with HGA Architects & Engineering, Inc.; and the planning committee comprised of Clemson University staff members and passionate nursing and industry leaders. Add Brenda McDermott, retired. This conference would not be possible without the extraordinary support from the Clemson University faculty and staff who demonstrate their innovative talents each, and every day.

As we reflect on what each of you has had to do to choose to attend this conference— from submitting abstracts, arranging schedules, and traveling— we want to thank you for your time and talent to join this scholarly salon for a conversational gathering among nurses and inter-disciplinary colleagues to advance excellence in nursing by reimagining the unimaginable in healthcare design.

Sincerely,

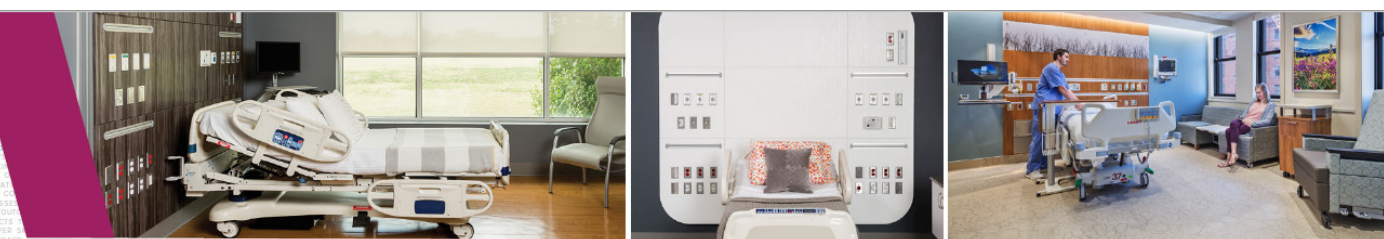
Kathleen Valentine & Debbie Gregory  
Conference Co-Chairs

# Conference Mission

The mission of the conference is to:

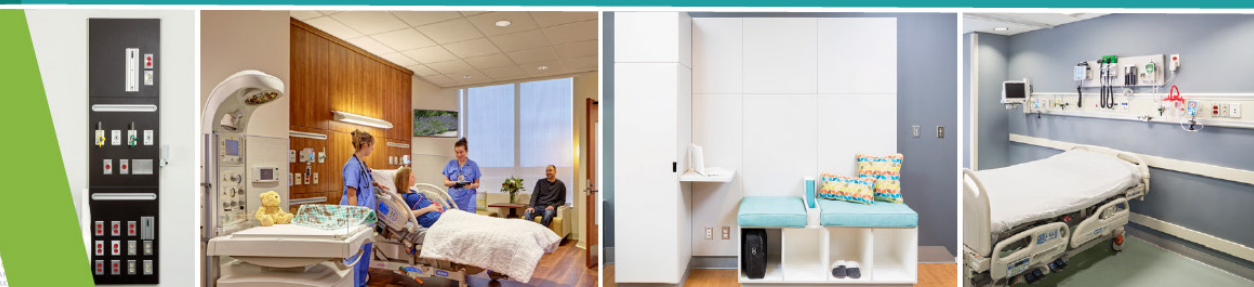
- Disseminate new knowledge obtained through research related to the effect of healthcare design on patient (family), provider and organizational outcomes
- Identify best practices for nurse leadership in healthcare design
- Stimulate innovation in healthcare design
- Encourage interprofessional collaboration and engagement
- Identify opportunities for nurse, patient/family input into safety improvements in healthcare design
- Foster an inclusive platform for specialty design settings (global health, military health, integrative health, etc.) that expands and supports the role of nurse leaders in the design of specific specialty practices.

