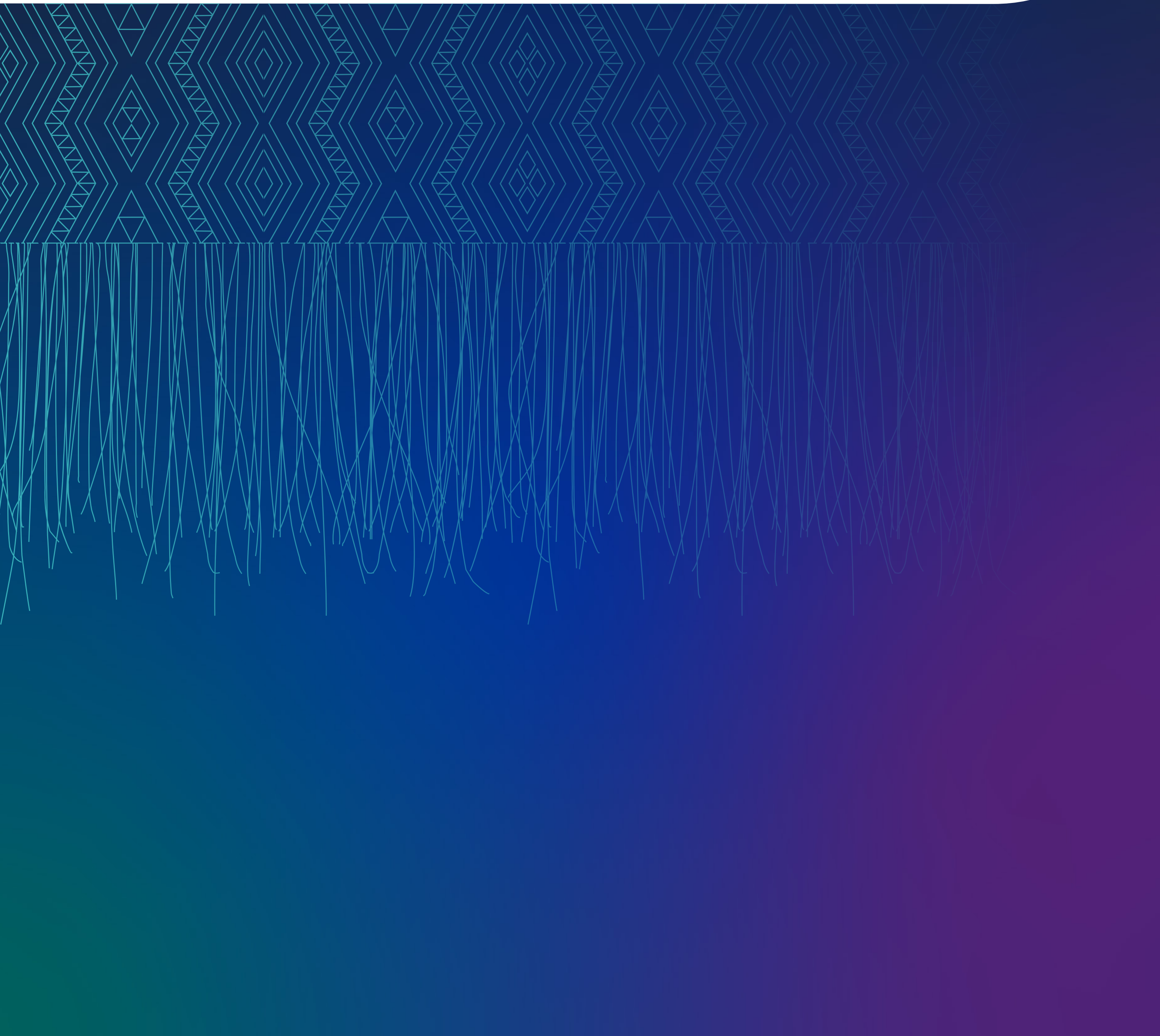
Health New Zealand
Te Whatu Ora

Clinical quality and safety review: longitudinal data

How results of care have changed over the last 10 years and where we are today

November 2024



Acknowledgements

This review of longitudinal quality and safety data was requested by the Commissioner of Health New Zealand | Te Whatu Ora (Health NZ). It has been produced by Dr Penny Andrew, Director, Te Whatu Ora Improve, Planning, Funding and Outcomes business unit. We wish to acknowledge the time, expertise and commentary provided by:

- **Richard Hamblin**, Te Tāhū Hauora Health Quality and Safety Commission Director of Health Quality and Intelligence who has supported the development and peer review of this report
- Te Tāhū Hauora Health Quality and Safety Commission
- **Professor Alan Merry**, ONZM. Foundation Chair of the Board of Te Tāhū Hauora Health Quality and Safety Commission and former Deputy Dean at the Faculty of Medical and Health Sciences at the University of Auckland
- **Dr Dale Bramley**, National Director, Planning, Funding and Outcomes, Health NZ
- **Adjunct Professor Robyn Whittaker**, Director Research, Evidence and Clinical Trials, Health NZ
- **Dr Karen Bartholomew**, Director Health Gain Development, Health NZ
- **Dame Professor Helen Stokes Lampard**, National Chief Medical Officer, Health NZ

Citation: Health New Zealand | Te Whatu Ora. Clinical quality and safety review: longitudinal data. How results of care have changed over the last 10 years and where we are today. November 2024. Wellington: Health New Zealand | Te Whatu Ora.

Published in March 2025 by Health New Zealand | Te Whatu Ora PO Box 793, Wellington 6140, New Zealand

ISBN 978-1-991139-21-4

This document is available at tewhatuora.govt.nz

Health New Zealand
Te Whatu Ora

Contents

Executive summary

1. The Commissioner of Health New Zealand | Te Whatu Ora (Health NZ) has requested a review of the quality and safety of health care and services across Health NZ. This report examines quality and safety, patient experience and harms data over the decade 2014 – 2024, and assesses trends over time.
2. Our review has identified four key findings:
    a. Outcomes of healthcare show a mixed picture with some indicators showing sustained improvement
    b. Access to healthcare in both primary and hospital settings is getting worse
    c. There are quality and safety alerts occurring in specific areas that need to be addressed
    d. Internationally in broad terms of quality and safety of care, New Zealand performs reasonably.
3. Changes in quality and safety indicators over time show that for some indicators there has been sustained improvement (perioperative mortality, falls, surgical site infections (SSI), in-hospital cardiac arrests, mental health inpatient services (seclusion), and inpatient experience); for some there has been improvement for a time but this has fallen back (postoperative deep vein thrombosis / pulmonary embolus (DVT/PE)); and some indicators have stayed the same or deteriorated (pressure injuries (PI), healthcare associated *Staphylococcus aureus* bacteraemia (HA-SAB), perinatal and maternal mortality, and patient experience of access to services).
4. These changes are summarised in Table 1 below along with key findings. More detailed descriptions of trends in these indicators is provided in the data and interpretation section of this report.

Change in indicators over time

TABLE 1: CHANGE IN QUALITY AND SAFETY INDICATORS OVER TIME

Improved	Stayed the same	Deteriorated
Falls (2014-2024) (2012/13 – 2023/24)	Perinatal & Maternal Mortality (2004-2021)	Healthcare-associated *Staphylococcus aureus* bacteraemia (2016-2024)
Surgical Site Infections (orthopaedics) (2015-2024) (2012/13-2023/24	Patient experience (once accessed services) primary care 2020-2024	Patient experience access to primary & secondary care (2020-2024)
Surgical Site Infections (cardiac) (2017-2024)	Hospital Standardised Mortality (2020-2024)	People waiting for more than 4 months for a first specialist appointment
Patient Deterioration (cardiac arrests) (2019-2024)		People treated within 4 months once given a commitment to treatment
Perioperative Mortality (2012-2024)		Pressure Injuries (hospital and non-hospital acquired) (2021-2024)
Mental Health Inpatient Services Seclusion (2019-2024)		Postoperative deep vein thrombosis / pulmonary embolus (2021-2024)
Patient experience (once accessed services) adult inpatients (2014–2019; and 2020-2024)		Health and Disability Commissioner nationwide rate of complaints (2014-2024)
		Self-discharge ED mortality (2016-2023)

Overall findings

Patient experience – access

- Since 2020, there has been a marked deterioration in patient experience with respect to timely access to services in both primary and secondary care. The proportion of adults who reported not accessing care from a general practitioner (GP) in the past 12 months due to long waits has almost doubled from roughly 11.5% in 2021/22 to 21.2% in 2022/23 – one-fifth of the entire adult population.
- The deterioration in timely access to primary care has been inequitable. In 2022/23, Māori (23.8%) and Pacific people (22.4%) were both more likely than European people (20.9%) to report not visiting a GP due to wait times. Disabled people (24.3%) were similarly more likely than non-disabled people (20.9%) to experience wait times as a barrier.
- Patient experience of timely access to secondary care services shows similar trends (deterioration): by November 2023, the number of people waiting more than four months for a first specialist assessment was four times the number waiting in February 2020. And, by November 2023, three times the number of people given a commitment to treatment were not treated within four months compared to February 2020.
- Barriers to accessing care are potentially numerous and are often experienced inequitably so their effects may be compounding. Māori (16.9%) and Pacific people (17.6%) were more likely to experience cost as a barrier to visiting a GP than European/Other (12.4%) and Asian (10.4%). Adults living in the most deprived neighbourhoods were 1.4 times as likely as those living in the least deprived neighbourhoods to have not visited a GP due to cost in the past year; and one in five (21.4%) disabled adults reported not visiting due to cost, compared to 12.0% of non-disabled adults.
- Once people access care, however, their reported experience in both primary and secondary care has remained stable or even shown some small improvements (between 2014 and 2019 there were definite if small improvements in reported patient experience). Throughout the pandemic-affected periods and since, experience of care, once accessed, has remained remarkably stable – and largely equitable.

Outcomes

- Hospital mortality as a quality and safety outcome is much debated. Standardised national hospital mortality has broadly been stable over the last five years. However, interpretation of this metric is difficult given methodological challenges. Sudden or consistent changes have not occurred at a national level, but specific alerts have been identified previously for individual districts.
- Surgical mortality (perioperative mortality) is improving despite an ageing population and more complex operations being performed. Data over the last decade shows a significant decrease in the risk-adjusted perioperative mortality rate at 30 days post operation.
- The overall perinatal-related mortality rate (which includes deaths both during pregnancy and in the first 28 days after birth), has not significantly changed in the last 15 years despite a number of improvement initiatives. Preventable mortality disproportionately affects groups who are most disadvantaged: Wāhine Māori, Pacific women, birthing people and those living in higher deprivation areas. Globally, health systems are experiencing similar problems in maternity care.
- There has been a reduction in patient harm in relation to falls (46% decrease in the rate of in-hospital falls resulting in a fractured neck of femur between 2012/13 and 2023/24); surgical site infections (10% decrease in the rate of infections following orthopaedic hip and knee surgery between 2013/14 and 2023/24; and a 44% decrease in the rate of infections following cardiac surgery between 2016/17 – 2023/24); and inpatient cardiac arrests (0.3 point decrease in cardiac arrests per 1,000 admissions between Q2 2018–Q1 2019 and Q2 2024). These improvements have been maintained despite the challenges the pandemic presented to workforce capacity.
- For three measures, there has been an increase in harm. Between 2012/13 – 2023/24 there was a 30% increase in the observed vs expected ratio of postoperative deep vein thrombosis / pulmonary embolus (DVT/PE) episodes. And, since January 2021, there have been more postoperative DVT/PE episodes than expected in each reporting period. Some of this unexpected rise in patient risk can likely be attributed to COVID-19 which is linked to increased coagulation risk. A review of the risk-adjustment model used for this measure is being completed.

- Since 2021, Health NZ National Collections (coded) data shows an increase in both hospital-acquired and non-hospital acquired pressure injuries (PI). Between 2017-2023/24, there was a 42.5% increase in the rate of hospital-acquired pressure injuries; and in the same period, a 27.6% increase in the rate of non-hospital-acquired pressure injuries. Multiple agencies including Te Tāhū Hauroa | Health Quality and Safety Commission (Te Tāhū Hauroa), Accident Compensation Corporation (ACC) and Ministry of Health | Manatū Hauora (Manatū Hauora) have worked since 2015 to prevent and improve the management of PI.
- The rate of healthcare-associated *Staphylococcus aureus* bactaeremia (HA-SAB) cases per 1,000 bed-days has risen twice since the baseline Q1 2012. The median rate first rose from 0.11 to 0.13 in Q4 2016, and then to 0.15 in Q2 2019. *Staphylococcus aureus* is the most common cause of healthcare-associated bacteraemia in New Zealand and elsewhere.
- A recent study has highlighted the burden of healthcare-associated infections (HAI), which include HA-SAB, in New Zealand public hospitals. The study estimated that for 2021, there were 24,191 HAIs, 699 deaths and 76,861 hospital bed-days lost to HAIs. The annual economic burden of HAI in New Zealand public hospitals was estimated to be $955 million. There is worldwide consensus that action is needed for effective infection prevention and control.
- There are significant inequities in health outcomes including those based on gender, ethnicity, disability, rurality and deprivation. Inequities have impacts at each stage of the care pathway, from the differential risk of developing disease, to the impact of comorbidity on access to treatment and outcomes, in addition to differences in access to care, the quality of care received and the outcomes of this care.

5. Deterioration in some quality and safety indicators more recently form part of Te Tāhū Hauora's quarterly Quality Alerts reporting. This reporting identifies regional and district variation in these indicators and particular areas that need to be addressed.

6. International comparisons with New Zealand's quality and safety of care are difficult to make, but in broad terms New Zealand does not stand out. An analysis of cost (OECD) versus disability-adjusted life year (DALY)[i] loss (University of Washington) shows that among similar countries, we have outcomes as good as others despite spending less on our health system. In a recent report (published September 2024) comparing the performance of 10 high-income countries health systems across 70 performance measures, New Zealand ranked fourth overall in performance across five domains, and first for the domain of 'care process' which encompasses attributes that most experts around the world consider to essential for high quality care.[1]

7. Globally, individual improvement programmes have reduced specific harms resulting from healthcare and improved outcomes. Several New Zealand programmes have demonstrated sustained improvement and are reported in more detail in this report. The results demonstrate the impact and value of co-ordinated, structured national quality improvement programmes.

8. Preventable harm is important and efforts to reduce it should continue, but this should not detract from the fact that currently the most significant quality and safety issue in the health system is providing timely access to services across community and hospital settings. Failure in access is itself an important preventable cause of harm from healthcare and may result in poorer and more inequitable outcomes.

---

[i] DALYs are a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability, or early death. A DALY measures a year of life lost due to premature death or a year lived with a disability due to a specific condition. One DALY equals one lost year of healthy life.

Background

Purpose

9. The Health NZ Commissioner has requested a review of the quality and safety of health care and services across Health NZ. This report examines quality and safety, patient experience and harms data over the decade 2014 – 2024 and assesses trends over time.

Data sources

10. Data sources used for this review include:
    a. Te Tāhū Hauora:
        i. Quality Alerts, reported quarterly
        ii. Quality and Safety Markers, reported quarterly
        iii. Atlas of Variation
        iv. A window on the quality of New Zealand's health care reports, published annually
    b. Manatū Hauora
    c. Te Aho o Te Kahu | Cancer Control Agency
    d. Health and Disability Commissioner (six monthly report)
    e. OECD
    f. Health NZ (National Collections and other national data sets).

11. We have sought the longest periods for which data is available for each variable. This does mean that reporting periods vary depending on availability and also whether there is an uninterrupted timeseries available. In some cases further investigation of data and supporting information may be required to understand whether or not there is meaningful change and identify potential causes.

Data methodology and context

12. This review considers preventable harm in the context of the six domains of healthcare quality described by the U.S. Institute of Medicine[2] with a particular focus on two domains: access to care (timeliness) and safe care (safety). The other four domains (person-centred care, equity, effectiveness and efficiency) have been considered but a detailed review of these domains is out of scope for this report.

13. We have not undertaken any novel data production for this report. We have sourced all longitudinal information from existing reports and acknowledge Te Tāhū Hauora for much of the data presented here. We particularly acknowledge the contribution of Te Tāhū Hauora's Director of Health Quality Intelligence for the development and peer review of this report.

14. We note that when presenting national data you do not see significant outliers at a regional or district level. If this work is to be replicated at regional and local levels, further work is required to determine whether this will be possible. We will need to do this with the assistance of Te Tāhū Hauora. Engagement on this has commenced.

15. Globally, for high income countries there has been no clear overall downward trend in the rate of preventable patient harm resulting from health care over the last 20 years. Precise estimates are difficult, and vary considerably between healthcare settings, but a recent meta-analysis suggests that the pooled prevalence of preventable patient harm is about 6% overall. Around 12% of these harms are severe or result in patient death.[3]

16. Te Tāhū Hauora, in its 2024 'Window on quality' publication,[4] has provided a hypothesis to explain why preventable harm resulting from healthcare has remained unchanged despite reduction in specific harms, advances in standards of living and the quality and delivery of healthcare, and improved health outcomes over this time.

17. The hypothesis is that as healthcare techniques and technology develop, it has been possible to undertake more interventions successfully on sicker patients; at the same time, populations are growing and ageing and our health care system is caring for more complex, higher-risk patients.

18. The simultaneous advances in treatment and technology and increase in care and treatment of more complex high risk patients creates a paradoxical situation where, over time, health services around the world achieve better outcomes while on the face of it becoming no safer. This occurs in a way that maintains an 'equilibrium' of preventable harm at around 6%.

19. Given the difficulties in measuring and interpreting the overall rate of preventable harm, looking at specific harms and outcomes of healthcare are important, and, arguably, more informative in understanding the quality and safety of healthcare.

Data and interpretation

20. This section provides more detail on a range of quality and safety indicators and key findings highlighted in the Executive Summary.

Access to healthcare

Patient-reported experience of access to healthcare

21. Two key sources of data are available to provide insight into patient-reported experience at a national level: the New Zealand Health Survey (NZHS), which provides information about the health and wellbeing of New Zealanders;[5] and Te Tāhū Hauora's adult inpatient and adult primary care experience surveys.[6]

22. The NZHS became a continuous survey in 2011, with annual updates on the health of New Zealanders published by Manatū Hauora. Comparisons to earlier surveys are provided and results are available by gender, age group, ethnic group, neighbourhood deprivation and disability status.

23. Te Tāhū Hauora's adult inpatient experience survey commenced in August 2014. The survey runs quarterly in all districts and covers four key domains of patient experience: communication, partnership, co-ordination, and physical and emotional needs. The adult primary care experience survey also runs quarterly and provides information about what patients' experience in primary care is like and how their overall care is managed between their general practice, diagnostic services, specialists and/or hospital staff.

24. Te Tāhū Hauora's patient experience reports present weighted results in accordance with a method described in a document available from Te Tāhū Hauora's website.[7] The following groups are used in the weighting: age groups (15–24, 25–44, 45–64, 65–74, 75–84, 85 and over); gender (male, female); and ethnicity (Māori, Pacific, Asian, Other). Weighting adjusts for under- or over-representation in responses by age, gender and ethnic group and means the results account for differences in response rates within a local population.

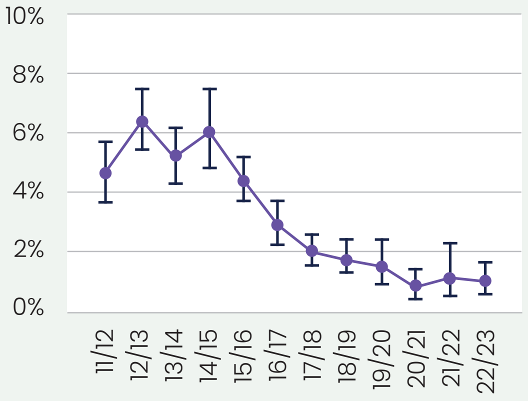
25. For the adult primary care survey, data is not consistent prior to 2020 (although the first pilot was late 2016, full data capture didn't occur until 2019 and therefore it is not possible to show timeseries data prior to 2020). For secondary (adult inpatient) care, it is possible to show timeseries data from 2014, however, there are slight wording changes in the questions/ answer categories over this time. For both surveys, it not possible to break down the data by ethnicity prior to 2020.

New Zealand Health Survey – Unmet need for GPs due to cost

26. In 2022/23, 1.1% of children (an estimated 11,000 children), experienced cost as a barrier to visiting a general practitioner (GP); this is down from 4.8% in 2011/12, and 2.1% in 2017/18.

27. One in eight adults (12.9%) reported not seeing a GP due to cost in the 12 months before taking part in the 2022/23 survey. This is higher than the previous two years, but less than other years since 2011/12. Cost as a barrier of access to primary care was experienced inequitably in 2022/23:
    a. Māori (16.9%) and Pacific people (17.6%) were more likely to experience cost as a barrier to visiting a GP than European/Other (12.4%) and Asian (10.4%)
    b. Adults living in the most deprived neighbourhoods were 1.4 times as likely as those living in the least deprived neighbourhoods to have not visited a GP due to cost in the past year, after adjusting for age, gender and ethnicity
    c. One in five (21.4%) disabled adults reported not visiting a GP due to cost, compared to 12.0% of non-disabled adults. Disabled adults were 2.2 times as likely to report this, after adjusting for age and gender.

Figure 1: Percentage of children with unmet need for GP due to cost, 2011/12–2022/23.



Source: New Zealand Health Survey.

New Zealand Health Survey – Unfilled prescription due to cost

28. In 2022/23, 1.5% of children (an estimated 14,000 children) had a prescription that was not collected due to cost. This is down from 6.6% in 2011/12 and 3.1% in 2017/18.

29. In 2022/23, 4.0% of adults (one in twenty-five) had an unfilled prescription due to cost, which is down from 7.3% in 2011/12. In addition:
    a. Māori and Pacific adults were 2.1 and 2.2 times as likely as non-Māori and non-Pacific adults to not collect a prescription due to cost, after adjusting for age and gender
    b. Disabled adults were 2.8 times as likely as non-disabled adults to not collect a prescription due to cost, after adjusting for age and gender
    c. Adults living in the most deprived neighbourhoods were 3.0 times as likely to not collect a prescription due to cost as adults living in the least deprived neighbourhoods, after adjusting for age, gender and ethnicity.

New Zealand Health Survey – Unmet need for GP due to wait time too long

30. In 2022/23, 21.2% of adults (aged 15+ years) who had a medical problem did not visit a GP in the past 12 months because the time taken to get an appointment was too long. This was almost double the proportion of adults responding to the same question in the 2021/22 survey (11.5%). In 2022/23, this percentage represents one-fifth of the entire adult population and translates to an estimated 891,000 adults who missed care due to wait times, up from an estimated 478,000 adults who missed care in 2021/22.

