

# Case Study: Southern Hills Hospital

## Samsung and AccendoWave Help Hospitals Distract Patients From Pain



### Overview

#### Customer Need

Pain is hard to ignore, and hard for patients to accurately describe. While healthcare providers can easily measure blood pressure, heart rate and temperature, gauging patient discomfort and offering solutions is more challenging. As one of the premier hospitals in Las Vegas, Southern Hills is committed to continually improving the patient experience by exploring cutting-edge solutions to age-old medical problems. So, when hospital leaders were offered the chance to pilot new pain management technology, they decided to give it a try.

#### Samsung Solution

Southern Hills conducted a six-month pilot program using discomfort management technology from AccendoWave together with Samsung Galaxy tablets. AccendoWave's platform detects, monitors and reports discomfort through proprietary wireless computing technology and displays the results on Samsung Galaxy tablets, which have been tailored for the platform using Samsung's Knox Custom Toolkit. Patients can also access diversionary content meant to distract them from their discomfort while in the hospital — including games, music, 300 hours of short video clips and full-length movies from DIRECTV.



#### Results

During the six-month pilot, nearly 1,000 Southern Hills patients used the AccendoWave/Samsung technology with a focus on its diversionary benefits. Ninety percent of survey respondents enjoyed using it; 81 percent said it helped them feel more comfortable; and 77 percent said it understood their discomfort. With the success of the initial pilot, hospital leaders have committed to expanding the program to another unit and are assessing how to use the pain assessment tool for medical diagnostics.

**SAMSUNG**



Voted the “Best Hospital in Las Vegas” by the Las Vegas Review-Journal, Southern Hills Hospital & Medical Center relies on advanced digital technology and an accomplished medical staff to provide southwest Las Vegas with quality healthcare. Services include an emergency department for adults and children, a geriatric behavioral health program, an accredited Chest Pain Center, a Certified Primary Stroke Center, dedicated orthopedic, neurology and spine units, OB-GYN, diagnostic imaging and surgery.

The Joint Commission, the leading accreditor of healthcare organizations in America, recognized Southern Hills as a *Top Performer on Key Quality Measures*® for 2010 through 2014, making it the only Southern Nevada hospital to earn this recognition for five consecutive years. The hospital is a member of the respected Sunrise Health System.

## The Customer Need: Putting Patients at Ease

Some health warning signs can be easy to ignore, but pain gets people’s attention. Whether they’re suffering from an injury, chest pain, abdominal pain or migraines, discomfort is one of the top reasons patients seek help in the emergency room or access other hospital services.

When patients get to the hospital, pain levels can be difficult to accurately describe. What feels excruciating to one person might be an everyday ache for another. While healthcare providers can easily measure blood pressure, heart rate and temperature, gauging patient discomfort and offering solutions is more challenging.

As one of the premier hospitals in Las Vegas, Southern Hills has a high-volume emergency department which deals with patients in varying levels of pain. Dorita Sondereker, director of emergency services, explains, “As soon as patients come into the emergency room, nurses ask about pain as part of our initial assessment. Adults rate their pain on a numeric scale of zero to 10, with 10 being someone has an ax

to your head, and zero being you’re fine. With children we use a smiley/frowny face scale.”

Sondereker says research on the pain scale shows it’s a “pretty good analysis of pain,” but with certain patient populations, especially those in the emergency room, it doesn’t always work well.

As an organization, Southern Hills is committed to continually improving the patient experience by exploring cutting-edge solutions to age-old medical problems. So, when hospital leaders were offered the chance to pilot a new discomfort management technology solution, they decided to give it a try.

“Anytime you can have a differentiator in your service or how you’re treating your patients, whether it’s new technology or a new process, that’s being cutting-edge,” says Joyce Goedeke, vice president of marketing/public relations for Southern Hills. “So new differentiators are always attractive to us, provided they improve our patient experience.”

