

Emergency department crowding is not being caused by increased inappropriate presentations

Peter G Jones, Gary Jackson

ABSTRACT

Contrary to the prevailing wisdom, there may be little or no room to move with respect to reducing emergency department (ED) utilisation, as ED utilisation in Aotearoa New Zealand is low by world standards and is not driven by patients presenting inappropriately with minor conditions. We should continue the excellent work done in the primary care sector to maintain our low ED presentation rate and support primary and urgent care providers to provide alternatives to the ED for people with minor conditions. However, to reduce the system pressure and harms caused by ED crowding due to access block for admitted patients, we also need to adequately resource our hospital-based inpatient teams and EDs so that the (appropriate) acute care workload can be managed safely.

The pervasive narrative about health system pressures in Aotearoa New Zealand has been that acute demand for hospital services is too high and increasing—especially for minor conditions—driven by lack of knowledge or access to alternative care in the community, and by costs of care, reflected in presentations to the emergency department (ED). This narrative was the rationale for a recently published article in the *New Zealand Medical Journal*.¹ Yang et al. explored why patients with minor presentations came to the ED at Middlemore Hospital. They found that the most common reason for presenting was that they had been referred there by a primary care provider (41%), while unavailability of alternatives and cost of care in the community were reasons for 28% and less than 2% of presentations respectively.¹ Furthermore, more than 95% of these patients had a primary care provider, nearly half had been to their primary care provider before presenting to the ED and virtually all were aware of alternatives to the ED.¹ These findings are consistent with a prior systematic review of 13 studies exploring the issue of why patients present to the ED.² Yang et al. argue that attempts to reduce non-urgent ED presentations should focus on the real reasons why people are coming, rather than unfounded assumptions that are not evidence based, which is to be applauded. However, Yang and colleagues themselves perpetuate a popular myth about ED presentations in New Zealand. This is that presentations are increasing markedly and that this is driven by people with minor conditions.¹

The reality is that ED presentations in New Zealand are among the lowest in the world based on population and are not increasing beyond expected levels. A recent paper comparing New York, Ontario and New Zealand found that there were approximately 250 ED visits per 1,000 population in 2016–2017 in New Zealand, compared to over 400 ED visits per 1,000 population in New York State and the province of Ontario.³ In major cities in New Zealand, after-hours accident and medical clinics see an estimated 2.5 million patients annually.⁴ In addition, it is estimated that primary care also sees approximately 2.5 million acute patients (out of 20 million visits annually).⁵ In contrast, there are 1 million ED visits annually, of which between 5% and 20% are “minor” cases suitable for primary care. Hence, in New Zealand more than 95% of people with minor acute health problems see providers outside of hospital-based EDs.

ED crowding and acute hospital system pressures causing risks to patient safety are primarily caused by insufficient resources within hospitals to cope with the appropriate demand for emergency care, especially timely access to hospital wards for admitted patients (access block), rather than too many minor presentations to ED.^{6,7}

Methods

For the following analyses, we used data from the National Non-Admitted Patient Collection (NNPAC) dataset extracted in July 2023. There

is a time lag of approximately 3 months for this data to be updated and go through data quality assurance, so the 2023 data shown in Figure 1 has been estimated from data up to March 2023. Rates are per 100,000 population, age standardised by 5-year age groups to the New Zealand estimated resident population for 2018. The data for the triage category is not age standardised. As we present data from the whole population rather than a sample of the population, we have not performed inferential tests. Trends were calculated using the Least Squares method in Microsoft Excel.

