

Andrew Szende and the Development of the electronic Child Health Network (eCHN)

Morgan Holmes

In 2007, Canada Health Infoway surveyed Canadians' attitudes toward electronic health records (EHRs). Among the significant findings was the fact that 88% of respondents endorsed "the idea" of EHRs. The main reasons for their support included a belief that EHRs would accelerate and improve the accuracy of diagnoses as well as reduce prescription errors (Canada Health Infoway 2007). "EHRs benefit patients by improving health care and decreasing risks; lowering the chance of having duplicate, invasive or expensive tests; and shortening wait times" (Canada Health Infoway n.d.). By 2016, Infoway aims to satisfy the public's desire and have EHRs available for all Canadians, regardless of their age or location (Canada Health Infoway 2009).

As any person who has tuned into the news over the last little while knows, transforming EHRs into a reality for everyone in Canada is a tall order, one that sometimes trips over financial, technical and organizational hurdles. Those challenges go a long way to explaining why the healthcare community and the media alike were so intrigued by the 10th anniversary – celebrated in 2009 – of Canada's first province-wide integrated electronic patient record system: Ontario's electronic Child Health Network (eCHN) (www.echn.ca).

eCHN's secure, private network enables authorized healthcare professionals to access – through a desktop or portable computer terminal – their patients' medical data drawn from many different sources. If, for example, a child arrives in an emergency room in Ottawa, the attending pediatrician can quickly discover whether her patient has any medical issues that might impinge on his care. If a general practitioner locum who works in Timmins one day a month wants to review a patient's complete medical history, including radiographs and laboratory tests taken in Sudbury a year earlier, he can do so from the convenience of his handheld computer. Meanwhile, it takes just a few minutes for a nurse at Toronto's Bloorview Kids Rehab to review the charts of a "new consult" outpatient who has been referred to her Brain Injury Rehab program by a physician in Thunder Bay.



Andrew Szende

Photo credit: Robert Teteruck

"The overarching goal of eCHN is to provide an information database that functions as a decision-support to the circle of care for each individual patient."

In order to better understand how eCHN began and grew, Longwoods recently interviewed Andrew Szende, the organization's president and chief executive officer (CEO). This article is the second profile in the Longwoods E-health Library, the first having focused on Dr. Edward Brown and the Ontario Telemedicine Network (OTN) (Holmes and Hart 2009). Szende's account of eCHN's evolution reinforces many of Dr. Brown's observations on OTN's development. In this article on eCHN, you will find a particularly clear picture of the combination of the human, technological and strategic elements that are required for success in the e-health domain.

Phase One: 1997–1998

“The overarching goal of eCHN is to provide an information database that functions as a decision-support to the circle of care for each individual patient.” That’s how Szende describes the robust network that, by the dawn of 2010, merged and managed the EHRs of over 1.5 million Ontario children (that’s a growth of 300,000 individuals over the previous nine months).

Such success did not, of course, happen overnight. In fact, while eCHN was officially founded in 1999, the preliminary work began two years earlier.

eCHN by the Numbers*

- Database records of over 1.5 million children
- More than 100 hospital sites
- All 14 of Ontario’s community care access centres
- All 20 of Ontario’s children’s treatment centres
- Approximately 7,600 clinician users, including physicians, nurses, technicians and therapists
- 850 physicians who connect from their offices

*Data as of January 2010.

Sources: Andrew Szende and the electronic Child Health Network (n.d.).

In 1997, the Health Services Restructuring Commission of the Metropolitan Toronto District Health Council published a report that recommended the formation of a Child Health Network that would reorganize paediatric care in the council’s jurisdiction. Szende recalls that a key component of the proposed network was “an electronic enabler that would allow medical data to travel with kids among all the sites at which they receive care.”

The commission advised that The Hospital for Sick Children (SickKids) should take the lead in organizing the network. Its goal was to foster linkages among members that would support three outcomes:

- Swift access to patient information
- Elimination of duplication (e.g., of laboratory tests)
- Reduction in the requirement to transfer patient information physically between healthcare institutions.

SickKids acted quickly on this recommendation. Beginning in fall 1997 and continuing for just over a year, SickKids and a team of outside consultants convened planning meetings with institutions – including Toronto East General Hospital, St. Joseph’s Health Centre and Scarborough Centenary Hospital – providing paediatric care across the Greater Toronto Area.

One of this initiative’s main proponents was Brendan

Gibney, SickKids’ vice-president of information and diagnostic services. In November 1998, Szende received a tantalizing call from Gibney: “He asked me point blank whether I would be willing to be the CEO of a brand-new electronic health network. Gibney said, ‘We’ve figured out what the network should do. Now we want you to make it happen.’”

At the time, Szende – who had enjoyed previous careers as a journalist with the *Toronto Star* and as a senior bureaucrat with the Government of Ontario – had just completed a project that saw him acting as a consultant on the creation of the Rouge Valley Health System. With that project completed, the time was right for Szende to consider a new challenge.

“Brendan had actually mentioned to me the potential of what we now call ‘EHRs’ even before the Health Services Restructuring Commission released its report,” Szende recalls. “He wanted to achieve *real* change in paediatric healthcare. And because he was a true visionary, as well as the most strategic thinker I’ve ever met, Brendan could see the potential of EHRs long before any levels of government got involved. He saw the difference they could make to the lives of kids.”

