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## INJURY SURVEILLANCE SYSTEMS IN AUSTRALIA

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## OUTLINE

- Purpose of injury surveillance
- Three levels of severity in injury surveillance data
- Strengths and limitations of Australian systems
- Current developments at Monash
- Best buys in injury surveillance

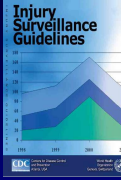
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## PURPOSE

- Injury prevention
- Needs to be closely linked to data users and policy makers
- Needs to meet injury surveillance criteria (CDC)
- Needs to fulfil the data role in the public health injury prevention model



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## PUBLIC HEALTH INJURY PREVENTION MODEL

- Injury data
- Problem definition
- Risk factor identification
- Research to identify design, organizational, behavioural solutions and benefits/cost
- Countermeasure production, implementation, regulation and enforcement, community awareness
- Injury reduction

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## DATA UTILITY IN INJURY PREVENTION

**Tool to:**

- Describe frequency, rate and nature of injury
- Describe circumstances of injury
- Monitor trends over time (and identify emerging issues)
- Assist with priority setting
- Target interventions
- Evaluate interventions
- Conduct cost of injury studies
- Identify cases for analytic research

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## LEVELS OF SEVERITY AND SOURCES AUSTRALIA

**DEATHS**

- Vital statistics
- Mortuary and coroner/medical examiner data

**HOSPITAL ADMISSIONS**

- ICD 10 AM

**HOSPITAL EMERGENCY DEPARTMENTS**

**OTHER**

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## Coronial Process – Data Sources

Information generated from death investigation includes:

**MORTUARY DATA**

- Forensic autopsy report
- Forensic toxicology report
- Specialist reports
- CT scans

**CORONIAL DATA**

- Police investigation
- Expert opinion
- Coroner's Finding

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## NATIONAL CORONERS INFORMATION SYSTEM – OVERVIEW

- National database: deaths reported to coroners since July 2000
- Over 150,000 deaths on the NCIS
- One strength is as case identification tool
- Funded by State/Territory Justice Departments and Commonwealth agencies
- Managed by VIFM

\* QLD data since January 2001

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## NATIONAL CORONERS INFORMATION SYSTEM – WHY?

- Allows death investigators to identify previous similar fatalities
- Standardized coding of coronial information
- Identifies trends, patterns and previous recommendations
- Timely access to national information for research and monitoring.

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## NATIONAL CORONERS INFORMATION SYSTEM – WHICH DATA?

- Demographic details of deceased
- Medical cause of death
- Mechanisms and objects (ICD 10 coded)
- Contextual details of incident
  - Intent
  - Case type (natural or external cause)
  - Location and Activity
- Full text reports
  - Police circumstances
  - Autopsy
  - Toxicology
  - Coronial finding

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## NATIONAL CORONERS INFORMATION SYSTEM – How does it work?

- Data entered Local Case Management Systems (8 states/territories)
- New data securely uploaded each night
- Available to users via online Web interface – coded data or keyword search of text reports
- Closed cases quality checked and feedback from users
- Privacy: controlled authorization for users and level of access

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## NATIONAL CORONERS INFORMATION SYSTEM – Classification Systems

- ICD 10 codes
  - sourced from Australian Bureau of Statistics
- Intent/circumstances/manner/activity
  - based on ICECI amended
- Geographic Codes (for residence)
  - Australian Standard Geographical Code
- Industry/Occupation Codes
  - Australia and New Zealand Industry Classification

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## STRENGTHS AND LIMITATIONS: DEATH DATA

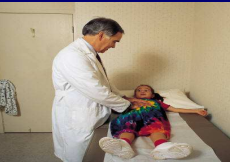
- Vital statistics provide generally complete but limited information
- NCIS: detailed information, but system is still maturing
  - state and territory discrepancies
  - ICECI cumbersome for mechanism
  - some coding refinements required
  - open case lag is problematic (also for vital statistics)

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## HOSPITAL ADMISSIONS DATA

- ICD 10 AM: expanded chapter XX
- Widely used for research and monitoring
- Reliable injury indicators established



