1. Improving patient flow: Early senior decision making in emergency departments

A Timely Emergency Care Collaborative how-to guide for health services

OFFICIAL

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Institute for Healthcare Improvement

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In this document, 'Aboriginal' refers to both Aboriginal and Torres Strait Islander people. 'Indigenous' or 'Koori/Koorie' is retained when part of the title of a report, program or quotation.
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Introduction

The Timely Emergency Care Collaborative (TECC) aimed to reduce delays for patients needing emergency care in Victoria through improving hospital-wide patient flow.

The project involved 14 teams from hospitals across Victoria, as well as a team from Ambulance Victoria. The Victorian Department of Health delivered the project in partnership with the Institute for Healthcare Improvement.

The project ran from December 2022 until the end of June 2024. Almost every team showed significant improvements in the timeliness of emergency care, as measured by emergency department lengths of stay.

The project set out with a change theory of how to improve hospital-wide patient flow. This change theory was developed by drawing on international evidence, local and international expert input and the ideas of the participating teams.

Through the results of testing and the insights from participating teams, the change ideas that were found to be most impactful (feasible to implement, demonstrated improvement) were identified as 'high-impact change ideas'. These ideas have been written up as a series of 'how-to guides'.

This guide is one of a series outlining each of these high-impact change ideas. All guides are available from Emergency care <https://www.health.vic.gov.au/patient-care/emergency-care> or by contacting TEC2@health.vic.gov.au. A summary of the overall change theory from the TECC can also be found on the Emergency care webpage <https://www.health.vic.gov.au/patient-care/emergency-care>.

The change theory and learnings from the TECC project continue to inform other departmental projects including the Timely Emergency Care (TEC) 2 Program.

Problem this change idea addresses

Delays to the disposition decision for patients presenting to an emergency department (ED) significantly impact patient outcomes and slow patient flow through the ED. With expert local knowledge and clinical experience, senior decision-makers[1] (SDMs) can rapidly synthesise clinical information to make a diagnosis and management plan, shortening the time from assessment to a decision about admission or discharge.

To maximise the impact of SDMs on patient flow, patient care must be structured to enable early access to SDM review. This chapter highlights 2 common early senior decision-making models, which can be adapted to the local context to improve emergency patient flow.

1 In the Australian context, SDMs include:
- emergency physicians – Fellows of the Australasian College for Emergency Medicine (ACEM)
- emergency medicine senior registrars – ACEM trainees
- nurse practitioners with significant experience in emergency care
- rural generalists and general practitioners (with sufficient ED experience) – Fellows of the Australian College of Rural and Remote Medicine (FACRRM) or Fellows of the Royal Australian College of General Practitioners (FRACGP).

Overview of the change idea

Two potential models for early senior decision making are outlined:

1. senior doctor at triage
2. streaming to an early SDM.

Considerations for choosing the more appropriate model for your local context are outlined below.

Model 1: Senior doctor at triage

The senior doctor at triage (DAT) model places an SDM close to triage, enabling an SDM to see patients at the earliest possible time. Patients are seen during or soon after triage to gather a quick summary of their reason for presentation. The SDM will assess the patient to:

