

NEW ZEALAND NATIONAL TRAUMA DATABASE



RoTES Report

- Delays in ambulance response
- Delays at accident scene
- Delays in transport
- Inadequate medical escort
- Inadequate management in Emergency Departments by junior staff
- Delayed investigation
- Delayed surgery
- Complications

Management Deficiencies and Death Preventability of Road Traffic Fatalities Before and After a New Trauma Care System in Victoria, Australia

Frank T. McDermott, MD, FRACS, FRCS (Eng), FACS, Stephen M. Cordner, MRCPATH, FRCPA, DipCrim, DMJ, David J. Cooper, MD, FRACP, FJFICM, Victoria C. Winship, BSc, and the Consultative Committee on Road Traffic Fatalities in Victoria

Background: The Consultative Committee's findings that preventable or potentially preventable (P/PP) death rates (survival prospects $\geq 25\%$) of road crash fatalities who received treatment were unaltered between 1992 and 1998 led to a Ministerial Taskforce on Trauma and the gradual introduction of a new Victorian trauma care system. The present study compares outcomes before (1997–1998) and after (2002–2004) the new system.

Methods: The emergency and clinical management and death preventability of 245 consecutive fatalities in the 'before' period and 193 in the 'after' period was assessed by the committee's multidisciplinary panels using the com-

plete hospital, ambulance, and autopsy findings.

Results: Emergency department admissions to expanded Major Trauma Services (MTS) increased from 34% to 62% ($p < 0.05$). More patients were attended by Advanced Trauma Life Support paramedics ($p < 0.05$) and scene times increased ($p < 0.05$). Patients admitted within 1 hour decreased from 70% to 45% ($p < 0.05$). The mean number of deficiencies per patient including those contributing to death was decreased ($p < 0.05$). The combined P/PP death rates decreased from 36% to 28% (22% relative risk reduction). The P/PP death rates for MTS, Metropolitan Trauma Services, Rural Trauma Services, and Ur-

gent Care Centers for 2002 to 2004 were 25%, 33%, 50%, and 83%, respectively, and did not differ significantly from those of 1997 to 1998 (23%, 49%, 36%, 75%, respectively). The P/PP death rates in MTS were less than those of the other hospital groups.

Conclusions: The new Victorian trauma care system has resulted in a significant decrease in deficiencies including those contributing to death and a decrease in P/PP death rates. The improvement has been largely consequent to a marked increase in admissions to MTS.

Key Words: Trauma systems, Preventable deaths, Management, Evaluation studies, Traffic crashes.

Victorian State Trauma System

- Preventable/Potentially Preventable Deaths
36 → 28%
- 22% relative risk reduction
- ↑↑ admissions to Major Trauma Centre