31. The question on unmet need due to wait time was only introduced in the 2021/22 round of the New Zealand Health Survey. So, although the results show unmet need nearly doubled it is based on only two years of data, limiting the sense of impact over time.

32. Waiting time as a barrier to accessing GP care was experienced inequitably by adults in 2022/23:
    a. Māori and Pacific peoples were more likely to not visit a GP due to having to wait too long to get an appointment (23.8% and 22.4% respectively) than European/Other (20.9%) and Asian (19.5%)
    b. Disabled adults (24.3%) were also more likely to not visit a GP due to having to wait too long for a GP appointment

Te Tāhū Hauora's patient experience surveys

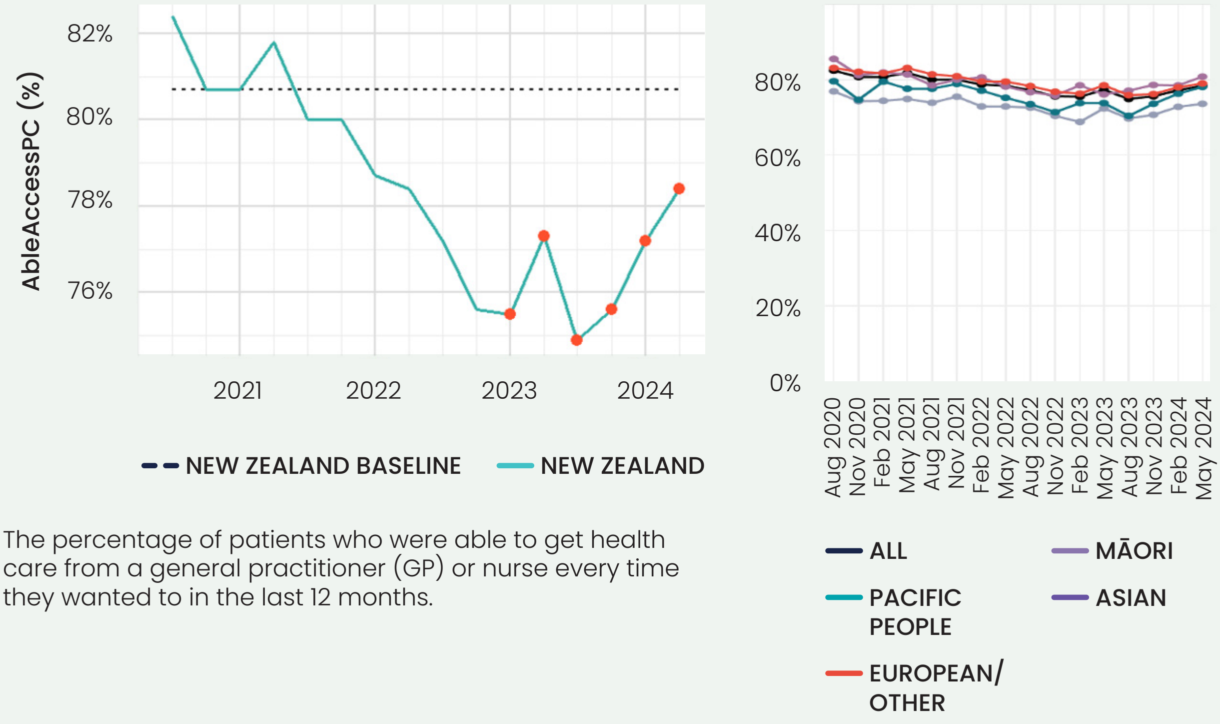
33. Results from Te Tāhū Hauora's adult patient experience surveys show that since 2020 there has been a marked deterioration in timely access to services in both primary and secondary care.

34. The proportion of adults who reported difficulty accessing primary care (care from a GP or nurse) due to long waits has doubled from roughly 10 to 20% over the last three years, primarily driven by long wait-times for appointments, and in some districts more people reported cost as a barrier to access.

In recent months there has been a slight reduction in respondents selecting 'Waiting time to get an appointment too long' as the reason they could not get healthcare from a GP or nurse when they wanted it in the last 12 months: 17.8% May 2024 down from a peak of 20.7% in August 2023.

35. This deterioration in timely access to primary care has been experienced inequitably – in November 2023, 23.3% of Māori and 20.7% of Pacific people who responded said they couldn't get healthcare because wait times were too long compared to 19.8% of European/other and 17.5% of Asian respondents.

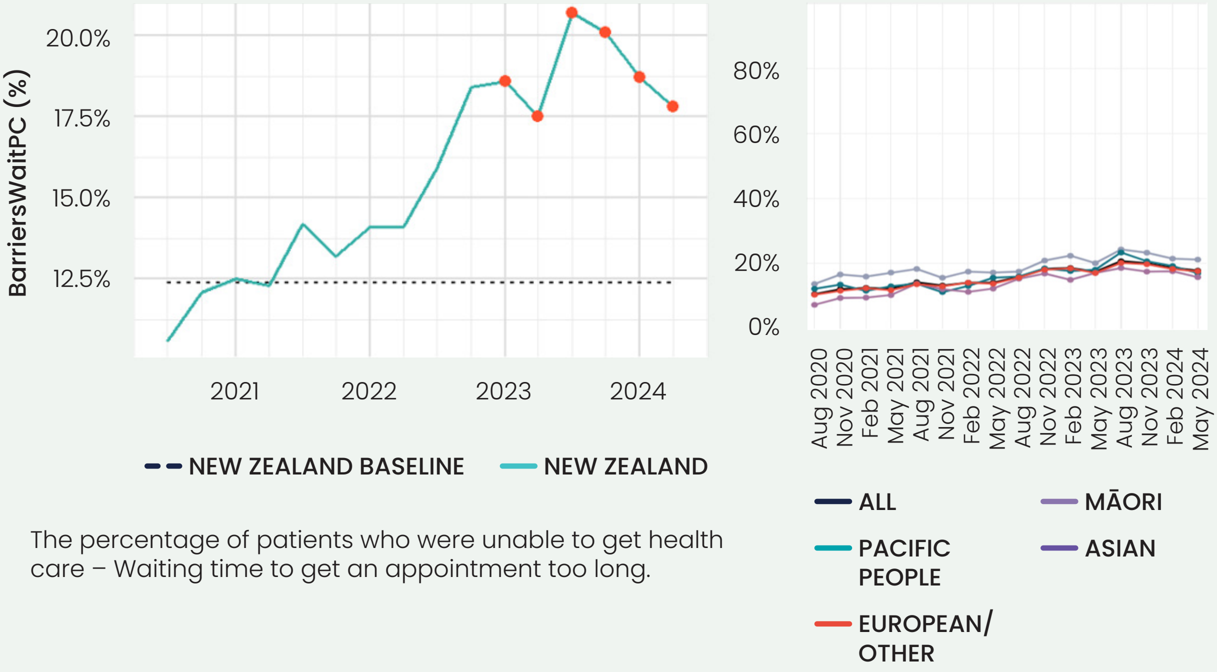
Figure 2: The percentage of patients who were able to get health care from a general practitioner (GP) or nurse every time they wanted to in the last 12 months, Aotearoa New Zealand, Aug 2020-May 2024 (note Y axis does not start at zero); and by ethnic group, Aug 2020-May 2024.



The percentage of patients who were able to get health care from a general practitioner (GP) or nurse every time they wanted to in the last 12 months.

Source: Te Tāhū Hauora, Aotearoa New Zealand primary care patient experience survey.

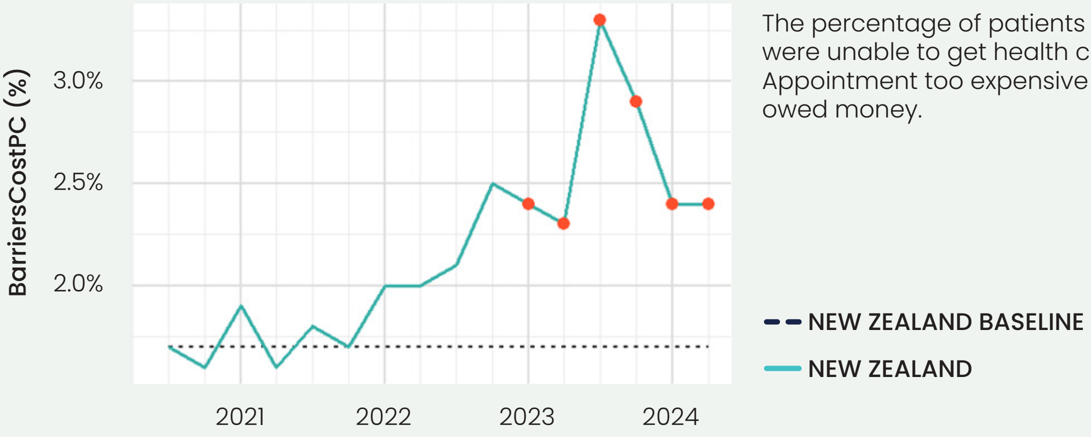
Figure 3: Percentage of patients who selected ‘Waiting time to get an appointment too long’ as the reason they could not get health care from a GP or nurse when they wanted it in the last 12 months, Aotearoa New Zealand, August 2020–November 2023 (note Y axis does not start at zero); and by ethnic group August 2020-May 2024.



The percentage of patients who were unable to get health care – Waiting time to get an appointment too long.

Source: Te Tāhū Hauora, Aotearoa New Zealand primary care patient experience survey.

Figure 4: The percentage of patients who were unable to get health care – Appointment too expensive or owed money, Aotearoa New Zealand, 2020–2024 (note Y axis does not start at zero).



The percentage of patients who were unable to get health care – Appointment too expensive or owed money.

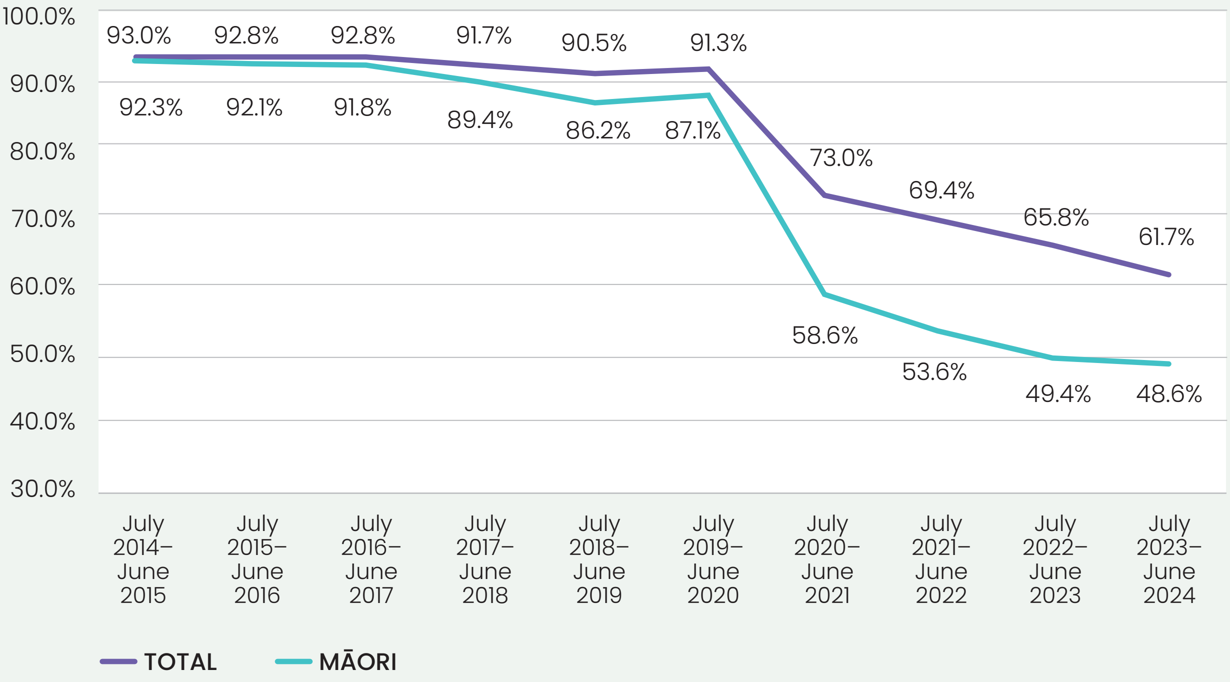
Source: Te Tāhū Hauora, Aotearoa New Zealand primary care patient experience survey.

Access to preventive care

36. Preventive care access (coverage/participation) to childhood immunisation and screening services deteriorated from 2015 rates during the COVID-19 pandemic period of 2020 to 2022, and has continued to deteriorate for childhood immunisation milestones and bowel screening.

37. Immunisation coverage is the percentage of children who have received all of the target immunisations on the National Childhood Immunisation Schedule. The national childhood immunisation target is to get 95% of children immunised at 8 and 24 months. In the 12 months to June 2020, 91% of children were fully immunised at 24 months. Māori rates were 87% and Pacific 94% at 24 months. Since the start of the COVID-19 pandemic immunisation rates at 24 months have deteriorated, particularly for Māori and Pacific children. Rates deteriorated most markedly between July 2020 and June 2021 with 73% of children fully immunised at 24 months in the 12 months to June 2021; Māori rates were 59% and Pacific 68%. Rates have continued to deteriorate and remain inequitable. In the 12 months to June 2024, 62% of children were fully immunised at 24 months; Māori rates were 49% and Pacific 50%.

Figure 5: Childhood 24-month immunisation rates national total and for Māori, New Zealand, 2014–2024.



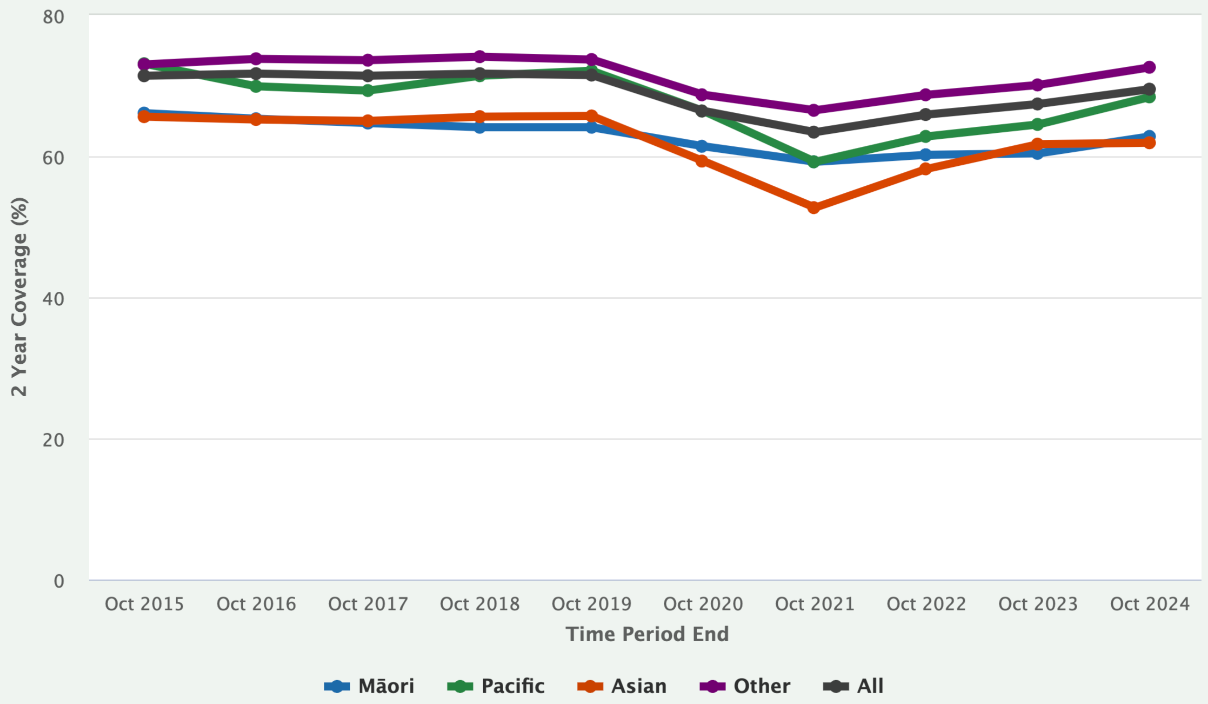
Source: Health New Zealand, Aotearoa Immunisation Register.

38. Access (participation) in breast screening is reported as coverage, which is defined as the proportion of wāhine and other individuals eligible for screening who have been screened in a given time period. The current BreastScreen Aotearoa (BSA) coverage target is for two-yearly screening of 70% of eligible women.

39. In the period just prior to COVID-19, BreastScreen Aotearoa (BSA) coverage was 72% overall (all eligible women) but was not equitable (Māori wāhine 64%, Pacific 72%, and Asian 66%). Coverage deteriorated from September 2019 with some recovery since September 2021 to almost to pre-COVID-19 coverage in October 2024 with 70% coverage for all eligible women, however inequitable coverage has deteriorated (Māori 63%; Pacific 68%, and Asian 62%).[8]

40. The BSA coverage report[8] has been updated to include the 2023 population projections from Statistics New Zealand with updates applied consistently to all time periods. The most significant impact of these changes is for the Asian coverage rates. The Asian population is significantly higher than originally projected, and that means the Asian coverage rate is lower than previously reported.

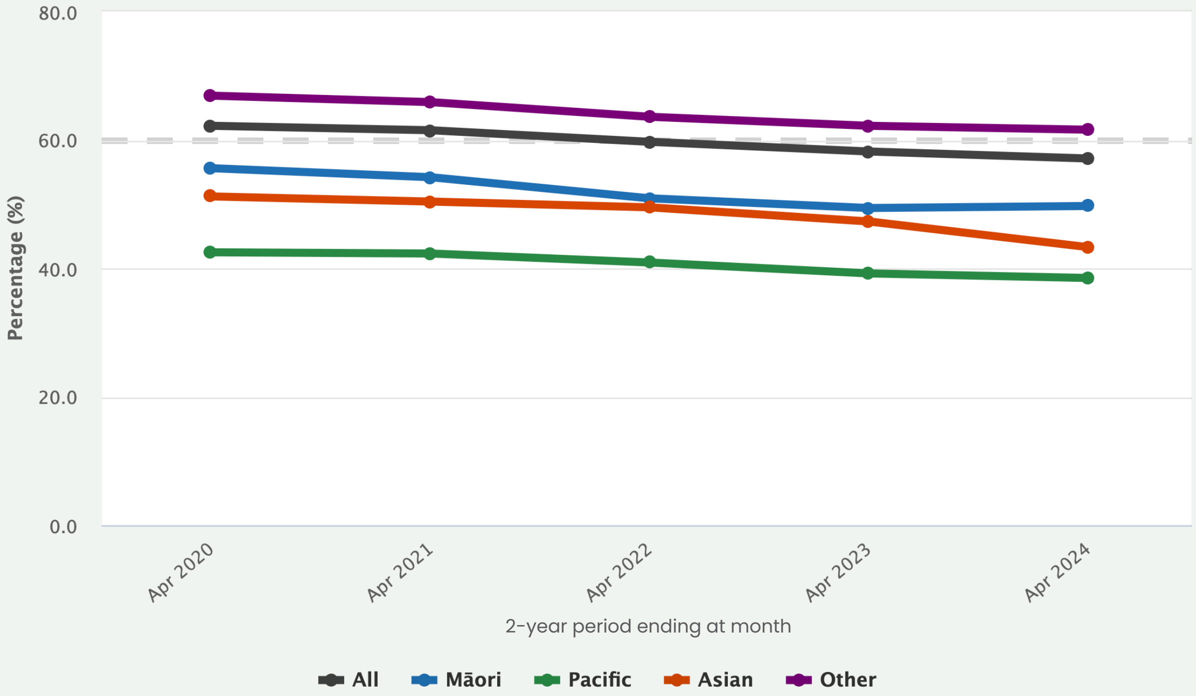
Figure 6: Breast screening 2-year coverage by ethnicity, New Zealand, 45 to 69, 10 years to October 2024.



Source: Health New Zealand, Breastscreen Aotearoa Coverage Report.

41. Bowel screening uses participation to measure access to the programme (other screening programmes use coverage, where the denominator is based on the age-specific census population). The National Bowel Screening Programme (NBSP) target is to screen 60% of the population (60-74 year olds) every two years. There has been deterioration in bowel screening participation from August 2020 (62% overall) to April 2024 (57% overall). Participation is inequitable: in April 2020, participation for Māori was 56%, Pacific people 43%, and Asian 51%; and this has deteriorated with participation in April 2024 for Māori 50%, Pacific people 38%, and Asian 43%.[9]

Figure 7: National bowel screening programme participation by ethnicity, New Zealand, 60-74, 4 years to April 2024.



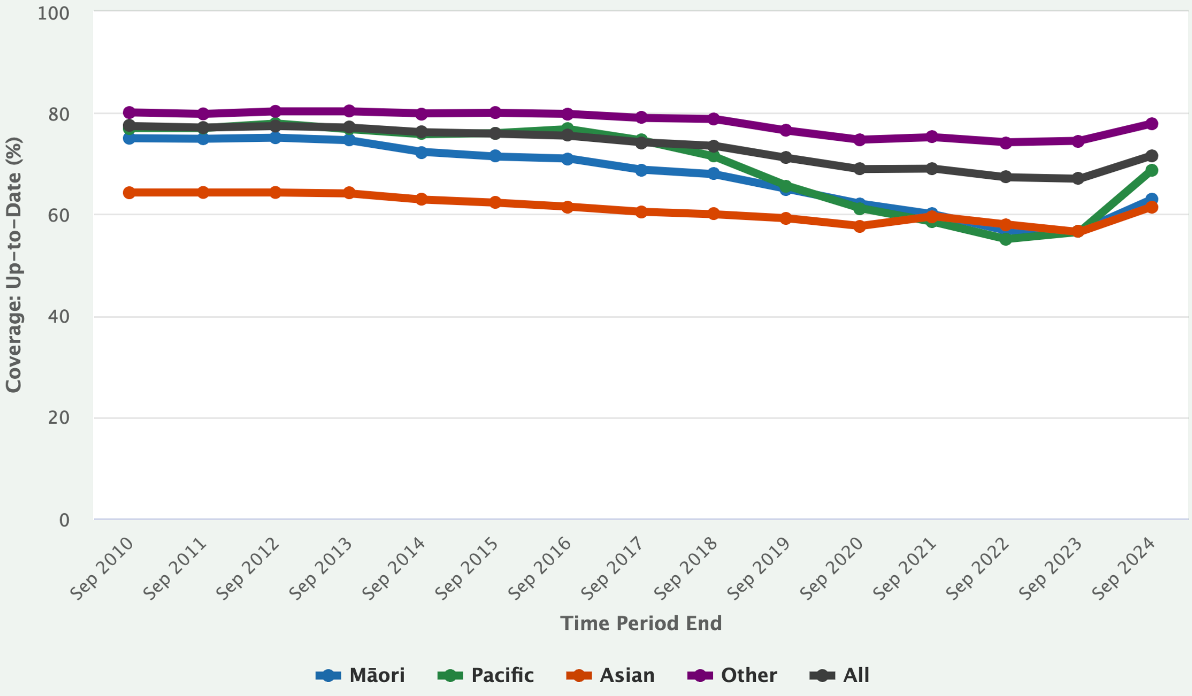
Source: Health New Zealand, National Bowel Screening Programme.

