Sustainable and Quality use of Diagnostics in Emergency Departments Project

Reducing low-value diagnostic pathology, imaging, and interventions in Victorian Emergency Departments to improve patient outcomes, lower carbon emissions, and save healthcare costs.

Project Information Pack

OFFICIAL

Background information

Healthcare in Australia accounts for a significant portion of the nation's carbon footprint, contributing approximately 7 per cent of total greenhouse gas emissions[1]. These emissions have detrimental effects on both human and environmental health. Many healthcare professionals and consumers are increasingly concerned about the impacts of climate change and believe the sector should take action to reduce its environmental footprint. In October 2024, the Australian Commission on Safety and Quality in Healthcare, in partnership with the Australian Centre for Disease Control and Australian specialist medical colleges released a joint statement – *Working together to achieve sustainable, high quality healthcare in a changing climate* to signify a shared commitment to address the health impacts of climate change.

Creating a safer healthcare system for all Victorians requires providing high value, evidence-based care. Addressing low-value pathology, imaging and interventions can significantly improve patient outcomes while benefiting the environment. Additionally, medical imaging and pathology tests contribute around 9 per cent of the healthcare sector's carbon footprint due to the energy-intensive equipment and materials required[2]. In Victoria's public Emergency Departments (ED), it is estimated that addressing overuse in just four low-value healthcare practices could save approximately $9 million annually[3] and cut emissions by over 81,000 kg of CO_2, equivalent to driving a car 579,000 kilometres. If this can be applied to other tests and practices, there is potential for substantial cost savings, allowing resources to be redirected to other areas of care.

Overuse of diagnostic procedures can also lead to misdiagnosis or overdiagnosis, compromising patient safety, and affecting patient flow through hospitals. This can contribute to a cycle of clinically unwarranted treatments and interventions. Reducing waste and low-value care in imaging and

pathology can decrease exposure to unnecessary risks and enhance the experiences of both patients and staff within the healthcare system.

Appropriate use of pathology and imaging services aligning with patients' needs and health related goals has the potential to:

- Prevent potential patient harm by reducing the risk of overdiagnosis and unnecessary treatments.
- Minimise exposure to radiation.
- Improve patient satisfaction and health outcomes by focusing on clinically relevant and evidence-based care.
- Decrease the likelihood of complications or adverse events caused by medical intervention.
- Reduce greenhouse gas emissions associated with supply chains and the use of pathology and imaging equipment and consumables.
- Reduce waste generated by disposable materials used in testing (e.g. syringes, plastic tubes).
- Optimise resource allocation and allow funds to be redirected towards other areas of care.
- Lower costs to patients and healthcare services by addressing overuse of pathology and imaging procedures.
- Deliver positive benefits for healthcare staff.

What is the Sustainable and Quality Use of Diagnostics in Emergency Departments project?

Safer Care Victoria (SCV) and Climate Health Victoria (CHV) have partnered to lead the delivery of a project aimed at promoting the quality use of diagnostic pathology and imaging in Victorian EDs. This initiative is supported by the Australasian College for Emergency Medicine (ACEM) and offers an opportunity to collaborate with other health services to test and implement changes that support clinically appropriate, safe, and high-quality use of diagnostics. In partnership with participating health services, the project aims to improve patient outcomes, deliver environmental benefits and utilise healthcare resources more effectively.

ED project teams recruited to this project will also have an opportunity to attend a two-day Sustainability in Quality Improvement (SusQI) workshop delivered by the University of Melbourne (UoM) and co-designed with SCV. The UoM is a member of the Centre for Sustainable Healthcare's SusQI Academy, globally recognised leaders in sustainable healthcare, and is the only Victorian Beacon Site.

The Sustainable and Quality use of Diagnostics in Emergency Departments project will build upon the successes of the Choosing Wisely program, an initiative aimed at reducing unnecessary medical tests, treatments, and procedures to improve patient outcomes, reduce overdiagnosis, and lower healthcare costs. SCV and CHV aim to expand this program, with an additional focus on sustainable

change, program governance and climate health, aligning with the National Health and Climate Strategy and global efforts to address climate change.

This project will work with Victorian public health services over a two-year period, specifically targeting ED presentations. This includes reducing the number of low-value diagnostic pathology, imaging, and interventions such as intravenous cannulations, coagulation studies and blood gases, as well as CT KUB imaging requested by ED clinicians as standard practice. Participating health services can choose other investigations or interventions to target through this project, outside of these four, that they can propose will improve patient care, reduce greenhouse gas emissions and healthcare costs.

Project design and expectations

What are we trying to accomplish?

We aim to reduce the number of diagnostic pathology, imaging and interventions* in Victorian public emergency departments by at least 30%*, to reduce patient harm, improve quality of healthcare and reduce its environmental impact, by June 2027. We will do this by aligning care with patient values and goals.

**Participating health services will identify target diagnostic pathology, imaging and/or interventions based on local needs and the potential impact of reducing these interventions.*

Each health service will develop its own aim statement that aligns with their target pathology/ imaging and organisational goals.

How will we know that a change is an improvement?

Measurement is an essential part of testing and implementing changes in any quality improvement project. Measures help teams determine whether the changes they are making in the system lead to an improvement. Throughout this project all teams will collect data related to clinical care processes and outcomes, as well as the utilisation of select diagnostic pathology and imaging tests to enable estimates of waste, carbon, and cost savings. Project teams will have access to, and training in, the use of a project tracking tool, developed by the UoM and SCV, to record and report the measures collected. Further information on project measures will be provided in the two-day SusQI training workshop. Teams will be supported to select measures to use that align to their change ideas/targeted pathology and imaging practices.