A Trauma Plan for Queensland

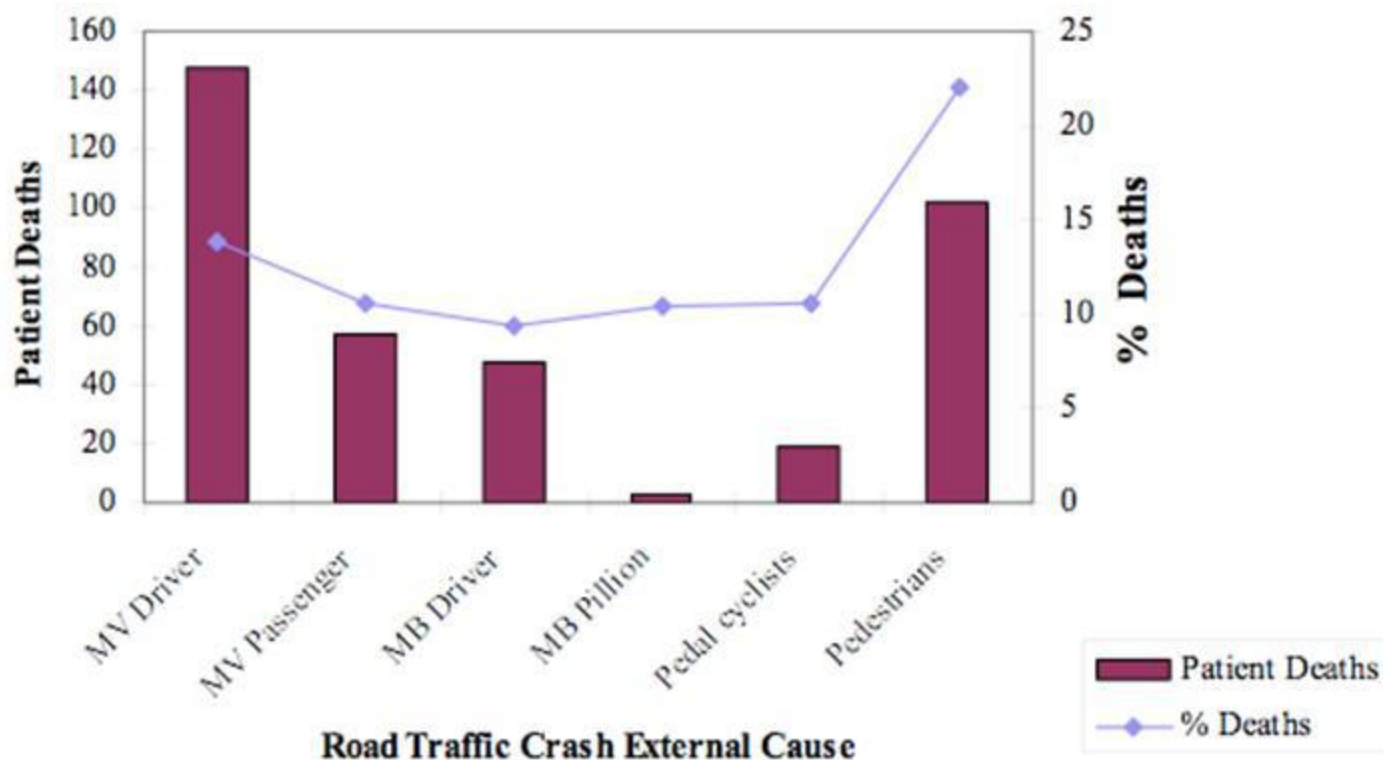


Queensland Government
Queens and Health
Department of Emergency Services