42. Access (participation) in cervical screening is reported as coverage which is defined as the proportion of wāhine / women and people with a cervix eligible for screening who have been screened in the previous three years. Cervical screening is offered every three years to eligible women (25-69 year olds) and the National Cervical Screening Programme (NCSP) target is to reach 80% screening coverage for all those eligible.

43. The current eligible population coverage for the NCSP is 72% (August 2024). Coverage was 77% in September 2010. The rate has improved in the year to September 2024 (72%), returning to above the September 2019 rate of 71%. Māori and Pacific have suffered a disproportionate burden of the COVID-19 pandemic. Inequities in coverage persisted and worsened from September 2010 through to September 2022. The equity gap has since reduced substantially for Pacific people between September 2021 (55% cf. 74% for European/Other) and September 2024 (69% cf. 72% European/ Other). The equity gap also reduced for Māori and Asian people, but not to the same extent as for Pacific people.[10]

44. As per the national breast screening programme (BSA), the NCSP coverage report has been updated to include the updated 2023 population projections from Statistics NZ and the most significant impact of these changes is for the Asian coverage rates. The Asian population is significantly higher than originally projected, and that means the Asian coverage rate is lower than previously reported.

Figure 8: National cervical screening programme participation by ethnicity, New Zealand, 25-69, 14 years to April 2024.



Source: Health New Zealand, National Cervical Screening Programme.

Access to secondary care services

45. Patient experience of timely access to secondary care services has also deteriorated: by November 2023, the number of people waiting more than four months for a first specialist assessment was four times the number waiting in February 2020. And by November 2023, three times the number of people given a commitment to treatment were not treated within four months compared to February 2020.

46. There is a "robust evidence base" demonstrating inequities in access to specialist services, which is described in a report on the evaluation of waitlist prioritisation tools for planned care in Health New Zealand published in July 2024 (planned care waitlist prioritisation report).[11] Patient experience inequities exist at each stage of the planned care pathway across a range of domains, and there are marked inequities between ethnicities, across socio-economic status, and for people living rurally.[11]

47. The planned care waitlist prioritisation report sets out examples of inequities in waiting times for specialist appointments, appointment attendance across specialities, receipt of treatment across specialties. There are also inequities in the timeliness and quality of treatment provided once patients are on the treatment pathway; and inequities in perioperative and postoperative outcomes.

48. Among people with cancer, there are clear inequities in stage at diagnosis, which is important because there is often a relationship between stage at diagnosis and survival outcomes.[12,13] Late stage at diagnosis accounts for a component of the survival inequities for a number of cancers.[13,14,15] For some forms of cancer, in particular breast, bowel, cervical and prostate, this is likely to in part reflect differential access to screening.[16,17]

Safe care (harms data)

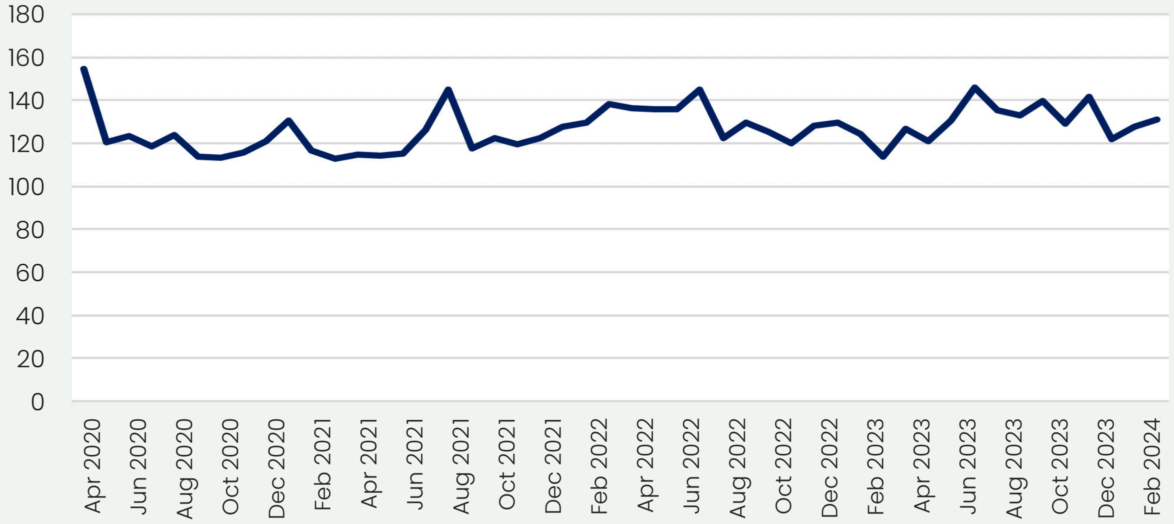
Mortality

Hospital standardised mortality

49. We are able to report national hospital diagnosis standardised mortality rate (HDxSMR) data for the last five years (previously it has been reported at the district level). Interpretation of HDxSMR data is difficult because there are clear anomalies in the source data submitted by districts (data missing or clearly wrong). In addition, interpretation of changes in HDxSMR and comparisons across entities is difficult because of the way data is managed in mortality calculations. For example, exclusions in calculations based on palliative care do not solve the problem – calculations can be gamed, as was seen in the case of Mid Staffordshire NHS Trust which had the most improved hospital standardised mortality ratio (HSMR) in England while significant patient harm was occurring over a long period.

50. Acknowledging these data limitations, it appears that the HDxSMR for New Zealand has been broadly flat (unchanged) over the past five years.

Figure 9: Monthly Hospital Standardised Mortality Rate (HDxSMR) across Aotearoa New Zealand from April 2020 – March 2024.



Source: Health New Zealand.

Perioperative mortality

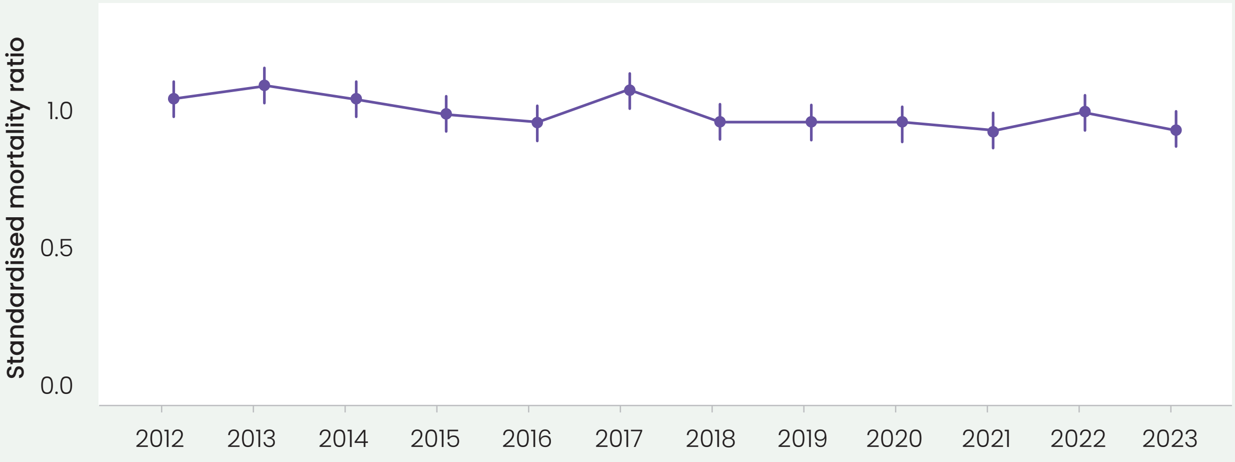
51. Te Tāhū Hauora has recently released an updated tool (Perioperative Mortality Explorer), which provides an interactive dashboard for health professionals with access to detailed data about surgical outcomes. The tool can be used to compare populations, eg by district, age group and ethnicity, to understand the factors contributing to survival and deaths after surgery. Te Tāhū Hauora also published an infographic summarising mortality information about surgeries completed in 2023 (elective and emergency), covering deaths from all causes up to 30 days after an operation.[18]

52. Data from the last 10 years shows a marked decrease in the risk-adjusted perioperative mortality rate at 30 days post operation: from a SMR of 100-110 to 94. This decrease is likely attributable, at least in part, to Te Tāhū Hauora's Safe Surgery Improvement Programme (surgical safety checklist; briefing and debriefing; and DVT/PE prevention), along with ACC-funded programmes (resuscitation simulation and team training), and the work of the Perioperative Mortality Review Committee (improvements to morbidity and mortality reviews).

53. While risk-adjusted perioperative mortality has decreased, unadjusted (overall) postoperative mortality is relatively flat (stable) over the same period. This difference can be explained by an increase in patient risk (more complex/unwell patients where surgery poses greater risk of poor outcomes) over this period: higher-risk patients are being treated and mortality has not increased as might be expected, due to improvements in patient safety and quality of care.

54. For planned surgery, mortality after surgery for Māori and Pacific people has improved when compared to NZ European and other ethnicity groups. For acute or emergency operations, mortality has not improved for Pacific people compared to other groups.

Figure 10: Annual risk adjusted (standardised) perioperative mortality rates, Aotearoa New Zealand, 2012-2023.



Source: Te Tāhū Hauora.

Perinatal and maternal mortality

55. In contrast to perioperative mortality, the overall perinatal related mortality rate (which includes deaths both during pregnancy and in the first 28 days after birth), has not significantly changed in the last 15 years.[19] Although some changes were seen over this period, these were small and unequally distributed.

56. For example, there continues to be a small significant decrease in the rate of stillbirths, while the rates of newborn neonatal encephalopathy show a small, statistically significant trend upwards. The Perinatal and Maternal Mortality Review Committee (PMMRC) noted in its 16th report[19] that although it is recommended that all babies with moderate neonatal encephalopathy receive magnetic resonance imaging (MRI), this is still not being achieved.

57 The PMMRC's 16th report[19] identifies a significant amount of preventable mortality, and this is especially true in the groups who were most disadvantaged: Wāhine Māori, Pacific women and birthing people and those living in higher deprivation areas. Those of New Zealand European ethnicity were 67% less likely than wāhine Māori to die by suicide – a direct contributor to maternal mortality in the 2006–2021 period.

58. There have been numerous improvement initiatives over the 15 years of mortality reporting by the PMMRC, supported by Manatū Hauora, ACC and Te Tāhū Hauora. This includes a Maternal Quality and Safety Programme (MSQP) since 2011; a Maternity Action Plan (2019-2023); New Zealand Maternity Clinical Indicators; a Neonatal Encephalopathy Taskforce (overseeing four initiatives including a newborn observation chart (NOC/NEWS); a Growth Assessment Protocol (GAP) programme; and fetal heart monitoring education); and a national small for gestational age (SFGA) clinical guideline.

Self-discharged ED patient mortality

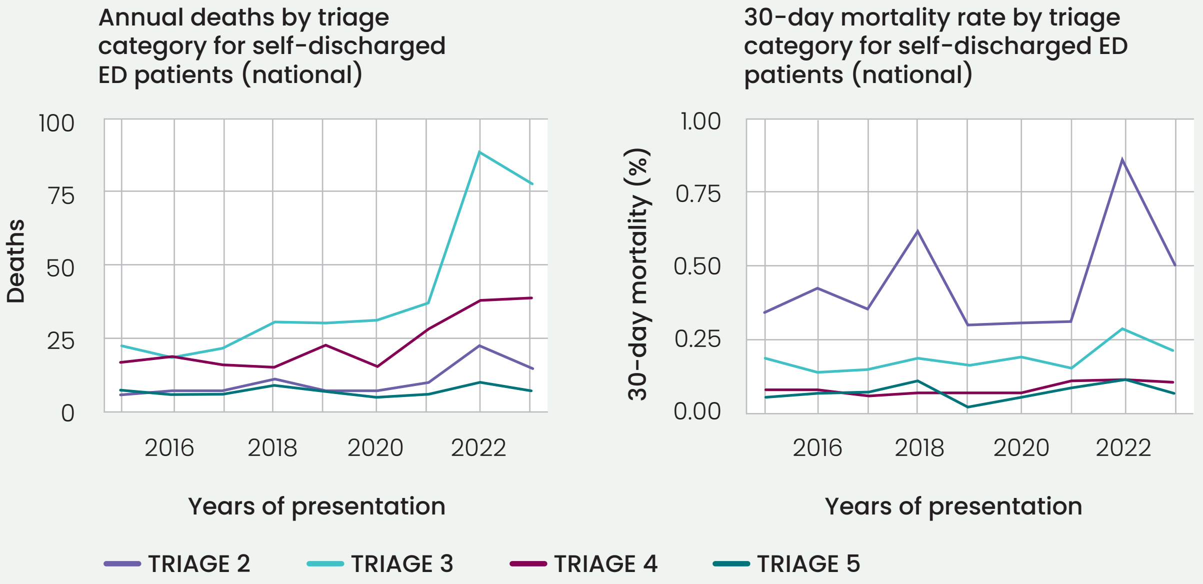
59. Te Tāhū Hauora's Quality Alert Q2 2024 (April–June) reported an 80% increase in the numbers of Triage 2 and 3 patients who self-discharge from emergency departments (ED), and a doubling of 30-day mortality per 100 self-discharges in 2022-2023 from a baseline period of 2016-2019.

60. Analysis by Health NZ shows the average number of Triage 2/3 patients who self-discharged from ED increased by 120% from 2016-2019 (n=16,306 (average)), to 2023-2024 (n=35,951 (average)). And, 30 day mortality per 100 Triage 2/3 self-discharges more than doubled from 0.15 (2016-2019) to 0.31 (2022-2023).

Figure 11: Annual deaths by triage category for self-discharged ED patients (national). And 30-day mortality ratio by triage category for self-discharged patients (national), Aotearoa New Zealand, 2015-2023.

Q1 2024: National level: New GENERAL ALERT:

A sharp spike in the rate and number of self-discharged patients who die within 30 days of presentation to an ED in 2022 and continuing in 2023. Strongest in Triage 2 and 3 patients. There has been an increase in the volume of self-discharges, but the rise in deaths is not attributable this alone.



Source: Te Tāhū Hauora.

61. This issue is under investigation with case-note reviews being undertaken in each district and findings will be reported to Health NZ's Clinical Governance Group and Clinical Quality and Safety Committee.

Cancer mortality

62. Approximately 9,000 New Zealanders die from cancer each year. Data published by Te Aho o Te Kahu in its State of Cancer in New Zealand 2020 report show the cancers causing the most deaths are lung (around 1,780 deaths/year), colorectal (1,200 deaths/year), breast (670 deaths/year) and prostate (700 deaths/year) cancers.[20] The report highlights substantial ethnic differences in mortality across most cancers, with research showing that Māori are twice as likely to die from cancer as non-Māori[15,20] and these inequities in cancer-related mortality have increased over time.[21]

63. Te Aho o Te Kahu notes that the biggest improvements in cancer mortality and reduction in mortality disparities will come from prevention activities that reduce the incidence of poorer-prognosis cancers. A quality improvement monitoring report published by Te Aho o Te Kahu in 2024 on route to diagnosis,[22] notes that cancer patients diagnosed after an emergency admission to hospital have poorer survival and other outcomes compared to patients with non-emergency diagnoses. Patients who are diagnosed following an emergency or unplanned hospital admission often present with severe symptoms, indicating an advanced stage of cancer resulting in poorer outcomes.

64. Key findings from data presented by Te Aho o Te Kahu in the ‘Route to diagnosis’ report[22] include:
    a. New Zealanders experience a high rate of being diagnosed with cancer after an emergency or unplanned admission: 23.9% across 22 different types of cancer
    b. New Zealand has the highest rates of emergency admission prior to diagnosis for eight cancer types – esophageal, stomach, colon, rectal, liver, pancreatic, lung and ovarian (the exception being liver cancer for which we had the third highest rate)
    c. Māori are more likely to be diagnosed following an emergency admission than people of other ethnicities in almost all districts, and there is variation in performance across districts.

65. Possible areas of focus to improve early cancer detection and diagnosis are set out by Te Aho o Te Kahu in the Route to diagnosis report.

Healthcare-associated infection mortality

66. A study of the burden of healthcare-associated infections (HAI) in New Zealand public hospitals has recently been published.[23] The study estimated the economic burden of HAI in adults in New Zealand public hospitals by number and monetary value of bed-days lost; number of deaths, number of life years lost, and the monetary value (in New Zealand dollars); Accident Compensation Commission (ACC) HAI treatment injury payments; and disability-adjusted life years (DALYs).

67. The burden of HAI study[23] reported that there were 510,289 adult admissions to public hospitals in 2020–21 and, of these, 4.74% (4.74 patients per 100 admissions for 2021) were incident cases of HAI. The authors estimated that for 2021 there were 24,191 HAI, 699 deaths, and 76,861 lost bed-days due to HAI. The excess length of stay and mortality risk attributed to those with HAI was calculated using a multistate model.

68. The same burden of HAI study[23] estimated the economic burden of HAI in New Zealand public hospitals to be $955 million comprised of $121m for lost bed-days, $792m for cost of years of life lost (YoLL), and $43m in ACC claims. The DALY burden of HAI was shown to be higher than that of many other conditions and causes of injury.

69. The presence of a peripheral or central intravenous catheter is an independent risk factor for HAI. A point prevalence survey of patients in New Zealand public hospitals in 2021,[24] which informed the burden of HAI study,[23] found a high prevalence of “device” use (device is described as peripheral intravenous catheters (PVCs), central intravenous catheters (CVCs), urethral or suprapubic catheters, and invasive ventilation (i.e. involving an endotracheal tube or tracheostomy)): of a total of 5,468 patients surveyed, 3,585 (66%) had at least one device, with 2,922 (53%) patients having a peripheral intravenous catheter. Sixty-nine (16%) HAI were device-associated.

70. In both the burden of HAI and point prevalence articles,[23,24] the authors conclude that the best available body of evidence supports the use of care bundles alongside a multimodal implementation strategy as part of a nationally led infection prevention and control programme.

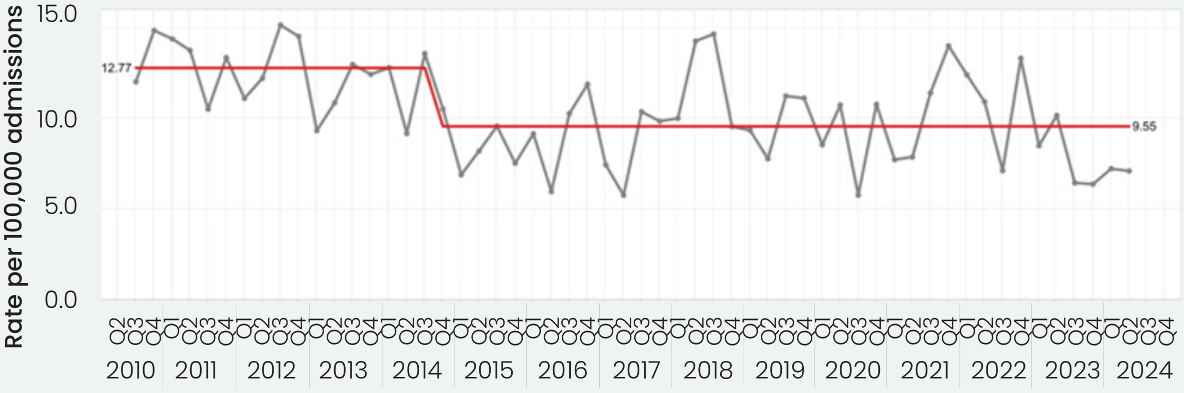
In-hospital falls resulting in fractured neck of femur (broken hip)

71. In 2012 Te Tāhū Hauora was asked by the Minister of Health to focus on reducing harm from falls (one of four priority areas along with surgical safety, medication safety and hospital-acquired infection). Baseline data was determined for the period June 2010 to July 2012 with a median rate of 12.8 in-hospital falls resulting in a fractured neck of femur per 100,000 admissions.

72. Since September 2014, the median rate of in-hospital falls resulting in a fractured neck of femur per 100,000 admissions has decreased to 9.6 and shown a significant improvement: in 2012/13 the rate of in-hospital falls resulting in a fractured neck of femur was 12.5% and in 2023/24 it was 6. 8%. This represents a 5.7 percentage point difference, and a 46% decrease in the rate of in-hospital falls resulting in a fractured neck of femur between 2012/13 to 2023/24. This reduction is supported by the observed improvement in the risk assessment and plan process markers' results.

73. There were 68 in-hospital falls resulting in a fractured neck of femur in July 2023 – June 2024. This number is significantly lower than the 129 that we would have expected in July 2023–June 2024 given the falls rate observed in the baseline period. Te Tāhū Hauora has estimated the reduction has saved $2.67 million in July 2023–June 2024 based on an estimate of $47,000 for a fall with a fractured neck of femur.[25] Some of these patients are likely to be admitted to aged residential care on discharge from hospital, which is estimated to cost $135,000 per occurrence.[25] Based on an estimate that 20% of the patients who avoided a fall-related fractured neck of femur would have been admitted to an aged residential care facility, the reduction in falls represents $3.94 million in total avoidable costs in the period July 2023-June 2024.

Figure 12: Rate of in-hospital falls with fractured neck of femur per 100,000 admissions, Aotearoa New Zealand, Q3 2010 – Q 2 2024. The red line represents the median rate.



Source: Te Tāhū Hauora routine data analysis.

Surgical site infections: orthopaedic and cardiac surgery

74. The New Zealand Surgical Site Infection Improvement Programme (SSIIP) was established by Te Tāhū Hauora in 2013 to reduce the incidence of surgical site infections (SSI) in publicly funded hip and knee arthroplasties (joint replacements) in New Zealand hospitals.

