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Software versus Vaporware

The short history of Electronic Medical Records in corrections includes a long list of mistakes.

By Morgan Jones

"Unless your health care processes are running right to begin with, the only thing computerization will do is magnify your chaos," warns Dr. Todd R. Wilcox, MD, MBA, who is currently chairing a taskforce on Electronic Medical Record systems for the National Commission on Correctional Health Care (NCCHC).

"Electronic Medical Record systems are clearly an emerging issue in corrections. As money has gotten tight, there's been a demand to manage correctional health care in the style of an HMO," Dr. Wilcox says. "Now you have many correctional agencies clamoring to put an information system in place simply to help them control health care costs. Medium- and large-sized jail systems, as well as state corrections departments, are struggling in their effort to select and implement one."

Dr. Wilcox is the medical director for Wellcon, a physicians' group that provides health management services to the Salt Lake County Jails in Utah. Before the county's new 1,000-bed jail opened in 2000, the NCCHC had placed Salt Lake County on probation, saying its health care infrastructure was substandard. When auditors returned last year, they were so impressed with the jail's health care philosophy and the new, fully-integrated Electronic Medical Records system, they named Salt Lake County Jails as the 2001 NCCHC Facility of the Year.

While they were at it, the NCCHC invited Dr. Wilcox to serve as chairman of the not-for-profit organization's newly-formed Electronic Medical Record Advisory Board. The board issues its first report at the 26th National Conference on Correctional Health Care, to be held in Nashville, Tenn., October 19-23.

Morgan Jones: *What is the NCCHC's interest in the Electronic Medical Record (EMR)?*

Todd R. Wilcox: EMRs can bring salvation to your facility, but you have to implement them correctly. The NCCHC accredits jails and prisons for health care, and they saw there were many facilities having trouble. Correctional agencies would start to implement an EMR, get several million dollars into the process, and the system wouldn't be worth it. So the NCCHC put together a task force to provide objective advice and some general guidance. EMRs are a great thing if you have one that works. They're a complete disaster if you have one that does not. They are expensive creatures created in a complicated process, so it's a tough mistake to recover from.

MJ: *What mistakes are you trying to avoid?*

TRW: Some vendors make conversion to an EMR seem simpler than it really is. Some deal in vaporware. They will present you with a cartoon that shows all the great things their system can do, but none of it is actually written in code. I think, 'It's nice that you've designed these screen shots, but do you have a system that can actually accomplish what you just showed me?' They can't show you the specifics.

Vendors have even been audacious enough to expect that you will foot the bill for their software development. They want two to five years of lead-time before they provide a system, and I know of very few correctional health care agencies who have the luxury of that timeline. For our system, it took us 90 days from the beginning of the implementation phase to the go-live date; that included building the interfaces, customizing the system to our needs, training the staff, and loading all of the prisoner data into the database.

Our vendor's system was completely operational at the time we signed the contract. The vendor made a few necessary changes to customize it, but we did not finance their software development.

Also, there are quite a few correctional facilities that have been a little too arrogant about the process and decided that they can write their own software. They tell their Information Systems Department, 'Let's write our own EMR,' and yet they don't fully understand the complexity of this kind of software. That's like telling the warden, 'We want to build a new jail, but we don't want to hire an architect.'

I know of one state department of corrections that spent $3 million

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and they can't even turn on the system. It basically sits on the shelf as an expensive and embarrassing white elephant. Another DOC is partnering with a major computer company, but panic is setting in because they're several million dollars into the project and it's not HIPAA-compliant (Health Insurance Portability and Accountability Act). There has not been one line of code written yet. They're trying to plan after they've started to create a very, very large system.

Resources in corrections are limited. You're always short of money because the state legislators and county commissioners are reluctant to tell voters their taxes are being spent on prisoner health. So it's a shame to see institutions waste what little money they do have because they didn't have a good feel for how to do a project like this.

MJ: *Isn't this to be expected, since EMRs are new to corrections? It's not as simple as taking a hospital application and plugging it into a jail.*

TRW: That's true. There's always some customization that goes into writing this kind of code, but there are ways to take a system that's already in existence and modify that system instead of reinventing the wheel. There are some hospital systems that have been modified for corrections. The problem is that every correctional facility has different computers that they use for offender management, they interact with different labs to obtain their medical test results, and so you have to customize the interfaces for each facility. That's to be expected, and it's true in hospitals as well.

The system used in Salt Lake County was originally written for the private sector, but there's a lot of flexibility designed into it so that they could customize it to accommodate the facility. There are companies out there who have mastered the correctional piece and have good software to offer. You don't have to start from scratch and use a hospital application to make it work. Unless you have a program that really can allow you to track all your costs, all your prescriptions, monitor staff efficiency, do all your quality assurance, and integrate the entire health care delivery process into one database, you can never really hope to manage your health care environment.

MJ: *What are the different types of EMRs?*

TRW: Conceptually, there are two kinds of EMRs. There are those that are purely a database, where you put something in, say a physician's note, and you're able to retrieve that and look at it again. That's basically a passive storage system. There are other

systems-there aren't very many of them, but they are out there-we call medical management systems, and they interact with users. The software gives you feed back about issues you may want to consider.