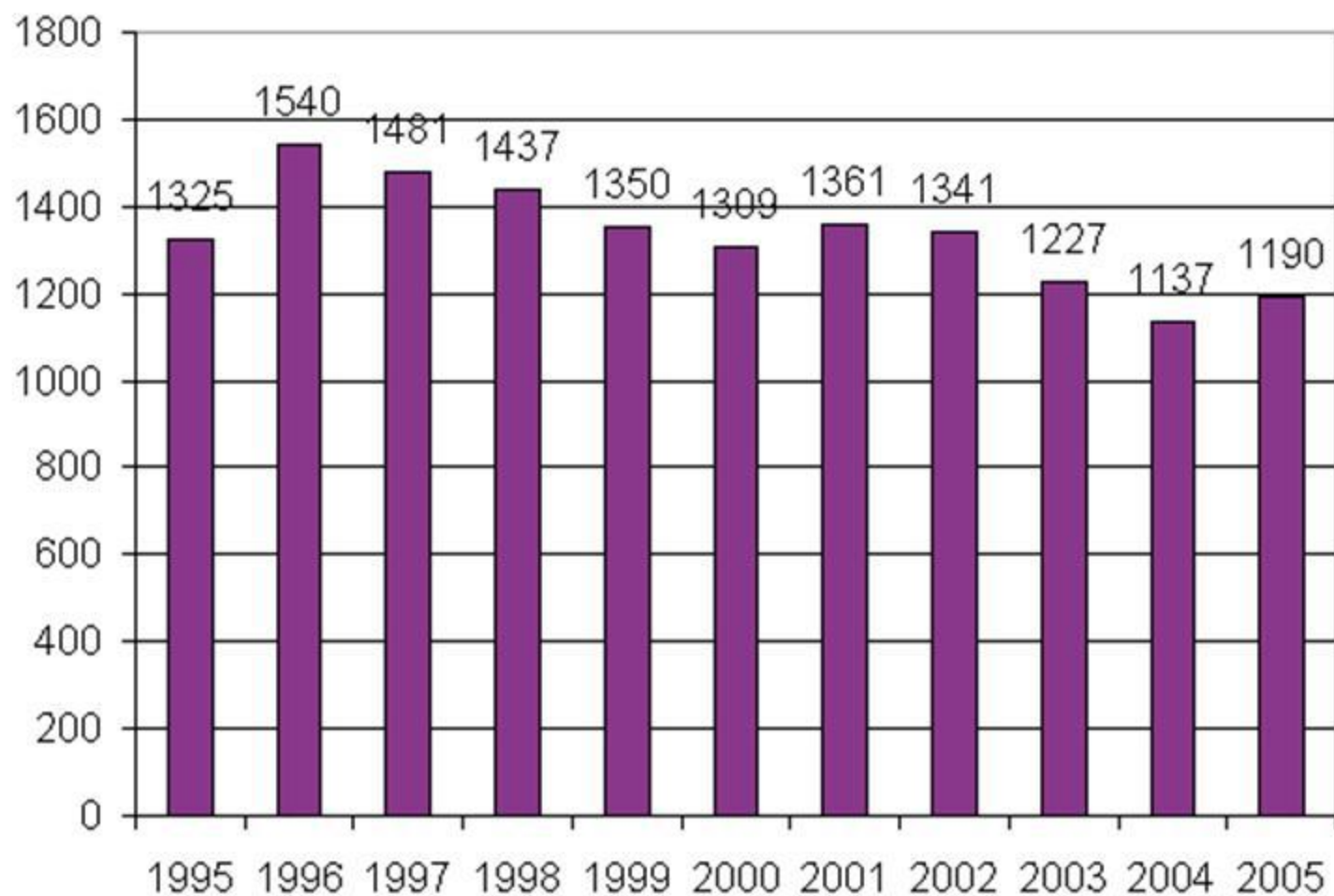


ROYAL AUSTRALASIAN
COLLEGE OF SURGEONS

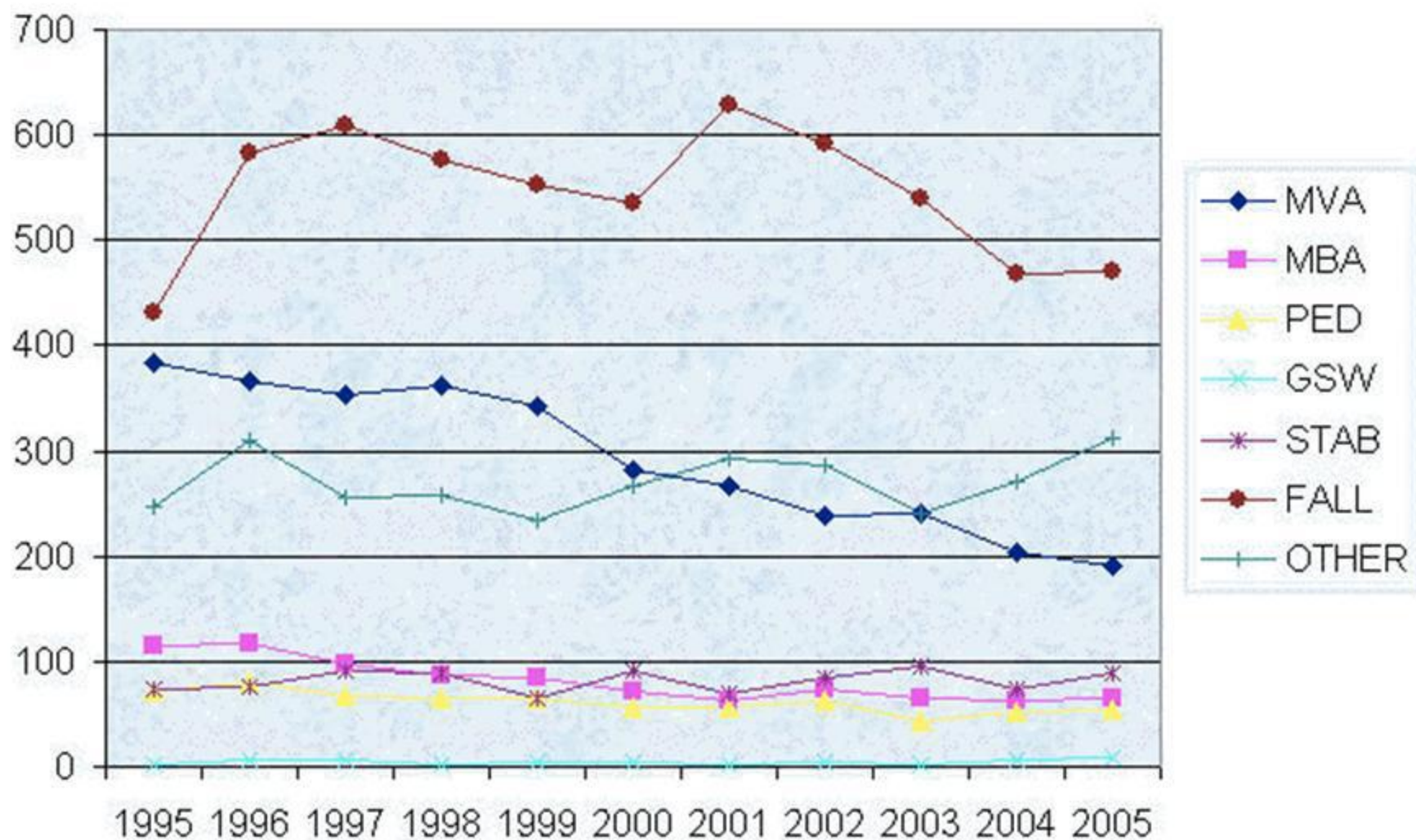
National Trauma Registry Consortium
(Australia & New Zealand)



