

Healthcare Meets a Mobile Revolution

With forward thinking ingenuity, and patient care as a priority, [Rush University Hospital](#), a Chicago-based academic healthcare system, set out to improve the health of their patients and the diverse communities they serve. One of the first items on their list was to find the most efficient mobile solution to improve the prescribed medication process and patient identification accuracy at the point of care. Shedding bulky sleds and additional scanning hardware, Rush incorporated enterprise-grade barcode scanning mobility, the first of its kind in healthcare, into their workflow using nurse-favored and requested iOS devices.

Mobility Meets Scanning Muscle

Barcode scanning has become one of the most important tools affording the largest advantage for patients within the healthcare industry. In a study titled "[Effect of the Implementation of Barcode Technology and an Electronic Medication Administration Record on Adverse Drug Events](#)", researchers found that the implementation of eMAR and Barcode Medication Administration (BCMA) technology improved patient safety by decreasing the overall rate of adverse drug events (ADEs) and the rate of transcription errors. These technologies also reduced the harmful impact to patients caused by administration errors. ¹

The daily rounds workflow is as varied and unique as the patients themselves. Finding ways to make the complicated processes easier and more intuitive had Rush administrators pointing to their own mobile devices. Nurses are constantly on the go, and barcode scanning is a major part of patient care. In fact, barcode scanning is a critical element in catching and preventing medication errors as well as possible ADEs. For Rush, the preferred solution would be naturally intuitive and could easily travel with them from room to room by simply fitting in a small pocket—just like a cell phone. It would be lightweight, smaller in size, and more accurate with zero-miss barcode reading capabilities.

To find their perfect solution, Rush turned to [Epic's iOS mobile application, Rover®](#), integrated with Code's® enterprise-grade barcode scanning software. This pair connects in real-time to Epic's core system to facilitate patient lists, charting, and med administration straight from an iPhone®, or any iOS device running the Rover app. The addition of Code's [barcode scanning software, CortexDecoder®](#), delivers an unparalleled barcode scanning experience using the device's powerful built in camera.



Armed with Rover and CortexDecoder, Rush found the best mobile solution. Determined to define the most ideal mobile workflow, Rush is setting the precedent for mobility in healthcare.

Bye-Bye, Bulky Sled

Currently, the de facto mobile barcode scanning solution in healthcare falls to the *sled*. A sled is generally any rugged case with a built-in barcode scanning engine that a hospital mobile device would live inside. Sleds add weight and bulk, and in many cases, diminish the performance of iOS functionality. Items such as voice quality and radio bandwidth are big concerns, and sleds struggle to keep up with the turnover in compatibility with the latest versions of iOS devices.

For Rush, as with most hospitals, a primary way for nurses and clinicians to communicate with one another is by phone calls during their shifts. The need for high-quality sound is imperative when critical care information needs to be conveyed, understood, and acted upon. To have a sled impede efficiency or create more questions for clarification is a major problem.

iOS phones and devices upgrade yearly, and most people like the benefits and features the latest technology brings. If a hospital wanted to upgrade to take advantage of the latest tech, there would also be the additional cost burden of sled replacement—if there were even a sled option available. After trying on and test-driving many of the different sleds available for iOS and finding the same hurdles in performance and cost, **Rush knew that if the goal was true mobility with no sacrifice in performance while trying to cut overall hardware costs, they needed an integrated solution in order to utilize Rover to its fullest capabilities.** They needed to think outside the sled.

Soft-Scanning: Mobile Decoding Software Solution

Epic Systems had a solution in mind called soft scanning for its HIS software. Epic experimented with integrating barcode scanning into Rover, and when the idea gained serious interest, they reached out to the industry innovator in that space: Code. With a long, 20-year history of solving data capture issues within complicated healthcare workflows, [Code's barcode scanning software was the perfect soft-scan solution Epic had been looking for to enable Rover the with the zero-miss scanning power it lacked.](#)

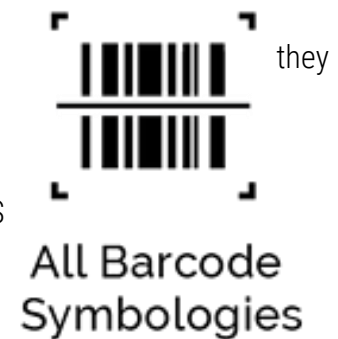
Code's barcode scanners and the scanning software that powers them, had already made a big name for themselves within healthcare, fast becoming a nurse favorite for a few key reasons, the foremost being that the **scanning software powering each barcode scanner outperformed the competition - reading barcodes others couldn't.** After careful testing to ensure superior scan quality, Epic partnered with Code to integrate the first software decoding solution, CortexDecoder, into their Rover application.