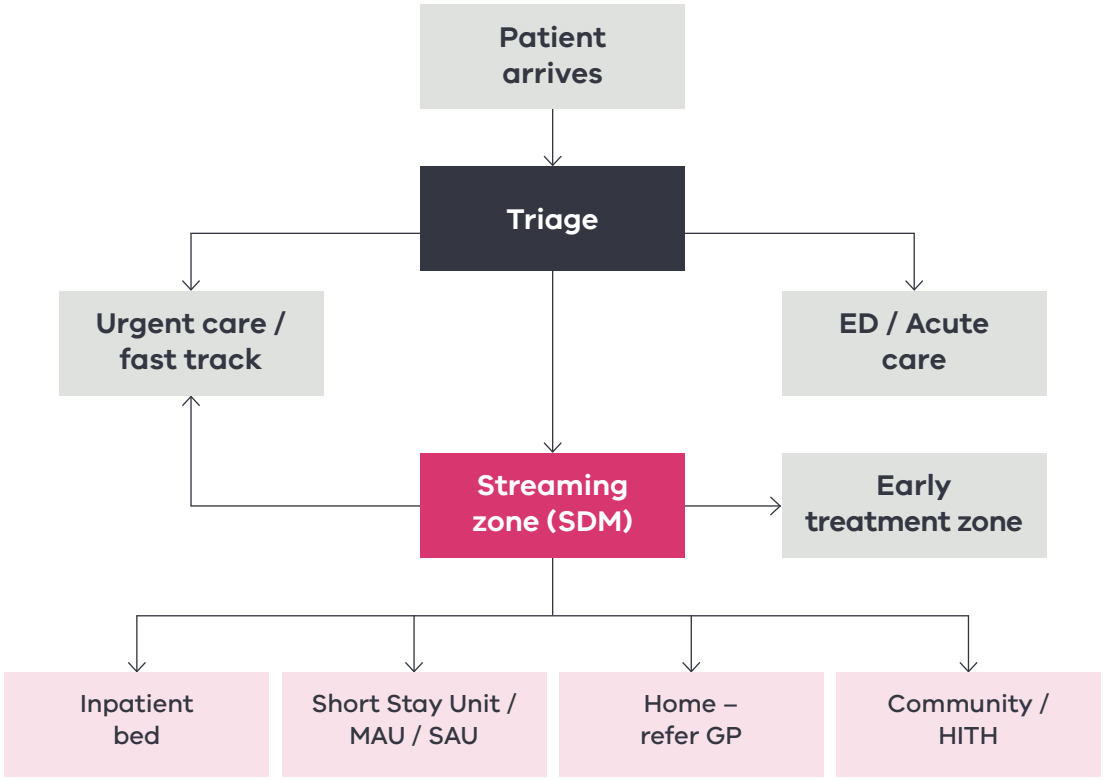
- determine the need for investigation
- determine the nature of treatment required
- decide whether a patient is likely to need admission.

Because patient presentations usually exceed the capacity of one SDM (the next patient arrives before the SDM has completed the rapid review of the previous patient), a targeted approach is typically applied. In this context, SDMs should prioritise their assessment of the sickest patients, ensuring that Australasian Triage Scale (ATS) principles are followed as closely as possible. Ideally, extremely unwell patients will be directly streamed to resuscitation, but the SDM may mange them while waiting for resus capacity to be available.

Figure 1.1 shows a senior DAT model. In this model of care, patients are streamed to fast track, acute care and the streaming zone, which is staffed by an SDM. Patients in the streaming zone are usually of ATS triage categories 3, 4 and 5 and include all patients who are not:

- fast track presentations – those patients with minor presenting complaints who are unlikely to need admission to a short stay unit or an inpatient ward
- acute care presentations – those patients with severe illness (triage category 1 or 2) that need urgent assessment in resus or a monitored environment.

Figure 1.1: Senior doctor at triage (DAT) model



Adapted from New South Wales Health, 2012

Once allocated to the streaming zone, the SDM performs a quick assessment to determine the management and need for admission. At this point, most patients for admission can be referred to their next location of care, which may be:

- the ED short stay unit – for patients who need more investigations and treatments before discharge
- an inpatient bed – for patients who need ongoing investigation and management on an inpatient ward (expected length of stay greater than 24 hours), or
- at home – with or without community service support.

