



Enhancing the Hospital Experience

Building a smarter patient room

by Robin Cavanaugh, GetWellNetwork chief technology officer

Let's face it: Most hospital patients would prefer to be just about anywhere other than a hospital room. They're likely not feeling 100 percent, have little control over their environment and are unclear about the status of their health and treatment. Throw in concerns about keeping visiting family comfortable and minimizing everyone's boredom and it's easy to understand why.

But, what if we could redesign the hospital experience to make it more comfortable and accommodating for patients and families? For example, what if we created a patient room of the future that:

- Accommodates patient and family needs while also encouraging engagement
- Incorporates patients and clinicians into the planning and design process
- Integrates patient engagement and physician rounding
- Leverages the latest technologies to motivate patients to be actively involved in their own care

Thanks to the rapid advancement and pervasive influence

of future-focused technology, the next iteration of the patient room is within reach. By harnessing digital connectivity, communication and access to information in combination with human-centered design principles, hospitals can deliver a new level of comfort and convenience not typically associated with this setting.

So, what does a smart room that streamlines, optimizes and improves the experience for patients, families and clinicians entail?

The patient room of the future incorporates cloud computing, machine learning, artificial intelligence and the "internet of things" in the form of features like telemedicine, interactive media, multicasting and asset tracking.

It strikes a balance between optimizing environmental elements and technology through a more holistic and intuitive design. Doing so facilitates better engagement, improves communication between patients, families and clinicians, and offers patients more control over their surroundings. The result: improved outcomes and overall patient experience.

Inside the patient room of the future

A look at how integrating systems and environmental elements maximizes the benefits of individual technology solutions for everyone in the room.



PATIENT-CONTROLLED ENVIRONMENT



Patients control the lighting, room temperature and programs or features displayed on the TV from a singular device

PERSONALIZED CARE PLANS



Tailored care pathways and health education content created from details within individual patient EMRs is delivered to the in-room TV or patient's mobile devices through a personalized interface



USER-FRIENDLY TECHNOLOGY

Device-agnostic technology meets patients where they're most comfortable, giving them flexibility to control their environment from any device, including tablets, smartphones, smart TVs and voice-controlled digital assistants



AUGMENTED ROUNDING

Clinical information and trending data pulled from the electronic medical record (EMR) and other systems is screencast from a physician's web-enabled device to increase doctor and patient engagement during rounds



ENHANCED COMMUNICATIONS

Whether bringing multiple offsite specialists into the room for a care team consult or having grandma there to join the care plan discussion from the other side of the country, enhanced video conferencing makes it possible



BARRIER-FREE DESIGN

Modular room design eliminates barriers to human connection, is more conducive to clinician-patient engagement and easily rearranges to accommodate visitors



SMART WEARABLES

Physiological monitoring devices transmit data to the EMR and offer a means for tracking and analyzing information post-discharge

Uniting the interoperable ecosystem

Rather than multiple platforms to support the various tasks and features described above, the patient room of the future employs a “plug and play” approach to interoperability using an intelligent hub.

Applications, solutions and components responsible for things like providing entertainment and education, tracking assets and people, and accessing environmental controls, meal ordering systems and EMRs all work together through an integrated platform. The resulting seamless digital experience and fluid workflow promotes transparency, access, inclusion and engagement.

Leaping into the future with Kaiser Permanente & Medical University of South Carolina



Kaiser Permanente is one of the health systems leading the charge on this front. In a [recent interview with The Wall Street Journal](#), CIO Dick Daniels shared some of the ways Kaiser is bridging the gap between the physical and digital worlds to improve engagement and collaboration.

- Their newest hospitals feature a digital information panel outside of each patient room. Giving physicians the opportunity to review key clinical data before walking in, improves the overall efficiency of the patient encounter.
- From screens inside each room, patients access health education, order meals, watch on-demand movies and participate in video conferences (all through the [GetWell Inpatient™](#) solution).
- Nurses and doctors also use the in-room video conference capabilities for consults with offsite specialists.



For [Medical University of South Carolina](#) (MUSC), the journey to the summit began with a deep understanding of the important, yet largely overlooked role the patient room plays in positive outcomes. Catalyzed by construction of a 128-bed facility, the academic medical center considered

what patients need experientially, not just clinically, to get better.

They've reimagined a next-generation environment where human-centered design principles converge with emerging technologies to give patients choice, control and comfort—key components in the healing process.

Every detail of an inpatient stay is responsive to the unique needs and customized preferences of a patient and their family. MUSC is embracing future-forward technology to deliver this kind of personalized, preference-driven experience, similar to modern hotels.

Thoughtful considerations regarding the physical layout of the environment also factor into the design, including seemingly simple decisions like banning computers on wheels from hallways to create more physical space for patients and visitors.

The future is now

Many of the technologies needed for the patient room of the future already exist. To make this kind of environment a reality, hospitals must find new and creative ways to integrate them in a seamless manner. Part two in this series dives deeper into how MUSC is doing exactly that: leveraging technology in new ways to bring the patient room of the future to life.

About the author

As GetWellNetwork's chief technology officer, Robin Cavanaugh is responsible for R&D, product architecture and development. For the past several years, he has steered solutions from prototype to production and created scalable, integrated systems for leading health care organizations. His experience includes successful implementations at several agencies, including the Department of Health and Human Services and the Center for Mental Health Services.

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