



**MIDLAND**  
**TRAUMA SYSTEM**

RESEARCH CENTRE

[www.midlandtrauma.nz](http://www.midlandtrauma.nz)

# RESEARCHER'S GUIDE

for clinicians, academics and students

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# INTRODUCTION

The Midland Trauma Research Centre (MTRC) is keen to work collaboratively with researchers to improve the burden of trauma for the midland community.

Time and resources are precious commodities for everyone and so it is important to us that any research undertaken is completed and the agreed goals are met. To this end we will work with you to keep things on track and ensure information is supplied in a timely fashion and within agreed timeframes.

This booklet is designed to provide you with information about us and what we do, the Midland Trauma Registry (which is the source of our data) and how to get started on research with the MTRC. It is important that research undertaken will benefit the community.

We would be very happy to answer any questions and look forward to working together on your project.

# CONTACT DETAILS

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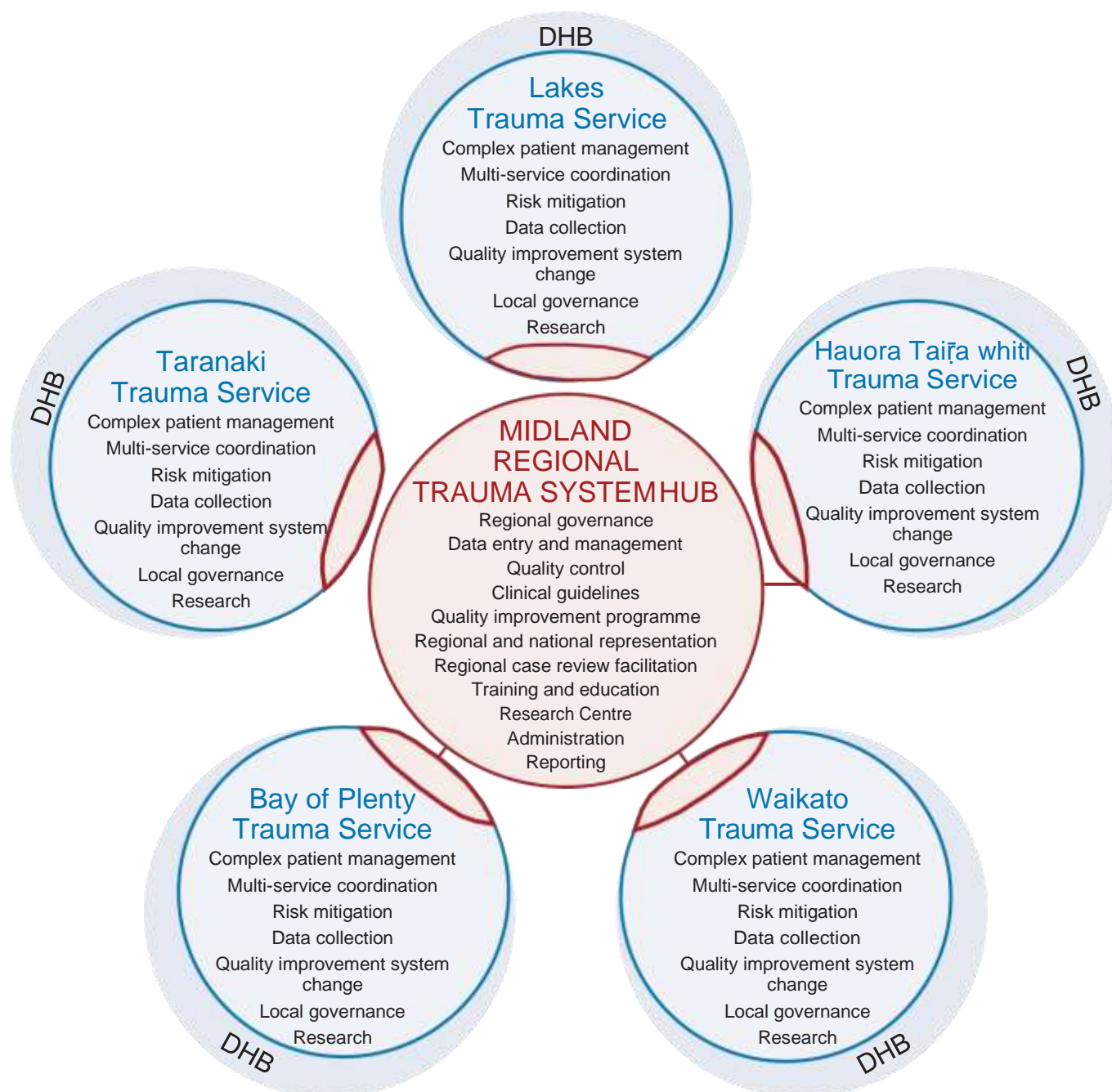
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# THE MIDLAND TRAUMA SYSTEM



