## TECHNOLOGY TRENDS

# Enhancing the patient experience

### Mary Beth Massat

T's no secret that patient satisfaction improves reimbursement. Just as happy patients keep business coming, the opposite is true: Dissatisfied patients can choose new providers, with their complaints traversing social media and online rating platforms like a fastspreading virus.

Patient dissatisfaction means tangible reimbursement suffers, too. Consider the Patient Protection and Affordable Care Act of 2010, which includes the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. Developed by the Centers for Medicare & Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ), these survey results are factored into value-based incentive payments in the Hospital Value-Based Purchasing program.<sup>1</sup> Low scores mean lower payments.

Of course, providing good care for the sake of helping others is at the crux of patient satisfaction. In general, boosting patient satisfaction isn't tied to systems and technical or other solutions as much as communicating and interacting with patients—although that may be changing.

#### Waiting, Decision-making

In his blog, David Craig, MD, medical director at Spruce Health, San Francisco, shares several methods that practices can follow to increase patient satisfaction.<sup>2</sup> Among them is lowering perceived wait time. He suggests: Give patients valuable things to do when

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waiting; move them through the preprocess or check-in sooner; identify anxious patients and provide reassurance, if possible, while they are waiting; give guidance on expected wait times and explain any discrepancies in wait times; and encourage patients to bring a friend or family to their appointment. Spending time with patients, sitting down to carefully listen to their concerns and explaining their care, and being a good communicator are other methods that clinicians, therapists, and nurses can follow to enhance patient satisfaction.<sup>2</sup>

Shared decision-making can also improve patient satisfaction in radiation therapy. A study of 305 patients undergoing treatment at Abramson Comprehensive Cancer Center of the University of Pennsylvania, found a correlation between patient satisfaction and patient-perceived shared decisionmaking.3 Those who experienced shared decision-making or perceived control of treatments were more satisfied with their care than those who did not-a difference of almost 17 percent and 26 percent, respectively. The authors reported a significant association between patient satisfaction with radiation therapy and patient-perceived shared decision-making (84.4% vs. 71.4%) or perceived control over the course of treatment (89.7% vs. 69.2%).

"Most importantly, our findings emphasize the value of patient-physician relationships and communication specifically in radiation oncology, something that hasn't been shown before," said lead author Neha Vapiwala, MD, in a prepared statement.<sup>4</sup> Dr. Vapiwala is an associate professor in the department of radiation oncology at Penn Medicine.

In another study that examined communication skills training for radiation therapists, the authors found that additional training improved the therapist's communication skills with patients. The authors note that additional research in this area is needed. However, the authors propose that "communication skills training, focusing on both preparing patients for radiation therapy and eliciting and responding to emotional cues, may be beneficial to all radiation therapists, reduce patient anxiety and potentially reduce costs to the health care system."<sup>5</sup>

#### Value of Video in Pediatric Treatment

While enhancing communication is important for adult oncology patients, TV may be more useful for comforting pediatric cancer patients. A study presented at the European Society for Radiotherapy & Oncology 36th Annual Meeting reported that projecting a video directly on the inside of a radiation therapy machine during treatment reduced the need for general anesthesia. The study included 12 children between ages 1-and-a-half years and 6 years. Six were treated before a video projector was installed, and in 83% of the treatments, the patient required general anesthesia. Of the 6 treated after video installation, general anesthesia was used in 33% of treatments. According to co-author Catia Aguas, a radiation therapist and dosimetrist at the Cliniques Universitaires Saint Luc, Brussels, Belgium, video has almost completely replaced anesthesia in her clinic, reducing treatment times and stress for patients and families.

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**FIGURE 1.** Decorative ceiling tiles can provide a soothing setting that helps lower anxiety and improve the patient experience. Credit: Ceiling Scenes, Warren, Michigan.

#### **Environmental Impact**

Comforting environments lower stress as well, with physical surroundings strongly influencing a sense of wellbeing, as described in a paper by Jarvis about the patient experience in radiation therapy.<sup>7</sup> As a result, some providers seek to incorporate the patient's viewpoint into design ideas from the get-go. Visual tweaks can include additional windows, skylights, decorative ceiling tiles (see **Figure 1**), new interior finishes, as well as removing the "visual chaos" created by medical clutter, coffee makers, waste containers, personal displays, etc.<sup>7</sup>

"Good design is the careful orchestration of uplifting and encouraging experiences for patients throughout their entire visit," writes Jarvis. "For providers who achieve this, architecture becomes evidence that they put their patients first."<sup>7</sup>

#### A Patient-centered Linac

Additionally, more medical equipment manufacturers are embracing a patient-centric approach—in both medical imaging and radiation therapy—to further bolster satisfaction.

In May 2017, Varian Medical Systems, Palo Alto, California, launched its Halycon system, featuring a patientcentered, user-friendly design intended to automate, streamline and simplify a patient's treatment. "We started with the patient and designed the system outwards from there," Mu Young Lee, director of New Product Solutions says. "We asked, 'What technologies could optimize, enhance and personalize the patient experience?""

Because linacs may appear imposing, Varian selected a form similar to a CT scanner, a familiar design for the patient. In addition to a "familiar form factor," Halycon also addresses patient comfort, noise and lighting. Its 100-cm gantry opening is larger than a standard CT system. The enclosed gantry is capable of rotations 4 times faster than a C-arm gantry, accelerating treatment delivery.

Halycon is also twice as quiet as similar systems thanks to the use of linear motors rather than geared motors that create noise due to their moving parts. The system includes an integrated couch-mounted camera for the therapist to view the patient during treatment, and an integrated sound system so patients and therapists can easily talk. Patients can also have music from their mobile device piped in through the intercom. Ambient lighting was added to the back of the system to help illuminate the room for patient comfort and to assist the therapist with a view of the patient during treatment.

The Abramson Comprehensive Cancer Center of the University of Pennsylvania was the first to install Halycon, and assisted Varian with clinical research during product development. James M. Metz, MD, PhD, chair of radiation oncology at the Perelman School of Medicine, the Henry K. Pancoast Professor of Radiation Oncology, and associate director for Clinical Services and Programs at the Abramson Comprehensive Cancer Center of the University of Pennsylvania, led the team that evaluated Halycon for Varian.

"In general, we are seeing a 50% reduction in beam time for most patients," he says. As an example, a typical head and neck cancer treatment went from 25 minutes on a conventional linac to 13 minutes on Halycon. In fact, Dr. Metz recalls the first case scheduled on Halycon-a head and neck cancer patient. "After 13 minutes of treatment, the therapist went to get the patient off the table and he said, 'That's it?' We had the perception that treatment time could be shorter, but to hear it from our patient validates it," he says. "And that's really our goal-to make this the best possible patient experience."

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