



## xwave brings Electronic Medical Record and Practice Management software to Canadian physicians.

Since their initial development in 1972 by Indiana University's Regenstreif Institute, electronic medical records have made an increasingly compelling case for primary-care adoption. Research indicates, for example, that physicians spend about 25 percent of an average (7 to 10 minutes) patient encounter documenting it. The rate of loss for paper charts, meanwhile, is around 11 percent—while EMRs have been shown to reduce that figure to less than one percent. Storage of paper charts can take up hundreds of square feet of office space; an EMR requires about 20 square feet. And retrieval of paper charts typically takes about a minute; with an EMR, it takes two seconds.

However, though this kind of supporting evidence continues to mount—making the benefits to both physicians and patients increasingly apparent—feasibility and usability have remained significant barriers to adoption, despite the eagerness of many physicians to adopt.

“Everyday, probably 15 to 20 times a day, I come across processes that would benefit from automation,” says Dr. David Grant, a GP in Kitchener, Ontario practicing for 23 years. Grant is one of 14 physicians in a local Health Service Organization (HSO) and, as a user of an older, relatively limited computer system, is looking to implement an EMR solution that offers more intuitive functionality, is easy to manage, and operates within an Ontario practice and billing framework. To that end, he and three of his colleagues are among a group of primary-care physicians currently adopting a new web-based EMR solution developed for the Canadian market by **xwave**.

The solution is a clinical management system offered in an application service provider format. As an ASP, the solution offers full EMR and PM (practice management) capabilities via a pay-by-month web service: **xwave** looks after all management and maintenance, and provides necessary

training and support as well as upgrades that ensure the technology complies with funding requirements and medical and legislative guidelines. There are no in-office servers, and the need for on-site technical competency is lessened considerably. Patient data is stored in two redundant data centres operated by Smart Systems for Health Agency (SSHA); the data itself—patient records—remains the property of the physicians.

“The fact that it's Internet-based is an important feature,” says David Grant. He mentions a recent case in which a local medical facility was broken into and servers containing patient data were stolen. “I feel more confident that the backup is handled by secure data centres.”

The only ASP solution of its kind in Ontario, the CMS has at its heart, GE Healthcare's Centricity® Physician Office software; widely-adopted in the U.S., Centricity is currently in use there by tens of thousands of clinicians. The **xwave** system marks the technology's introduction into Canada, with the Ontario model being launched and a model for other provinces under development.

Centricity Physician Office comprises EMR and PM components that together automate and connect a comprehensive range of clinical and administrative processes. On the clinical side, features include cumulative patient profiles; full integration with hospitals and labs; and point-of-care support in the form of direct-feed diagnostic readings, drug-interaction warnings, special patient-history alerts, and encounter forms that speed up documentation of patient visits.

From an administrative perspective, the CMS-ASP handles all billing and reporting, electronic claims and remittance, inventory control, and multi-physician/multi-site scheduling. As well as improving external networking capabilities, the solution streamlines inter-office workflow, automating communication and chart-transfers between front desk and back office. Multiple users can work on the system simultaneously, even entering information concurrently on the same screen. Access to the system, initiated by a user ID and password, is determined by the physician(s) and can be set generally according to office role, or specifically on an individual need-to-know basis.

This degree of connectivity, encompassing anytime-anywhere access to complete patient records, is proving a significant motivator for adopting the solution—especially given the proliferation of Family Health Networks (FHNs) and rotational on-call support: gaining quick, remote access to the records of other doctors' patients has become increasingly important.

Dr. Mark Wilkinson, a GP in Stratford, Ontario also adopting the solution, cites specific features such as the ability to enter information through various access points. He also likes the comprehensiveness of the templated forms. “Because of the maturity of the Centricity product,” he says (the initial EMR software was launched in 1985), “there's a wide range of forms that speed up the routine and time-consuming administrative aspects of patient encounters. Previously, there weren't many products that offered this much variety.”

Overall, Wilkinson says, the two primary factors that have prompted him to choose the **xwave** solution over others is the strength of the application and, once again, the fact that it's an ASP. “A well-implemented ASP is probably the best solution for most



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**Gary Folker**  
Managing Director, CMS  
**xwave**

doctors,” he says. Similar to Kitchener's David Grant, Wilkinson points to the ASP format as offering superior data protection in comparison with local solutions. “Patient records are more secure in this model than they would generally be in a local solution,” he says. He points out that though the system is Internet-based, it's offered through a managed virtual private network.”

Wilkinson might be considered an early adopter of EMR technology: he's been using it since 1998 and hasn't had paper charts in his office since 2000. In his experience, the **xwave** CMS-ASP is “extremely easy to navigate” and offers “huge depth.” He admits he'll need a bit of practice before fully leveraging that depth, offering this analogy as an explanation: “If you simply want to enter text into a computer, you can use Microsoft® Word without too much training. But if, say, you want to do a mail-merge, your knowledge of the application needs to be a little more involved.”