The Midland Trauma System (MTS) is a network of specialised, clinical personnel, supported by a team at hub services, committed to ensuring the application of best practice in trauma care across five district health boards: Bay of Plenty, Hauora Tairāwhiti, Lakes, Taranaki and Waikato.

## MTS VISION

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

## MTS MISSION

The Midland Trauma System will improve clinical trauma care, reduce incidence of injury and enable safer, more efficient systems along the trauma journey.

## MTS 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

The clinical team reviews trauma patients perform clinical risk assessment and mitigation practices, collect trauma data, and facilitate local trauma processes to enable quality improvement initiatives.

The MTS hub team, based at Waikato DHB, manages the regional database; develops and manages clinical guidelines and transfer protocols; identifies and actions system change; supports quality improvement activities; and supports the activities of MTS clinicians and the Midland Trauma Research Centre. MTS members contribute to national and international bodies engaged in trauma quality improvement and resource planning.

The Midland Trauma Research Centre (MTRC) aims to produce clinically relevant research that impacts the community by facilitating collaborative relationships with all researchers.

The MTRC supports project-only research; we enter into partnerships for specific projects rather than to release raw data to external parties. The use of Registry data is subject to rules that protect patients, organisations and researchers. It is expected that all data users understand and abide by the MTS Data Use Policy (found at [www.midlandtrauma.nz](http://www.midlandtrauma.nz)). The MTRC works closely with the Waikato DHB to fulfil legal and ethical responsibilities.

The MTRC operates within a “5 Safes” framework.

**Safe people:** All recipients of MTS data must be authorised by the Midland Trauma Research Centre as per the MTS Data Use Policy. All potential conflicts of interest must be declared by researchers.

**Safe projects:** The MTRC works together with researchers to ensure the projects are suitable and managed to a high standard.

**Safe settings:** Prior to the start of the project, use of the registry data is authorised for agreed projects only.

**Safe data:** The Registry data has been processed and checked for accuracy. Any potential for harm is assessed and discussed.

**Safe output:** The MTRC and researcher agree the type of output prior to the project starting.

# THE TRAUMA REGISTRY

The primary information resource for the MTRC is the Midland Trauma Registry which contains trauma-related data on admitted patients from the Midland DHBs. The registry is administered by the MTS hub group on a secure server at Waikato DHB.

A standardised set of registry data is collected by trained clinical staff from all patients admitted to Midland hospitals that meet the criteria listed below. This data is entered via a web portal on the Midland Trauma Registry where data quality, management and storage are provided by the MTS hub staff. Data quality is assured by multiple checks on completeness and accuracy throughout the data management process, to ensure that all information arising from the registry is true and reliable. Registry data is an extension of the clinical records of patients and therefore privacy regulations apply. The registry meets national standards for data security and privacy. The Midland Trauma Registry meets national standards for data security and privacy and has attained HISO10029:2015 (Health Information Standards Organisations).

## REGISTRY INCLUSION AND EXCLUSION CRITERIA

### Inclusion criteria

- Admission to an MTS in-hospital bed as a result of, and within seven days of the injury
- Death in hospital following injury (including deaths in the emergency department)

### Exclusion criteria

- Trauma patients seen and discharged from the emergency departments.
- Injuries attributable to documented pathological processes such as osteoporosis, osteopenia, metastatic disease, etc.
- Isolated peri-prosthetic fractures
- Exertional injuries (e.g. tendon rupture not associated with external force)
- Hanging, drowning without evidence of anatomical injury
- Poisoning
- Foreign bodies that do not cause anatomic injury
- Patients admitted primarily for pre-existing medical conditions (e.g. epilepsy, syncope, Parkinson's) and who are not admitted directly as a result of their injuries, (e.g. syncope / collapse causing laceration to forehead).