Before taking the plunge, in November/December 1998, Szende joined Gibney on research field trips to two sites in the United States. In Dayton, Ohio, they learned about the progress a group of local hospitals had made in setting up an early version of EHRs with the help of IBM, which, Szende notes, “were real pioneers in the EHR field.” A little further south, in St. Louis, Missouri, the pair also took in a more advanced initiative that involved integrating patient data derived from several of that city’s hospitals, again working with IBM. “Neither of these two aggregating initiatives was focused on paediatrics. But these two trips,” Szende says, “plus Gibney’s knowledge and enthusiasm, persuaded me that I wanted to be part of the similar exciting undertaking planned for Ontario.”

Phase Two: 1999 – Present

Szende officially joined the newly minted eCHN as its president and CEO on January 2, 1999. With an initial \$7.5 million in funding from the Ontario Ministry of Health and Long-Term Care (MOHLTC) and matching funds from SickKids, Szende and his team – consisting of technology experts from both SickKids and IBM – developed the burgeoning network. “In that pre-launch stage,” Szende notes, “we devoted a lot of attention to testing the system – *ad nauseam* – to see how it would accommodate such things as multiple concurrent users and the integration of new hospitals into eCHN. We also needed to ensure that units of measure as well as nomenclature for diagnostic tests would be consistent and comparable. In fact, testing to ensure new data are uncorrupted is still an important task for us every time a new hospital comes on board.”

While there was no giant switch for Szende to throw, eCHN “went live for real clinical use” on October 30, 2000, with a

handful of pilot physicians – including Drs. Saul Greenberg, Mark Feldman and Alan Hudak – and five healthcare organizations:

- SickKids, Toronto
- St. Joseph's Health Centre, Toronto
- Scarborough Centenary Hospital, Scarborough
- Orillia Soldiers' Memorial Hospital, Orillia
- St. Elizabeth Health Care, Markham

It did not take long for eCHN to begin to gain a reputation for making a positive difference for patients and healthcare providers. By 2002, the network had grown to 11 sites; as Szende points out, "Our long-term goal was eventual expansion into every region of the province."

Recognizing the benefits of eCHN for remote communities, the Ontario government decided to fund the network's expansion to Northern Ontario in 2003. To accomplish this North Project, eCHN received \$14.5 million: \$3 million from the Northern Ontario Heritage Fund and \$11.5 million from the MOHLTC. "So, we packed our bags and headed north to proactively invite new members," Szende recalls. The fruits of their labours were plentiful: in 2003, several northern community care access centres joined eCHN, along with several hospitals, including facilities in Sudbury, Sault Ste-Marie, North Bay, Timmins and Thunder Bay. The Children's Hospital of Eastern Ontario, located in Ottawa, also joined that year.

Success Essentials

There are no magic bullets in the EHR domain. But the eCHN story shines a light on several vital success factors:

- Responsiveness to users' needs, desires and recommendations
- A focus on enabling better care for patients
- An emphasis on integrating physicians' and hospitals' existing computer equipment, rather than necessitating expensive new investments
- A highly skilled team that is utterly dedicated and that has a solid grasp of the interface between healthcare and technology
- A collegial relationship with funders/government, hospital leaders and, most importantly, physicians and other healthcare providers.

Today, eCHN employs between 40 and 50 people, whose main job is the significant amount of maintenance work that is required to keep up to date with all changes made to the

data by the originating hospitals. Szende and his team collaborate closely with physicians and other healthcare providers, governments and hospital administrators. The network is also now entirely funded by MOHLTC. For such a wide-ranging and continually expanding organization, it is perhaps a little surprising to learn that the network has cost Ontario taxpayers only \$60 million to date.

Towards the Future

When he reflects on eCHN's successful development, Szende characterizes the network's relatively "unusual" approach to organizational development as an "iterative" or "organic" methodology. He points in particular to the shaping role of "dialogue – especially with our physicians. We ask doctors what they want, and then we try to give it to them." Over the past couple of years, for example, Szende and his colleagues have been hearing from physicians that eCHN ought to include specific tools for helping them better manage their patients who have type 1 diabetes. "The need is real," Szende comments, "and we would like very much to answer it through enhanced functionality."

While eCHN includes members in all corners of the province, including all the major paediatric centres, there remain some institutional "gaps" that Szende and his team definitely want to address. eCHN's popularity with healthcare providers around the province has led to a waiting list of hospitals that have signed up to join the network. For instance, prospective member hospitals in southwestern Ontario and in York Region are waiting for eCHN to receive government funding to allow them to join the network.

"Existing physician members are one of our best marketing vehicles for recruiting their colleagues because they speak so clearly about the benefits of membership."

"We're also always interested in adding more physicians to the eCHN roster." In fact, Szende goes on to note that "existing physician members are one of our best marketing vehicles for recruiting their colleagues because they speak so clearly about the benefits of membership." One of the incentives to come on deck, too, is the fact that all a physician requires is a computer and Internet access. "There's no cost for them to join, and we set up their systems and individually train them in how to use eCHN," notes Szende; "and our help desk provides technical support if they have any questions."

With whatever specific innovations eCHN undertakes, as he looks to eCHN's future Szende believes it will be critical for

the network to maintain its patient-centred orientation: “We’re here to help patients *get* better service by enabling physicians and others in patients’ circles of care to *give* better service. Those are our key measures of success.” And, when he gazes ahead with his widest-angle lens, Szende hopes that the eCHN model of care will be both “inspirational and practically useful” for the development of an EHR system that benefits all 13 million Ontarians, regardless of their age. **HQ**

About the Author

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