



**Home to
the world's
healthiest
software!**

About the Cluster

The New Zealand Health IT Cluster is a vibrant alliance of organisations interested in health IT, comprising software and solution developers, consultants, health policy makers, health funders, infrastructure companies, healthcare providers, and academic institutions - who have agreed to work collaboratively.

Our Vision

Uniting organisations to position New Zealand as a leader in the supply and use of innovative health technology.

Our Objectives

- ✓ building collaborative relationships
- ✓ initiating, facilitating and managing collaborative projects
- ✓ enhancing the business development capabilities of members
- ✓ promoting Government investment and funding
- ✓ advocating/promoting the NZ health IT sector
- ✓ communicating and facilitating opportunities
- ✓ developing innovative revenue streams

E-LABORATORY : CLINICAL DATA REPOSITORY OPTIONS

A NZ HEALTH IT CLUSTER REPORT : FEBRUARY 2006

The e-Laboratory Orders and Communications Feasibility Study (The Feasibility Study) published by the NZ Health IT Cluster in 2004 concluded that the implementation of an electronic laboratory ordering and results system was financially and clinically justified and outlined a way forward for an initial implementation site. The Ministry of Health then asked the NZ Health IT Cluster to clarify its members' position with regard to some key elements of the e-Laboratory proposal, and in particular the nature of any clinical data repository that may be required under a proposed e-Laboratory system.



Current state

As detailed in the Feasibility Study, the current state of lab order requests is characterised as "manual" and "non-standard". The flow of test order data from GPs to laboratories is still based on paper forms printed from the GP's Patient Management System (PMS) and manually entered into a Laboratory Information System (LIS).

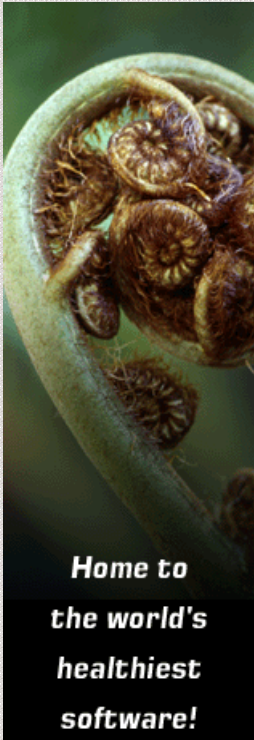
Proposal Outline

The e-Lab solution discussed in the Feasibility Study proposed two fundamental components - an Orders Clearing House (OCH) and a Clinical Data Repository, or CDR. Each is an absolute requirement for the solution to operate, and while they could be combined, they do not perform the same function.

Orders Clearing House: The OCH is a clearing house for lab orders. Orders are created by healthcare practitioners (for example, by a GP in their Patient Management System) and submitted to the OCH. The order is then retrieved from the OCH by the laboratories at the point of specimen collection, usually within their Laboratory Information System. This eliminates the difficulty of not knowing where the specimen will be collected after an order has been created. Following retrieval, orders are deleted from the OCH system after a number of days when no longer required. A copy of the order may also be provided to the CDR.

Clinical Data Repository: A CDR is a real-time database that consolidates data from a variety of clinical sources to present a unified view of a single patient. The main purpose of the CDR is to allow multiple healthcare practitioners to retrieve data for a single patient, and to improve the care of patients through the shared view of their medical history. In a CDR, business procedures, rules and data stewardship processes are agreed to ensure appropriate security and privacy of individual health information.

The CDR infrastructure can be combined with the Order Clearing House. The lab results can be returned/stored to the CDR where they will be matched with the order. The CDR can also add value by providing a single point of contact to detect order/result mismatches and incorporate decision support tools. It can also form the basis of an electronic longitudinal health record.



**Home to
the world's
healthiest
software!**

Our Role

We work directly with key Government agencies such as the Ministry of Health, NZ Trade & Enterprise, and the Foundation for Research, Science and Technology to help Cluster members to grow their business in their chosen markets.

Membership Categories

- Health IT Companies
- Supporting Members
- Healthcare Provider Members
- Academic Members
- Individual Members

Join now

If your organisation has an interest in health IT, a significant presence in New Zealand, and wants to collaborate with other sector participants.

Key Findings and Recommendations

The Clinical Data Repository (CDR) Architecture Options outlined in this report include a CDR consolidated at the local (GP or PHO), regional, and national levels. The following criteria were used to assess the relative strength of each option:

- (i) Access: Ease of access by multiple healthcare providers
- (ii) Infrastructure: Is the infrastructure currently in place?
- (iii) Privacy: Compliance with PAS standards
- (iv) Security: How robust is the security?
- (v) Flexibility: The ability to evolve and adapt to meet market/funder requirements
- (vi) Interoperability: Ease of linking to other systems
- (vii) Audit: Ability to audit access
- (ix) Acceptance: How willing is the sector to do this?
- (x) Cost: Relative cost to implement

The following summarises the assessment of the CDR options:

CDR Assessment Criteria	CDR 1: consolidated at PMS/PHO level	CDR 2: consolidated at Regional level	CDR 3: consolidated at National level	
Access	+	++	+++	Key + Low ++ Medium +++ High
Infrastructure	+	++	+	
Privacy	+++	++	++	
Security	+	+++	+++	
Flexibility	+	+++	++	
Interoperability	+	+++	++	
Audit	+	+++	+++	
Responsiveness	+++	++	++	
Acceptance	++	+++	+	
Cost	++	+++	+++	

This report recommends the scoping, design and implementation of a CDR consolidated at a regional level. The major benefits of regional CDRs are enhanced security, and managed access by multiple healthcare providers which will enable decision-support and audit tools to be included, while enhancing the quality of patient-care, and lead to reduced costs.

Regional CDRs are already in existence (for limited access to pathology or radiology results) proving the model works. Expanding the functionality of a regional CDR to include an orders clearing house and a CDR for laboratory test results is a pragmatic and feasible step. The CDR could evolve to become the basis of a longitudinal electronic health record.

More information

To obtain a copy of the NZHITC report 'E-Laboratory : Clinical Data Repository Options' please go to the NZHITC 'library' section of our web site www.healthit.org.nz.