



# MIDLAND TRAUMA SYSTEM

RESEARCH CENTRE



## Midland Trauma Research Centre Strategic Direction

Delivering our priorities 2019-2022



## Director's message

Our mission in the Midland Trauma Research Centre is to conduct trauma research that contributes to the health and wellbeing of all people living in the Midland Region.

An ongoing programme of research, embedded in evidence and specific to our Midland context is essential to ensuring best practice clinical care, raising awareness of injury and prevention activities. Although we have made significant progress in all these areas since our inception in 2011, our work is far from over. The burden of injury simply remains too high and the highest cost is borne by injured people and their whānau. All District Health Boards across the Midland region have a strong commitment to addressing inequities for Māori and we share this commitment. We also have a significant rural population which pose challenges in injury prevention and an ageing population now brings particular issues for both clinical care and injury prevention.

This plan outlines our priorities for the next three years. We are now building on our strong foundations and will actively collaborate with others to achieve our research goals. We will continue to use the trauma data collected daily by our clinicians across the region to guide decision-making, provide quality clinical care and undertake the right research activity so that when injury does occur, patients get the right care, in the right place, at the right time.

Te korero o te Tumuwhakarae.

Ko to mātou mahi o te whare rangahau ohonga ngaukino i te takiwā waenganui he mahi rangahau oranga ki ngā iwi e noho ana i te takiwā waenganui.

Kei te haere tonu te hotaka rangahau nei, e whakatō te whakaaturanga i roto i te horopaki o ā taatou takiwā waenganui i ngā mahi tika hauora, e piki ake te matatau ohonga ngaukino me te mahi ārai aukati e ahakoa mātou he haere whai tika ki mua i te wā hanga o tō mātou timata i te tau 2011 e kore taea tō mātou mahi kia mutu. Ko te toimaha o te ohonga ngaukino e piki tonu me te tino utu e kawe mai ana i te kai ohonga ngaukino me ōna whaanau, ko ngā (DHB's) i roto i te takiwā waenganui e mahi kaha ana rātou e mahi tika ki te iwi Māori he ōrite ki a mātou hoki. He nui a mātou iwi taiwhenua he maha hoki ngā wero ohonga ngaukino me te ārai aukati ki te kaumatua, pakeke Nohonoho ki he kaupapa hauora tika me te ārai aukati.

Ko te nuinga o tō mātou kaupapa ki ngā tau e toru e heke mai nei e hanga mātou tūāpapa e mahi tahi mātou ki ētehi atu ki a tutuki tō mātou whaingā, kei te haere tonu mātou ki te mahia a mātou kōrero kohikohi rangahau ia rā, ia rā i tō mātou kai rangahau Nōreira i te wā hauata ko te iwi whaiora e tiaki tika ki ai ia me te wā tika hoki.

Grant Christey  
Director  
Midland Trauma System



# Midland Trauma System and the Midland Trauma Research Centre

The Midland Trauma System (MTS) is a network of highly skilled clinical personnel in each of the Midland District Health Boards (DHBs) who are supported by an experienced central hub service dedicated to helping trauma patients, their families and the wider community.

The wider team works to ensure that trauma patients receive the best in trauma care regardless of when, where or what trauma occurred. The MTS is the first regional trauma system in New Zealand and is a leader in trauma system development.

The Midlands Trauma Research Centre (MTRC) is part of the MTS and was established to translate data into knowledge. The focus of the MTRC is to identify and monitor trauma issues which can then be addressed by the appropriate people in the wider team – whether the issues are clinical, systems infrastructure or injury awareness or prevention in nature. The ethos of the MTRC aligns with that of MTS as a whole, in which research will be focussed primarily on the needs of patients, their whānau/families and their communities.

## OUR VISION

The health and wellbeing of our Midland communities will be improved by reducing the burden of trauma.

## OUR MISSION

To improve clinical trauma care, reduce the incidence of injury and enable safer, more efficient systems along the trauma journey.