OUTCOMES IN A CONTROLLED ENVIRONMENT WITH PRODUCTS THAT DO NOT FALL SHORT ON DESIGN DETAILS. WE OFFER SMART, HIGH-DESIGN AESTHETIC DESIGN TEAMS AND MANUFACTURING SYSTEMS THAT MAKE OF THE PATIENT SPACE BOTH SIMPLE AND EFFICIENTLY INCREASE FUNCTIONALITY FOR THE CLINICAL STAFF. ENVIRONMENT WITH PRODUCTS THAT ARE DESIGNED TO BE MEANINGFUL AND WE BELIEVE YOU PLAY AN IMPORTANT ROLE IN THE FUTURE OF HEALTH CARE. THAT IS WHY AT MODULAR SERVICES COMPANY, WE COMMITTED TO IMPROVING THE HEALTH CARE ENVIRONMENT THROUGH LISTENING. WE CREATE, WE ENCOURAGE AND WE CHIEF ON YOUR IDEAS. MODULAR SERVICES COMPANY IS COMMITTED TO TEAMING WITH CLINICIANS, DESIGNERS, ARCHITECTS, CONTRACTORS AND OTHERS WHO SHARE OUR SAME DESIRE TO MAKE POSITIVE CHANGES TO THE HEALTHCARE ENVIRONMENT. COME EXPLORE OUR SOLUTIONS FOR YOUR SPACE. MODULAR SERVICES COMPANY HAS BEEN MANUFACTURING HEALTHCARE PRODUCTS FOR OVER 50 YEARS. WE HAVE THOUSANDS OF INSTALLATIONS IN EVERY KIND OF HOSPITALS OF EVERY ACUITY LEVEL. OUR SOLUTIONS FOR THE HEALTH CARE ENVIRONMENT RANGE FROM CARTS, PATIENT ROOMS AND LIGHTS TO HEADWALLS, CEILING BOOMS AND COMPLETE ROOM COLLECTIONS. OUR PREFABRICATED MANUFACTURING PROCESSES USE QUALITY MATERIALS TO PRODUCE CONSISTENT AND SPECIFIC OUTCOMES IN A CONTROLLED ENVIRONMENT. WE STRIVE TO INCREASE FUNCTIONALITY FOR THE CLINICAL STAFF IN THE HEALTH CARE ENVIRONMENT WITH PRODUCTS THAT ARE USER-CENTRIC AND MEANINGFUL. AND WE BELIEVE YOU PLAY AN INVALUABLE ROLE IN THE FUTURE OF HEALTH CARE. THAT IS WHY AT MODULAR SERVICES COMPANY, WE COMMITTED TO IMPROVING THE HEALTH CARE ENVIRONMENT THROUGH LISTENING. WE CREATE, WE ENCOURAGE AND WE CHIEF ON YOUR IDEAS. MODULAR SERVICES COMPANY IS COMMITTED TO TEAMING WITH CLINICIANS, DESIGNERS, ARCHITECTS, CONTRACTORS AND OTHERS WHO SHARE OUR SAME DESIRE TO MAKE POSITIVE CHANGES TO THE HEALTHCARE ENVIRONMENT. COME EXPLORE OUR SOLUTIONS FOR YOUR SPACE. MODULAR SERVICES COMPANY HAS BEEN MANUFACTURING HEALTHCARE PRODUCTS FOR OVER 50 YEARS. WE HAVE THOUSANDS OF INSTALLATIONS IN EVERY KIND OF HOSPITALS OF EVERY ACUITY LEVEL. OUR SOLUTIONS FOR THE HEALTH CARE ENVIRONMENT RANGE FROM CARTS, PATIENT ROOMS AND LIGHTS TO HEADWALLS, CEILING BOOMS AND COMPLETE ROOM COLLECTIONS. OUR PREFABRICATED MANUFACTURING PROCESSES USE QUALITY MATERIALS TO PRODUCE CONSISTENT AND SPECIFIC OUTCOMES IN A CONTROLLED ENVIRONMENT. WE STRIVE TO INCREASE FUNCTIONALITY FOR THE CLINICAL STAFF IN THE HEALTH CARE ENVIRONMENT WITH PRODUCTS THAT ARE USER-CENTRIC AND MEANINGFUL. AND WE BELIEVE YOU PLAY AN INVALUABLE ROLE IN THE FUTURE OF HEALTH CARE. THAT IS WHY AT MODULAR SERVICES COMPANY, WE COMMITTED TO IMPROVING THE HEALTH CARE ENVIRONMENT THROUGH LISTENING. WE CREATE, WE ENCOURAGE AND WE CHIEF ON YOUR IDEAS. MODULAR SERVICES COMPANY IS COMMITTED TO TEAMING WITH CLINICIANS, DESIGNERS, ARCHITECTS, CONTRACTORS AND OTHERS WHO SHARE OUR SAME DESIRE TO MAKE POSITIVE CHANGES TO THE HEALTHCARE ENVIRONMENT.



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## Keynote speakers

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### Oriana Beaudet



Oriana Beaudet, DNP, RN, PHN, is the Vice President of Nursing Innovation for the American Nurses Association Enterprise (American Nurses Association, American Nurses Credentialing Center, and the American Nurses Foundation). Dr. Beaudet completed her doctorate in nursing practice with an emphasis in Health Innovation Leadership and Design from the University of Minnesota School of Nursing.

Dr. Beaudet has been leading innovation initiatives for more than 20 years through strategic and operational change management work on behalf of and with health systems looking to transform their organizations. Her last position as the Vice President of Transformation for a national healthcare design firm focused on strategy and business development for national health system clients around operational innovations; business, operational, and financial modeling; including technology and care delivery redesign for the built space.



