EASE app updates families on patients’ progress during surgery

As the anesthesiologist places the mask on the little girl’s face, the circulating nurse snaps a photograph and sends it to her parents’ cell phone with a caption saying, “she is safely off to sleep.”

The nurse continues to send photographs and videos of the girl’s heart procedure along with text messages every 30 minutes for the duration of the procedure. That step-by-step guide through their daughter’s procedure was made possible by a new app called “EASE” (Electronic Access to Surgical Events).

EASE was developed by two pediatric cardiac anesthesiologists, Kevin de la Roza, MD, and Hamish Munro, MD, FRCA, at Arnold Palmer Hospital for Children in Orlando, Florida, to “ease the minds” of those waiting and worrying about a child having surgery.

“We have always been aware of the parents’ anxiety in the waiting room,” Dr Munro told OR Manager. “At the end of a case, we would see a look of almost terror on their faces about what the surgeon was going to tell them. We knew there had to be a better way to communicate with them throughout the process.”

EASE development

In 2012, Arnold Palmer Hospital’s media department organized a live blog during an open heart procedure on a child that was posted on social media sites. Photographs, texts, and other live communications were sent from the operating room, and thousands of people followed the procedure.

A couple of months after that, another parent asked if the same could be done during her child’s procedure.

Dr Munro, director of pediatric cardiac anesthesia, says they couldn’t organize it quickly enough with the media department, so he offered to send text messages and photographs to her cell phone during the case.

She thanked him profusely and told him how much it reduced her anxiety.

Dr Munro and Dr de la Roza then teamed up and sent texts and photographs to families on about 20 more procedures. Pleased with the results, they took their idea for the EASE app to hospital administrators and their parent company, Orlando Health.

“We then hired programmers and spent the next 18 months writing the app program, fixing bugs, and ‘jumping through hoops’ with the legal and IT departments so Orlando Health would let us use it,” says Dr Munro.
Security ensured
For each procedure, a circulating nurse is assigned an iPhone with the EASE sender app and is responsible for keeping the family updated.

Family members download the EASE receiver app to their cell phones and then are connected to a standby screen to await updates.

Messages can be sent anywhere in the world. Families also can designate other relatives and friends to receive the updates.

“We built it to be like texting,” says Dr de la Roza. The nurse can create a little network and send mass updates. With the click of a button on “family and friends,” a contact list pops up and the nurse selects the names and sends the update.

Use of 256-bit encryption for all messages both in transit and at rest gives the app the same level of security used in mobile banking transactions. Only the hospital can authorize people to use the app, and users have special training to make sure they’re in compliance with the Health Insurance Portability and Accountability Act (HIPPA).

All messages and images sent through EASE are automatically deleted from the cell phone within 45 seconds, but they are saved on an Amazon Cloud Drive, notes Dr Munro.

A future enhancement may be to make the messages, photographs, and videos available to the families, he says.

Easy to use
In the operating room, steps have been taken to make using the app as seamless and inconspicuous as possible, says Dr Munro.

Most procedures are fairly standardized, especially cardiac, because certain steps are going to happen every time, he says. The nurses know the steps and have a sense of when to give an update; it almost becomes automatic.

“It is so seamless, it just becomes second nature,” says cardiac surgical nurse Kara Dobson, BSN, RN, PCCN. “It is so natural to take out my phone and text when I am not at work that it easily becomes routine at work.”

The app also has a feature that reminds the nurse to update the family every 30 minutes.

Sometimes Dobson sends updates more often if the surgeon sees something interesting and wants to show the family. The surgeon can display images on the monitors in the room with an internal camera, and Dobson can take a screen shot and send the photograph to the family.

“The app actually makes communicating with the family easier and doesn’t disrupt the workflow as much as making a call,” says Dobson. “I can send a quick text and keep going.”

Toward the end of a procedure, Dobson sends an update saying the child is awake and that the surgeon will be out to speak with them shortly.

The session is then ended, and the family receives a survey on their cell phone screen, which collects patient satisfaction data for the hospital. Satisfaction surveys from more than 230 procedures during which EASE has been used have scored an average of 9.7 out of 10.
Nerves are calmed

Surgeons say the app makes their conversations with families so much easier postoperatively because they feel like they watched the whole thing, says Dr de la Roza. “They know what happened, when it happened, and that everything is fine.”

The surgeons have become very involved in explaining what’s happening during videos also, and they often request that photographs be taken.

“We never warn families about what’s coming in a photograph or video,” says Dr de la Roza, “and 99% of families say what we send them is appropriate and doesn’t scare them.” Families find the videos and photographs comforting because they can see what’s happening to their child, he says.

“At the beginning of a procedure, we send a photograph of the child’s face with the mask or intubated because we have found that it relieves the parents’ fear of anesthesia and reassures them that their child is safely asleep,” says Dr Munro.

EASE is now being used in all specialties at Arnold Palmer Hospital and in adult cardiac procedures at nearby Orlando Regional Medical Center. Even the gastroenterology physicians who do 30-minute endoscopies want to use the app, says Dr de la Roza.

Subscription based

Hospitals that are interested in a subscription to EASE are first allowed to pilot it, either for a certain amount of time or a certain number of cases.

The cost of the subscription is based on the size of the hospital. “We want it free for the families, so the hospital subscribes,” says Dr Munro.

Every hospital has different solutions for the cell phones used, says Dr de la Roza. Arnold Palmer Hospital bought iPhones for each OR, which are locked down and can be used only for EASE.

One hospital had iPhones in the rooms, so they just put the app on those phones. Another hospital put the app on their OR-dedicated iPad minis.

“We know that cell phones and the photo-centric generation are here to stay,” says Dr Munro. “We’re not taking advantage of that as such, but we are using it as a modern tool for communication in the operating room. We should be proud of our work, and we should share that with the families. That’s our guiding principle.”

—Judith M. Mathias, MA, RN

References

www.easeapplications.com