## OUR VALUES

Our work will be guided by our beliefs and commitments to our values.

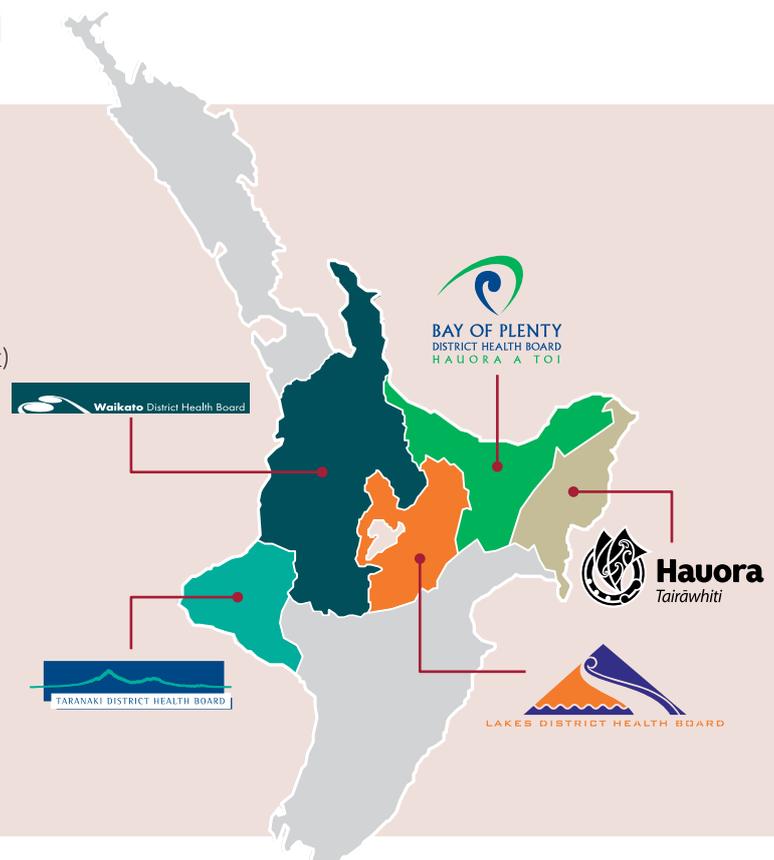
- Patients first: The needs of patients guide our actions
- Communication: Open, honest, helpful
- Collaboration: Together we achieve more
- Excellence: Quality care and information
- Forward Looking: Integrity, diversity, creativity

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## Our Midland community and the burden of trauma

The Midland region encompasses Bay of Plenty, Hauora Tairāwhiti, Lakes, Taranaki, and Waikato DHBs, a geographic area of 57,728km<sup>2</sup> or some 21 percent of New Zealand's land mass. The region includes the major population centres of Tauranga, Rotorua, Gisborne, New Plymouth and Hamilton. The population in 2017/18 was estimated to be over 900,000, including 237,000 Māori (26 percent) and 43 local iwi groups.