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### Falls in buildings: hospital admissions by specific cause Australia

	2002-03	2003-04	2004-05	Total	%
Same level fall from slipping, tripping and stumbling	29,629	30,527	32,534	92,690	29.2
Slipping	10,523	10,470	11,300	32,293	10.2
Tripping	14,186	15,738	16,931	46,855	14.7
Stumbling	4,885	4,319	4,303	13,507	4.2
Fall while being carried	321	322	276	919	0.3
Fall involving wheelchair	603	441	726	1,970	0.6
Fall involving bed	6,793	6,965	7,291	21,049	6.6
Fall involving chair	3,894	4,132	4,294	12,320	3.9
Fall involving other furniture	826	904	857	2,587	0.8
Fall on and from stairs and steps	5,859	6,296	6,866	19,021	6.0
Fall on and from ladder	1,937	2,050	2,170	6,157	1.9
Fall from, out of or through building or structure	2,133	1,974	2,049	6,156	1.9
Other fall from one level to another		2,094	2,021	6,232	2.0
Other fall on same level	2,117	23,337	25,047	68,588	21.6
Unspecified fall	20,204	26,896	28,774	80,216	25.2
<b>Total</b>	<b>98,862</b>	<b>106,138</b>	<b>112,905</b>	<b>317,905</b>	<b>100.0</b>

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### Falls in buildings: hospital admissions by location Australia


	2002-03	2003-04	2004-05	Total	%
Home	60,661	66,108	70,341	197,110	62.0
Aged care facilities	14,869	17,389	19,255	51,513	16.2
Other residential institution	632	583	712	1,927	0.6
School	3,011	3,148	3,147	9,306	2.9
Health Service area	12,144	11,808	11,908	35,860	11.3
Other specified institution and public administrative area	1,112	894	942	2,948	0.9
Sporting hall (indoor)	538	601	610	1,749	0.6
Shop and store	2,289	2,521	2,675	7,485	2.4
Commercial garage	119	101	111	331	0.1
Office building	113	98	96	307	0.1
Café, hotel and restaurant	1,875	1,943	2,132	5,950	1.9
Other specified trade and service area	768	699	773	2,240	0.7
Other	734	245	203	1,179	0.4
<b>Total</b>	<b>98,862</b>	<b>106,138</b>	<b>112,905</b>	<b>317,905</b>	<b>100.0</b>

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## STRENGTHS AND LIMITATIONS: ADMISSIONS DATA

- Statistical blind-spots
- Lack of detail eg consumer products
- Activity and location coding incomplete



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## HOSPITAL EMERGENCY DEPARTMENT SURVEILLANCE

- Only one Australian state collects state-wide data; some states have partial collections
- Operating electronically in all public and private hospitals, Victoria since 1996 >2 million cases
- Includes narrative text
- Value-added features include publication *Hazard*, free information service

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### STRENGTHS AND LIMITATIONS: ED SURVEILLANCE

- Incomplete reporting
- Many narratives of poor quality
- Rates can only be estimates
- Huge range of case series data available
- Data is timely and can identify emerging hazards
- Not a priority for government or hospitals



### CURRENT DEVELOPMENTS IN SURVEILLANCE AT MONASH UNIVERSITY

- ED and defence forces system user studies
- Development of guideline for mortuary based injury surveillance
- Quality studies of vital statistic death data
- Enhancements to NCIS:
  - NZ joining
  - strategy to address discrepancies with ICD and between states
- Issue of open cases



### BEST BUYS IN INJURY SURVEILLANCE

- Use ICD 10 chapter XX for admissions
- Narrative text is essential addition to WHO injury surveillance guideline for EDs
- ED surveillance is unlikely to be effective beyond the local level
- Mortuary based injury surveillance has good prospects
- Strong partnership with data collectors and users is necessary



### STRATEGIC USES OF INJURY DATA IN-COUNTRY

- Make case for societal importance and unacceptably high cost of injury
- Advocacy tool for government policy developments and resources
- Basis for case for reducing timeframe to best practice
- Capacity to provide data on topical issues
- Availability creates media interest
- Leads to public awareness and political pressure for prevention (and data system maintenance)