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#### Our Mission

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To engage and integrate clinical expertise into the planning and design of healthcare environments.



#### Our Vision

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Please visit our website to learn more: [www.nursingihd.com](http://www.nursingihd.com).

## Karen Hill



Karen Hill, RN, DNP, NEA-BC, LFACHE, FAAN recently retired after 28 years as the Chief Operating Officer/Chief Nursing Officer from Baptist Health Lexington, located in Kentucky. In her role, Dr. Hill supervised 2800 employees and over 1100 of these employees were nurses. Dr. Hill led Baptist Health Lexington to Magnet designation four times during her tenure recognizing nursing excellence. As COO, CNO, Dr. Hill was instrumental in the planning and construction of over \$600 million of construction projects including hospital renovations, addition of a 7-story bed tower and a new ambulatory campus currently under construction.

Dr. Hill is the Editor-in-Chief for the Journal of Nursing Administration, an international scholarly peer reviewed journal. She processes over 400 manuscripts for JONA in 2021 and produces 11 editions a year. JONA is circulated in 146 countries and has over 1.5 million downloads of articles annually.

Dr. Hill has over 75 peer-reviewed publications and is co-author of a book released in 2018, "Creating a Research-Friendly Environment: A Community Hospital Approach". She is a lifetime Fellow in the American College of Healthcare Executives and a Fellow in the American Academy of Nursing.

The logo for SSR, consisting of the letters 'SSR' in a stylized, white, serif font on a dark blue background.

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# Leadership and Innovation in Health + Design Inaugural Cohort

## Mary Ann Bennett, RN, BSN, MHA



Mary Ann Bennett has 30+ years of leadership expertise in high-level operations with diverse healthcare industries. She is often described as a high-energy problem-solver who loves project management and innovations in healthcare. She has spent the last 13 years as Chief Operating Officer in a behavioral health facility

specializing in autism. She was head of autism programming, quality improvement, regulatory, risk management, and patient experience there. She also frequently served as the director of nursing.

Mary Ann completed the Graduate Certificate Program in Leadership and Innovation in Health + Design at Clemson University as one of the students in the inaugural class. She also has a Master's in Healthcare Administration from Ohio University and a Bachelor of Science in Nursing from the University of South Alabama. Mary Ann is currently seeking opportunities to consult on healthcare design teams.

[maryann424200@yahoo.com](mailto:maryann424200@yahoo.com)

## Brooke Karlsen, MSN, BSN, RN, NEA-BC, EDAC



Brooke Karlsen is a dynamic healthcare leader with extensive acute care and ambulatory experience. She has a strong record of fostering multidisciplinary collaboration and mentorship in highly collaborative environments. During her career as a clinical leader she worked in a variety of nursing and operations roles,

and was known for combining highly effective communication with strong project management skills.

Brooke recently completed the Graduate Certificate Program in Leadership and Innovation in Health + Design at Clemson University. Utilizing her clinical experience and leadership, Brooke followed her passion and expertise in healthcare planning, organization, and implementation and opened BK Healthcare Concepts, LLC. Through consultative work, she fulfills a wide variety of roles including planning, supporting, and managing complex projects. She also leads or supports multidisciplinary teams that integrate designers, construction professionals, and clinicians in prioritizing efficient and evidence-based design processes. She currently works with healthcare architectural firms, consulting firms, and directly with healthcare organizations supporting all facets of healthcare design and construction processes.

[bkarlsen116@gmail.com](mailto:bkarlsen116@gmail.com)

## Anita Singleton Ferree, RN, BSN



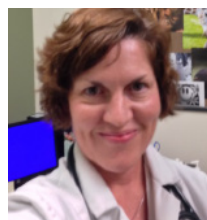
Anita is a native of Charleston, South Carolina and attended Clemson University from 1998 to 1990 as an undergraduate nursing study. She received her BSN from the Medical University of South Carolina in 1993. As a nursing student, she worked part time at MUSC's Institute of Psychiatry, and

upon graduation moved to North Carolina to work as a post-operative care nurse at the University of North Carolina Hospital.

In 1996, Anita began working as a clinical research monitor, clinical trial manager and clinical operations manager. She has spent the last 26 years working in oncology clinical research, monitoring and managing global clinical trials. She currently serves as a Sr. Clinical Trial Manager for Immunogen, based in Waltham, Massachusetts, and is the clinical program lead for a novel ovarian and endometrial cancer immunotherapy candidate. Following completion of the Graduate Certificate Program, Anita plans to take the EDAC exam and ultimately investigate opportunities to consult on design opportunities.

