



- BARBARA KERMODE-SCOTT -

Ontario's Group Health Centre Exploits IT to Improve Patient Care...

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The physicians, health professionals and staff at a large multi-disciplinary, multi-specialty health care facility in Ontario share a tremendous pride in their centre. They're allowed. The Group Health Centre (GHC) in Sault Ste. Marie, built in 1963, is a special place where innovation and excellence in health care, research, and health promotion thrive. GHC is a leader in evidence-based medicine. The facility is also unusually large. Over 240 health care providers, including 60 physicians in the Algoma District Medical Group, work in this award-winning facility. GHC serves almost 50,000 rostered patients (more than 50 per cent of Sault Ste. Marie's population and the surrounding population of Algoma).

During a visit to GHC last year, Roy Romanow, Commissioner of the Future of Health Care in Canada, described the facility as *"Canada's best kept secret"* and its integrated health care system as *"the most advanced seen to date"*.

Improving quality of care... The clinicians' point of view

Group Health Centre family physicians are practicing excellent primary care in fairly new ways. For example, they work in teams with other allied health professionals. They collaborate closely with specialist colleagues, and they use electronic medical records (EMR) instead of paper charts. Many Canadian governments are hoping to persuade more community physicians to follow their suit.

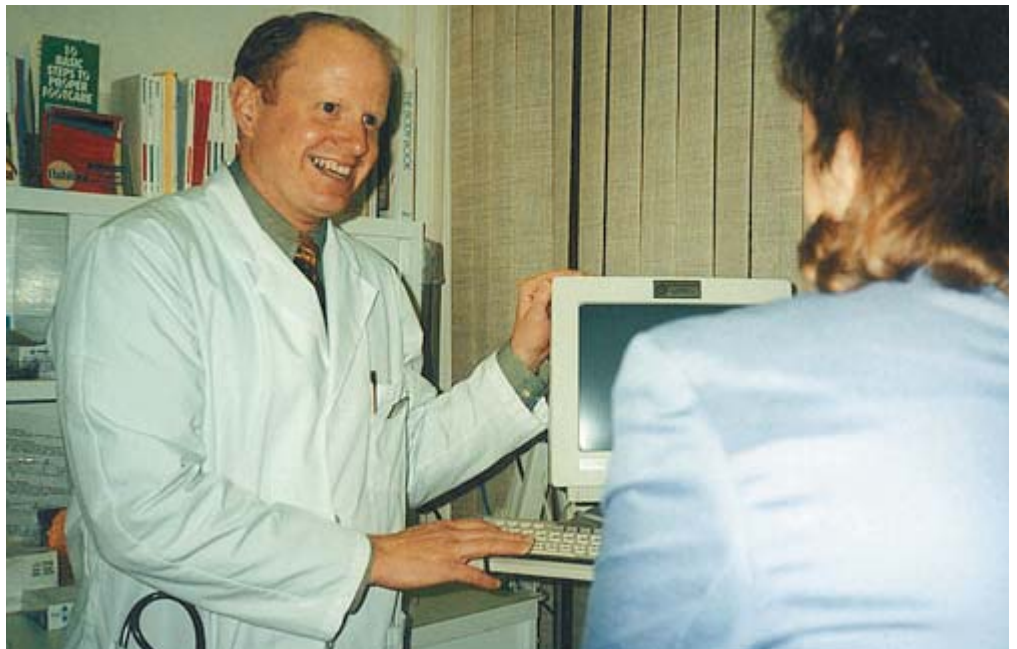
Both the clinical and administrative staffs at GHC are proud of the Centre's EMR system, a fully functioning, integrated EMR used by 242 health care providers simultaneously. Implemented in October 1997, theirs is also the largest primary care EMR system in Canada. It has certainly provided opportunities to improve quality of care, and provides endless possibilities to practice evidence-based medicine. It also seems, in some instances, to be leading to improved outcomes.

"A jewel in our crown is our electronic medical record system... We believe the M-R [Medical Record] is the key tool in improving health outcomes for our patients... and it saves time and money."

GROUP HEALTH CENTRE SAULT STE. MARIE.
PRESENTATION AT SUDBURY PUBLIC HEARING.

(As highlighted in Romanow's final report "Building Values,
The Future of Health Care in Canada", Page 78.)

"This is a great place to work," says family physician Dr. Lewis O'Brien, a passionate champion of the EMR. "The EMR has allowed me to deliver a much higher quality of care... When I see a patient I have access instantaneously to so much information. I can access lab results, consultants' reports, and an updated and ongoing problem list. I can be much more thorough in managing the patient... I think it provides a better outcome for the patient... There is a value there that certainly we couldn't offer before."



Dr. Lewis O'Brien



Dr. David Crookston

Dr. O'Brien enjoys the fact that GHC's on-site lab is linked to the EMR system.

"The lab dumps the results into the system about every hour. It's just incredible," he says. "When I get a lab result back, one keystroke takes me to the patient's chart and my last note. With another keystroke I can message my nurse what to do... The EMR allows you to do more in the time that you have."