Considerations

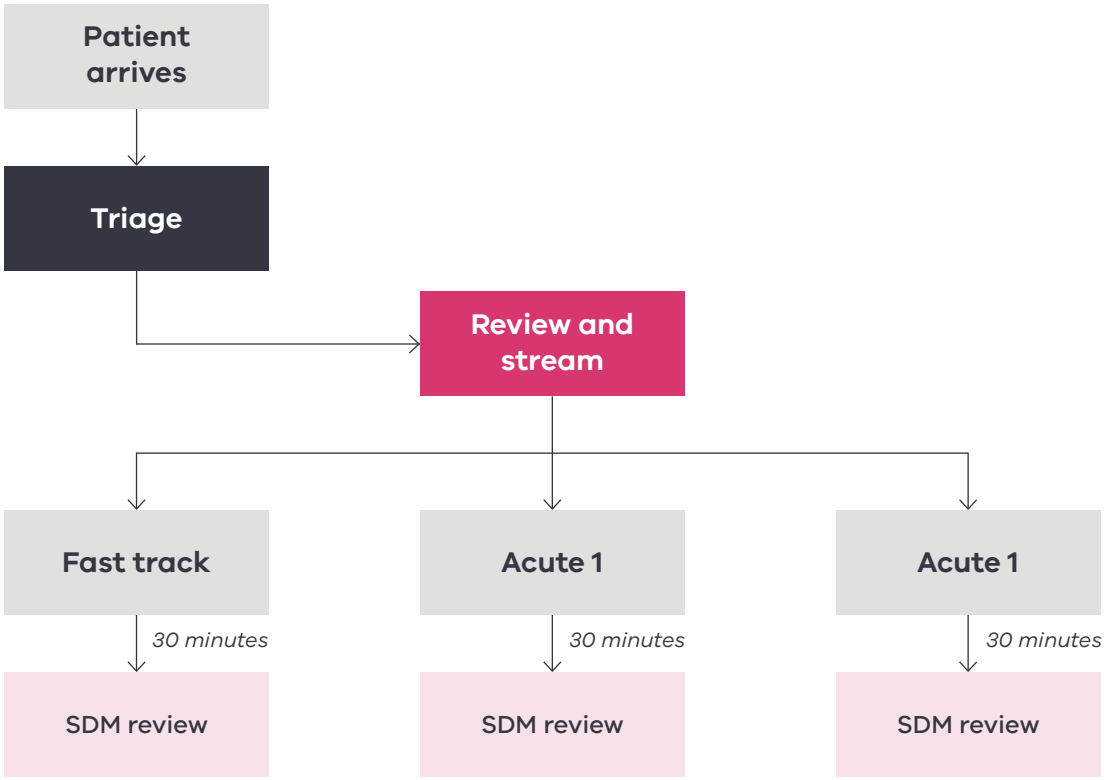
A single SDM at triage cannot guide the care of all ED presentations. Without extra staff, the opportunity cost of removing an SDM from another location must be considered. Ensure SDMs are available in all areas of increased clinical risk and deploy your excess SDM to triage.

Concurrent assessment with nursing staff is highly efficient and reduces patient movement from the waiting room. Following assessment, nursing staff can draw blood and provide initial treatment as prescribed.

Model 2: Streaming to an early senior decision-maker

Streaming to an SDM is another common model used to achieve early senior review (Figure 1.2). In this model, junior medical staff do the initial review of the patient and report their findings as early as possible (within 30 minutes) to the SDM. The SDM decides about the patient's management and their need for admission, which the junior doctor actions.

Figure 1.2: Streaming to a senior decision-maker (SDM) model



This approach requires:

- placing an SDM in each stream to maximise availability
- a standard workflow for junior medical staff with firm expectations that the review and report to the SDM be completed within 30 minutes
- an expectation that SDMs decide about admission or discharge at the time of consultation. If this cannot happen from the junior medical assessment, the patient should be seen directly by the SDM to achieve this outcome.

Considerations

Ideally, all areas of the ED should have local SDM supervision. When resources are limited, ensure SDMs are located in areas of highest clinical risk first, such as resus or high-dependency cubicles. After addressing clinical risk, distribute SDMs to maximise access by junior medical staff.

