

“From Mathematics to Management – Privacy and Security Risks with Electronic Health Data Integration”

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The move towards integrating the wealth of electronically stored health data continues to gain momentum in Australia and internationally. The accumulation of disparate data sources across organizations and across various states and territories presents challenges for system integrators. They must address non-trivial issues of a technical, legal and operational nature. The potential rewards for integrating systems and linking health records are numerous. They include not only administrative efficiencies and improved safety, but research into better treatments and outcomes from our understanding of patient journey, cohort studies, etc.

The superior high speed connectivity and remote access, realized through the adoption of Information Technology, presents new and dangerous problems. The need to maintain confidentiality requires state-of-the-art in IT security technologies. The need to respect privacy requires policies and implementations that adhere to our complex legal framework in Australia. Failure to address adequately these issues will put the possibilities of further health data integration at a high risk. **The necessary trust can be fragile and easily broken through well publicized incidences.** The need to understand and manage the risks and minimize their impact is therefore critical. But what are the risks? How can we reduce them? What are the techniques used for protecting clinical data, for its use in clinical care and health administration, together with its secondary usage in research studies?

Information Technology makes extensive use of complex mathematical techniques to protect data. This includes both encryption and statistical analysis (e.g. the probability of back tracking with de-identified data or the probability of adverse incidences occurring). **All the mathematics is pointless if the system is not well managed.** Do health managers understand the maths? Should they have to?

This non-technical talk will look at the findings of the various risks that data integration presents to today's health managers. Then, the value of adopting highly usable IT applications that help demystify some of the complexity associated with privacy and, furthermore, assist in the management of the essential security protection measures, will be presented.