The EMR is a great teaching tool as well, he suggests. Patients love being able to look at their chart and receive printouts of their test results or educational materials.

Dr. David Crookston, like Dr. O'Brien, has practiced family medicine with the Algoma District Medical Group for about 17 years. Dr. Crookston also believes that the EMR system at GHC offers great opportunities to improve quality of care. The EMR allows the average family doctor in a typical doctor-patient interview to provide the best available care, he suggests.

"I think we all feel the EMR has improved quality of care," he says. "We do more of the right thing at the right time. It's very satisfying... I have practically instant access to important information. It's incredible. I can spend more time with the patient because the information is there and I'm not wasting time looking for it. I'm more satisfied with the level of care I give."

Dr. Crookston doesn't feel he suddenly had extra time or made more money when GHC implemented the EMR. Initially, archiving the paper charts and learning how to use the EMR actually took more time.

"Still, it's been worth it. I'd do it all over again," he says. "Our primary goal is to deliver the best quality of care. That to me is the most important aspect of what we do. If I do a better job with the patient then any other hassles are worth it."

The EMR has also enabled clinicians to consider the patient chart as much more than a way of simply "warehousing" information or documenting isolated encounters, explains Dr. Crookston. The EMR system at GHC is a huge database of information that allows

clinicians to improve the quality of care not only for an individual patient but also for groups of patients (e.g. patients with diabetes). The EMR has also made it much easier for a physician to sign out the care of his or her patients to a colleague. If a patient shows up with an urgent problem the on-call physician can access the patient's complete medical history whether the individual is their patient or not.

"You can access the same comprehensive and legible information as for your own patient," he explains. "It's much simpler to cover one another's practice because of the legibility of the record, and because of the way the information is stored. It's easier for us to provide care as a group of physicians now."

Improving quality of care— A manager's point of view

The Group Health Centre is certainly a leading edge organization, agrees Group Health Association CEO David Murray.

"Our experiences with the EMR have taken us to the next level of care," says Murray. "The EMR is a very proactive tool... We can contact patients about appointments and be proactive with their treatment instead of waiting for them to become really sick and come see us... The EMR leaves the paper world in the dust. It's a whole different mindset."

GHC has been very fortunate in having the support of an innovative medical group, according to Murray. Medical leadership is critical to the success of an EMR project, he believes.

"The clinicians made a huge commitment to make this work. The administration made the commitment of reserves to implement the EMR, but the clinical team gave their time and energy... That's been an amazing success story in itself."



David Murray, CEO Group Health Association

Improving care for patients with diabetes...

The EMR has allowed the physicians and providers at GHC to do things that they were doing only with great difficulty previously, such as chronic disease management, research and health promotion initiatives, according to Dr. Crookston. For instance, the GHC team has developed disease site registries, and new research studies in diabetes, congestive heart failure and osteoporosis.

In 1999, the Health Promotion Initiative for Patients with Diabetes (HPID) Study commenced at GHC. Co-sponsored by the Ontario Ministry of Health, the Algoma District Medical Group and the Sault Ste. Marie & District Group Health Association, this study aims to help adults with diabetes maintain good health and reduce their risks of developing diabetes complications.

The HPID Study, led by internist Dr. Hui Lee, has identified GHC patients with diabetes for referral to an interdisciplinary health team that coordinates their ongoing care. Dr. Lee and his colleagues also developed an electronic template for diabetes care based on the Canadian Medical Association/Canadian Diabetes Association clinical practice guideline for the treatment of patients with diabetes.



The Group Health Centre, Sault Ste. Marie

“We can identify every diabetic, and put a template in every diabetic’s chart,” explains Dr. O’Brien. “When I open the chart, the template comes up and reminds me in a very short period of time the essential things I need to do with that patient, such as check their foot exam is done, their lipids are up to date, and ensure their glycosylated hemoglobin is appropriate.”

The charts of patients with diabetes are also audited annually to ensure these individuals are receiving the treatments they need to control their condition and avoid complications.

“Diabetes is the proverbial case where an ounce of prevention is worth a pound of cure,” suggests Murray. “We need to manage diabetes better, and to help patients self-manage diabetes better. We feel that we really will achieve better health outcomes with these patients.”

GHC clinicians are also participating in the second Computerization of Medical Practices for the Enhancement of Therapeutic Effectiveness (COMPETE) research study. COMPETE II aims to develop an effective, integrated clinical decision-support tool for patients and health care providers. Researchers are developing and testing a diabetes tracker as a model for evidence-based chronic disease management.

Improving care for patients with congestive heart failure

Congestive heart failure (CHF) is one of the major causes for readmission to hospital. CHF patients are usually on very complex medication regimens. They often have trouble maintaining these regimens upon discharge.

GHC is currently undertaking a research project to determine if CHF readmissions can be reduced if better care is provided CHF patients in the community. A GHC nurse visits every CHF patient following their discharge from hospital. The nurse is able to check the medications that have been prescribed for the patient as these are all listed on the EMR. The nurse helps make sure the patient follows the correct regimen.

