



# William Osler Health System

Laboratory Reduces Specimen Losses, Increases Efficiency and Assures Patient Safety with InfitrakWireless Temperature Sensors

## About William Osler

William Osler Health System is one of Canada's largest community hospital corporations serving the growing and diverse communities in the Greater Toronto (GTA), Canada area. Osler's hospitals include Etobicoke General, Brampton Civic and the soon-to-be redeveloped Peel Memorial which together provide a comprehensive range of acute care, ambulatory and ancillary health services. Osler's emergency departments are among the busiest in Ontario, and its labor and delivery program is one of the largest in the GTA.

With a combined laboratory staff of over 225 people, Osler Health works around-the-clock to ensure patient safety is their number one concern. To laboratory staff this includes monitoring storage and handling conditions for patient medication, blood products, tissue samples, and reagents. 24-hour monitoring is needed for refrigeration systems, and staff has to be alert. Fluctuations in temperature for an extended period of time can lead to the loss of thousands of dollars in product specimens.

Fridges containing blood samples (whole blood, plasma, or urine), throat swabs, stool samples, serum samples, patient medications, reagents must keep at that critical 2 to 8 C range, where some items, like flash-frozen tissue samples, must remain frozen at -70 maintain tissue colors.

Monitoring refrigeration systems was nothing new for William Oster. The company had been using manual thermometers to check for temperature fluctuations and staff was expected to manually check each thermometer two times per shift, every eight hours. It was time consuming and did not allow for diagnosis of problem areas. It also lacked the ability to notify staff at the moment a problem occurs.

## The opportunity to upgrade

In late 2007, Osler opened the state-of-the-art Brampton Civic Hospital. Covering over 1.3 million square feet, the new facility includes hand-held wireless devices, pharmacy robots and computerized carts to dispense medications and improve patient safety, and operatories utilize the latest technology and sterilization procedures.

The new facility, along with its hospital-wide network, created the perfect opportunity to upgrade its temperature monitoring program to active sensors that would not only alert staff of temperature fluctuations, but even help determine when refrigeration units needed maintenance.

Dora Pimentel, Corporate MLA/Specimen Receiving Coordinator for Osler, had responsibility for implementation the new monitoring program.



## Snapshot

Business:	Hospital Laboratory
Product:	Blood tissue samples, medications, reagents
Facility size:	1.3 million sq ft
Challenge:	<ul style="list-style-type: none"><li>• Product loss</li><li>• Manual records</li><li>• Passive monitors</li><li>• Inefficient HVAC</li></ul>
Solution:	Infitrak 802.11 temp recorders, Internet-based reporting, live alerts
Results:	<ul style="list-style-type: none"><li>• Staff efficiency</li><li>• Automation</li><li>• Process updates</li></ul>

Case Study

## The Infitrak WiFi Solution

Pimentel selected the Infitrak WiFi refrigeration monitoring solution for its ability to not only integrate with an existing wireless infrastructure, but also its ability to integrate with the cloud. This allows for reporting and analysis of multiple refrigeration and freezer locations from one, centralized web-based portal. Real-time alerts of out-of-range events were then configured to signal a pager when event / time thresholds were surpassed. This allowed personnel to take action only when needed.

Pagers were set up to receive alerts and specific logging data was sent via page when an alert occurred. The data included the department and refrigerator number so that, regardless of who was on staff at the time of the alert, the on-call person could check where the department refrigerator was stored and determine next steps. Those steps could include checking for door openings, maintenance issues, or moving of specimens.

### Implementation and testing

Prior to complete implementation, Pimentel worked with Infitrak to develop checklists, training programs, in-service reviews, procedures and testing programs to determine if alerts were working properly and if staff was ready to take on a “live alerting” platform.

She then observed and monitored the system for a set time period to look for trends, detect where corrective action was required and double-check processes. Mock beta tests were then conducted, whereby false alarms were set up and the staff was trained how to handle them and log incidents.

It was important for the staff to know how to related an alert to the data associated with it and then take action on that data, stated Pimentel. “Infitrak’s cloud made it possible for each department to log into their area of the portal, read the graphical information, and take action.”

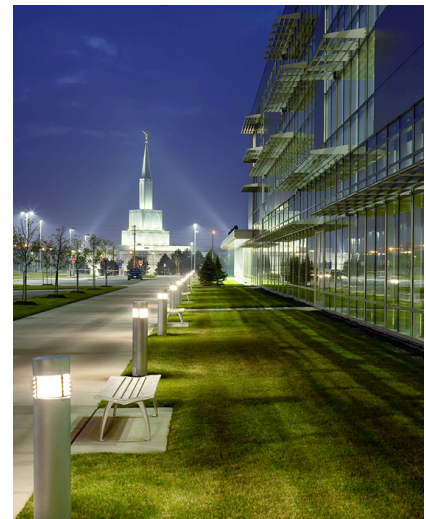
### Immediate Results

“Data started coming in right away and we noticed some trends that we did not expect. We found that staff was leaving the refrigerator doors open too long, and it was happening a lot”. said Pimentel. “We immediately adjusted the temperature settings to alert staff via an audible alarm when the door was left open for a specific number of minutes. If the audible alarm is ignored, the infittrak system sends a notification page telling us which fridge is having temp fluctuations.”

Pimentel also found that their cooling units were susceptible to overpacking. Too many samples in some freezers or having too many products on the top shelf prevented adequate air circulation. They also discovered that depending on where the temperature sensor was placed, it was difficult to tell if proper air distribution was happening. Since the Iniftrak units sample temperature every five minutes and is are so precise, the sensors were able to detect fluctuations that could triggers when things needed to be moved or when maintenance was required.



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*“What we discovered over time was that product integrity had improved dramatically, added Pimentel. “We had fewer specimen losses due to temperature fluctuations. This saved the company thousands in product specimens.”*

### About Infitrak

Infitrak is a leading provider of intelligent, web-enabled, wired and wireless environmental monitoring systems to highly regulated industries. The company is also a leader in providing a comprehensive array of cold chain services to assist clients in meeting regulatory and compliance requirements.