How are we going to achieve this together?

SCV will partner with Health Services to use SusQI and the Model for Improvement to test, measure and implement evidence-based improvements. Together we will share experiences, to work towards reducing variation in the quality use of pathology and imaging for patients across Victoria. Collaboration and shared learning will be facilitated through workshops and monthly Communities of

Practice to enable the sharing of successes, challenges, and data to support the sustainable and safe implementation of the program.

Engagement Activity	Description
Status report meetings	Meetings between the SCV project team, the UoM and each health service's project team to discuss progress, review data, and escalate risks and concerns that will impact participation in the project. A template for these meetings will be supplied to health services during induction to the program.
Site Visits	Health services will host the SCV project team. **Site visits** will offer the opportunity to see the project or location in action. It provides a valuable opportunity to celebrate success, identify areas for improvement, and strengthen collaboration.
Workshops Quarterly	**Workshops,** including the SusQI two-day workshop, are face-to-face or virtual meetings led by SCV and/or UoM, where teams come together with the expert faculty to exchange ideas. They will provide teams opportunity to network and expand their knowledge in evidence-based improvements and sustainability in quality improvement.
Community of Practice Regularly / Monthly	**Community of Practice** is an all share, all learn online community where health services can exchange learnings and collaborate to overcome challenges. Health service project leads will be called upon to chair these meetings.

A detailed timeline and key dates for activities will be provided in a separate document to participating health services.

What can you expect from us?

SCV will provide:

- **Funding** for a project lead. (Approximately 0.3-0.5FTE for 12 months for allied health, junior medical officer, nursing, or project officer equivalent. Funding contingent on how many health services participate in the project.)
- A **dedicated project team** with expertise in improvement methodology to support service teams in testing and implementing change ideas.
- A **two-day workshop in Sustainable Quality Improvement** delivered in conjunction with the University of Melbourne.
- Access to, and training to utilise, a **project tracking tool** to record and report measures including the environmental impact of healthcare interventions.
- Access to **clinical experts** and **consumers** with lived experience.
- **Networking opportunities** with other participating services, supporting knowledge sharing and learning opportunities in-person and virtually.
- **Monthly status report** meetings to discuss data, and support teams to generate, analyse, understand, and present data.
- Support to foster growth and development of **improvement capability** and capacity, including improvement science teaching and **coaching**.
- A **collaboration site** (via Team Assurance platform) that:
  - Supports connection and sharing of ideas and resources with other improvement teams/health services.
  - Enables easy and dynamic data sharing with SCV.

What do we expect from you?

Participating organisations are expected to:

- Designate an **executive sponsor** who will:
  - Champion the project as an organisational priority.
  - Support their team to test and implement changes by making themselves available on a regular basis/as required.
  - Attend executive sponsor kick off meeting and status report meetings (or assign proxy) with SCV and the project team as required.
  - Enable protected time for the project team to dedicate to the improvement work.
  - Provide project teams with access to relevant resources.
  - Remove barriers to ensure progress of the work.

- Designate a **Project Lead,** funded by SCV, who will:
  - Have a clinical or non-clinical background.
  - Undertake all day-to-day project planning and management.
  - Prepare for and attend status report meetings.
  - Coordinate a project team to test and implement changes in processes to reduce selected low-value diagnostic pathology, imaging and interventions.
  - Actively participate in all project activities such as in-person events, workshops, Communities of Practice, calls, and emails. Active participation may include, but is not limited to developing storyboards, sharing key learnings, hosting online Communities of Practice, timely response to emails and participation in feedback questionnaires and forums.
  - Collect data on agreed measures at your health service and share with SCV via a secure nominated platform (Team Assurance platform).
  - Openly share learnings with other participating sites.
  - Escalate risks and concerns that will impact participation in the project to executive sponsor and SCV.

- Designate a senior clinician (senior nurse, fellow, senior emergency physician) currently working in your Emergency Department as a **Sustainability Clinical Champion,** who will:
  - Support the project, influence uptake and champion sustainable changes beyond the initial project phase.
  - Provide strategic input and high-level project steering as part of their clinical duties (unfunded by SCV).
  - Have a special interest in climate health, value-based health care and quality improvement.

- Form a **multidisciplinary** core **team** (including the project lead) of 4-5 members including: **clinicians** (e.g., medical, allied health, pharmacy), **sustainability leads**, **consumers,** and members with **quality improvement** experience, responsible for identifying champions and driving change on the ground. For best results we recommend this team:
  - Complete a health service charter, setting aims and goals for the project team.
  - Hold regular meetings e.g. weekly or fortnightly.
  - Attend and contribute to all engagement activities listed in the table on page 4.
  - Test change ideas using plan-do-study act cycles.
  - Have fun learning and growing as a team.

- **Collect data:**
  - Share data with SCV via TeamAssurance platform.

Further information

If you have any questions, please reach out to the Value Based Health Care Team:
email: valuebasedhealthcare@safercare.vic.gov.au phone: 03 9285 3594

References

1. Malik, A., Lenzen, M., McAlister, S., & McGain, F. (2018). The carbon footprint of Australian health care. *The Lancet Planetary Health*, *2*(1), e27-e35.
2. Malik, A., Padget, M., Carter, S., Wakiyama, T., Maitland-Scott, I., Vyas, A., ... & Geschke, A. (2021). Environmental impacts of Australia's largest health system. *Resources, Conservation and Recycling*, *169*, 105556.
3. Figures provided by the Department of Critical Care, Melbourne Medical School, the University of Melbourne.
4. Choosing Wisely Australia [Internet]. Australia (AU): Australian Commission on Safety and Quality in Health Care; cited 2025. Available from: choosingwisely.org.au