



## Improving productivity and resident care

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**Henry Leung**, VP of IT at MediSystem

### FACTS

**Customer:** MediSystem Pharmacy™ – a Shoppers Drug Mart® Company, pharmacy service provider to long-term care facilities in Canada.

**Challenge:** To replace pen, paper and faxing with a faster, more accurate way of handling prescriptions.

**Solution:** DIGIORDER, a solution developed by InfoMax Technologies Corporation, based on Anoto Digital Pen and Paper technology. Currently, 1,100 pens are in use.

**Benefits:** The pharmacy can reduce its opening hours by two hours per day. Paper records of prescriptions are automatically kept electronically. Access to resident records from offsite. The margin for error is considerably reduced. More time for resident care. User-friendly solution.

MediSystem Pharmacy™, a pharmacy service provider to long-term care facilities in Canada, has introduced DIGIORDER, a digital pen and paper ordering system that improves the way resident (patient) prescriptions are recorded and filled. The application, developed by InfoMax Technologies, an Anoto partner; allows doctors to fill out prescription forms for each resident visited in the facility, using Anoto Digital Pen and Paper technology (DP&P). The result is that prescriptions are delivered faster and more accurately, improving the quality of care and keeping a precise record of all medications prescribed. Full deployment of the application began in February 2006 and it is now in use at over 95% of the facilities served by MediSystem in Canada.

“MediSystem was the first pharmacy in Canada to start using a DP&P prescription ordering system in a long-term care environment. Seeing how well it works, everyone is interested in it and wants to adopt the same or a similar system. Once again, MediSystem is setting the norm in the industry”, says Henry Leung, VP of IT at MediSystem.

### Background

Residents in long-term care facilities are visited regularly by doctors, who assess their condition and adjust their medications or prescribe new medications according to need. Until recently, these prescriptions were written out by doctors with regular pen and paper and had to be collected and collated by nurses, sometimes taking hours of work. The

nursing staff then faxed these prescriptions to the pharmacy manually, which also took considerable time and sometimes caused delays in medication delivery processing and delivery of the medications from the pharmacy side. After faxing them, all these prescriptions had to be sorted and inserted into resident charts again, thereby increasing the likelihood of error or misplacement.

Because doctors' rounds in a long-term care facility involve many residents and therefore many prescriptions have to be handled over a short period of time, there was often a back log and, consequently, a delay before all prescriptions were sent off to the pharmacy.

This could mean a long wait for residents in need of medication, while also increasing the risk of errors in data transmission between the long-term care facility and the pharmacy, as well as possible inaccuracies in the prescription records for each resident. Fax output at the pharmacy could be blurred, and often pharmacy staff had to call back the nurses at the long-term care facility for clarification, causing more time on each side. Furthermore, there was no way of guaranteeing that faxes “successfully” transmitted were actually received by the pharmacy.

On the other hand, doctors were accustomed to using traditional pen and paper to write prescriptions, finding it easy to fill out forms during their rounds of the wards. Nursing staff were also familiar with the paper forms, which provided a written trace of medications prescribed, to be kept on record.

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### How the new solution works

The digital pen and paper solution consists of digital pens and forms with Anoto's unique pattern, (featuring multiple blanks with free spaces so that they can be used over a period of time), a dedicated InfoMax data transmission appliance as a docking station for the pen, connected via secure Internet to the InfoMax Digital Pen Platform located at MediSystem's headquarter.

Initially, solutions with tablet PCs, mobile phones and PDAs were also considered. However, these options were discarded as they would definitely require more training and changes in behavior on the part of doctors and nursing staff. Additionally, these other technologies would be more costly to procure, and require more effort to implement, time to deploy, as well as time and effort for ongoing maintenance.

The unique dedicated InfoMax appliance made deployment as simple as hooking up a fax machine, and allowed rapid deployment to many locations in a short period of time. With the simple appliance set up, the ongoing support cost is also greatly reduced. Studies have shown that accuracy is the best and technology is the least intrusive with the digital pen and paper solution.

