# Major Trauma National Clinical Network

## NZ's trauma system

# THE MAJOR TRAUMA NATIONAL CLINICAL NETWORK

## What is a Network vs what is a System

NETWORK

An extended group of people with similar interests or concerns who interact and remain in informal contact for mutual assistance or support

SYSTEM

A group of interacting, interrelated, or interdependent elements forming a complex whole

# THE MAJOR TRAUMA NATIONAL CLINICAL NETWORK

In January 2012 the National Health Board approved the Terms of Reference for a Major Trauma National Clinical Network.

**Purpose and Role**

The Major Trauma National Clinical Network (the Network) provides clinical leadership and oversight to ensure that there is a **planned and consistent** approach to the provision of **major trauma** services across New Zealand. It provides advice on service and treatment issues to the Network Sponsors.

# THIS WILL BE ACHIEVED BY....

Development and implementation of an annual Network work plan to address service **quality** and delivery issues

Promoting a **nationally coordinated** and **consistent** approach to the delivery of major trauma services including the identification and implementation of appropriate sector wide communication strategies

Clinical leadership that facilitates collaborative and **inclusive relationships** with all stakeholders

**Providing advice on monitoring and auditing** of major trauma services to inform **continuous quality improvement**

**Providing advice** on other specific areas as requested by the Sponsors.

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MAY 2012

# GUIDELINES

## For a Structured Approach to the Provision of

# OPTIMAL TRAUMA CARE

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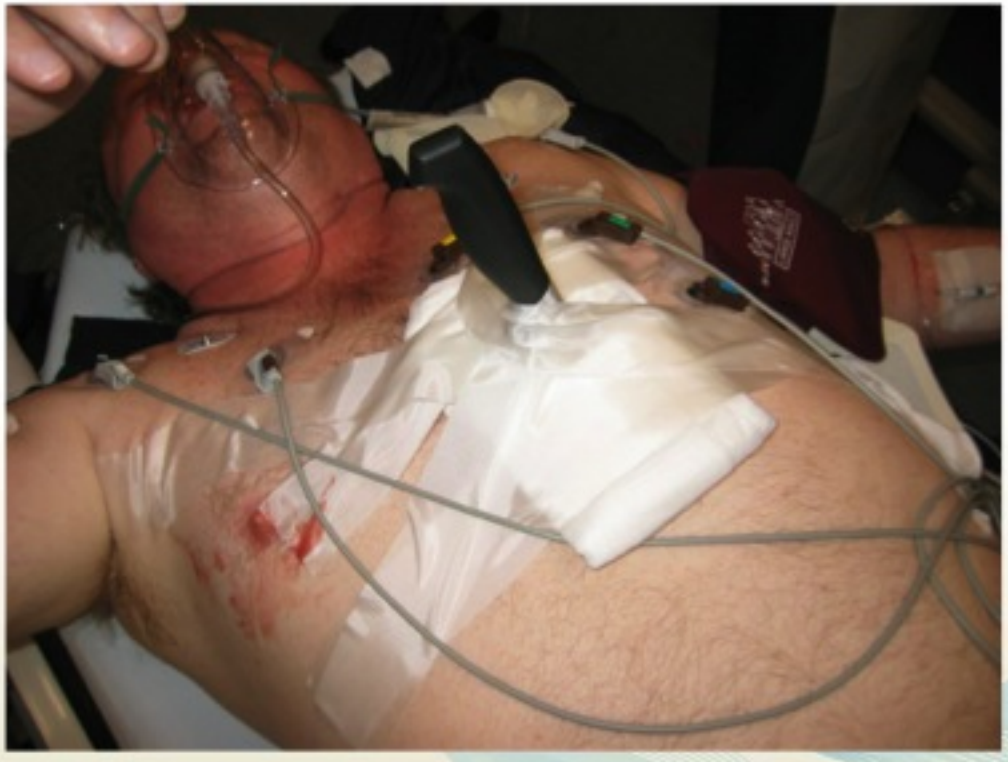
# WHAT IS MAJOR TRAUMA?