Auckland Hospital Trauma Services



Admissions by Mechanism of Injury



Which Dataset

- 1, Full
- 2, Minimal

Data Entry

SECTION I DEMOGRAPHIC DATA

Institution Number **999999**
Trauma Number **001088**

Which Dataset **2**:

Injury Date/Time **21/01/2007 @15:00**

Cause of Injury E- **812.7**
Specify **Ran on to road and was hit by passing car**

Restraint **1** Airbag **1** Helmet **1**

Type of Activity **7** Type of Activity Detail
If Other

Place of Injury E-849. **5**
Specify **Pilkington Rd Glen Innes**

Geographic Location **1006**

Intentional Injury **1** Work Related **2** Type of Injury **1**

1 Demo 2 Prehosp 3 Acute Care 4 Clinical 5 Outcome 6 Dx PgUp PgDn

Edit Cancel ? Help 1 of 22 < < > >

Screen: F1.1 Record: 001088 Closed | Coded-90

Accident Compensation Commission

- 1995
- Hawkes Bay and Wellington
- 3-year Trauma Care Pilot
- Collector[®] Registry software





American College of Surgeons

National Trauma Data Bank® (NTDB)

[Home Page](#)

[Members Only](#)

[Table of Contents](#)

[Search This Site](#)

[Contact Us](#)

[Site Index](#)

- 1989
- Collaborative group
- 600 US Trauma Centres
- >2 million cases

Emergency Care Coordination Teams (ECCT)

- 2003
- Francis Group Consultants
- Feasibility of a National Trauma Database



information paper



PREVENTION. CARE. RECOVERY.

Te Kaporeihana Āwhina Hunga Whara

The case for a New Zealand National Trauma Database

Purpose

For over 10 years, the New Zealand Trauma Committee of the Royal Australasian College of Surgeons (RACS) has been trying to get sponsorship for a New Zealand National Trauma Database. ACC has been intermittently involved during that time but has more recently identified that there was potential benefit to the Corporation if such a system were established.

Issues



- Ministry of Health
- ACC operational needs
- Research capacity
- Ownership (ACC)
- Governance body
- Dataset
- Data collection FTEs (12 for NZ)
- Collector[®] recommended

MIDLANDS TRAUMA SYSTEM

- Project Manager
- Regional Clinical Director
- Trauma Consultant 0.1-0.2/DHB
- Trauma Nurse Coordinator 0.5/DHB
- Data Manager
- Data Entry
- Admin.



Midland
District Health Boards



Why have a NTD?

- Benchmarking
- Quality Improvement
- Injury Prevention

What data is available?

