

# Reducing Anxiety in Pediatric Patients

By John Hart

## EXECUTIVE SUMMARY

- Staff at St. Joseph's Children's Hospital, an acute care comprehensive state designated children's hospital located at St. Joseph's Regional Medical Center in Paterson, NJ developed media products to prepare children and their parents for the imaging environment. Pediatric patients—especially those between the ages of two and ten—became anxious and worrisome upon entering the imaging room.
- Five videos would be produced: one each for parents and pediatric patients for both x-ray and MRI, as well as one targeted for imaging staff.
- Video segments lessened anxiety, enabled greater cooperation, and helped get the optimal images on the first attempt. Positive feedback has supported this and contributed to greater patient satisfaction.

**As the** gatekeepers of ionizing radiation used for diagnostic purposes, radiology professionals have an obligation to ensure that every effort is being taken to minimize radiation dose to the patient. Collimation, proper technique settings, and lead shielding all play significant roles in the principles of ALARA. Equally important, technologists should make sure that each image needed for an exam being performed is taken only once. That tenet is especially critical in pediatric imaging. Pediatric patients do not inherently understand the importance of remaining still in the period between positioning and exposure.<sup>1</sup> When anxious or uncomfortable, as is often the case in pediatric imaging, children will seek to quickly resolve their emotional state. Therefore, the preparations before exposure should include efforts to ensure the patient is as calm and relaxed as possible.

That same belief is shared across St. Joseph's Healthcare System and its components, including St. Joseph's Regional Medical Center, a major academic tertiary medical/trauma center and St. Joseph's Children's Hospital. St. Joseph's provides comprehensive inpatient services including a 38-bed pediatric unit, a 10-bed adolescent medicine unit, a neonatal ICU, a 6-bed pediatric ICU, a 6-bed pediatric step-down unit, as well as extensive pediatric outpatient and subspecialty services. The department of

radiology at St. Joseph's interacts with pediatric patients on a daily basis providing many different types of imaging exams, most of which include plain x-ray, CT, MRI (with or without sedation), and contrast imaging.

It was the technical members of the staff who made the first suggestions of developing a media product intended to prepare children and their parents for the imaging environment. In their experiences, pediatric patients—especially those between the ages of two and ten—became anxious and worrisome upon entering the imaging room. Moreover, their emotional state often intensified as the normal course of pre-imaging events unfolded: placing the child on the exam table, using lead shielding, moving large imaging equipment into place, (in some instances) removing the child's direct contact with the parent and, finally, asking the child to remain very still. The staff's suggestion to develop and produce several video segments that explained what to expect during a radiology exam was aimed at two main goals: increasing the child's familiarity with the imaging process before being placed in that environment, and engaging the parent in a pre-exam video explanation of the imaging process. The latter objective was based on the premise that by reducing parents' anxiety, staff could more readily rely on them to help calm the child's fears. That assumption is supported by

information on the Children's National Medical Center website, which states that "In pediatric settings, communication during visits with young children occurs primarily between the parent and the provider . . . Studies of parent-provider communication also have found a relationship between communication and parent satisfaction with care."<sup>2</sup>

After applying, we received the AHRA & Toshiba Putting Patients First grant. The monies funded the purchase of an HD camcorder, three terabyte hard drive, HD software upgrade, and a teleprompter with a tripod. All these items were used in the production phase of our video segments and escalated the quality of the end product.

## Development

At the onset of the project, the director of radiology met with several x-ray and MRI technologists and their respective supervisors. Selected because of their regular daily interactions with pediatric patients and their parents, the group discussed which educational video segments would be the most effective, based on pediatric imaging volumes. There would be five segments produced:

- Coming to the Radiology Department for an x-ray (for the pediatric patient)
- Coming to the Radiology Department for an x-ray (parent's version)
- Coming to the Radiology Department for an MRI (for the pediatric patient)
- Coming to the Radiology Department for an MRI (parent's version)
- Tips and Suggestions for Successful Pediatric Imaging (targeted for imaging colleagues)

Project team members were each asked to write their own version of a script explaining what takes place in the exam room. X-ray technologists wrote the scripts for their area while MRI did the same for theirs. Project staff were given three weeks to produce their drafts. In order to keep the creative

process within a narrower focus, it was decided to complete all the peds and parent based segments first, then go back and write and produce the segment intended for imaging colleagues. Parent segments covered topics such as changing the child into a gown, how lead shielding would be used, and the principle of ALARA. Segments intended for children focused on what the equipment resembled, footage of the actual exam process, and of course that x-rays and MRIs do not hurt.

Compiling, combining, and editing of the scripts was undertaken by the department director. The scripts for the child focused segments were sent to the Child Life Specialists within the hospital to review for age appropriate vocabulary and content. Their recommended changes were sensible and sound and made for more effective communication aids.

