



## CASE STUDY

**Client:** Atlantic Health Sciences Corporation  
**Industry:** Health Care Organization  
**Solution:** AnyWare Group's ROAM Technology

**Business Challenge:** Most newly diagnosed diabetics are less critical cases and, for these patients, clinic wait times can be 2 to 3 months. AHSC realized an interactive patient portal could help patients proactively change behaviour right away and reduce clinic visits.

### Background

Newly referred patients visiting Dr. John Dr. Dornan's diabetes clinic in Saint John, N.B., have options. Rather than coming into the endocrinologist's clinic for three days of intensive education to help manage their chronic disease, they can find all of the necessary information by simply connecting to Atlantic Health Science Corporation's (AHSC's) web portal from the comfort of home, office or café.

"We see more than 100 patients a month, 20 per cent of which are new referrals," says Dr. Dornan, chief of internal medicine at AHSC. "Those who require urgent care get to see a doctor quickly, but for less critical cases, the wait can be two to three months. We realized if patients were able to interact with our in-house clinicians at their convenience and be directed to appropriate educational websites, we could reduce clinic wait times considerably and provide faster, more efficient service to the entire patient population."

### ROAM Patient Portal Solution

Saint John-based AnyWare Group provides AHSC's interactive chronic disease management system through the ROAM Patient Portal. This system provides diabetic patients with tools to help proactively deal with their health without frequent clinic visits. The patients can securely access selected medical files and educational resources via Internet connection.

With these tools, they can find suitable treatments, specifically tailored to their needs. As they monitor their blood sugar and cholesterol levels, blood pressure, heart rate and other pertinent de-

tails, then upload the information to the hospital's web portal for analysis. The information is checked by AHSC's diabetes team, which provides feedback and alerts to patients and appropriate medical staff to any inconsistencies or reasons for following up.

"Many of our patients live hours away," says Dr. Dornan. "With a secure Internet connection, they don't have to be here physically; instead, we can refer them to web sites that deliver information about diet control and exercise. They can interact with physiotherapists, dieticians, pharmacists and other members of our team to find answers to very specific questions."

### Secure Remote Access

The portal scenario has been a natural extension of the hospital's secure remote access solution. Several years ago, AHSC faced what Dr. Dornan calls "a very large physician interaction problem."

AHSC is New Brunswick's largest accredited, regional, multi-facility health authority, comprising 13 hospitals and health centres and serving close to 200,000 people. While AHSC already had an up-to-date, progressive computing infrastructure in place, the problem was medical professionals working at off-site clinics, at home or on the road were unable to access the patient database to retrieve information, such as health records, X-rays or lab reports.

The information technology (IT) department tried various remote access methods over the years, but these proved expensive or cumbersome—or required significant changes to users' home computers to enable access.

"The 'hiccup' was Internet security," says Dr. Dornan. "We needed technology that respected the security and functionality requirements we had set up in our institution. That was our biggest barrier."

In 2004, AHSC implemented AnyWare Group's role-oriented access management (ROAM) system to allow secure information access and video conferencing within its administration department. It offered confidential interaction, using a Secure Sockets Layer virtual private network (SSL VPN) to ensure a high level of privacy and security. Yet, it is also easy to use and cost-efficient because it works via Internet connection, rather than requiring special computers or software.

This successful project was soon extended throughout the hospital, allowing AHSC's 280 physicians and 100 nurse practitioners, charge nurses and administrators to securely access sensitive and confidential information—including e-mail, patient records, test results and X-rays—from remote locations for quicker diagnoses and treatment. Similarly, there was no need for the IT team to set up and maintain a specialized portal tool for mobile users—they could be added within minutes, rather than the two days it took in the pre-ROAM environment. This meant the IT team had more time to focus on pressing network issues.

Dr. Dornan was among the first physicians to start using ROAM. For the first time, he was able to easily access records and view X-rays dating back to 1997, even while he was away on vacation.

He says it made a difference as his practice grew. "I recently had a patient

*(Continues)*

who had an endocrine problem with her thyroid and pituitary gland,” he says. “I ordered some investigations and those directly related to the pituitary gland were okay, but the patient was not feeling well and had other symptoms.”

“I was able to access the hospital information system through ROAM and find out she’d had a blood glucose test two days previous in the emergency department. That test demonstrated she had diabetes. I was able to initiate therapy that same day, rather than having her leave my office and spend the next few weeks going for additional testing, coming back for the results and going to her family doctor for followup.”

***“We need decision support and interactivity. The more information we can get to people, in the right format, at the right time, the better our care will be.”***

Many of Dr. Dornan’s busy patients often ended up cancelling their disease education and health monitoring appointments because they could not take three days off work to come in.

His program administrator, Jill Barton-McPhee, had an idea: if staff could interact with the hospital system to serve the inpatient population, the system could also be rolled out to the outpatient population as well, particularly given the growing level of general computer literacy.

“When people with chronic diseases are prepared to make changes to their behaviour, we need to help them through that,” says Dr. Dornan.

“If they are given the tools in the proper context, they will use them. So, if patients could interact with us in their off-hours, (e.g. send a message with respect to their home glucose values), then they could receive recommendations and lab results from our staff in a timely manner,

which could truly help improve health and save lives.”

### Care Considerations

AHSC collaborated with AnyWare to create the current system. Today, diabetes patients can log onto AHSC’s portal and link to hospital-sanctioned educational resources, including the Canadian Diabetes Association’s recommendations for diet and exercise.

“It’s better than other unreferenced popular searches, because we have reviewed the links and they are endorsed by other professionals,” says Dr. Dornan.

Patients can also interact with the clin-

ic’s nurse educator, dietician and exercise physiotherapist. There is a rotating shift assigned to review incoming notes from the previous 24-hour period, with responses delivered the next day or within the week, depending on the degree of urgency. Practitioners involve other team members as needed.

### Patients Given Options

The diabetes clinic offers new patients the option of either completing all of their education online or coming in for three days of training. The clinic staff compares how quickly patients achieve healthy blood pressure, cholesterol and glucose levels and evaluates their satisfaction. The number of enrolled patients is growing, with more added as they are referred to the clinic.

Plans are now in the works to bring the hospital’s family doctors and endocrinologists on board, given they are integral

members of the diabetes clinic’s team.

The ROAM Patient Portal is also being considered by other chronic disease management clinics within AHSC, including those for rheumatology, nephrology and cardiology. Dr. Dornan also urges outside hospitals to embrace the ‘virtual workplace’ concept, especially given the Canadian Diabetes Association’s statistics suggesting there are more than two million diabetics in Canada, with some \$13.2 billion spent in the health-care system to support them.

However, he emphasizes the importance of first considering several major factors: security, simplicity and affordability.

“First, you don’t want to promote interaction that can be hacked or otherwise compromised,” he says. “Secondly, if something is difficult, it won’t be used; it has to be done with simple home computers and Internet connectivity tools. And finally, in an era of socialized medicine, while we expect people to have Internet access, we can’t make it expensive for them to get information through online interaction with our hospitals.”

Dr. Dornan says Internet access is not the “be all and end all” for every patient, but has certainly proven a boon to his practice and many patients.

“Regular monitoring of key health parameters, such as glycemic readings, prevents further complications associated with diabetes,” he says. “It motivates patients to better understand their illness, accommodate lifestyle changes and control their health more effectively. Many hospital information systems are grossly underused, often functioning only as report generators. We need decision support and interactivity. The more information we can get to people, in the right format, at the right time, the better our care will be.”