Patient & Family Experience

Introduction

A husband and his wife sit uncomfortably on the floor of the Emergency Department, comforting her father while waiting for information about his condition. The husband, wishing for a comfortable chair, looks around and is reminded of one disheartening fact … he designed this space! What does it feel like to be a patient or family member in a hospital facility, whether in the ED or a private patient room? Is it stressful and uncomfortable or welcoming and comfortable? How one feels depends on many factors, but the physical environment does affect the overall patient and family experience, and this affect can be positive or negative. As we move away from the old paradigm in medicine where medical staff did things to and for patients to a more patient-centered approach, our facilities must support this new paradigm. If a hospital is patient-centered, there is more choice, greater flexibility, better communication and collaboration, and an emphasis on patient empowerment. Designing a hospital is more than creating a building, it is about creating an experience. We must clearly define what is the current state of hospital facilities in terms of the patient and family experience, describe the desired state, and plot a course for reaching it. Decision-makers can certainly design and construct better hospitals based on what is currently known about how the physical facility affects patient and family outcomes, but much more work needs to be done to more fully understand the impacts of design decisions. During the HER Summit, three Patient and Family Experience groups developed a list of research needs, a set issues regarding the pipeline of information flow among various stakeholders concerning evidence-based design, and a set of action items that are recommendations for advancing the field in order to have a direct and positive impact on the large number of hospital construction projects that will occur in the years ahead. Each of these is discussed in greater detail in the following sections.

Research Needs

During the break-out sessions, three groups identified a wide range of research needs to further our understanding of both the current state and the desired state of the patient and family experience in a hospital setting. These research needs have been grouped into 11 categories, including: Specific Spaces; Technology & Communications; Movement; Hospital Culture; Patient Choice; Perceptions; Privacy; Needs of Various Types of Patients; Patient/Family Involvement in the Design Process; Regulations & Policy; and, Research Methods & Tools. Specific research topics and questions that were identified are listed below.

Specific Spaces

Participants recommended that research must be conducted on several different types of spaces to ensure that patients and their families have a positive hospital experience. These
spaces include patient rooms, waiting rooms, family zones and food service areas. For each of these, specific research questions were identified.

**Patient Rooms**
- What is the best configuration for family support in relation to clinical staff and the patient?
- Do patient and family agree that LDR should be kept separate from the postpartum rooms?
- How do different NICU designs affect families and patient outcomes? For example, what is the effect of having queen-sized beds for mom and baby as provided in a Denver hospital?
- Does family presence/personalization (e.g. photos, family items, place to lock things up) change the perspective of the caregiver and reduce their perception of patients as “objects”?
- How does the “bed-centric” room design affect patient and family outcomes and is this appropriate given that current protocols call for getting patients out of bed?
- What does the patient think about the patient room?
- What is the optimal size of hospital rooms (e.g., patient, OR, LDR) and how does room size impact the patient’s comfort, sense of privacy, and sense of crowding? What are the activities that should occur in the patient room that determine the optimal room size?
- What is the effect of have three zones in patient rooms (family zone, patient zone, and clinician zone). Are these rooms capable of accommodating changes in the delivery system and technology as they occur?

**Family Zones**
- What qualifies as a family zone – what are its features and how much space is needed?
- How does design support the family as they go through a new experience?

**Waiting Rooms**
- How can we design family waiting rooms to improve the family experience? What kinds of spaces do they want (e.g., small alcoves, larger spaces for more family members)?

**Food Service Areas**
- How does the various ways in which food is delivered (room service, floor level galleys) and the design of the food service areas affect patient weight gain, diet complaints, satisfaction, etc.?

**Technology & Communications**
- How can we create environments that support improved communications?
- Can bedside computing improve communications?
- Can family members access computerized data, such as medical records?
• How does decentralization of nursing stations affect patients’ privacy, interaction with staff, etc?
• How can we improve collaboration among clinicians, family and patients in the patient room?
• How can improved communication about what is happening in the ED enhance patient and family confidence and reduce stress/anxiety?
• How can we better support patient education in the patient room, exam room, waiting room, etc.? 
• What are the effects of having computers inside the patient room versus outside the room?
• What is the role of technology for patients of varying age (old versus young) for such activities as ordering from a menu, controlling temperature in the room, and so forth?
• What are the effects of having recorded conversations from doctors so that patients and their family members can replay it?
• What is the threshold for automation for patients when they in the healthcare facility or when they are at home?
• How do we integrate technology into the environment for an optimal patient and family experience?