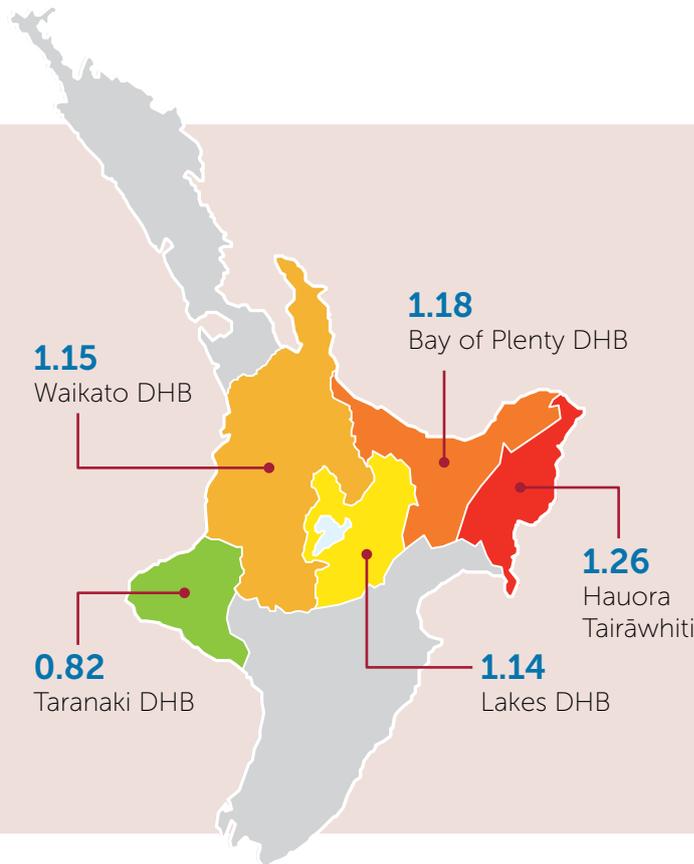
Trauma is the greatest cause of death for people aged from 5-50 years and is responsible for the greatest number of productive lives lost in the community. Trauma continues to have a major impact on Midland communities, with the relative risk of injury resulting in a hospital admission for Māori being higher in four out of five Midland DHBs. The social and economic cost of trauma to patients, their whānau and communities is immense and often largely goes unseen. The economic cost to hospitals alone in the Midland region was estimated at \$55 million in 2016.



## Relative risk for Māori

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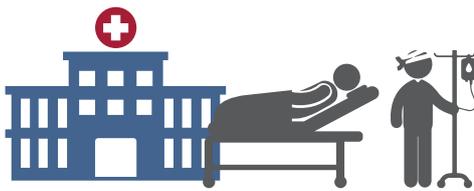
Midland region 2018



## higher relative risk for Māori in 4 out of 5 Midland DHBs

The relative risk of injury resulting in a hospital admission for Māori was higher in four out of five Midland DHBs.

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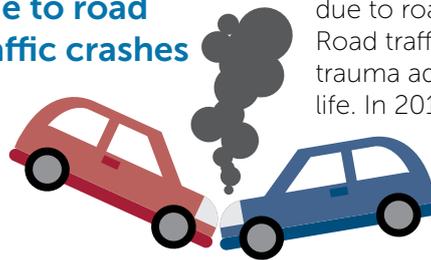


# 7047

hospital admissions in 2018 as a result of trauma

## 549 due to road traffic crashes

549 patients were admitted to Midland hospitals due to road traffic crashes in 2017. Road traffic crashes are a major cause of trauma admissions with serious threat to life. In 2017, the Midland Trauma System registry recorded 549 car (and 172 motorcycle) crash casualties who were admitted to Midland hospitals.



## 299 due to quad bike injuries

299 people were admitted to hospital due to quad bike injuries between July 2012 and June 2018. Most at risk were males aged 20-35 and 50-65 years

## 689 motorcyclists admitted

689 on-road motorcyclists were admitted to hospital following a crash during 2012-2016



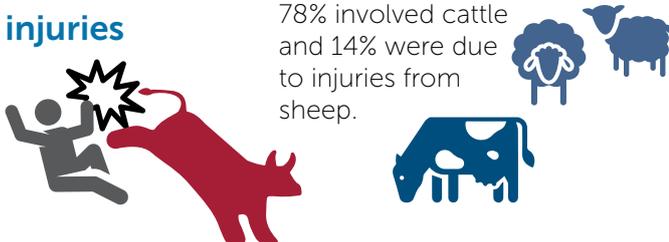
## 998 cyclists admitted

998 cyclists were admitted to hospital between June 2012 and July 2016



## 168 due to livestock injuries

168 people were admitted to hospital in the region 2012-2015 due to livestock injuries. 78% involved cattle and 14% were due to injuries from sheep.



