Aim
The aim of the 2014 evidence-based care improvement projects in Victorian emergency departments was to enhance the use of evidence to reduce variation in clinical practice and improve consistency and quality of patient care.

Overview
In February 2014 the Emergency Care Clinical Network (ECCN) embarked on its sixth round of quality improvement projects to enhance the use of evidence to drive clinical practice improvement in emergency departments (ED).

New topics for improvement were identified by scan of the medical literature, input from the sector and the ECCN multidisciplinary steering committee. Topics from previous years’ improvement cycles were also available. Clinical experts presented the evidence on the new topics at sector-wide engagement forum on 19 February 2014.

2014 topics for improvement were:
- Increasing the appropriateness of IV cannula insertion (new)
- Improving the use of intranasal fentanyl for pain relief in children with limb fractures (new)
- Rapid rule out of Acute Coronary Syndrome (ACS) in low risk chest pain (new)
- Improving the recognition of and response to the deteriorating patient (repeat)
- Improving the management of children aged under 5 years presenting with fever (repeat)
- Improving the management of atrial fibrillation with rapid ventricular response (repeat)

Interested ED responded to the ECCN expression of interest process and nominated the topic most relevant for their ED. 25 EDs commenced 29 projects in six different topic areas.

Summary
Changes to improve clinical practice were implemented in each ED based on the gaps they identified between the evidence and their local practice. Clinical practice changes included new clinical pathways, new policies, new protocols and procedures, new observations charts, creation of patient information, improved patient discharge and referrals, new training materials and resources and staff education and training.

The results of the projects were shared at the sector-wide forum in February 2015 and ED received a storyboard poster of their project and results.

Results at a glance
- Participation: 26 successfully completed projects (90%) in 23 emergency departments, including 2 private hospitals
- Duration: Nine-month improvement cycle: March to December 2014
- Clinical Topics: 4 new topics plus 3 repeat topics
- Methods: Local improvement process with before and after evaluation
- Significant results: Clinically significant change in all six topics
- Clinical engagement: Over 125 emergency clinicians were members of local ED improvement teams
- Data: Data from more than 6,300 de-identified patient records
- Supporting activities: ‘Evidence into action’ forum 19 February 2014 with over 200 clinicians attending from ED across Victoria
- Project management training workshop 14 April 2014 with over 40 emergency clinicians attending from 23 EDs
<table>
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<tr>
<th>2014 evidence-based topics</th>
<th>No. of EDs</th>
<th>Changes achieved</th>
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| Increasing the appropriateness of peripheral IV cannula insertion | 18         | • The proportion of patients with an IV inserted **reduced significantly 48% to 42%** (p<0.0001).  
• The proportion of those with an IV inserted who has it used in the ED **increased significantly 64% vs. 74%** (p<0.0001). |
| Improving the use of intranasal (IN) fentanyl for pain relief in children with limb fractures | 4          | • The proportion with a pain score recorded **increased from 33% to 57%** (p=0.002).  
• The proportion of children where IN fentanyl was used for analgesia **increased from 18% to 44%** (p<0.001). |
| Rapid rule out of acute coronary syndrome (ACS) in low risk chest pain patients | 1          | • The proportion of patients suitable for a rapid ACS rule-out process who were managed according to a rapid rule-out pathway **increased from 0% to 70%** (p<0.05).  
• Median LOS **was not different between time periods**.  
• The proportion of patients discharged within 4 hours **increased from 43% to 60%**. |
| Improving the recognition of and response to the deteriorating patient in ED | 1          | • The proportion of unstable patients where it was reported for action **increased from 33% to 100%** (p=0.002).  
• The proportion where escalation processes were followed was **100%**. |
| Improving the management of children aged under 5 years presenting with fever | 1          | • The proportion of children with fever managed according to a local pathway **increased from 0% to 100%** (p<0.001).  
• The proportion of children with a formal risk assessment **did not change** (0%).  
• The proportion of children with one full set of vital signs **did not change** (3% vs. 3%).  
• The proportion of children without an identified focus of fever referred for early review **increased from 11% to 78%** (p<0.01). |
| Improving the management of atrial fibrillation with rapid ventricular response | 1          | • Management according to a local pathway **increased from 0% to 67%** (p<0.0001).  
• Chronicity documentation **increased from 17% to 44%** (p=0.08).  
• Rate vs. rhythm control strategy documentation **increased from 17% to 50%** (p=0.03).  
• CHADS 2 score (or similar) documentation **increased from 6% to 61%**. |

**Emergency departments that successfully completed their project**
Angliss Hospital, Austin Hospital, Bairnsdale Regional Health Service, Ballarat Health Service, Bendigo Hospital, Box Hill Hospital, Central Gippsland Hospital – Sale, Dandenong Hospital, Epworth Richmond Private Hospital, Footscray Hospital, Frankston Hospital, Knox Private Hospital, Latrobe Regional Hospital, Maroondah Hospital, Mildura Base Hospital, Rosebud Hospital, Sandringham Hospital, South West Healthcare – Warrnambool, Swan Hill District Hospital, St. Vincent’s Hospital, Sunshine Hospital, The Alfred, University Hospital Geelong
Impact of 2014 evidence-based care quality improvement projects:

- Reduced the risk of unnecessary complications
- Staff are better informed and aware about the risk associated with IV catheter insertions
- Time and cost savings associated with fewer IV catheter insertions
- Decreased pain and discomfort for patients
- Increased staff satisfaction by providing better care
- Patients are engaged in their care
- Increased compliance with standardised clinical practice
- Improved patient flow
- Reduction in stress for patients
- Shorter waiting times
- Children with fractures had quicker pain relief
- Staff are providing more consistent evidence-based care
- Decreased patient length of stay in ED

Key learning from the 2014 evidence-based care project leads:

These projects were led by a local emergency clinician (either a doctor or a nurse) with the support of a local multidisciplinary project team. The majority (74%) of project leads had no prior experience of leading a whole-of-ED improvement project. At the end of the project the leads completed a project report and a project lead feedback report about their experience. The key factors they identified for project success were:

- Motivation, commitment and enthusiasm
- Having clear objectives
- Building staff confidence
- Improving documentation and communication
- Providing evidence to support clinical practice change
- Using a variety of information tools (e.g. posters, flyers and trigger cards)
- Having active floor champions
- Providing regular educational sessions
- Using ‘huddles’ to communicating about the project

Challenges included:

- During busy periods, staff returned to old habits
- Finding time and opportunities for team member education
- Frequent rotation of junior medical staff
- Engaging medical staff
- Reluctance of some medical staff to change practice

The results from the 2014 evidence-based quality improvement projects have demonstrated change in clinical practice and improved care for patients. The ECCN's low-cost, locally led, standardized approach to improvement with network support is an effective model to reduce variation in clinical practice and improve consistency and quality of emergency care.

About the ECCN

The ECCN has been working with 40 EDs in Victoria since 2008 on quality improvement activities Victoria to create and build sustainable improvements and innovation in the delivery of emergency care. The ECCN is part of the Innovation Hub and Health System Improvement Branch, Department of Health & Human Services.

This document is available on the internet at: http://www.health.vic.gov.au/clinicalnetworks/emergency/activities.htm

To receive this document in an accessible format email ECCN at: EmergencyCare.ClinicalNetwork@health.vic.gov.au