Movement

Patient Movement
• How do falls relate to the physical environment and the patient/family experience?
• How can we reduce transfers of patients, in addition to variable acuity rooms?
• What is the impact of having universal ICU rooms and med-surge rooms on the same floor in terms of transfers and errors?
• Is it better to combine in-patients and out-patients with similar issues, (e.g., cardiology) or to keep them separate (in versus out) due to patient flow issues?
• We need to better understand how patients move through the hospital system from the time they enter the facility until they are discharged.
• We need to better understand “on stage” versus “off stage” design (the separation of service activities from family/public areas). How important is it? Is there a way to study it to make a decision? Qualitatively is it a high priority for improving the patient and family experience?

Material Flows
• How does the location of supplies and materials affect the patient and family experience? What is the optimal distance between patient rooms and supplies? Would better locations increase nurse time with patient?

Hospital Culture
• Is the nursing station idea obsolete? How does it affect the nursing culture? What are the needs of the nursing staff for socialization and mentoring and how does
centralization affect these? Are the patients adversely affected because of the lack of mentoring/collaboration when nurses being distributed?

- If we design in things like a solarium on a nursing floor, do people use them? Does it make people feel better?
- What are the advantages/disadvantages of bed-side charting?
- ED design - can we reduce bottlenecks through design?
- How can we design spaces to help patients feel more connected to caregivers?
- Do wider single corridor/double loaded corridors provide for more visibility of other families. Is there a benefit from interaction of different families in similar situations and if yes, can we design to support them?

**Patient Choice**

- If choice reduces stress, how does choice (e.g. of food, temperature, when education occurs) affect patient outcomes?
- How does design contribute the feeling that the patient/family has some level of control over the ambient environment?

**Perceptions**

- What is the effect of having no mirror image rooms (all alike) on the patient experience in the room?
- How do bed comfort and other furnishings affect patient outcomes?
- The ED is often the front door to the hospital - how do we make it a better one since 60% of ED admissions go to the floors? Is the fact that a large percentage of patients come through ED affecting the patient experience? If ED is the front door, should we do something more gracious?
- How do the perceptions of clinical personnel (e.g., physicians) and their ability to understand design issues affect their decision-making? To what degree are various perceptions prevalent in the population? How might we educate them (and get them to want to learn about evidence-based design)?
- Do decentralized nursing stations produce a closer connection between the patient and family to the staff? Does the family perceive this as a benefit?
- To what degree do we/should we mask the institutional nature of hospital facilities?
- What is the perception of the patient and the family around different modes of documentation/charting?

**Privacy**

- When nursing stations are decentralized, does the patient feel that their privacy is violated if the nurse is too close to the patient room?
- How do we design for patient privacy while we support the staff’s need to chart and access records?
- How much interaction vs. privacy space do we need and how can that be created?
**Needs of Various Types of Patients**

- How do we design spaces that provide healing environments for different types of patients (cardiology, cancer, etc.) and what they are dealing with? What are the emotions of people related to their illness or diagnosis and how do we help them through design?
- Is the in-patient hospital the best starting point for understanding patient and family issues? It is important to study areas where people are the most vulnerable. We need generalizable data or data that is differentiated across multiple settings.
- How much space do we need for patients who are elderly and always accompanied, patients who are foreign and need translator, etc.?
- We need to understand ethnic and cultural differences that affect how the family interacts with the patient.

**Patient/family Involvement in the Design Process**

- We need to better understand roles, competencies, and protocols associated with family members brought into the care giving process and how design affects these? How do you most affectively give the family, patient and the natural support group a voice in the planning and design process?

**Regulations & Policies**

- What are the legal issues that are linked to and drive design decisions?
- What are the guidelines from the Nursing Magnet hospitals? Might these be relevant for demonstrating what is consistent in policies and practices in those environments?