- Admission to ICU
- ISS>15
- In-hospital death



# HOW MUCH MAJOR TRAUMA IS THERE?

Box 2 – Transfer, management and outcomes of major trauma patients* in Victoria, 2001–2006†

| Characteristic | 2001–02 (*n* = 1153) | 2002–03 (*n* = 1131) | 2003–04 (*n* = 1359) | 2004–05 (*n* = 1565) | 2005–06 (*n* = 1737) |
|---|---|---|---|---|---|
| Victorian population (millions) | 4.86 | 4.92 | 4.98 | 5.05 | 5.13 |

33/100,000/year (adults and children)

# HOW MUCH MAJOR TRAUMA IS THERE?

2 Demographic and injury profile of 9769 patients with major trauma (injury severity score [ISS], > 15) in New South Wales, 2003–2007

| | 2003 | 2004 | 2005 | 2006 | 2007 | Total | $\chi^2$ test for trend |
|---|---|---|---|---|---|---|---|
| NSW population ⩾ 15 years | 5 378 000 | 5 438 000 | 5 508 000 | 5 574 000 | 5 640 000 | | |
| Patients ⩾ 15 years with ISS > 15 | 1802 | 1924 | 1993 | 2 089 | 1961 | 9769 | |
| Mortality, *n* (%) | 272 (15.1%) | 238 (12.4%) | 290 (14.6%) | 275 (13.2%) | 253 (12.9%) | 1328 | *P* = 0.07 |
| Sex*, *n* (%) | | | | | | | |

35/100,000/year (adults only)

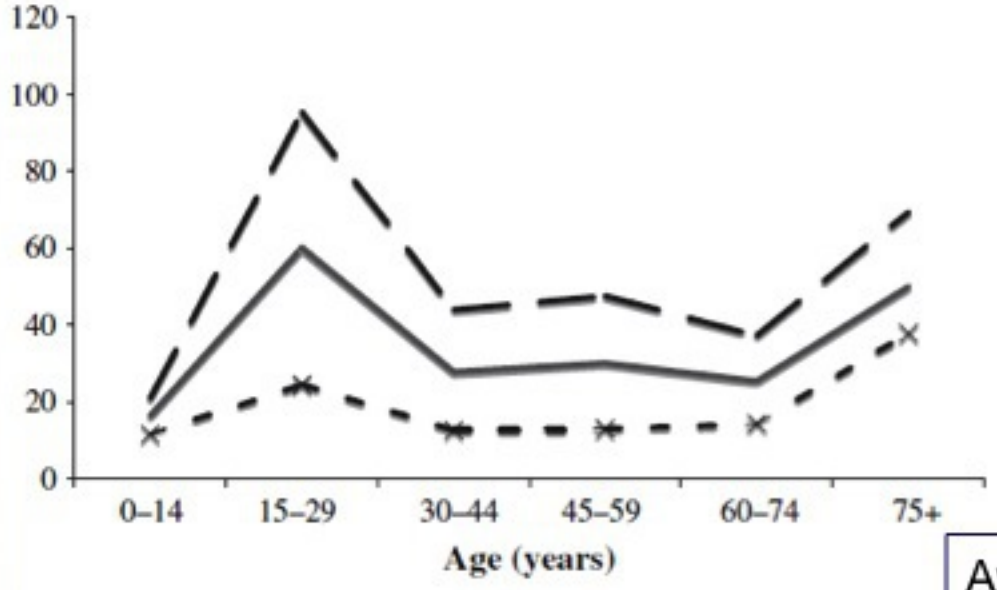



**Fig. 2.** Severe injury rates for the male and female sexes in different age groups. ——, male; – – ×– –, female; ——, total.

What about NZ as a whole ??

Average 33/100,000/year (adults only)

# SO WHAT HAVE WE BEEN DOING?

**Major Trauma National Clinical Network – DHB Visits 2012/2013**

| Name of DHB | Date of visit |
|---|---|
| Canterbury | 10 August 2012 |
| Whangarei | 29 August 2012 |
| Southern (Dunedin and Invercargill Hospitals) | 1 & 2 November 2012 |
| West Coast | 7 December 2012 |
| Whanganui | 5 March 2013 |
| MidCentral | 2 May 2013 |
| Hawkes Bay | 22 May 2013 |
| Capital and Coast | 23 May 2013 |
| Wairarapa | 28 May 2013 |
| Hutt Valley | 29 May 2013 |
| Nelson Marlborough | 4 July 2013 |
| South Canterbury | Scheduled 24 September 2013 |

# Trauma Capacity and Capability Questionnaire Analysis

***Prepared for the Major Trauma National Clinical Network, by Midland Regional Trauma System***

**Purpose**

To provide a summary of the key points observed in the Trauma Capacity and Capability Questionnaire responses.