How to test this change idea

The Plan-Do-Study-Act (PDSA) framework offers guidance for testing these change ideas. This framework uses rapid cycle tests to quickly learn and adapt change ideas. As confidence in the idea increases, cycles can be longer and tested under different conditions. The guidance below focuses on the first testing cycle. Plan extra test cycles ahead of time so there is continuous testing and adaptation of the idea until it is ready for permanent implementation.

For more information about PDSAs refer to the Institute for Healthcare Improvement website <https://www.ihi.org/how-improve-model-improvement-testing-changes>.

Before testing

Ensure there is appropriate clinical leadership and engagement

The clinical director of emergency medicine (or equivalent role) should sponsor and support this change idea. A change from existing practice will need strong leadership to increase the chances of success. Ensure there is appropriate clinical engagement of the senior emergency medicine team before testing the change idea.

Co-develop the early senior decision-making model to be tested

Engage a small team representing the key craft groups/roles that would be involved in a new model to co-develop the new model to be tested.

Once drafted, the new model should be broadly socialised and adjusted if there are specific risks or issues identified with the proposed model (testing will help refine the model).

Identify any other requirements for testing

Ensure systems are in place (for example, electronic medical records [EMR], or other documentation) to support the new model. Where changes to an EMR or other IT systems are needed, work out if an interim process can be put in place while undertaking initial testing. This will reduce unnecessary delays to testing and avoid changes being made to IT systems based on an untested model.

Ensure the SDM has an appropriate workstation, easy access to the waiting room and a small assessment area to assess patients in private.

Plan

Decide when to start the first test cycle and for how long

Avoid starting your testing on a Monday or after a public holiday. These are typically days of increased pressure on EDs and may impact staff awareness and readiness for the test after a break.

The duration of the test of change should be determined based on a number of factors:

- the level of staff support/readiness for the change
- the potential risk associated with the change
- the level of confidence that the change will lead to improvement.

A model can be tested for just a few hours if a short cycle would help address the concerns of staff and to allow for rapid adaptation. However, there should be a plan to continue testing the model (with necessary adaptations through rapid PDSA cycles) for long enough to have data that shows whether the change is leading to improvement (reduced time for disposition decisions) and not resulting in any unintended consequences. This may be a few days to a few weeks depending on the patient volumes being seen through the new model. The model may also need to be tested under 'different conditions' (different shifts or days of the week, different SDMs or teams) to give confidence that it can be consistently delivered and will lead to improvement.

Plan for data collection

Establish a plan for collecting data before testing begins. Recommended measures to consider are outlined in the next section.

Define clear operational definitions for measures. Outline who will be responsible for collecting (or extracting) data and how often. Work out how the data will be analysed and by whom.

It is important to also plan how to get qualitative feedback about the test of change. Planning a short huddle at a convenient point in the day while team members can be quickly assembled can be a simple and effective way to gain rapid insights and adjust the model to address any issues.

Prepare the team

Align staff rosters as needed to support the new model. Ensure all staff involved in the test get adequate training. Providing role cards[2] that outline the key tasks and expectations of each role can be useful as an easy reference during early tests.

The clinical director must encourage and empower SDMs to make decisions on clinical grounds including history, examination and bedside investigations and without radiology or pathology results. While this may not be possible for some patients, it should be for more than 90%. When uncertainty occurs, the SDM should physically review the patient to make their decision.

Communicate to others

Ensure other staff who may interact with the team are aware of the test of change. This includes why the change is being tested and what they can expect.

2 Role cards can be provided as laminated cards to attach to a lanyard and be posted on the wall at key stations or areas of work for quick reference.

Do

Starting testing

Meet with the SDM and other team members who are part of the test before their shift to address any questions or concerns and reiterate the expectations for each role.

Collect data and feedback

Collect data during the testing cycle.

Capture feedback at huddles.