“We’re all connected so we each have the patient’s information,” explains Dr. O’Brien. “We try to preemptively manage the patient, to keep them out of trouble before they have problems and need to be readmitted to hospital. We’ve had an amazing decrease in readmissions... We feel much more comfortable about the kind of care that we’re providing these patients. We’re really taking primary care to the next level.”

Choosing a vendor...

When GHC had paper charts, the physicians and providers dreamed of having a legible common record that was accessible and wouldn’t go missing. GHC representatives researched various vendors and, in 1995, found a vendor that could provide what was needed. CLINICARE Corporation, a hardware and software provider in operation since 1984, had installations and experience with similar, albeit smaller centres. They could also supply a server platform able to handle the large number of concurrent users at GHC. CLINICARE was contracted to install a suitable server together with their “ChartCare” computer-based patient records (CPR) software.

“CLINICARE had a solution that had been used in group practices for some time that we thought we could adapt to a large clinic,” says Dr. O’Brien. “We worked with them for about two years, very much learning by the seat of our pants, and then put in the EMR system in 1997.”

The GHC EMR system includes:

- user definable templates
- interfaces with billing and scheduling applications
- ordering and receiving diagnostic lab and diagnostic imaging tests
- automated faxing
- patient handouts
- patient recall
- prescription writing with medication tracking
- chart notated messaging between providers and staff
- Physician Electronic Signature signoff
- electronic searches

These days the GHC team enjoys developing the EMR system so it can do more and more for them. For instance, CLINICARE is currently assisting GHC to pilot an automated “smart” template for diabetes care. When a provider opens a chart of a patient with diabetes, the template not only reminds the provider of appropriate care, but is smart enough to search the chart for patient’s most recent foot exam, blood pressure results, etc., and present that data in the template automatically.

The Group Health Centre is also replacing its workstations with PCs with windows-based software.

“You look at a problem, you find a way around it,” comments Dr. O’Brien. “You have some other problems, you look at ways that automation can help. Progress is only limited by one’s own creativity.”

“This is still a work in progress,” says Dr. Crookston. “No system is perfect. We’re making constant refinements to it. CLINICARE has been very helpful. You make a first guess at how you think it should be and then you modify as you go.”

During the last 5 years, GHC has probably invested over \$1 million on capital and operating costs for implementing and then redesigning their EMR system for 242 users. This large health care facility has also achieved substantial cost savings through warehousing its paper charts and cutting clerical staff.

Paper vs. electronic...

Before GHC introduced EMR, the management of paper charts was somewhat of a nightmare due to the size of the facility. About sixty thousand patient medical records took up tremendous storage space in a centralized chartroom. The Centre employed numerous staff to transcribe notes, file and pull records, and move the charts around the building. Paper files were easily misplaced. When a physician requested a chart, it could take days before it was tracked down and delivered. After the EMR was implemented, about 2,500 square feet of storage space was converted into offices for two family doctors, a pediatrician, a nurse practitioner and an anticoagulation clinic. Additional cost savings and system efficiencies were achieved through fewer medical tests being unnecessarily duplicated.

The Group Health Centre is so large that effective, efficient administration is crucial. The Centre’s computerized, centralized, appointment centre, for instance, receives over 2000 calls daily from patients wishing to book appointments with providers. Approximately 35,000 appointments are booked monthly.

From the administrative standpoint, there’s a much higher comfort level around the accuracy, reliability and timeliness of GHC’s medical records since the EMR was implemented, stresses Murray.

Size helps...

There’s no doubt that the unusual size of GHC also affords certain advantages that aren’t typically available to smaller clinics. For instance, GHC has an information technology (IT) department.

“Our IT people have been crucial,” suggests Dr. O’Brien. “We couldn’t have begun to do what we’re doing without them... If there is a problem, you need to be able to talk to somebody right away and get rolling again. Medical practice today is so busy that literally minutes count... Our system is operational over 99.9% of the time.”

Group Health Centre provides many services, including:

- primary care,
- specialist services (cardiology, anesthesia, surgery, dermatology, emergency medicine, internal medicine, geriatrics, nephrology, neurosurgery, obstetrics & gynecology, oncology, ophthalmology, psychiatry, sports medicine, pain and sleep disorders, and pediatrics),
- audiology,
- communication disorders,
- counseling,
- day and evening clinics,
- diagnostic imaging,
- employee assistance services,
- a family health worker program,
- immunizations,
- laboratory,
- nutrition services,
- phototherapy,
- physical therapy,
- chiroprody,
- psychometry,
- vision and eye care,
- nurse practitioner services
- women’s health

Security

GHC physicians access patient records where and when they need to, including from home, from nursing homes and hospitals. Authorized individuals have password protection to enter the system. There’s a zero tolerance policy in place for any breach of security and privacy.

“Security issues are of paramount importance,” stresses Murray. “We place an incredibly high priority on handling security well. The EMR is far more secure than a paper record. When someone carries around a paper chart you don’t know who’s handling it, who’s looking at it, or who’s photocopying it. We monitor who’s accessing the EMR so we know who’s been in and looked at the record, and who’s treating the patient.”

