Health New Zealand
Te Whatu Ora

Major Trauma Annual Report 2024/25

Trauma National Clinical Network and New Zealand Trauma Registry

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Our tohu

Designed by artist Jim Wiki (Te Aupōuri), the tohu for the National Trauma Network is the pīwakawaka (fantail). The pīwakawaka symbolises the guardian who stays with us during care and rehabilitation and guides our patients and whānau through the spectrum of life and death. The main kōwhaiwhai in the body depicts the strength a person needs in dealing with injury, and the wings convey the support of whānau. The two koru at the base of the tail feathers symbolise the joining of whānau and services. The weaving pattern in the middle tail feathers depicts the strength in binding together all parts of whānau and the trauma system.

Contents

Waerea te ara	**Clear the pathway**
Mānawatia te kāhui o nga atua	Give thanks to ancestral forces
Tāwhiwhi atu ki a Rongo,	Commune with Rongo,
E Rongo! Whaowhia tēnei huinga,	Rongo! Inspire this hui with
I ngā hua o te whakaaro nui	The benefits of wisdom
ngā hua o te whakaaro rangatira,	The benefits of chiefly ideals,
Kauparea atu ngā ātetenga	Clear away resistance
kia horahia, he ngākau pai,	Extend transparency,
E rarau ki te tapuwae nui o Tāne	Pursue the great pathway of Tāne
Tāne-i-te-wānanga	Tāne source of scholarly pursuits
Tāne-nui-a-rangi,	Tāne source of higher knowledge,
Kia whakamau ai ki a tina	Fasten it firmly
Hui e, tāiki e	**Strengthened in unity!**

Rongo is the god of cultivation and peacemaking in Māori mythology. Tāne, his brother, is god of the forest and birds. He is also known as Tāne-i-te-wānanga, Tāne source of higher knowledge.

Foreword

Tēnā koutou katoa

We are pleased to present the Trauma National Clinical Network (the Network) Annual Report for the period 1 July 2024 to 30 June 2025.

The focus during this reporting period has been on embedding national work programmes, strengthening regional alignment, and translating strategy into coordinated system action. The progress outlined in this report reflects a trauma network that is increasingly mature, connected and outcomes focused. These developments aim to support safer care, improved equity and better outcomes for people experiencing major trauma.

We acknowledge and thank the many partners who have contributed to this work, particularly Accident Compensation Corporation (ACC) and Health Quality & Safety Commission Te Tāhū Hauora, whose collaboration continues to support quality improvement, data capability, and system learning. We also recognise the commitment of regional trauma networks and frontline clinicians, whose engagement underpins national consistency and meaningful local delivery.

Key milestones during the year include the consolidation of workstreams across each rōpū rangatira, the commencement of the national trauma quality improvement programme *The Path of Making Things Right – Te Ara Whakatika,* and investment in the NZ Trauma Registry supporting a data-driven national clinical network, with visible national trauma reporting and quality assurance. The Network actively engaged with the Royal Australasian College of Surgeons during its review of the Model Resource Criteria for Trauma Care. Network endorsement of these criteria as the National Clinical Standard for Trauma Care positions this work to inform future trauma system planning, workforce development, and investment decisions.

The National Trauma Symposium, held in November 2024, brought together over 250 participants from across Aotearoa New Zealand and internationally. The programme spanned transfusion practice, trauma research, simulation, and critical interventions, reinforcing shared standards and innovation across the sector. This was complemented by the Trauma Nurse Specialist and Allied Health Study Day, reflecting the Network's commitment to strengthening multidisciplinary workforce development.

We would like to recognise and thank Associate Professor Chris Harmston for his tenure as leader of the Northern Regional Trauma Network. We welcome Dr Savitha Bhagvan to the role.

The Network is well positioned to build on this momentum. Through clearer governance, stronger partnerships, and improved data and reporting capability, the Network remains focused on its core objective: a coordinated, equitable, and high-performing trauma system that delivers better outcomes for all New Zealanders.

Dr James Moore FANZCA FCICM

Rangitāne, Ngāti Kahungunu,

Whānau-ā-Apanui

National Trauma Co-Lead

Dr Max Raos FACEM

Te Ātiawa

National Trauma Co-Lead

Executive summary

For a person experiencing a traumatic healthcare event, timely access to high-quality care provides crucial support for them and their whānau. Major trauma initiates a journey that spans the entire health and ACC system, from the moment the event occurs and emergency services respond, through assessment and treatment by skilled hospital teams, to community-based support funded by ACC. Ensuring this pathway is efficient, effective, and compassionate is essential to achieving the best possible outcomes for patients.

This report looks at trends in major trauma to give whānau, clinicians and our partners comprehensive information we can use to:

- support people to overcome a life-changing situation
- improve the service we provide
- help us to meet important health targets.

It looks at trauma patterns, demographic disparities, and system performance, and provides insights to inform clinical practice, prevention strategies, and equity-focused interventions.

System performance and quality indicators

Emergency department (ED) length of stay has decreased, signalling improved efficiency in acute care processes.

Trauma quality improvement initiatives, including the Chest Injury Guideline and the serious traumatic brain injury project, have driven gains in tertiary survey rates and timely imaging.

Despite these improvements, resource constraints and workforce variability remain significant barriers to consistent trauma care delivery nationwide.

Incidents of trauma in Aotearoa New Zealand

Incidents of trauma are increasing in Aotearoa New Zealand, with 2,808 patients admitted with major trauma in 2024/25, equating to 54 per 100,000 population, the highest rate to date. This increase is largely driven by falls among older adults (34 per cent nationally, approaching 40 per cent in some regions), which have shown the greatest rise since 2019/20, and persistent transport-related injuries, predominant at 49 per cent.

Low-level falls among older adults increased by approximately 25 per cent, signalling a significant shift in trauma burden toward older New Zealanders.

Demographics

Trauma incidence among those aged ≥75 years has increased by 25 per cent, primarily due to falls. This demographic also has the highest case fatality rate at 19.6 per cent, compared with the overall rate of 8.3 per cent. This is comparable to an average CFR of the ≥75 years cohort over the previous five years of 18.7 per cent.

Gender predominance reverses in older age groups, with females more affected by falls, whereas males dominate transport-related injuries.

Māori remain over-represented across all age, gender, and rurality groups up to age 74 years. Pacific and Asian peoples show higher trauma call activation rates, suggesting differing injury patterns or presentation severity compared with European/other groups.

Age-specific patterns reveal that younger Māori males have the highest incidence rates, predominantly from transport-related mechanisms, whereas older European females are disproportionately affected by falls.

Case fatality and outcomes

The national case fatality rate is 8.3 per cent, with 233 deaths recorded. Falls carry a mortality rate of 13.4 per cent, significantly higher than transport incidents (4.9 per cent).

Central nervous system injuries remain the leading cause of death (at 71 per cent).

Rural versus urban differences

The incidence of major trauma is consistently higher among rural populations than among their urban counterparts. This disparity is most pronounced in the Northern region, where rural rates have surged by 37 per cent. Contributing factors include:

- greater exposure to high-speed transport incidents
- longer pre-hospital times despite improvements in helicopter retrieval and direct-to-definitive care pathways
- limited access to tertiary facilities.

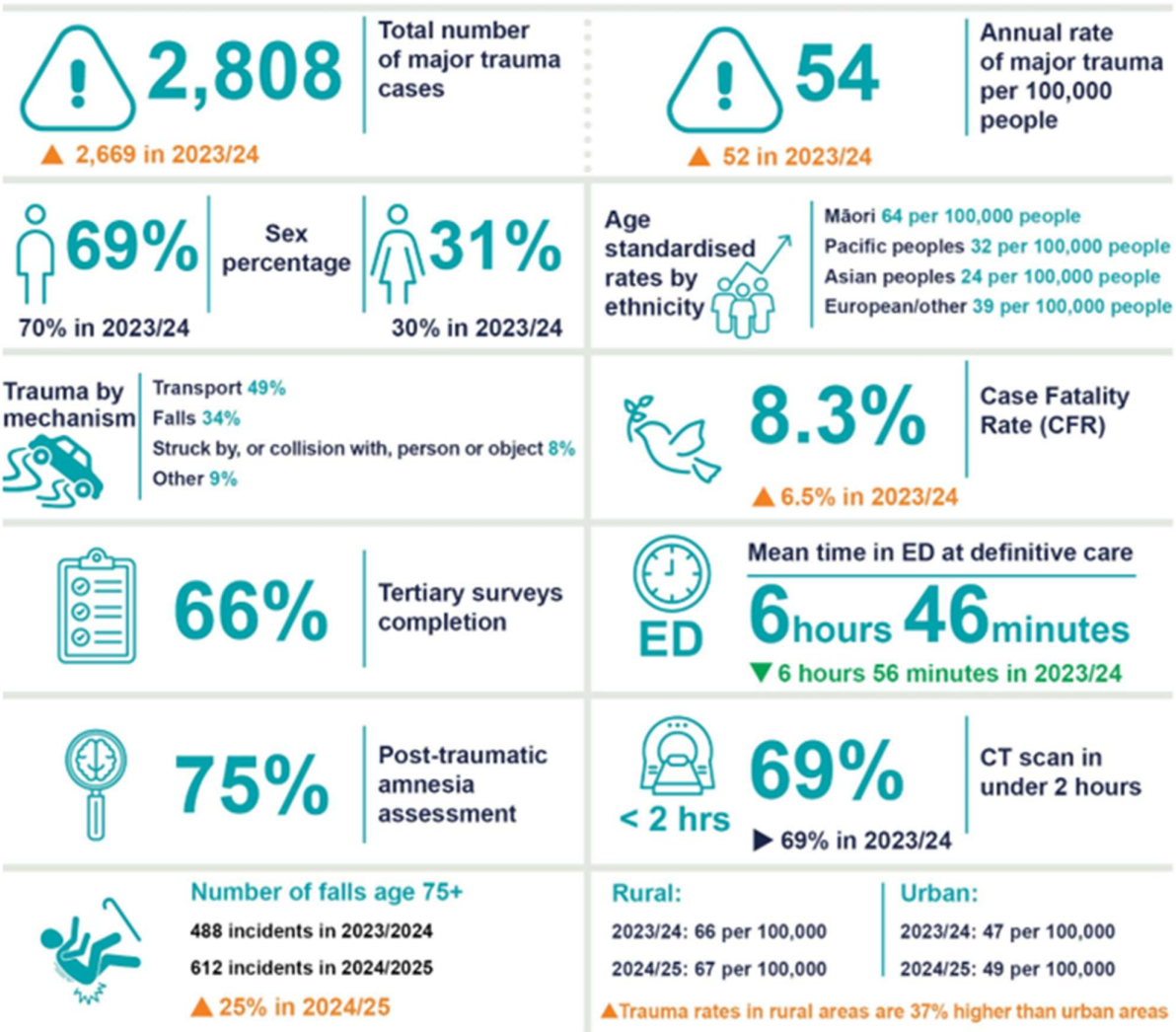
Implications and priorities

The shifting trauma burden towards older adults, persistent ethnic inequities, and rural access challenges underscore the need for:

- enhanced falls prevention initiatives for older people by complementing ACC's current programmes with additional approaches that address the growing and changing burden of falls
- enhanced culturally safe care models to address Māori health inequities
- continued investment in trauma system infrastructure, particularly in rural regions, to reduce time-to-care disparities
- strengthened post-discharge rehabilitation pathways, in conjunction with ACC, to increase equitable access and culturally aligned support.

These findings highlight the evolving epidemiology of major trauma in Aotearoa New Zealand and reinforce the need for system adaptation. Through coordinated national governance, robust data insights and collaborative quality improvement, the Trauma National Clinical Network aims to deliver a safer, more equitable trauma system for all New Zealanders.

2024/25 at a glance



Billy's story

Billy Ross is the epitome of a young adventurous rangatahi living life to the fullest. The sheer determination of Billy and his whānau in the face of severe brain injuries has been rewarded with the most precious gift – Billy returning to the things he loves most.

After the Christchurch earthquake in 2011, my whānau and I moved out of the city to a rural property on the Banks Peninsula. My life before my accident was very active, and I had sustained a previous brain injury at 14 after a mountain bike accident. It took 18 months to recover from that injury, but at the beginning of 2024, I was feeling 'normal' again and was able to get back to the things I loved. After finishing high school, I had spent a month trekking and climbing the Himalayas in Nepal and volunteering in villages.

The night of 30 April 2024 changed all that. It was the second day of studying mechanical engineering at Polytechnic and, after class, a group of friends and I decided to go hunting just north of Christchurch. We had a great evening, and heading back home, we were involved in a motor vehicle accident.

I was crushed and upside down, trapped by my seatbelt (which kept me alive) and the wreckage of the car. It took over two hours to get me out of the wreckage to Christchurch Hospital. I spent the first week on life support in the intensive care unit and then moved to the orthopaedic trauma unit at Christchurch Hospital.

At first, the focus was all on my orthopaedic and chest injuries, despite scans showing I had sustained a traumatic brain injury too, my invisible injury.

My whānau and friends were very worried as I was not myself – I was aggressive and combative. An MRI revealed I had a significant traumatic brain injury, alongside my other injuries. The likelihood of me being able to walk again was low, and my cognitive abilities would be challenged because of the severity and complexity of my injuries. My parents were devastated.

