ABSTRACT

Current hospital environments remain characterized by auditory clutter: technologies, larger patient/visitor populations, and physical spaces that are, themselves, noisy. This white paper provides an overview of noise-related risks and outcomes and outlines seven improvement strategies from case studies that have resulted in improved patient outcomes by reducing the negative impact of noise.
The Foundation of Healing Environments

In her work in laying the foundation for the role of the hospital environment in the mid 19th Century, Florence Nightingale stated clearly that patients are imprisoned by their illness first and, then, by the “sick room” that further isolates them. She wrote that color, form, beauty, and variety were critical to the well-being and restorative process that moves a patient from a state of disease to that of health (Nightingale, 1860). Early in the study of human development, Nightingale addressed what was to be considered the impact of monotony and boredom. In Notes on Nursing, she wrote, “To any but an old nurse, or an old patient, the degree would be quite inconceivable to which the nerves of the sick suffer from seeing the same walls, the same ceiling, the same surroundings...” (Nightingale, 1860, p. 19).

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She also addressed the challenge of sound by writing that any sound that causes “anticipation, uncertainty, apprehension, waiting, expectation, and fear of surprise” damages the patient. For Nightingale, the patient’s experience was the sole determinant of what defines noise. She would have agreed that objective volume levels were secondary to perceived loudness; mechanical sounds were important to the degree they disturbed a patient; the sound of meal carts were an insult to a patient since they were hardly critical to their recovery; and vacuum cleaners should be eliminated. Specifically, she wrote that “unnecessary noise was the cruelest absence of care.” At the same time, she emphasized the importance of quiet and respect for the suffering that could only be worsened by inconsideration. She put the responsibility on the caregivers to anticipate what would be disturbing and to minimize or eliminate these stressors.

Introducing C.A.R.E.

In 1992, Healing HealthCare Systems introduced the first environmental programming for patient television, the Continuous Ambient Relaxation Environment (C.A.R.E.) Channel. C.A.R.E. addressed several challenges common to the hospital environment, some of which had already been identified and others yet to come. Following the tenets of Nightingale, more current studies in the field on environmental psychology and healthcare design, The C.A.R.E. Channel serves the patient on an “as-needed” basis over the full 24-hour admission day. The visual images use the principles of biophilia (Kellert & Wilson, 1993) and universal attraction to all living things, as well as the coherence of natural landscapes along with an auditory component of...
purely instrumental music, avoiding any lyrics or music familiar or biased to any one generation, culture, ethnicity or religion. There are also no vocal lyrics, eliminating language confusion or cognitive demands.

Going back to Nightingale, by the last quarter of the 19th Century, she had asserted that hospital environments were to provide for ongoing observation of the patient and infection control, the psychological and emotional state of the patient through their perceptions of what was happening to and around them, and the role of the patient environment as that which informed all of these (Nightingale, 1864). She also pointed to variety as the antidote to monotony and resulting boredom, which she posited increased pain and suffering. Nightingale went further to say that if variety were to be provided, it must be slow variety, as fast changing, over-demanding images, language, actions would worsen the frustration and pain already severe in patients who are hospitalized (Nightingale, 1864). Thus, the need for sensitively paced variety and beauty, and music that was soothing rather than inciting, became the founding standards for producing The C.A.R.E. Channel. Unlike most television broadcast media content, from its conception, C.A.R.E. has addressed the sensitive needs of the most acute patient population while still being appropriate for all patients. The challenges of high levels of medication, high acuity, cognitive impairment, as well as disorientation are common in the hospital setting. Patients recovering from surgery, from a heart attack or stroke, from infection or pneumonia, require an environment that is responsive, resilient, and restorative.

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Nature and music, when produced to serve this population and these circumstances, transforms the role of the in-room patient television from entertaining to therapeutic. Nightingale’s original directive regarding the pacing of stimulation for patients, together with newer studies in environmental psychology and human development provided strong direction in the production and editing standards that to this day, guide the quality and effectiveness of The C.A.R.E. Channel.

C.A.R.E. Meets HCAHPS

A review of the 31 questions included in the HCAHPS survey reveals a thematic focus on issues that are the core of the in-hospital experience. These questions are answered in retrospect, forcing patients to not only recall what happened to them, but to also relive the most critical events. While much of what goes on during a hospitalization is not recalled or noted, the most poignant moments remain in the patient’s memory, gaining meaning over time. HCAHPS is sent to a randomized sampling of patients within 24 hours following their discharge. Even the act of asking these questions serves to alter the past. Some questions on the survey are outcomes of the generalized patient experience. For example, the final questions regarding the quality of the hospital and whether the patient would recommend this hospital to others follow more specific queries. Other questions look at how patients entered the hospital and where they went following discharge. In 2013, four more questions were added that deal with the demographics of the patient: income, education, race, and language.
C.A.R.E. Meets HCAHPS

Questions 1-7 on the survey focus on the patients’ perception of respect evidenced in how physicians and nurses addressed them, how they communicated with them, and the regard with which they were treated. This includes patients’ capacity to fully understand what was happening to them and the implications beyond the hospital stay. Communication, comprehension, and meaningful dialogue are each dependent on the environment in which people are engaged. For example, in a noisy environment, the tenor of dialogue tends to rise in volume and be strained. Further, the ability for an elderly person to comprehend what is being said to them, even if the language is simplified, remains highly compromised in a chaotic and cluttered auditory environment.