- Health Information Service (NZHIS)
 - MOH

- Statistics NZ

× Injury Severity Score **X**

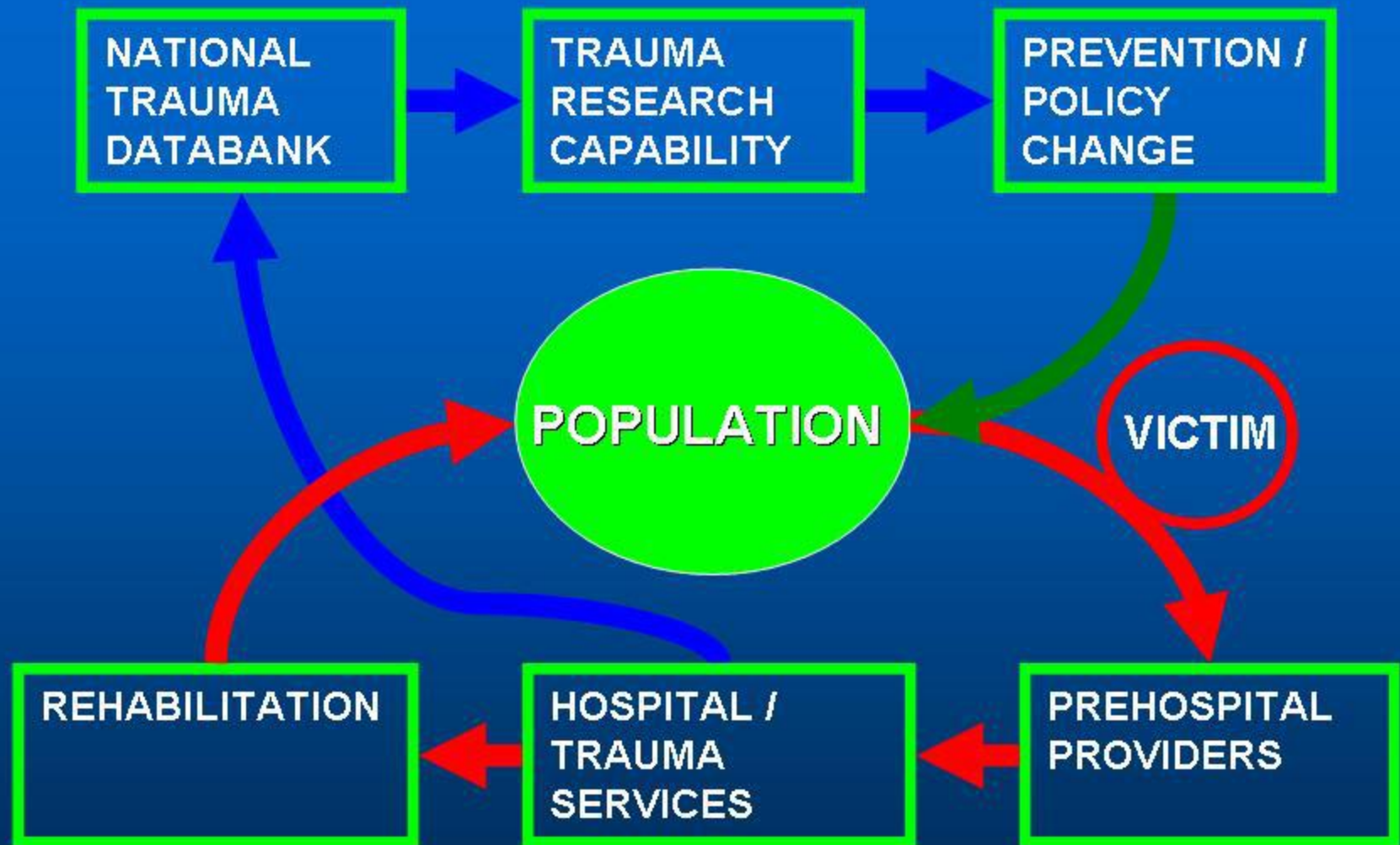
Statistical publications:

- Cancer
- Drug statistics
- Fetal and infant deaths
- Hospital events
- Maternity and newborn
- Mental health
- Mortality
- Suicide
- Workforce
- Technical documentation
- Other publications
- Newsletters

What do we need?

- National Trauma System
- DHBs to employ trauma services
- ACC to require quality from DHBs
- Public and political will

