



## Windows Mobile Customer Solution Case Study



Northern Ontario  
School of Medicine

**Customer:** Northern Ontario School of Medicine

**Web Site:** [www.nosm.ca](http://www.nosm.ca)

**Customer Size:** 250 staff

**Country or Region:** Canada

**Industry:** Education

**Partner:** 4SmartPhone

**Web Site:** [www.4smartphone.com](http://www.4smartphone.com)

### Customer Profile

Founded in 2005, the Northern Ontario School of Medicine is the first new medical school in North America in more than 20 years. It has of a total of 250 staff, 250 students and 200 residents.

### Software and Services

- Windows Mobile 5.0
- Windows Mobile 6
- Windows Mobile 6.1
- Microsoft Office
  - Microsoft Office Outlook
  - Microsoft Office Outlook Web Access
- Microsoft Server Product Portfolio
  - Microsoft SQL Server 2005
- Technologies
  - Microsoft .NET Framework

### Hardware

- HTC Smartphones
- HP Ipaq Pocket PCs

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## Medical School Improves Communication and Data Transmission Using Mobile Solution

“We recorded over 10,000 logbook entries using Windows Mobile. We got really rich data about what the students are actually doing and where. The accreditation committee was very impressed.”

Dr. David Topps, Director, E-Learning Unit, Northern Ontario School of Medicine

*Students and residents at the Northern Ontario School of Medicine (NOSM) often train at distant rural clinics. They needed to reliably transmit clinical activity data and communicate better with NOSM. Using Windows Mobile® phones, hosted Microsoft® Exchange Server, and mobile access to healthcare applications, NOSM learners communicate better and can transmit data directly from the field, helping NOSM track clinical activity and maintain accreditation.*

### Business Needs

Founded in 2005, Northern Ontario School of Medicine (NOSM) is the first new medical school in North America in more than 35 years. The school follows a unique community-based model to teach and train healthcare professionals, requiring students and residents to travel a great deal. "Right from their first week, students are out on rotations with community clinical practices, some in remote aboriginal communities well north of Ontario," says Dr. David Topps, Director of the E-Learning Unit at NOSM, which supports the school's technology-enhanced educational practices. "Everything

we do, from Dean's meetings to classes, is online and distributed, and relies on technology to bridge the distance."

In order for a medical school to be accredited in Canada or the United States, it needs to meet standards set by the Liaison Committee on Medical Education (LCME). New LCME requirements set in 2007 required educational institutions to monitor and verify students' clinical encounters with patients, keeping track of each procedure and other data. This meant NOSM needed a mobile solution that would let students gather their clinical activity data and reliably



transmit it back to the school from wherever they were.

In addition, students needed a way to access the Internet from wherever they were, so they could view healthcare Web sites such as Lexi-COMP Online, a large medical reference resource. NOSM also needed to establish a more reliable way for medical students and e-Learning Unit staff to access their e-mail, calendar, and contacts, even when travelling in airports or visiting remote clinics.

## Solution

At the recommendation of a colleague, Topps turned to 4SmartPhone, a Phoenix, Arizona-based mobility solution provider, for help meeting the communication and data transmission needs of NOSM's students, residents, and staff. 4SmartPhone helped the e-Learning Unit move to a solution based on hosted Microsoft® Exchange Server, as well as Windows Mobile® smartphones.

A hosted Exchange Server solution is a subscription service that provides customers with the Microsoft Office Outlook® messaging and collaboration client on the desktop, access to e-mail via Office Outlook Web Access, and phone synchronization via Exchange ActiveSync® with Direct Push Technology. The provider maintains the servers at its location, saving the customer from hardware and server maintenance expenses.

Customers using Windows Mobile and hosted Exchange Server services can stay connected while on the go, keeping their e-mail, calendars, contacts, and tasks synchronized with their desktops in near real time.

Approximately 100 NOSM students, 40 post-graduate residents, and 20 e-Learning staff

members are using the solution with HTC Smartphones and HP Ipaq Pocket PCs, running Windows Mobile 5.0, Windows Mobile 6, or Windows Mobile 6.1. "The entire system is really set up based on using Windows Mobile devices," says Topps.

Installed on the students' Windows Mobile devices is a custom-made clinical logbook application built with the Microsoft .NET Framework, which uses the Microsoft SQL Server® data management software. With native Microsoft operating systems on the phones, it's easy to integrate the phones with applications developed using Microsoft technology.

Students use the logbook application to easily record clinical encounter data such as procedure, rotation, and location information. They can then synchronize the data directly with NOSM's database.

Topps is hoping that the solution will be expanded to include additional departments, until eventually all learners, staff, and professors are using Windows Mobile.

## Benefits

NOSM's solution has improved communication between the learners and the medical school, improved the ability of remote students to gather and transmit data, supported the school's accreditation requirements, and improved its ability to track what students are doing clinically.

### Easy and Reliable Mobile Communication

NOSM's learners and E-Learning staff now have a familiar and easy way to communicate via e-mail and to access calendar, contacts, and other data. "It's lovely that you can pull out your smartphone anywhere in the world and have access to

your calendar and e-mail. You don't have to fire up a laptop when you're at the airport running to a gate," says Topps.

### Access to Medical Information On the Go

NOSM's students have much quicker access to medical information from Web sites such as Lexi-COMP Online, as well as access to helpful healthcare applications such as UpToDate medical reference software. "Some of the great multimedia applications are exclusively based on Windows Mobile," Topps says.

With the latest medical data at their fingertips, students can be more successful at their clinic placements. "They have access to the information they need as learners from absolutely anywhere," says Topps.

### Improved Data Collection and Transmission

Using the logbook application on their phones, students document their clinical encounters with patients quickly and accurately. They can then transmit the data directly back to the school almost instantaneously.

The new solution has helped NOSM maintain its accreditation. "In eight months, we recorded over 10,000 logbook entries using Windows Mobile," says Topps. "We got really rich data from that in terms of what the students are actually doing and where. The accreditation committee was very impressed with the quantity and quality of data we had."

The school can better track student's clinical activities as they go through the NOSM program. "Rather than what the students say they do, or what the curriculum says they're supposed to do, we can look and see what they actually do, when they do it, and where they do it," Topps says.