Results

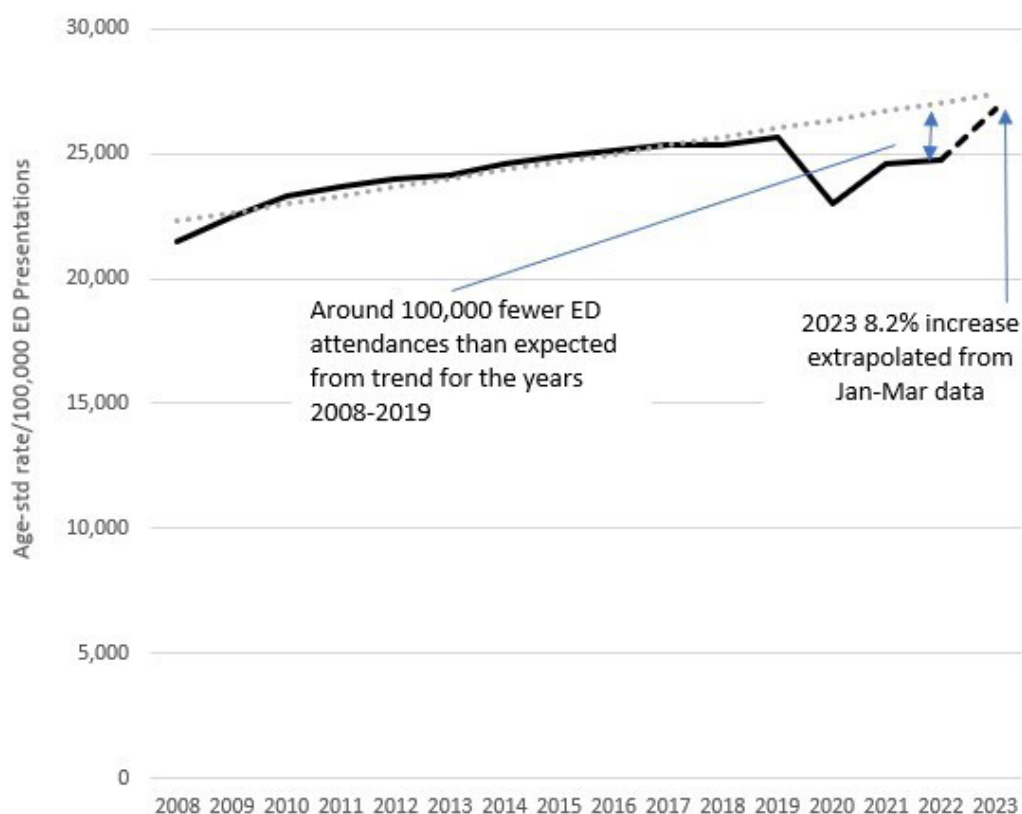
Figure 1 shows that age-adjusted ED presentations per 100,000 population have risen approximately 0.7% per year from 2008–2022, remaining low by international standards. Figure 1 also shows the impact of the COVID-19 pandemic and the public health measures taken in response to this, with an

estimated 100,000 fewer presentations in 2022 than would have been expected if the pre-pandemic trend had continued. ED presentations in 2023 appear to be returning to near pre-pandemic levels.

It is important to note that Figure 1 shows the national trend, which is not seen in all districts. Tairāwhiti and Canterbury had increases in presentations beyond that expected (Table 1). The increase in Canterbury coincided with opening of the new hospital in Christchurch in November 2020, which is consistent with but smaller than the increase in ED age-standardised presentations that was seen in Waitemātā when Waitakere hospital was opened in 2005.⁸ The increase in Tairāwhiti may partly be due to effects of climate events and the provision of primary care in the region.

When broken down by urgency of condition, presentations with non-urgent conditions are reducing over time while the number of more urgent presentations is increasing (Figure 2).

Figure 1: Age-standardised ED presentations 2008–2023.

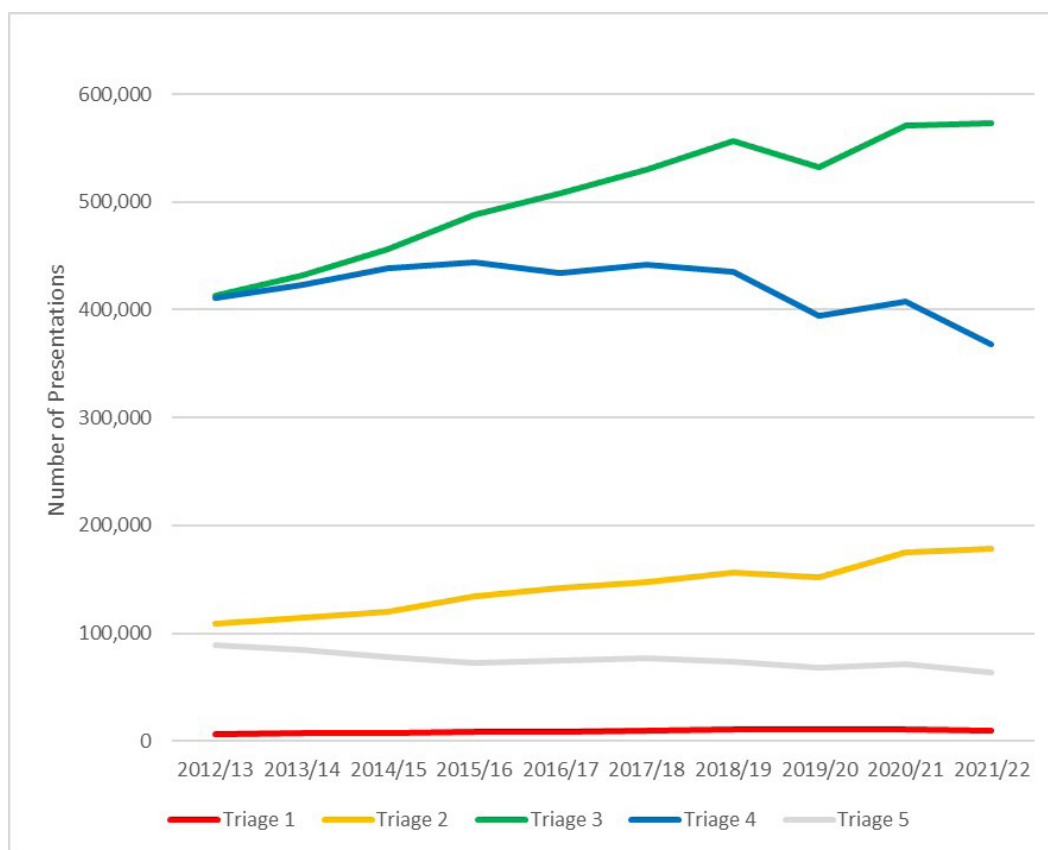


Key: ED = emergency department. ED attendance data sourced from the National Non-Admitted Patient Collection dataset. Population data sourced from Statistics New Zealand.