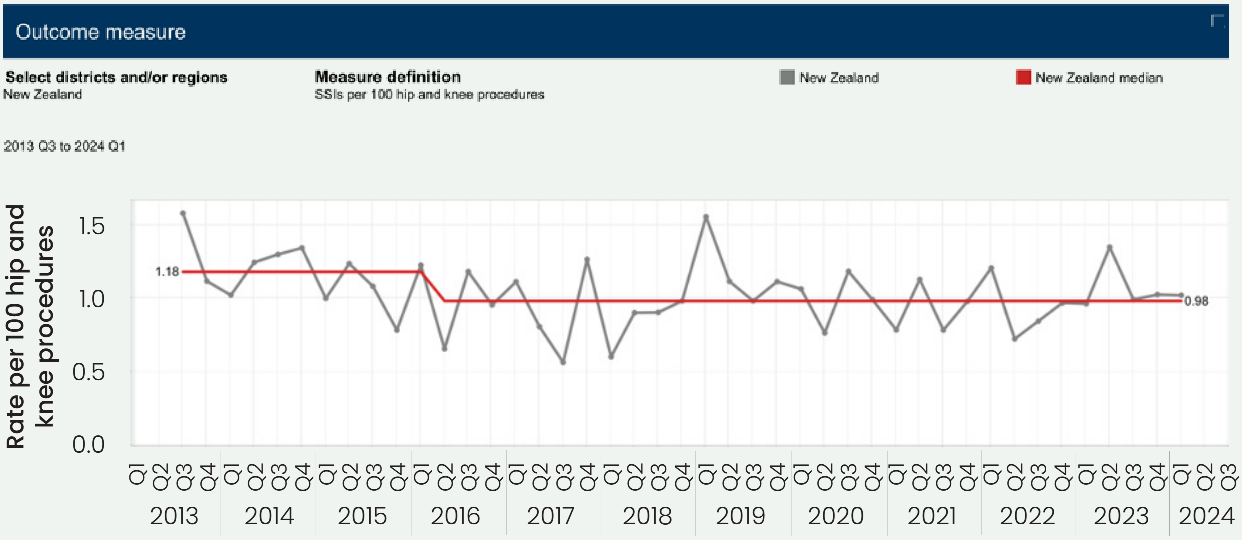
75. The SSI rate for hip and knee arthroplasties has shown a significant improvement in both best practice process measures and outcomes.

76. Since Q3 2013, there has been a nationwide increase in compliance with all process measures for hip and knee arthroplasties: correct timing for antibiotic prophylaxis; use of the recommended antibiotic in the recommended dose, and alcohol-based skin antisepsis.

77. In 2013/14, the SSI rate for hip and knee arthroplasties was 1.23 per 100 procedures; and in 2023/24, 1.10. This represents a 0.12 percentage point difference, and a 10% decrease in the rate of infections between 2013/14 and 2023/24.

78. A study published in 2018[26] reported the nationwide median rate of hip and knee surgery SSI fell to 0.91 per 100 procedures since June 2015, which was sustained to June 2017, compared with the baseline period of April 2013 to March 2014. This equates to approximately 55 fewer infections between August 2015 and June 2017, and savings of $2.2 million in avoided treatment. Understanding the financial benefits of avoiding infection is important but can obscure the harm and trauma caused to the individual if this is not quantified as well: in this study avoided disability-adjusted life years (DALYs) were estimated to be $5 million between April 2015 and June 2017.[26]

Figure 13: Surgical site infections per 100 hip and knee procedures, Aotearoa New Zealand, Q1 2013– Q2 2024.



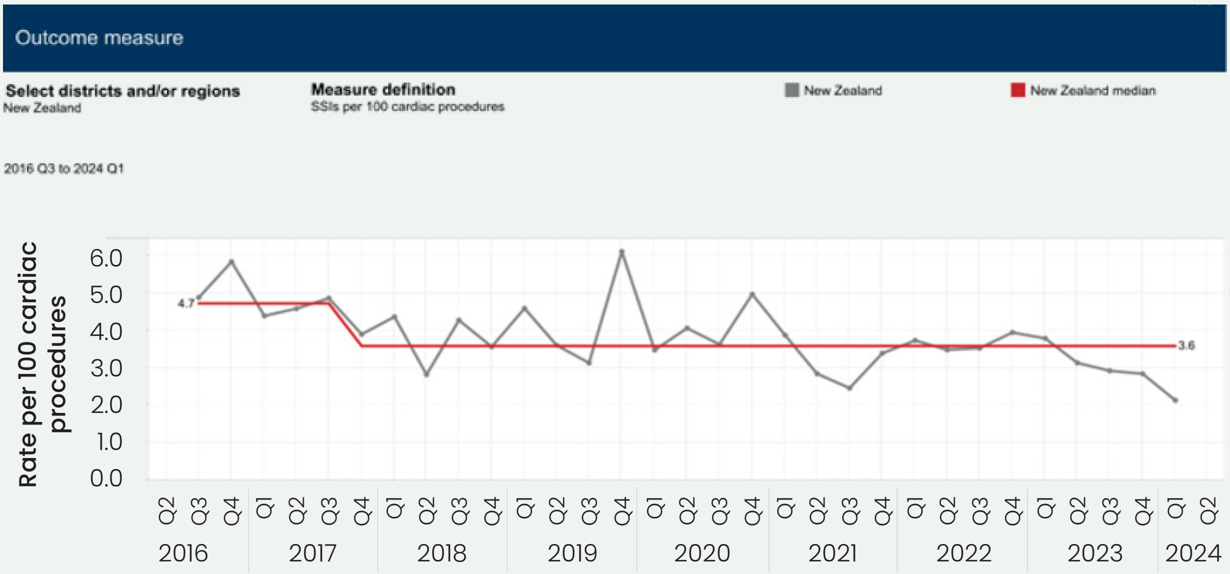
Source: Te Tāhū Hauora routine data analysis.

79. A national cardiac surgery SSI programme was established by Te Tāhū Hauora in 2014 and public reporting commenced in March 2017 for procedures performed from 1 July 2016 onwards. Only cardiac procedures that have a chest incision with a median sternotomy are collected within the programme. Procedure categories are: cardiac surgery (CARD), ie, heart procedures including valves and septum, etc; coronary artery bypass graft with chest and donor site incisions (CBGB); and coronary artery bypass graft with chest incision only (CBGC).[ii,27]

80. The rate of cardiac SSI in 2016/17 was 4.9 and decreased to 2.7 in 2023/24. This represents a 2.18 percentage point difference, and a 44% decrease in the rate of infections between 2016/17 and 2023/24. It appears, from most recent data, that the rate is likely to decrease again. The programme has highlighted variation in practice (cases not getting recognised interventions) between districts and this is being followed up by clinical leaders.

[ii] The National cardiac SSI programme uses the Australian Classification of Health Interventions (ACHI) to define cardiac procedures in scope for the programme. Procedures such as transcatheter aortic valve implantation (TAVI) are not included, because these do not open the chest, even though the ACHI code may be the same. The complete list for of ACHI codes of procedures for inclusion in the cardiac SSIIP programme can be found in Appendix 3 of the Cardiac Surgery Guide 2018.

Figure 14: Surgical site infections per 100 cardiac procedures, Aotearoa New Zealand, Q2 2016-Q2 2024.



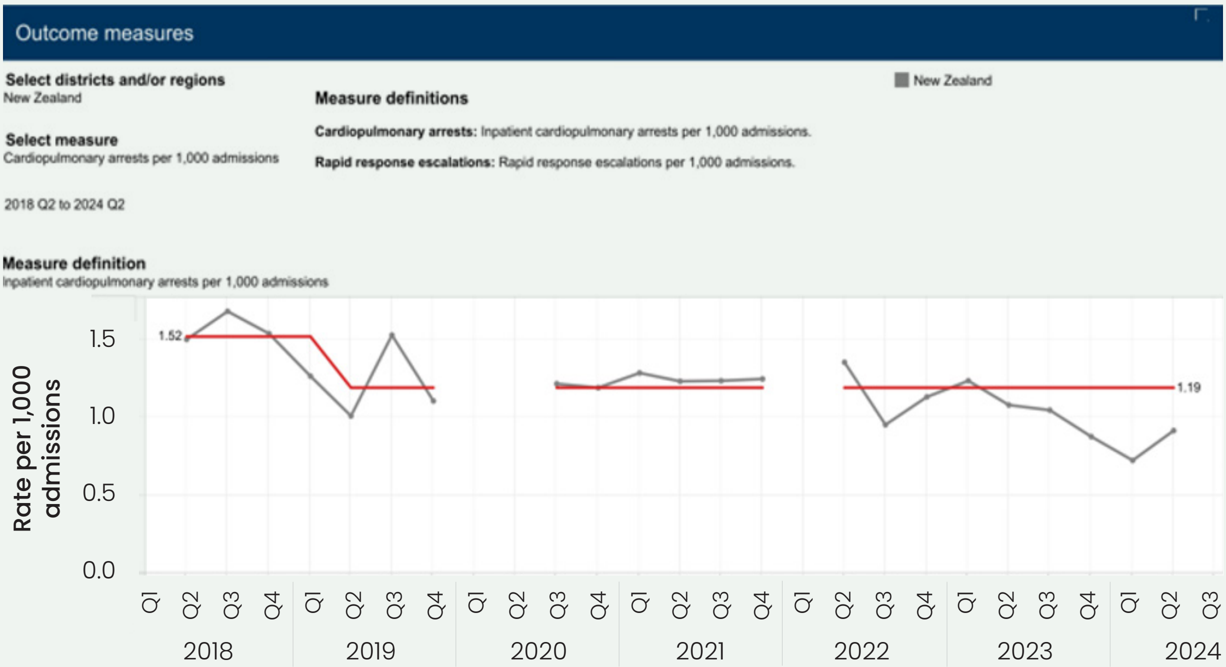
Source: Te Tāhū Hauora routine data analysis.

Patient deterioration: incidence of inpatient cardiac arrests

81. Te Tāhū Hauora Hauora's National Patient Deterioration programme commenced in 2016 with the aim, over a five year period, to reduce harm from failures to recognise or respond to acute physical deterioration for all adult inpatients (excluding maternity). The progamme included implementation of recognition and response systems with national standardised vital signs charts with early warning scores. Currently these are the adult New Zealand early warning score NZEWS; paediatric early warning system (PEWS); neonatal observation chart incorporating the newborn early warning score (NOC/NEWS); and (now) maternity early warning system (MEWS); patient, family and whānau escalation processes; and increased capability in recognising and responding to patient deterioration.

82. There are two outcome measures for the programme: the rate of inpatient cardiopulmonary (cardiac) arrests per 1,000 admissions (a lower rate is better), and the rate of rapid response escalations per 1,000 admissions (a higher rate is better). The median rate of cardiac arrests has decreased from a baseline of 1.5 cardiac arrests per 1,000 admissions in Q2 2018–Q1 2019, to 1.2 in Q2 2024; this represents a 0.3 point decrease in cardiac arrests per 1,000 admissions over this period. The median rate of rapid response escalations has increased from a baseline of 25.2 to 38.4 per 1,000 admissions since Q2 2019.

Figure 15: Inpatient cardiopulmonary arrests per 1,000 admissions, Aotearoa New Zealand, (timeseries). And rapid response escalations per 1,000 admissions, Aotearoa New Zealand, (timeseries). The COVID-19 outbreaks from April 2020 to June 2022 impacted the ability of some districts to collect and submit data.



Outcome measures

Select districts and/or regions
New Zealand

Select measure
Cardiopulmonary arrests per 1,000 admissions

2018 Q2 to 2024 Q2

Measure definitions

Cardiopulmonary arrests: Inpatient cardiopulmonary arrests per 1,000 admissions.

Rapid response escalations: Rapid response escalations per 1,000 admissions.

Measure definition
Inpatient cardiopulmonary arrests per 1,000 admissions

Source: Te Tāhū Hauora routine data analysis.

Mental health: seclusion in inpatient services

83. Reducing and eliminating seclusion in mental health inpatient services is a priority because seclusion is traumatic and harmful for consumers, whānau, visitors and health workers. The Mental Health Bill was introduced into the House on 1 October 2024[28] and will repeal and replace the Mental Health (Compulsory Assessment and Treatment) Act 1992.

84. The Mental Health Bill will introduce specific requirements to support the reduction and elimination of seclusion. In addition to setting out when seclusion and force may be used, the Bill introduces a duty on services to use their best endeavours to eliminate seclusion and to minimise the use of force. To support transparency, there are also reporting requirements on the use of those practices. The Bill requires that seclusion be used in accordance with regulatory guidelines. It also enables regulations to prohibit or restrict the use of seclusion.

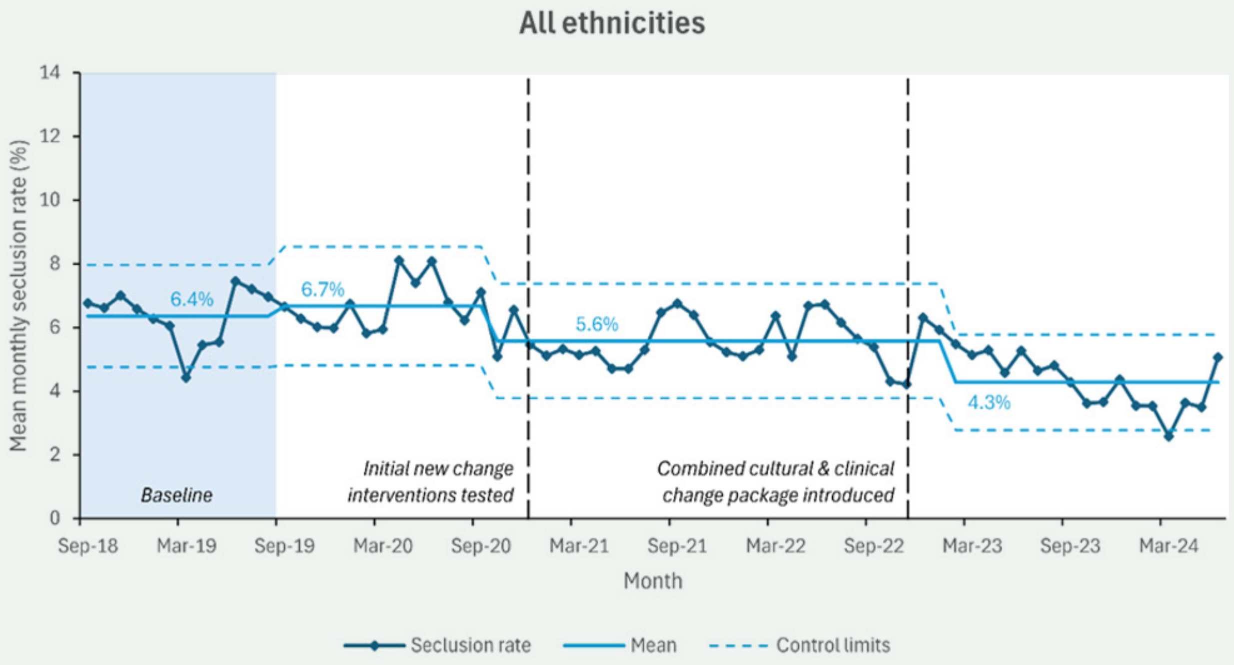
85. A Zero seclusion: Safety and dignity for all | Aukatia te noho punanga: Noho haumanu, tū rangatira mō te tokomaha improvement programme has been underway since 2017.[29] The programme aims to reduce seclusion rates in both Māori and non-Māori/non-Pacific population groups in mental health and addiction adult unit inpatient settings to less than 3% by 30 June 2025, working towards the goal of health equity and ultimately zero seclusion.

86. The overall seclusion rate[iii] in adult units is now 4.3% as of June 2024, reduced from a baseline of 6.4% in 2018/19. This includes a reduction in Māori rates from 9.9% to 6.0%, and non-Māori, non-Pacific rates from 4.0% to 2.3%. The equity gap has also decreased from 5.9% at baseline to 3.7% as of June 2024.

87. Seven districts have now achieved a reduction of seclusion rates to below 3%; three districts have a seclusion rate of between 3 and 5%; and for seven districts, the rate remains above 5%. A focus for the FY2024-2025 is tailored support for districts with the aim of all achieving less than 3% seclusion by June 2025.

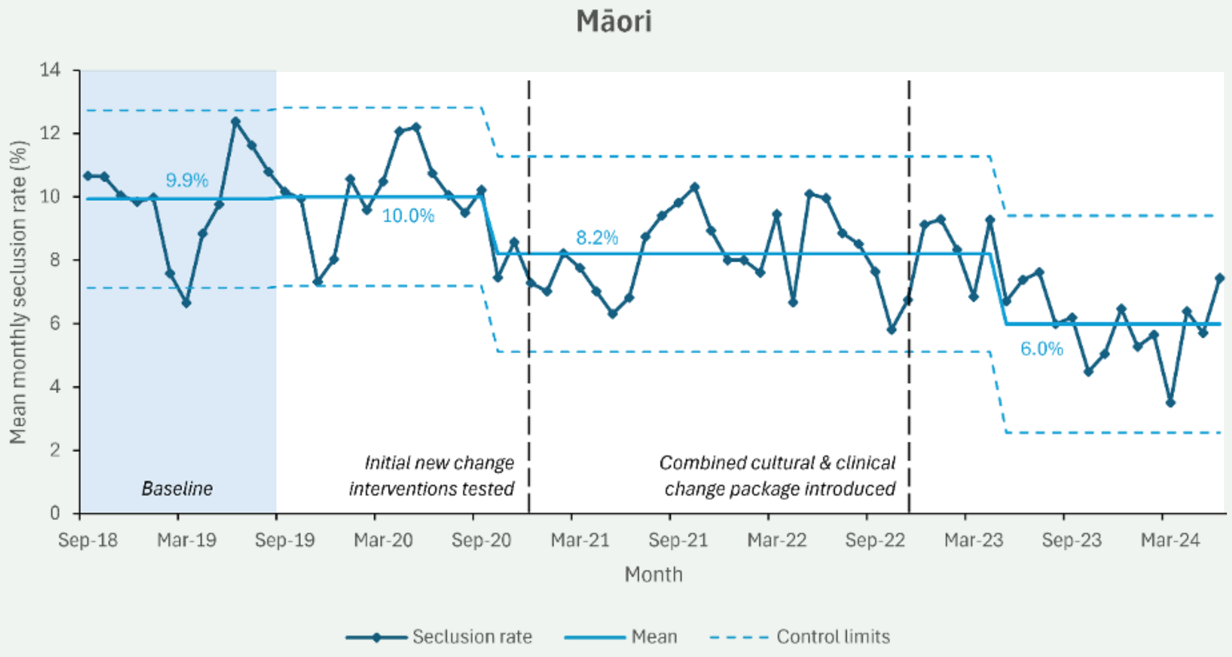
[iii] The seclusion rate is the number of people who were secluded in the month, divided by the number of inpatients. This analysis excludes Nelson Marlborough and Southern districts due to their data not being complete up to June 2024 at the time of analysis. Nelson Marlborough makes up approximately 3% of the national number of people admitted to adult units, and Southern makes up approximately 8%.

Figure 16: National seclusion rates for inpatients in adult, non-forensic mental health units, Aotearoa New Zealand, Sept 2018-Jun 2024.



Source: Te Tāhū Hauora analysis (National Collections PRIMD datamart).

Figure 17: National seclusion rates for Māori inpatients in adult, non-forensic mental health units, Aotearoa New Zealand, Sept 2018-Jun 2024.



Source: Te Tāhū Hauora analysis (National Collections PRIMD datamart).

Mental health: anti-psychotic medication and cardiometabolic risk

88. A second mental health and addictions improvement programme, maximising physical health for mental health and addiction services patients, is in progress. It aims to increase the rate of screening for cardiometabolic risk to 90% for consumers, and family and whānau at increased risk due to anti-psychotic medication treatment (clozapine and intramuscular injection) by December 2025.

89. Baseline national screening data for the 12-month period July 2018 to June 2019 shows 48% of people on intramuscular injection (IMI) medication received glucose screening, and 44% received lipid screening. For those on clozapine medication, 67% received glucose screening and 62% received lipid screening. The programme continues to develop a more robust, reliable data collection system and further results are not yet available.

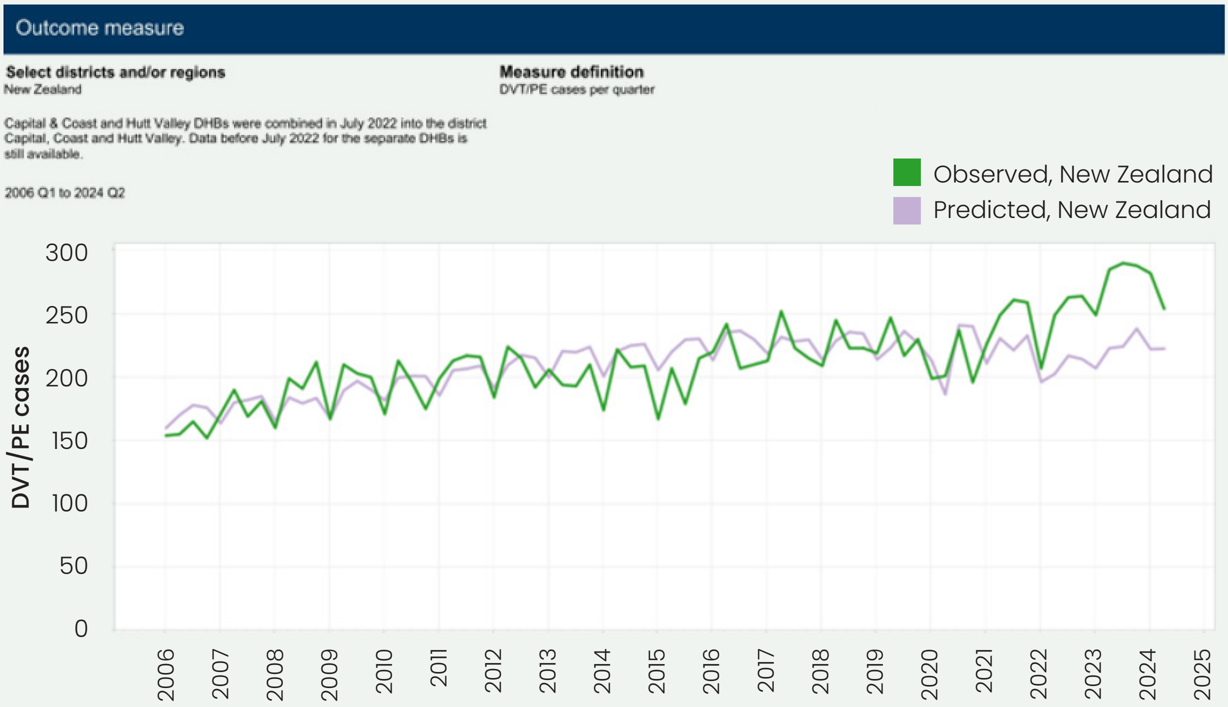
Safe surgery: Deep vein thrombosis / Pulmonary embolus

90. A Safe Surgery Programme was commenced in 2012 led by Te Tāhū Hauora with the aim of reducing perioperative harm. The programme moved to a sustainability phase in 2021 and Te Tāhū Hauora continues to monitor and report the number of postoperative deep vein thrombosis (DVT) / pulmonary embolus (PE) cases per quarter as part of the Quality Safety Markers programme.