**Research Methods and Tools**

- What are some effective models of research for gathering quality data from patients and family? Do current satisfaction surveys and other tools really work? We need instant feedback and from a neutral source, perhaps, who could capture the feedback. Satisfaction surveys are standardized, but currently none of them ask sophisticated questions about the physical environment. We need to use research (or need to do additional research) to make a case that the instruments need to include questions about the physical environment. It needs to be used in a way so that it will not count against a hospital if facilities rate poorly.
- Identify the facilities that work well and discover what it is about them that works. We need improved methods of recording best practices and disseminating information.
- Can we develop a hierarchy of design elements and design needs that allow decision makers to improve the most important things (light versus art)? Which environmental decisions have the greatest impact? Let’s focus in the areas where we know that the impact of the decision is high and we do not know a lot about it. Let us not study things that are known intuitively, even if there is no hard data to confirm it.
- How do you prioritize whose needs are to be met by the space – patient / family / staff?
• Somehow we need to be able to overlay many types of information (including the clinicians’ point of view) so that we can map out the patient experience and identify “hot spots” (e.g. moving through the ED experience, out-patient surgery experience, or pregnancy journey). Once we identify these hot spots, we need to see what studies have already been done. If the issue is already pretty well understood, take it off out of the list. How do we go about this? Literature reviews. What is already been resolved, what is being studied, how serious is the information gap, etc.? Then we need to actually design the process for engaging family members and patients in research.

Pipeline Issues

The best research in the world regarding healthcare facility design is useless if it does not help pave the way for the design and construction of facilities that enhance the experiences of patients, their families, and the hospital staff. Therefore, it is critical that research is translated into usable data and disseminated across the information pipelines in which various stakeholders travel. This is not an easy task. During the break-out sessions, the Patient and Family Issues groups discussed strategies for ensuring that research is utilized by decision makers to produce better hospitals. In order to be successful, knowledge sharing must combine both information, such as that which could be centrally stored and made widely available, and a social strategy. Both a top-down and bottom up approach to providing information must be utilized to ensure more rapid adoption of evidence-based design. In order to do that, it is important to gain a better understanding of each of the pipelines for various stakeholders (e.g., researchers, designers, clinicians, CEOs, etc.), including the primary hospital decision-making team that typically includes the VP of finance, VP of clinical care, Chief Operations Officer, VP of human resources, VP of development (fundraiser), Planning and Business Development/marketing, VP of facilities and the Chief Medical Officer. In this early stage of education and awareness, a message at the beginner level must be constructed and disseminated consistently, yet this version of “EBD-Lite” must quickly be taken to the next level to ensure a deeper understanding, particularly as more information becomes available about how to design better healthcare facilities.

Pipeline issues identified by the participants have been grouped into five categories, including: Information Repositories; Improving Education & Awareness; Interdisciplinary Partnerships; Establishing a Field; and, Research. Specific issues have been listed each of these categorical headings.

Information Repositories

• We need one good single source of information that includes a comprehensive database with a compendium of categorized articles. It should be accessible to everyone. Although architectural databases exist, none are specific to health care design. There are some databases topics that need to be considered like: 1) research and design connection; 2) subscription the database; and 3). information design (which has also been studied in Univ. of Minnesota). We can link our
existing sources (architectural databases) with the sources in the bio-medical field. But these questions must be answered: What are our needs for database? What are we using currently?

- It would be helpful to have a common slide library available to members for developing presentations for promoting evidence-based design.

**Improving Education & Awareness**

Since education is at the heart of transforming the design process to promote evidence-based design, this topic received the most attention by participants. Related issues have been grouped into 4 categories, including: Target Audience; Media; Demonstration Facilities; and, Mentoring.

