

Reliability of Hospital Inpatient Injury Coding



Analysis of injury hospitalisations data in New Zealand (NZ) is used to shape injury prevention policy and practice. There is, however, very limited knowledge of how reliable the clinical coding is for these data. Studies from Australia and the USA suggest that the error rate may be high.^{1,2}

This fact sheet gives selected results of a study undertaken to assess the level and nature of coding error in the external cause and diagnosis codes of injury cases discharged from New Zealand public hospitals from 1996 to 1998.

Method

- Approximately 1800 discharges were randomly selected from NZ public hospital discharges from 1996-1998 with a principal diagnosis of injury. Readmissions were excluded.
- Discharges were coded using International Classification of Diseases Ninth Revision, Clinical Modification-Australian version.
- An accredited coder recoded the principal diagnosis and external cause (E-code).

Results

- 94% of records selected were found.
- 95% of the principal diagnoses, 82% of the first E-codes, and 92% of the location code, were correctly coded (Table 1).
- Cases of Suicide/Self-inflicted injury had the lowest error (Table 2).
- There was little difference in the error rates between small and large hospitals.

Table 1: Level of Error

	Principal Diagnosis	% of Total Coded	1st E-Code	% of Total Coded
Correct coding	1579	95%	1238	74%
Incorrect group	36	2%	20	1%
Correct to group level, 2nd or 3rd digit incorrect	26	2%	224	13%
Correct to 3 digit level, 4th digit incorrect	20	1%	57	4%
Correct to 4 digit level, 5th digit (E-code: location code) incorrect	9	0%	131	8%
Total coded	1670	100%	1670	100%

Limitations of the study

There were limitations to this study that might have affected the results. Errors may have been due to mistakes by the accredited coder, and the coding by the accredited coder may not have been entirely blind to the previous coding in some instances.

Why are the Diagnoses More Accurately Coded?

- One possible explanation is that there is more detailed information in the patient notes for coding injury diagnoses, as opposed to the cause of injury.

Conclusions

- The level of error in diagnosis codes compares very favourably with that reported for Australia.²
- The error rate for external cause codes is similar to overseas experience.^{1,2}
- Many of the errors are the result of omission, i.e. the original coder did not consult the clinical notes in their entirety.

Future Work

- The IPRU intends conducting a similar study in 2005 examining injury discharges classified to ICD-10-AM.

References

- 1 LeMier M, Cummings P, et al. "Accuracy of external cause of injury codes reported in Washington State hospital discharge records." *Injury Prevention*, 2001, 7:334-338
- 2 MacIntyre CR, Ackland MJ, et al. "Accuracy of injury coding in Victorian hospital morbidity data." *Australian & New Zealand Journal of Public Health*, 1997, 21:7:779-83

Acknowledgements

Marie Gregan, Christine Thorpe, New Zealand Health Information Service, Health Research Council of New Zealand, Public hospitals in New Zealand.

Prepared by: SCR Stephenson, JD Langley, August 2004

Table 2: Errors by External Cause - Selected Groups

		Records	% Correct	% Error in 1st 4 digits	% Error in location code only
Unintentional					
E810-819	Motor Vehicle Traffic Crashes	157	81%	17%	3%
E800-807 E820-848	Air, Water and Other Land Transport	91	70%	22%	8%
E870-879 E930-949	Medical Injury	242	68%	17%	15%
E880-888	Falls	507	73%	9%	2%
E916-928	Other Accidents	370	75%	19%	6%
Intentional					
E950-959	Suicide/Self-Inflicted	83	88%	2%	10%
E960-969	Homicide/Assault	86	78%	20%	2%

INJURY PREVENTION RESEARCH UNIT

Department of Preventive and Social Medicine

University of Otago

PO Box 913 Dunedin New Zealand

Tel 64 3 479 8342 Fax 64 3 479 8337

Email iprunz@otago.ac.nz Website www.otago.ac.nz/ipru