

Case definition of  
serious  
non-fatal injury:  
Are we missing a material  
number of cases?

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# Background

- Operational definition of serious non-fatal injury:  
NZIPS Serious Injury Outcome Indicators:
  - Principal diagnosis S00-T78 *and*
  - First listed e-code V01-Y36 *and*
  - ICISS score  $\leq 0.941$  (6% threat to life)
- Support for alternative range of diagnoses codes:
  - S00-T75, T79 (Berry and Harrison, 2007)
- Is current operational definition too restrictive?

# Example

- Self-harm

- ✓ Principal diagnoses: brain injury

- External cause code: self-harm

- ✗ Principal diagnosis: Mental disorder

- Contributing diagnosis: brain injury

- External cause code: self-harm

# Alternative definitions

- Two were investigated:
  - A.  $\geq 1$  **injury diagnosis** in the range S00-T78; 1st E-code V01-Y36; and  $ICISS \leq 0.941$
  - B. Principal diagnosis S00-T78; **any E-code** in the range V01-Y36; and  $ICISS \leq 0.941$

# Methods

- Enumerated number of cases identified using current and alternative definition A;
- Assessed nature of cases captured using alternative definition A;
- Consulted with stakeholders to assess acceptability of alternative definition A

# Additional cases identified using alternative definition A

NZIPS Priority Areas	Current NZIPS	Additional A	Additional %	Total
Assault	6,379	133	2	6,512
Self-harm	1,594	277	17	1,871
Drowning	86	0	0	86
Falls	34,827	2,646	8	37,473
MVTC	13,335	191	1	13,526
Work-related	3,445	84	2	3,529
<i>All injury</i>	<b>69,993</b>	<b>4,704</b>	<b>7</b>	<b>74,697</b>

## Notes:

1. Additional cases have Principal diagnoses outside the range S00-T78.
2. Both current and additional cases are serious non-fatal, i.e. with ICISS scores  $\leq 0.941$

# PDx of additional cases

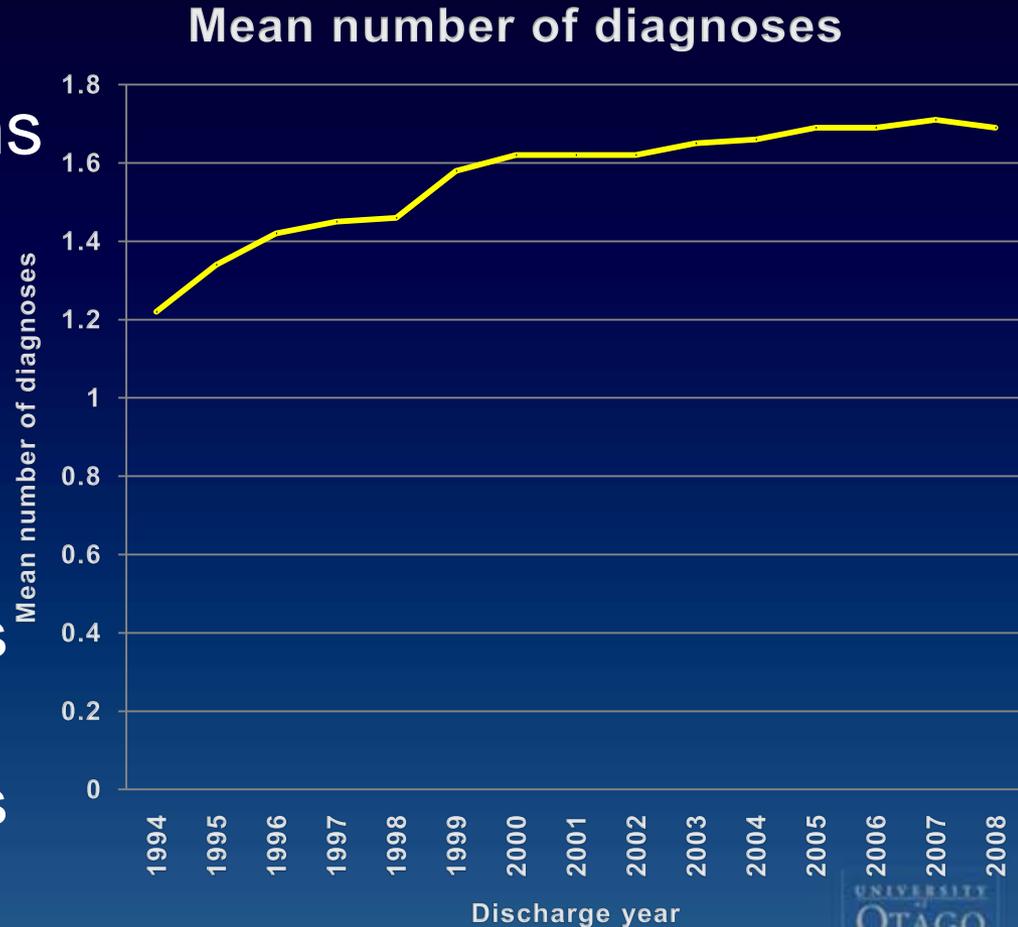
- Self harm:
  - Mental and behavioural disorders
- Falls:
  - Abnormal signs and symptoms
  - Factors influencing health status
- Falls (75+ years)
  - Circulatory diseases
  - Factors influencing health status

age	diagnosisicd10	ecodeicd10	iciss	icd10
25	I48	W0604	0.891631	S021
25	I48	W0604	0.891631	W0604
4	M542	W1309	0.819563	S020
4	M542	W1309	0.819563	S021
4	M542	W1309	0.819563	W1309
2	G938	W1309	0.877091	W1309
2	G938	W1309	0.877091	S028
2	G938	W1309	0.877091	S020
2	G938	W1309	0.877091	S0151
2	G938	W1309	0.877091	S0120
2	G938	W1309	0.877091	S0149

Source: Ministry of Health, National Minimum Data Set of Hospital Discharges

# Stability of diagnosis recording

- NZ diagnosis patterns 1995-2000
  - 1994: Max 6 diags+6 e-codes+6 operation codes recorded (i.e. 18 in total);
  - 1995: Up to 25 codes recorded in total;
  - 1999: Up to 99 codes recorded in total;



# Other possible issues

- Increased chance of identifying complications/ sequelae?
  - Readmissions excluded
- Increased chance of identifying trivial cases?
  - Retain ICISS threshold for selecting serious cases

# What do the results mean?

Are we missing a material number of cases?

# YES

# Proposed alternative definition

- $\geq 1$  diagnosis in range S00-T75, T78.8, T79
- First listed e-code in range V01-Y36
- ICISS score  $\leq 0.941$