[aniajsingleton@gmail.com](mailto:aniajsingleton@gmail.com)

## Shelisa Schroeder, RN, MSN, FNP



Shelisa Schroeder has been an RN and family nurse practitioner for over 35 years. Her expertise is in clinical adult medicine working both in inpatient and outpatient settings. Her most recent position was as a clinician in an outpatient walk-in clinic in Newport, Oregon for Samaritan Health Services

where she cared for all ages. Prior to that she worked as a nurse practitioner/ hospitalist in Medford, Oregon for Providence.

Shelisa completed the Graduate Certificate Program in Leadership and Innovation in Health + Design at Clemson University as one of the students in the inaugural class. She received her MSN from Oregon Health Sciences University, a Master's in Sustainable Design from Boston Architectural College, and a Master's in Health Law from Loyola University in Chicago. She received her BSN from Illinois Wesleyan University in Bloomington, Illinois.

She plans to combine her sustainable design degree and Post-Master's certificate to work in community development and planning.

[Shelisamj@gmail.com](mailto:Shelisamj@gmail.com)



**Mazzetti+GBA worked very closely with the Clemson School of Nursing providing Medical Equipment and IT Systems Planning for the new Simulation Lab. We continue to provide our expertise in innovative design to higher education and healthcare systems throughout the US. In support of the nursing field, we employ nurses from the PICU, Emergency Department, ICU, and other areas of health facilities to ensure we bring practical experience to our design.**

Jeff Looney, Principal  
Technology Division Leader



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# Schedule

Thursday, 7/28/2022	7 - 9 p.m.	Registration and Reception	Mezzanine
Friday, 7/29/2022	6:30 - 7:45 a.m.	Breakfast	Poinsett Ballroom
	7:45 - 9:15 a.m.	Welcome, Keynote Speaker: <b>Dr. Karen Hill</b>   Nurses as Healthcare Design Leaders: Now More Important Than Ever. <i>(1 AIA LU   1.25 Nursing Contact Hours   1.5 EDAC Credits)</i>	Gold Ballroom
	9:15 - 9:30 a.m.	Break	
	9:30 - 10:15 a.m.	Introductions, Restoring the Joy of Nursing - <b>Dr. Terri Reed</b>   CAMA; <b>Kimberly Montague</b>   Kimball International <i>(.5 EDAC Credits   .5 Nursing Contact Hours)</i>	Gold Ballroom
	10:15 - 10:45 a.m.	Redesigning an Emergency Department for Resilience: Listening to the Voice of the Frontline Workers - <b>Dr. Ursula Lasky</b>   Erlanger Western Carolina Hospital <i>(1 AIA LU/ HSW   .5 Nursing Contact Hours   .5 EDAC Credits)</i>	Gold Ballroom
	10:15 - 11 a.m.	Break	
	11- 11:30 a.m.	Creating a Resilient Model for Pandemic Care: Conversion of the Miami Convention Center - <b>Steven Langston</b>   rlf; <b>Jennifer Powers</b>   rlf; <b>Brian White</b>   rlf <i>(.5 Nursing Contact Hours   .5 EDAC Credits)</i>	Gold Ballroom
	11:30 - 12 p.m.	Building for Pandemic Resiliency: A Comparative Analysis of Multiple Facilities Across a Health System - <b>Dr. Deborah Wingler</b>   HKS, Inc.; <b>Brenda McDermott</b> <i>(1 AIA LU   .5 Nursing Contact Hours   .5 EDAC Credits)</i>	Gold Ballroom
	12 - 1 p.m.	Hosted Lunch and Networking	Poinsett Ballroom
	1:15 - 2:15 p.m.	Keynote: <b>Dr. Oriana Beaudet</b> - Growth and Sustainability: Innovation Is Required To Reimagine Healthcare <i>(1 Nursing Contact Hour   1 EDAC Credit)</i>	Gold Ballroom
	2:15 - 3 p.m.	Leadership & Innovation in Health + Design Certificate Student Panel	Gold Ballroom
	3 - 3:15 p.m.	Break	
	3:15 - 4 p.m.	Introductions, A Pilot Study Using Mobile Eye-tracking Method and Sentiment Analysis to Explore Telepresence During Mental Health-related Telehealth Visits - <b>Dr. Elizabeth Johnson</b>   Montana State University; <b>Dr. Kimberly Strauch</b>   The University of Pennsylvania <i>(.5 Nursing Contact Hour   .5 EDAC Credit)</i>	Gold Ballroom
	4 - 4:30 p.m.	Using Operational Studies to Improve Healthcare Facility Planning and Design for Behavioral Health Care in the Emergency Department - <b>Marvina Williams</b>   Perkins & Will; <b>Sabah Mohammed</b>   Perkins & Will <i>(1 AIA LU   .5 Nursing Contact Hour   .5 EDAC Credit)</i>	Gold Ballroom
Saturday, 7/30/2022	6:30 - 7:45 a.m.	Breakfast	Poinsett Ballroom
	7:45 - 8:45 a.m.	Boots on the Ground Perspective for Practice and Academics During a Global Pandemic - <b>Dr. Kathleen Valentine</b>   Clemson University School of Nursing; <b>Dr. Carolyn Swinton</b>   Clemson University School of Nursing <i>(.75 Nursing Contact Hour   1 EDAC Credit)</i>	Gold Ballroom
	8:45 - 9:30 a.m.	Introductions, Design in the Time of Cholera: (re)Infusing Humanity in a Post-Pandemic Health Environment - <b>Steven Langston</b>   rlf; <b>Miriam Ganesh</b>   rlf <i>(.5 Nursing Credit Hour   .5 EDAC Credit)</i>	Gold Ballroom
	9:30 - 9:45 a.m.	Break	
	9:45 - 10:15 a.m.	Future-Proofing Hospitals for the Next Global Pandemic - <b>Jennie Evans</b>   HKS, Inc. <i>(.5 Nursing Contact Hour   .5 EDAC Credit)</i>	Gold Ballroom
	10:15 - 10:45 a.m.	The Hospital of the Future - <b>Dr. Deborah Wingler</b>   HKS, Inc. <i>(1 AIA LU   .5 Nursing Contact Hour   .5 EDAC Credit)</i>	Gold Ballroom
	10:45 - 11 a.m.	Wellness Moment: Terri Zborowsky	Gold Ballroom
	11 - 12 p.m.	Clemson University Academy of Nursing for Excellence in Design Panel: The Future of Nursing Research and Design <i>(.5 EDAC Credit)</i>	Gold Ballroom
	12 - 1 p.m.	Wrap-up and Boxed Lunch	Gold Ballroom

