

PREDICTORS OF MISSING DATA IN INJURY SURVEILLANCE: AN OBSERVATIONAL STUDY

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Background Trauma registry data are almost always incomplete. Traditional approaches to dealing with missing data lead to biased outcomes and conclusions. Multiple imputation can reduce bias in registry analyses but the ideal approach would be to improve data capture.

Aim The aim of the study was to identify which patients were most likely to have incomplete data.

Methods An analysis of prospectively collected regional trauma registry data over 1 year was performed. Variables used for trauma system benchmarking were analysed. Logistic regression analyses were performed to identify predictors of missingness. These analyses were conducted following complete data estimation using multiple imputation.

Results There were 2520 cases. The variables with the greatest proportion of missing observations were respiratory rate, GCS and systolic blood pressure. Data for these physiological variables were more likely to be missing when the patient died in hospital. GCS and respiratory rate were more likely to be missing when they were abnormal. A major predictor of a missing GCS or respiratory rate was an abnormal pre-hospital GCS; an additional predictor of a missing blood pressure was whether the patient was transferred to a second hospital for definitive care.

Significance Death in hospital was a predictor of missingness for all of the primary hospital physiological variables. An abnormal GCS and respiratory rate were more likely to be missing from the dataset. In addition to reducing bias during data analysis, multiple imputation can be used to inform improvements in data capture.