The questionnaires were completed by 23 hospitals between August 2012 and May 2013. The hospitals surveyed are:

- Auckland City Hospital
- Christchurch Hospital
- Dunedin Hospital
- Gisborne Hospital
- Grey Base Hospital
- Hawkes Bay Regional Hospital
- Hutt Valley Hospital
- Middlemore Hospital
- Nelson Hospital
- North Shore Hospital
- Northland Hospital
- Palmerston North Hospital
- Rotorua Hospital
- Southland Hospital
- Starship Childrens Hospital
- Taranaki Hospital
- Tauranga Hospital
- Timaru Hospital
- Waikato Hospital
- Wairarapa Hospital
- Wairau Hospital
- Wellington Regional Hospital
- Whanganui Hospital

# Trauma Capacity and Capability Questionnaire Analysis

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Chart 2: The number of Emergency Department presentations[3].

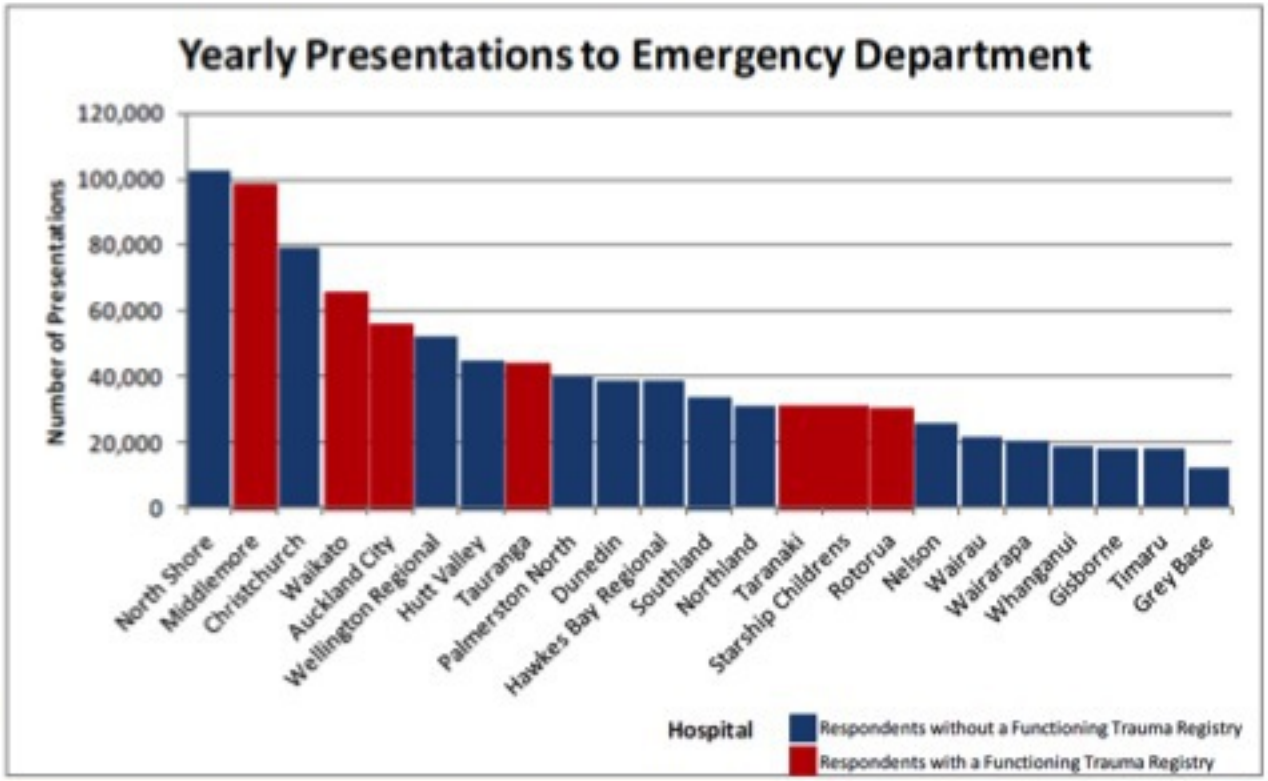

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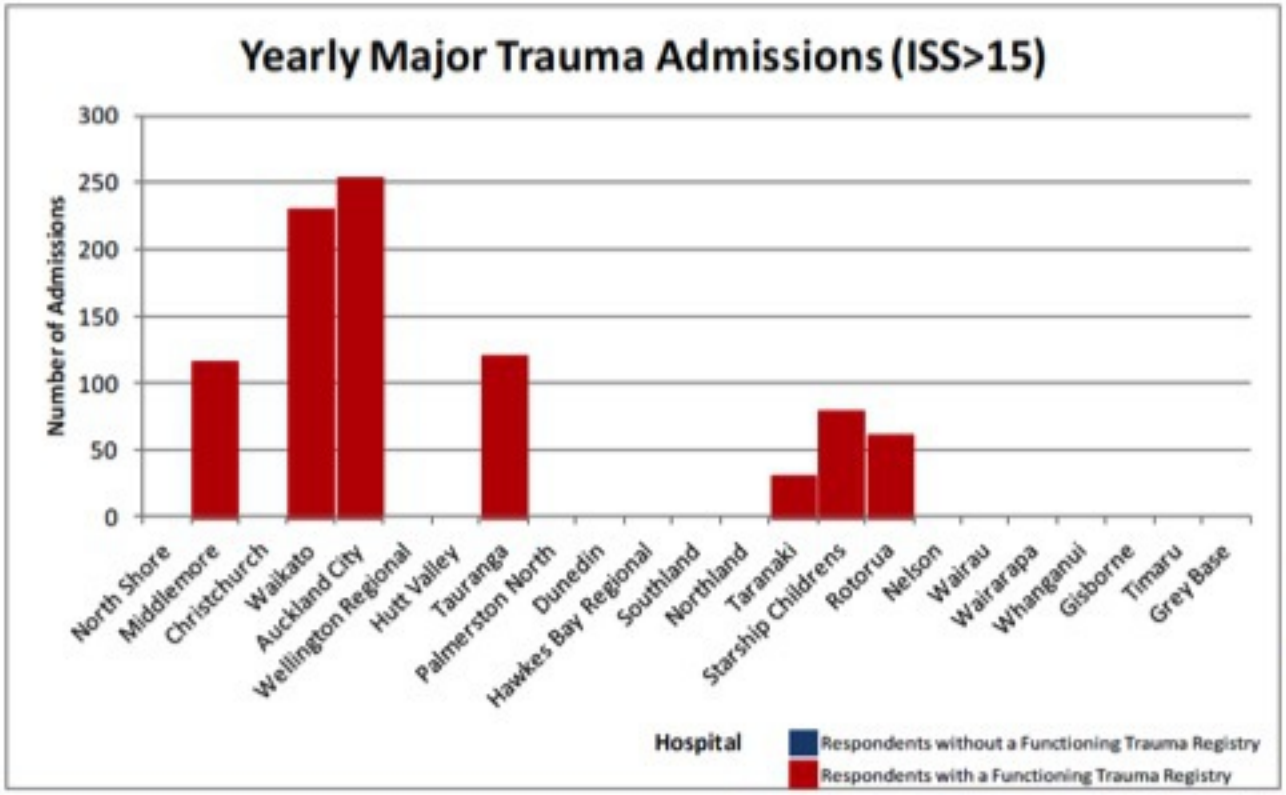
Chart 6: The total major trauma admissions if known[7].