## REQUESTING DATA FROM THE TRAUMA REGISTRY

The Data Registry Fields (appendix 2, page 9) are for your information only. The request for data will form part of the discussion at step 3 of the research process and will be mutually agreed. The following details are intended as a guide only; however, the MTRC will authorise the final selection of registry data.

We can provide

- Data from January 2012 to the most current data available, subject to lag for data entry, cleaning and audit processes i.e. data will not be available to the present time. Allow up to six months retrospectively for this process.
- Data for the five district health boards in the Midland Region: Bay of Plenty, Hauora Tairāwhiti (data available from July 2014), Lakes, Taranaki and Waikato.
- Fields listed in Tables 1 to 9.

We cannot provide

- Individual patient information (e.g. NHI number, name), except in unique circumstances.
- Registry data in bulk.

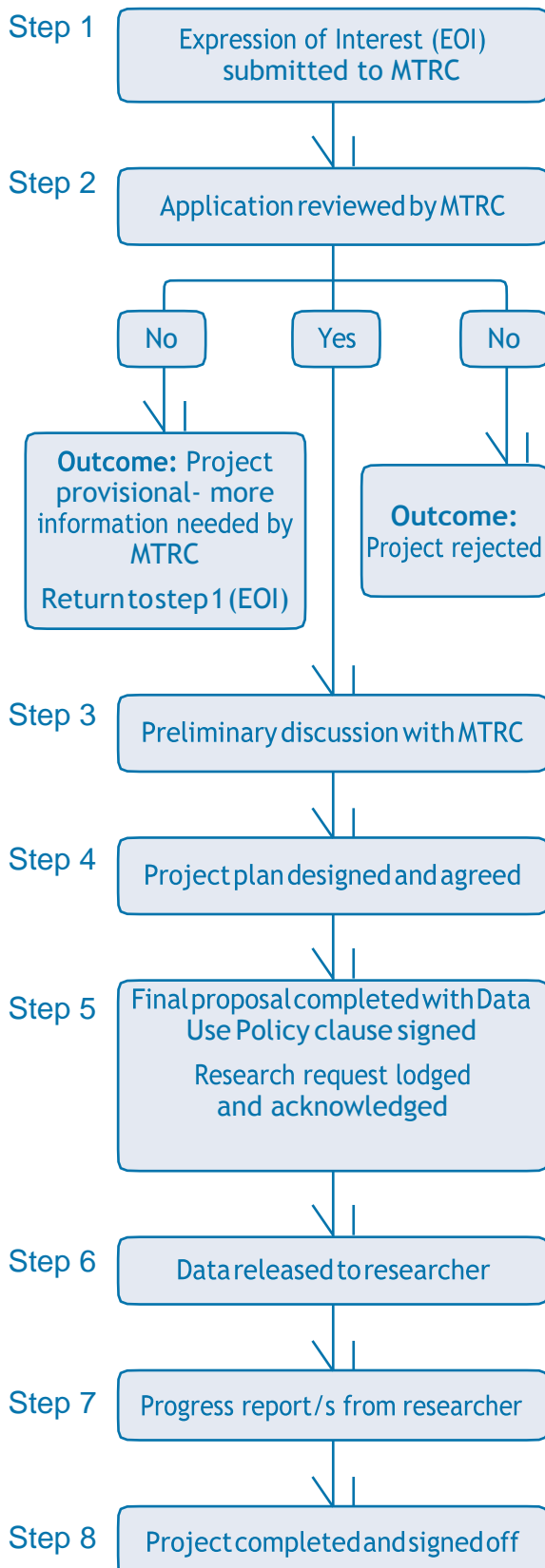
Additional data is available in some circumstances

- From mid-2006 to April 2012.

# THE RESEARCH PROCESS

Prior to conducting any research with the MTRC written approval is required.

The following flowchart provides an overview of the process to register your research interest in accessing registry data. Each step is explained in more detail on the following page. Every application will be considered on a case-by-case basis.



**Step 1: The Expression of Interest form:** (complete online at [www.midlandtrauma.nz](http://www.midlandtrauma.nz))

- is designed to ensure you have a well-developed project at this early stage. Submission to MTRC.

**Step 2: MTRC options are to:**

- accept the project and proceed to step 2 of the process OR
- defer the project as more information is needed OR
- reject the project as unsuitable.