Study

At the end of the testing cycle, gather the team to review the data and feedback. Identify what is working well and opportunities for improvement. Develop ideas for any adjustments that could be made to improve the model.

Act

Decide whether to continue testing and if any adjustments are needed. Start the next PDSA cycle accordingly.

Note that the intent should always be to continue testing unless:

- the model was determined to be inappropriate (unsafe, unsustainable or no confidence that it would lead to improvement), or
- the model has been tested long enough that it is ready to transition into permanence (implemented as the new standard way of working).

How to measure if the change is leading to improvement

The following measures could help you understand if the early senior decision-making model is leading to improvements. For more information on measurement for improvement, refer to the Institute for Healthcare Improvement website <https://www.ihi.org/how-improve-model-improvement-establishing-measures>.

Measure	Metric	Operational definition	Why use this measure
Outcome measure	Time from arrival to disposition decision	ED length of stay for non-admitted patients Time from arrival to clinical decision to admit[3]	This model aims to reduce the time to decide about the next appropriate point of care.
Process measure 1	Time from arrival to being seen by SDM	As per metric	This measure will determine whether the model is performing as intended.
Process measure 2	Proportion of patients seen by SDM	The percentage of patients the SDM sees during the testing period	This measure will determine whether the model is performing as intended. The appropriate proportion of patients suitable for the SDM model should be predicted based on past patient data.
Balance measure	Proportion of patients who represent to the ED within 72 hours	The number of patients who represent to the ED within 72 hours of a previous presentation	An SDM may be overwhelmed by the volume of decisions made. This may reduce their accuracy in predicting the need for admission.

3 An alternative measure is to use the time of bed request if the clinical decision to admit is not available.

Case study: Peninsula Health

Organisation	Peninsula Health
Service type	Metropolitan emergency department
Problem	Access to an SDM early in a patient's journey in the ED was fragmented leading to delays in disposition. This reduced patient flow through the ED and ambulance transfer times.
Change idea	Test an emergency physician in charge (EPIC) role in the Frankston Hospital ED between the hours of 8:00 am to 6:00 pm, Monday to Friday.
Changes	Implement the EPIC role to: • provide early review by SDMs including the timely assessment of ambulance patient arrivals • provide early identification of patients who are appropriate for admission to the ED short stay unit • oversee the ED waiting room, initiating assessment and treatment, and facilitating timely referrals to specialty teams whenever possible • support timely admission decisions by medical and nurse practitioners across the ED.
Measures	**Outcome measure (see Chart 1):** Average time from arrival to clinical decision to admit • Reduced by 27 minutes • Improved by 12.5% **Process measure (see Chart 2):** Mean ambulance handover time • Reduced by 17.5 minutes • Improved by 26.4%
Key enablers	**Supporting ED roles** • *Nurse phlebotomist* in the ED waiting room to ensure prompt collection of pathology. • *RAPID (respond, assess, plan, implement, discharge)* nurse in the fast track area, focused on expediting patient dispositions. • *Nursing senior decision-maker* at triage to help identify patients who can be diverted to their GP or local priority primary care centre.

Chart 1: Peninsula Health – Mean time from ED arrival to clinical decision to admit (mins) – Individuals chart