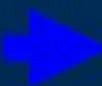
NATIONAL TRAUMA SYSTEM



Patient Flow



Information Flow



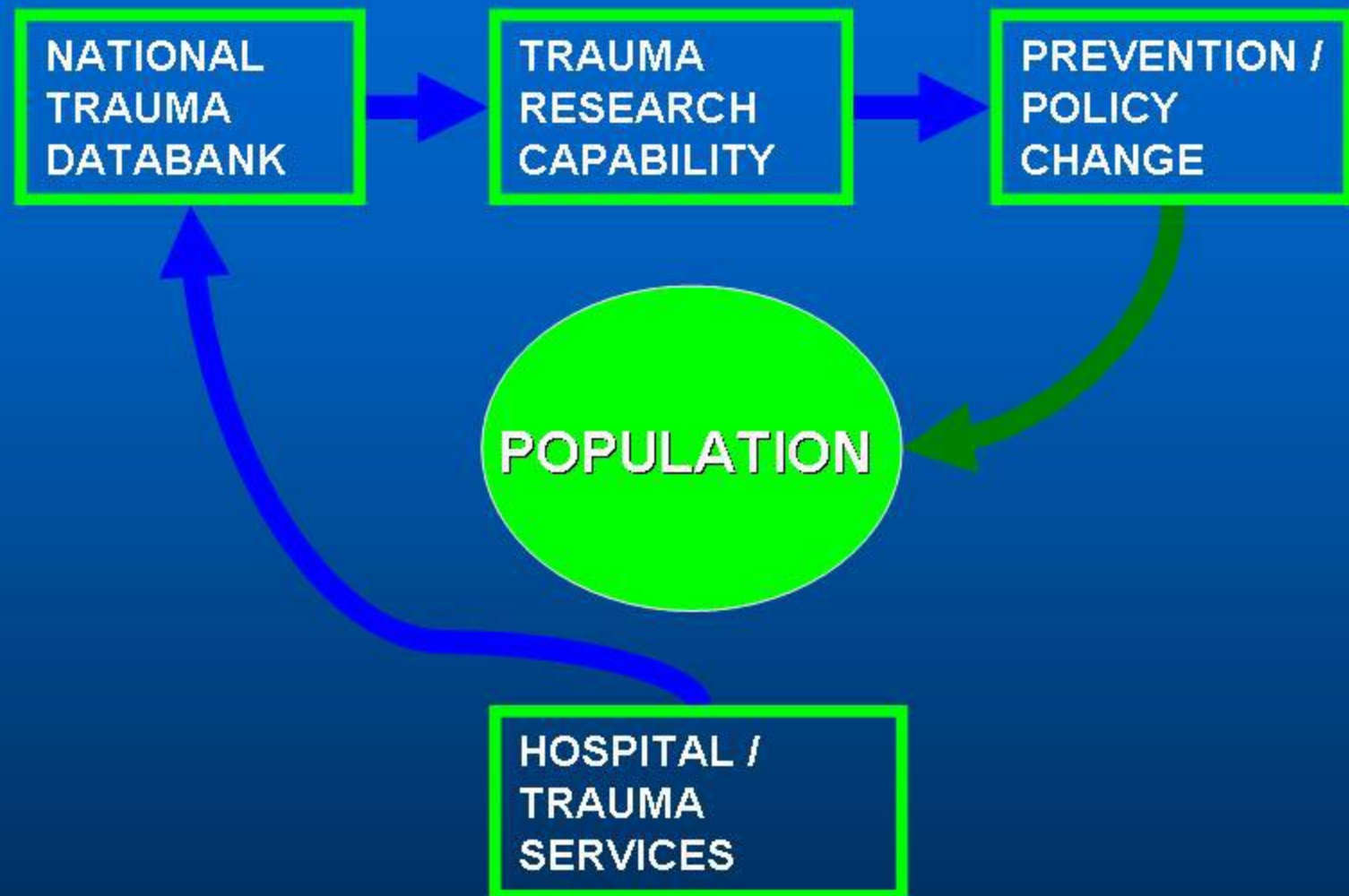
Intervention



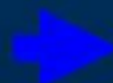
