



Emergency Medicine Foundation

# Emergency Medicine Foundation Research Investment Impact Analysis





## **Executive summary**

*A report prepared for the  
Emergency Medicine Foundation  
by KPMG*





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# Key findings

## Government investment in emergency healthcare services in Australia

			
\$8.6 billion spent on public emergency healthcare services	\$4.8 billion funding for public hospital emergency department presentations	\$3.2 billion expenditure on ambulance services	\$58.0 million aeromedical retrievals expenses

## Outcomes from EMF-funded research

			
Increased research staff and research capacity in Queensland emergency departments	Improved patient experience and reduced wastage of healthcare consumables	Estimated <b>\$44 million</b> in economic health benefits each year across Queensland and the Northern Territory in participating hospitals	<p>If only five projects are translated more widely in Queensland, the potential annual economic benefit for the State is <b>\$97 million</b>.</p> <p>If these five projects are adopted across Australia, the potential nationwide annual economic benefits is <b>\$767 million</b>.</p>

# Executive Summary

Emergency healthcare services play a vital role in the frontline care of Australians. They are also the very public yardstick by which our entire healthcare system is measured.

Increasingly, our emergency healthcare services are facing rising patient demand, which is straining clinicians' ability to provide timely care. With calls for better services and models of care, robust, evidence-based options are urgently needed to deliver long-term and sustainable solutions.

The Emergency Medicine Foundation is one of the few Australian organisations awarding research grants to clinician-led studies into improved emergency healthcare. After a decade, its rigorous, impact-driven grants programs are leading to system-wide changes, and most importantly, better patient outcomes.

In this review, the *Emergency Medicine Foundation Research Investment Impact*, KPMG was contracted to evaluate the value of the organisation in terms of benefits it delivered for patients and the healthcare system as a whole.

KPMG selected eight projects funded by the Emergency Medicine Foundation, which had outcomes published in peer-reviewed journals. Where economic evaluations were available, they updated the financial benefits for 2017-18 dollar values and, where possible, estimated the potential value if the projects were adopted in Queensland as well as nationally.

## Australia's investment in public emergency healthcare services

- Australian government investment in emergency healthcare is substantial, accounting for 13.7% of the national public healthcare spend
- Commonwealth, State and Territory governments spent \$8.6 billion on public emergency healthcare services in 2016-17
- \$4.8 billion spent on emergency department presentations in Australian public hospitals; \$3.2 billion ambulance service expenditure; and aeromedical expenses of \$58 million.

## Economic outcomes from Emergency Medicine Foundation investment in research

KPMG selected eight projects funded by EMF, which had outcomes published in peer-reviewed journals. Several of these projects have been clinically translated predominantly in the participating hospital.

Key findings included:

- Estimated \$44 million in economic health benefits each year across Queensland and the Northern Territory in the participating hospitals.
- If only five of the projects are translated more widely across Queensland, the potential annual economic benefit for the State is \$97 million.
- If these five projects are adopted across all Australian emergency departments, the potential nationwide annual economic benefits is \$767 million.

- KPMG calculated a benefits realisation ratio for five projects invested in by EMF—for every \$1 there was an estimated \$53 return.

## Capacity building

KPMG stressed the clear value of EMF in building research capacity in the emergency healthcare workforce via its grants and capacity building initiatives.

## Other benefits

Based on the EMF-funded projects reviewed by KPMG, there were further non-quantified benefits:

- Increased staff and hospital capacity
- Reduced wastage of healthcare consumables
- Improved patient experience
- Reduced aeromedical retrievals

## Conclusion

Emergency healthcare services are a critical component of Australia's healthcare system and account for a significant proportion of the country's healthcare budget.

Expenditure in emergency healthcare services should see improved patient outcomes and system-wide efficiencies and effectiveness.

Dedicated and specific investment in emergency healthcare research, as demonstrated by the Emergency Medicine Foundation can achieve significant economic benefits for the Australian health system.

# Case studies



## Chest Pain

Chest pain is one of the most common problems among patients presenting to emergency departments. EMF-funded research led by Professor Louise Cullen to develop and trial two accelerated diagnostic protocols, ACRE and IMPACT, for patients presenting to the emergency departments with chest pain. The IMPACT protocol in particular means 75% patients can be safely discharged home from the emergency department within four hours—down from 16-26 hours.

**EMF investment: \$1,117,440**

**Realised 5 year benefit\*: \$67.5 million**

**Potential national 5 year benefit: \$2.1 billion**

*\* Across 19 Qld emergency departments*

## Hospital in the Nursing Home

The *Hospital in the Nursing Home* is making emergency care for older persons safer, easier and less frightening. Following an EMF-funded evaluation of the program, it was also found to reduce the number of emergency department visits from aged care facilities and delivering a return of \$22 for every \$1 invested. The research is important, with one in five emergency department presentations from patients aged over 65 years. Of these, a substantial proportion of the patients live in aged care facilities.

**EMF investment: \$297,846**

**Realised 5 year benefit:\* \$40.9 million**

**Potential national 5 year benefit: \$1.3 billion**

*\* Royal Brisbane and Women's Hospital only*







### Point-of-care testing for remote health centres

With an EMF grant, a Flinders University research team assessed the benefits of using rapid, on-site pathology testing, or point of care testing (POCT), in remote health clinics in the Northern Territory.

The team found the technology improved the outcomes for acutely ill patients: reducing the need for medical evacuations by up to 35% and allowing patients to receive treatment locally; while also enabling the early diagnosis, treatment and evacuation of critically ill patients.