91. Results for postoperative DVT/PE are reported as an observed versus expected ratio (O/E ratio) with the 'expected' number of cases based on a risk adjustment which includes age, operation etc. From, Q2 2013 there was a statistically significant downwards shift in the number of postoperative DVT/PE case per quarter, taking into account the increasing number of high-risk patients treated by hospitals and more complex procedures undertaken by hospitals. However, since January 2021, there have been more DVT/PE cases than expected in each quarter.

92. In 2012/13 the observed versus expected ratio of postoperative DVT/PE was 0.95, and in 2023/24 it was 1.23. This represents a raw difference of 0.28 and a 30% change in the O/E ratio. The increase, which has occurred for the last three years in a row, reflects an unexpected rise in patient risk likely to be due to the direct influence of COVID-19, given someone who has had COVID-19 is at greater risk of developing DVT/PE. Te Tāhū Hauora is completing a review of the risk-adjustment model and will be updating the results this year.

Figure 18: DVT / PE cases per quarter, Aotearoa New Zealand, Q1 2006-Q2 2024.



Outcome measure

Select districts and/or regions
New Zealand

Measure definition
DVT/PE cases per quarter

Capital & Coast and Hutt Valley DHBs were combined in July 2022 into the district Capital, Coast and Hutt Valley. Data before July 2022 for the separate DHBs is still available.

2006 Q1 to 2024 Q2

Source: Te Tāhū Hauora routine data analysis.

Pressure injuries: hospital acquired and non-hospital acquired

93. Pressure injuries (PI) are a major cause of preventable harm for patients using healthcare services. The pressure injury quality and safety markers (QSMs) are both in-hospital and in-community (non-hospital) focused, with reporting commencing in 2018-19.

94. From Q4 2018, the percentage of audited patients with a documented and current PI risk assessment has been used to monitor how well districts are conducting PI risk assessments and recognising at-risk consumers. There has been minimal improvement nationally in this measure resulting in fewer opportunities for improved outcomes for consumers at risk of developing a PI. While Te Tāhū Hauora has worked alongside ACC and Manatū Hauora since 2015 to prevent and improve the management of PI, this was not run as a national improvement programme.

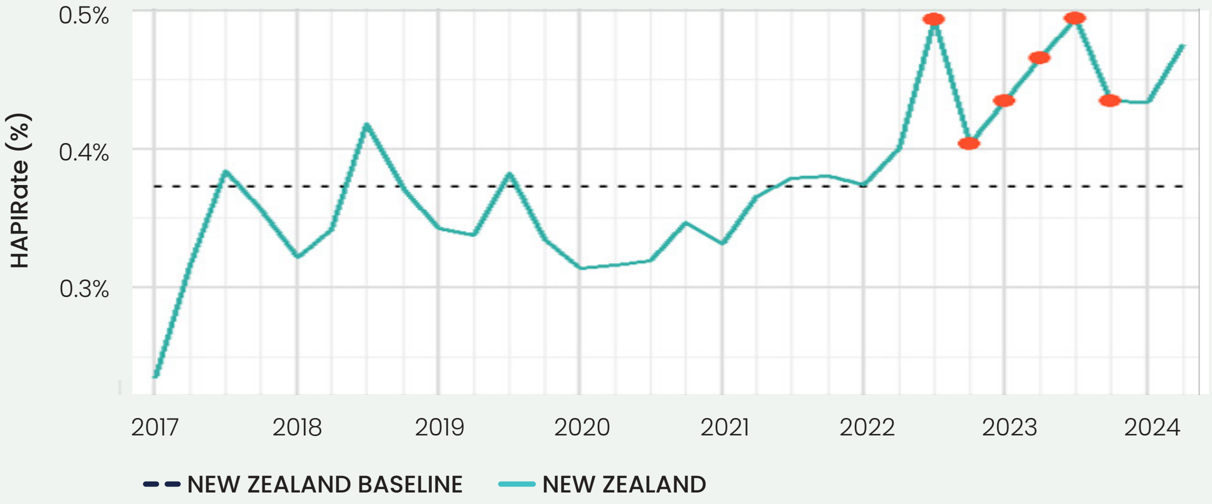
95. Te Tāhū Hauora has used hospital admission coded data (National Minimum Dataset (NMDS)) to triangulate pressure injury audit results and pressure injury rates. In 2017, the rate of hospital-acquired pressure injuries (HAPI) was 0.32 per 100 admissions, and in 2023/24 it was 0.45. This represents an 0.14 percentage point difference and 42.5% increase in the rate of HAPI between 2017 and 2023/24. Since 2021, NMDS data shows that recorded hospital-acquired pressure injuries (HAPI) have increased, which wasn't observed in audit results.

96. In 2017, the rate of non-hospital-acquired pressure injuries (NHAPI) was 0.84 per 100 admissions, and in 2023/24 it was 1.07. This represents an 0.23 percentage point difference and 27.6% increase in the rate of NHAPI between 2017 and 2023/24. Since 2021, NMDS data shows that NHAPI have been elevated above the median rate, aligning with audits results.

97. Te Tāhū Hauora has noted[30] that analysis of adverse event pressure injury data, and triangulation of quality safety marker data relating to non-hospital acquired pressure injury data sets (NMDS), confirms the finding that the number of NHAPI has increased across community and aged residential care settings. These results were presented at the National Wound Care Society pressure injury symposium in August 2023.

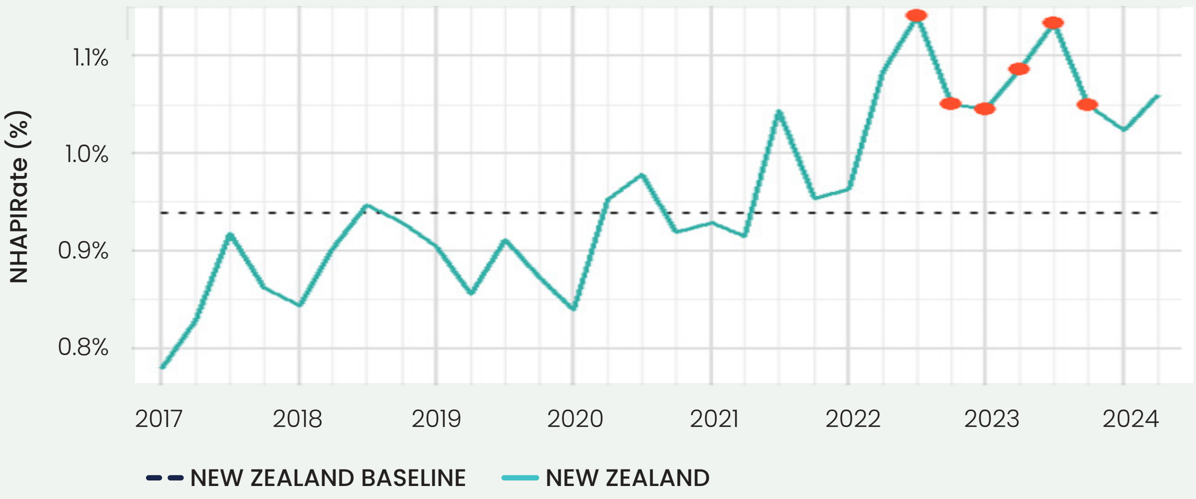
98. Pacific people had the highest incidence of NHAPI from community settings. An opportunity to focus on reducing non-hospital acquired pressure injuries for Pacific people will be raised for discussion by Te Tāhū Hauora at the National Quality Forum in November 2024.

Figure 19: Rate of hospital-acquired pressure injury per 100 admissions, Aotearoa New Zealand, Q1 2017-Q2 2024.



Source: Te Tāhū Hauora routine data analysis (National Collections NMDS).

Figure 20: Rate of non-hospital-acquired pressure injury per 100 admissions, Aotearoa New Zealand, Q1 2017-Q2 2024.



Source: Te Tāhū Hauora routine data analysis (National Collections NMDS).

---

[99] Note the graphs above use suppression of the zero to magnify the apparent effect size. If the graphs included zero they may look more modest.

Healthcare-associated infections: *Staphylococcus aureus* bacteraemia

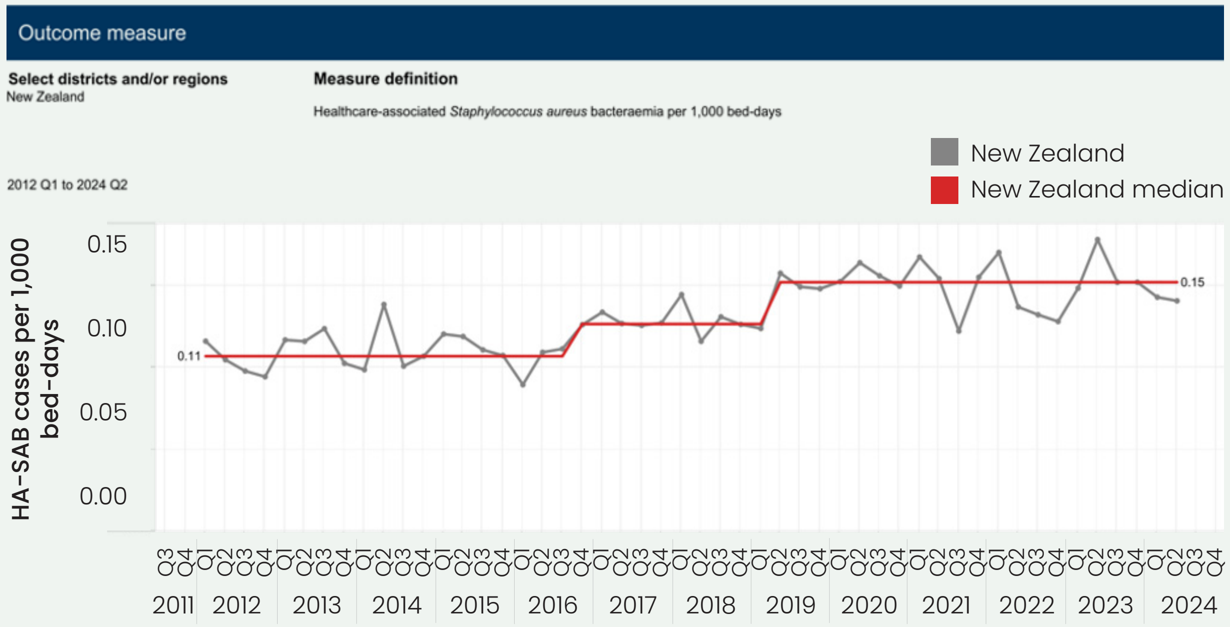
100. Healthcare-associated *Staphylococcus aureus* bactaeremia (HA-SAB) is an outcome measure of New Zealand's Hand Hygiene improvement programme, which includes measuring compliance with the World Health Organisation's (WHO's) 5 hand hygiene moments. Baseline data collection commenced in November 2012-January 2013.

101. The HHNZ programme has led to improvements in hand hygiene practice in hospitals throughout New Zealand. HHNZ was included in a suite of national quality improvement programmes (NQIPs) commencing 2009, and the nationally aggregated measured compliance with hand hygiene at this time was 47% (25,148 observations over 12 months from 12 participating DHBs). In 2013, the quality and safety marker (QSM) target for hand hygiene compliance was set at 70% which was met in June that year. The QSM target of 75% for 2014 was achieved in October that year and the QSM target of 80% for 2015 was achieved in June 2015. In the November 2015 to March 2016 audit period, the nationally aggregated measured compliance rate was 81% (63,483 observations over five months from 20 DHBs).

102. Direct observation of hand hygiene compliance is currently recommended as the 'gold standard' for measuring compliance, as it is the only method that can assess hand hygiene at all moments. However, direct observation is not without limitations. Potential areas of bias include observation bias, observer bias, and selection bias, with published reviews highlighting bias in hand hygiene compliance monitoring.[31]

103. The rate of healthcare-associated *Staphylococcus aureus* bactaeremia (HA-SAB) cases per 1,000 bed-days has risen twice since the baseline Q1 2012. The median rate first rose from 0.11 to 0.13 in Q4 2016, and then to 0.15 in Q2 2019.

Figure 21: Rate of healthcare-associated Staphylococcus aureus bacteraemia per 1,000 bed-days, Aotearoa New Zealand, Q1 2012-Q2 2024.



Source: Te Tāhū Hauora routine data analysis.

104. Several reasons have been postulated to explain why hand hygiene compliance has not improved rates of HA-SAB. For example, healthcare-associated bacteraemia most likely reflects the worst outcome for an episode of healthcare-associated infection. The incidence of other healthcare-associated infections such as peripheral intravascular access device-related phlebitis, catheter-associated urinary tract infections and non-surgical site skin infections may have been impacted upon by improvement in hand hygiene practices. However, defining such events and then ensuring consistency with reporting is considerably more difficult than capturing episodes of bacteraemia. Another explanation given is that diminishing returns in disease reduction may occur when hand hygiene compliance rates improve to 50 to 70%. It is possible that most of the impact on HA-SAB rates coincided with the earlier work and preceded HA-SAB data collection.[31]

105. Continuous ongoing surveillance of healthcare-associated infections (HAI), including HA-SAB, is important. *Staphylococcus aureus* (S. aureus) is the most common cause of healthcare-associated bacteraemia in New Zealand and elsewhere. Individuals who develop HA-SAB are more likely to have medical complications, need complex treatment and stay longer in hospital, and HA-SAB infections can also result in death. Surveillance of HA-SAB is considered a robust measure of the control of HAI and the quality of IPC strategies, because the identification of S. aureus in a blood culture is rarely considered a contaminant.[32]

Medication safety: opioid-related harm

106. Te Tāhū Hauora sponsored an 18 month formative 'safe use of opioids' improvement collaborative from October 2014. The collaborative was aimed at building district and private hospital engagement and capacity to identify interventions to reduce opioid-related harm.

107. Appropriate use of opioids is an essential part of managing acute pain and cancer-related pain, and acute pain in particular carries its own morbidity. However, opioid medicines (morphine, oxycodone, fentanyl, methadone, tramadol and codeine) have significant side-effects eg constipation, nausea and vomiting and urinary retention, and can cause serious harm from opioid-induced ventilatory impairment (OIVI) and cardiac arrest. Formative work sponsored by Te Tāhū Hauora contributed to the development of a best-practice care bundle approach that includes interventions to reduce OIVI and opioid-induced constipation.

108. It is very difficult to measure the impact of opioid harm. There is significant variation in what is reported, which is hard to standardise; it is hard to determine if side-effects are related to opiates and, if so, to what extent; and OIVI events are rare. The Atlas of Variation (see below) reports opioid treatment, and variation in use is closely correlated to where pain clinics are located: where there is no specialist pain clinic, community opioid dispensing increases.

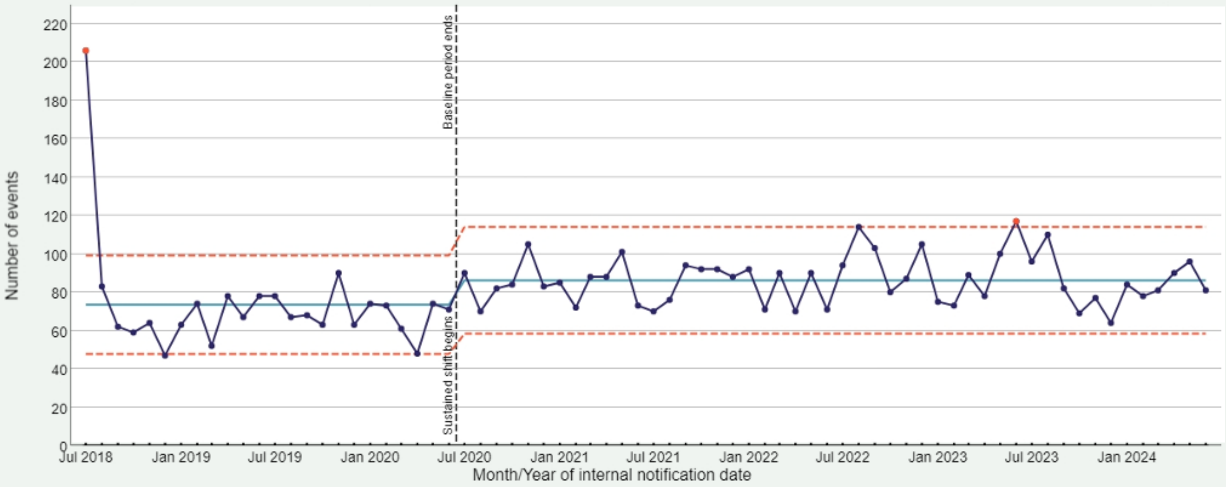
109. Opioid harm is reported in 0.47% of surgical episodes of care within the National Minimum Dataset (NMDS). Process measures are no longer reported (since January 2022) because the safe use of opioids quality and safety marker moved to a sustainability phase. Te Tāhū Hauora will still publish the outcome measure from the NMDS that shows the percentage of surgical admission episodes with opioid-related harm.

Serious adverse events (SAC 1 and 2 events)

All adverse events

110. Te Tāhū Hauora collects, analyses and reports on adverse events (defined as an event in which a person receiving health care experienced harm),[33] that meet criteria based on a Severity Assessment Code (SAC): it collects, analyses and reports on SAC 1 and 2 events (severe harm) and those on the Always Report and Review (ARR) list.[34] This reporting is published in Te Tāhū Hauora's public-facing national quarterly dashboard and in an annual exception report.[30,35] Figure 22 shows the number of SAC 1 and 2 adverse events reported to Te Tāhū Hauora by month for the last six years (July 2018–July 2024).

Figure 22: Number of reported adverse events by month, Aotearoa New Zealand, Jul 2018-Jul 2024.



Source: Te Tāhū Hauora routine data analysis.

111. It is important to note that adverse event reporting alone is not an indicator of overall harm as Te Tāhū Hauora receives only reports related to severe harm (SAC1 and SAC 2), and several factors contribute to variability in reported adverse events.[30] There is considerable underreporting;[36] however, as the actual rate of adverse events is unknown,[37] so is the level of underreporting.[38] Organisational culture also influences adverse event reporting. If staff feel safe to report adverse events without fear of retribution, and reporting is simple, then reporting rates will increase.[37,39,40]

112. Te Tāhū Hauora's learning and improving from harm 2022/23 annual exception report is the third year of this reporting. The 2022/23 report identifies the following key findings:

    a. There were 1,383 adverse events reported to Te Tāhū Hauora between 1 July 2022 and 30 June 2023 from all providers. Of these, 1,189 met the SAC 1 and 2 criteria, and 165 met the criteria for ARR events with lower SAC rating codes (all within normal variation).
    b. Most of the adverse events were reported by Health NZ hospital and specialist services (1,122 SAC 1 and 2 events; 152 ARR events; 237 mental health-related events), with fewer from the rest of the sector. This reflects the maturity of reporting systems within public hospitals.
    c. A total of 779 notifications were given a clinical management sub-classification: 59 events were classified as clinical administration (WHO code 1), 715 as clinical process and procedure (WHO 2) and five as resourcing (WHO 14). These are combined under the clinical management sub-classification and overall are within normal variation.
    d. The ethnicity data shows that Māori experienced 14% of events, Pacific people 5.3%, Europeans 72% and Asian 6.6%. Ethnicity by reporting year includes only SAC 1 and 2 events.
    e. Pressure injuries (PI) make up the largest increase in reported SAC 2 events (Te Tāhū Hauora has included PI in the SAC rating guide since 2019/20).
    f. The healthcare-associated infection (HAI) SAC requirements were included in the SAC rating guide in 2022/23, this resulted in HAI SAC 2 notifications, which had not been reported previously.
    g. Similarly, the release of the maternity SAC example guide[41] created a corresponding increase in reported events. The change in reporting aligns with an increased focus on consistent reporting and accurate SAC rating. This information and the statistically significant variation has been shared with districts.

Maternity serious adverse events (SAC1 and SAC2 events)

113. Te Tāhū Hauora has also undertaken a thematic analysis of maternity events to better understand what was learned from maternity adverse events across a five-year period.[42]

114. Between 1 July 2018 and 30 June 2023, a total of 455 maternity events involving pregnant woman and birthing people were reported. There was a total of 455 events across the five years. A total of 241 of these events specifically reported adverse outcomes for pregnant women and birthing people. These included a series of complications and unexpected harm, including uterine rupture, sepsis, hysterectomy, post-partum haemorrhage, significant perineal tears and fetal demise. In addition, a total of 214 (of the 455) reports focused on adverse outcomes for the neonate following birth. These included neonatal encephalopathy, deterioration, sepsis and the need for transfer to higher levels of care.

115. The percentages of Māori and Asian people identified in these numbers were higher than expected based on the percentage of Māori and Asian people by overall general population. It is also notable that the proportion of Pacific consumers having a reported adverse event increased over the last two years.

116. These findings are consistent with the findings of the Fifteenth Annual Report of the Perinatal and Maternal Mortality Review Committee (Health Quality & Safety Commission 2022), which showed that Indian (Asian under level 1 ethnicity) and Pacific people had higher rates of perinatal-related mortality than Europeans. This annual report also showed that rates of stillbirths were higher for babies of Pacific and Indian people than for those of New Zealand Europeans, and rates of neonatal deaths were higher for babies of Māori and Pacific people than for those of New Zealand Europeans.

