A SAFE AND FASTER WAY TO TRIAGE CHEST PAIN

Building on its previous work, Safer Care Victoria’s Emergency Care Clinical Network implemented and embedded a shorter, evidence-based process to more efficiently assess patients for acute coronary syndrome in a number of emergency departments, reducing patients’ anxiety and their time in hospital.

## Background

Acute coronary syndrome (ACS) is a term used to describe a range of urgent conditions associated with sudden reduced blood flow to the heart. The most common conditions are heart attack and angina. It is vital to rule out life-threatening causes and provide timely treatment for these conditions.

In 2016, approximately 2 per cent of Victorian emergency department (ED) admissions (42,000 patients) were for suspected ACS or chest pain.

Traditionally, national guidelines have recommended clinical observation and repeated electrocardiography measurement and blood testing over four to 12 hours to identify or rule out ACS in an ED. This long process can cause anxiety and inconvenience for patients.

Evidence at the time of the project showed patients at low risk of having ACS could have a shorter assessment process – an ‘accelerated diagnostic pathway’ (ADP). However, after trialling these pathways at a small number of EDs, the Emergency Care Clinical Network (ECCN) found that less than 3 per cent of patients eligible for an ADP were being assessed using the shorter approach.

Through this project, the ECCN aimed build on its earlier work by embedding ADPs in the EDs where they had already been trialled and measuring the sustainability of the pathways. The network also planned to simultaneously implement the ADP approach in additional hospitals, with the ultimate goal of improving patients’ experience, reducing their length of stay (LOS), and releasing ED capacity.

Emergency Care Clinical Network (ECCN) acute coronary syndrome project

**Lead** Safer Care Victoria ECCN

**Partners** 18ECCN member EDs – Albury Base Hospital, Angliss Hospital, Austin Hospital, Bairnsdale Hospital, Bass Coast Hospital, Bendigo Health Service, Box Hill Hospital, Footscray Hospital, Frankston Hospital, Goulburn Valley Base Hospital, Royal Melbourne Hospital, Southwest Healthcare (Warrnambool), St John of God Hospital, St Vincent’s Hospital, Sunshine Hospital, The Northern Hospital, University Hospital Geelong, Werribee Mercy Hospital

**Duration** December 2016 – June 2018

**Key outcomes**

* Reduced anxiety and inconvenience for patients by using an ADP approach to rule out ACS faster
* Reduced variation in practice and ensured the process of ruling out ACS was evidence-based
* Saved 20 minutes and released an estimated capacity of 472 patients in EDs implementing an ADP for the first time
* Increased the proportion of eligible patients assessed using an ADP from 22 per cent to 68 per cent in sites that completed ADP implementation
* Reduced the median LOS by between 15 and 83 minutes in almost all implementation sites

## Key activity

Eighteen hospital EDs joined the project: nine to implement an ADP, six to embed the pathway, and three to participate in a once-off sustainability audit.

For EDs implementing or embedding an ADP, the ECCN facilitated a quality improvement process that assisted participating sites in reviewing and updating their clinical practice to incorporate the accelerated process.

The project involved a structured approach to change, but participating sites were given the flexibility to adapt the approach to suit their local environment.

The ECCN provided:

* improvement science and project management training
* an evidence and resources pack, including data collection tools
* a mid-project collaborative progress meeting.

Data from each ED was analysed by the ECCN, which provided feedback to the sites on local changes.

The ECCN also pooled the data from all sites to gauge the project’s system-wide impact.

## Outcomes

### Implementation

Four sites completed ADP implementation within the project timeframe. Three sites were still implementing the pathway by project close.

In the four sites that completed implementation:

* the proportion of ADP-eligible patients assessed using the pathway increased from 22 per cent to 68 per cent
* three of the sites reduced their median LOS time by between 15 and 83 minutes for ADP-eligible patients, regardless of whether the pathway was used to assess them.

Over the course of the project, two hospitals discovered the type of testing available at their site was not suitable for an ADP approach.



While this meant they were unable to implement an ADP, their participation in the project uncovered that the processes they were using to rule out ACS were not consistent with national guidelines.

Identifying that they were at risk of missing patients with ACS was an important safety outcome for these sites.

### Embedding

Two participating sites provided post-embedding data.

In an earlier ECCN trial, both sites had increased the proportion of eligible patients assessed with an ADP and reduced patient LOS after implementing an ADP.

In the current project, both sites showed further improvements after embedding the process.

Overall, from pre-implementation to post-embedding, the sites achieved median LOS reductions of 112 and 138 minutes, respectively.

### Sustainability

A sustainability audit of three participating sites showed two had slipped backwards in terms of the proportion of eligible patients assessed with an ADP.

However, they had all maintained clinically significant reductions in median LOS of between 59 and 183 minutes.

### Overall impact

All participating sites changed their assessment processes by introducing an ADP. This reduce variation in practice and ensured the process was evidence-based.

Ruling out ACS faster by using an ADP reduced anxiety for eligible patients and minimised the inconvenience of a lengthy ED stay.

The project also demonstrated a release in ED capacity:

* sites implementing an ADP for the first time saved an average of 20 minutes and released an estimated capacity of 472 patients
* sites that had sustained an ADP saved 112 minutes and released capacity for 2,831 patients.

## Key learnings

* **Be clear in the use of troponin tests from the outset –** During the project, it was discovered that there was some confusion about how different troponin tests could be used safely. These tests measure troponin, a blood marker that indicates damage to the heart, and help to determine a patient’s eligibility for an ADP. Clarifying this issue was essential to ensuring safety within the project.
* **Factor in the unpredictable nature of the ED –** Change in an ED is not easy and can be impacted by unpredictable influences such as sudden spikes in patient presentations, competing priorities, and unplanned staff changes. It is recommended that contingencies are built into the project to account for this.
* **Be proactive in identifying potential delays and barriers –** Three of the sites ended up starting implementation almost a year after the others. Given the new implementation sites were late adopters of an ADP approach, delays and barriers were anticipated and were managed once identified, however a more proactive approach to mitigating these issues would have been beneficial.