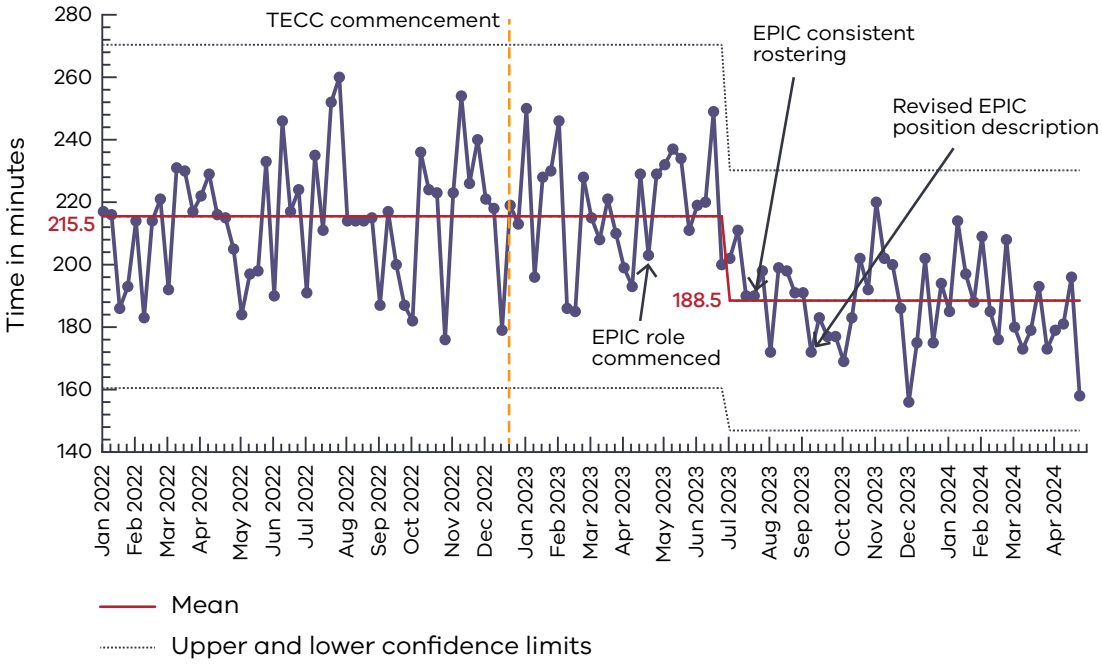
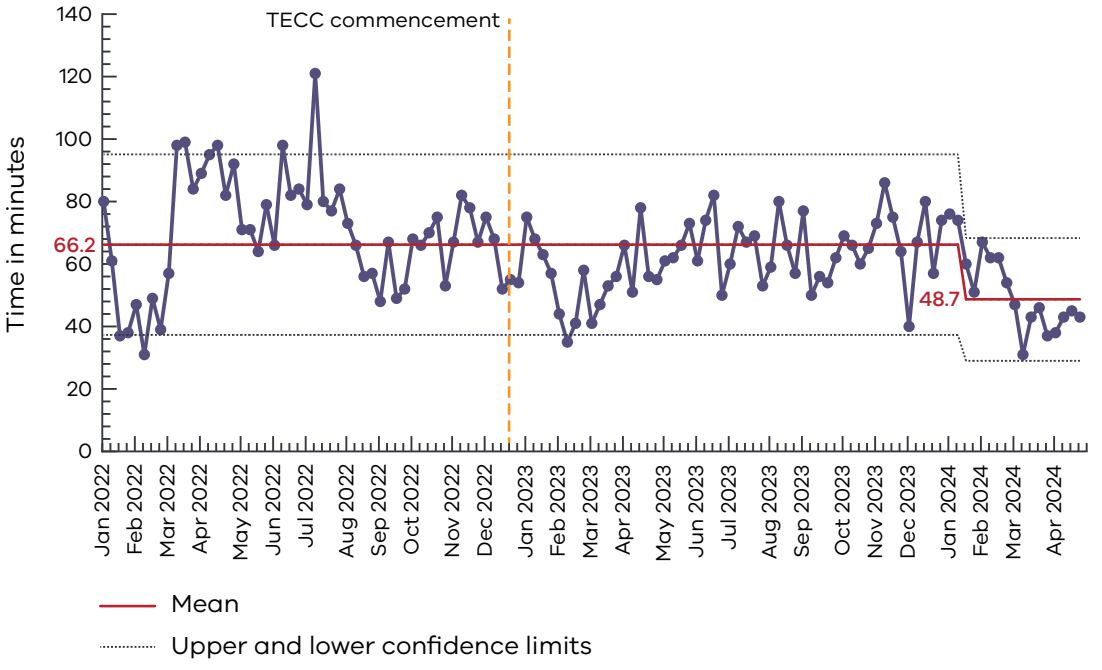