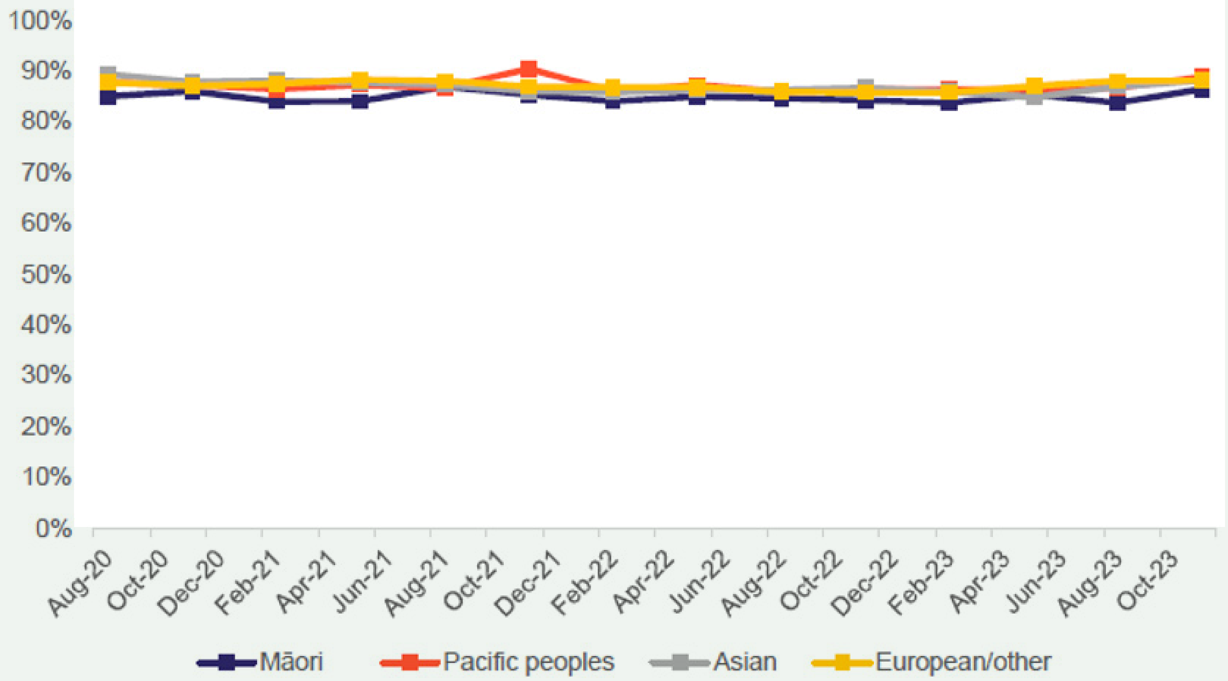
117. The qualitative analysis of maternity adverse events identified a number of themes for ongoing discussion across the maternity sector. These were tabled at a national maternity quality forum in December 2023 as part of the discussion to evaluate potential projects for improvement across the wider maternity sector. The themes included challenges with escalations of care; issues with the application and interpretation of, and response to, cardiotocography (CTG) findings; lack of a centralised electronic record; and ongoing communication challenges between health professionals.

Person and whānau-centred care

Patient-reported experience once services accessed

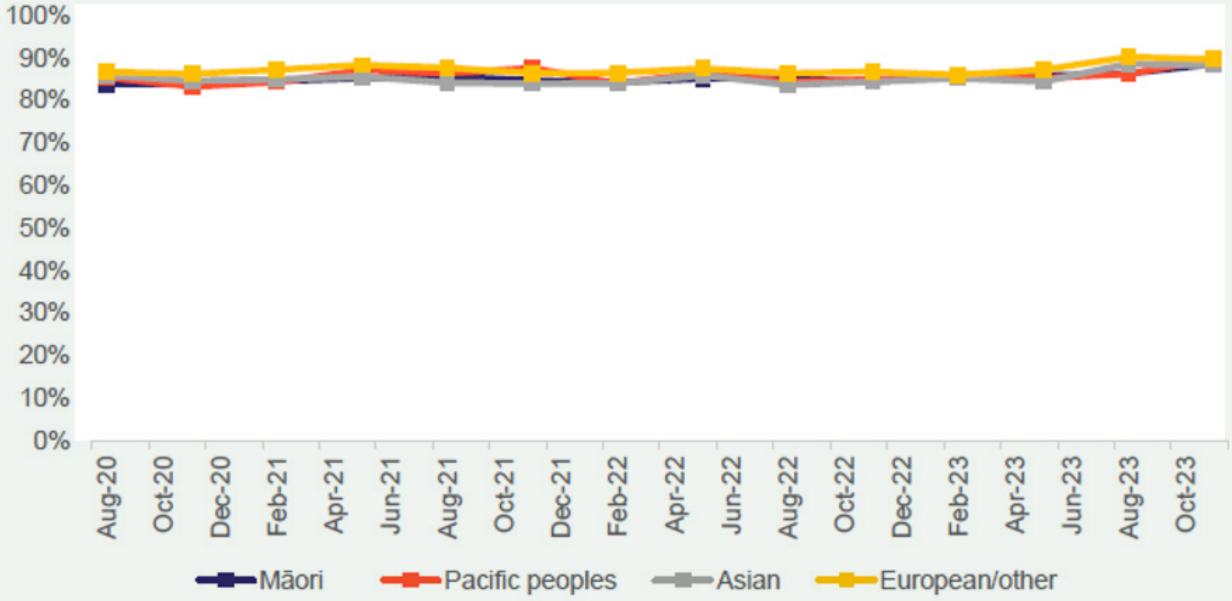
118. Once people access care, their reported experience has been remarkably stable throughout pandemic-affected periods and since. Survey data shows primary care patients responded positively to the question 'Did the health care professional involve you as much as you wanted to be in making decisions about your treatment and care?', at consistent levels from August 2020 to November 2023. Patients attending primary care also responded positively to the question 'Did you have trust and confidence in your health care professional?' at consistent levels from August 2020 to November 2023.

Figure 23: Percentage of primary care patients who responded positively to the question 'Did the health care professional involve you as much as you wanted to be in making decisions about your treatment and care?', by ethnicity, Aotearoa New Zealand, August 2020-November 2023.



Source: Te Tāhū Hauora.

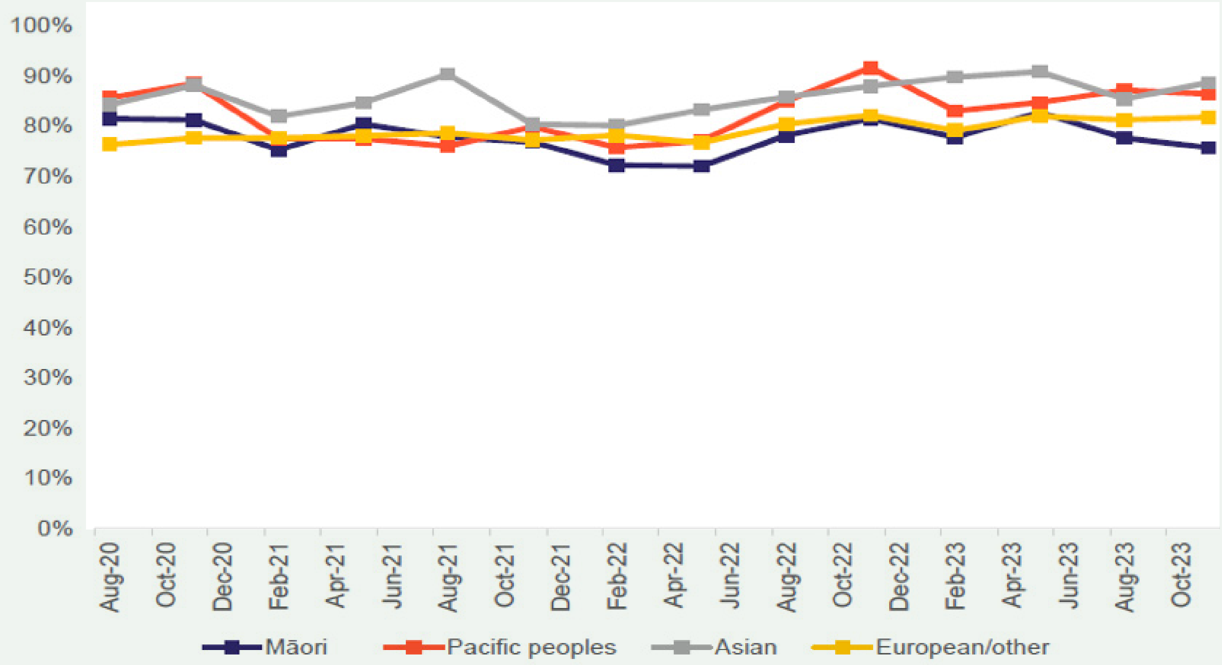
Figure 24: Percentage of primary care patients who responded positively to the question ‘Did you have trust and confidence in your health care professional?’, by ethnicity, Aotearoa New Zealand, August 2020-November 2023.



Source: Te Tāhū Hauora.

119. Once patients accessed secondary care, their reported experience of care has also remained stable over the period of the pandemic. No clear changes in inequity were evident.

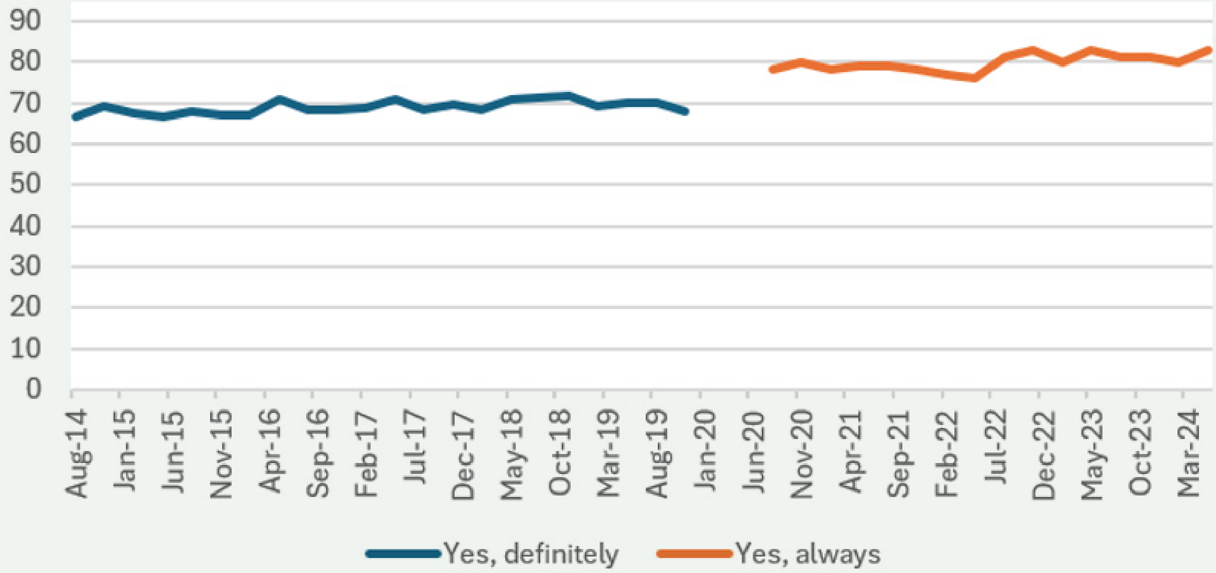
Figure 25: Percentage of secondary care patients who responded positively to the question, 'Were you involved as much as you wanted to be in making decisions about your treatment and care?', by ethnicity, Aotearoa New Zealand, August 2020-November 2023.



Source: Te Tāhū Hauora, Aotearoa New Zealand adult secondary care patient experience survey.

120. For the adult inpatient experience survey, it is possible to show a timeseries from 2014. However, there have been slight wording changes in the questions/ answer categories, which has led to an increase in positive responses in relation to patients being involved as much as they wanted in making decisions about treatment and care ("always involved" may elicit more positive responses than "definitely"). However, two definite shifts up of about three percentage points occurred between 2014 and 2024 (2014-2019; and 2020-2024).

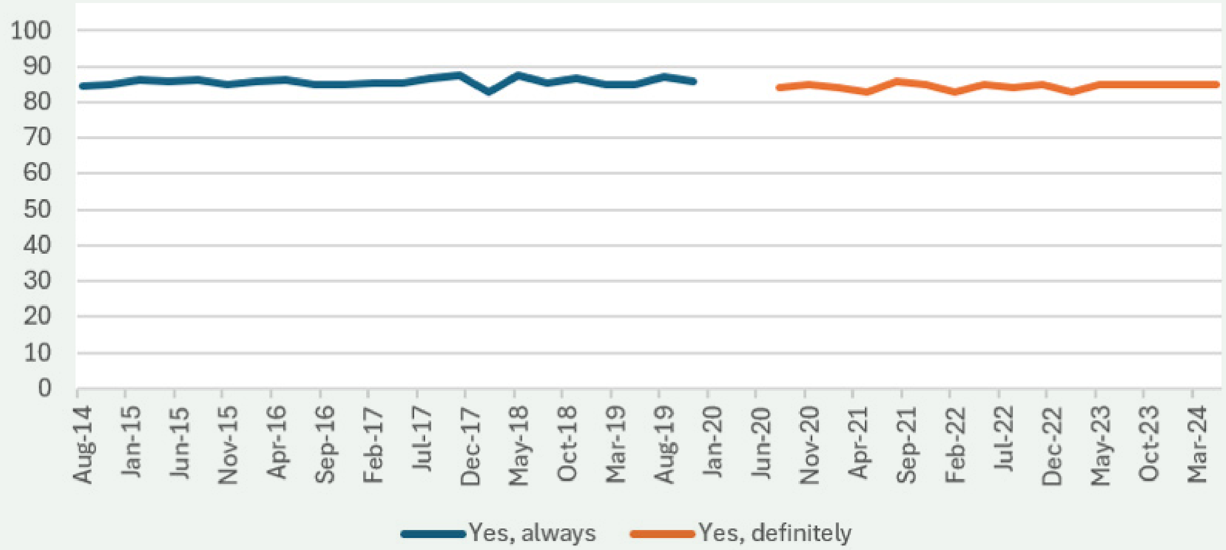
Figure 26: Percentage of secondary care patients who responded positively to the question, 'Were you involved as much as you wanted to be in making decisions about your treatment and care?, Aotearoa New Zealand, August 2014-March 2024.



Source: Te Tāhū Hauora, Aotearoa New Zealand adult secondary care patient experience survey.

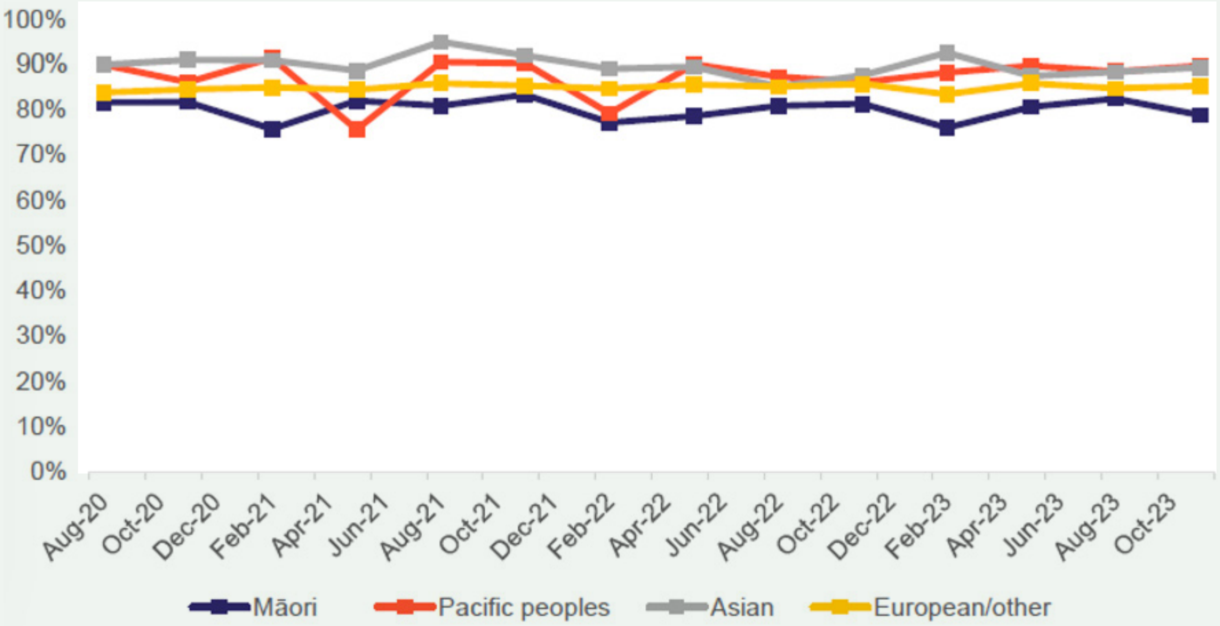
121. The responses of patients in hospital to the question, 'Did you have trust and confidence in the doctors?' is essentially flat over the period August 2014-March 2024, this is despite a change to the answer categories with "always" being replaced with "definitely", which could be expected to have a negative effect on the result. Inequity for Māori is more visible in the responses to this question (data from 2020-2024).

Figure 27: Percentage of secondary care patients who responded positively to the question, ''Did you have trust and confidence in the doctors?', Aotearoa New Zealand, August 2014-March 2024.



Source: Te Tāhū Hauora, Aotearoa New Zealand adult secondary care patient experience survey.

Figure 28: Percentage of secondary care patients who responded positively to the question, ''Did you have trust and confidence in the doctors?', by ethnicity, Aotearoa New Zealand, August 2020-November 2023.



Source: Te Tāhū Hauora, Aotearoa New Zealand adult secondary care patient experience survey.

Health and Disability Commissioner complaints

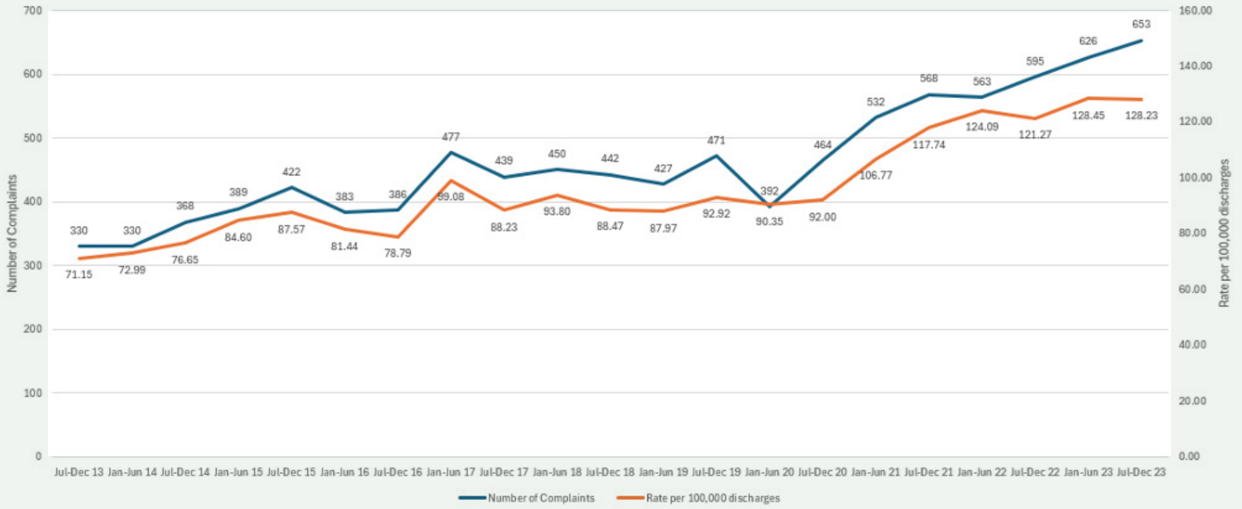
122. The HDC provides a six-monthly report on complaints made to the Commissioner about New Zealand public hospitals. Figure 29 below shows the number of complaints and rate of complaint per 100,000 discharges received by the HDC involving Health NZ from July-December 2013 to July-December 2023.

123. This data is available to the public from the HDC Research and Data Reports.[43] The rate of complaints received in Jul-Dec 2023 per 100,000 discharges is 36% higher than the average rate of complaints over the previous 9.5 years (Jul 2013-Jun 2023).

124. The latest report, Complaints to HDC involving Health NZ July–Dec 2023, records the highest number of complaints about public hospitals ever received by the HDC. This represents a 4% increase in the average number of complaints received by the HDC compared to the average of the last four reporting periods; and an 11% increase in the rate of complaints compared to the average rate of complaints received over the last four reporting periods. A report covering the first six months of 2024 is expected in January 2025.

125. The HDC comments in the complaints reports that "It is also important to note that the number of complaints received by HDC is not always a good proxy for the quality of care provided and can be impacted by several factors (eg, features of the services provided by a particular district/region). In addition, complaints received within a single six-month period will sometimes relate to care provided within quite a different period. From time to time, some districts may also be the subject of several complaints from a single complainant within one reporting period".

Figure 29: Number and rate of complaints involving Health NZ received by HDC Jul-Dec 2013 to Jul-Dec 2023.



Source: HDC Research and Data Reports.

Equity

126. Significant inequities in experience and health outcomes exist in New Zealand. These have been described in detail in two recent reports, the Health NZ report on the evaluation of planned care waitlist prioritisation tools (Planned Care Waitlist Prioritisation Report)[11] and the New Zealand Health Status Report 2023 (Health Status Report).[44] Inequities include those based on gender, ethnicity, disability, refugee or migrant status, location (rurality) and socio-economic status (deprivation).

127. In addition, two reports examine and highlight inequity in health outcomes for Māori: a Te Tāhū Hauora Window on quality report 2019 (Window on Quality 2019);[45] and the Quality and Safety Marker results for Māori, which show consistently statistically significantly worse outcomes across nine of ten quality and safety markers.

128. The Health Status Report provides population metrics that describe aspects of inequities in New Zealand. The report provides an overview of the underlying, potentially avoidable factors contributing to the life expectancy gap between Māori and Pacific people compared with non-Māori/non-Pacific people using data from 2018-2020 (as the data was not available for years after 2020 at the time of publication of this report). It includes an overview of the top 10 avoidable contributors to the life expectancy gap between Māori and non- Māori /non-Pacific; total mortality; and avoidable causes of mortality.

129. The Health Status Report acknowledges that drivers of inequities are frequently intersectional, intergenerational and compounding: inequity is a complex, system-wide problem that requires systemic, multilevel solutions (that are not limited to the health sector). It also highlights the limitations of ethnicity data and the importance of improving ethnicity data quality.

130. The Planned Care Waitlist Prioritisation Report identifies inequities experienced at each stage of the planned care pathway across a range of domains, and there are marked inequities between ethnicities, across socio-economic status, and for people living rurally. These inequities have impacts at each stage of the planned care pathway, from the differential risk of developing disease, to the impact of comorbidity on access to treatment and outcomes, in addition to differences in access to care, the quality of care received and the outcomes of this care.

131. The Planned Care Waitlist Prioritisation Report also explores barriers to accessing care, which are potentially numerous and are often experienced inequitably so their effects may be compounding. Barriers to access may include cost, availability, inflexibility of appointment times and scheduling of appointments during working hours, as well as cultural bias, racism and lack of cultural competency.

132. Window on Quality 2019 provides an in-depth analysis of health inequities between Māori and non-Māori, considers basic causes of inequity, and identifies tools and resources that are available to advance Māori health and achieve greater equity. The report includes timeseries analysis of data over the previous 10 years or longer.