**Step 3: Preliminary discussion with MTRC**

- If the project is accepted this step may or may not be necessary depending on the scale of your project. We are seeking to ensure the project is in line with the MTRC vision and suitably developed for the final proposal. This will entail discussion on the data needed, ethics, timeline, progress reports, milestones, and outcomes.

**Step 4: Project plan designed and agreed**

- Project resources allocated and timelines defined.

**Step 5: Final proposal**

- The Final Proposal Form (appendix 3, pages 11-12) contains more information and this step includes reading and signing the Data use policy.

**Step 6: Data extracted**

- Sent via email and if necessary as a secure password-protected file.

**Step 7: Progress report/s**

- Regular Progress reports, including mutually agreed milestones, will be submitted by the researcher (appendix 5, pages 18-20).
- Draft revisions are circulated and expected to be returned for further processing within agreed timeframes.

**Step 8: Project completion and MTRC sign off**



## Appendix 1: Requirements for online documents

### EXPRESSION OF INTEREST

- Name of researcher / principal investigator with date, email address, phone number and affiliation.
- Name/s of collaborators, principal investigators or co-authors (include email addresses).
- Type of output: Academic publication, audit, local report, annual report, national report.
- Project title (up to 15 words).
- Abstract / executive summary (up to 250 words).
- Research question/s.
- Methodology.
- Explain how this will make a difference to the burden of trauma.
- Expected publication/s or output.
- Expected time timeframe for the entire project with dates of milestones.

### FINAL PROPOSAL

This proposal needs to be printed, signed (by all researchers), scanned and returned to [MTS@midlandtrauma.nz](mailto:MTS@midlandtrauma.nz).

- Date
- Project title
- Name of researcher / principal investigator with date, email address, phone number and affiliation
- Name 1: Proposed co-author with date, email address, phone number and signature
- Continue for as many names as needed

### PROGRESS REPORT

- Date
- Project title
- Name of researcher / principal investigator with date, email address, phone number and affiliation
- Aims
- Progress update: With reference to the above have your stated aims been met? Please indicate how the plan has been fulfilled and outline any difficulties that may have affected your progress
- Supervisor's comments (where applicable)



## Appendix 2: Trauma Registry Fields

The following tables are provided for the researcher's information only. The fields are arranged in chronological order from trauma event to discharge from the emergency department.

*Italics provide further detail.*

TABLE 1	PERSONAL
1	Name
2	NHI number
3	ACC number
4	Age
5	DOB
6	Gender
7	Ethnicity
8	Employment Status
9	Occupation
10	Homeless
11	Area of residence (Domicile code)
12	District
13	Tourist
14	Home Country
TABLE 2	EVENT Information
15	<i>Event: date, time, month</i>
16	Cause of injury: Mechanism Description: <i>free text description of event</i>
17	Cause of Injury: ICD-10 codes: <i>Primary Injury cause, secondary injury cause</i>
18	Injury type
19	Injury Intent: <i>accidental/deliberate</i>
20	Place of Injury: <i>ICD-10 code</i>
21	Activity when Injured: <i>ICD-10 code</i>
22	Height of Fall
23	Injury location: Domicile, district, country: geographic location
24	Position of person in vehicle
25	Location of impact on vehicle <i>eg right rear, roof</i>
26	Restraints in vehicle
27	Airbag
28	Equipment Type: <i>safety equipment used by patient at time of injury eg helmet, eye protection</i>
29	Trapped in/under vehicle: <i>yes/no</i>
30	Minutes trapped
31	Loss of consciousness: <i>yes/no</i>
32	Loss of consciousness: <i>minutes</i>
33	Self-Presented at facility: <i>yes/no</i>
34	Mode of transport from scene