Table 1: Changes in age-standardised ED presentation rates from 2012 to 2022, by districts.

Districts	% change from 2012 to 2017	% change from 2017 to 2022	% change from 2012 to 2022	Annualised change from 2012 to 2019	Annualised change from 2019 to 2022
Northland	5%	8%	13%	1.3%	1.1%
Waitematā	4%	-8%	-5%	0.0%	-1.6%
Auckland	14%	0%	14%	2.0%	-0.2%
Counties Manukau	7%	-10%	-4%	1.5%	-4.8%
Waikato	8%	-6%	1%	1.7%	-3.5%
Lakes	8%	0%	8%	1.4%	-0.6%
Bay of Plenty	13%	-12%	0%	1.5%	-3.6%
Tairāwhiti	5%	21%	27%	2.1%	3.1%
Taranaki	-5%	-5%	-10%	-0.9%	-1.4%
Hawke's Bay	14%	-9%	4%	2.1%	-3.7%
MidCentral	-7%	-12%	-18%	0.7%	-8.0%
Whanganui	2%	-11%	-9%	-0.7%	-1.6%
Capital & Coast	13%	-9%	3%	1.5%	-2.4%
Hutt Valley	0%	-7%	-7%	-0.1%	-2.3%
Wairarapa	-10%	-19%	-27%	-2.3%	-5.0%
Nelson Marlborough	-10%	-1%	-11%	-1.6%	-0.2%
West Coast	3%	-38%	-36%	0.6%	-15.2%
Canterbury	8%	6%	15%	0.8%	3.0%
South Canterbury	13%	2%	15%	2.5%	-1.0%
Southern	6%	-2%	4%	1.8%	-2.9%
New Zealand overall	6%	-4%	1%	1.0%	-1.9%

Note: West Coast stopped reporting to NNPAC from Buller and Reefton in 2022 as these are community-based, not hospital-based, providers, which accounts for the apparent large drop in this district. The number from these providers is <0.2% of the overall population.

Figure 2: ED presentations by triage category 2012–2022.

Key: ED = emergency department. Triage 1–3 = more urgent, triage 4–5 = less urgent, based on the Australasian Triage Scale. Data sourced from the National Non-Admitted Patient Collection dataset.

This suggests that the increased pressure observed in EDs is due to a higher proportion of more urgent cases presenting over time rather than less urgent cases. Triage 3 cases are more likely to be older and more complex. They will require more investigations and will be more likely to be admitted to hospital and be exposed to hospital access block than triage 4 cases. They spend longer in ED (approximately an hour more on average) and thus lead to higher ED occupancy and crowding, as ED occupancy is intimately related to time patients spend in ED.⁷ It is also possible that there has been a change in the way patients are triaged over time; although the Australasian Triage Scale has been largely unchanged since 2011, only minor changes recommended to how patients were triaged were made in 2016.⁹ The proportion of triage 3 patients requiring admission to hospital is more than double that of triage 4 and this ratio has remained constant over the last 10 years (data not shown).

Conclusion

Contrary to the prevailing wisdom, there may be little or no room to move with respect to reducing ED utilisation, as ED utilisation in New Zealand is already low by world standards and is not driven by patients presenting inappropriately to ED with minor conditions. We should continue the excellent work done to date by the primary care sector in maintaining our low ED presentation rate and supporting primary and urgent care providers to provide alternatives to the ED for people with minor conditions. However, to reduce the system pressure and harms caused by ED crowding due to access block for admitted patients, we also need to adequately resource our hospital-based inpatient teams and EDs so that the (appropriate) acute care workload can be managed safely.

COMPETING INTERESTS

PJ is an emergency physician and GJ is a public health physician. Both authors are employed by Te Whatu Ora – Health New Zealand. The views expressed in this article are the personal views of the authors and not of Te Whatu Ora – Health New Zealand.

AUTHOR INFORMATION

Peter G Jones: Adult Emergency Department, Te Toka Tumai, Auckland City Hospital; Faculty of Medical and Health Sciences, Waipapa Taumata Rau, The University of Auckland; Hospital and Specialist Services Te Whatu Ora – Health New Zealand.

Gary Jackson: Service Improvement and Innovation, Te Whatu Ora – Health New Zealand.

CORRESPONDING AUTHOR

Peter G Jones: Adult Emergency Department, Te Toka Tumai, Auckland City Hospital; Faculty of Medical and Health Sciences, Waipapa Taumata Rau, The University of Auckland; Hospital and Specialist Services Te Whatu Ora – Health New Zealand.

E: peterj@adhb.govt.nz

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