

CANADIAN Healthcare Technology

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DI departments could benefit by deploying automated analytics systems

Jeff Vachon is President of Biologics Analytics Inc., a Canadian leader in the development of business intelligence (BI) and analytics systems for Diagnostic Imaging departments. The company's claim to fame is that it has produced an "agnostic" solution that connects to all and any devices and databases, presenting the data in real-time and in an easy-to-use format. Biologics has implementations across Canada and the US, from single hospitals to complete provincial implementations. Canadian Healthcare Technology editor Jerry Zeidenberg interviewed Jeff Vachon about the current environment for BI and analytics systems.

CHT: Jeff, what is the state of business intelligence and analytics in hospital DI departments today?

Vachon: Every Canadian hospital today does perform some form of analytics. Unfortunately, most are still capturing data manually from different systems – PACS, RIS and EHR – and consolidating the data into spreadsheets to extract the data required for reporting. This process is very labour-intensive. You'd be surprised how many systems they're trying to pull data from. And by the time it reaches management, it's often out of date.

CHT: What should a BI system in a DI department look like? What should it consist of?

Vachon: It all starts with the ability to capture data and put it into a usable and structured database. But the data capture should be automatic, and to do this, you must be able to handle HL7, DICOM and XML data coming from multiple contributing IS systems. That will give you a view of the entire patient workflow and

operational performance of the department. Once you have it in a database, data utilization can continue to evolve, from BI to Machine Learning and AI applications.

CHT: So, we're just in the initial stages of using analytics in DI departments. Is the market growing?

Vachon: It's expected to grow quite fast. The global healthcare analytics market is expected to reach \$18.7 billion by 2020, with AI in medical imaging to exceed \$2 billion 2023. The demand is growing now for more rigorous data reporting, with DI departments and entire hospitals trying to figure out how to do better. They're relying on data to improve the effectiveness of operations and care. And the better the data, the more up-to-date it is, the better you can make changes on the fly and respond immediately to the challenges of running a large department.

CHT: Are people a little in awe of analytics and AI? Do they think they'll need skills that they don't have?

Vachon: To be successful, an analytics system has to democratize the data so that everyone is able to understand it. It's hard to believe, but in many DI departments, there are no automated analytics systems. Instead, they're making decisions based on gut feel or out-dated information. That's a problem for medical imaging, which is one of the largest and most expensive departments within a hospital. Analytics should be available for all of the management team from the charge tech monitoring specific metrics for their own modality specialty, to the imaging director and chief of radiology looking for operational metrics. The growth of data is also spawning a new

specialty profession, that of the imaging informatics specialist, focusing on managing imaging data to assist the management team with sophisticated analysis, routine reporting and informed decision-making.

CHT: Once you've got the data flows and database, what do you do with it all?

Vachon: Usually, you've got a problem in mind, whether it's patient workflow issues across the department, or with a certain clinical specialty or modality. If you've got



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the data, in graphic or tabular form, you can quickly see where possible bottlenecks are and brainstorm solutions about how to fix them. It can help with scheduling, too. If you see, for example, that historically, on a particular weekend there are greater demands from the ED and you need more CT exams,

you can staff appropriately with the right number of technologists and radiologists to ensure appropriate wait times are met.

CHT: Are there sites in Canada where your technology has helped DI departments?

Vachon: Yes, we've got installations at various sites including Halton Healthcare, Peterborough Regional Health Science Centre, North York General Hospital, the PHSA in BC, and the whole province of Saskatchewan. We also have many sites across the US in use today. At Halton Health, for example, the solution has been in place for several years now. It delivers routine reports to stakeholders and is an important tool for solving ad hoc questions that arise across the imaging service.