**Target Audience**

- Develop focused presentations for different groups (e.g., policy makers, hospital CEOs, etc.) that include both the broad message and more specific information directed specifically at them.
- Educate consumers to make them aware of the benefits of the evidence-based design and who is practicing it.
- Inform patients who will be involved in the design process (and other team members) about the evidence for design strategies that are linked to positive patient outcomes.
- Tap into the pipeline that includes either the VP of facilities or Program Manager that has been hired to manage projects. Educate and inform those who guide and manage design and construction.
- Educate Board Members through the American Hospital Association, ACHE, etc. that have governance tracts. Pay attention to providing materials for the governance activities.
- Train future administrative personnel (while studying in the universities) about healthcare design issues.

**Media**

- Look at *Re-making American Medicine*, a PBS/CMS production. Can we link our research agenda to this 4-part series?
- Perhaps we need a journal.
- Identify what journals key decision-makers read. There will be those that are not obvious. For example, there was an article regarding the business case for better buildings (Hamilton et al.) in the peer-reviewed journal *Financial Management Association Journal*.

**Demonstration Facilities**

- Too often clients are unwilling to implement anything that has not been done before. The field needs pilot projects that are given permission to be the first and to make some mistakes.
- Identify a few key institutions that have projects coming up and get to them immediately – create a tipping point.
• Give out awards to healthcare facilities that are using best practices in evidence-based design.

Mentoring
• How do you deal with less experienced firms or CEOs who don’t have the experience to use evidence-based approaches? What is our obligation to those just entering the field and to the owners who are working with those entering the field? There are models where a big firm does the work and where a national firm must partner with a local firm.
• We must figure out how to help the small and rural hospitals design quality facilities. This sometimes occurs when a big system builds small hospitals that are supported through system resources. Most small hospitals belong to a larger system. We need different strategies for including them. What might rural hospitals need?
  o AHA, ACHE, conference presentations with EBD information
  o State Healthcare/Hospitals Associations’ cooperation – small hospitals attend these conferences.
  o An analog of the county extension agents to support rural hospitals and local design firms without the EBD skills.
  o An association with the Federal pipeline is (DoD, Indian Health, VA, Public Health).
  o A campaign to get leaders of organizations to become champions of EBD within their organizations. Support them with the best research and resources.
  o Appoint “12 apostles” to head up different task forces and establish a reporting back timeframe on their accomplishments.

Interdisciplinary Partnerships
• Be explicit that people who finance and fund projects must be brought into the understanding of EBD.
• Link our efforts to other on-going efforts at IHI, etc. to become main-stream and gain credibility.
• Traditional planning models no longer work in today’s world, the facilities plan needs to tie with strategic plan – it is not linear anymore. Similarly, research does not necessarily come first. Researchers, designers and others need to partner to get things done.
• Build collegiality amongst healthcare architects and others in field.
• Build interest, commitment and passion in people throughout the industry.
• Coordinate the efforts of Pebble, HERS, ANFA etc.

Establishing a Field
• Need to create a field. The name needs to imply improved outcomes/performance. The field must be data driven and performance-based. What do we need to have a field?
  o Funding for doctoral research
- Journal
- Conferences
- Benefits that people appreciate
- Design firms and owners look for people who have studied it

- For a model, look at how sustainability emerged: USGBC, big building owners used LEED, LEED accreditation for professionals, interdisciplinary, etc.

**Research**

- We need common metrics and common key issues. We need funding sources for research.
- Use patient satisfaction surveys to elicit more information on the environment.
- We need a paradigm shift that builds the research phase in to the building development schedule.
- Research must be generalizable enough to apply across the industry (not too specific to one project).
- Define terminology – there needs to be consensus on the definitions associated with evidence-based design.
- Find out from the organizations that are already innovating to learn why and how it happened.
- Utilize existing resources and models of research, such as Kaiser’s Garfield Center, Clemson University’s simulation mock-ups, the Beach Center on Disabilities at the University of Kansas, etc. to conduct needed research.
- Start collecting data from existing hospitals to develop feedback from patients and their families. Utilize focus groups and surveys to obtain necessary information for health care design