## 701 due to equine related injuries

Over the period 2012-2016, 701 people were admitted to a Midland region hospital due to equine related injuries, and half of these required surgery. Most at risk were females. 76.6% falls, 12.7% kicked and 6.7% knocked.



# Our value proposition

Due to the high social, economic and medical burden of trauma to patients, their whānau, communities and the health system, our attention is focused on a systems approach to reducing trauma.

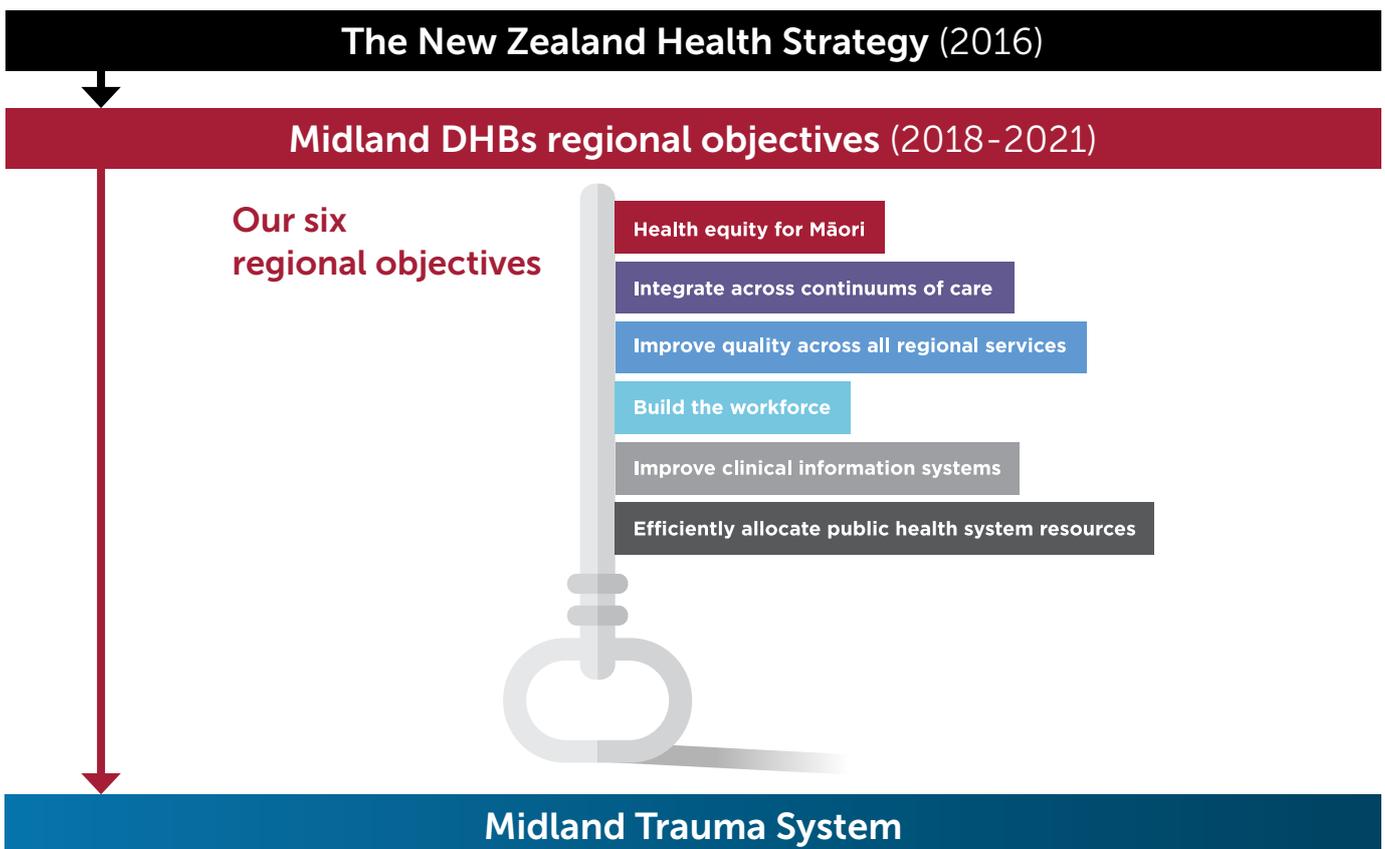
This will be facilitated through (a) continuous quality improvement of clinical care and infrastructure and (b) evidence based research that informs injury awareness and prevention.