ABI Rehabilitation was recommended. Having to move to Wellington was difficult, but we were determined to have access to the best care to ensure I could have every opportunity to reach my full potential.

I was airlifted to ABI Wellington by LifeFlight 27 days after my accident. I still don't remember my first week there. Within two hours of arriving, my incredible physio Chris had me up and sitting in a wheelchair for the first time.

The rehab was hard. I didn't want to get out of bed. I didn't want to talk to my therapists. I was gutted every time the pool was closed. I hated having to go out in a wheelchair. But the rehab started to pay off and I was able to move to using crutches. This was a game changer.

I hated being told I needed to rest – I hated knowing my brain was still injured and hated being "tested" to see how I was progressing. I hated that my Mum made me get up every day – and that even during the weekends and quiet times she pushed me. We started doing everything that "normal" people did and then it hit me – I was going to be ok – I was making progress. All this work had paid off – I still couldn't walk but my brain was healing, and I was learning new ways of doing old things. I had stopped hating being alive and started looking forward. I started to remember who I was, where I came from and where I was going.

I was discharged from ABI 104 days after my accident. I was transferred to extensive community rehab at home in Christchurch and was determined to keep progressing. Two weeks after returning home, my orthopaedic surgeon

told me to try and walk. And I did – kind of! Eight weeks later, I was walking unaided and returned my wheelchair to ACC. I enrolled in a night class with my dad and successfully completed a welding course.

Seven months on from my accident, I was signed off to drive again, which was a huge accomplishment. Cars and driving were my passion before my accident, and I was wild when I was told my licence had been taken off me because I had a brain injury.

Once I could drive again, I re-enrolled in my mechanical engineering course in 2025, and with the support of my rehab team and student supports, I am passing my course and have secured part-time work in a mechanics with the aim of an apprenticeship at the end of the course.

One of the things that upset me the most with my head injury was I lost my ability to remember my mihi. I had forgotten how to tell people where I was from and who I was – but I hadn't forgotten who I was – just how to explain – I could still feel who I was. Jo, from ABI, helped me find my missing words – my whakapapa was never lost; it was still in my jumbled-up brain and just needed to be rearranged with all the mess in there after the accident.

Ko Aoraki tōku Maunga
Ko Waitaki tōku Awa
Ko Takitimu tōku Waka
Ko Kai Tahu ratou Waitaha ko Kati Momoe ko Te Atiawa ki Taranaki oku Iwi
Ko Huirapa tōku Hapu
Ko Moeraki tōku marae
No Motukarara ahau
Ko Anaru tāku Papa
Ko Nikki tāku Mama
Ko Billy Ross tōku ingoa.

Part 1:

New Zealand Trauma Registry Report

Patterns of injury

Region rates

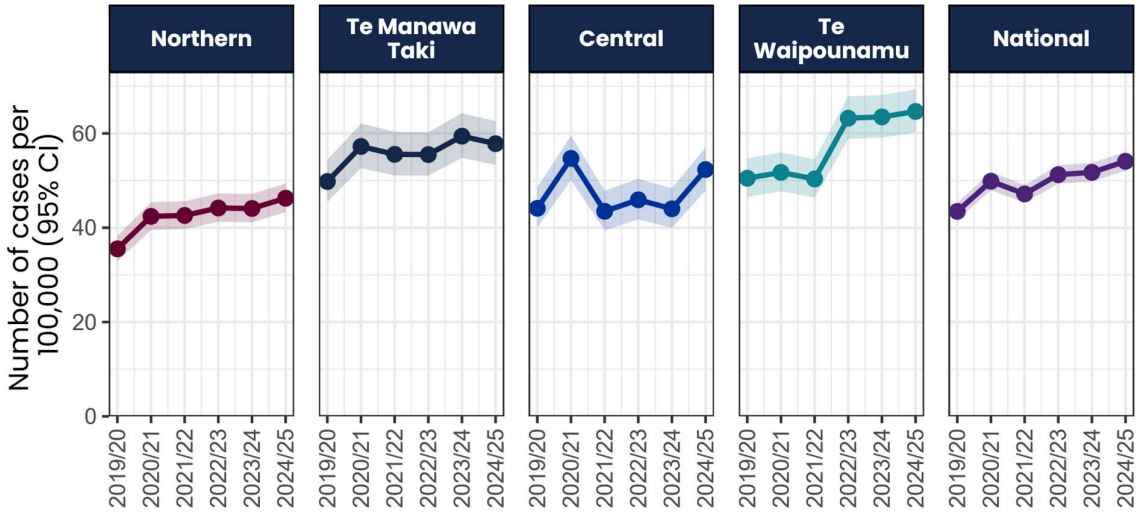
In 2024/25, a total of 2,808 New Zealanders were admitted to hospital with major trauma (defined as an Injury Severity Score [ISS] of >12). The incidence rate has increased to 54 per 100,000 population, the highest recorded to date. This continues the upward trend observed since 2021/22.

Figure 1: Incidence rate (caseload) of major trauma by region, 2024/25

Region	Rate
Northern	46/100,000 (895)
Te Manawa Taki	58/100,000 (607)
Central	52/100,000 (516)
Te Waipounamu	65/100,000 (790)
National	54/100,000 (2,808)

Rates of major trauma have shown a steady increase in the Northern and Te Waipounamu regions, with a sharp rise observed in the Central region.

Figure 2: Major trauma incidence rate and 95% confidence interval (CI) per 100,000 people by region, 2019/20–2024/25



Mechanism of injury

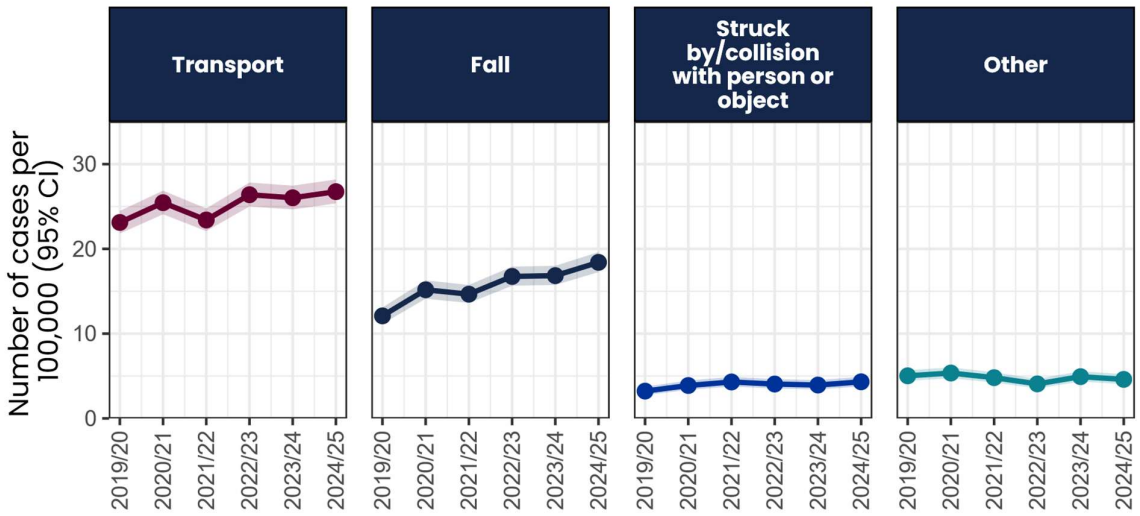
The rise in major trauma incidence rates appears to be driven by falls, which have steadily increased since 2021/22 and now account for nearly 40 per cent of major trauma cases in the Northern and Central regions.

Table 1: Number (per cent) of major trauma cases by mechanism of injury, by region, 2024/25

Mechanism	Northern	Te Manawa Taki	Central	Te Waipounamu	National
Fall	335 (37)	162 (27)	189 (37)	270 (34)	956 (34)
Struck by/collision with person or object	81 (9)	45 (7)	44 (9)	54 (7)	224 (8)
Other	87 (10)	47 (8)	34 (7)	71 (9)	239 (9)
Transport	392 (44)	353 (58)	249 (48)	395 (50)	1,389 (49)
Car	148 (17)	171 (28)	102 (20)	168 (21)	589 (21)
Motorcycle	91 (10)	103 (17)	60 (12)	83 (11)	337 (12)
Pedestrian	76 (8)	19 (3)	37 (7)	41 (5)	173 (6)
Pedalcycle	64 (7)	38 (6)	36 (7)	84 (11)	222 (8)
Other	13 (1)	22 (4)	14 (3)	19 (2)	68 (2)

Incidence rates of falls have increased to 18.4 per 100,000 (95% confidence interval [CI]: 17.3–19.6), making falls the mechanism with the greatest rise since 2019/20. The rise in falls reflects population ageing, increased frailty, and survival into older age.

Figure 3: Major trauma incidence rate and 95% confidence interval (CI) per 100,000 people by mechanism of injury, 2019/20–2024/25



Case mix

Injury type, intent, ISS category, and sex remain consistent with previous years.

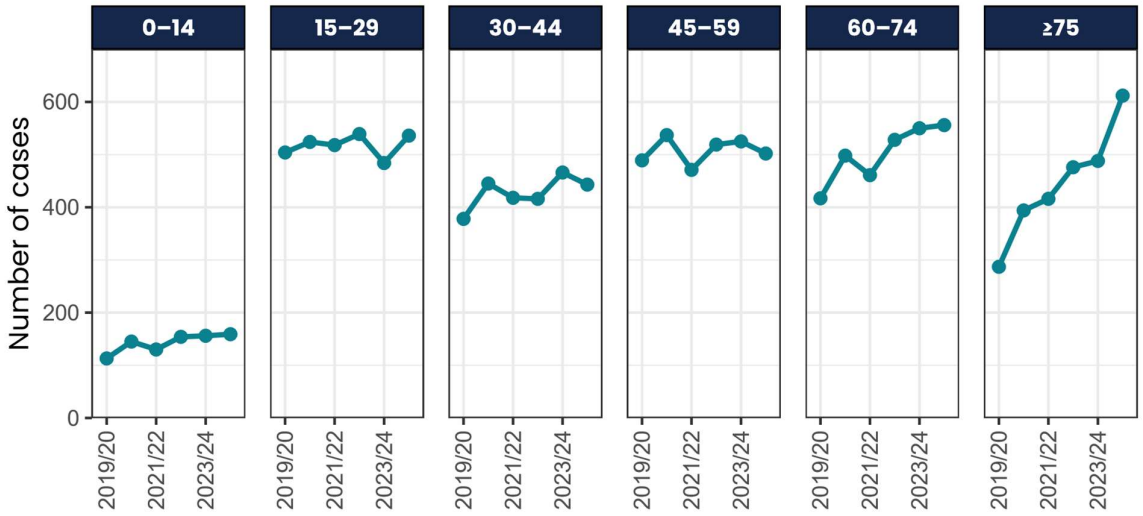
Table 2: Major trauma incidents by sex, injury intent, type of injury and Injury Severity Score, 2024/25

Characteristic	Number (%)
Dominant injury type	
Blunt	2,701 (96)
Burns	25 (1)
Penetrating	79 (3)
Unknown	3 (0)
Injury intent	
By other	203 (7)
Not known	48 (2)
Self-inflicted	49 (2)
Unintentional	2,508 (89)
Injury severity score	
13–24	2,025 (72)
25–44	723 (26)
≥45	60 (2)
Sex	
Female	868 (31)
Male	1,939 (69)
Unknown	1 (0)

Age

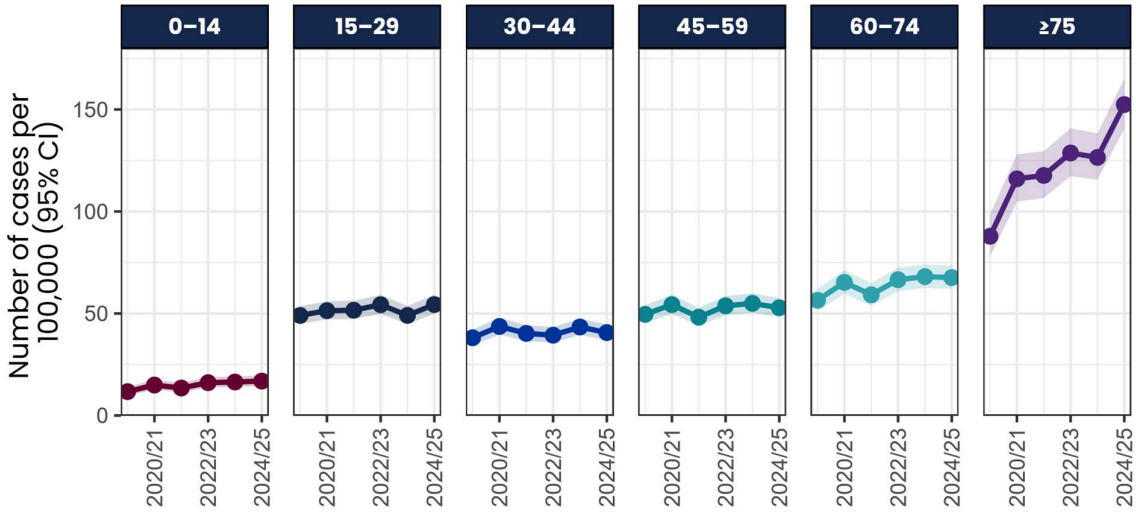
Counts by age show a sharp rise in major trauma incidents among those aged ≥75 years, consistent with an increase in falls.