On their rounds of the long-term care facility, doctors carry a binder containing forms with each resident's profile information. These forms are printed on paper with Anoto's unique pattern. After seeing each resident, the doctor writes down what medication or treatment is needed on the resident form, using a digital pen. The pen looks and feels like any regular ink pen, but contains a tiny infrared camera and processor which enables it to "read" and digitize pen strokes as they are written on the resident form.

At the end of the round, the doctor docks the digital pen to the dedicated appliance at the nursing station. These appliances are installed at every nursing station in the facility. The prescription data contained within the pen is transferred via secure Internet to the InfoMax Digital Pen Platform located at MediSystem's data centre. The nurse or doctor receives an automatic confirmation that the data has been successfully transmitted, along with a confirmation number for future reference.

At MediSystem's data centre, within the InfoMax Digital Pen Platform, the prescriptions

are re-routed to the designated branch office of the pharmacy chain. Since long-term care facilities are required to keep a record of the orders placed with the pharmacy, a confirmation is automatically printed onsite for such purposes. When the medication arrives at the long-term care facility, nursing staff can check the delivery against the printed confirmation to make sure nothing is missing. The InfoMax Digital Pen Platform and IT infrastructure at MediSystem are designed to be highly scalable and able to handle the ever increasing volumes of data traffic.

### Key benefits for MediSystem

MediSystem has seen a significant increase in productivity as a result of this application. It saves the nurses' time and allows quicker resolution of questions and queries. Furthermore, DP&P gives MediSystem a competitive advantage over other pharmacies vying for the same long-term care facilities' business, while new business is generated through marketing the DP&P technology to new long-term care facility prospects.

The pharmacy also saves money. Prescriptions arrive earlier in the day, which allows the pharmacy to complete its work earlier and consequently reduce its opening hours by a full two hours per day.

### Key benefits for staff and residents

For care providers, the challenges of adapting to the new technology are minimal. Besides ensuring that the pen is docked properly, they can continue to work in the way that they are used to, while enjoying numerous advantages. For example, the tedious work of compiling and faxing prescriptions to the pharmacy is eliminated, the time spent to re-organize and file prescriptions is also eliminated, and the staff can now review each resident's prescription information on-line.

Also, the care providers no longer have to manually document medication orders in the drug record book as order confirmations are printed automatically. The new system is time-saving and this fact, combined with better access to information, ultimately leads to better resident care. For example, residents experience fewer delays in receiving medication, since prescriptions are handled more efficiently.

### Implementation so far

As of Q1 2009, over 1,100 pens are in use at hundreds of locations on a 24/7 basis, and the number continues to grow as the technology gains recognition. MediSystem is printing over 100,000 forms with Anoto's pattern per month within the InfoMax application platform.

MediSystem has also implemented other DP&P applications – including resident admission forms, which have been in use at long-term care facilities since July 2008. This is another cost-effective tool, since the same application platform and equipment are being used. Furthermore, a special "Tamiflu dosage form" (for administering anti-influenza drugs to residents) was implemented in late 2008.

### Partner profile:

InfoMax Technologies Corporation, based in Toronto, Canada, is an Anoto partner. It is the leading digital writing solution provider in Canada with solutions in use by thousands of users on a 24/7 basis, based on the unique InfoMax data transmission appliance and InfoMax Digital Pen Platform. InfoMax has one of the largest installation bases of digital writing technology in Canada. Its roots began in IT consulting, and it is one of the most comprehensive companies in the world of information communication and systems integration. InfoMax is dedicated to implementing Digital Pen and Paper technology and deploys digital writing solutions to principal Canadian businesses in healthcare and other market sectors.

[www.infomaxcorp.com](http://www.infomaxcorp.com)

### Customer profile:

Founded in the late 1980s, MediSystem Pharmacy™ began as Queensway Centre Pharmacy, a small retail pharmacy in suburban Toronto in Canada. Its founder shifted the company's focus in the early 1990s to servicing long-term care facilities. On August 31, 2004, the company was officially listed on the Toronto Stock Exchange (TSX), trading under the symbol (MDY). In October 2006, MediSystem was acquired by Shoppers Drug Mart, the biggest pharmacy chain operator in Canada. Since then, MediSystem Pharmacy™ operates as a Shoppers Drug Mart® Company.

[www.imediasystem.com](http://www.imediasystem.com)