Chart 2: Peninsula Health – Mean ambulance handover time (mins) – Individuals chart



Appendix 1.1: EPIC role description

The principal roles of the emergency physician in charge (EPIC) are resource management and patient flow. This will relieve the blue/green/pink consultants of some of their workload and allow for front-loading of patient care. The 2 main focuses are:

- ambulance ramp – improving offloading of patients and early initiation of appropriate treatment
- ED short stay – improving flow through emergency short stay (ESSU) by assisting in early discharges and appropriate direct admissions.

Focusing on both the above areas will result in:

- improved time to treatment for patients
- better access to beds
- quicker turnaround time for ambulance crews to get back out into the community.

Main tasks:

1. Facilitating early discharges from ESSU. This includes meeting with the ESSU consultants after the ED huddle to identify those patients flagged for impending discharge, reviewing those patients as required, and helping to discharge them as soon as possible: aiming for '8 out by 10am' and '4 out by 6pm'.
2. Facilitating direct admissions to ESSU for clinically appropriate patients on the ambulance ramp as well as the waiting room. This includes ordering relevant tests and treatments and documenting a handover to the relevant ESSU consultant.
3. Rapidly assessing patients on the ambulance ramp, specifically:
   - offloading to the waiting room when appropriate
   - clearing c-spines clinically when appropriate
   - early initiation of appropriate investigations and initial treatment.

Additional tasks once the main tasks have been completed:

4. Acting as the overall ED consultant in charge.
5. Balancing the workload and staffing across streams: Ensure each team has appropriate staffing at the start of the shift. Regularly review the workload for each team throughout the shift to rebalance either staffing and/or patient load as required.
6. Taking internal and external referrals via 7196. Passing non-urgent results that need follow up to the in-house clinical support consultant on 8980.
7. Responding to all codes in the department.
   - This includes: emergency buzzer activations, Code Blue within ED and ED waiting room, Code Grey or Code Black outside of the behaviour of concern (BoC) room, trauma calls, stroke calls.
   - This does **not** include: sepsis alerts, trauma alerts, BoC response, Code Grey/Black within the BoC room.
   - Attending codes is **not** to assume care for the patient but to assist the relevant team leaders in ensuring that appropriate resources are allocated, and initial management is started early.

8. Ensuring patients waiting to be seen have appropriate investigations and initial treatment started, focusing on the ambulance ramp and waiting room. This includes imaging, bloods, swabs and analgesia as appropriate.
9. Assigning themselves to direct/expected admissions from the community or outpatient clinic, where the clerking will be done by the inpatient team.
10. Ensuring flow through the radiology department is maintained. Specifically:
    - periodically triaging the CT and ultrasound waiting lists and assisting radiographers to prioritise patients when demand exceeds capacity
    - ensuring any blockages in flow to the radiology department are resolved, such as assisting with IV cannulation.

Tasks do NOT include:

11. Being the primary clinician for patients.
12. Joining a team as another staff member – for example, in resus or fast track / paediatrics.

Schedule:

13. Day 0800–1800, evening 1600–2400 (when rostered, and dependent on SMS sick leave).
14. Meet with the nurse in charge after handover to plan patient movements.
15. Attend the ED huddles at 0845 and 1645.
16. Meet with the ESSU consultants after the huddle to plan how to facilitate early discharges.
17. If the ED executive is unavailable, the EPIC assumes the role of the ED executive for disaster activation and management.

Acknowledgement

The Department of Health thanks Peninsula Health, who have contributed their improvement strategies and data to show the impact of early senior decision making in the Victorian context.

Chapter references and further reading

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