“Staff need to be somewhat proficient on Windows, and they need to be able to type,” says Dr. David Grant. His own staff have been, until now, mainly non-computer users, while he himself has used a 15-year-old system primarily for patient demographics and billing.

He acknowledges that migration to a new system is challenging. “For the first one or two weeks, it is going to disrupt a practice in terms of the physician-staff-patient relationship,” he says. “After that, however, it will improve that relationship.” He points to benefits such as being able to show patients graphical renderings of results that will reinforce the need to take preventative or medical action. He also makes reference to the protocols provided around procedures and tests. And he mentions improvement of record legibility. “Legibility is a problem,” he says.

Dr. Wendy Graham, a GP in North Bay for 23 years and another participant in the **xwave** pilot, also points to legibility as being an important benefit of EMR adoption, particularly in context of guidelines set down by the College of Physicians and Surgeons of Ontario (CPSO); these guidelines legally require physicians to maintain clear, readable medical records.

Dr. Mark Wilkinson says, “There's no comparison in the quality of data-capture on paper versus an electronic system.” He himself has undergone two CPSO peer reviews—random audits of his medical records by a CPSO physician. The first review took place in 1987, a few years after Wilkinson started practicing, and the second one in 2004, after he'd gone 'paperless'. The second review focused primarily on EMR education, as the physician conducting it

worked in a paper-based office. In offices with EMRs, Wilkinson says, there aren't often issues regarding charting and completeness of records. Though he adds, “The auditor couldn't give me a perfect score because I wasn't measuring the circumference of newborn babies' heads—my existing application doesn't have the capability to do that.” **xwave's** CMS-ASP, he says, will provide that functionality.

“There aren't too many gaps in this solution,” says Tom Neufelder of GE Healthcare. As Engineering General Manager, Centricity Physician Office, Neufelder guides the ongoing evolution of Centricity in the U.S. and has served as GE's technical lead in solution development with **xwave**. In explaining the differentiating qualities of Centricity, he cites its maturity, completeness, and the fact that it can be customized—most notably the electronic forms—to suit a particular physician's practice. Other pertinent features include a standardized

data model—enabling effective information aggregation and population analysis—and robust HL7 (Health Level 7) capabilities: these support high degrees of functionality—direct feeds to hospitals, for example—that other systems often don't.

Perhaps the one overriding benefit of this kind of EMR technology, says Neufelder, is the ability to maintain standard-of-care guidelines that are frequently complex, and that require continual checking and cross-referencing that paper-based administration doesn't easily support. He offers an example: “Diabetes is prevalent and expensive to treat—but you can take steps to manage it and slow its progression. The tools in Centricity help physicians practice the diligence and consistency needed to take those steps.”

Neufelder, who continues to collaborate closely with **xwave** in the delivery of the CMS-ASP, offers considerable praise for the company's experience and professionalism in building the solution, particularly given the complexities of adapting the software to a Canadian market, and the scope of its implementation. “Though we have large groups of users on single applications—New York University, for example—the Ontario model represents the largest potential user-group to date.”

“The EMR opportunity with **xwave's** product is so robust that it will entirely change the way we practice medicine.”

*Dr. Wendy Graham  
Lead Physician  
Blue Sky Family Health Team  
North Bay, Ontario*



*“You can talk all you want about healthcare efficiency; until you have functional, robust IT, it's not going to happen. At this point, I'd rather leave my stethoscope in the car than my EMR.”*

*Dr. Mark Wilkinson  
General Practitioner Stratford, ON*

**xwave** draws from more than 30 years of building and supporting healthcare solutions in a wide variety of applications. The company provides consulting and outsourcing support for organizations such as Atlantic Health Sciences Corporation, the Nova Scotia Department of Health, and the Nurses Association of New Brunswick. It has designed medical-claims systems for the Government of Newfoundland and Labrador and, south of the border, has provided web development services to facilities such as MaineGeneral Health.

Gary Folker, **xwave**'s Managing Director of the Clinical Management System is matter-of-fact about what primary-care physicians want from an EMR solution: “They're looking to reclaim space, lower costs, improve service delivery—ultimately in an effort to deliver better care. As an ASP solution, Centricity Physician Office provides a feasible means of achieving those goals.”

Thus while the doctors adopting the solution clearly recognize the hurdles of making the transition, they say the benefits are worth the effort. Dr. Mark Wilkinson for one is adamant about the need for solutions such as the CMS-ASP.

“You can talk all you want about healthcare efficiency; until you have functional, robust IT, it's not going to happen.” He adds, “At this point, I'd rather leave my stethoscope in the car than my EMR.”

## About xwave

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**xwave** is a business solutions provider with 1500 professionals in locations across North America and in Europe. **xwave** provides end-to-end solutions from systems integration and software engineering, right through to infrastructure services and product fulfillment.

**xwave** is a subsidiary of Aliant Inc., a \$3.7 billion dollar telecommunications carrier in Atlantic Canada. Together the two companies provide industry-leading telecommunication services, information technology solutions and knowledge-services applications.

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