Figure 4: Annual major trauma caseload by age group, 2019/20–2024/25



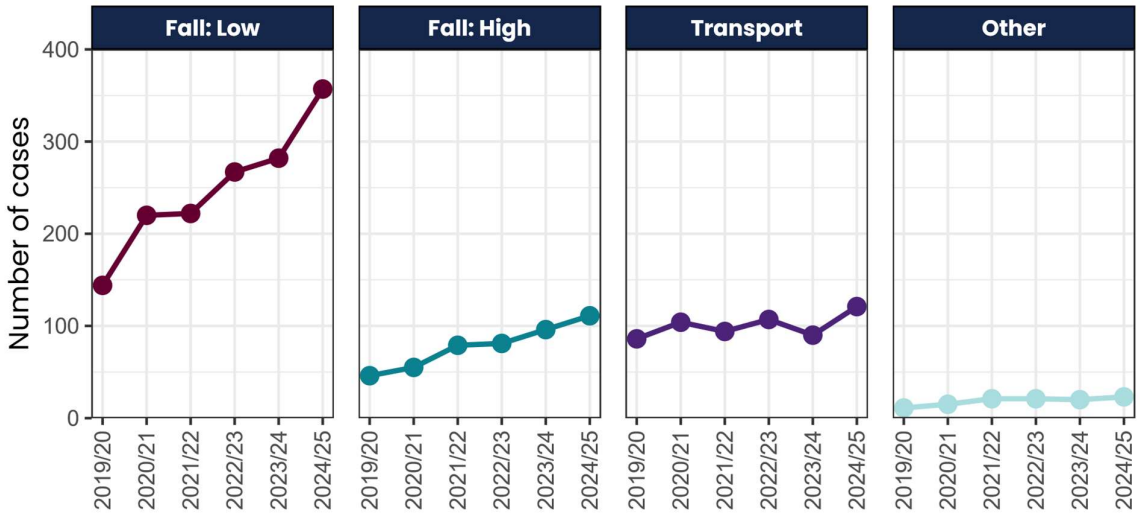
The increase in incidents of major trauma for people aged ≥75 years in recent years is not explained in full by an increase in the population of this age group; the rate has increased from 88 per 100,000 people in 2019/20 to 152 per 100,000 people in 2024/25. In this same period, the estimated national population of this age group increased significantly, from 314,000 to 401,000.

Figure 5: Rate of major trauma per 100,000 population by age group, 2019/20–2024/25



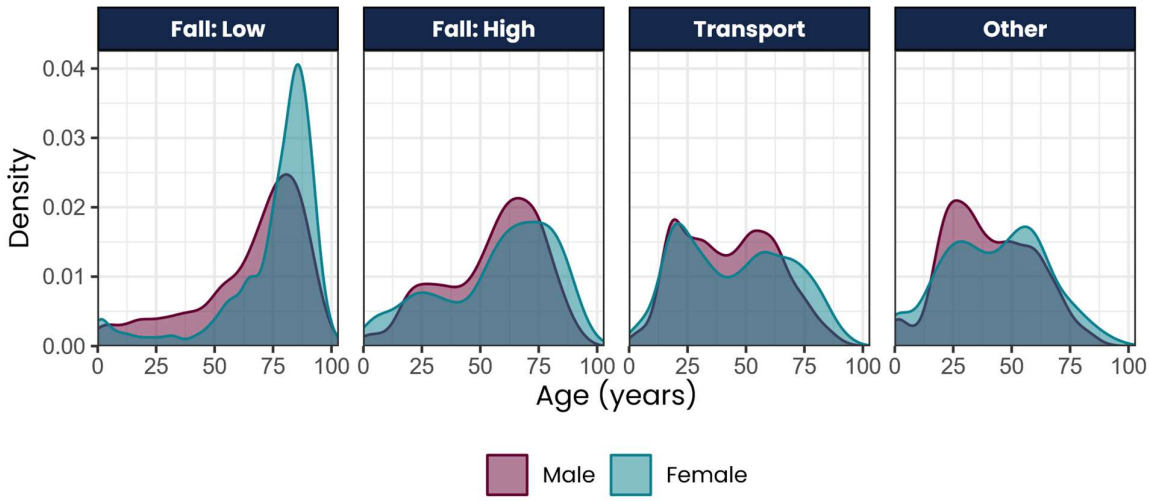
The increase in the number of incidents for those aged ≥75 years is primarily driven by low falls. Low falls are defined as falls from standing height or less than one metre. High falls are falls from one metre or above.

Figure 6: Annual major trauma caseload for those aged ≥ 75 years by mechanism, 2019/20–2024/25



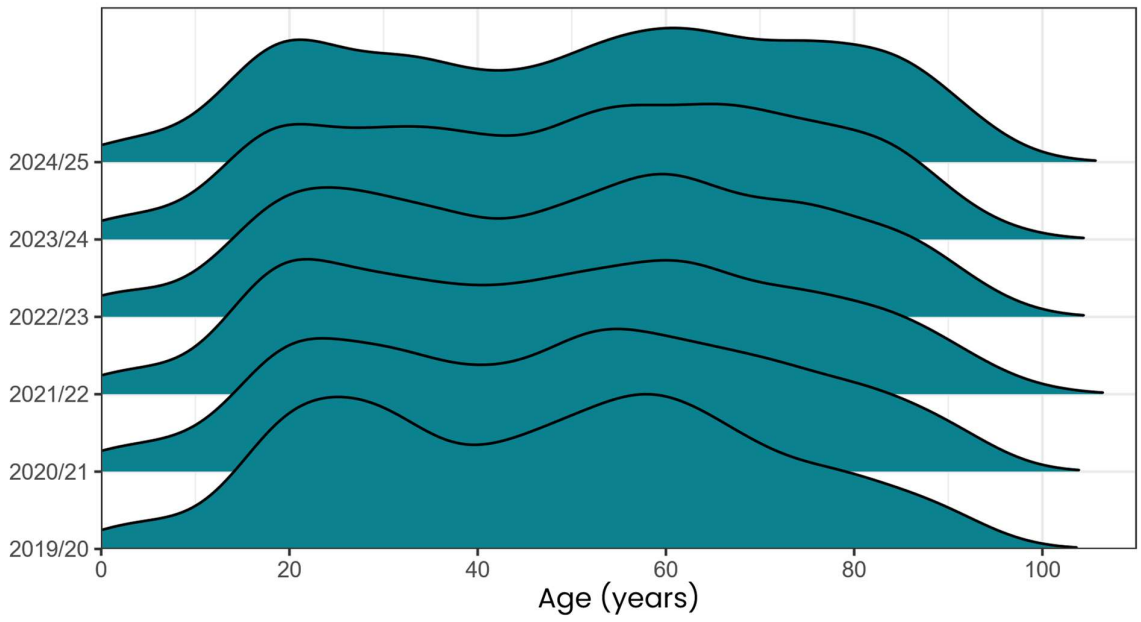
The following figures show the distribution patterns of major trauma incidents by age. Figure 7 shows that most major trauma incidents caused by low falls are for older females, whereas transport-related incidents are more evenly distributed across ages, with peaks around 20 and 55 years of age.

Figure 7 Distribution of major trauma caseload by age and mechanism, 2019/20–2024/25



Over time, the distribution of age for the annual major trauma caseload has increased for those aged ≥75 years. This shift represents a fundamental change in trauma system demand.

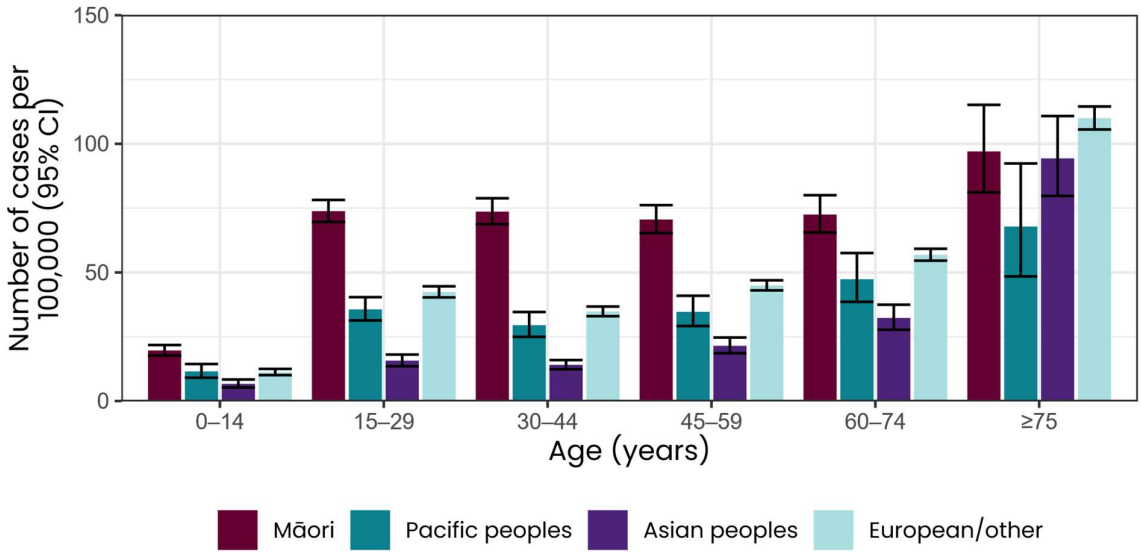
Figure 8: Distribution of major trauma caseload by age, 2019/20–2024/25



Ethnicity

Ethnicity patterns remain mostly consistent with previous years, with younger, Māori males having the highest incidence rates. These inequities reflect broader structural determinants of injury risk and access to care.

Figure 9: Annual major trauma incidence rate and 95% confidence interval (CI) per 100,000 people by age group and ethnicity, 2019/20–2024/25



Age-standardised rates

Figure 10: Age-standardised major trauma rates and 95% confidence interval (CI) per 100,000 people by ethnicity, 2019/20–2024/25

