Parliamentary Road Safety Committee
Inquiry into Serious Injury
22 July 2013

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Departmental functions related to Serious Injury Inquiry

- Custodian of major hospital datasets which include emergency presentations and admissions for injuries treated in public and private hospitals
  * Victorian Admitted Episode Dataset (VAED)
    - 2.5 million records in 2011/12
  * Victorian Emergency Minimum Dataset (VEMD)
    - 1.48 million records in 2011/12

- Data linkage infrastructure and expertise (Victorian Data Linkages)

- Management of major trauma care through the Victorian State Trauma System (VSTS) and performance management of Victoria’s public hospital system
  - immediate impact of road and other trauma and tertiary prevention
  - insights into cost and outcomes associated with interventions
  - cost and health burden of serious injury
Focus of Department of Health’s submission

- Contribution of VSTS to best practice in managing long-term reductions in serious injury
- Role and capability in linkage of hospital data to other collections for policy development, research and reporting purposes
- Observations on methodological issues and assessment of cost-effective countermeasures
Improvement in major trauma care and outcomes since VSTS introduced

- Survival chances ("adjusted odds of in-hospital death") for major trauma patients have improved since 2001–02

Source: Department of Health. (2012). Victorian State Trauma Registry, 1 July 2010 to 30 June 2011 Summary report. Adapted from Figure 2a, p. 15.
Overall achievements:

- Implementation of ROTES recommendations is virtually complete
- Development of standard processes for triage and transfer
- 85 per cent of all major trauma patients are treated at an MTS;
- High compliance with major trauma guidelines
  - the right patient to the right hospital
- Improved outcomes:
  - Reduction in mortality rates with fewer than expected deaths;
  - Positive trends in preventable deaths;
  - Reduced length of stay in hospitals;
  - More major trauma patients being discharged home, rather than to rehabilitation;
- Wide stakeholder engagement in the implementation and monitoring of the system
- Participation of all Victorian health services in the VSTR.
What is data linkage?

Data linkage is a method of bringing together information about people, places, and events in a way that protects the privacy of individuals.

...but it is also a collaborative and tightly governed process

Data linkage is a collaborative process involving data custodians, data linkers and researchers that manages increased access to the information held by data custodians in a way that ensures that the information that is disclosed to data linkers and researchers, respectively, is limited to what they need to do their jobs.
Role clarity is important in data linkage

- **Data custodians**

  People who work within a government department or agency are responsible for the secure collection, use and disclosure of data.

- **Data linkers**

  People who work in a data linkage unit that is either within, or associated with, a government agency and create the linkage IDs that allow data to be linked within and between data collections.

- **Researchers**

  People who use the data for the purposes of analysis and research, after an extensive application process and approval by all relevant data custodians and (where applicable) a Human Research Ethics Committee (HREC).
Adding value through data linkage in health

- Increased capacity in population level linked data
- Improved knowledge and skill in the use of linked data
- Increased research
- Improved knowledge transfer through presentations, peer review publications and policy advice
- Improved ability to plan, implement and evaluate programs in health, community services and education.

IMPROVED HEALTH AND WELLBEING
How is data linked for research?

1. Acquire data necessary to map the datasets from data custodians.
2. Map identifying data from the respective datasets to identify cases that belong together.
3. Enable data custodians to approve and release service or clinical data only to data analyst(s).
4. Enable data custodians to release minimum service/clinical data (with no identifiers) necessary for project to data analyst(s).
5. Enable data analyst(s) to join up and analyse linked data.
How is data linked for research (cont)?

A short video on the process of data linkage (courtesy of SA-NT DataLink, the Data Linkage Unit for South Australia and the Northern Territory) is available at:

Agencies and content data relevant to road-related Serious Injury Policy

Data Custodians

- Australian Bureau of Statistics
- WorkCover
- Traffic Accident Commission
- Registry of Births, Deaths and Marriages
- Victorian State Trauma Registry
- Department of Health
- Ambulance Victoria
- Coroner’s Office (Victorian Institute of Forensic Medicine)
- Victoria Police
- VicRoads

ICD-coded cause of death

Claims with respect to hospital, medical and allied health care, disability, deaths

Emergency care

Injury Severity Scale scores

Functional outcomes ....

VSTS triage status

Hospital admitted episodes

Out of hospital deaths (died at scene/dead on arrival)

Out of hospital deaths (post-discharge)

In hospital deaths

Emergency care

Acute care

Rehabilitation

In hospital deaths

Out of hospital deaths

Road safety initiatives; Operational activities data;

Crash-related data (incl. person/accident/vehicle description)

Crash-related data serious injury reports

Licensing (demerit points); registration (vehicle VIN) operational (traffic signals, volume counts); road conditions (accident black spots)

Crash-related data

Toxicology data

Primary & secondary

Pre-event

Event

Post-event

Tertiary

Level of prevention

Department of Health
Best practice protocol

Principles

• To maximise the protection of individual privacy
• To provide linked data files to only nominated researchers involved in approved research projects
• To provide researchers with no more than the datasets required for their specific project
• To assure data custodians that the data they are responsible for will be used appropriately and security obligations met

Stage 1

• Memorandum of understanding (MoU) and ethics approval
• Production of the linkage key file

Stage 2

• Project approvals
• Extraction of a subset of data for each project

Some observations on evaluating cost-effective countermeasures

- A comprehensive approach to identifying, measuring and valuing costs and benefits is important to understanding the full societal impact of health and safety interventions.

- Such an approach should guide the prioritisation of new countermeasures:
  - Cost benefit and cost-effectiveness analysis take account of both inputs (resources) and outputs (changes in health and safety outcomes) simultaneously.
  - Approach builds on formal assessments of the efficacy (i.e. can it work?) and effectiveness (i.e. does it work?) of interventions.
  - Requires systematic analysis to clearly identify relevant alternatives and to measure relevant costs and consequences of an intervention.
1. Acknowledge the contribution of the Victorian State Trauma System (VSTS) to improving trauma outcomes and its ongoing role in tertiary prevention

2. Seek advice from the State Trauma Committee regarding useful classifications of measures of severe injury according to the immediacy of the purpose for which they are needed

3. Use economic evaluation as well as burden of injury and cost-of-illness approaches to inform the allocation of funding to road-related serious injury countermeasures or interventions

4. Relevant agencies should collaborate to:
   a) develop a data map across agencies with policy-relevant road-injury data collections; and
   b) identify one or two pilot linkage projects that can draw on the established data linkage capability of Victorian Data Linkages to demonstrate the policy insights that can be gained by optimising the use of the datasets held by different agencies