Northern NSW Local Health District

Chest Pain Pathway: ST segment Elevation Myocardial Infarction (STEMI) Audit
Executive Summary Report

June 2019
Background

The use of the Chest Pain Pathway is monitored through annual auditing. This year, audits were completed between March and May at all facilities where there was a presentation of chest pain resulting in a diagnosis of ST segment Elevation Myocardial Infarction (STEMI).

The audit looks at management of patients presenting to Emergency Departments with chest pain and the use of the Chest Pain Pathway. Two audit tools were created to monitor use of the Chest Pain Pathway, dependent upon whether the patient was identified as Non-ST segment Elevation Myocardial Infarction (NSTEMI) or ST-segment Elevation Myocardial Infarction (STEMI).

The audit is retrospective with auditors asked to review a sample of patient medical records where the primary presentation was for chest pain leading to a diagnosis of STEMI during 2018.

In 2019, a total of 81 audits were completed where the diagnosis was STEMI.

These results will form part of the evidence for the National Safety and Quality Health Service (NSQHS) Standards requirement to have agreed and documented clinical guidelines and/or pathways available to the clinical workforce, and that the use of those clinical guidelines by the clinical workforce is monitored. Facilities will use these results to prepare an action plan where necessary to improve the use of the Chest Pain pathway.

Executive Summary of results

This annual audit reviews the use of and compliance with the chest pain pathway and subsequent patient management. Below is a summary of these results. Where the result for this audit has varied significantly from previous audits, it will be noted.

Across the LHD, a total of 81 audits were conducted on patients identified as having ST-segment elevation myocardial infarction (STEMI). Of these, 78 were audited at the primary site of presentation, while three were audits following transfer in after initial treatment elsewhere.

Initial Emergency Department presentation

- Of the 78 patients, 36% were brought to hospital by Ambulance (28 of 78). 2018 = 52%

- The audit looked at pre-hospital treatment. Of the 28 patients who presented to hospital by ambulance, 93% had an ECG attended in the Ambulance (26 of 28); while only one patient had pre-hospital thrombolysis (4%).

- The time of symptom onset is relevant to the care provided. The time of symptom onset was documented in 92% of records (72 of 78). This is consistent with the 2018 audit result of 93%.

- Chest pain or other symptoms of myocardial ischaemia require at least a Triage 2 category. 100% of patients received a triage category 1 or 2. This has continued from last audit where the result was also 100%.

- The Chest Pain Pathway (paper or electronic) was present in 50% of cases audited (39 of 78). 2018 = 64%
• An **ECG was attended within 10 minutes of arrival** in 86% of cases (67 of 78) and 79% of patients were **seen by a medical officer** for interpretation of ECG results and vital signs **within 10 minutes of arrival**. This has declined slightly from the 2018 audit result of 90% and 86% respectively.

• The patient’s **troponin level was taken and reviewed** in 96% of cases (75 of 78). This has improved from 90% compliance last audit.

• First line management includes giving **300mg of Aspirin**. As required, 100% of patients were given Aspirin either pre-hospital or in the Emergency Department (77 of 77). One patient was contra-indicated. **2018 = 100%**

• **A chest x-ray** is also first line general management. Of the 78 patients, 38% had a chest x-ray (30 of 78). It was noted that 13% of patients (10 of 78) could not have an x-ray at the presenting site due to x-ray services being unavailable. A total of 38 patients (49%) did not have a chest x-ray. The number of patients have a chest x-ray has declined since the last audit.

• There was documented confirmation of **indications for reperfusion** as **STEMI** in 94% of cases (73 of 78) and ACS symptoms with LBBB in one case (1%). It was not documented for four patients. The reperfusion method was confirmed by the FACEM or Cardiologist in 87% of cases (68 of 78). This has improved from 80% last audit.

• The **primary method of reperfusion** was PCI 45% (35 of 78); thrombolysis 42% (33 of 78); while 13% (10 of 78) did not have any reperfusion.

**Transfer presentation (following initial treatment elsewhere)**

• Three patients were audited following **transfer from another facility**. All were audited at Lismore.

• Of the three patients, all three arrived **more than 2 hours after** presentation to the initial facility. Two patients were transferred from Maclean and one was from Kyogle.

• On arrival at Lismore, 67% of patients (2 of 3) were **triaged as category 2**, while the other was triaged a category 3.

• The **chest pain pathway was sent** with 100% of patients from Maclean (2 of 2), however the Kyogle patient did not have a chest pain pathway sent with the patient. This patient was commenced on a pathway at Lismore.

• Two patients (67%) had ongoing pain on transfer and both of these (100%) had a **repeat ECG** attended within 10 minutes of arrival. The ECG was then reviewed by a medical officer in both cases within 10 minutes (100%).

• The patient who had no ongoing pain also had a repeat ECG during their ED stay.

• A plan for angiography or PCI was documented for one of the three cases (33%). That patient commenced PCI.
Overall clinical management

Following completion of each audit, the auditor was asked to assess each patient’s management based on the information contained with the patient medical record, and determine if management was appropriate according to the National Guidelines and whether a clinical review is required.

- The auditor determined that 99% of cases (80 of 81) were managed appropriately according to the National Guidelines.

- It was determined that one case (1%) required a clinical review be attended:
  - A patient at Grafton presented on three separate occasions with chest pain. The second presentation included an elevated troponin, however the patient was not admitted. STEMI was diagnosed on third admission.

Actions and Recommendations

Actions and recommendations that may be considered are:

1. This executive summary should be read in conjunction with the site level data spreadsheet.

2. Where indicated, sites are to review the patient record and undertake a clinical review where the auditor deemed a clinical review should be undertaken, or the patient’s management was not appropriate according to the National Guidelines.

3. Regular audits, in additional to the annual LHD audit, be conducted at all sites to review management of chest pain patients.

4. All chest pain presentations should utilise the chest pain pathway or ensure the chest pain protocol is followed as per NSW Policy Directive: Chest Pain Evaluation (NSW Chest Pain Pathway) PD2011_037.

5. Sites should consider ongoing education to assist staff in recognising which patients need to be commenced on a chest pain pathway.

6. These audits should be discussed at each site and an action plan developed to identify areas and strategies for improvement where required.

Further information

For further information on these audits, please contact the Clinical Governance Unit or your local Quality Manager.