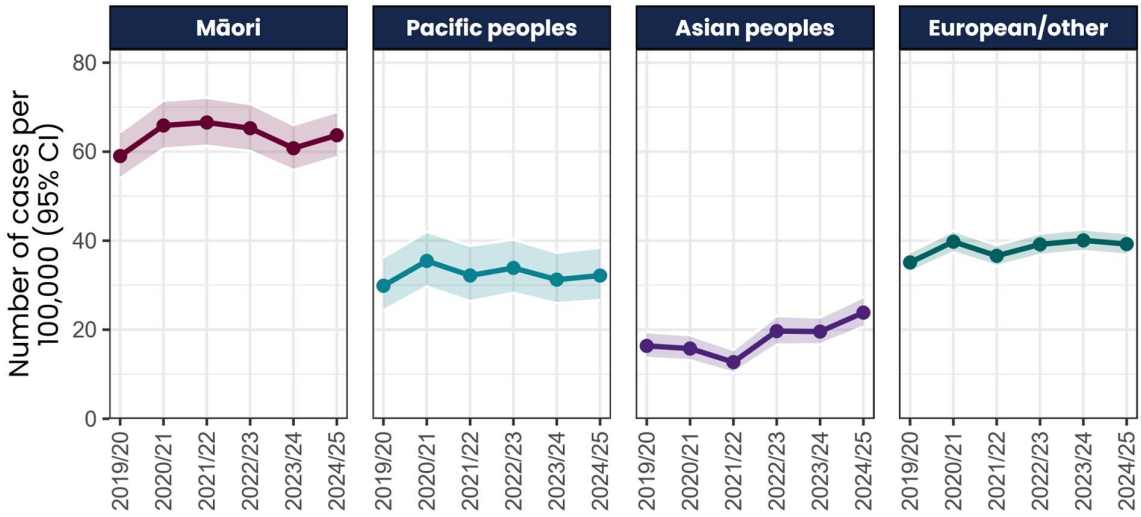
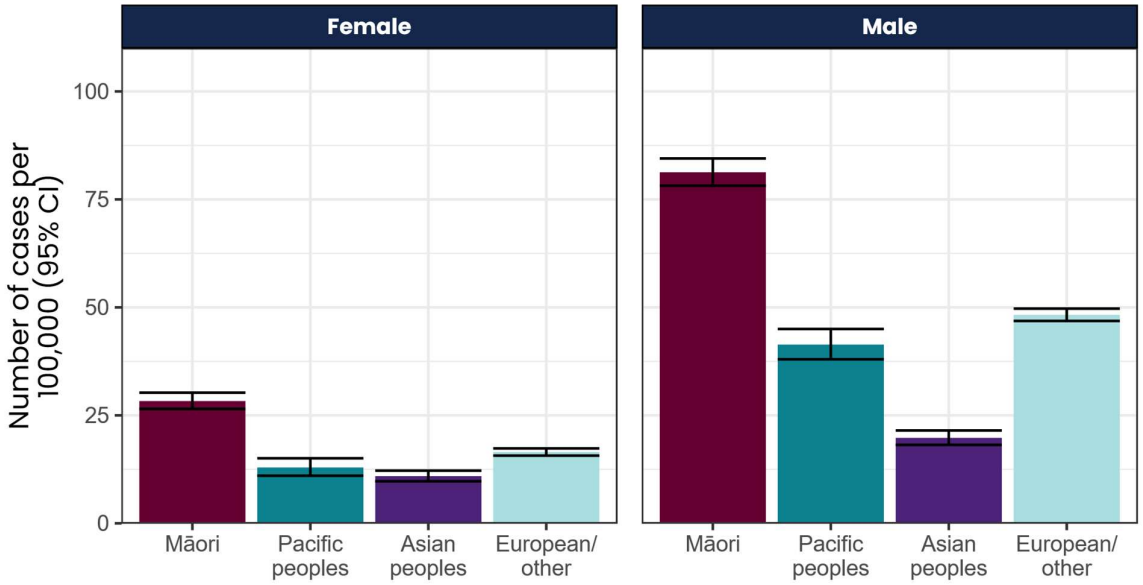
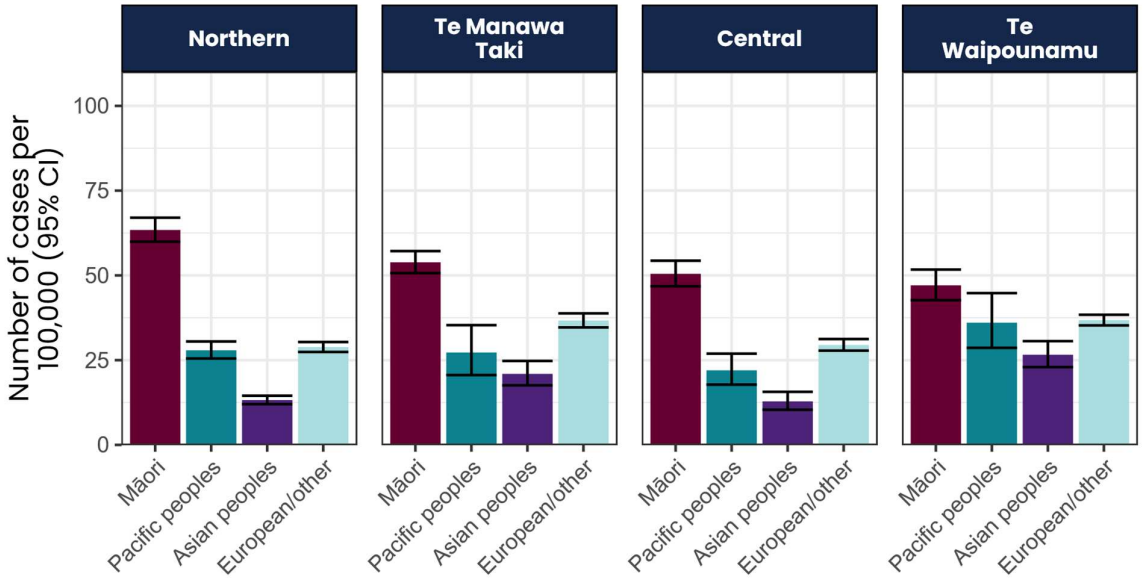


Figure 11: Age-standardised major trauma rates and 95% confidence interval (CI) per 100,000 people by sex and ethnicity, 2019/20–2024/25



Age-standardised rates are highest for Māori in the Northern region.

Figure 12: Age-standardised major trauma rates and 95% confidence interval (CI) per 100,000 people by ethnicity and definitive care region, 2019/20–2024/25



Rural/urban

The rate of major trauma is higher for those who live rurally. The difference between rural and urban rates has remained similar over time but is greatest in the Northern region. Rurality remains a consistent determinant of trauma risk and access to definitive care.

Figure 13: Annual major trauma incidence rate and 95% confidence interval (CI) per 100,000 people by rurality of domicile, 2019/20–2024/25

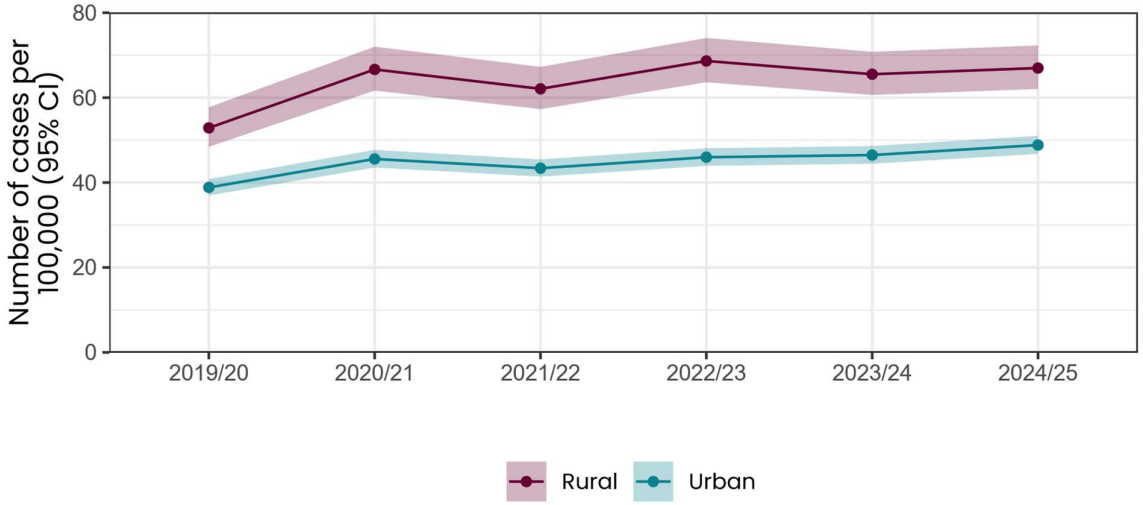
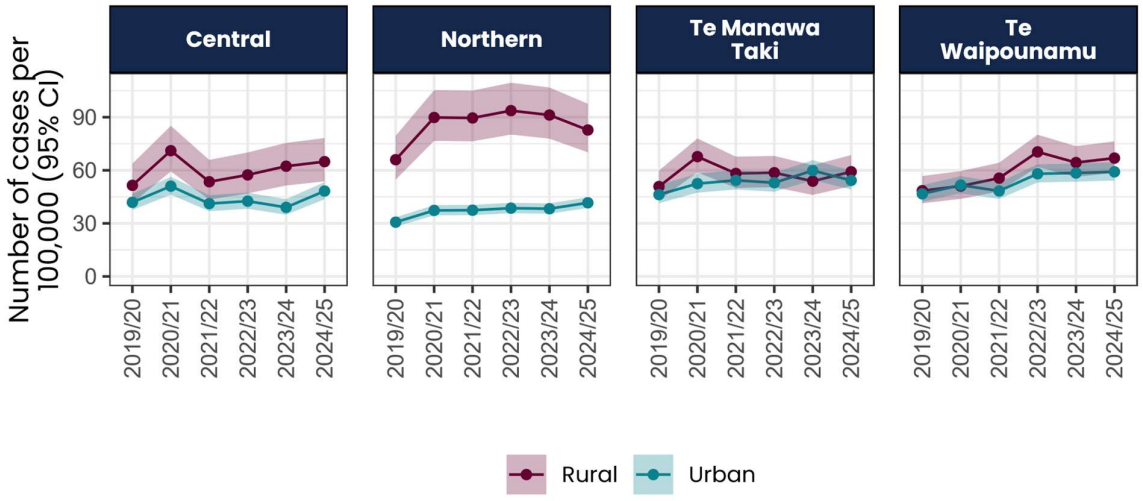


Figure 14: Annual major trauma incidence rate and 95% confidence interval (CI) per 100,000 people by rurality of domicile and definitive care region, 2019/20–2024/25

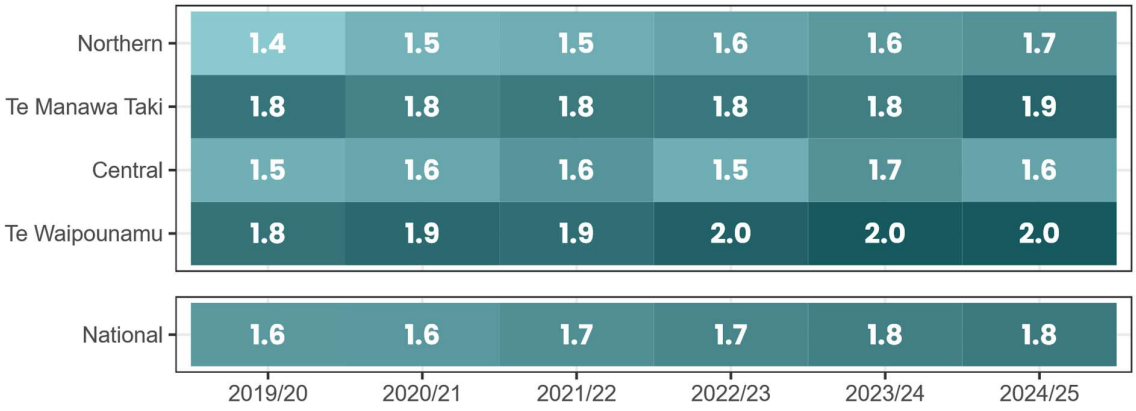


Process of care

Time to definitive care

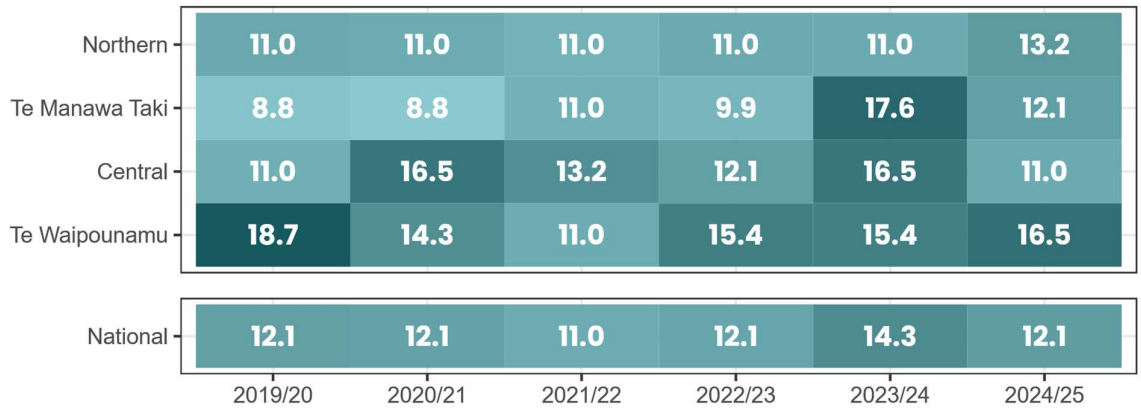
Time from injury to arrival at hospital is an important metric, with shorter times associated with improved patient outcomes. Since 2019/20, the median hours from incident to arrival at definitive care for those transported directly has increased slightly nationally.

Table 3: Median time (hours) from incident to arrival at definitive care for those transported direct from scene, 2019/20–2024/25. Cell shading represents the relative distribution of values within each table and is intended as a visual guide.



For those who were first transported to a different facility before being transferred, the median hours from incident to definitive care decreased in both Te Manawa Taki and the Central region.

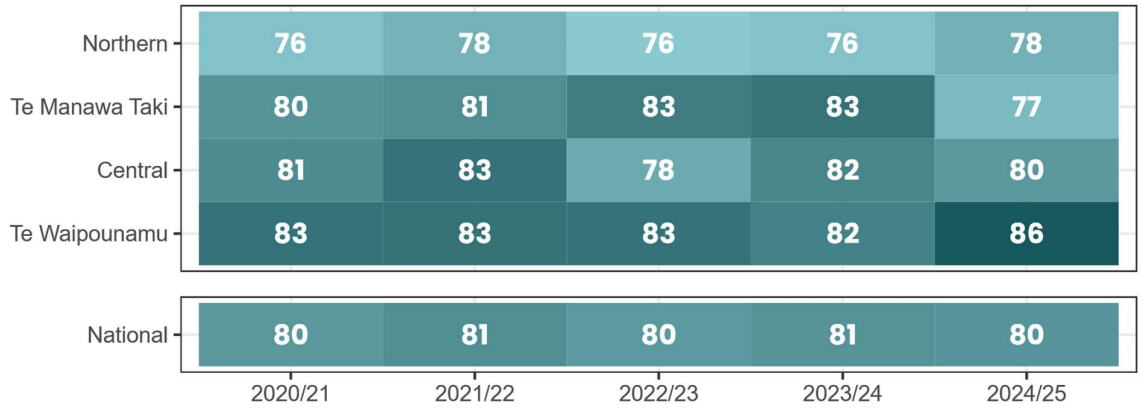
Table 4: Median time (hours) from incident to arrival at definitive care for those with a transfer, 2019/20–2024/25



Direct to definitive care

The percentage of patients transported directly to definitive care has remained at around 80 per cent nationally since 2020/21.