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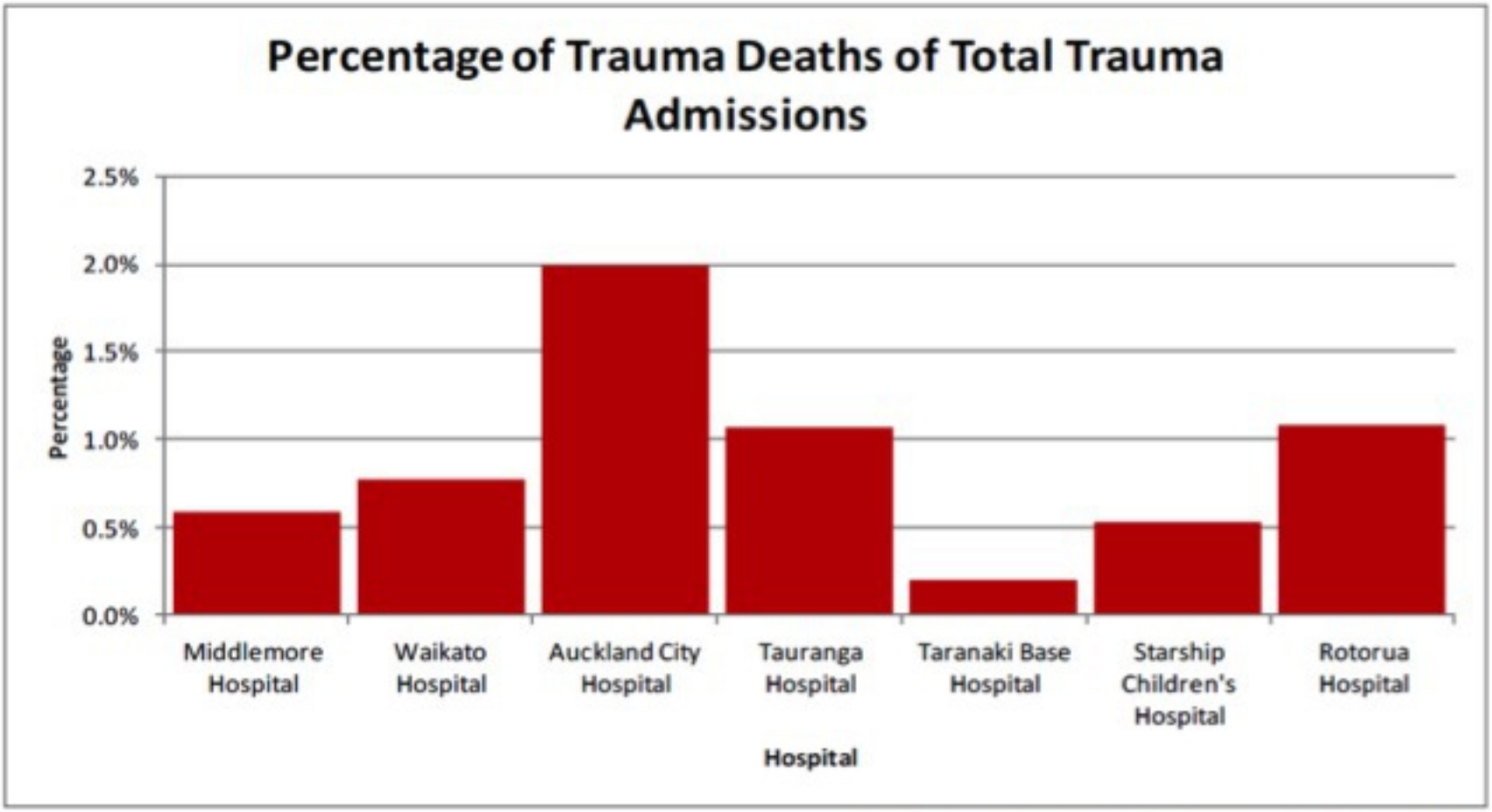