**Action Items**

The team assembled for the HER Summit is passionate about evidence-based design and ready for action. The Patient and Family Experience groups identified a large set of research needs and pipeline-related issues that should be addressed in order to translate research evidence into design practice. Near the end of the Summit, these groups developed a set of specific action items that should be pursued in order to advance the field and improve the hospital design process. Although some of these action items may seem redundant with the research needs and pipeline issues previously stated, these action items are considered to be among the more near-term activities that should occur. As actions are taken, it is important to remember that different groups of people will need different types of information in a variety of formats. A clear path for developing and disseminating data must be developed. The action items identified during the break-out sessions have been grouped into 4 categories, including: General; Research; Professional Development & Education; and, Information Repositories. Specific action items have been listed under each of these categories.
**General**

- Identify points of intersection between pipelines.
- Advocate the use of evidence-based design consultants to work on projects to raise the competency of the design team to perform the work.
- Form task forces: academics, industry, owners, architects, etc. to address various audiences, stakeholders, specific action items and so forth.

**Research**

- Anjeli Joseph with the Center for Health Design is now creating a template for better understanding where different people enter the research process and to determine what type of information these different stakeholders need.
- Charisse Oland, President and CEO of Children’s Care Hospital and School is looking at how the CEO prepares his/her team before architects get on board with a new project. While the CEO is the final decision maker, he/she depends heavily on others to do much of the work and influence the process (e.g., VP of patient care).
- We must develop common definitions (including one for evidence-based design) and a taxonomy for the field.
- David Allison and Kirk Hamilton are doing a study looking at net to gross ratios in hospitals. As part of this study, they are evaluating how others have made these measurements and will propose one metric. We must develop consistent and standardized metrics for research.
- Connect research projects that link:
  - Evidence-based design research
  - Patient-centered values/principles research
  - Highly reliable care research
  to identify the overlap among these three (reference Jean Huddleston – Mayo Clinic)
- Seek sponsorship for a research project by a group of healthcare architecture firms or a hospital system.

**Professional Development & Education**

- Kirk Hamilton and the Center for Health Design are developing an interdisciplinary evidence-based design accreditation and certification program funded by RWJF.
- Develop a research primer for CEOs/VPs of facilities
  - Build on the Fable Hospital
  - Summarize the Ulrich/Zimring paper
  - Get a sponsor
- Develop a voluntary incentive program for architects:
  - To collaborate in research
  - To study projects
  - To report outcomes
• Connect with training/CE programs for health care professionals (administrators, facilities directors, operation executives, etc.)
• Continue to publish results in a variety of publications read by architects, payers, executives, quality improvement professionals, etc.
• Connect the Summit with the Remaking American Medicine programming and the work of IHI to help reframe the built environment issues as a quality improvement initiative.
• Identify key projects that exist and use them as examples.

Information Repositories

• Try to get funding to build the PUBDES (NLM-type) library database for design that is as convenient and useful as PubMed/Medline. We currently have Informedesign that works well for most, but it does not really contain everything we need.
• Multiple architecture firms are developing databases to give their firm members and clients evidence-based design information that is relevant for them. Each firm doing it is struggling with it. They need to get together to develop one database of articles. Look at the Leapfrog model for Fortune 500 companies pulling together and doing joint marketing.
• Develop a Federal program to create incentives around the design of hospitals/clinics, including both new and renovated buildings, which would encourage voluntary reporting of results.

Summary

Research on evidence-based design cannot be done by academics alone, or any single party. Research must include planners, architects, clinicians, patients, and their family members if it is to be used to improve the patient and family experience in healthcare facilities. Yet, it is still unclear how to most effectively give patients and families a voice in the planning and design process. Many of the research methods developed to date for understanding the effects of the physical design on the patient and family experience need further refinement and additional methods must be developed. Studies must be replicated if they are to be perceived as valid by hospital decision makers and their designers. In order to have a meaningful impact, it is vitally important to better understand where improvements in hospital design will have the greatest effect on the largest number of people. Is this where they spend the most time, where they have the highest dissatisfaction, where we can make the best first impression, where people are the most critically ill, or none of these?

Research can only have a significant and positive effect on healthcare facility design if it is timely, relevant, and translated into useful information that will be read, watched, and understood by the various stakeholders involved in the hospital design process. Much work remains to be done not only in developing the data, but also in disseminating it to those who will begin making better decisions about how to design a hospital facility that enhances the patient and family experience.