Table 5: Percentage of patients who were directly transported to definitive care, 2020/21–2024/25

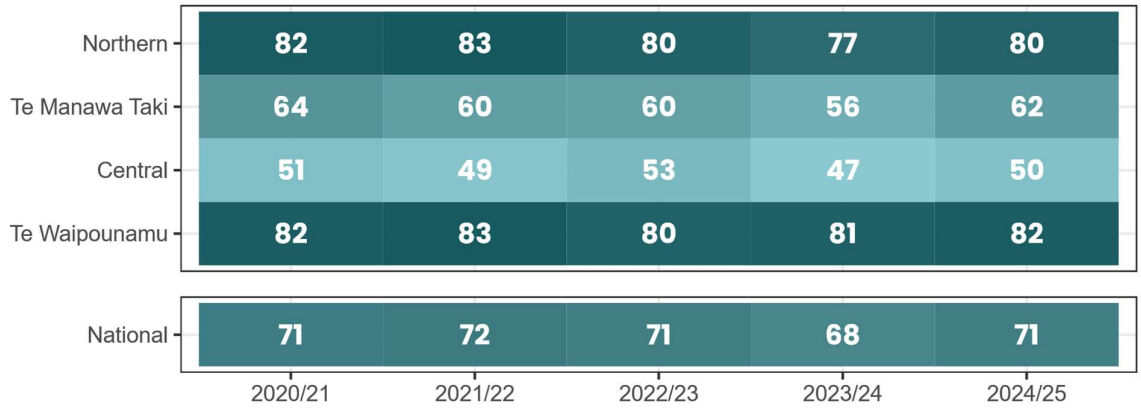


Tertiary facility as definitive care

Tertiary trauma centres are designated by the Network as specialised referral centres for management of patients with complex multisystem trauma. Whether patients are managed in a tertiary trauma hospital varies significantly across the country.

The percentage of patients who received definitive care at a tertiary facility has also remained stable at around 70 per cent nationally. The percentage is lowest in the Central (50 per cent) and Te Manawa Taki (62 per cent) regions.

Table 6: Percentage of patients who received definitive care at a tertiary facility, 2020/21–2024/25



Trauma call on arrival

Trauma calls describe an intervention on arrival in the ED, with the activation of a specialised team of clinicians to provide initial assessment, management and stabilisation of an injured patient. Trauma call activation depends on recognition of the degree of patient injury and the perceived risk of deterioration. Some patients with major trauma will have injuries that are relatively stable and unlikely to deteriorate. Further, because the definition of major trauma is made retrospectively based on injury coding, this may not be immediately obvious on presentation to the ED. Previous reports have shown a clear association between activation of a trauma call and more rapid access to imaging, such as computed tomography (CT) scans and interventions. The percentage of patients who receive a trauma call before arriving at hospital has remained relatively stable, at around 50 per cent nationally. The percentage is highest in the Central region (57 per cent) and at large tertiary facilities (57 per

cent). Lower trauma call rates among older adults likely reflect injury patterns and physiological presentation differences but may represent an opportunity to optimise early recognition pathways for older adults with major trauma.

Table 7: Percentage of patients with a trauma call by region, 2020/21–2024/25

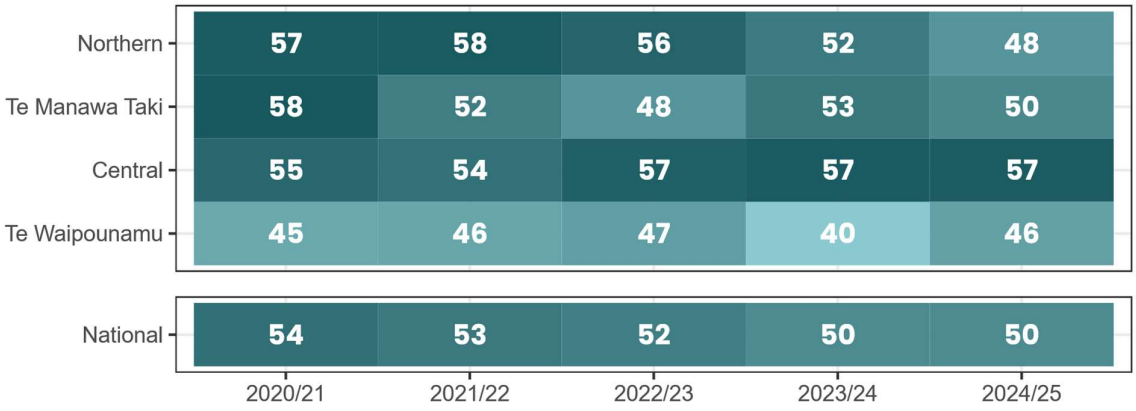
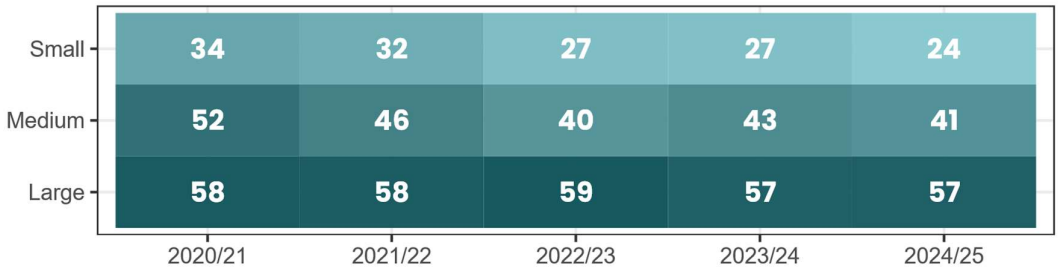


Table 8: Percentage of patients with a trauma call by size of definitive care facility, 2020/21–2024/25



Several incident characteristics influence the likelihood of a trauma call. Trauma calls are much more likely for transport incidents (67 per cent) than for falls (25 per cent).

Table 9: Percentage of patients with a trauma call by age, mechanism and mode of transport, 2024/25

Characteristic	Percentage
Ethnicity	
Māori	56
Pacific peoples	59
Asian peoples	56
European/other	46
Age (years)	
0–14	55
15–29	68
30–44	63
45–59	52
60–74	48
≥75	23
Mechanism	
Transport	67
Fall	25
Struck by/collision with person or object	33
Other	63
Mode of transport from scene	
Road ambulance	51
Helicopter ambulance	82
Other/unknown	18

Tertiary survey

The percentage of patients who receive a tertiary survey in the first few days after admission to identify injuries that may not have been evident or identified on initial arrival in hospital has increased nationally, from 50 per cent in 2020/21 to 66 per cent in 2024/25. This appears to be largely driven by improvements in the Central region, where 75 per cent of patients received a tertiary survey in 2024/25.

Table 10: Percentage of patients with a tertiary survey by region, 2019/20–2024/25

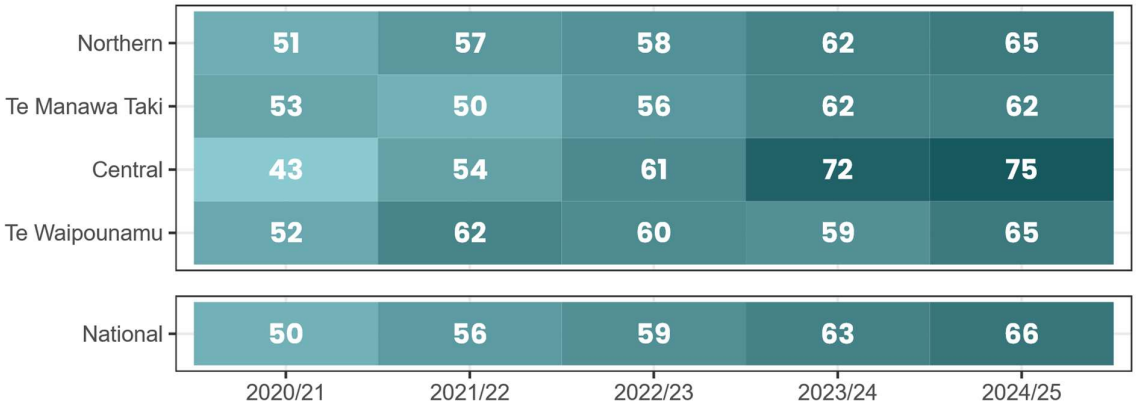


Table 11: Percentage of patients with a tertiary survey by size of definitive care facility, 2020/21–2024/25

As with trauma calls, several incident characteristics – such as age and mechanism of injury - increase the chances that a tertiary survey will take place.

Table 12: Percentage of patients with a tertiary survey by age, mechanism and mode of transport, 2024/25

Characteristic	Percentage
Ethnicity	
Māori	67
Pacific peoples	68
Asian peoples	68
European/other	65
Age (years)	
0–14	77
15–29	76
30–44	73
45–59	68
60–74	68
≥75	47
Mechanism	
Transport	80
Fall	51
Struck by/collision with person or object	62
Other	51

Blood alcohol collection

The percentage of patients with blood alcohol concentration recorded has remained stable at just above 65 per cent. Blood alcohol concentration is more likely to be collected in the Te Manawa Taki (72 per cent) and Northern (70 per cent) regions. Recording is much less likely to occur for incidents involving falls.

Table 13: Percentage of patients with blood alcohol concentration recorded at first hospital by region, 2020/21–2024/25

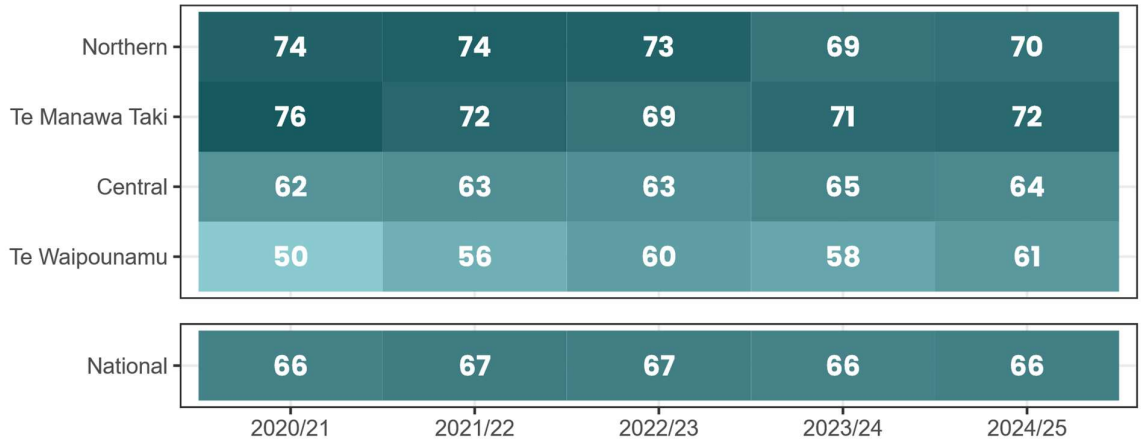
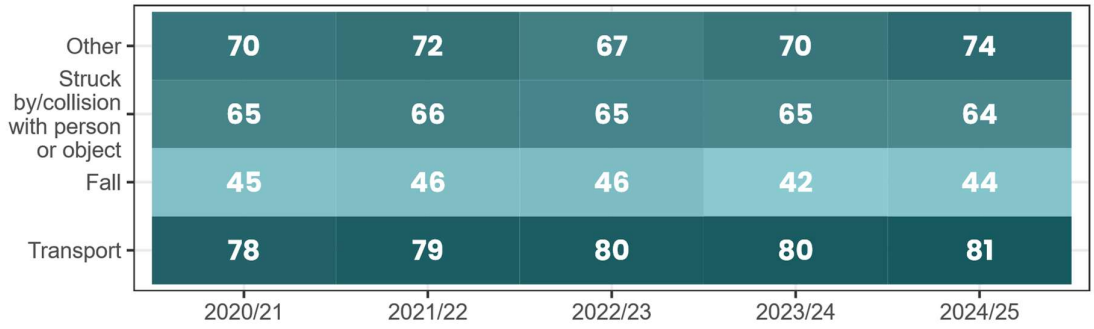


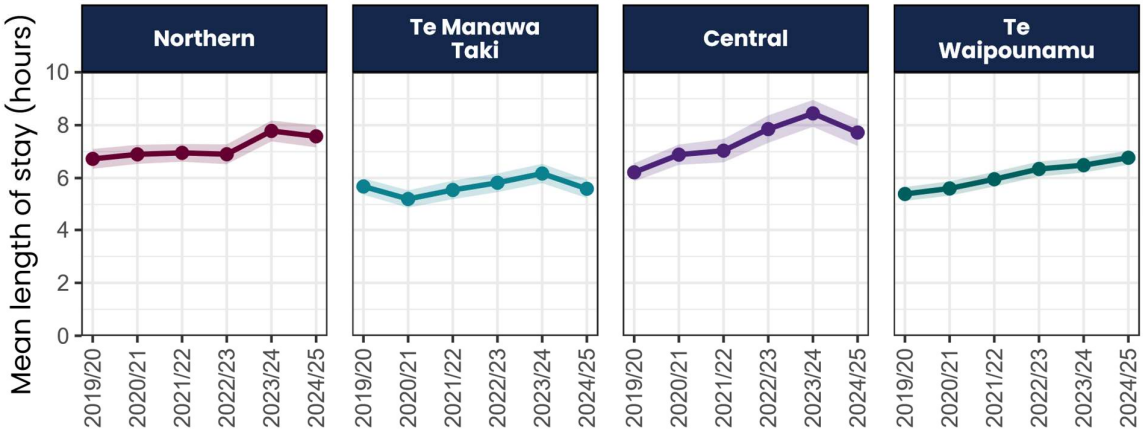
Table 14: Percentage of patients with recorded blood alcohol concentration and blood alcohol detected at first hospital, 2020/21–2024/25



Time spent in the ED

The mean length of stay in the ED at the definitive care facility has stabilised or slightly decreased for most regions in 2024/25.