Replacing the drone of commercial television when it is serving only to fill the time and cloud the transparency of an environment that is spattered with sounds of the hospital, C.A.R.E. provides a soothing, consistent auditory and visual background that is appropriate for recovery. Rather than competing with important dialogue and communications, C.A.R.E. masks both continuous sounds and erratic noises.

“During this hospital stay, how often did nurses/doctors listen carefully to you?”

The C.A.R.E. Channel enhances communication between caregivers and patients by:

1. Masking continuous sounds and erratic noises that can interrupt conversations.
2. Providing a soothing, consistent auditory and visual background that calms patients and allows them to focus on what is being said.

The environment communicates the intention of the healthcare organization and reflects the capacity of administrators and staff to realize the many verbal promises made regarding high quality care. Available to patients on an ongoing basis rather than only during interventions and monitoring, C.A.R.E. supports a culture of person-centered care.

Environment of Care

Questions 8 and 9 focus directly on the environment of care, asking how often the hospital room and bathroom were kept clean and how often the patient experienced quiet at night. These questions have deeper implications. First, “kept clean” implies that the hospital room was tended to, that housekeepers entered the room, checked on its condition and that of the bathroom, and maintained its high quality on an ongoing basis.

If patients have no alternative and positive focus during the many hours that they are awake, they will see and hear more than any staff member and, as Nightingale and then Melzac later pointed out, they will only think of their discomfort and circumstances (Melzack & Perry, 1975; Nightingale, 1860). They will notice small stains on the privacy curtains and brownish leaks in the ceiling tiles. They will notice waste cans that have not been emptied. And, their family members will notice even more.

The C.A.R.E. Channel is not a substitute for tending to the room. However, it is a positive focus, and it provides patients with knowledge that they are not alone.

Next, “quiet at night” is not about silence. Rather is it a quality of peacefulness that is secure and appropriate to being in the hospital. Patients want to hear what they feel they should hear; they want to hear the staff busy tending to other patients, they want to hear a kind of “shh” that means that their rest is being respected. The question about “how often” means that there may be gaps in the “quiet,” but there is a temporal character to the quality of the auditory environment that supports restfulness.

Over the late night hours, The C.A.R.E. Channel offers a midnight starfield that reflects a stunning sky with changing clouds and sparkling lighted stars. It provides cues that night is for sleeping and that daytime is over. Further, the music is less active, more restful. This starfield is introduced with a sunset and yields to the morning with a sunrise. The music changes and the starfield changes, just as the night sky changes.
“During this hospital stay, how often was the area around your room quiet at night?”

The C.A.R.E. Channel helps improve sleep at night by:

1. Creating a peaceful auditory environment.

2. Offering a midnight starfield to cue that daytime is over and it's time for sleep.

Prior to the term “sleep deprivation” being identified as a clinical risk, Nightingale declared rest and sleep the ultimate healing agent (Nightingale, 1860). Patients who have lost their orientation to day and night are subject to the risk of becoming psychotic (Justic, 2000). The cause of disturbed sleep can be many, including noise, nursing activities, various tubes and devices attached to the patient, and simply being in a strange setting (Ugras & Oztekin, 2007). Resulting sleep deprivation threatens the healing process and extends hospital stays. Patients who cannot rest are prone to falling and also to confusion and agitation. The C.A.R.E. Channel’s midnight starfield holds the hands and hearts of patients every night, all night.

Waiting Time

Questions 10-17 are directly related to specific experiences that each involve waiting time, perceived time, and, again, patients’ perception of being cared for. Asking for assistance and receiving help in using a bedpan involves waiting time. And, the sense of helplessness for patients who need such assistance is only exacerbated by extended waiting time.

Suffering occurs in an “expanded present,” out of linear, chronological time, making every minute endless and every sense of expectation and uncertainty unbearable. The “past, present, and future cease to exist,” creating only the present moment in suffering to survive (Sacks & Nelson, 2007, p. 685). Suffering is private, often living in an unshared mind and soul, and can be comforted only by reassurance in the resolution of the worries and concerns.

When asked about ongoing pain control, and the sense that “everything possible was done” to keep the patient comfortable, the experience occurs in perceived time. Suffering and waiting extends time far beyond clock time. Five minutes to a patient is a different five minutes to the nurse. A chaotic environment reduces the ability of patients to cope with their pain and also contributes to learned helplessness. Every pain medication has duration of effectiveness and a ramp up into effectiveness. Therefore, even when patients are on self-administered pain medication, their experience is about “how long will this take” and “how long will this last.” Therefore, the role of the environment and its stressors and comforts, plays a critical role in this experience.