**Damaged & Hard
to Read Barcodes**

As soon as Rush heard that Code's soft scanning technology would be a feature offered by Epic in Rover 6.0 for iOS, they knew it was the solution had been searching for to deploy their mobility workflow and deliver the superior barcode scanning solution their nurses had been asking for.

Adding Code's decoding algorithm to the Rover application turned any iOS device running Rover into a mobile enterprise-grade barcode scanning solution with zero-miss efficiency. Rush preferred this solution as a way around using bulky sleds or multiple devices to accomplish the same tasks all while improving scanning capabilities across the board.



Sign Me Up—CortexDecoder for Epic Rover

Rush was the first healthcare system to pilot and deploy CortexDecoder for Epic Rover. Epic developers came to Rush and tested the Rover application and its new scanning feature in many different environments, putting Code's technology through its paces. Code's passing with flying colors allowed Rush to pilot the Rover application in their real workflow environment. According to Rush, piloting took a little over a month and official deployment of 60 devices took place shortly thereafter.

According to research, nurses use Rover significantly more than other medical staff. Before the integrated scanning functionality, nurses had to login with a typed full username and password every time they used the application. Naturally, this was prone to error entry and multiple attempts to gain access negatively impacting workflow efficiency from the very start. Now, with CortexDecoder a simple scan of their ID badge barcode and a typed 4-digit PIN allows instant access.

Once in the Rover application, a smart list of the nurses' specific patients appears and the ability to scan patient wristbands and medications to verify and administer is a tap away. Everything scanned by the app is then logged within the application which automatically syncs straight into Epic's main database, so nothing is missed.

At Rush, many patient rooms still have a computer workstation with a dedicated barcode scanner. The workstation is primarily used for full medication and patient assessment cycles. Rover has been instrumental for deploying mobile efficiency and accuracy with on-the-fly meds, convenience meds, real time charting, and when the main workstation is in use. When there is a clinician or doctor in the room using the workstation the nurses can still administer medicine and chart using the Rover application.

Another mobile benefit Rush found using CortexDecoder for Epic Rover was the small screen for night nurses. In the middle of the night, when they needed to chart and administer medication, they could do so with just the mobile device screen instead of using the big workstation. By not using the large, bright workstation screen, they were no longer disturbing their sleeping patients.

Many of the nurses found that the superior scanning power provided by the CortexDecoder software and their iOS device surpassed that of the dedicated workstation barcode readers in regards to small or damaged barcodes, or those printed on transparent or shiny surfaces. Workflow efficiency continued to increase when barcodes that were always a problem now scanned with ease.

"CortexDecoder for Epic Rover's scanning is reliable, quick and accurate and enables Rush to use the five rights of medication administration: right patient, right medication, right dose, and right route at the right time. This technology will help to reduce the chance of medication harm and decrease the cost of care", says Dr. Shafiq Rab, Chief Information Officer with Rush.

Workflow Mobility in Motion

[For those seeking a mobile efficiency intervention for their point of care workflows](#), there is now a solution for barcode scanning that eliminates the need for bulky sleds – camera-based decoding software. Unleash the high-performance scanning capabilities of your iOS devices with CortexDecoder and protect them with a far less expensive case option. Deploying CortexDecoder soft-scanning ensures that hospitals can take back the device choice and gives them the freedom to upgrade to newer technology faster than ever before. No matter the iOS device a health system chooses, **the scanning software is always compatible and ready to go**, making the wait for sled updates to meet the latest technology a thing of the past.

"CortexDecoder reduces the need for nurses to carry cumbersome, handheld devices, helping us achieve a pillar of the Quadruple Aim: improving the work life of healthcare providers, clinicians and staff, known as Provider Well-Being", says Lisa Swiontek, Associate Vice President, Clinical Information Systems at Rush.

CortexDecoder for Epic Rover has proven to be the ideal mobile solution for Rush University's point of care workflow. Eliminating the need for additional scanning hardware and training make the decision an easy one. It is rare to get more than you ask for while saving money; soft-scanning technology has made this possible.

Works Cited

- Truitt, Erin et al. "Effect of the Implementation of Barcode Technology and an Electronic Medication Administration Record on Adverse Drug Events." *Hospital Pharmacy*6 (2016): 474–483. *PMC*. Web. 4 June 2018. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4911988/>