NATIONAL TRAUMA SYSTEM



NATIONAL TRAUMA SYSTEM



Information Flow



Intervention



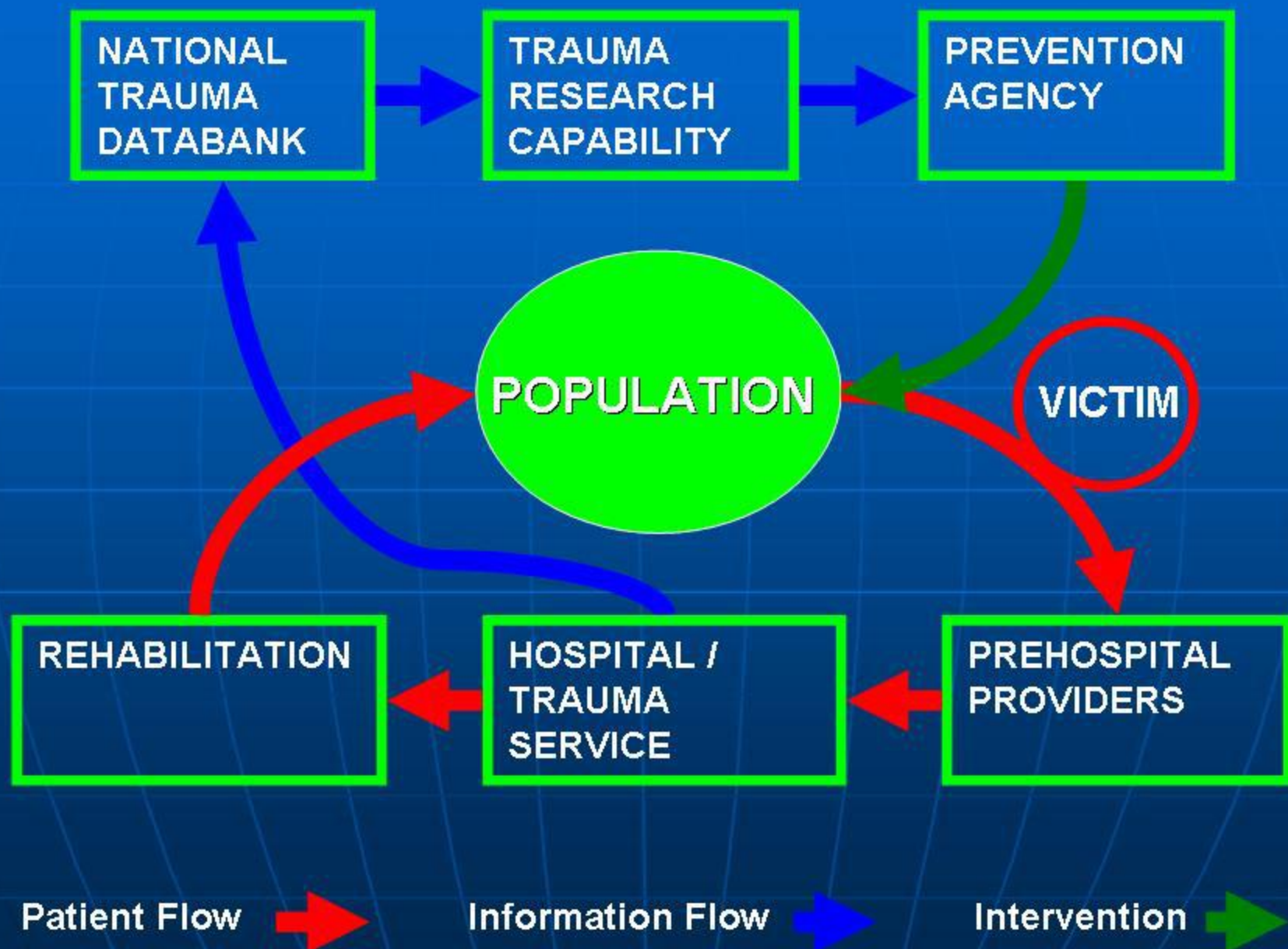
What are the goals and objectives of the NTDB?