## **Future-proofing Hospitals for the Next Global Pandemic**

**Sarah Holton, DNP, MBA, RN, CNML, LSSYB | HKS, Inc.**

**Jennie Evans, MBA, RN, LEED AP, EDAC | HKS, Inc.**

### **Setting**

The pandemic experience has transformed our collective understanding of preparedness, creating a demand for permanently activated operational design. It is not meant to be a prescription or to give one answer, but rather to suggest priorities and key considerations regardless of the space constraints and provide examples of what this could look like in action.

### **Purpose**

The purpose of this presentation is to answer the following questions: Did Covid19 demonstrate a gap in preparedness that suggests our preparedness focus must shift to a sustainable response rather than episodic preparedness? How can the healthcare setting influence the overall preparedness and response time to disaster?

### **Relevance**

This collaborative effort engaged clinicians, researchers, architects, and health engineers in a thought-leadership exercise to address the current pandemic and increase resilience for the future. The goal was to help hospital executives, facility directors, and planners with decisions regarding facility investment considerations when designing and renovating spaces.

### **Strategy/Methods**

The framework of our efforts shifts preparedness design discussion from if to when the next global event will occur, thus emphasizing permanence over makeshift and temporary design solutions. Interviews with frontline clinical, administrative, and executive staff informed the design strategies for long-range airborne infectious diseases.

### **Evaluations/Outcomes**

Synergies between infectious disease care and overall healthcare priorities, with the goal of creating a flexible and resilient hospital campus. We recognize that no one strategy or modification has been a panacea, and each facility needs unique approaches based on their foundational infrastructure. 7 Principles for Pandemic-Resilient Healthcare Design were developed and offer core considerations, providing a variety-solution based on a facility's unique situational needs.

### **Implications for Practice**

Our objective is to influence preparedness incorporating three key strategic objectives. The first is to reduce risks, secondly, to create a robust organization mindset for disaster and finally, to design environment that supports resiliency in people. Key priorities for future healthcare facility design must include planning for resiliency flexibility, and an infrastructure that will permit the facility to adapt to the likelihood of another pandemic and rise of infectious diseases.

# A Pilot Study Using Mobile Eye-tracking Method and Sentiment Analysis to Explore Advanced Practice Nurse Telepresence During Mental Health-related Telehealth Visits

Elizabeth Johnson, Ph.D., MS-CRM, RN | Montana State University  
Kimberly Strauch, PhD, MSN, ANP-BC | University of Pennsylvania

## **Setting/Situation**

Advanced Practice Registered Nurses (APRNs) in the United States who have utilized telehealth as a care provider for a mental health-related patient visit in past 6 months.

## **Purpose**

To evaluate APRN eye movements and sentiments associated with establishing telepresence during telehealth-delivered mental health patient care.