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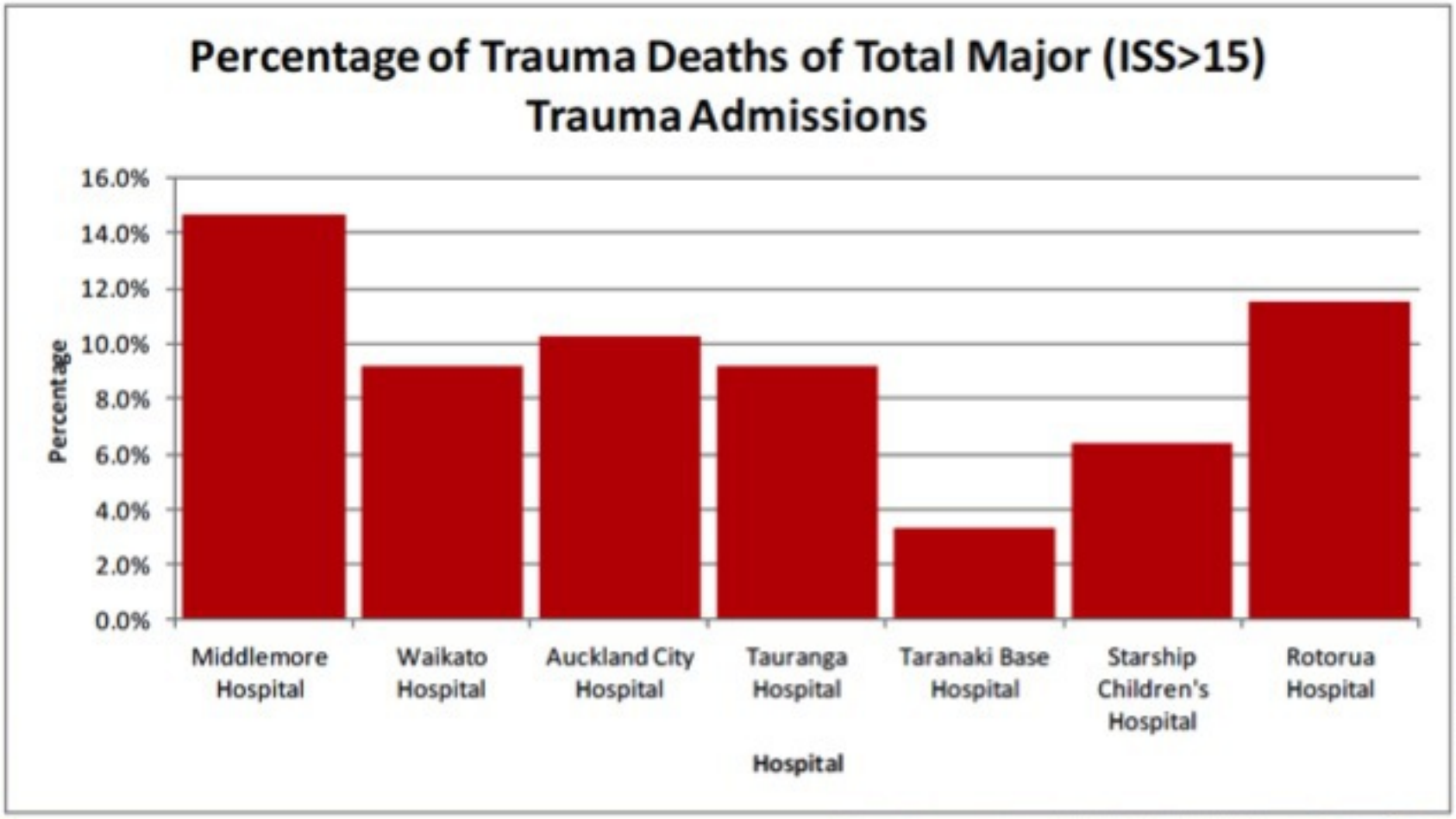

# Trauma Capacity and Capability Questionnaire Analysis

*Prepared for the Major Trauma National Clinical Network, by Midland Regional Trauma System*

**Trauma Service**

Of the 23 hospitals surveyed:

- 6 (26%) have a dedicated Trauma Service.
- 7 (30%) have a functional Trauma Registry.
- 7 (30%) have a Quality Assurance Program functioning. Of those who stated they had a QA programme functioning, common points used to describe the programme include:
    - Case reviews,
    - Loop closure of issues, and
    - Trend reporting.

# Trauma Capacity and Capability Questionnaire Analysis

*Prepared for the Major Trauma National Clinical Network, by Midland Regional Trauma System*

**Quality Assurance, Training and Research**

Of the 23 hospitals surveyed:

- 15 (65%) have a QA organisation structure.
- 10 (43%) have a multidisciplinary trauma audit.
- 4 (17%) have a Regional Trauma Audit Loop Closure process. On average this is undertaken 4 times a year.
- 8 (35%) use clinical indicators.
- 3 (13%) perform trauma outcome studies.
- 7 (30%) are involved in trauma research programs.
- 14 (61%) run trauma training programs for doctors.
- 15 (65%) run trauma training programs for nurses.
- 7 (30%) run trauma training programs for allied health personnel.
- 3 (13%) have community trauma education.

# Trauma Capacity and Capability Questionnaire Analysis

***Prepared for the Major Trauma National Clinical Network, by Midland Regional Trauma System***

When asked what was good about their trauma service; respondents[2] primarily referred to:

- Relationships within the trauma team and across departments.
- Staff commitment and skill level.
- Quality assurance.

When asked what could be improved; respondents answered:

- Increase in FTE or developing the trauma team.
- Regional and national collaboration.
- Increased opportunities for training, research and education.
- Trauma database and data gathering.