NTDB
NATIONAL TRAUMA DATA BANK

- To improve the quality of patient care
- To provide an established information system for the evaluation of injury care and preparedness
- To develop better injury scoring and outcome measures
- To provide a rich source of data for clinical benchmarking, process improvement, and patient safety

NATIONAL TRAUMA SYSTEM



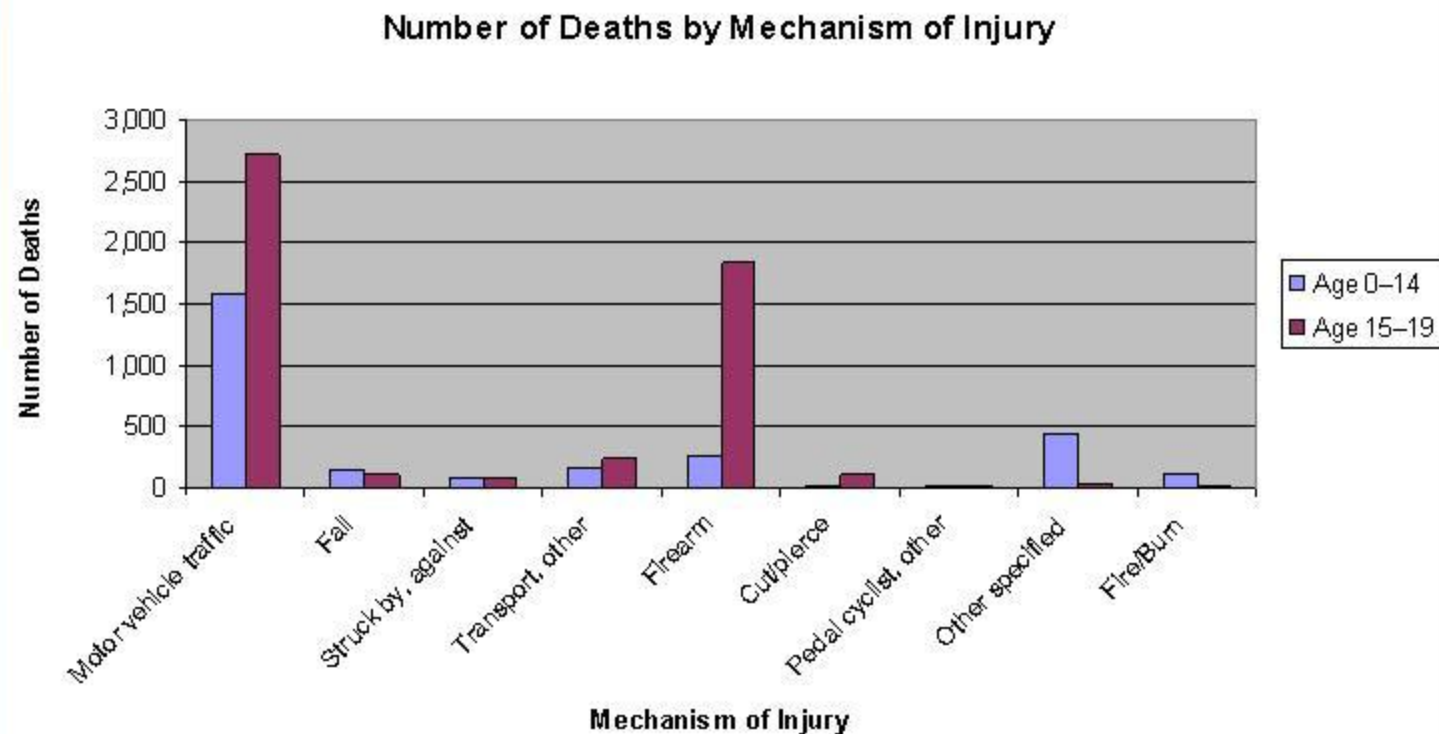


Where to now?

- Midlands Trauma System
- ACC review of funding to MOH
- Statistics NZ review of Trauma Data



Number of Deaths by Mechanism of Injury



SPECIAL ARTICLE

RESULTS

After adjustment for differences in the case mix, the in-hospital mortality rate was significantly lower at trauma centers than at non-trauma centers (7.6 percent vs. 9.5 percent; relative risk, 0.80; 95 percent confidence interval, 0.66 to 0.98), as was the one-year mortality rate (10.4 percent vs. 13.8 percent; relative risk, 0.75; 95 percent confidence interval, 0.60 to 0.95). The effects of treatment at a trauma center varied according to the severity of injury, with evidence to suggest that differences in mortality rates were primarily confined to patients with more severe injuries.

CONCLUSIONS

Our findings show that the risk of death is significantly lower when care is provided in a trauma center than in a non-trauma center and argue for continued efforts at regionalization.



☐ 1: [J Trauma](#). 1998 Oct;45(4):772-9.

Quality assessment of the management of road traffic fatalities at a level I trauma center compared with other hospitals in Victoria, Australia. Consultative Committee on Road Traffic Fatalities in Victoria.

[Cooper DJ](#), [McDermott FT](#), [Cordner SM](#), [Tremayne AB](#).

Department of Surgery, Monash University, Alfred Hospital, Melbourne, Victoria, Australia.
Forensic@vifp.monash.edu.au

OBJECTIVES: Since 1992, the Consultative Committee on Road Traffic Fatalities in Victoria, Australia, has identified problems including those contributing to death and the potential preventability of deaths in road fatalities who survived until at least the arrival of ambulance services. The present analysis examines the outcomes at a Level I trauma center compared with other hospital groups in Victoria. **METHODS:** Between 1992 and 1994, 257 consecutive eligible fatalities were evaluated. Problems in management and preventable deaths were identified at the trauma center (TC) and in pooled data from other hospital groups, i.e., specialist teaching (Level II), other metropolitan (Level III), large regional (Level III), and small regional hospitals. **RESULTS:** Mean problems identified and those contributing to death (controlled for the number of areas of care), were less frequent at TC (1.7 and 0.6) than at other hospital groups (specialist teaching, 1.9 and 1.1*; metropolitan, 3.1* and 1.6*; large regional, 3.8* and 1.8*; small regional, 5.1* and 2.6*) (* $p < 0.05$ compared with TC). Preventable and potentially preventable deaths were also less common at TC (20%) than at the other hospital groups (specialist teaching, 40%*; metropolitan, 41%*; large regional, 53%*; small regional, 62%*) (* $p < 0.05$ compared with TC). When a Trauma and Injury Severity Score of 75% or more was used to define preventable death, a similar trend was identified. **CONCLUSION:** Management of patients with major trauma at a Level I trauma center was associated with fewer problems contributing to death and fewer preventable and potentially preventable deaths than at the different hospital groups. A trauma system in Victoria, including bypass of major trauma patients to designated hospitals with 24-hour trauma services, is likely to decrease the frequency of problems, including the preventable death rates.

PMID: 9783620 [PubMed - indexed for MEDLINE]

Related Articles

- Management deficiencies and death preventable fatalities before and after a new trauma care
- Evaluation of the medical management and pre in 137 road traffic fatalities in Victoria, Austral
- Management deficiencies and death preventab Victorian road fatalities (1993-1994). Th [Aust
- Reproducibility of preventable death judgments identification in 60 consecutive road trauma fe
- The preventability of death in road traffic fatali injury in Victoria, Australia. The Consultal ☐ Cl

» See al

Victoria

- Fewer deaths at major trauma centres
- Trauma System recommended