Figure 15: Mean length of stay with 95% confidence interval (CI) in definitive care emergency department by region and year of injury, 2019/20–2024/25



Outcomes

Case fatality rate

The case fatality rate has increased a little this year, to 8.3 per cent. The number of deaths is also high, at 233.

Table 15: Case fatality rate, 2019/20–2024/25, number (per cent)

2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
159 (7.3)	210 (8.3)	183 (7.6)	220 (8.4)	174 (6.5)	233 (8.3)

By age, the case fatality rate remained highest, at 20 per cent in 2024/25 for those aged ≥75 years. Although the number of deaths for those aged ≤15 years is higher than in the last two years, the rate remains low at 3.8 per cent.

Table 16: Case fatality rate by age, 2019/20–2024/25, number (per cent)

Age (years)	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
0–14	7 (6.2)	8 (5.5)	15 (11.5)	≤5 (≤3)	≤5 (≤3)	6 (3.8)
15–29	16 (3.2)	30 (5.7)	14 (2.7)	32 (5.9)	28 (5.8)	20 (3.7)
30–44	15 (4)	22 (4.9)	20 (4.8)	20 (4.8)	20 (4.3)	18 (4.1)
45–59	28 (5.7)	34 (6.3)	22 (4.7)	27 (5.2)	15 (2.9)	26 (5.2)
60–74	34 (8.2)	38 (7.6)	37 (8)	48 (9.1)	28 (5.1)	43 (7.7)
≥75	59 (20.6)	78 (19.8)	75 (18)	88 (18.5)	82 (16.8)	120 (19.6)

Consistent with the higher case fatality rate for older adult patients, the proportion of fall incidents that resulted in mortality is higher than for other mechanisms, at 13.4 per cent.

Table 17: Case fatality rate by mechanism of injury, 2019/20–2024/25, number (per cent)

Mechanism	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Transport	62 (5.3)	75 (5.8)	65 (5.4)	90 (6.6)	53 (3.9)	68 (4.9)
Fall	68 (11.2)	97 (12.5)	77 (10.3)	101 (11.7)	91 (10.5)	128 (13.4)
Struck by/collision with person or object	12 (7.4)	13 (6.6)	18 (8.2)	9 (4.3)	7 (3.4)	16 (7.1)
Other	17 (6.7)	25 (9.2)	23 (9.3)	20 (9.6)	23 (9.1)	21 (8.8)

Cause of death

The most common cause of death continues to be central nervous system deaths. Although deaths from haemorrhage remain uncommon (5 per cent), continued focus on haemorrhage control remains essential given its potential preventability.

Table 18: Number (per cent) of deaths by cause, 2019/20–2024/25

Cause of death	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Haemorrhage	16 (10)	28 (13)	10 (5)	8 (4)	8 (5)	12 (5)
Multiple organ failure	12 (8)	13 (6)	16 (9)	20 (9)	9 (5)	24 (10)
Central nervous system	101 (64)	137 (65)	117 (64)	138 (63)	122 (70)	166 (71)
Medical	16 (10)	27 (13)	36 (20)	41 (19)	29 (17)	23 (10)
Unknown	14 (9)	5 (2)	4 (2)	13 (6)	6 (3)	8 (3)

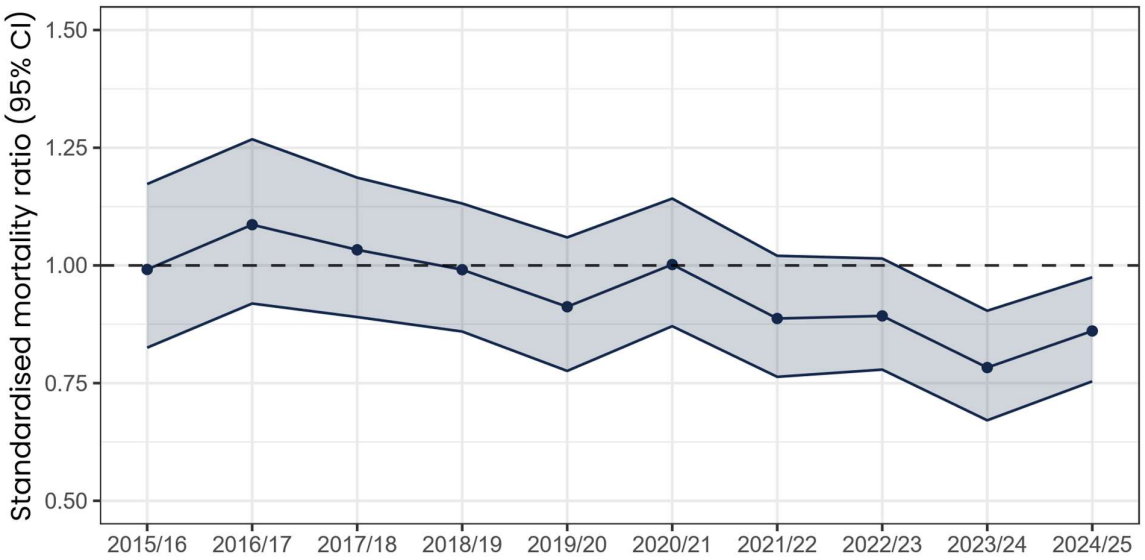
Standardised mortality ratio

Note: this year, the baseline period for the standardised mortality ratio (SMR) has been expanded to include all incidents up to and including 2019/20. This means the SMR has shifted slightly.

The SMR expresses the actual number of deaths as a ratio of the predicted mortality based on modelling. The expected mortality model adjusts for variables known to influence outcomes, including age, physiological markers of severity and anatomical injury. We continue to demonstrate a progressive improvement in the SMR, and the last two years have shown statistically significant reductions in actual mortality compared with expected. This improvement suggests system-level gains in trauma care delivery.

In the SMR timeseries, the dashed line at 1 represents the point where observed mortality equals expected mortality. An SMR of 1 therefore indicates that outcomes are exactly in line with the reference period.

Figure 16: Standardised mortality ratio with 95% confidence interval (CI), 2015/16–2024/25



The SMR shows that the number of observed deaths is higher than was expected for Māori in 2024/25, which was significantly lower than baseline in 2023/24. Significant improvements in the SMR have been seen in transport incidents over the last two years.

Figure 17: Standardised mortality ratio by ethnicity with 95% confidence interval (CI), 2015/16–2024/25

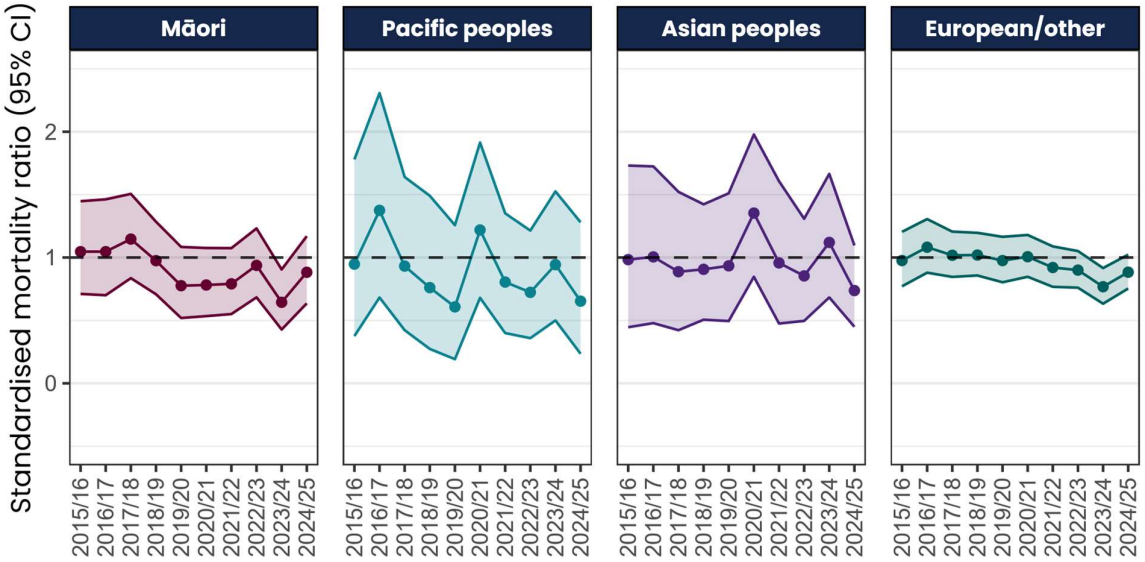
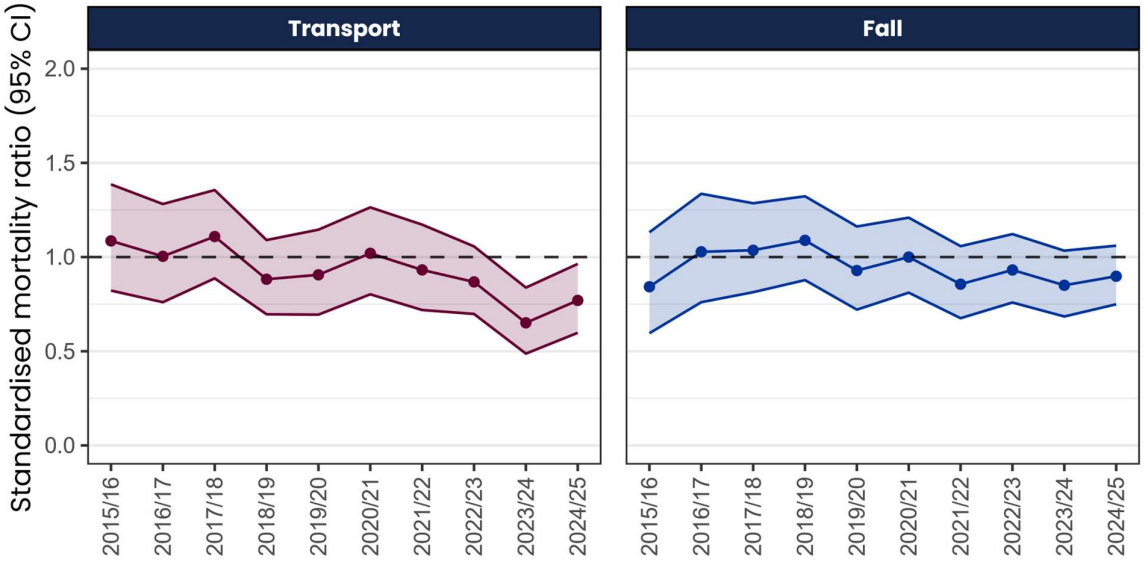


Figure 18: Standardised mortality ratio by mechanism with 95% confidence interval (CI), 2015/16–2024/25



Serious traumatic brain injury

In 2024/25, 39 per cent of people involved in major trauma incidents had a serious traumatic brain injury (sTBI). Of those, 71 per cent were isolated and 29 per cent complex. Complex sTBI refers to patients with sTBI plus serious injury (Abbreviated Injury Scale [AIS] head score ≥3) in one or more other body regions, whereas isolated sTBI refers to patients without major extracranial injuries.

Table 19: Percentage of major trauma incidents with a serious traumatic brain injury (sTBI), 2019/20-2024/25

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
sTBI	**33**	**34**	**36**	**37**	**36**	**39**
Isolated sTBI	67	72	71	69	70	71
Complex sTBI	33	28	29	31	30	29

The case fatality rate was around 16 per cent for both isolated and complex sTBIs.

Table 20: Case fatality rate (per cent) by serious traumatic brain injury (sTBI) group, 2019/20-2024/25

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Complex sTBI (AIS head >2 + serious injury in another region)	14.4	15.9	16	21.9	16.6	16.4
Isolated sTBI	14.8	17.8	13.1	12.9	12.4	15.8
No sTBI	3.6	3.6	4	4.1	2.4	3.5

Table 21 presents characteristics of patients with sTBI by level of consciousness (assessed by the Glasgow Coma Scale [GCS]) on arrival at hospital. Data summarising outcomes in patients without sTBI is also included for reference.

Notably, many patients with sTBI do not have impaired consciousness on arrival. Most patients with sTBI and moderately or severely impaired consciousness receive a trauma call, and a CT scan in under 2 hours, although both could be improved in patients with isolated sTBI and moderate impairment of consciousness (GCS 9-12).