Across the regional MTS personnel put the needs of the patient first. Clinical staff members perform clinical

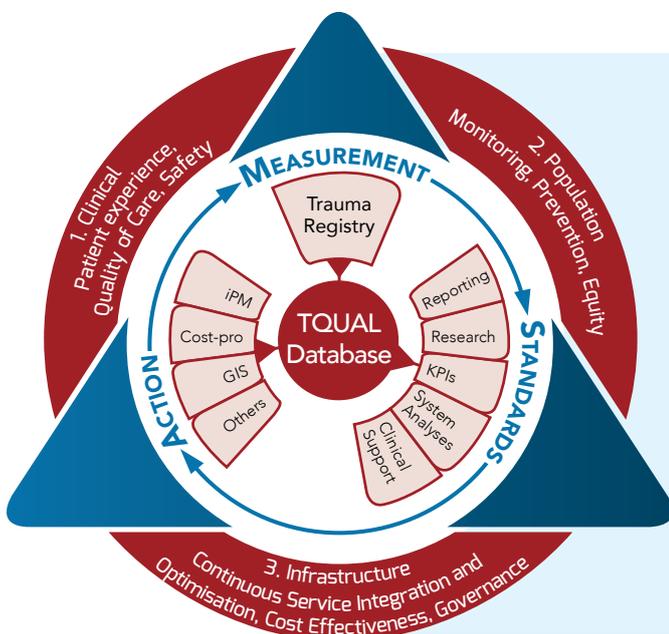
risk assessment and mitigation, collect trauma data, and facilitate local trauma committees to enable quality improvement initiatives.

The hub group manage the regional database; develop guidelines and protocols; identify and action system change; and support the activities of clinicians and the MTRC.

Team members contribute their various skills to national and international bodies engaged in trauma quality improvement and resource planning.



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The MTS has four strategic aims, reflected in the Midland Regional Service Plan, to which our research is aligned;

1. Improve the delivery of equitable, high quality and patient-centered clinical care to trauma patients and their whānau
2. Develop, implement and maintain trauma system infrastructure; including workforce and information systems
3. Support injury prevention and awareness by identifying inequities and groups at risk
4. Establish a Trauma Quality Improvement Program (TQIP) to enable evidence-based change that is clinically relevant and cost effective

# Our research themes

## THEME ONE

### Delivering high quality clinical care to all regional trauma patients

Effective and transparent reporting and analysis of clinical quality data will encourage discussion within the regional network and help us to prioritise areas for improvement. This theme is also closely aligned with adopting nationally (and internationally) consistent best practice; leading to fewer adverse events, better health outcomes, reduced harm and cost, and greater transparency within our regional trauma system.

#### Research objectives

- Implementation and monitoring of regional trauma guidelines.
- Support improved clinical outcomes through the implementation of appropriate staging and transfer to hospitals best able to meet the treatment needs of major trauma patients.
- Establish clinical evidence through process indicators to monitor and improve decision making at all stages of the trauma journey.
- Undertake regional case reviews for training and education purposes.
- Develop targeted and achievable research opportunities for clinical student projects.

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The delivery of consistent high quality clinical care will improve the patient and whānau experience, reduce harm and mortality and reduce unwarranted variation in patterns of care.

