

## WITH ALLSTREAM'S WIRELESS ECG SYSTEM, ST. BONIFACE GENERAL HOSPITAL IS SAVING MORE LIVES

### SUMMARY

#### ORGANIZATION

St. Boniface General Hospital is one of Manitoba's largest health care facilities and a provincial leader in cardiac sciences and emergency medicine.

#### INDUSTRY

Health care.

#### CHALLENGE

To improve diagnosis of heart attacks, St. Boniface wanted to equip emergency responders with technology that could help them make a preliminary diagnosis and begin initial treatment.

#### SOLUTION

With Allstream's wireless ECG solution, emergency responders can wirelessly transmit diagnostic data to on-call cardiologists in real time, enabling them to diagnose and initiate remote treatment.

#### OUTCOMES

- Reduced the time it takes to deliver patient care by 40%
- Improved heart attack survival due to system of expedited care, with increased survival to hospital discharge from 87% to 96%
- Enhanced patient outcomes by enabling emergency responders to initiate treatment
- Relieved strain on the health care system with more accurate diagnosis, allowing for prompt transfer to the most appropriate hospital

### BUSINESS CHALLENGE

Established in 1871, St. Boniface General Hospital is more than simply the second largest hospital in Manitoba. It is also the designated cardiac care facility for the Winnipeg Regional Health Authority, a role that sees it conduct 4,600 Heart Catheter Lab exams and handle over 1,200 cardiac operating room cases annually.

As part of these responsibilities, the hospital was looking for ways to enhance its patients' prognoses for recovery following a heart attack. In reviewing its processes, it realized it could achieve this goal by empowering Winnipeg Fire and Paramedics Services responders to better diagnose patients in transit to the hospital and initiate treatment. By targeting diagnosis and initiation of treatment at the first point of care, the hospital would be able to both mitigate the severity of heart attack damage and improve patient cardiac outcomes.

Achieving this goal, however, would require a new technology system – one that enabled emergency

responders to seamlessly communicate with cardiologists in real time to assess the patients' condition and recommend appropriate treatment. To turn this vision into reality, St. Boniface and Winnipeg Fire and Paramedics Services turned to Allstream.

**“Thanks to Allstream's wireless ECG system, we've reduced the time it takes to deliver care from an average of 120 minutes down to 76 minutes.”**

- Dr. James Tam,  
Cardiologist,  
St. Boniface General Hospital

### SOLUTION

After assessing the hospital's requirements, Allstream recommended the adoption of a wireless ECG (electrocardiogram) solution and software interface. Deployed over a cellular network, this system integrates portable ECG monitors that are carried in ambulances to the BlackBerrys used by cardiologists.

In a suspected heart attack situation, emergency responders perform a clinical assessment and then complete a preliminary diagnosis by performing an ECG on the patient. They then wirelessly send this data to the on-call cardiologist, who decides on the treatment. Depending on the ECG results and a follow-up phone call between the emergency responder and the cardiologist, three options are available: the patient can be sent directly to the St.

Boniface General Hospital Heart Catheterization Laboratory, or be given clot-busting drugs or be taken to the most appropriate hospital for further monitoring and/or treatment.

“Before we had the wireless ECG system, the only option available to us was to bring a patient to the closest hospital,” explains Dr. James Tam, a cardiologist at St. Boniface General Hospital. “Now we have two additional options. We can also give medications in the field to break up the clot, or bring patients directly to the Heart Catheterization Laboratory to open the blockage mechanically. In either instance, Winnipeg Fire and Paramedics Services responders administer blood thinners en route to expedite efforts to open the artery.”



## TECHNOLOGY SOLUTIONS CAN IMPROVE THESE SOBERING CANADIAN STATISTICS

- 70,000 heart attacks occur each year
- 19,000 people die from heart attacks annually
- Cardiovascular disease accounts for more deaths (32%) than any other disease
- Every seven minutes, someone in Canada dies from heart disease or stroke
- Heart disease and stroke cost more than \$18 billion a year in physician services, hospital costs, lost wages and decreased productivity
- Circulatory diseases are the leading cause of hospitalization, accounting for 15.4% of total hospitalizations

Source: Heart and Stroke Foundation of Canada website

## BUSINESS OUTCOMES

Since adopting the wireless ECG system, St. Boniface has increased patient survival rates and reduced medical event severity by:

- Reducing the time it takes to deliver patient care by 40%. The widely accepted standard of care target is within 90 minutes of a heart attack. The pre-solution norm at St. Boniface was approximately 120 minutes. In just the first twelve months of deployment, the hospital has already set a new standard of 76 minutes
- Improving heart attack survival. With this system of expedited care, survival to hospital discharge has increased from 87% to 96%
- Enhancing patient outcomes by enabling EMS responders to initiate treatment and improving collaboration between responders and cardiologists

- Relieving strain on the health care system with more accurate diagnosis

As an added advantage, the wireless ECG system has fundamentally altered the efficiency of heart attack treatment and the productivity of the hospital's health care providers – suggesting a range of possibilities for applying the system to other acute care situations. “Given the success of the wireless ECG system, I can envision applications in areas like mobile CAT scans for stroke,” says Dr. Tam. In addition to strengthening the relationship between health care providers and patients, these mobile treatments can also support earlier intervention that can save lives.

**“By enabling us to determine which patients need active intervention, Allstream’s wireless ECG system helps prevent unnecessary demand on the health care system.”**

- Dr. James Tam,  
Cardiologist,  
St. Boniface General Hospital

## ABOUT ALLSTREAM

Allstream is a leading communication solutions provider with a world-class portfolio of IP Connectivity, Unified Communications, IT Consulting and Security. Focused on the business market, Allstream collaborates with customers to create tailored solutions that meet their unique needs and help them compete more effectively. Allstream is a division of Manitoba Telecom Services Inc. (MTS), with a team of dedicated employees focused on delivering outstanding value to its customers. MTS Allstream has an extensive broadband fibre-optic network spanning more than 27,900 kilometres and provides international connections through strategic partnerships and interconnection agreements with other international service providers. MTS's shares are listed on the Toronto Stock Exchange (trading symbol: MBT).

To learn more about Allstream please visit  
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