Mortality among those with sTBI and severely impaired consciousness (GCS <9) is high, at 30 per cent and 44 per cent for complex and isolated sTBI, respectively. The high mortality associated with severe impairment of consciousness underscores the importance of early recognition and rapid transfer to definitive care.

Table 21: Characteristics of serious traumatic brain injury (sTBI), 2024/25

Characteristic	Mild/none (GCS > 12)	Moderate (GCS 9–12)	Severe (GCS < 9)	Total
Complex sTBI (AIS head >2 + serious injury in another region)				
Caseload	174	51	92	317
Case fatality rate (%)	8	19.6	30.4	16.4
Median (mean) ISS	26 (27)	29 (32)	37 (37)	29 (31)
Neuroscience centre for definitive care (%)	66	86	90	76
Trauma call on arrival (%)	61	94	98	77
Less than 2 hours until CT (%)	74	88	90	81
Isolated sTBI				
Caseload	552	81	133	766
Case fatality rate (%)	8.7	17.3	44.4	15.8
Median (mean) ISS	17 (20)	17 (20)	25 (24)	17 (20)
Neuroscience centre for definitive care (%)	60	72	86	66
Trauma call on arrival (%)	18	47	71	30
Less than 2 hours until CT (%)	50	85	93	61
No sTBI				
Caseload	.	.	.	1,725
Case fatality rate (%)	.	.	.	3.5
Median (mean) ISS	.	.	.	17 (19)
Neuroscience centre for definitive care (%)	.	.	.	59
Trauma call on arrival (%)	.	.	.	54
Less than 2 hours until CT (%)	.	.	.	67

Abbreviations: AIS, Abbreviated Injury Scale; CT, computed tomography; GCS, Glasgow Coma Scale; ISS, Injury Severity Score.

Post-Traumatic Amnesia assessment

Some patients with brain injury do not have an abnormal head CT scan, and their brain injury can remain unrecognised. Screening for post-traumatic amnesia (PTA) is important to help identify patients with brain injury so they can be monitored and – where necessary – referred for ongoing specialist input and rehabilitation. Patients are considered 'at risk' of brain injury if they have injury either to the head or to two or more body systems after experiencing a trauma.

Table 22: Number (per cent) of patients who survived to discharge and received screening for post-traumatic amnesia (PTA) by definitive care region, 2024/25

Characteristic	Yes	No/unknown
All major trauma		
Northern	654 (80)	161 (20)
Te Manawa Taki[a]	150 (77)	46 (23)
Central	312 (67)	156 (33)
Te Waipounamu	572 (78)	163 (22)
At risk[b]		
Northern	630 (84)	123 (16)
Te Manawa Taki[a]	147 (79)	40 (21)
Central	300 (69)	136 (31)
Te Waipounamu	558 (81)	131 (19)
sTBI		
Northern	293 (93)	23 (7)
Te Manawa Taki[a]	57 (86)	9 (14)
Central	128 (73)	47 (27)
Te Waipounamu	180 (86)	29 (14)

[a] Sites that implemented validated PTA assessment. Waikato and Gisborne are working towards transitioning to a validated tool for 2024/25.

[b] Patients with either any head injury or an injury to at least two body regions, without burns as dominant injury type or poisoning as mechanism of injury.

Royal Australasian College of Surgeons key performance indicators

The Royal Australasian College of Surgeons trauma key performance indicators focus on outcomes and processes key to driving quality improvement in trauma care across Australia and Aotearoa New Zealand.

Table 23: Case fatality rate (Injury Severity Score ≥13), 2019/20–2024/25, number (per cent)

2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
159 (7.3)	210 (8.3)	183 (7.6)	220 (8.4)	174 (6.5)	233 (8.3)

Table 24: Median hours from incident to arrival at definitive care for patients transferred (Injury Severity Score ≥13) by definitive care region, 2019/20–2024/25

Region	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Northern	11.4	11.2	10.5	11.2	11.2	12.7
Te Manawa Taki	9.0	8.5	10.7	10.3	17.6	12.3
Central	10.8	16.1	13.7	12.2	16.1	11.2
Te Waipounamu	19.1	13.8	11.2	15.3	15.2	16.8
National	12.2	12.0	11.2	11.8	14.2	12.5

Table 25: Median hours from incident to arrival at definitive care for patients transported direct from scene (Injury Severity Score ≥13) by definitive care region, 2019/20–2024/25

Region	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Northern	1.4	1.5	1.5	1.6	1.6	1.7
Te Manawa Taki	1.8	1.8	1.8	1.8	1.8	1.9
Central	1.5	1.6	1.6	1.5	1.7	1.6
Te Waipounamu	1.8	1.9	1.9	1.9	2.0	2.0
National	1.6	1.6	1.7	1.7	1.8	1.8

Table 26: Discharge destination following in-hospital stay (Injury Severity Score ≥13) by definitive care region (per cent), 2024/25

Discharge destination	Northern	Te Manawa Taki	Central	Te Waipounamu	National
Home	57	58	49	66	58
Rehabilitation	19	19	12	14	16
Hospital for convalescence	10	5	24	8	11
Died	9	8	9	7	8
Residential aged care service or nursing home - not the usual place of residence	2	1	2	2	2
Unknown	0	7	0	0	2
Left against medical advice / discharge at own risk	2	2	2	1	1
Other	1	0	1	1	1
Special accommodation	1	0	1	1	1

Table 27: Median hours to index computed tomography scan for patients with impaired consciousness (Glasgow Coma Scale ≤13; Injury Severity Score ≥13), by definitive care region, 2024/25

Northern	Te Manawa Taki	Central	Te Waipounamu	National
0.7	1	1	0.7	0.8

Table 28: Median hours at first hospital for those transferred (Injury Severity Score ≥13) by first care region, 2024/25

Northern	Te Manawa Taki	Central	Te Waipounamu	National
4.9	7	8.6	8.6	7

Table 29: Percentage of patients with blood alcohol concentration recorded at first hospital (Injury Severity Score ≥13) by first care region, 2019/20–2024/25

Region	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Northern	77	74	74	73	69	70
Te Manawa Taki	68	76	72	69	71	72
Central	51	62	63	63	65	64
Te Waipounamu	46	50	56	60	58	61
National	62	66	67	67	66	66

Table 30: Median hours in the emergency department (Injury Severity Score ≥13), by definitive care region, 2024/25

Northern	Te Manawa Taki	Central	Te Waipounamu	National
7	5	7	6	6

Part 2:
Rōpū Rangatira

Rōpū rangatira

The rōpū have continued a focus on whole-of-system with the work being undertaken. The rōpū are:

1. Injury prevention
2. Acute care and out of hospital
3. Rehabilitation and transitions of care
4. New Zealand Trauma Registry (NZTR), data and insights
5. Trauma quality improvement

Key outputs from the Rōpū over the past 12 months have been:

- providing new innovations in insights with the delivery of the National Major Trauma dashboard
- updating the TBI toolkit to support clinical staff
- delivering the Chest Injury Guideline, which was adopted nationally by Health NZ.

Looking ahead, the rōpū are working on:

- destination policy and staging guidelines
- identifying key indicators of the appropriate management of the older person who experiences major trauma
- developing a trauma education framework for nursing and allied health professionals.

Part 3: Research and Improvement Priorities

NZTR data governance

The NZTR is an important facet of the Trauma National Clinical Network programme. It provides the foundation for a data-driven approach to delivering a high-quality trauma system.

The NZTR data governance group provides assurance for the ethical and appropriate use of data held in the NZTR.

The group received several research requests for use of NZTR data over the last year, related to:

- mortality
- hepatic trauma
- older persons trauma
- regional spinal injuries.

These projects demonstrate the growing research capability supported by the NZTR.

Research

Accident Compensation Corporation (ACC) invested $100,000 in grants to support major trauma research. Grants were provided to University of Otago and University of Auckland.

University of Otago

Investigators Dr Helen Harcombe, Associate Professor Gabrielle Davie, Mr Dave Barson, Dr Brett Maclennan and Associate Professor Trudy Sullivan.

These investigators examined comorbidities among a cohort of 11,768 people who were hospitalised for a major trauma event in Aotearoa New Zealand between 2018 and 2022.

Over half the cohort (54 per cent) had at least one comorbidity as defined by the M3 Multimorbidity Index. There was a small increase in the prevalence of comorbidities across the five-year period. Comorbidities had significantly impacted on length of stay, intensive care unit length of stay and mortality, highlighting the importance of the complexity of trauma care in the presence of comorbidities.

An overview of the key findings of this project was presented at the Australian and New Zealand Trauma Society Conference in Wellington in October, and a manuscript is in preparation.

University of Auckland

Investigators Dr Luke Boyle, Dr Doug Campbell, Professor Ian Civil, Dr Paul McBride, Associate Professor Bridget Dicker and Dr Matthew Moore.

These investigators explored the validity of Days Alive and Out of Hospital (DAOH) as an outcome measure for patients with major trauma. This measure is a composite of time in hospital, death and time at home and provides a more nuanced way of measuring outcome after injury than mortality alone. The researchers found that DAOH followed expected patterns, with key trauma factors being the overall injury severity, the GCS score and the presence of traumatic brain injury, and age.

The investigators are in the process of publishing their findings and discussing the implications of the outcomes of these important studies for the National Trauma Network.

Quality improvement

Serious chest injury project

The national Chest Injury Guideline was published in July 2025 after extensive expert engagement and feedback, which included the co-design of patient handouts developed by people with lived experience of chest injury. The guideline was developed to address the variation in management of patients

with chest injury across the country, to streamline advice provided to patients and to optimise timely access to rehabilitation.

The Chest Injury Guideline provides a foundation that hospital services of differing sizes and resources can adapt and implement to suit their local setting and infrastructure. It includes:

- evidence-based and actionable information and tools regarding the assessment and management of a patient with a chest injury
- guidance for multidisciplinary roles involved in chest injury management and recovery
- care advice for specific priority populations, including older adults, paediatrics and under-served populations who experience barriers accessing health services
- clarity for staff navigating the multitude of services available for patients with serious chest injury, including ACC, inpatient and community rehabilitation teams and wrap-around support services
- consistent advice to patients recovering from a chest injury, presented in an easy-to-read format, including key information that consumers felt was most important.

sTBI project

A one-year review of the sTBI injury project was completed at the end of 2024. The sTBI project had two workstreams and aims:

1. Acute workstream: To ensure that all major trauma patients with a potentially survivable traumatic brain injury with GCS <9 and an abnormal CT brain are transferred to a neuroscience centre within 24 hours of admission, achieved through mutually agreed regional transfer pathways.
2. Rehabilitation workstream: To ensure that all ‘at risk’ major trauma patients are assessed for the presence of PTA with a validated tool, achieved through a national collaborative approach involving project teams from across the country.

The most recent data demonstrates that:

- 90 per cent of patients with complex sTBI and a GCS of <9 are transferred to a neuroscience centre for definitive care. Patients not transferred are monitored regularly through clinical audit, and most of the small number not transferred were because the TBI was deemed not survivable. The audit tool can be accessed on the National Trauma Network website.

- 78 per cent of major trauma patients at risk of a TBI (those with an injury to the head/neck or an injury to a minimum of two body systems) are assessed for PTA with a validated tool.

The path of making things right: Te ara whakatika

Throughout 2025, the project 'the path of making things right: Te ara whakatika' was scoped and launched. In-depth data analytics linking the NZTR data with ACC claims data, National collections data and patient-reported outcome measures data identified unwarranted variation in reduced access to rehabilitation services after hospital discharge for major trauma.

Te Rina Ruru-Pelasio has been appointed as project co-lead. Te Rina is a dedicated Māori development leader and co-founder of Unseen Heroes, a charitable trust that uplifts and advocates for whānau who are often overlooked. She is deeply committed to weaving mātauranga Māori and Te Tiriti-based practice into organisational change, ensuring that whānau voice and lived experience remain at the centre. Te Rina brings both professional expertise and lived experience into the impact of health, wellbeing, and safety on individuals and their wider whānau. Her passion lies in creating authentic, sustainable pathways that uphold mana and strengthen cultural capability.

'The path of making things right: Te ara whakatika' project is aiming to ensure that every patient with major trauma gets the community rehabilitation they need after discharge, with a focus on delivering culturally responsive care that supports physical (taha tinana), emotional (taha hinengaro), spiritual (taha wairua) and social wellbeing (taha whānau) with a strong commitment to equity for Māori.

