

LINEMART

Maximising insights for effective health service delivery



THE POWER OF INSIGHT

Data is critical to health care research and innovation and making the most of data requires the very accurate linkage of disparate data sources. Data linkage is used to 'join up' or link together records that belong to the same person. It provides a detailed yet anonymous picture of patient experiences and health outcomes, generating insights that are used to improve the efficiency and effectiveness of health service delivery, clinical care, and guide the strategic directions of the health system.



LINKING IT ALL TOGETHER

Data linkage in Australia and elsewhere is typically performed by trusted third parties, known as data linkage units. These units need linkage software that is extremely accurate, secure, scalable and fast. They also need linkage software that can cope with the complexity of ongoing, operational data linkage, such as

- Managing ongoing linkage of data collections over time (without the need to relink at intervals)
- Managing multiple linkages and data extractions
- Managing amended and deleted records within an enduring system
- Handling diverse consumer and data custodian needs, such as a researcher wanting to link their own data or data custodians imposing restrictions on a particular linkage

A STATE OF THE ART SOLUTION

Curtin University has developed linkage management software (LinXmart) that matches records using deterministic and probabilistic methods. The software produces accurate results, maximising the insights from data. LinXmart can link very large files (tens of millions of records) at speed.

LinXmart has been specifically designed to meet the challenges of operational data linkage and to manage the growth of increasingly complex and dynamic linked datasets. It handles ongoing as well as project based linkages.

Data from all parts of the linkage process (loading, linking, grouping, reviewing, extraction) and repeated processes for enduring linkage are managed by the software.

LinXmart has several unique security features, including:

- Role based permissions
- Project separation
- Privacy-preserving features: the ability to load, process and link Bloom-encoded data returning very high quality results (see separate fact sheet)
- Secure storage of all data and results with logging and auditing

Using LinXmart requires minimal management and operational overheads.

