Streamlining the physician order management process

Pyxis® Connect system

Due to a hospital-wide perception that turnaround time for new medication orders was excessive, a Pharmacy/Nursing task force at Avera McKennan, a 490-bed Magnet facility in Sioux Falls, SD, evaluated the medication order process to see if improvement was needed. The process, which involved Pharmacists rounding to pick up orders from each unit, showed the average time from when the order was removed from the chart to the time it was entered in the pharmacy system was approximately 2.5 hours.

In order to simplify the order management process and improve patient safety, Avera McKennan implemented the Pyxis® Connect physician order management system from CareFusion. The document imaging and management system works by capturing a digital image of the handwritten order and routing it to an electronic "in box" in the Pharmacy, eliminating the need for manual, paper order management systems. Once these orders are approved by Pharmacy, Nursing has immediate access to those medications on the floor through the Pyxis® MedStation® system.

> *"We went from a 2.5 hour order turnaround time to 16 minutes with the help of Pyxis® products."*
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> **Michael Borgmann,** *Pharmacy Technology Specialist*
> Avera McKennan Hospital & University Health Center, Sioux Falls, SD

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Paperless pharmacy system simplifies information access

In today's healthcare environment, it is imperative to have information readily available, and paperless systems facilitate this access. "Prior to Pyxis® Connect, we had two large drawers where a Pharmacy Tech or volunteer would constantly file paper patient orders. Then, when Pharmacists had questions about a patient's previous orders, they had to shuffle through these files to find what they needed," shared Michael Borgmann, Pharmacy Technology Specialist at Avera McKennan. "With Pyxis® Connect, this time-consuming, manual process has been 100% eliminated. As a matter of fact, decentralized Pharmacists started using Pyxis® Connect to archive orders by manually scanning them into the system prior to the actual 'go-live' because they liked the system so much."

Having this information at their fingertips allows Pharmacy to better answer questions from Nursing about patient orders. "With Pyxis® Connect we're able to answer questions from Nursing such as, 'How long did Pharmacy wait between the time we sent the order and the time it was put into the system?' We're able to provide Nursing with data specific to their questions while also identifying opportunities for improvement or education. It's a really great, unbiased system."

"We recently went through a Lean redesign and the Pyxis® Connect system played a vital role in giving us the data to guide us through the Lean process," added Borgmann. "Pyxis® Connect gave our Pharmacy very precise numbers of scans generated per hour of the day, which allowed us to ensure we were staffing to customer demand. The Pharmacy Lean team also utilized Pyxis® Connect to help us identify where mistakes are made during order entry, enabling us to adjust our order entry process. Pyxis® Connect also proved to be an amazing tool for our Nursing Lean team when they wanted to know how long it took from admission, to orders scanned to Pharmacy, to first dose available for dispense."

Improving Pharmacy/Nursing communication

Avera McKennan uses pre-printed Nursing/Pharmacy communication forms to relay non-urgent issues from the Nursing station to Pharmacy through the Pyxis® Connect system, which has improved communication between these departments. "We have lowered the number of phone calls that come to the Central Pharmacy and, at the same time, we now have a record of those communications on file should any other questions come up in the future.

This data access has been very valuable to the Pharmacy/Nursing relationship."

A decentralized Pharmacy model is also imperative to the Pharmacy/Nursing relationship. "In a decentralized Pharmacy model, it is vital to have extra workstations on the floor so Pharmacists don't get 'tied' to the order entry stations within the Pharmacy," shared Borgmann.
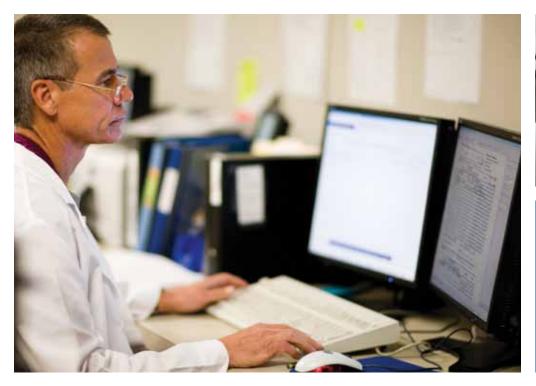
"Since we have Pyxis® Connect stations on the floors, our Pharmacists are more readily available to work closely with Nursing and answer clinical questions."

Enabling off-site order approval

"We have the take home solution, which provides on-call Pharmacists with access to Pyxis® Connect from home so they can immediately assist our Pharmacy staff without having to spend 30 to 60 minutes driving to the hospital when they are called in. My Pharmacists have been extremely pleased with this product," said Borgmann.

"We also have a Pyxis® Connect view station installed in our eICU center. The eICU is a central room where a physician monitors all patients in our ICU and the ICUs of many of our sister hospitals around the region," shared Borgmann. "The physicians in the eICU wanted to be able to see orders from the ICU floor and giving them access to view orders from the Pyxis® Connect system was an easy way to do this. The physicians are very happy with the immediate access that Pyxis® Connect gives them to review patient orders written by other providers."

Significantly improving order turnaround time

A post-implementation study found the average order entry time had been significantly reduced. "With Pyxis® Connect, we went from a 2.5 hour order turnaround time to 16 minutes on average, with stat orders averaging 6 to 8 minutes from the time the order is scanned by Nursing to the time it is entered into the pharmacy system," added Borgmann. "Our TPN can wait on hold for up to eight hours, which skews our numbers, so the median order turnaround time is actually only one minute."

To ensure these numbers are kept low, Avera McKennan implemented a paging system to alert Pharmacists when the order queue hits pre-set limits. "We set our system up to page our Pharmacy leaders and our decentralized Pharmacists when there are 35 idle orders waiting to be processed or when five or more orders in queue have been waiting for more than 60 minutes," shared Borgmann. "The paging system is a great way for us to recognize when order entry needs 'all hands on deck' assistance."

Maximizing system uptime

While the technology has significantly simplified the order management process and made Pharmacists more available for clinical consultation, it's imperative to ensure system reliability. "I would estimate our up-time on Pyxis® Connect to be somewhere in the 99.9% range," said Borgmann. "About two years ago, our hospital information system crashed and was down for three days. One of the things that really saved us was the ability for Nurses to continue to use Pyxis® Connect to get their orders to Pharmacy."

Providing ultimate staff satisfaction

"Pyxis® Connect is one of the best, easiest to use and most successful projects the Pharmacy and Nursing staff has ever collaborated on," concluded Borgmann. "My Pharmacy staff asked for four weeks of working with the system before we went live. After only two days they all wanted to push the transition up. We gave a 15 minute in-service to each unit, and the Nursing and secretary staff picked up the scanning procedure quickly with very few problems. I would highly recommend this system to just about anyone."

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