

THE CONVERSATION

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GP co-payment would increase emergency department wait times

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As the queue grows, small increases in waiting times soon turn into dramatic spikes. Fotoluminate LLC/Shutterstock

The introduction of a GP co-payment could see average emergency department visits increase by between six minutes and almost three hours, new modelling shows, as more patients opt for free hospital care rather than paying to see their local general practitioner.

Based on an average emergency department (ED) visit of 5.6 hours, one extra patient per hour would make the visit marginally longer – an average of 5.7 hours, which includes waiting times and treatment, or admission to a bed. An additional four patients per hour, however, would lengthen the queue and result an average visit of 8.5 hours.

The new Australian Senate will soon be asked to vote on legislation for the proposed A\$7 GP co-payment but the Department of Health hasn't provided any modelling of its impact.

We've been working on a patient flow simulation model for a large Adelaide hospital with a busy emergency department for almost a year now. We therefore have a ready-developed tool to consider the possible consequences of a GP co-payment shifting activity from the community to hospitals.

While every hospital around Australia would be different, the pattern is likely to remain the same: as patient demand grows without additional resources, small increases soon turn into dramatic spikes in waiting times.

Current waiting times

Patients requiring emergency care are prioritised based on urgency and triaged into five categories. A triage score of one means the patient needs immediate treatment due to a life-threatening issue such as a heart attack, while a triage score of five means the patient requires non-urgent treatment and **should be seen within two hours**.

People triaged to category five and four are sometimes referred to as GP-like patients. But these categories don't mean the patients shouldn't be there; the triage category is merely a means of prioritising the order in which patients should be treated. And some will require admission into hospital.

Our patient flow model takes triage and whether patients are admitted or discharged from the emergency department into account.

Under the **National Emergency Access Target**, by 2015 hospitals should be admitting or discharging 90% of patients from the emergency department within four hours. This includes waiting time before treatment, assessment, tests and evaluation.

From October to December 2013, **66% of patients** in major metropolitan hospitals were either admitted or discharged within four hours; this compares with 53% of patients during the same period in 2012. So improvements have been made, but there's still a long way to go to meet the target.



Emergency patients are already waiting longer than the target times for care. [ThreeRivers11/Shutterstock](#)

Our model

Using our model we considered the question: what happens to the average queue length and average time spent in the emergency department as additional patients are added to the system?

Clearly, we didn't know exactly how much demand would shift to hospitals, so we had to make some assumptions about what might happen.

For our initial exploration, we assumed an extra patient would arrive at the emergency department each hour between 8.00am and 6.00pm, Monday to Friday, and would be discharged home without admission. One extra patient per hour means ten extra patients per day.

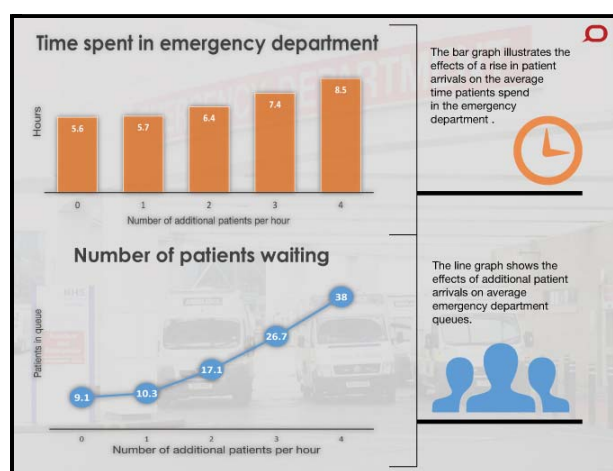
This seemed a reasonable assumption, as the hospital's catchment is large and there are an average of 20,000 regular and long GP consultations every day in South Australia. Around 80% of these consultations are currently bulk billed.

One additional patient per hour represents just 0.036% of the total GP consultations, while four additional patients per hour represents 0.143% of consultations.

Finally, we assumed this rate of additional patient arrivals would be sustained. And we've assumed the hospital's level of resourcing doesn't change.

What we found

The following chart shows what happens to emergency department queues and the time patients spend in the ED as additional patients are added to the system.



Click to enlarge

You can see the addition of extra patients per hour results in a larger increase in average queue length and the average time spent in the emergency department. Additional time spent in the emergency department means patients wait longer, be it for treatment to commence, or for things like x-rays, blood tests, specialist assessments, and so on.

In this scenario, the average time spent in the emergency department increases for those patients waiting to be admitted into a bed, even though all the additional patients were discharged.

Currently, patients who are admitted to a bed spend an average of 7.6 hours in the emergency department. With one extra patient per hour arriving per hour, this time rises to an average of 7.7 hours, but with four extra patients, this rises to an average of 10.7 hours.

It's important to note that the figures won't be the same for all hospitals. But the trend will be: at some point average waiting times and average queue lengths will spike.

Flow-on effects

While the federal government has suggested hospitals could charge patients for "GP" attendances to reduce the likelihood of patients deciding to switch service options, such an approach is likely to cost more than it would generate in fees.

Add to this the practical difficulties of determining which patients *could* have seen a GP instead of visiting an emergency department and whether you'd want emergency department clinicians undertake this task, and it looks even less appealing.

So, what can hospitals do if GP co-payments are introduced and more patients arrive seeking care?

The hospital already deals with variation in patient arrivals and can respond by reallocating resources. But this is done for short bursts and not in a sustained manner, unless there's a planned change to the way in which the emergency department is going to do business.

Clearly, if the introduction of the co-payment results in an additional stream of patients arriving at the hospital, there are two options for the hospital's management: allow patients to wait longer, which may have implications for patient outcomes; or add resources, which invariably involves additional costs.



Charging emergency department patients who could have been treated by a GP would cost more than it would generate. Tyler Olson/Shutterstock

The health system is complex. Decisions to change a complex system without first understanding both the intended and unintended ramifications creates unnecessary risk. This is precisely where modelling can be of assistance: to analyse various scenarios and understand the outcomes, all without the need to mess up the real system.

In the United Kingdom, the Cumberland Initiative hopes to transform “the quality and cost of [National Health Service] care delivery through simulation, modelling and systems thinking”. This, it claims, could “cut NHS costs by 20% while raising capacity and quality”.

Our group has just started collaborating with the Cumberland Initiative, with the aim of achieving similar outcomes in Australia.

This article was co-authored by Keith Stockman, Manager of Health Operations Research and Projects in the General Medicine Program at Monash Health.