

The Doctors Are In, Episode 6: Why shouldn't we just stay on paper? [Transcript]

Introduction: You're listening to the CST Audio Network, the voice of clinical transformation. The doctors are in. Dr. Jeremy Theal, Gastroenterologist and Chief Medical Information Officer at North York General Hospital, where he led the implementation of a Cerner clinical information system. As a recognized expert at developing and implementing advanced EMRs, he advises hospitals and health systems in Canada and around the world.

In this episode, Dr. Theal considers why physicians would want to go through the difficult changes that come with moving to an electronic health record.

Dr. Jeremy Theal:

So first of all, why are we even doing this? We know this is going to be painful. Implementing advanced health information systems is a blood, sweat and tears exercise, so why shouldn't we just stay on paper? I think there are several environmental factors and problems to solve. First of all, it's not new, but Baker/Norton published in 2004 [The Canadian Adverse Events Study](#), which showed that almost 24,000 patients in Canada die in hospitals every year due to preventable medical errors. So, if we can put a system in place that provides an extra layer of protection against those errors, that's something that I think our patients would want.

The other thing that's happened over the past 20 or 30 years is that the rate of information that clinicians need to process at the point of care in order to be able to provide the best possible – and up-to-date – care for their patients has increased exponentially. And so, how does that frontline clinician who's doing their best to keep up with the information in their specialty, actually be able to provide the best care at all times? If you could have a system that could help assist in that, that's probably a welcome change.

And the other thing is that hospital workflows, as much as we love them, a lot of them evolved over time for reasons that nobody really completely understands and they don't always necessarily lead to the best safety and quality and efficiency. If there's a system that could also help us redesign and improve and transform some of those workflows, that would also probably be better. It's an entirely new toolbox that we didn't have before in health care to change some of these outcomes.

Having a system that gives us legible, clear orders that are instantly viewable anywhere in the world is much better than what we had on paper. We have a closed loop medication administration process, which I know that you're working towards, which definitely improves quality and safety. So (it's) the idea of having a barcoded wristband for every patient, a barcoded badge for every provider and every medication unit-dosed and barcoded, to reduce the number of potential errors at administration.

We know that the medication process in hospitals requires many steps and at every one of those steps, there are potential points of failure that can lead to quality and safety issues. Prescribing, transcribing, dispensing and administration – and using an electronic system we can actually meet each of those issues head on. So first of all, the orders are clear and there's no transcribing necessary; that eliminates the whole transcribing problem.

They're instantaneously viewable and interprofessionally accessible, so it helps to reduce dispensing errors. The system is smart, it's going to introduce alerts for things like allergies and interactions, so that helps to reduce prescribing errors, and we also have this closed loop system that I just described to you which helps to reduce administration errors. So that's why the literature even way back in the 80s in *The New England Journal (of Medicine)*, was talking about how CPOE (Computerized Provider Order Entry) systems, one of their biggest benefits is in medication safety, and it's because of this whole constellation of solutions that is put in place.

We also have clinical decision support. So here's an example of an alert in our hospital that reminds physicians if they forgot to do the admission medication reconciliation, that hey, the best possible medication history is already done, can you please do the admission med rec? When we introduced this alert, we actually saw a 30 per cent improvement in our admission med rec rates without having to use any artillery or other forms of coercion.

This is a study that was published actually a while ago now where a commercially sold CPOE system was implemented at an advanced pediatric hospital and actually statistically significantly increased mortality. So when people say that these systems can cause harm, they're definitely not wrong. [The post-mortem on this study](#) was done by a very famous researcher; he said they were trying to automate paper. They hadn't put any CPOE order sets in place; they didn't do usability testing before go-live. Dean Sittig was the researcher (and) he said: "One must avoid the temptation to blame the adverse effects on the particular system used. This would be the equivalent of stating that a particular brand of tool from a hardware store was unsafe because an injury occurred while someone was misusing it."

We also know that these systems can improve patient outcomes and these studies that I'm quoting are on purpose (and) not new. I think it's to illustrate that it's not news that these systems can make a difference.

Here's a single hospital study looking at diabetes management and that if you use CPOE order sets for diabetic care, you can reduce length of stay for diabetic patients and improve glycemic control. Here's another study looking at sepsis: 15.5 per cent reduction in absolute mortality rates. That's like introducing a whole new class of antibiotics because you have standardized care on CPOE and you have decision support that is helping people make the best decisions at time critical points for patients with sepsis. Here's a multi-hospital study, 41 hospitals in Texas, looking at CPOE and clinical decision support,

where not only did they see a 21 per cent reduction in deaths from pneumonia, but they also save money per patient.

This was one of the reasons why our hospital embarked on this type of work: We felt that order sets were a key catalyst to transform care, bring evidence to the bedside, standardize workflows (and) remove quality and safety gaps. If it's crucial information like a black box warning, we've actually had situations where it's been out of our system in 24 hours. Try to do that on paper.

*In the next edition of *The Doctors Are In*, Dr. Theal talks about the goals North York General set out to achieve by adopting a new clinical information system and the difference it made to the quality of patient care. Thanks for listening to the CST audio network. We look forward to your next appointment. In the meantime, let us know what you think of this podcast: What you like and how we can improve. Write us at info@CSTproject.ca. As a thank you for sending us your feedback, the first five respondents will receive a beautiful CST coffee mug.*