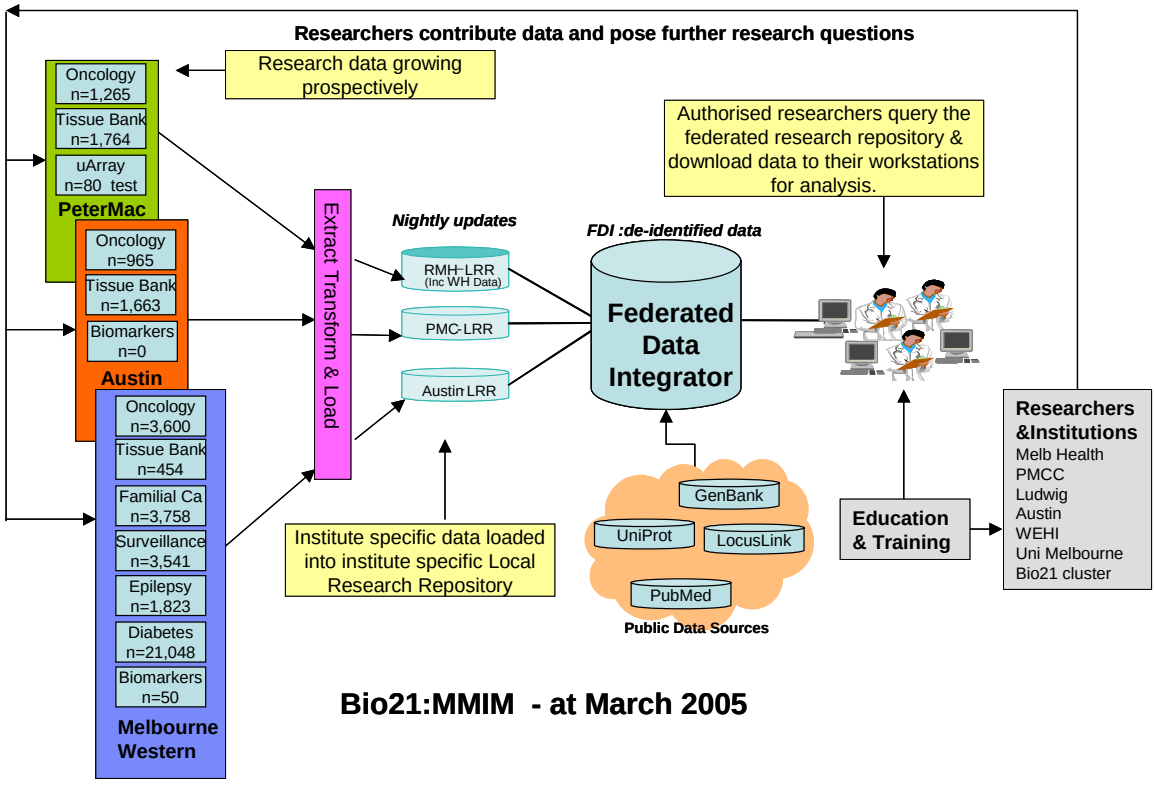
What is Bio21: MMIM?

Molecular Medicine Informatics Model

The Bio21: MMIM platform provides clinical researchers access to data from disparate existing databases across multiple disease types at multiple institutions, co-located in a virtual repository, which can be linked with publicly available research and genetic profiling data. It is ethically approved at all participating sites.

The Bio21: MMIM provides a flexible and secure method for interrogating the multiple data sources, where 80,000 records of patient data is record-linked across all databases and institutions. Researchers can extract sub-sets of data, transform where required and test hypotheses using their own analytical tools. The data is extracted nightly from all source databases where it is mapped into the Bio21: MMIM local repositories, adhering to subject area standards where appropriate. It provides a flexible way of adding new data sources, with a "plug-in" facility, and, as research requirements change with new discoveries, it has the flexibility to evolve and expand accordingly.



Bio21:MMIM - at March 2005

The Bio21: MMIM is an innovative technology platform allowing authorised researchers to:

(i) conduct research with confidence that ethics, privacy, security and IP issues are addressed,

(ii) test multiple hypotheses without collecting their own data,

(iii) identify patient numbers for clinical trials based on clinical information or genetic profile,

(iv) research suitable pre-symptomatic testing and early intervention based on genotype data,
(v) research genetic factors that may influence treatment outcome, with respect to toxicity and potential benefit,
(vi) analyse summary/statistical information across institutions and from diverse databases,
(vii) cache data retrieved from public data sources and work on that locally,
(viii) join the platform to add new data sources – nationally as well as linking internationally.

The Bio21:MMIM pilot has been achieved with rigorous attention to ethics and privacy requirements. Although the data is used in a coded form, the system allows the patient to be re-identified if required. The Bio21:MMIM can integrate diverse and isolated data by mapping data from several sources, hence bridging data differences and enabling complex analyses across multiple data sets.

Phase 2: Funding is currently being sought

The system is capable of accommodating new organizations and heterogeneous data sets and interfaces. Its flexibility allows utilisation and exploration of emerging international standards for genomic and clinical data, and is designed to inter-operate with a wide range of other health and research services. Currently expansion of the data integration to other sites across the Bio21 cluster, other cancers, mental health, inflammatory and infectious diseases is envisaged. In the long term the Bio21:MMIM will assist in identifying target components for new diagnostic tools, aid research into novel therapeutic targets as well as assist the research of pre-symptomatic testing of patients and early intervention based on genotype data. Consequently MMIM will provide improved and more rapid health-care outcomes to the community.

Further Information

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