# Trauma Capacity and Capability Questionnaire Analysis

*Prepared for the Major Trauma National Clinical Network, by Midland Regional Trauma System*

When asked to list any major resource or system limitations not otherwise mentioned in the survey; respondents mentioned:

- Lack of dedicated resource or support for trauma.
- Resource limitations, however the Christchurch Hospital rebuild will address this.
- Training limitations due to clinical staff support and RMO availability.
- Access to real time trauma data.
- Hospital Emergency and ED Mass Casualty Plans require more work.
- No national or regional trauma system or co-ordination.

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# New Zealand Major Trauma Minimum Dataset (NZMDS)

| *BNTMDS number* | *Data field* | *Comments* | *Outstanding matters/field options* |
|---|---|---|---|
| 1.01 | Institution* | The references assigned to referring and final acute care centres responsible for treating the patient. | List to be developed. Each separately administered health care establishment to have a unique identifier |
| 1.03 | Incident Number | To be generated as a unique event number by each local hospital registry. Able to link back to original dataset for any linkage studies or data quality queries etc.<br>NB: this is incident specific not person specific. | Ensure this is possible at local sites and that numbers generated are truly unique. |
| 2.01 | Date of Birth | | - |
| 2.02 | Age | Derived from above if provided | - |
| 2.03 | Sex* | | M, F, indeterminate, unknown |
| 3.01 | Date and Time of Injury* | | - |
| 3.02 | Injury Cause* | | ICD10-AM |

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# LESSONS LEARNED IN THE PURSUIT OF QUALITY SURGICAL HEALTH CARE

## THE FOUR PRINCIPLES

The College has discovered four key principles required to measurably improve quality of care and increase value:

1. STANDARDS
2. INFRASTRUCTURE
3. ROBUST DATA
4. VERIFICATION

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*Inspiring Quality:*
*Highest Standards, Better Outcomes*
100 years

1. **Set the Standards:** Identify and set the highest of clinical standards based on previous outcomes and other scientific evidence that can be individualized by the patient's condition.

2. **Build the Right Infrastructure:** Have in place appropriate and adequate structures, such as staffing levels, number and type of specialists, and the appropriate equipment. More recently, checklists and information technology have become an integral component of this infrastructure as well.

3. **Collect Robust Data:** Use data from medical charts—not just from claims files—that track patients after they leave the hospital and are risk-adjusted to account for the condition of the patient, provide a clearer picture of care, and capture as many as twice the number of complications normally documented. Data should be collected in nationally benchmarked databases to allow hospitals to compare their care with that provided by other facilities.

4. **Verify through a Third Party:** Allow an external authority to periodically verify that the right processes and infrastructure are in place, outcomes are being measured and benchmarked, and hospitals and providers are proactively responding to those findings.

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# Trauma Quality Improvement Program (TQIP)

- Provides risk-adjusted benchmarking of designated/verified trauma centers to track outcomes and improve patient care.
- Utilizes the infrastructure of the National Trauma Data Bank (NTDB) to collect valid and reliable data, provide feedback to participating trauma centers, and identify institutional characteristics that are associated with improved outcomes.
- Builds upon this existing infrastructure through enhancements in the following areas: *data collection, benchmarking, and identifying structures and processes of care.*

ACS tqip TRAUMA QUALITY IMPROVEMENT PROGRAM

TQIP Participant Portal

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## Australian Trauma Quality Improvement Program (AusTQIP)

# AusTQIP Objectives

1. Foster networking between interested stakeholders in trauma quality improvement.
2. Develop and share a national map of trauma quality improvement efforts.
3. Facilitate development of quality improvement tools in collaboration with Major Trauma Centres.
4. Assist Major Trauma Centres to implement programs to improve quality of trauma services and patient outcomes.
5. Identify collaborative opportunities and measure the success of quality improvement interventions.
6. Optimise and align use of Australian Trauma Registry data for quality improvement through the standardisation of trauma data and information.
7. Scope the feasibility of risk-adjusted confidential benchmarking of performance indicators.

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# SO WHAT DO WE NEED TO DO NEXT?

- Empower and support all hospitals to fulfil all the requirements outlined in the Trauma Guidelines
- Ensure (encourage) each DHB to collect relevant data to monitor quality of care for major trauma patients
- Establish national registry to amalgamate relevant anonymised data
- Support verification process throughout NZ
- Encourage provision of educational opportunities for trauma care providers nationally and regionally
- Work with pre-hospital providers to develop and refine destination policies

# The Major Trauma National Clinical Network

- All DHBs and trauma care providers have an important role
- Benchmarked quality trauma care the goal
- Sooner, better, more convenient
- Equity across NZ