



CASE STUDY

Clinical Data Repository

About the client

Queensland Health is a dynamic organisation committed to providing a range of services aimed at achieving good health and well-being for all Queenslanders.

Through a network of Health Service Districts and the Mater Hospitals, it delivers a range of integrated services including hospital inpatient, outpatient and emergency services, community and mental health services, aged care services and public health and health promotion programs.

Project overview

The Clinical Data Repository (CDR) stores patient records from multiple sources in a single data repository in a standard format. Records are stored as they arrive from laboratory or information technology system feeds. The current focus for the use of the stored records is to produce patient discharge summaries.

The project is ongoing and began in mid 2005. The second phase of the project began in December 2006 and went "live" in hospitals in March 2007 with discharge summaries constructed from the CDR and delivered to GPs. The state wide rollout of an electronic discharge summary began in 2009 and is expected to be complete by the end of 2010.

Project design

The client has developed interfaces to convert health records from patient administration, pathology, radiology, pharmacy, surgical, medications and other systems into openEHR format and deliver them to the CDR. The CDR is built on Extensia's RecordPoint technology.

These standardised health records are assigned to each patient and can be retrieved for viewing or subsequent processing into a patient's discharge summary. The project focused on a Services Oriented Architecture approach which connects all components of the overall project using web services.

Extensia developed several web services in the RecordPoint product for use in this project:

- ▶ Web services for patient management (Register patient, change details, merge, un-merge)
- ▶ Web services for loading records with replacement and correction (update) options
- ▶ Web services for finding and retrieving patient records (including by date, and record type)
- ▶ A web service for retrieving different types or categories of information (clinical record data format definitions) from the system.

At the request of the client and with NEHTA data structures (2005) as guidance, Extensia developed openEHR information categories for health records in:

- ▶ Pathology and radiology
- ▶ Medications
- ▶ Patient notification details
- ▶ Procedures and procedure notifications.

The client has performance tested the Clinical Data Repository in a proof of concept environment with real data feeds, and it has demonstrated the ability to load records at above 40 records per second, and to retrieve at rates suitable for more than 100 operators producing discharge summaries in parallel. This is more than is needed for the state wide rollout of an electronic discharge summary.

Benefits

The client can use the Clinical Data Repository as a central single repository for storing and finding/retrieving a patient's data. The data originates from multiple sources, but is stored and retrievable in a single and standard format.

The web services interfaces to the Clinical Data Repository allow the client to build new applications with internal development teams and easily access the records as required from the central repository. As the connections are web services, the new applications are not tied to any particular language or operating system.

The system can be modified easily to add new types of Health or administrative records to the repository by designing appropriate information categories and loading these into the configuration for the RecordPoint repository.

The first practical uses of the Clinical Data Repository are in viewing a patient's health record history and in producing discharge summaries. When fully implemented the system will provide real-time, state-wide discharge summaries and care plans.

RecordPoint supports

- ✓ **NHRC Report**
- ✓ **SOA Web Services Architecture**
- ✓ **Deloitte National E-Health Strategy**
- ✓ **Clinical Information Model (archetypes)**
- ✓ **NEHTA Standards (HI ready)**
- ✓ **Audit Logs**
- ✓ **Clinical Data Repository**
- ✓ **openEhr and CEN13606**



Contact for more information
Emma Hossack CEO 07 3292 0222
enquiries@extensia.com.au
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