The C.A.R.E. Channel is non-programmatic with the patient being able to watch it at any time; there are neither absolute beginnings nor endings. As in a garden, whenever you enter, you enter. The content library is robust, with over 80 hours of non-repetitive high-definition original content scheduled for the patient to experience its full variety over a 10-day cycle. Further, music and nature imagery with subtle motion and fluid editing, engage patients without confusing or frustrating them. Rather, their engagement with the most beautiful nature imagery and soothing music distracts them from focusing only on their own discomfort. These positive distractions have been identified as an effective means of enhancing the patient’s own coping mechanism (Melzac & Perry, 1975).

The question on the HCAHPS survey about whether patients perceive that “the staff did everything they could to control their pain” is the deepest of experiential perceptions. “Everything they could” goes far beyond “what was needed” or “required.” Beyond the physical pain is the non-physical experience of suffering that can neither be medicated nor ignored. Suffering is a distinction that is not directly correlated to the amount or type of pain, but rather is directly related to a perceived existential threat, to uncertainty, and to the sadness of a lost future (Sacks & Nelson, 2007, p. 675).
“During this hospital stay, how often did the hospital staff do everything they could to help you with your pain?”

The C.A.R.E. Channel helps with pain management by creating a peaceful auditory and visual environment that helps relieve suffering by:

1. Distracting patients from their discomfort.
2. Masking continuous sounds and unwanted noises that can interfere with patients’ comprehension of what is happening.

The person who is suffering has attributed meaning and prognosis to what is happening to him or her that is negative and most threatening at its worst, and unknown at its best. This is where staff must move past what is clinically appropriate to add what is needed. And, it is where healing and curing are quite different, with curative medicine and meeting clinical standards being necessary but not sufficient. The environment of care must relieve suffering or, at the least, not worsen it. It must provide opportunities for calm, for assurance, for relief, and for restfulness. Minimizing harmful distractions, reducing clutter and disarray, speaking clearly and concisely to allow patients to comprehend what is happening are part of the hospital staff doing “everything they could” to control patients’ pain.

Discharge and Recovery

The remaining questions on the HCAHPS survey look at the expectations and understanding of their condition upon discharge and the confidence patients have with continuing their recovery at home. Quite often, discharge is stressful, with last minute directions being done either in a hurry or in a perceived rush to get patients out of their rooms. Instructions for the family and confidence in their own capacity to follow medical and nursing recommendations sits with their understanding of what is happening, what to expect, and how to manage once discharged.

A noisy environment is a stressed environment; words spoken to the patient that compete with babble coming from outside the room or in the outside corridors are often neither not understood or accurately recalled. Both the admission and discharge of a patient are points of critical informational exchange. In an environment that is hostile to full comprehension, there is an increased risk of misunderstanding and confusion.

“During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?”

The C.A.R.E. Channel helps with discharge planning by:

1. Providing an auditory backdrop that is supportive of focused listening.
2. Offering the opportunity to continue the soothing auditory and visual experience at home.

The C.A.R.E. Channel provides an auditory backdrop that is both familiar from use during the hospital stay, and supportive of focused listening. Rather than turning the television off to signal the end of the stay, turning it to The C.A.R.E. Channel provides a caring continuity that extends the concern and compassion for the patient and family right through discharge. The C.A.R.E. at Home series offers DVD’s for personal use that brings the now familiar experience of restfulness into the home recovery environment.

Conclusions

The environment of care is the patient experience. The environment itself is an intervention; it is both the “what” and “where” of what happens to them. And, it becomes “who” in its representation of the intentions of the caregivers. Therefore, every detail of the physical environment merges with the patient so as to be inseparable. Nurse Theorist Martha Rogers stated clearly that the patient and the environment are one (Rogers, 2012). Environmental Psychologist Kenneth Craik looks at Person-Environment Congruence,
claiming that the higher the patient acuity, the more the environment itself controls behavior, mood, and capacity (Craik, 2000). And, finally, in her Caring Science model, Jean Watson, Ph.D. states that the opportunities for a caring, transformational moment between patient and caregiver occur in an environment for the physical and spiritual self that respects human dignity (Watson, 2012).

The C.A.R.E. Channel conditions the visual and auditory environment to serve as a most personal level of caring and comfort. It goes beyond pain medication to relieve the suffering of time so common to the hospitalized patient. Patients make meaning of their experience through what they see and what they hear. From masking distractions of noises common to the hospital to providing access to nature for the otherwise confined patient, supporting restfulness in the long and often lonely night hours, and representing the nurse when he or she is not in the room, The C.A.R.E. Channel can become the virtual caregiver in the many hours of each hospital day. By calming suffering and enhancing the longer term perception of caring, The C.A.R.E. Channel contributes to a more positive patient experience that can impact HCAHPS survey scores.

References


About the Author

Susan E. Mazer, Ph.D. is acknowledged as a pioneer in the use of music as environmental design. She is the President and CEO of Healing HealthCare Systems®, Inc., which produces The C.A.R.E. Channel. In her work in healthcare, she has authored and facilitated educational training for nurses and physicians.

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