**EMF investment:** \$95,730

**Realised 5 year benefit:\*** \$108 million

*\* In the Northern Territory*



### IV fluids: no benefit for drunk patients

Several Queensland emergency departments are no longer using IV fluids to treat intoxicated patients. The change in practice follows an EMF-funded clinical trial at the Gold Coast University Hospital. The research team found there was no evidence that IV fluids either improved outcomes for drunken patients or shortened their hospital stay. Nationally, if all emergency departments adopted the change in clinical practice, it would save the Australian healthcare system more than \$57 million each year.

**EMF investment:** \$43,738

**Realised five year benefit:\*** \$2.5 million

**Potential national 5 year benefit:** \$287.6 million

*\* Gold Coast University Hospital only*



# Case studies

## New program sees patients getting fewer needles

The CREDIT intervention program is reducing the number needles used in emergency departments. The EMF-funded program was developed at the Royal Brisbane and Women's Hospital and has the potential to save the Australian healthcare system more than \$19 million each year. CREDIT specifically targets the overuse of cannulas, which are routinely inserted into emergency department patients to inject medication or fluids. More than 30% of cannulas are never used.

**EMF investment: \$81,200**

**Potential national 5 year benefit: \$98.3 million**

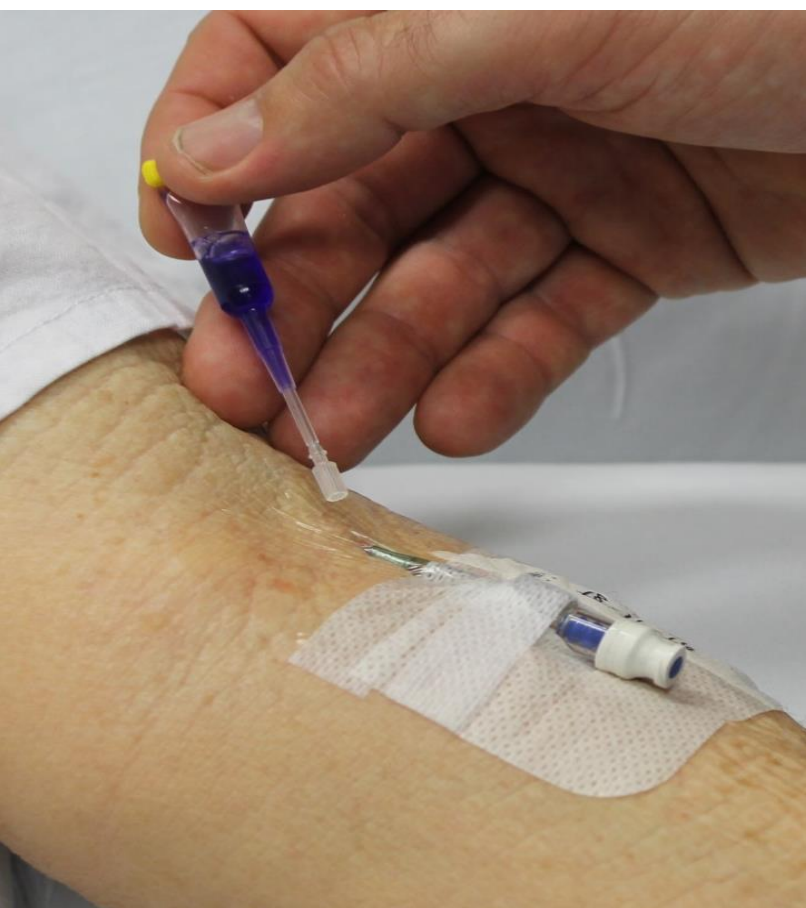


## Medical glue solves IV drip issues

Caboolture Hospital Emergency Department clinicians have found a new way to make one of the most common medical procedures in the world – placing drips or intravenous (IV) lines – safer, less painful and potentially more cost effective. In a clinical trial, the glue not only reduced the number of IV lines that needed replacing in the first 48 hours (down to 17% from 29 to 40% failure rates), it also cut infection rates and was more comfortable for patients. By switching to glue, Australia's emergency departments could collectively save \$20 million each year.

**EMF investment: \$52,284**

**Potential national 5 year benefit: \$101 million**



# Case studies

## Improving the care of babies in emergency departments

EMF-funded researchers have changed the way emergency clinicians treat babies with respiratory illness. Following a large, EMF and NHMRC-funded clinical trial, Queensland metropolitan and regional emergency departments are now using nasal high-flow breathing devices to treat babies with breathing difficulties associated with respiratory illnesses, such as bronchiolitis. The device halves number of babies requiring a higher level of care, including intensive care.

**EMF investment:** \$69,924

**Potential national 5 year benefit:** \$5.9 million\*

*\* Excluding potential savings from reduced hospital transfers/retrievals*



## Lung ultrasound new diagnostic option for older patients with breathing problems

Queensland emergency departments are using lung ultrasound to quickly and accurately diagnose heart failure in older patients presenting with shortness of breath. In EMF-funded studies, it was shown that the diagnostic was simple to use and just as effective as the traditional x-ray.

An economic analysis associated with the trial of the device (in metropolitan emergency departments) revealed no economic advantage over traditional methods. The evaluation did not take into account, however, the benefit of using the less expensive and portable ultrasound device in rural emergency departments and remote health centres (as well as by paramedics) where x-ray facilities may not be available or as readily accessed after hours.

**EMF investment:** \$241,542