For example, all of Salt Lake County Jails' chronic care delivery is managed by a very sophisticated rule engine that is designed into the software. When I see a Type 1 diabetic in clinic, I can run an analysis on his record in three seconds that tells me all the tests, studies, and diagnostic evaluations due for this patient. In this sense, our chronic care has changed from episodic care into a longitudinal disease management process where we treat the patient over his lifetime, as opposed to starting and stopping his disease management with each new admission to jail. As a systems administrator, I can perform very sophisticated analysis of items that I need to report, such as infectious disease reporting and epidemiological analysis. That's the type of software that we were most interested in and it's been a great thing for us.

We designed the system to address a staffing problem. The Salt Lake County Council didn't want to hire more health care staff because of the ongoing expense. So when we put in our EMR, we tried very hard to provide efficiencies so that the computer would perform some work formerly handled by staff. When we first started, we had about 10 medical records clerks that were in charge of filing and making paper charts and other paperwork, but once we went to an EMR, we could run our entire medical records department with two people. That gave us eight additional employees we could then use in other tasks where we were short-staffed. Conversely, nurses perform nursing tasks instead of clerical tasks.

The computer tracks all of them as far as who needs to have their test read, when it needs to be read, and what room they're in so the nurses don't have to look up the inmates' room numbers all the time.

All our health care is integrated into this system, including mental health. We are as paperless as it's possible to be. We have one chart. All patient information is found in one place. We don't have separate files for booking, mental health, dental, medical, outside referrals, X-rays, or anything else. The information comes to one place and everything is seamlessly integrated into one piece of software. So when we go to see a patient, we get a complete snapshot of their care. If the mental health doctors have them on a medication, I know about it. Whenever we write a prescription, the system automatically checks to makes sure that there aren't any conflicts with previous prescriptions.

MJ: *So, this is a useful tool in terms of reducing your legal liability?*

TRW: Yes. When we were using paper, we were constantly having items misfiled. Detainees would come in with multiple aliases and their health care information would be scattered over several different charts. It was easy to make a mistake. Whenever we would order medications, a prescription would be written and there would be a two-day delay in processing and delivery to the pharmacy, which now occurs instantaneously. We have a computer record that's easy to refer to and things don't get lost. And that makes a big difference from a liability standpoint, because our documentation is excellent.

MJ: *Should every sheriff be considering an EMR?*

TRW: It becomes a size issue. If you have a smaller jail, you can get by on paper. When you reach a certain size-the amount of data you have to deal with and the number of prisoners you're processing-you reach a point where you have to switch over to electronic records if you're ever going to be efficient. I think that size is in the range of 800 to 1,000 prisoners. If you're above that, you should be on an EMR, period.

It seems that EMRs are most commonly implemented as part of new construction projects. Counties don't want to put EMRs in their old jails, they want it to be part of the design of a new jail. It's easiest to fund EMRs as part of a bond package or sales tax increase to build a jail that's also modernized as far as dataports and other technologies.

MJ: *What is most important to do before implementing an EMR?*

TRW: Hire an architect who understands both EMRs and health care delivery to assist you with this process. Going from a paper-based system to an EMR is a long, multi-step process, and you have to get all the steps right.

For example, you have to make sure the right kind of transmission lines pull to all the locations where you need a computer-in a lot of jail systems that's a real dilemma. You need to make sure you have connectivity within the county so that the computers can talk to each other on a network, and a lot of counties aren't yet on networks.

Make sure you have the right kind of computer hardware to run the EMR software. We run our system with about 65 computer stations and they're spread throughout our facility. We had to make sure

they were all talking to each other because that's the only way you can pull off a system like this. The infrastructure has to be in place before you can even begin implementing an EMR, which means your existing medical processes have to be logical and well thought-out, because the last thing you want to do is program your chaotic system into a computer. The underlying problems will remain.

The RFP must contain well-written specifications and you must distinguish what you need from what you want. What often happens is that computer companies respond to a poorly-written RFP and they promise you the moon. The county officials get together and tell the company what they want, and these companies say, 'Not a problem. We can do that.' But all that comes out of both financial and timeline costs.

There needs to be a clear end-result in the minds of those overseeing the procurement process. I've seen correctional agencies get in trouble in this area because the computer companies are happy to take your money in a 'consulting' role. The administrators don't realize how fast they are burning through their money and, all of a sudden, they're at the end of their budgets, the computer programmers aren't finished, and you don't have a system ready. On top of this, there's the question of how do you set up the medical delivery process, and how do you do that so efficiency is increased? You can actually reverse-engineer your process and slow your staff down. Sensitivity to efficiency and ergonomic issues is critical.

It's not that we were brilliant. We were just on the leading edge of a technology that's only new to corrections. We're not a lone voice in the wilderness, and we're certainly not the only ones to pull off a customized system. The software we use is also in use in all the eastern prisons run by the Texas Department of Criminal Justice. I've also heard that New Jersey is doing good things, though I haven't seen their system in person. There are a lot of correctional agencies implementing EMRs right now, and because they've been able to learn from others, they're doing a good job. That's going to continue.

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