

Population-based linkage of health records in Western Australia: development of a health services research linked database

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Abstract: Objectives: To introduce the Western Australian Health Services Research Linked Database as infrastructure to support aetiological, utilisation and outcomes research. To compare the study population, data resources, technical systems and organisational supports with international best practice in record linkage and health research.

Method and Results: The WA Linked Database systematically links the available administrative health data within an Australian state of 1.7 million people. It brings together, initially, six core data elements (birth records, midwives' notifications, cancer registrations, in-patient hospital morbidity, in-patient and public out-patient mental health services data and death records). It will be updated regularly and is designed, in future extensions, to include data on primary, residential and domiciliary care and health surveys. Linkage uses probabilistic matching of patient names and other identifiers. Geocodes for spatial analysis are assigned using address linkage and mapping software. By June 1997, the project had taken 2½ years to develop the system and link seven million core data records from 1980 to 1995.

Conclusions: The system is consistent with international benchmarks, from four centres of excellence, for the study population, core datasets, matching and geocoding, and collaborative networks. There are prospects to redress deficiencies in primary medical contact and other data resources, validation studies, tracing systems and a more supportive legal framework.

Implications: The WA Linked Database will be used in combination with medical record audits to provide a comprehensive evaluation of health system performance. (*Aust NZ J Public Health* 1999; 23: 453-9)