

CANADIAN Healthcare Technology

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Automating work of cardiologists and staff improves patient care

BY ROSIE LOMBARDI

Diagnostic imaging devices are remarkable technologies, but they've been developed separately over the years by different vendors, without regard to how they're used together. That incompatibility problem not only plagues radiologists, but cardiologists, too.

Busy hospitals and cardiology clinics must work with multiple imaging tools, and unfortunately, cardiologists have to view studies at different workstations.

Moreover, many devices don't include even basic report generation tools; cardiologists are forced to rely on time-consuming dictation and transcription to produce reports that are then manually processed by fax or mail.

"It's a complex, slow and error-prone process because of all these inefficient processes, multiple steps and various people who are involved in the workflow," said Dr. Joe Ricci, a lead cardiologist at Toronto-based CorCare, a cardiac and nuclear medicine practice which operates three clinics.

Now, however, Dr. Ricci and his team have produced a game-changing solution called Influx Workflow, a software system that automates much of the troublesome data collection and reporting that must be done in cardiology departments and clinics

Based on Lean management principles,

Influx's Workflow software brings a wide range of diagnostic imaging devices—echocardiogram, EKG, Holter, stress, nuclear, vascular and more – into a single paperless and efficient workflow.

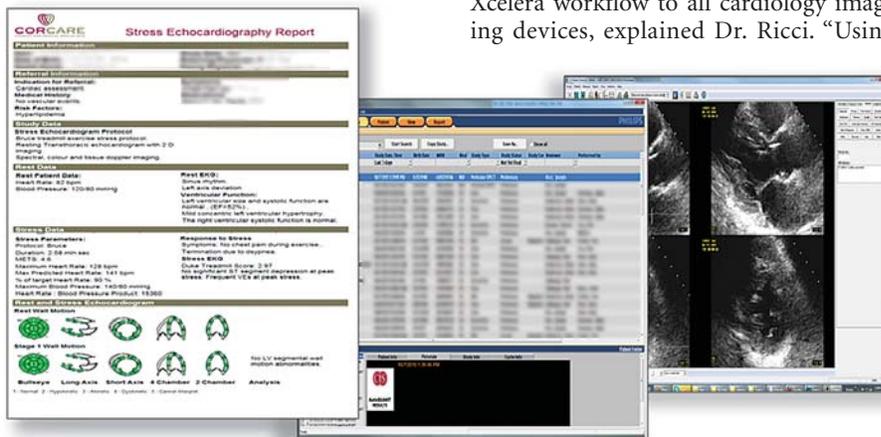
"It used to take us about a week and six staff to get a full diagnostic report back to the referring physician. With Influx, working with one technician, we can complete the test and have a report ready for the referring doctor in less than one hour," he added.

Two major factors inspired Dr. Ricci to

adopt a Philip's Xcelera system for echocardiograms.

"We recognized very early on that Xcelera created a remarkably lean workflow – but it was designed to work only for echocardiograms. Our research showed us that no vendor offered what we really wanted: a unified workflow solution that could be used with all cardiac modalities. So we developed a solution ourselves, based on Lean management principles, that extended the capabilities of Xcelera."

Influx is middleware that extends the Xcelera workflow to all cardiology imaging devices, explained Dr. Ricci. "Using



develop the solution. In his hospital and office-based practice, he worked with Lean management methods and gained great respect for workflows that focused on efficiency by reducing wasteful steps and unnecessary waits. It was a fortunate coincidence that his office also became an early

DICOM technology, we transfer images and measurement data from various cardiology imaging devices into the Influx workflow. The solution includes a report viewer and a very efficient, structured reporting tool to generate reports. Cardiologists can view all the different studies at

a single workstation, analyze them on-screen, and create consistent reports without transferring any paper.”

Once the cardiologist completes the report, reports are stored electronically and they can be printed, sent to an EMR and transmitted by digital fax with the office admin system.

Influx has been implemented, tested and refined in recent years at CorCare’s three clinics across the Greater Toronto Area and at four hospitals and clinics, including Calgary’s Total Cardiology clinic and Toronto’s St. Michael’s Hospital.

Learning to use Influx wasn’t difficult, says Dr. Paul Galiwango, a Toronto-based cardiologist who has been using Influx for over a year. “It didn’t take long to adapt to it. Instead of dictating a study, we input our findings ourselves. We developed some templates for recurring elements so the actual amount of typing we do is minimal. And there’s little eyestrain, since you’re mostly looking at images on-screen, not text, so the medium lends itself well to that.”

The biggest beneficiaries of Influx’s improved workflow are patients, added Dr. Galiwango.

“Tests go back very quickly to the referring doc, which is much better for patient care. If there are any abnormal results, we’ll know within 24 hours and can start treatment right away.”

Influx can dramatically boost the number of patients a cardiology practice can

handle, said Dr. Ricci. “After a full year of implementation at CorCare, we were able to improve our workflow to the point where we could handle 30 percent more patients. Cardiologists who used the system were more focused and efficient, with much greater throughput. In higher volume practices with waiting lists, you can produce more high-quality reports with fewer errors and complaints.”

Integrating and digitizing the workflow results in real savings in many other

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areas. The reports can be sent instantly, via computers, to the referring doctors, which reduces administrative costs and overhead. Dictation and transcription are not needed, as they can be replaced with structured reporting tools and advanced templates, so those costs are eliminated as well.

“We reduced our non-technical support staff by 20 percent,” said Dr. Ricci. “More importantly, our imaging technicians can use their time more efficiently on patient imaging, with less time wasted on processing paper.

“Cost savings in our first full year showed an immediate saving of over

\$100,000, which we were able to reinvest in newer technologies, staff training and increasing our technical staff.”

Cardiology clinics can recoup the costs of acquiring the system in about 18 months, he said. “In a large institution with seven or eight imaging modalities and multiple machines, the return on investment will be substantially more because the impact on efficiency is larger.”

Dr. Ricci believes there’s a big unmet demand for a solution that integrates existing equipment in cardiology. To this end, Influx is vendor-agnostic and will work with virtually any diagnostic imaging equipment. “However, at present clinics do need to have Xcelera to implement the full solution. But in the future, we plan to add an interface that will allow Influx to work with other PACS systems as well.”

The Influx Workflow solution can be extending beyond cardiac imaging, said Dr. Ricci. Influx’s developers are working with the respiratory department at St. Michael’s Hospital to modify the system.

“St. Michael’s approached us about using Influx to manage their multiple pulmonary function testing requirements, because there’s no product with Influx’s capabilities, and the workflow for pulmonary function testing is very similar. Because of the work we’ve done with them, we’ve fine-tuned the new respiratory product, and it will be available for distribution at the end of 2015.”

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