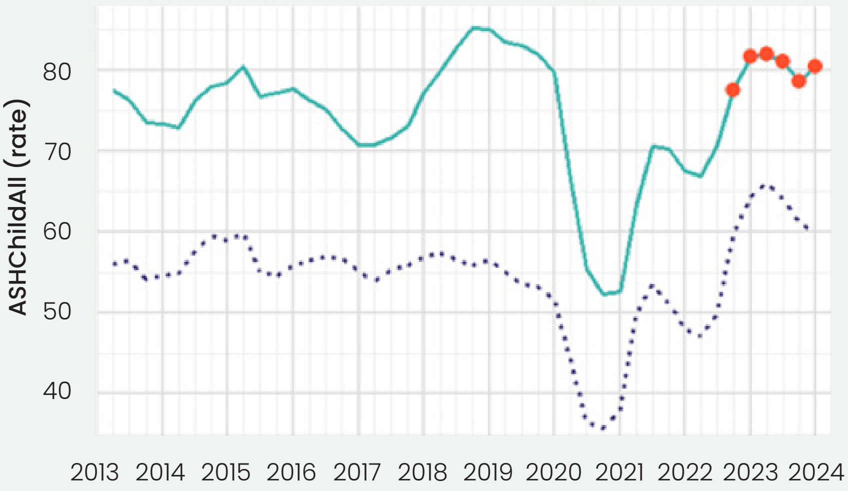
133. Three groups of measures are examined in Window on Quality 2019: measures of access, measures of quality, and measures of improvement. For measures of access, the report finds that services are less accessible and there are barriers to health services that prevent Māori from having the same access to healthcare as non-Māori.

134. For measures of quality Window on Quality 2019 finds that even if services are accessed, the quality of those services is not equitable, and Māori do not benefit from them as much as non-Māori do. For example, sub-optimal asthma control is seen in Māori tamariki, who have higher levels of prescriptions for reliever medication with no preventer prescribed, potentially contributing to the 30% higher hospitalisation rate for asthma in Māori tamariki. Hospitalisations for self-harm and suicide mortality rates are markedly higher in young Māori than in young non-Māori. And, following a hip fracture, the percentage of Māori having an operation on the day of admission to hospital or the next day has decreased steadily since 2013, while the rate for non-Māori has steadily improved.

135. For measures of improvement, Window on Quality 2019 finds that while national quality improvement programmes that address specific areas of harm to patients have achieved good results for non-Māori in many cases, some of these programmes have seen an increase in inequity for Māori.

136. Quality and Safety Marker results for Māori show consistently statistically significantly worse outcomes across nine of ten quality and safety markers compared with a reference group, findings that are consistent with the above reports. The markers include ambulatory sensitive hospitalisation (ASH); Immunisation at 24 months of age; ability to access primary care; cost barriers to primary care; barriers to waiting in primary care; difficulties to taking time off work (primary care access); and culture needs in primary care.

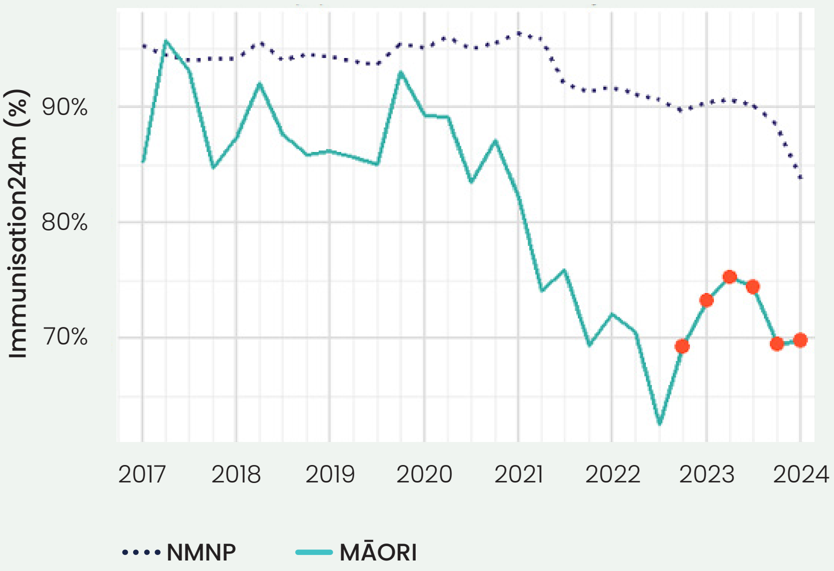
Figure 30: Ambulatory sensitive hospitalisation (ASH) 0-4 year old admissions per 1,000 population, Aotearoa New Zealand, Q2 2013-Q1 2024.



Ambulatory sensitive hospitalisation (ASH) 0–4-year old admissions per 1000 population.

Source: Te Tāhū Hauora routine data analysis.

Figure 31: Immunisation rate per 100 eligible children at age 2, Aotearoa New Zealand, Q1 2013-Q1 2024.



Immunisation rate per 100 eligibile children at age 2.

Source: Te Tāhū Hauora routine data analysis. Aotearoa Immunisation Register (AIR) data.

Effective care – unwarranted variation

137. Recognising unwarranted variation in healthcare – "differences that cannot be explained by illness, medical need, or the dictates of evidence-based medicine"[46] – is important because it allows the identification of underuse of higher value interventions; overuse of lower value interventions; and overuse of interventions which may result in increasing harm. The existence of persistent unwarranted variation directly impacts on equity of access to services, the health outcomes of populations and efficient use of resources.[47]

138. Unwarranted variation in healthcare is susceptible to reduction and therefore should be a focus of improvement activity. The first step in addressing unwarranted variation in health care is the systematic and routine collation and publication of data on such variation. Many countries publish 'Atlas of Variations' to highlight geographical variation in the provision of health services and associated health outcomes.

139. In New Zealand, Te Tāhū Hauora publishes an Atlas of Healthcare Variation (the NZ Atlas) as an online tool designed to highlight variation in the provision and use of specific health services (variation in access to services and care; access to optimal care (evidence-based best practice); the impact of improvement; and health outcomes by geographic area).[48] The NZ Atlas is organised by 23 domains that include asthma, cancer, cardiovascular disease, community use of antibiotics, diabetes, gout, maternity, mental health in primary care, Well Child, trauma, and an equity explorer. Many of the domains include timeseries data. The data across these domains is currently being updated.

140. Generally, for the data currently reported in the Atlas, there has been very little change (improvement) since 2012 in terms of differential access, for example access to community management of chronic disease and related medications (and from that potentially avoidable admissions). In addition, there is a general pattern of Pacific people and Māori having less access to optimal care – often there are overall improvements in terms of more people getting the right care, but no reduction in disparities.

International comparisons and benchmarking

Health Roundtable

141. Health Roundtable (HRT) is a non-profit member organisation of health services across Australia and New Zealand. It collects, analyses and publishes information comparing organisations and identifying ways to improve practice. One of the benefits of membership of HRT is that it provides comparative benchmark analysis for the vast majority of major Australian hospitals and all large New Zealand hospitals, with peer and exemplar comparisons for similar hospitals across Australasia.

142. HRT produces a wide range of data reports covering numerous hospital performance and quality and safety measures. These measures include hospital standardised mortality (HDxSMR); hospital acquired complications (HAC); the Classification of Hospital Acquired Diagnoses (CHADx), which allows hospitals to identify, count and monitor adverse events occurring in hospital; hospital KPIs; top 10 diagnostic related groups (DRGs) with potential bed-day savings; ED Target comparisons; long stay share of bed-days; relative stay index; and workforce wellbeing.

143. Up until 30 June 2024, individual districts joined HRT with each district having access to reports about that particular district. A national contract has been signed for the FY2024/25 and this will enable the development of national (all districts' hospitals) and regional (all districts in a region) reporting, in addition to reporting at an individual district (hospital) level. Regular national and regional-level reports are not available yet.

OECD

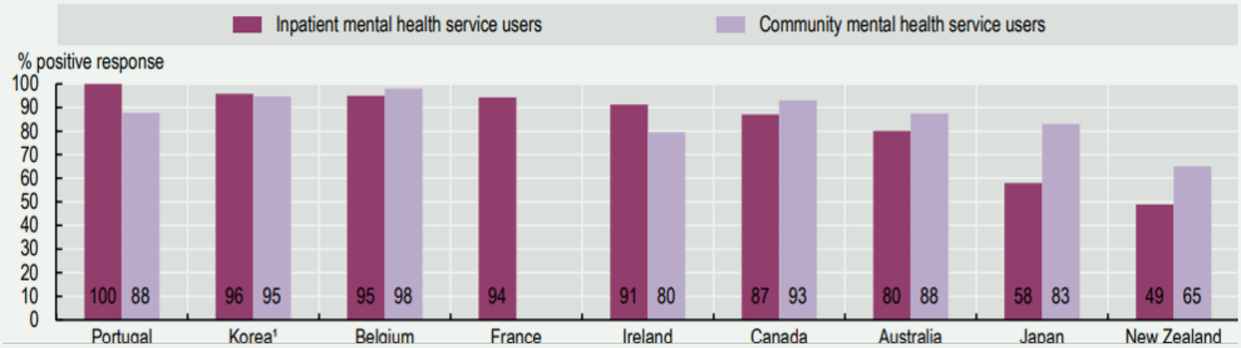
Patient experience

144. The OCED's *Health at a Glance* reports are produced biannually and provide a comprehensive set of indicators on population health and health system performance across OECD members and key emerging economies. Indicators cover health status, risk factors for health, access to and quality of health care, and health resources. Alongside indicator-by-indicator analysis, an overview chapter summarises the comparative performance of countries and major trends.

145. *Health at a Glance 2023*,[49] includes analysis of patient experience indicators: the perceptions of service users in inpatient mental health settings and those using community services about whether care providers treated them with courtesy and respect.

146. The proportion of mental health service users reporting that they were treated with courtesy and respect in inpatient mental health services in 2021-2022 ranged from 49% in New Zealand to 100% in Portugal. In community mental health settings, the lowest share was again in New Zealand (65%), while the highest share was in Belgium (98%).

Figure 32: Share of inpatient and community mental health service users who were treated with courtesy and respect by providers, 2021-22.



Source: OCED Health Statistics 2023.

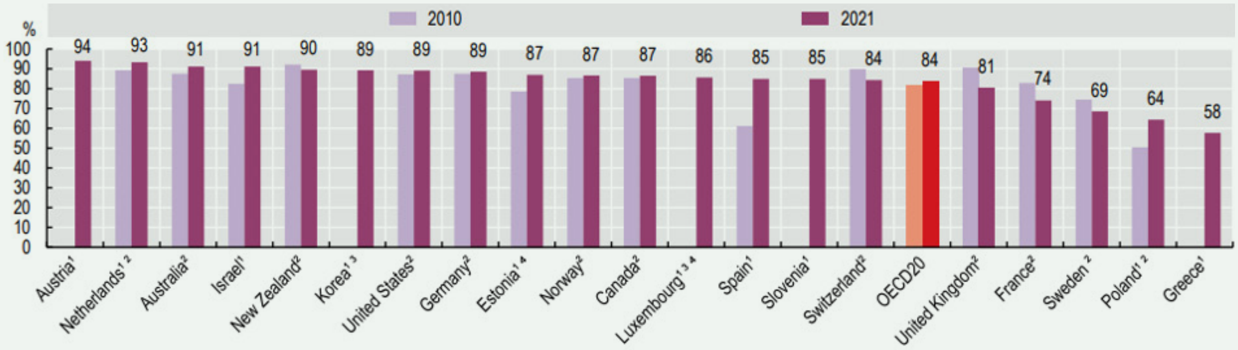
147. *Health at a Glance 2023* also includes patient experience about doctors' communication (providing easy-to-understand explanations; and involving patients in decisions about their care and treatment), with New Zealand performing positively (5th and 8th respectively) among the 21 countries reported (2020-2021).

Figure 33: Doctor providing easy-to-understand explanations, 2020 and 2021 (or nearest year).

Source: OECD Health Statistics 2023.

1. Data from national sources. 2. Data from Commonwealth Fund International Health Policy Surveys 2010 and 2020. 3. Data refer to patient experiences with any doctor. 4. 2019 data.

Figure 34: Doctor involving patient in decisions about care and treatment, 2020 and 2021 (or nearest year.



Source: OCED Health Statistics 2023.

1. Data from national sources. 2. Data from Commonwealth Fund International Health Policy Surveys 2010 and 2020. 3. Data refer to patient experiences with any doctor. 4. 2019 data.

Preventable and amenable mortality

148. The *Health at a Glance 2021* report includes an analysis of avoidable mortality comprising preventable and amenable mortality.[44,49,50] Based on the 2019 OECD/Eurostat definitions, preventable mortality is defined as causes of death amongst people aged under 75 years that can be mainly avoided through effective public health and primary prevention interventions (i.e. before the onset of disease/injury, to reduce incidence). Amenable mortality is defined as causes of death that can be mainly avoided through timely and effective health care interventions, including secondary prevention and treatment (i.e. after the onset of disease, to reduce case fatality).

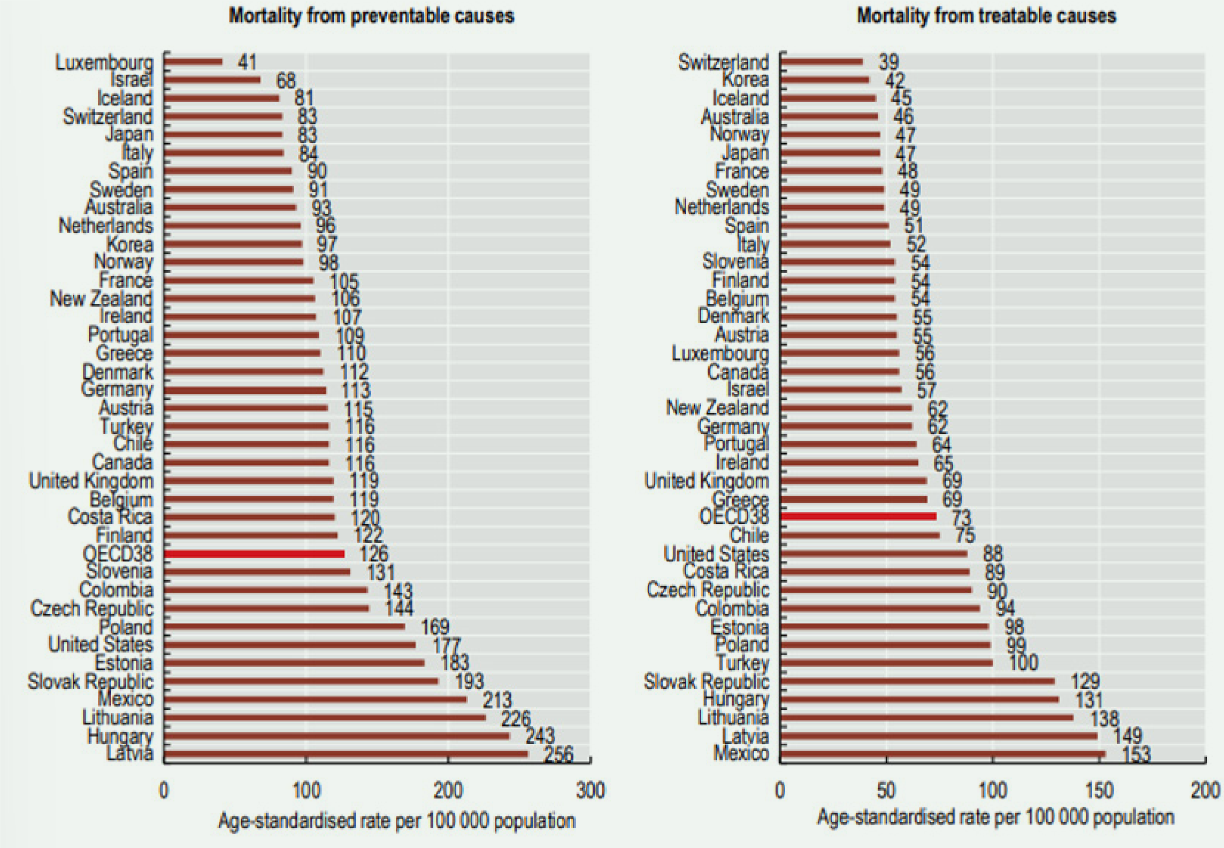
149. *Health at a Glance 2021* reports that in 2019 across OECD countries, over 3 million premature deaths amongst people aged under 75 years could have been avoided through better prevention and healthcare interventions. This amounts to over one quarter of all deaths. Of these deaths, about 1.9 million were considered preventable through effective primary prevention and other public health measures, and over 1 million were considered amenable through more effective and timely healthcare interventions.

150. Some cancers that are preventable through public health measures were the main causes of preventable mortality in 2019 (31% of all preventable deaths) – particularly lung cancer. The main amenable cause of mortality in 2019 was circulatory diseases (mainly heart attack and stroke), which accounted for 36% of premature deaths amenable to treatment.[iv] Effective, timely treatment for cancer, such as colorectal and breast cancers, could have averted a further 27% of all deaths from amenable causes. Respiratory diseases such as pneumonia and asthma (9%) and diabetes and other diseases of the endocrine system (8%) are other major causes of premature death that are amenable to treatment.

151. Figure 34 ranks 39 OECD countries for mortality from preventable causes (New Zealand 14th) and mortality from amenable (treatable) causes (20th).

[iv] OECD (2021), Avoidable mortality (preventable and treatable), in Health at a Glance 2021: OECD Indicators, OECD Publishing, Paris.

Figure 35: Mortality rates from avoidable causes, 2019.



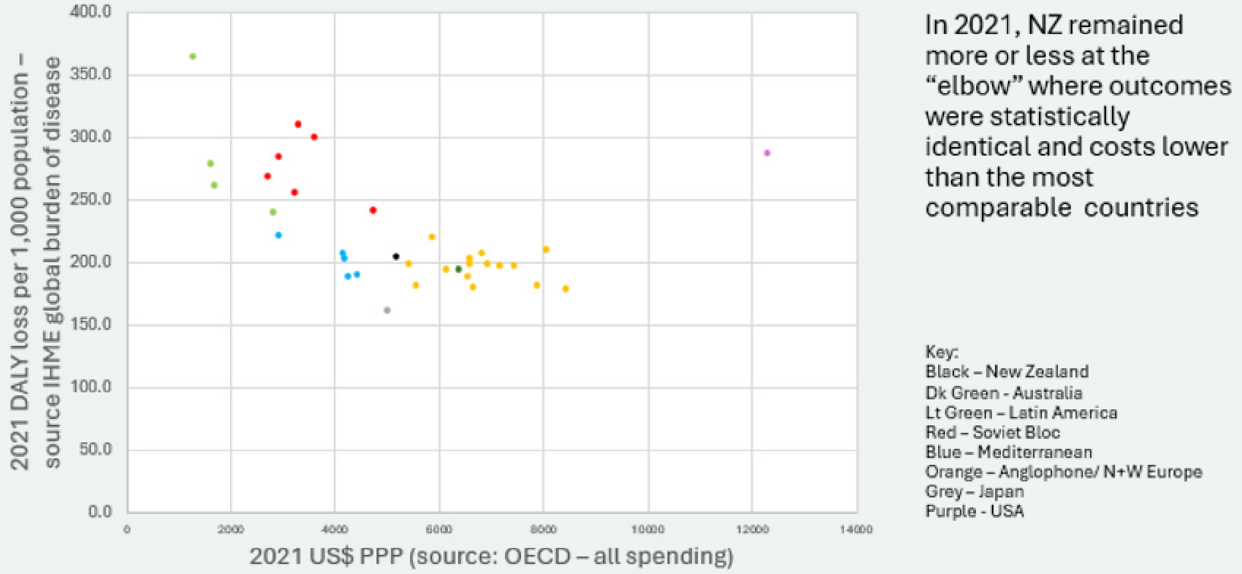
Source: OCED Health Statistics 2021.

Heath system outcomes and expenditure

152. International comparisons of New Zealand's health system outcomes and expenditure are mixed and difficult to make. However, in broad terms New Zealand does not stand out.

An analysis of cost (OECD) versus disability-adjusted life year (DALY) loss (University of Washington) data, undertaken by Te Tāhū Hauora, shows that among similar countries, we have outcomes equal to others and spend less as a health system.

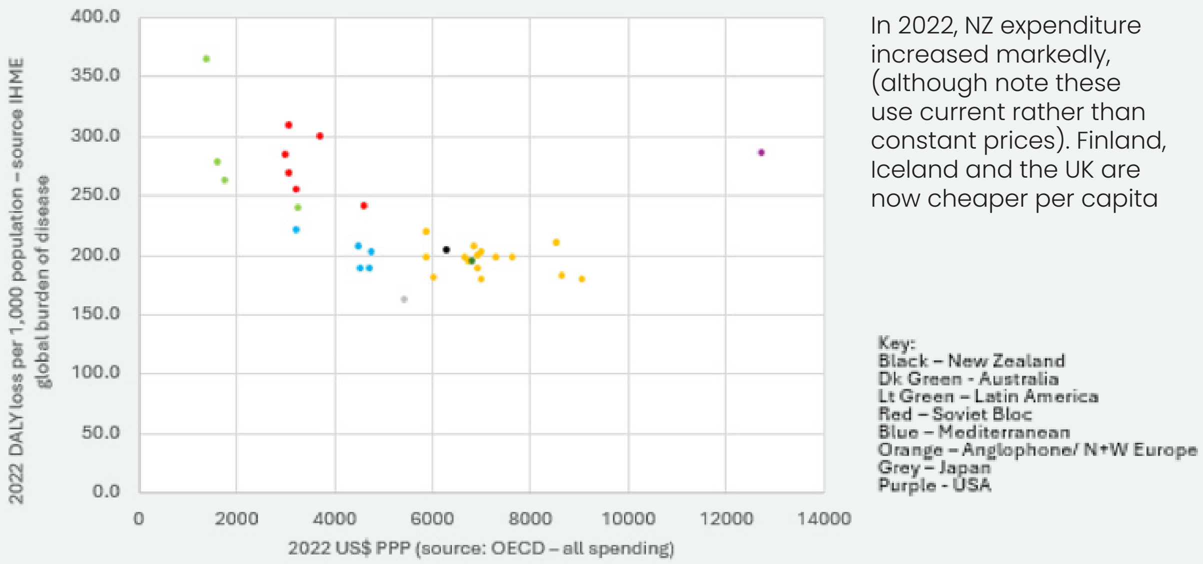
Figure 36: Health system spending (OECD) versus DALY loss per 1,000 population vs health spending, 2021.



In 2021, NZ remained more or less at the "elbow" where outcomes were statistically identical and costs lower than the most comparable countries

Source: Te Tāhū Hauora (DALY loss data from the University of Washington, IHME global burden of disease).

Figure 37: Health system spending (OECD) versus DALY loss per 1,000 population vs health spending, 2022.