## **Relevance/Significance**

Suboptimal environmental conditions and lack of training may lead to missing or misinterpreting components of patient assessment: gaze, eye contact, facial microexpressions attributed to patient mental status. Missed cues during assessment and lack of a therapeutic relationship create gaps in patient safety and quality care. APRN role significant to rural telehealth delivery for mental health-related patient encounters.

## **Strategy/Implementation**

50 APRNs will watch a clinical vignette of a mental health-related patient visit on a computer/smart device linked with mobile eye-tracking software. During the short vignette, the APRN's gaze, areas of interest, and rapid eye motions are captured as well as eye-based sentiment data. APRNs will complete a semi-structured qualitative interview regarding their experiences viewing the vignette. Study data collection anticipated to initiate late June of 2022.

## **Evaluation/Outcomes**

Anticipated outcomes include: raising APRN awareness on the impact of physical environment when interpreting microexpressions; obtain pilot data on eye movement patterns during telehealth visits; describe experiences of APRNs using sentiment analysis and interviews.

## **Implications for Practice**

An examination of APRN eye contact and gaze during telehealth mental-health related visits will facilitate a better understanding of telepresence during these visits and key environmental components of telehealth delivery space impacting eye contact (lighting, wall color, glare). Sentiment data will describe APRN competence and confidence in telehealth care delivery and establishing digital presence.

# Design in the Time of Cholera: (Re)Infusing Humanity in a Post-Pandemic Health Environment

Steven Langston, AIA, ACHA, EDAC, LEED BD+C | rlf  
Miriam Ganesh, NCIDQ, CHID, IIDA, EDAC, LEED AP | rlf

## Setting/Situation

Hospital/Acute Care Environments

## Strategy/Implementation

- 1) Survey/Summary of Current Research on Delivering Healthcare in the Pandemic Mode
- 2) Research/Summary of Current Solutions identifying the good, the bad, and the ugly.
- 3) Identifying the Needs of both the Patient and the Care Giver (Nurses)
- 4) Ideating Solutions in a Workshop Format to Resolve these issues.

## Evaluation/Outcomes

- 1) Understand the issues and temporary solutions to create a better permanent solution for healing in a safe pandemic environment.
- 2) Understand the elements of the healing process and how the built environment can either create impediments or aids toward healing.
- 3) Learn the science behind a therapeutic environment and the processes that support this.
- 4) Learn new tools and techniques that can be immediately applied in the design of healing spaces.

## Implications for Practice

By utilizing the tools/solutions presented and discovered, a more humane working and healing environment can be created to improve medical outcomes for the patient.

# Creating a Resilient Model for Pandemic Care in Impossible Time - Conversion of the Miami Beach Convention Center in 12 Days

**Steven Langston**, AIA, ACHA, EDAC, LEED BD+C | rlf

**Jennifer Powers**, NCIDQ, IIDA | rlf

**Brian White**, AIA, NCARB, LEED AP | rlf

## **Setting/Situation**

Case Study of the Conversion of a Convention Center to Pandemic Care in 12 days

## **Strategy/Implementation**

- 1) Present the goals and objectives of this case study along with the program, schedule, criteria, and budget from the Client.
- 2) Demonstrate the unique charrette process used to ideate, design + deliver this unique healing environment.
- 3) Present the design solution and operational drivers that created it.
- 4) Show the construction process and the built solution along with lessons learned from the project team.

## **Evaluation/Outcomes**

Will compare and contrast the designed versus built solution with both qualitative and quantitative methods of the environmental performance for both patient and care giver.

## **Implications for Practice**

The unique process utilized to quickly design and build this large “field hospital” can be utilized in other situations to design more effective built environments in a shortened time without sacrificing quality.

## **Previous Presentations**

The initial presentation of this case study was given to the Center for Health Design which focused on the solution. This is an expanded presentation that talks about the design process of this case study along with updated operational data from both the patient and caregiver perspective.

Our team has presented a different topic at this conference last year and has presented at the national HealthCare Design Conference and the PDC Conference for the past two years.

# Redesigning an Emergency Department for Resilience: Listening to the Voice of the Frontline Workers

Ursula Lasky, DNP, RN, CEN | Erlanger Western Carolina Hospital  
Laurie Waggener, BSRC, RRT, BID, CHID, EDAC | EYP

## **Purpose**

The purpose of this research in practice was to measure the practitioner's perception of the physical environment relative to enhanced safety, efficiency, and security. Prevailing issues in the industry, such as Emergency Department overcrowding, medical errors due to interruptions, workplace violence and the project goals informed the composition of the validated survey instrument.