## THEME TWO

### Developing the regional trauma system with targeted process and infrastructure improvements

Inclusive trauma systems benefit all those injured who require hospital treatment. The benefit starts with patients receiving the right pre-hospital care for the injury they have. Benefits should continue during hospital care and then through inpatient rehab and post discharge. Quality and safety markers are a mix of structural, process and outcome measures designed to track the sector's progress against targets.

#### Research objectives

- Benchmarking and regular auditing of clinical trauma processes.
- Establish and monitor major trauma transfer and destination processes.
- Work collaboratively to establish appropriate bi-national measures with our Australian colleagues.

Evidence based and appropriately targeted process and infrastructure improvements will improve the patient and whānau experience, improve health equity, reduce harm and mortality and reduce unwarranted variation in patterns of care.



## THEME THREE

### Improving injury awareness and prevention

There are opportunities using the MTS registry data to identify population groups who are at particular risk of injury and to build evidence for collaborative and targeted intervention. A focus will be on reducing health inequalities which affect a range of population groups including Māori, Pacifica, people with disabilities, rural and the elderly.

#### Research objectives

- Identification of equity and access discrepancies within the Midland region population.
- Safer vehicle use – on the road, farm and for recreation.
- Raise awareness of injury and prevention opportunities for vulnerable road users (including pedestrians, cyclists and motorcyclists).
- Reducing the burden of occupational and rural trauma.

Working collaboratively to increase awareness of injury risk, and taking opportunities for preventative activities will improve health equity and reduce (or prevent) harm and mortality.

## THEME FOUR

### Improving outcomes following traumatic injury

For those who survive traumatic injury with major injuries requiring complex, multidisciplinary care there are often long recovery periods and potentially long term disabilities. To improve outcomes (short, medium and long term) for those who are injured we need to understand the journey from their perspective much better. The goal is to improve the individual's and the whānau experience by measuring baselines in perceptions of trauma services and treatment.

#### Research objectives

- To better understand the individual and whānau experience of the trauma journey, including after people have left the hospital environment.
- To understand the clinical journey in order to improve it by using outcome information in a new way to target improvements.

Gaining a better understanding of the patient perspective will improve the patient and whānau journey and reduce unwarranted variation in health care.

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# Future opportunities

This plan sets the strategic direction and agenda for our research over the next three years. The objectives outlined here will be translated into programs of work with clear accountabilities and timelines that will be reflected in the MTRC work plan. The performance of the research programme will be monitored through the Midland RSP.

#### We see opportunities to:

1. Contribute to a more equitable, efficient and higher quality healthcare system in the Midland region;
2. Work together with patients, whānau and clinicians to improve the trauma journey for those who are injured;
3. Grow research partnerships through targeted collaboration with 'safety' partners and agencies;
4. Deliver evidence based research in more user friendly formats to a variety of decision makers;
5. Work with others to translate knowledge into injury prevention and education opportunities – including making better use of trauma data through links with university based researchers;
6. Contribute to the Major Trauma Clinical Network, the ongoing development of trauma systems across New Zealand, Australia and the Pacific as well as engaging with international trauma prevention groups to share knowledge and maximise benefits.

# Achievements

## Selected milestones

Better workforce	We have established specialised clinical positions in all five Midland region DHBs.
Happier patients	Reduced mortality and length of stay, and improved patient satisfaction.
Network	We have established a regional network for clinical communication, case reviews and quality improvement.
Trauma registry	We have recorded the clinical journeys of over 44,000 patients since 2011 in a web-based registry.
Policies	We have established a formal, regional data-use policy for research and audit purposes.
Accreditation	We have facilitated formal quality accreditation through the Royal Australian College of Surgeons (RACS) Trauma Verification Programme.
Guidelines	We have worked in collaboration to develop and implement Regional Trauma Guidelines and referral matrices.
Partnerships	We continue to develop partnerships in injury awareness and prevention.

## Published research (2017-2019)

8

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