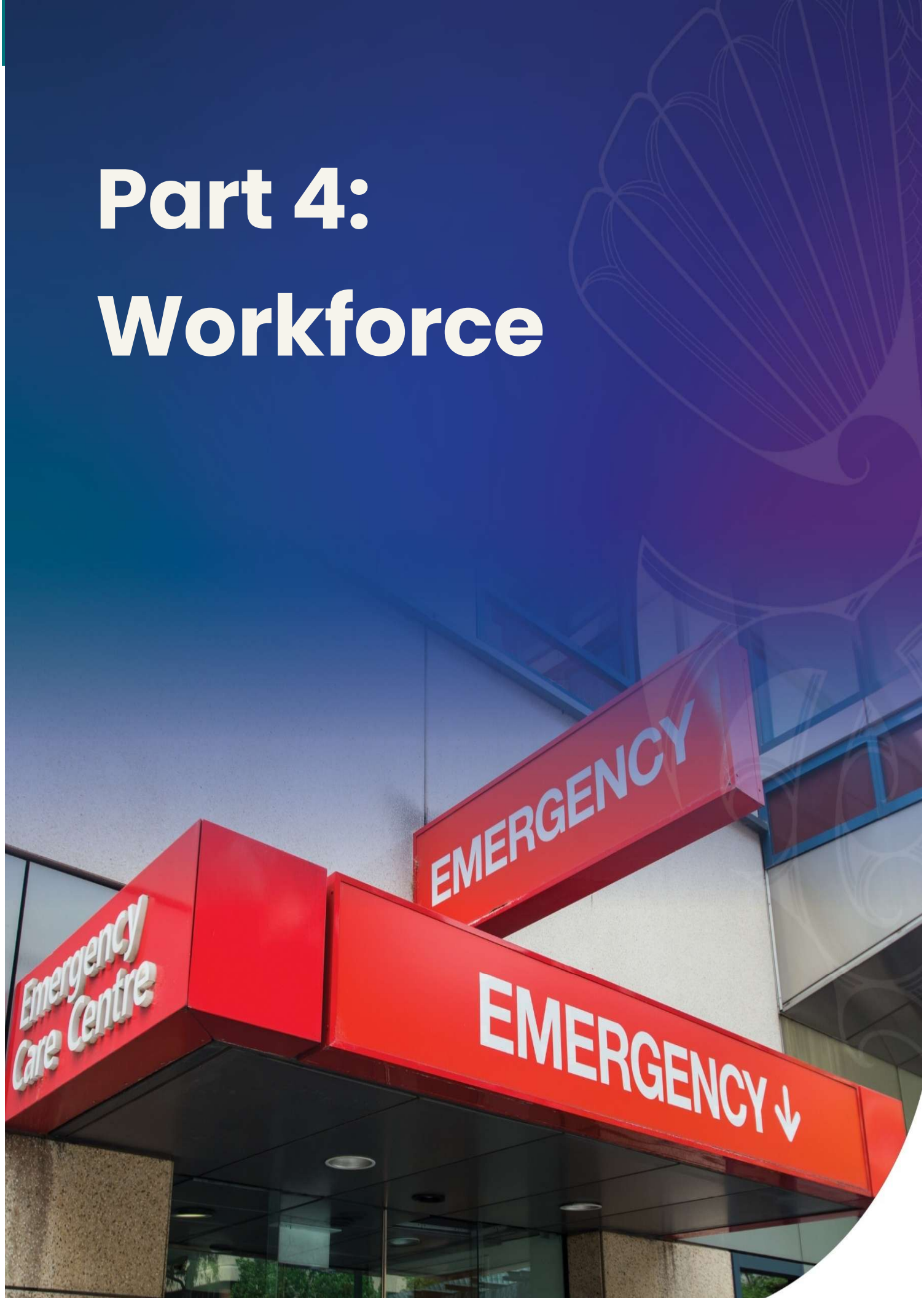
Through co-design with consumers, clinicians, and cultural experts, we expect to:

- improve access to trauma rehabilitation
- build partnerships between ACC, Health NZ, rehabilitation providers, and Hauora Māori Services
- share learnings to drive sustained change and scale improvements nationwide.

NZTR monthly report

The development of the NZTR monthly report provides NHI-level trauma data at district level, sourced directly from the NZTR. It supports trauma committees, mortality and morbidity meetings, quality improvement initiatives and service reviews by offering timely, accurate insights on major trauma patients in their hospital.

Part 4: Workforce



NetworkZ

The NetworkZ Trauma Programme delivers multidisciplinary simulation-based (SIM) team training in the ED setting. The SIM training is based on real-world clinical scenarios that provide an interactive and realistic experience, followed by facilitated structured discussions (debriefs). The immersive in-situ approach strengthens relationships and tests systems for improved organisation, team and individual performance.

The NetworkZ trauma SIM programme has trained over 250 clinicians across the motu, including in both large urban and small rural locations. The number of paediatric clinicians and interdisciplinary colleagues was higher within this year's cohort than previous years.

Key learnings from Latent Safety Threats in the 2024/25 trainings were:

- teamwork skills – focus is needed on consistency with role allocations and improving closed loop communication
- Massive Haemorrhage Pathway discussions highlighted inconsistent terminology and variable understanding of the pathway across sites, highlighting an opportunity for greater national alignment
- medication administration, referral pathways and a need for neuro-protective guidelines are required for paediatric major trauma.

Funding to support this national SIM programme was provided through the Community Road Safety Fund, which is administered by NZ Transport Agency Waka Kotahi, recognising its role in reducing the impact of road trauma in Aotearoa New Zealand. This funding stream will not be available from 2026. Loss of this funding risks interruption of a nationally consistent trauma team training programme.

Bi-national Trauma Quality Improvement Capacity and Capability Survey – New Zealand Findings

In late 2024, the New Zealand Trama Quality Improvement (TQI) rōpū rangatira and the Australia New Zealand Trauma Quality Improvement Program undertook a national survey to assess TQI capacity and capability across Aotearoa New Zealand trauma services. The survey aimed to identify strengths, gaps, and opportunities to inform local, regional, national, and bi-national TQI planning.

Of 20 invited facilities, 17 participated (an 85 per cent response rate), representing a broad range of verified and non-verified trauma services. Most hospitals reported established TQI structures; 94 per cent had a trauma committee and 65 per cent held trauma mortality and morbidity meetings. However, only three facilities had a designated trauma team, highlighting structural variability.

Resource constraints were a dominant finding. All facilities reported staffing deficits, with 76 per cent identifying insufficient resources for TQI and nearly half describing their current TQI efforts as unsustainable. Significant shortfalls were reported across nursing, allied health, and leadership roles, particularly in protected time and full-time equivalents for TQI activities.

Trauma data collection was widespread, with 71 per cent of facilities collecting data across all injury severities. Nevertheless, barriers to data entry, data quality assurance, and effective use of registry outputs were common.

Equity, consumer engagement, rehabilitation, and pre-hospital involvement were present but inconsistent. Overall, the findings demonstrate strong commitment to TQI across Aotearoa New Zealand trauma services, alongside clear system-level priorities for improved resourcing, data quality, leadership support, and coordinated national guidance.

These findings highlight the need for sustained investment in trauma quality improvement infrastructure.

Appendices

Appendix A: SMR commentary and technical notes

The SMR is calculated by dividing the sum of the observed deaths by the sum of the predicted deaths after each incident has been risk adjusted. CIs are calculated using *R*'s base Poisson test function (R Core Team, 2024).

The risk-adjustment model is a generalised additive model fitted using *R*'s mgcv package (Wood, 2011). The model is trained on all incidents between July 2015 and June 2020. The model adjusts for:

- the patient's first recorded pulse and first recorded systolic blood pressure (and the interaction between them)
- the patient's age and their first recorded GCS score (and the interaction between them)
- the patient's New Injury Severity Score (NISS, derived from AIS codes).
- the patient's recorded blood base deficit/excess
- the patient's highest recorded AIS severity injury to the head region
- the patient's highest recorded AIS severity injury to the vascular region
- the patient's comorbidities, as calculated using the multimorbidity index (Stanley & Sarfati, 2017)
- the mechanism of injury of the incident.

References

R Core Team. (2024) *R: A Language and Environment for Statistical Computing.* [Online]. Available from: https: //www.R-project.org/ [Accessed 1 March 2026]

Stanley, J., & Sarfati, D. (2017). The new measuring multimorbidity index predicted mortality better than Charlson and Elixhauser indices among the general population. *Journal of Clinical Epidemiology*, *92*, 99–110. doi:10.1016/j.jclinepi.2017.08.005.

Wood, S. N. (2011). Fast Stable Restricted Maximum Likelihood and Marginal Likelihood Estimation of Semiparametric Generalized Linear Models. *Journal of the Royal Statistical Society Statistical Methodology Series B,* 73, 3–36. doi:10.1111/j.1467-9868.2010.00749.x

Appendix B: Published research on trauma and injury in Aotearoa New Zealand

Cavadino, A., Te Ao, B., Kerse, N., Kool, B., Parsons, J., & Hikaka, J. (2025) Ethnic variation in access to publicly funded care for unintentional injuries in older adults in Aotearoa New Zealand: a retrospective study. *Injury Prevention,* 31(1), 66–72. doi.org/10.1136/ip-2023-045168

Christey, G., Soysa, I., & Smith, A. (2024) Characteristics of low, moderate and high severity trauma hospitalisations in a health region of Aotearoa New Zealand—10-year review. *New Zealand Medical Journal,* 137 (1599), 37–48. doi.org/10.26635/6965.6428

Christey, G., Soysa, I., & Smith, A. (2025) Evaluating the time to surgery for low-severity trauma patients within a trauma quality improvement programme. *ANZ Journal of Surgery* 95 (1–2), 210–215. doi.org/10.1111/ans.19367

Chu, W.Y.A., Lee, M.T., & Elkinson, I. (2025) Electric scooter-related orthopaedic injuries in Wellington. *New Zealand Medical Journal* 138 (1614), 61–69. doi.org/10.26635/6965.6812

Dicker, B., Montoya, L., Davie, G., Lilley, R., & Kool, B. (2025) Distribution of prehospital times of major trauma cases attended by emergency medical services in Aotearoa New Zealand. *New Zealand Medical Journal* 138 (1611), 55–64. doi.org/10.26635/6965.6778

Gibson, G., Dicker, B., Civil, I., & Kool, B. (2024) Adherence to New Zealand's major trauma destination policy: an audit of current practice. *New Zealand Medical Journal,* 137 (1603), 89–128. doi.org/10.26635/6965.6594

Hawkins, E., Stewart, B., Huggins, M., Compson, K., Larsen, P., & Rogan, A. (2024) What effect did the New Zealand COVID-19 lockdown have on computed tomography-head scan utilisation in patients presenting to the emergency department with traumatic head injuries? *Emergency Medicine Australasia,* 36 (1), 94–100. doi.org/10.1111/1742-6723.14322

Liddicoat, E., Moosa, S., Smith, A., & Christey, G. (2025) The burden of paediatric supracondylar humeral fractures admitted within a health region in New Zealand. *Journal of Paediatrics and Child Health* 61 (6), 919–925. doi.org/10.1111/jpc.70045

McGuinness, M.J., Joseph, N., Xu, W., Paterson, L., McLaughlin, S., Riordan, E., Isles, S., & Harmston, C. (2024) Management and outcomes of splenic injuries secondary to blunt trauma in patients presenting to major trauma hospitals in Aotearoa New Zealand. *ANZ Journal of Surgery,* 94 (11), 1971–1977. doi.org/10.1111/ans.19138

McGuinness, M.J., Staveley, L.K., Wilding, E.F.C., Ray, O.A., Semmons, A.M., Prosser, C.H., Fleischl, W., Joseph, N., Ang, W.C., & Harmston, C. (2025) Outcomes in patients with rib fractures following implementation of the RIB-IMPROVE rib fracture guideline. *New Zealand Medical Journal* 138 (1617), 12–49. doi.org/10.26635/6965.6926

McLaughlin, S., Speakman, S., Johns, J., McGuinness, M., Swanson, C., Muller, L., Muwanga-Magoye, T., & Harmston, C. (2025) Opioid prescribing patterns in trauma patients: assessing the impact of injury and treatment factors. *ANZ Journal of Surgery* 95 (6), 1236–1241. doi.org/10.1111/ans.70111

Montoya, L., Davie, G., Lilley, R., Dicker, B., & Kool, B. (2024) Comparison of injury severity scores derived from ICD-10-AM codes with trauma registry-derived scores: a study from New Zealand. *Injury,* 55 (5), 111511. doi.org/10.1016/j.injury.2024.111511

Panesar, D., & Civil, I. (2024) Intentional physical self-injury in Auckland: patterns, associations and clinical implications in a single-centre cross-sectional study. *New Zealand Medical Journal,* 137 (1600), 40–51. doi.org/10.26635/6965.6344

Sayers, A.E., Moosa, S., Soysa, I., & Christey, G. (2025) Characteristics of pelvic injuries in a health region of New Zealand. *Journal of Clinical Orthopaedics and Trauma* 67, 103022. doi.org/10.1016/j.jcot.2025.103022

Schroll, R., Flint, S.A., Harris, D., & Civil, I. (2025) Blunt cerebrovascular injury in trauma patients: an under-recognised injury pattern at Auckland City Hospital. *New Zealand Medical Journal* 138 (1616), 59–68. doi.org/10.26635/6965.6903

Soysa, I., Moosa, S., & Christey, G. (2024) Ethnic variations in traumatic injury hospitalisations in a health region of Aotearoa New Zealand—10-year review. *New Zealand Medical Journal,* 137 (1607), 75–86. doi.org/10.26635/6965.6659

Underwood, C.G., McCombie, A., Nonis, M., Joyce, L.R.M. (2025) Does frailty scoring help to predict outcomes in older patients with major trauma? A retrospective study at a major trauma centre. *Emergency Medicine Australasia* 37 (3), e70053. doi.org/10.1111/1742-6723.70053

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