

| Manitoulin-Sudbury District Services Board POLICY & PROCEDURES MANUAL | |
|--|--------------------------------|
| Section: G. Paramedic Services | Effective Date: April 30, 2019 |
| Topic: 3. Operations Directives | Replaces: April 1, 2017 |
| Subject: 4. STEMI Bypass Protocol | |
| Policy No. G.3.4.2019 | Page 1 of 4 |

PURPOSE

To ensure a consistent and standardized practice for the activation of STEMI bypass/alert by Manitoulin-Sudbury DSB Paramedics.

Health Sciences North houses the only Cardiac Catheterization Laboratory in the North-East Region. It is located at the Ramsey Lake site at the Centre Tower on the 3rd floor. Access to this area of the hospital is gained through the ED garage, north tower, north entrance (alternative entrance to ED doors).

APPLICATION

Paramedics, Paramedic Superintendents

PROCEDURE

Background

In Ontario, the frequency of ST-segment elevation myocardial infarctions (STEMIs) is approximately 68 of every 100,000 adult residents, a total of about 7000 STEMIs per year. Timely reperfusion is necessary for optimal recovery.

Development of the Provincial STEMI Hospital Bypass Protocol has been made in consultation with Cardiac Care Network (CCN), the Ontario Association of Paramedic Chiefs (OAPC), the Ontario Base Hospital Group Executive Committee (OBHG-Executive), Ontario Medical Advisory Committee (OBHGMAC), Toronto Paramedic Service and ORNGE.

Procedure

- Bypass to the Health Sciences North Cardiac Catheterization Laboratory, or Emergency Department shall be initiated where clinical criteria and geographic inclusion is met. The geographic inclusion is in Section 3.
- Patients presenting with borderline/unclear ST segment elevation, any STEMI mimics, pre/post cardiac arrest (not cardiogenic shock related) or who weigh greater than 250kg or 550lb shall be transported directly to the closest Emergency Department for further assessment. (Patients that are greater than 250 kg or 550lb exceed the max allowable weight for the procedure table)
- STEMI Bypass directly to the HSN Cath Lab will only be applicable on **Monday to Friday between the hours of 0800 and 17:00**. During

| Manitoulin-Sudbury District Services Board POLICY & PROCEDURES MANUAL | |
|--|--------------------------------|
| Section: G. Paramedic Services | Effective Date: April 30, 2019 |
| Topic: 3. Operations Directives | Replaces: April 1, 2017 |
| Subject: 4. STEMI Bypass Protocol | |
| Policy No. G.3.4.2019 | Page 2 of 4 |

evening hours (12 Lead acquired after 17:00), weekends and statutory holidays, all STEMI positive patients who meet the geographic inclusion criteria shall be transported under a STEMI Alert to the Health Sciences North Emergency Department. The HSN Cath Lab will be activated by the ED physician upon consultation with the transporting paramedics.

- STEMI Bypass to the Cath Lab shall be immediately initiated once a 12 Lead ECG completed by Paramedics shows a positive STEMI. The Cath Lab remains the most appropriate destination even if the ECG normalizes after administration of oxygen and/or symptom relief medications.
- Positive STEMI patients presenting in suspected cardiogenic shock should be transported directly to the Cath Lab regardless of pre-arrest status. If CPR is in progress, the patient will be transported to the closest ED. CACC must be advised if patient status changes to VSA to ensure the Cath Lab can be notified that Paramedics will be proceeding to the Emergency Department.

Clinical Assessment:

In situations in which the Paramedic suspects that the patient is suffering from a STEMI, the Paramedic shall:

1. Assess the patient to determine if they meet all of the following inclusion criteria:
 - \geq 18 years of age;
 - experiencing chest pain current or resolved consistent with cardiac ischemia or myocardial infarction;
 - the time from onset of the current episode of pain <12 hours;

AND

12-lead ECG indicates an acute AMI/STEMI, as follows:

- At least 2 mm ST-elevation in leads V1-V3 in at least two contiguous leads; **OR**
- At least 1 mm ST-elevation in at least two other anatomically contiguous leads; **OR**
- 12-lead ECG computer interpretation of STEMI and paramedic agrees.