# The Samsung Solution: Feeling Their Pain

In October 2015, Southern Hills began testing a discomfort management platform from AccendoWave that detects, monitors and reports discomfort through proprietary wireless computing technology embedded in an electroencephalography (EEG) system. The AccendoWave platform, which was installed on Samsung Galaxy tablets, also includes diversionary content meant to distract uncomfortable patients during their hospital stay.

During the initial pilot, patients in the Southern Hills emergency room and in the orthopedic-spine unit were offered this technology on a voluntary and complimentary basis.

These patients wear a headband and earbuds that communicate with the handheld tablet. AccendoWave uses the headband to measure patient brain waves and then translate the results into the standard chart of facial expressions, which is displayed on the tablet screen. If patients disagree with the assessment, they can alter the results by selecting a different face.

AccendoWave also uses the Samsung tablet, which is connected via AT&T's LTE network, to provide patients with diversionary content, including games, music, 300 hours of short video clips and full-length movies from DIRECTV. When patients explore the video clips section, AccendoWave automatically serves up content based on EEG readings. "The technology tries to

sense the patient's level of discomfort and identify content that relaxes each individual," explains Martha Lawrence, CEO of AccendoWave. "Then it changes the content to serve up more of what the patient is really focusing on. The patient can also do a 'thumbs up' or 'thumbs down' and indicate likes and dislikes, so it factors that in as well."

AccendoWave has chosen to offer the technology exclusively on Samsung Galaxy tablets, which provide the ability to modify the user experience using the Knox Custom Toolkit. Using the toolkit, AccendoWave was able to ensure patients could only access their application, control the hardware keys and system messages, and facilitate remote updates of the application.

"Samsung has been a very meaningful technology and business collaborator," says Lawrence. "The Samsung Knox Custom Toolkit is the only solution we found that provided the ability to remotely manage, provision and update all aspects of the tablet in a secure environment, which is critical, as our healthcare providers are very cognizant of data security."

Lawrence adds that because technology in an emergency setting is often handled in a "heavy way," the durability of Samsung devices is also key. "We needed the tablet to withstand repeated usage with minimal impact."

## Samsung Galaxy Tablet Portfolio

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## The Results: Distracting from Discomfort

During the six-month pilot, Southern Hills focused its use of the AccendoWave/Samsung technology on its diversionary benefits. Sondereker says the technology is a particularly big hit with children and remembers one patient in particular who had to leave the room for imaging tests but couldn't wait to get back to his tablet.

Nydia Pendlene, director of orthopedics/neurology, says post-surgical adult patients on her floor have also enjoyed using the solution. "It helps to occupy their time while they're in the hospital, because there's a lot of things on there that you can tune into. You can listen to music or watch a movie. It takes their minds off just being in the hospital."

Nearly 1,000 Southern Hills patients used and evaluated the AccendoWave/Samsung technology during the pilot. Of the 334 whose surveys have been processed:

- 90 percent enjoyed using it
- 81 percent said it helped them feel more comfortable

- 77 percent said it understood their level of discomfort
- 87 percent were happy with the content shown to them

Several scientific studies back up Southern Hills' patient data, proving that distractions such as music or video games can be effective pain management solutions. Researchers from the University Medical Center Hamburg-Eppendorf discovered that mental distractions produce endogenous opioids, which reduce the amount of pain signals sent from the spinal cord to the brain. Diversions don't just take patients' minds off pain; they actually lessen it.

Going forward, Sondereker says she hopes to also explore the pain assessment benefits of the solution. "This device has a lot of potential we haven't tapped into because we've really just been integrating it into our processes. If we keep using this therapy, nurses could monitor the

AccendoWave data and see when patients' pain is increasing, and we could intercept to get pain meds to them sooner."

With the successful initial pilot complete, Southern Hills has committed to expanding the AccendoWave/Samsung technology to another hospital unit and is excited to continue to explore its potential to enhance and personalize the patient experience.

Southern Hills CEO Adam Rudd says, "We are proud to be the first and only hospital in Nevada to offer this program free to our patients to improve their discomfort management."

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– Adam Rudd  
CEO  
Southern Hills

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