TABLE 3	Pre-Hospital Information FIRST SUPPORT
35	Incident number: <i>day, date</i>
36	Vehicle number: <i>only available for data prior to November 2015</i>
37	Transport Level of Care: <i>Skilled medical staff/paramedic/First responder</i>
38	Call Dispatched: <i>date, time</i>
39	Arrive Scene: <i>date, time</i>
40	Depart Scene: <i>date, time</i>
41	Arrived Destination: <i>date, time</i>
42	Intercept for transport
43	Vitals recorded: <i>date, time,</i>
44	Triage Status: <i>temperature</i>
45	Paralytic Agents
46	Intubated
47	Intubated type
48	Sedated
49	Respiration Assisted
50	Respiration Assisted Type
51	Oxygen Saturation
52	Pulse Rate
53	Blood Pressure
54	Unassisted Respiratory Rate
55	Glasgow Coma Score Total
56	Vitals Revised Trauma Score
TABLE 4	INJURY TO BODY REGION
57	Head
58	Face
59	Neck
60	Thorax
61	Abdomen
62	Spine
63	Upper extremity
64	Lower Extremity
65	External ( <i>Skin</i> )
66	Other ( <i>e.g. asphyxia, drowning</i> )
TABLE 5	TRANSPORT TO FACILITY
67	Transport Mode
68	Facility Name: <i>arrival date, time</i>
69	Facility Departure: <i>date, time</i>
TABLE 6	EMERGENCY DEPARTMENT PROCESS
70	Arrival Hospital
71	Arrival department
72	Admitting: <i>speciality, date, time</i>
73	Trauma Team Activation: <i>date, time</i>

74	Vitals Recorded: <i>date, time</i>
75	Facility Vitals: <i>inc blood alcohol level for Waikato only</i>
76	Triage Status
77	Temperature
78	Respiration Assisted
79	Assisted Respiration Type
80	Pulse Rate
81	Intubated: <i>yes/no</i>
82	Intubation: <i>date, time, location</i>
83	Unassisted Respiratory Rate
84	Blood pressure: <i>systolic, diastolic</i>
85	Glasgow Trauma Score: <i>eye, verbal, motor, total</i>
86	Revised Trauma Score
87	Baseline Chest X-ray : <i>yes/no, date, time</i>
88	Baseline CT Scan: <i>yes/no, date, time</i>
89	FAST Scan
90	ETOH/BAC
91	Post ED Disposition
92	ED Departure: <i>date, month, time</i>
93	Total Time in ED
TABLE 7	HOSPITALISATION
94	Hospital Length of Stay
95	Brain Assessment
96	Ventilator Days
97	Total ICU Days
98	Interval of Surgery
TABLE 8	OUTCOMES
99	Discharge: <i>department, status, date, time</i>
100	Ready for Discharge: <i>date, time</i>
101	Impediments to Discharge
102	Discharge Destination: <i>home, acute care facility, rehabilitation facility, rest-home, residential care etc</i>
103	Transfer: <i>between hospitals named facility</i>
104	Total days: <i>hospital, ventilator, ICU</i>
105	Death: <i>location, cause,</i>
TABLE 9	EVENT AND DATA SUMMARY INJURY CODING
106	ISS: <i>score, body region</i>
107	TRISS
108	ICD-10: <i>for specific data fields</i>
109	AIS: <i>severity for diagnosis injury coding</i>
110	Complications: <i>free text description</i>
111	Delay Days: <i>ready for discharge to actual discharge</i>

## Appendix 3

### TERMINOLOGY

Admission	A period of occupancy of a patient in an inpatient bed excluding Emergency Department.
Audit	Audit conducted within the Waikato DHB is defined as the systematic collection and review of objective evidence against accepted standards, to identify risks and opportunities for improvement and to provide quality assurance. Audits are fact finding and assessment exercises aimed at providing reliable, accurate information. (Research Policy, Waikato DHB).
Cause of injury	The mechanism is the means by which injury occurs e.g. road traffic crash (RTC).
Expected	Expected calculations are based on population demographics supplied by Statistics New Zealand to District Health Boards.
Event	a single incident causing injury.
Incidence	Events occurring per 100,000 people per year.
Length of Stay (LOS)	Time from admission date to final discharge date.
Outcome	Alive or dead at discharge.
Severity:	Expected calculations are based on population demographics supplied by Statistics New Zealand to District Health Boards.
Injury Severity Score (ISS)	In the AIS system individual injuries are assigned severity grades from 1 (minor) to 6 (unsurvivable) The ISS is the sum of the squared highest score in each body region. An ISS greater or equal to 13 is a major trauma case; an ISS less than 13 is a minor trauma case. The maximum ISS is 75.
Research	Research conducted within the Waikato DHB is defined as the systematic investigation and study designed to establish facts and new conclusions.
Trauma Injury Severity Score (TRISS)	The predicted probability of survival calculated from ISS scores.
Type of Injury	Blunt, Penetrating or Burn