| Manitoulin-Sudbury District Services Board POLICY & PROCEDURES MANUAL | |
|--|--------------------------------|
| Section: G. Paramedic Services | Effective Date: April 30, 2019 |
| Topic: 3. Operations Directives | Replaces: April 1, 2017 |
| Subject: 4. STEMI Bypass Protocol | |
| Policy No. G.3.4.2019 | Page 3 of 4 |

2. If the patient meets the inclusion criteria listed, assess the patient to determine if they have any of the following exclusion criteria
 - The Paramedic is unable to secure the patient's airway or ventilate; or
 - 12-lead ECG is consistent with any STEMI mimics such as:
 - Bundle Branch Blocks (Right and Left)
 - Left Ventricular Hypertrophy
 - Ventricular Pacemaker Rhythms
 - Pericarditis
 - Hyperkalemia
 - Hypokalemia
 - Digitalis Effect
 - Benign Early Repolarization (BER)
 - Patients weighing greater than 250kg or 550lb

transport directly to closest Emergency Department

- If a Manitoulin-Sudbury Paramedic is outside of geographic inclusion criteria and the clinical inclusion criteria are met, the patient shall be transported to the closest Emergency Department. Reasons for diversion to the closest Emergency Department are as follows:
 - Moderate to severe respiratory distress or use of CPAP
 - Hemodynamic instability (e.g. due to symptomatic arrhythmias or ventricular arrhythmia) or symptomatic SBP <90mmHg unresponsive to treatment
 - VSA without ROSC

STEMI Process:

If the patient meets all indications and does not have any exclusionary criteria:

- Paramedics initiate a "STEMI Alert" via portable or vehicle radio as soon as a STEMI is confirmed. Communication to CACC will be limited to "STEMI ALERT" and estimated transport time only.
- Immediate notification to the Cath Lab by CACC via dedicated telephone line. Once Cath Lab is notified and bypass is confirmed, CACC will relay the confirmation to the transporting unit via radio.
- In the event of any communication failure, or should Paramedics have any doubts about inclusion, the patient will be transported to the closest Emergency Department.

| Manitoulin-Sudbury District Services Board POLICY & PROCEDURES MANUAL | |
|--|--------------------------------|
| Section: G. Paramedic Services | Effective Date: April 30, 2019 |
| Topic: 3. Operations Directives | Replaces: April 1, 2017 |
| Subject: 4. STEMI Bypass Protocol | |
| Policy No. G.3.4.2019 | Page 4 of 4 |

During evenings, weekends and statutory holidays, the Cath Lab will be activated by the HSN ED Physician, following a patch and STEMI confirmation.

Paramedics can transmit 12 lead ECGs to ED physician or the Cath Lab from ZOLL X series monitor.

During evenings, weekends or statutory holidays the 12 lead ECG will be sent via fax from the Zoll X Series Monitor to the HSN ED and Paramedics shall immediately patch to the Charge RN.

3. While Health Sciences North will be the standard ED destination for Manitoulin-Sudbury DSB Paramedics in specific areas, the STEMI Bypass program will allow for staff to divert from the closest Emergency Department where the clinical inclusion criteria are met, and the following geographic inclusion criteria are met.
 - Paramedics initiate a "STEMI Alert" and transport to HSN where the following geofencing is met.
 - For areas, west of Greater Sudbury, the town of Espanola or east from that community.
 - For areas, east of Greater Sudbury, the Manitoulin-Sudbury DSB boarder on Highway 17m or west from that community.
 - For areas, north of Greater Sudbury, the intersection of Highway 144 and 560 (Watershed) and south from that location (bypass ED to Cath Lab from Cartier only, from Cartier to watershed would be destined for ED).
 - For areas, south of Greater Sudbury, the intersection of Highway 69 and 522 and north from that location.

REFERENCE

Advanced Life Support Patient Care Standards version 3.4
Ontario STEMI Bypass Protocol version 1

Health Sciences North Centre for Prehospital Care STEMI Triage Guideline