



Peninsula Regional Medical Center: Reducing the Search for Most Clinical Answers to a Minute or Less


Peninsula Regional Medical Center (PRMC) is an award-winning 266-bed hospital with Level II trauma center designation located in Salisbury, Maryland. Serving nearly 500,000 patients, the facility is well known for taking an innovative approach to care delivery. Its standing partnership with IBM Watson Health is enabling PRMC to streamline clinical workflows in new and creative ways. For example, they adopted a novel artificial intelligence (AI)-based clinical decision support tool that empowers clinicians to ask pharmacologic questions in natural language at the point of care.

Rachel Cordrey, Supervisor of In-patient Pharmacy Operations at PRMC, said that health providers routinely rely on pharmacy resources to help them make clinical decisions about drug compatibility, adverse effects and special dosing requirements. To date, she said, there are a variety of drug information databases at their disposal. Yet, when sitting in front of a patient, it can be difficult for doctors and nurses to take the time to look up the items they need to.

“Traditional search methods in drug information tools are a bit clunky,” Cordrey explained. “You have to open a web browser or open a desktop shortcut, search by the medication name you are looking for, and then search through the results to find the information you actually need to make your decision. It can take significant time – in fact, our own research suggested this manual process was taking up to three minutes each time.”

When factoring in dozens of patients across a single shift, that kind of time adds up – quickly. As a result, many such queries either were deferred or even abandoned altogether if the question did not pertain to a potentially life-threatening issue, said Mark Weisman, MD, Chief Medical Information Officer at PRMC.

“Clinicians are under tremendous time pressure,” he said. “It’s important to streamline efficiencies where you can – and keep clinicians inside the workflows they are used to using to do these sorts of tasks. If they have to go outside those workflows to find information they need, that’s often a barrier to entry that may prevent them from getting it done.”



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Rachel Cordrey | Supervisor of In-patient Pharmacy Operations | PRMC

Putting pharmacologic clinical decision support inside the workflow

To help address this issue, the PRMC team decided to integrate IBM Watson Health’s natural language AI-powered clinical decision support tool, IBM Micromedex with Watson, directly into the facility’s electronic health record (EHR) platform.

“The tool we were using before was a barrier for the provider’s workflow,” said Cordrey. “It was important to us to streamline this process and make it more efficient. If we could do so, it would be more likely that end users would actually use the tool to get those important questions answered.”

Cordrey added that it would also free up time for the pharmacy to engage in pharmacist-clinician dialogues about more complicated medication questions.

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The information technology (IT) team and pharmacists in collaboration with IBM Watson Health, trained the Watson Assistant on the most common medication questions that clinicians at the hospital tended to ask. They were then able to integrate this new AI-powered clinical decision support tool into the EHR under a unique Watson tab on the top of the interface. Clinicians can type a medication question into a conversational window. Within seconds, the tool provides quick answers and suggested links to more detailed evidence-based content.

“You don’t have to think about specific keywords or phrase the query in a certain way to get good information back,” said Weisman. “You can just say, ‘I need to know how to dose ciprofloxacin,’ and the answer comes right up.”

The PRMC team said there were many benefits to using IBM Micromedex with Watson for this implementation. First, having the tool embedded directly into the EHR made it very convenient to use. In an internal survey, 92% of respondents said they would be more likely to use such a tool if it were accessible in the EHR. Second, PRMC appreciated clinicians being able to use natural, conversational language to get the information they needed about specific medications. Finally, it was vital that every query resulted in rich, accurate information that clinicians could trust – and IBM Micromedex with Watson provides just that.

“Clinical decision support is not always that well-received by clinicians,” Weisman said. “Too often, it’s delivered as an invasive pop-up coming at you when you weren’t even asking for it. But IBM Micromedex with Watson was different. When the provider has a question, they can click on the tab, ask a question about a medication in a natural way and know they are going to get good information back quickly.”

Pharmacy clinical decision support at the point of care

Cordrey said the underlying technical work for the clinical decision support tool only took one day to implement. PRMC first deployed the tool directly to the pharmacy department in February of 2019.

“We started with our pharmacists because that’s the group of clinicians that are most used to working with drug information tools on a routine basis,” she said. “We then rolled it out to other departments across the hospital.”

The team soon saw results. The AI-based tool was used 489 times in May 2019 alone – compared to 275 visits during the previous six months prior to it being integrated into the EHR. When Weisman and colleagues did time studies on IBM Micromedex with Watson’s use, they discovered that clinicians could find the medication information they sought in less than one minute 73% of the time. When they later surveyed users, they found that 94% of PRMC users trusted the content that IBM Micromedex with Watson provided them – and users across the board overwhelmingly said this tool saved time, was easy to use and made their jobs easier.



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Mark Weisman, MD | Chief Medical Information Officer | PRMC

“Clinical decision support is a valuable tool for pharmacists and other clinicians,” said Cordrey. “Having this kind of natural language solution, embedded into the EHR so it can be accessed right at the point of care, is much more efficient for end users. When you make the tool easier, you are making it more likely that clinicians will use it. And that benefits everyone.”

Moving forward, Weisman hopes to implement other innovative technologies to improve care delivered at PRMC.

“We are not a huge academic medical center, but we are able to provide cutting-edge care here, thanks to partnerships like the one we have with IBM [Watson],” Weisman said. “The reason I got into this work was to make it easier for providers to give the highest quality care to patients. IBM Micromedex with Watson – and the AI behind it – gives us good data quickly and gets our clinicians the information they need when they need it. They don’t even have to think about what’s happening in the background. They are focused on their patient and can stay focused on their patient. That’s where we want them to be.”

To learn more about how AI can help improve clinical efficiencies visit [IBM Watson Health](#).

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