Once the scripts were completed, a meeting was held with staff from the hospital's media services department to discuss how to produce the segments for DVD media. With their guidance and input, storyboards were designed which prompted creative suggestions on how to convey each concept on video. It was agreed that most scenes for each segment would be shot within the radiology department in order to further the patients' recognition of the area when they presented for their exams. In order to have children as subject in each video, two staff members were asked to consider using their children, and they were enthusiastic about the idea.

One unforeseen delay in the project was that the shooting schedule needed to be postponed for about a month and a half due to prior project commitments in media services. It was still possible,

however, to put the voice-over portion of the segments on a parallel path and record them in the interim. Media services did make it clear that they were coming into their busy period—video productions for the hospital web page as well as nursing's Magnet program—and further segments would need to fit into their rapidly filling schedule.

The first segment to be completed was "Coming to the Radiology Department for an X-Ray" for parents. Thanks to the advanced planning by media services, the video footage to be recorded in the department was straightforward and clear: a brief introduction of the segment by the department director, then video footage of the x-ray exam process with parent and child, followed by a brief closing shot of the director in the exam room with the parent, child, and technologist. The segment would be interspersed with voice-over provided by the department director. Finally, media services would add post-production enhancements such as background music and transitional effects to connect the segments. Shooting went smoothly, thanks in large part to the technologist and child being related in real life. When we viewed the completed segment for the first time, it turned out even better than imagined.

There was excitement about rolling out its use in daily operations, but it wasn't obvious how this would be done. St. Joseph's encounters a large proportion of patients who are seen in clinics and referred across the street to the main hospital to make a future appointment in person. It was decided that the easiest first use of this segment would be to burn it to individual DVDs and have them accessible to parents as they scheduled their children for outpatient x-ray appointments. Burning additional

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copies as needed was easy and inexpensive—similar to burning copies of imaging exams when requested by patients.

Initially, twenty-five copies were made and the patient name and appointment date corresponding to each copy released was noted. This way, there would be a mechanism for following up with the parents on the day of the appointments to ask their opinions about the DVD. The first copies were handed out quickly—within three days—and the feedback was overwhelmingly positive. The need for a Spanish version of the content quickly became evident. The transcript of the segment was sent to a service for translation. This was accomplished for a few hundred dollars. Rather than reproduce the entire video segment, the decision was made to use the translation and create sub-titles on the English version, saving both time and money. This plan was used as the model for creating Spanish versions of the remaining segments.

In order to create a wider reach for the video segments, they have been set up as links on the hospital website in order to facilitate viewing without the need to come in to the hospital. We have also been discussing the feasibility of incorporating these segments into the regular daily inpatient programming on the hospital's closed circuit television channel. In this way, when x-ray exams are ordered for pediatric inpatients, the children and their parents can be asked to view the segments prior to them coming down to radiology.

Technical staff in the radiology department were responsible for asking parents of pediatric patients whether they felt the DVD segment had aided in helping the child and parent understand more fully what would occur once inside the department. The majority responded favorably. It should be noted that some respondents said they had been in the department with their children for imaging studies prior to this visit. Although repeat visits can, by themselves, lessen

anxiety levels in children, some parents did comment that they felt showing the video segment to their children was a contributing factor to a decreased anxiety level on this visit.

A total of four segments were completed over the course of nine months. The goal is to produce the remaining segment—targeted toward radiologic technologists who work with children—before the end of 2013.

## Conclusion

Time and again, the old adage has proven to be true: a picture is worth a thousand words. Our department believed that having video segments that explain and demonstrate to young children what will happen during an imaging exam would lessen anxiety, enable greater cooperation, and help get the optimal images on the first attempt. The positive feedback has supported that belief and contributed to greater patient satisfaction.

As director of radiology at St. Joseph's Healthcare System, my role is to put the department on a course that will challenge us to always look for opportunities to become better at what we do. The AHRA& Toshiba grant is a wonderful example of how technical staff saw an opportunity, collaborated with other hospital departments, and produced teaching aids that will continue to enhance the care they provide. I was privileged to be along for the ride.

View the videos here:

[http://www.StJosephsHealth.org/video-library/viewvideo/264/facilities/mri-procedures-for-children.](http://www.StJosephsHealth.org/video-library/viewvideo/264/facilities/mri-procedures-for-children) ☸

## References

- <sup>1</sup>Mattingly MA. Improving safety in CT through the use of educational media. *Radiol Manage.* 2011;May–Jun(33):36–39.
- <sup>2</sup>Children's National Medical Center. "Provider-Patient Communication Research." 2013. Available at: <http://www.childrensnational.org/research/ourresearch/translational-research/cccr/providerpatient.aspx>. Accessed August 14, 2013.

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