In 2022, NZ expenditure increased markedly, (although note these use current rather than constant prices). Finland, Iceland and the UK are now cheaper per capita

Source: Te Tāhū Hauora (DALY loss data from the University of Washington, IHME global burden of disease).

The Commonwealth Fund *Mirror, Mirror*

153. The Commonwealth Fund (CWF) publishes a series of reports, Mirror, Mirror, comparing and ranking the health systems of wealthy nations. *Mirror, Mirror 2024*[1] is the CWF's eighth report since the first edition in 2004. The analysis covers 70 health system performance measures in five domains: access to care, care process, administrative efficiency, equity, and health outcomes.

154. The report draws on data sources from 2020 or later including the CWF International Health Policy Surveys fielded in 2021, 2022 and 2023. The 2021 and 2023 surveys examined patients' views of the health care system, quality of care, care coordination, patient–physician communication, wait times, and access problems. The 2022 survey examined primary care physicians' experiences providing care to patients, use of information technology, and use of teams to provide care. Other data sourced for the report included recent reports of the OECD, Our World in Data, the World Health Organisation, and the U.S. Agency for Healthcare Research and Quality.

155. Overall, New Zealand ranked fourth in performance across the five *Mirror, Mirror 2024* performance domains. The three top-performing countries in 2024 are Australia, the Netherlands, and the United Kingdom. The report notes caution should be taken in drawing conclusions from overall performance as differences in overall performance between most countries are relatively small, each country has areas of higher and lower performance, and all countries have something to learn from one another.

TABLE 2: HEALTH CARE SYSTEM PERFORMANCE RANKINGS, MIRROR, MIRROR 2024, THE COMMONWEALTH FUND.

	AUS	CAN	FRA	GER	NETH	NZ	SWE	SWIZ	UK	US
OVERALL RANKING	**1**	**7**	**5**	**9**	**2**	**4**	**6**	**8**	**3**	**10**
Access to Care	9	7	6	3	1	5	4	8	2	10
Care Process	5	4	7	9	3	1	10	6	8	2
Administrative Efficiency	2	5	4	8	6	3	7	10	1	9
Equity	1	7	6	2	3	8	-	4	5	9
Health Outcomes	1	4	5	9	7	3	6	2	8	10

Note: SWE overall ranking calculation does not include Equity domain. See "How We Conducted This Study" for more detail.

Data: Commonwealth Fund analysis

Source: David Blumenthal et al., *Mirror, Mirror 2024: A Portrait of the Failing U.S. Health System – Comparing Performance in 10 Nations* (Commonwealth Fund, Sept. 2024). https://doi.org/10.26099/ta0g-zp66

156. Notably, New Zealand ranked first in the 'Care Process' domain. This domain looks at whether the care that is delivered includes features and attributes that most experts around the world consider to be essential to high-quality care. The elements of the domain are *prevention, safety, coordination, patient engagement, and sensitivity to patient preferences.*

157. There are 36 indicators in the Care Process domain (>50% of the indicators). Each of the indicators are set out in Appendix 5A-5D of *Mirror, Mirror 2024* along with the raw data and performance scores.

158. The Access to Care domain focuses on the affordability and availability of health services at the population level. The Netherlands, U.K., and Germany (top three) excel on measures of affordability because each country has low cost-related barriers to care, as reported by patients, and minimal out-of-pocket health care expenses (eg small or capped co-payments). New Zealand ranked 5th in this domain.

159. For the Equity domain, New Zealand ranked 8th (its lowest ranking). Equity was assessed by income (above and below average); geography (rural and non-rural); gender (male and female), and physician perceptions of differences by race or ethnicity (survey questions that asked physicians whether they thought health systems treat patients unfairly because of their racial or ethnic background, and if their patients had ever informed them that they were treated unfairly or not taken seriously when receiving healthcare because of their racial or ethnic background). Equity excluded assessment by race and ethnicity due to differences in how participating countries collect (or do not collect), define, and apply "race and ethnicity", consequently valid comparable data across countries on measures of equity by race and ethnicity could not be reported.

160. New Zealand and the U.S. rank last on Equity (Australia ranked first for Equity). The U.S. and New Zealand had the highest income-related differences in reported cost-related access issues and instances of unfair treatment or feelings that health concerns were not taken seriously by health care professionals because of patients' racial or ethnic background. New Zealand's poor performance for rural versus non-rural respondents contributed to its lower ranking.

161. The Health Outcomes domain covers those outcomes that are most likely to be responsive to health care interventions. Measures fall into two categories: population health and amenable mortality (deaths at all ages from specific causes that are considered preventable and treatable through timely and effective health care). New Zealand ranked 3rd in this domain. The authors emphasise the importance of this domain: "No element of a health system's performance is more important than the health outcomes it achieves for its population."

Conclusion

162. Overall, four key findings emerge from this longitudinal review of quality and safety data across our health system:
    a. Outcomes of healthcare show a mixed picture with some indicators showing sustained improvement
    b. Access to healthcare is getting worse
    c. There are quality and safety alerts occurring in specific areas that need to be addressed
    d. Internationally in broad terms of quality and safety of care New Zealand performs reasonably.

163. For people who do access healthcare, preventable harm from healthcare matters. The success of several of the improvement initiatives presented in this report is impressive and demonstrates the impact and value of co-ordinated, structured quality improvement programmes. A data-informed programme of improvement initiatives should continue to be a quality and safety priority.

164. Continuous improvement depends on the availability of robust data. We have been fortunate to access a lot of high-quality longitudinal data. There are areas that need focus such as joining up data sets for mental health and primary and community care. In addition, we need to make it easy for clinicians to collect data (e.g. digital tools) and provide good data visualisation (learning from successful improvement initiatives).

166. The benefit of multi-agency collaboration to share and join up data sets is evident. Health NZ should continue to work with Te Tāhū Haoura, Te Aho o Te Kahu, ACC, HDC, Manatū Hauora, and other organisations to develop and measure outcomes to ensure that we can continue to monitor progress in healthcare quality and safety.

167. Preventable harm is important and efforts to reduce it should continue, but this should not detract from the fact that currently the most significant quality and safety issue in the health system is providing timely access to services across community and hospital settings. Failing to access timely healthcare may result in poorer and more inequitable outcomes.

168. The findings from this review align with the current health system focus on improved access to health services, more timely access to health services, and delivery of high-quality health services.[51]

References

1. Commonwealth Fund. Mirror, Mirror 2024: A Portrait of the Failing U.S. Health System. Comparing Performance in 10 Nations. [Internet]. New York; 2024 Sep [cited 2024 Oct 16]. Available from: Mirror, Mirror 2024: A Portrait of the Failing U.S. Health System – Comparing Performance in 10 Nations
2. Institute of Medicine (US) Committee on Quality of Health Care in America. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington (DC): National Academies Press (US); 2001. PMID: 25057539.The Institute recommended six "Aims for Improvement": safety, effectiveness, timeliness (access), patient-centeredness, equity, and efficiency. This model is widely accepted as covering the issues that should be addressed in a comprehensive set of quality measures.
3. Panagioti M, Khan K, Keers RN, Abuzour A, Phipps D, Kontopantelis E, Bower P, Campbell S, Haneef R, Avery AJ, Ashcroft DM. Prevalence, severity, and nature of preventable patient harm across medical care settings: systematic review and meta-analysis. BMJ. 2019 Jul 17;366:l4185.
4. Health Quality and Safety Commission. A window on quality 2024: Turbulence, quality and the future. Published June 2024 [Internet]. Wellington, New Zealand: Health Quality & Safety Commission; 2024. Available from: Window-2024-final-web.docx
5. Ministry of Health. New Zealand Health Survey – Annual Data Explorer [Internet]. 2022 [cited 2024 Oct 16]. Available from: New Zealand Health Survey | Ministry of Health NZ
6. Health Quality and Safety Commission. Health Quality and Safety Commission: Patient experience survey results [Internet]. 2024 [cited 2024 Oct 16]. Available from: Survey results | Te Tāhū Hauora Health Quality & Safety Commission
7. Health Quality and Safety Commission. Health Quality and Safety Commission: Patient experience survey information and methodology [Internet]. 2024 [cited 2024 Oct 16]. Available from: Survey information and methodology | Te Tāhū Hauora Health Quality & Safety Commission
8. Health New Zealand. BreastScreen Aotearoa Coverage Report – interactive coverage data tool [internet] 2024 [cited 2024 16 Oct]. Available from: BreastScreen Aotearoa Coverage Report
9. Health New Zealand. National Bowel Screening Programme – interactive participation data tool [internet] 2024 [cited 2024 16 Oct]. Available from: National Bowel Screening Programme
10. Health New Zealand. National Cervical Screening Programme Coverage Report – interactive coverage data tool [internet] 2024 [cited 2024 16 Oct]. Available from: National Cervical Screening Programme Coverage Report
11. Health New Zealand | Te Whatu Ora. 2023. Evaluation of two tools used for waitlist prioritisation for planned care in Health New Zealand – Te Whatu Ora. March 2024. Wellington. Health New Zealand | Te Whatu Ora. Published in July 2024 by Health New Zealand.
12. McPhail S, Johnson S, Greenberg D, Peake M, Rous B. Stage at diagnosis and early mortality from cancer in England. Br J Cancer [Internet]. 2015;112(Suppl 1):S108. Available from: Stage at diagnosis and early mortality from cancer in England | British Journal of Cancer
13. Tin Tin S, Elwood JM, Brown C, Sarfati D, Campbell I, Scott N, et al. Ethnic disparities in breast cancer survival in New Zealand: which factors contribute? BMC Cancer. 2018 Dec 8;18(1):58.Ss

14. Brewer N, Zugna D, Daniel R, Borman B, Pearce N, Richiardi L. Which factors account for the ethnic inequalities in stage at diagnosis and cervical cancer survival in New Zealand? Cancer Epidemiol [Internet]. 2012;36(4):e251–7. Available from: Which factors account for the ethnic inequalities in stage at diagnosis and cervical cancer survival in New Zealand? – ScienceDirect
15. Te Aho o Te Kahu – Cancer Control Agency. He Pūrongo Mate Pukupuku o Aotearoa 2020 – The State of Cancer in New Zealand 2020 [Internet]. Wellington, New Zealand: Te aho o Ta Kahu, Cancer Control Agency; 2021. Available from: state-of-cancer-in-new-zealand-2020 (revised March 2021).pdf
16. Seneviratne S, Campbell I, Scott N, Shirley R, Lawrenson R. Impact of mammographic screening on ethnic and socioeconomic inequities in breast cancer stage at diagnosis and survival in New Zealand: a cohort study. BMC Public Health. 2015 Dec 31;15(1):46.
17. Egan R, Kidd J, Lawrenson R, Cassim S, Black S, Blundell R, et al. Inequalities between Māori and non-Māori men with prostate cancer in Aotearoa New Zealand. New Zealand Medical Journal. 2020;133(1521)Ss
18. Health Quality and Safety Commission. Surgery and risk in Aotearoa New Zealand | Te pōkanga me te tūponotanga I Aotearoa. September 2024. Available from: Surgery and risk in Aotearoa New Zealand | Te pōkanga me te tūponotanga i Aotearoa | Te Tāhū Hauora Health Quality & Safety Commission
19. Perinatal and Maternal Mortality Review Committee. 2024. Sixteenth Annual Report of the Perinatal and Maternal Mortality Review Committee | Te Pūrongo ā-Tau Tekau mā Ono o te Komiti Arotake Mate Pēpi, Mate Whaea Hoki: Reporting Mortality and Morbidity 2021 | Te Tuku Pūrongo mō te Mate me te Whakamate 2021. Wellington: Te Tāhū Hauora Health Quality & Safety Commission; 2024. Available from: 16thPMMRCReport_FINAL.pdf
20. Robson B, Purdie G, Cormack D. 2010. Unequal Impact II: Māori and Non-Māori cancer statistics by deprivation and rural-urban status, 2002–2006. Wellington: Ministry of Health, 2010. Available from: Unequal Impact II: Māori and Non-Māori Cancer Statistics by Deprivation and Rural-Urban Status 2002-2006 | Ministry of Health NZ
21. Teng, A.M., Atkinson, J., Disney, G. et al. Ethnic inequalities in cancer incidence and mortality: census-linked cohort studies with 87 million years of person-time follow-up. *BMC Cancer* 16, 755 (2016). Available from: Ethnic inequalities in cancer incidence and mortality: census-linked cohort studies with 87 million years of person-time follow-up | BMC Cancer | Full Text
22. Te Aho o Te Kahu. Quality Improvement Monitoring Report – Route to diagnosis: People diagnosed with cancer within 30 days of an emergency or acute (unplanned) hospital admission. [internet]. Wellington: Te Aho o Te Kahu; 2024 March [cited 2024 Oct 16]. Available from: Quality Improvement Monitoring Report
23. Morris AJ, Hensen M, Graves N, et al. The burden of healthcare-associated infections in New Zealand public hospitals 2021. Infect Control Hosp Epidemiol [Internet]. 2024. doi: 10.1017/ice.2024.95. Available from: The burden of healthcare-associated infections in New Zealand public hospitals 2021 | Infection Control & Hospital Epidemiology | Cambridge Core
24. Grae, N et al. Prevalence of healthcare-associated infections in public hospitals in New Zealand, 2021. J of Hosp Infect. 2023; 131: 164-172.
25. De Raad JP. 2012. Towards a value proposition… scoping the cost of falls. Wellington: New Zealand Institute of Economic Research. NZIER Scoping report to the Health Quality & Safety Commission NZ.
26. Morris AJ, Roberts SA, Grae N, Hamblin R, Shuker C, Merry AF. The New Zealand Surgical Site Infection Improvement (SSII) Programme: a national quality improvement programme reducing orthopaedic surgical site infections. New Zealand Medical Journal. 2018;131(1479).

27. Health Quality and Safety Commission. Cardiac surgery implementation manual Pukapuka aratohu whakahaere poka manawa [Internet]. Wellington 2018[cited 2024 16 Oct]. Available from: CardiacSurgeryGuide_Dec2018.pdf
28. New Zealand Parliamentary Counsel Office. New Zealand Legislation. Mental Health Bill. [cited 2024 Oct 16]. Available from: Mental Health Bill 87-1 (2024), Government Bill Explanatory note – New Zealand Legislation
29. Health Quality & Safety Commission. Aukatia te noho punanga: Noho haumanu, tū rangatira mō te tokomaha. Zero seclusion: Safety and dignity for all. Available from: Zero seclusion: Safety and dignity for all | Te Tāhū Hauora Health Quality & Safety Commission
30. Health Quality & Safety Commission Te Tāhū Hauora. Adverse events exception reporting 2020/21 [Internet]. Wellington, 2023 May [cited 2024 Oct 13]. Available from: Exception-reporting-May-2023.pdf
31. Bredin D, O'Doherty D, Hannigan A, Kingston L. Hand hygiene compliance by direct observation in physicians and nurses: a systematic review and meta-analysis. J Hosp Infect. 2022 Dec;130:20-33.
32. Health Quality & Safety Commission. Guide to the surveillance of healthcare-associated *Staphylococcus aureus* bacteraemia [Internet]. Wellington: Health Quality & Safety Commission; 2022 May [cited 2024 Oct 16]. Available from: HQSC-HA-SAB-Surveillance-Guide-May-2022_web.pdf
33. Health Quality & Safety Commission Te Tāhū Hauora. Healing, learning and improving from harm: National adverse events policy 2023 | Te whakaora, te ako me te whakapai ake i te kino: Te kaupapa here ā-motu mō ngā mahi tūkino 2023 [Internet]. Wellington: Health Quality & Safety Commission Te Tāhū Hauora; 2023 Feb (updated 2024 Feb) [cited 2024 Oct 18]. Available from: AdverseEventsPolicy2023_Eng_Feb24update_WEB.pdf
34. Health Quality & Safety Commission Te Tāhū Hauora. Always Report and Review list 2021–22 [Internet]. Wellington: Health Quality & Safety Commission Te Tāhū Hauora; 2022 Feb [cited 2024 Oct 16]. Available from: Always-report-and-review-list-2021-22-final-web.docx
35. Te Tahu Hauora Health Quality and Safety Commission. Adverse events national quarterly dashboard [Internet]. Te Tahu Hauora Health Quality and Safety Commission. Available from: reports.hqsc.govt.nz/AdverseEventsQuarterly/_w_c105ab74/#!/quarterly-snapshot
36. Noble DJ, Pronovost PJ. 2010. Underreporting of patient safety incidents reduces health care's ability to quantify and accurately measure harm reduction. Journal of Patient Safety 6(4): 247–50.
37. Shojania KG, Dixon-Woods M. 2017. Estimating deaths due to medical error: the ongoing controversy and why it matters. BMJ Quality & Safety 26(5): 423–8.
38. Archer S, Hull L, Soukup T, et al. Development of a theoretical framework of factors affecting patient safety incident reporting: a theoretical review of the literature. BMJ Open 2017; 7: e017155. doi: 10.1136/bmjopen-2017-017155.
39. Sim MA, Ti LK, Mujumdar S, Chew STH, Penanueva DJB, Kumar BM, Ang SBL. 2022. Sustaining the Gains: A 7-Year Follow-Through of a Hospital-Wide Patient Safety Improvement Project on Hospital-Wide Adverse Event Outcomes and Patient Safety Culture. J Patient Saf. 2022 Jan 1;18(1): e189–e195. doi: 10.1097/PTS.0000000000000725. PMID: 32398537.
40. Szymusiak J, Walk TJ, Benson M, et al. 2019. Encouraging resident adverse event reporting: a qualitative study of suggestions from the front lines. Pediatric Quality & Safety 4(3): e167. DOI: 10.1097/pq9.0000000000000167.
41. Te Tahu Hauora Health Quality and Safety Commission. Maternity Severity Assessment Code (SAC) examples [Internet]. Wellington: Te Tahu Hauora Health Quality and Safety Commission; 2023 Dec. Available from: Maternity-SAC-guide-A3_printable.pdf

42. Te Tahu Hauora Health Quality and Safety Commission. A qualitative thematic analysis of maternity adverse events reported 1 July 2018–30 June 2023. Wellington: Te Tahu Hauora Health Quality and Safety Commission; 2024 June. Available from: A qualitative thematic analysis of maternity adverse events reported 1 July 2018–30 June 2023
43. Health and Disability Commissioner. Research and Data Reports [Internet]. Health and Disability Commissioner. Available from: Research and Data Reports — Health & Disability Commissioner
44. Health New Zealand Te Whatu Ora. Aotearoa New Zealand Health Status Report 2023. Health New Zealand Te Whatu Ora; 2024 Feb. Available from: Health Status Report – Health New Zealand | Te Whatu Ora.
45. Te Tahu Hauora Health Quality and Safety Commission. A Window on the Quality of Aotearoa New Zealand's Health Care 2019 – A view on Maori Health Equity [Internet]. Wellington, New Zealand: Health Quality & Safety Commission; 2019. Available from: A window on the quality of Aotearoa New Zealand's health care 2019 | He matapihi ki te kounga o ngā manaakitanga ā-hauora o Aotearoa 2019
46. Menon M, Cunningham C, Kerr D. Addressing unwarranted variations in colorectal cancer outcomes: a conceptual approach. Nat Rev Clin Oncol. 2016 Nov;13(11):706-712.
47. Appleby, J. et al. Variation in health care. The good, the bad and the inexplicable. Published by The King's Fund, April 2011. Available from: Variations In Health Care | The King's Fund
48. Te Tahu Hauora Health Quality and Safety Commission. Atlas of Healthcare Variation [Internet]. Available from: Atlas of Healthcare Variation | Te Tāhū Hauora Health Quality & Safety Commission
49. OECD. OECD Health at a Glance 2023 Country Note: New Zealand [Internet]. 2023 [cited 2024 Oct 16]. Available from: Health at a Glance 2023 | OECD
50. Ministry of Health Manatū Hauora. A Guide to Using Amenable Mortality as a System Level Measure 2018. Available from: https://nsfl.health.govt.nz/dhb-planning-package/system-level-measuresframework/data-support-system-level-measures/amenable
51. Minister of Health. Government Policy Statement on Health 2024 – 2027. Wellington: Ministry of Health; 2024 Jul [Cited 2024 Oct 16]. Available from: Government Policy Statement on Health 2024–2027 | Ministry of Health NZ

Abbreviations

ACC	Accident Compensation Corporation
ARR	Always Report and Review
ADE	Adverse event
ASH	Ambulatory sensitive hospitalisation
CABG	Coronary artery bypass graft
CBGC	Coronary artery bypass graft with chest incision only
CTG	Cardiotocograph
CHADx	Classification of Hospital Acquired Diagnoses
CWF	The Commonwealth Fund
DALY	Disability-adjusted life year
DHB	District Health Board
DRG	Diagnosis-related group
DVT/PE	Deep vein thrombosis / Pulmonary embolus
ED	Emergency Department
GAP	Growth assessment protocol
GP	General practitioner
HA-SAB	Healthcare-associated *Staphylococcus aureus* bacteraemia
HAI	Healthcare associated infections
HAPI	Hospital-acquired pressure injuries
HDC	Health and Disability Commissioner
HDxSMR	Hospital diagnosis standardised mortality ratio
Health NZ	Health New Zealand | Te Whatu Ora

HH	Hand Hygiene
HRT	Health Roundtable
HSMR	Hospital standardised mortality ratio
IMI	Intramuscular injection
MEWS	Maternity early warning system
MQSP	Maternal Quality and Safety Programme
MRI	Magnetic resonance imaging
NMDS	National Minimum Dataset
NOC/NEWS	Neonatal observation chart incorporating the newborn early warning score
NZEWS	Adult New Zealand early warning score
OECD	Organisation for Economic Co-operation and Development
OIVI	Opioid-induced ventilatory impairment
PEWS	Paediatric early warning system
PMMRC	Perinatal and Maternal Mortality Review Committee
PI	Pressure injuries
PRIMD	The Programme for the Integration of Mental Health Data
Q	Quarter
QSM	Quality and Safety Markers
SFGA	Small for gestational age
SSI	Surgical site infections
SSIIP	Surgical site infection improvement programme
WHO	World Health Organisation

Glossary

Aotearoa	Traditional name now commonly used as a Māori name for New Zealand
Cardiotocography	A technique used to monitor the fetal heartbeat and uterine contractions during pregnancy and labour. The machine used to perform the monitoring is called a cardiotocograph
Manatū Hauora	Ministry of Health
National Minimum Data Set	A national collection of public and private hospital discharge information, including coded clinical data for same day and multi day inpatients
Te Tāhū Hauora	Health Quality & Safety Commission
Te Whatu Ora	Health New Zealand

Copyright Information

www.tewhatuora.govt.nz

Te Kāwanatanga o Aotearoa
New Zealand Government