## **Strategy and Implementation**

Project goals included design improvements in clinical efficiency, minimizing interruptions to promote safety and enhance rapid responses to various patient populations. A secondary project goal was to improve the emergency department (ED) experience for the Behavior Health patient. This mixed methods study included survey questions, an open-ended question, followed by interviews of the frontline workers.

Participants included registered nurses, physicians, patient care technicians, unit secretaries, access services, and social workers pre-move a total of 33) and post move , 22.. Patient data also were collected as outcome metrics.

## **Evaluation/Outcomes**

Research results revealed project goals were met regarding perception of enhanced safety ( $p < .05$ ) and efficiency ( $p < .05$ ). Perception of security findings were not significant. Overall findings on workplace satisfaction were statistically significantly positive ( $p < .01$ ). There were no significant findings in the pre and post patient data.

A total of 11 survey questions evaluated design regarding promoting safety. All 11 showed descriptive improvement except two that had no change. Eight out of 11 showed the improvements were statistically significant. A total of 14 out of 18 survey questions that evaluated efficiency showed descriptive improvements, 10 of which were statistically significant. A total of five questions addressed security improvements which had mixed results with none being statistically significant.

Both survey questions on overall satisfaction with workplace needs showed an increase in overall satisfaction descriptively; one was statistically significant. Patient data revealed pre and post results that were clinically significant, however not statistically significant.

# Restoring the Joy of Nursing

Terri Reed, Ph.D., MS, RN | Tan Chingfen GSN  
Rosalyn Cama, FASID, NCIDQ, EDAC | CAMA, Inc.  
Kimberly Montague, AIA, EDAC, LEED, AP, NCARB | Kimball International

## Setting/Situation

Tertiary Care Hospital

## Purpose

To explore the interconnection between the design of interior environments with the delivery of care and nurse well-being. How can the design of healing spaces encourage nurses to adopt behaviors that enhance their wellbeing throughout their shifts and while taking their breaks?

## Relevance/Significance

Nursing burnout is a major risk to the health of the United States. Burnout is characterized by emotional exhaustion, depersonalization, and decreased personal accomplishments. Recognized as an occupational hazard that affects nurses, patients, families, and society as-a-whole, burnout negatively impacts the health of the individual nurse and affects care delivery and patient outcomes. While Registered Nurses comprise the largest component of the U.S. workforce, stressors including demanding workloads and aspects of the work environment during the Covid-19 Pandemic have contributed to nurse burnout and workforce exodus.

## Strategy/Implementation

The two collaborative organizations conducted independent literature reviews as outlined by Grant and Booth (2009), and one organization employed the organization Design Intelligence to critically appraise the current literature to examine the associations between nurse's health/well-being and the adverse consequences of burnout for nurses, patients, and organizations. Search engines used were CINAHL, PubMed, PsychInfo, and Scopus. Articles were obtained from peer reviewed journals written in English, within the last five years with the exception of seminal articles, and included primary studies, secondary studies, meta-analysis, and systematic reviews. Articles were obtained from the field of evidence-based healthcare design including the HERD journal, CHD knowledge repository, and popular media. Nursing statistics were obtained from the ANA, AACN, and CDC. Team members attended nursing, healthcare-design, and organizational board meetings, dialogued with nursing leaders and frontline workers to gain further insight into the impact of burnout. Following the literature review the two organizations met to identify reoccurring themes and refine questions to address nurse burnout. A narrative was developed entitled "Moments of Care" to illustrate care delivery from a nurse's perspective. Nine key nursing behaviors were identified (empathize, care, communicate, coordinate, document, educate, juggle, move). These behaviors and reoccurring themes are the catalyst for the development of the Nurse Well-Being Sketchbook offering design recommendations and strategies to support nurse well-being.

## Evaluation/Outcomes

Present our findings and query conference participants to elicit their feedback. The feedback will be utilized to further develop environmental solutions to address nurse well-being.

## Implications for Practice

By addressing nurse wellbeing as an environmental solution, we can begin to strategically tackle the crisis of nurse burnout in the hopes to restore the joy of nursing.



# Using Operational Studies to Improve Healthcare Facility Planning and Design for Behavioral Health Care in the Emergency Department

**Marvina Williams, BSN, RN, Lean Black Belt | Perkins & Will**

**Sabah Mohammed, B. Arch, MS, EDAC, LEED Green Associate | Perkins & Will**

## **Setting/Situation**

The COVID-19 pandemic heralded multiple challenges. An alarming trend was the explosion in acute behavioral health cases that were exasperated by social and physical isolation. The Emergency Department (ED) serves as the hospital's front door and is a safety net for the under-insured and uninsured population. It handles any type of illness and acuity that comes through the doors. Many EDs developed temporary, rapid response measures to meet the surge in behavioral health cases. Starting July 2022, the number of behavioral health cases in the ED is expected to increase with the enactment of the National Suicide Hotline Designation Act and the creation of a nationwide three-digit hotline number (988) to assist people experiencing an acute behavioral health crisis.

## **Purpose**

This presentation will illustrate gaps in behavioral health care delivery; challenges encountered in the ED, and the significant role nurses have in the care of behavioral patients. The presentation will highlight engagement strategies employed by the clinical and architectural team to evaluate operational processes through lean design principles. We will also demonstrate how to identify opportunities to improve outcomes in operations and flow.

## **Strategy/Implementation**

Through case studies, we will illustrate best practices such as process analyses; benchmarking existing state operations and facilitating user-group charettes to arrive at ideal future state operations.

## **Evaluations/Outcomes**

These innovations drive patient and staff safety; improve the experience for patients, caregivers, and providers while improving clinical outcomes. Emphasis will be given to examples of flexible, acuity-adaptable design and its applicability to adult and pediatric health settings.

# The Hospital of the Future

**Deborah Wingler, Ph.D., MSD-HHE, EDAC | HKS, Inc.**

**Sarah Holton, DNP, MBA | HKS, Inc.**

**Angela Lee, FAIA | HKS, Inc.**

## **Setting/Situation**

As part of SingHealth's wider Regional Health System, Eastern Integrated Health Campus is envisioned to provide care and promote wellness in the Eastern region of Singapore.

This 1,420 bed campus is comprised of an acute care hospital, community hospital, and specialty outpatient care complex. The project has undergone extensive predesign and is currently in concept design, which will last through September 2022.

## **Purpose**

A team of architects, clinicians, data scientists, and researchers came together for an integrated project that was structured into 4 distinct yet interconnected areas of focus: facility design, operations design, experience design, and research. In this session, you will hear from the designer, nurse clinician, and researcher perspective on how the team leveraged evidence-based design to guide the integrated design process and set the stage for living lab.

## **Relevance/Significance**

This project sets a new benchmark for EBD that bridges evidence with empathy and links intent to outcomes to develop a fully integrated systems solution.

## **Strategy/Implementation**

Evidence-based design spanned from literature reviews, primary data collection, mock-ups and scenario testing. This evidence was used to develop the concept design, clinical services plan and functional narrative, and experience strategy.

## **Evaluation/Outcomes**

Responding to the Chairman's challenge for transformation, key performance indicators (KPI) were identified and aligned with design strategies, operational objectives and clinical outcome to create an enhanced patient and staff experience. Following occupancy, longitudinal Functional Performance evaluations will be conducted to understand the impact of the design in relation to the established KPIs.

## **Implications for Practice**

This project will serve as a catalyst for care delivery and workforce transformation, as well as a model for resilient design within the region. Specifically, this project takes a deep dive into how to extend the current nursing workforce while training and building a more resilient nursing workforce moving forward.

# Building for Pandemic Resiliency: A Comparative Analysis of Multiple Facilities Across a Health System

**Deborah Wingler, Ph.D., MSD-HHE, EDAC | HKS, Inc.**  
**Brenda McDermott, RN | U.S. Department of Defense (retired)**  
**Rutali Joshi, Ph.D., EDAC | HKS, Inc.**

## **Setting/Situation**

From private and public sectors to government military installations, the COVID-19 pandemic has had a profound impact on healthcare delivery around the globe. Collaboration with architects, engineers, and the government institutions have spent the last year and a half conducting Functional Performance Evaluations (FPEs) of 15 medical treatment facilities (MTFs) within the continental U.S. to understand the effectiveness of existing COVID-19 modifications and to document recommendations for potential facility improvements to ensure future pandemic preparedness.

## **Purpose**

The purpose of this study is to provide a comparative analysis across the 15 MTFs to understand healthcare facility characteristics that contribute to effective facility response during a pandemic.

## **Relevance/Significance**

As the largest effort of its kind in the U.S, this study will provide lessons learned and recommendations for implementing design strategies to support pandemic resiliency now and in the future within both the inpatient and outpatient environment.

## **Strategy/Implementation**

For this study, a multi-method approach comprised of staff surveys and interviews, and field audits was utilized to evaluate each MTF across the following constructs: safety, flow, surge capacity, staff well-being, and flexibility.

## **Evaluations/Outcomes**

In this session, participants will hear which sites exhibited the most and least effective facility pandemic response and what design factors impacted their degree of effectiveness.

## **Implication for Future Practice**

As many healthcare organizations across the U.S. are challenged to understand how COVID-19 has fundamentally changed healthcare moving forward, findings from this study will help to inform future policies and industry guidelines to better support pandemic resiliency, as well as prioritize future capital investments.

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