RCPA
The Royal College of Pathologists of Australasia

puts UPDATE

Australian Government
Department of Health and Ageing

Newsletter of the RCPA Pathology Units and Terminology Standardisation Project | March 2012 | Issue 1

Welcome to the first issue of PUTS Update. We will bring you regular updates on the progress of the Pathology Units and Terminology Standardisation (PUTS) project through this newsletter. This issue will highlight the background and aims of the project, the people involved and bring you up to date with the milestones reached to date.

Why a PUTS project?

There is an increasing tendency towards the aggregation of laboratory data in the Australian health sector. The usefulness of this data however is limited due the wide variability in test reporting practice for pathology tests in Australia. This variability can be seen in test names, units, reporting intervals (decimal places), reference intervals and types of clinical comments.

This variability has the potential to create confusion and misunderstanding as pathology results are viewed by a wider range of people, including requesting doctors, patients, nurses, pharmacists, dieticians and other allied health workers. Additionally pathology data is becoming more likely to be sent to databases such as practice software, national or regional repositories and personal health records. In these settings data from several laboratories may be combined into a single record and removed from, or at least separated from, the original supporting information (name, units, reference intervals etc).

This project aims to develop standardised pathology terminology leading to limited terminology reference sets with guidelines for their use and a standard for units of measure to minimise the risks from variation in practice.

Standardised pathology information structures and terminologies allow improvement in the recording, decision support, communication and analysis of pathology. In particular the ability to provide semantic interoperability between computers enables assurance of fidelity of communication and computer aided support.

Aims of the project

The project covers 4 sub-projects from the National Pathology Terminology and Information Standardisation Plan namely:

Develop and approve a revised set of standard units of measure that can be represented electronically;

Develop and approve Australian Pathology Terminology Sets (SNOMED CT, LOINC etc.)

Develop a fully specified terminology for the reporting of 'common' biochemistry items used in clinical decision support including advice for its use.

Review the protocols for cancer reporting and ensure terminology is available, consistent and able to be used in electronic decision support including advice for their use.

Timeline leading up to the PUTS project

Standardisation of pathology terminology has been underway since 1998 when LOINC was identified as an appropriate terminology for reporting observations in the Australian Standard for electronic messaging in pathology. The first set of codes used to identify the test being reported was drawn from LOINC and called AustPath.

In 2002 a set of codes used for requesting was developed by the University of Wollongong and Standards Australia and added to the AustPath codes. Both LOINC and SNOMED CT were considered but without a license for SNOMED and major issues with LOINC a set of mnemonics were chosen by comparing the codes used by 8 laboratories from the private and public sector and choosing a consensus term. At the time it was thought that these could also be used to identify the tests performed as required by the MBS. They are not in widespread use now.

Pathology terminology has been on the NEHTA work program since NEHTA began in 2005. The use of SNOMED for pathology was part of the business case for Australia to join IHTSDO.

NEHTA held a workshop in 2007, where they undertook to produce pathology and DI terminology by July of that year.

In August 2010 NEHTA changed its engagement with Standards Australia. There was an initiative to align the work programs. As part of that the NEHTA Senior Manager and the Chief Terminologist approached IT-14-6-5 and the profession for another workshop, which was held in September 2010.

Invitations went to all PAC members including RCPA, AAPP, scientific societies, Standards Australia and related NEHTA sections. The outcome of that was the National Pathology Terminology and Information Standardisation Plan.

The plan was subsequently supported by NEHTA, Standards Australia Committee IT-14-6-5, the RCPA e-Health committee and the Pathology Associations Council.

The plan included the allocation of project leadership.

Those projects that were identified as being led by the pathology profession were included in an application for support prepared by the RCPA and submitted to the Quality Use of Pathology Program in November 2010.

It was endorsed by QUPC and funded by the Department. Contracts were signed in April 2011.

Michael Legg was appointed as senior project manager and Christiaan Swanepoel as senior project officer in July 2011.

Project Governance and Stakeholders

The PUTS project governance model provides a framework for the development of standardised terminology. It reflects the same approach as for the successful Structured Reporting of Cancer Project.

The Stake Holders

The pathology profession is represented through the Royal College of Pathologists of Australasia (RCPA) and the other members of the Pathology Associations Council (PAC) www.pathology.med.pro. The pro-fession will define and endorse the clinical terminology.

The National Clinical Terminology and Information Service (NCTIS) within the National E-Health Transition Authority (NEHTA) is responsible for managing, developing and distributing SNOMED CT in Australia.

The Standards Australia Subcommittee IT-014 provides the main link to Australian and international health informatics standards development, software developers and users.

The customers include healthcare consumers eg Clinicians and associated healthcare providers; Researchers; Health software developers and knowledge resource developers; Local Terminology & Information Integrators and Clinical Terminology & Information Users.

PAC Members, besides the RCPA, collaborating in the project include: The Australian & New Zealand Society of Blood Transfusion; Australian Association of Clinical Biochemists; Australian Association of Pathology Practices; Australian Institute of Medical Scientists; Australian Society for Microbiology; Australian Society of Clinical Immunology and Allergy; Australian Society of Cytology; Endocrine Society of Australia; Haematology Society of Australia and New Zealand; Health Informatics Society of Australia; Human Genetics Society of Australasia; International Academy of Pathology Limited and the National Coalition of Public Pathology .

Health Informatics and industry associations are represented by: Standards Australia; IHTSDO representatives; NEHTA; HISA, HIMAA, MSIA, AIIA and others.

Government agencies and authorities; ACSQHC, AIHW, Cancer Australia, Health Departments, Registries

The project is funded by the Quality use of Pathology Program of Department of Health and Aging (QUPP DoHA) and the National e-Health Transition Authority .

The Steering Committee

The steering committee is chaired by Michael Legg. The committee was assembled in August 2011 after expressions of interest were invited from all the stakeholders. The members of the Steering committee and their associations are indicated on the governance chart below.

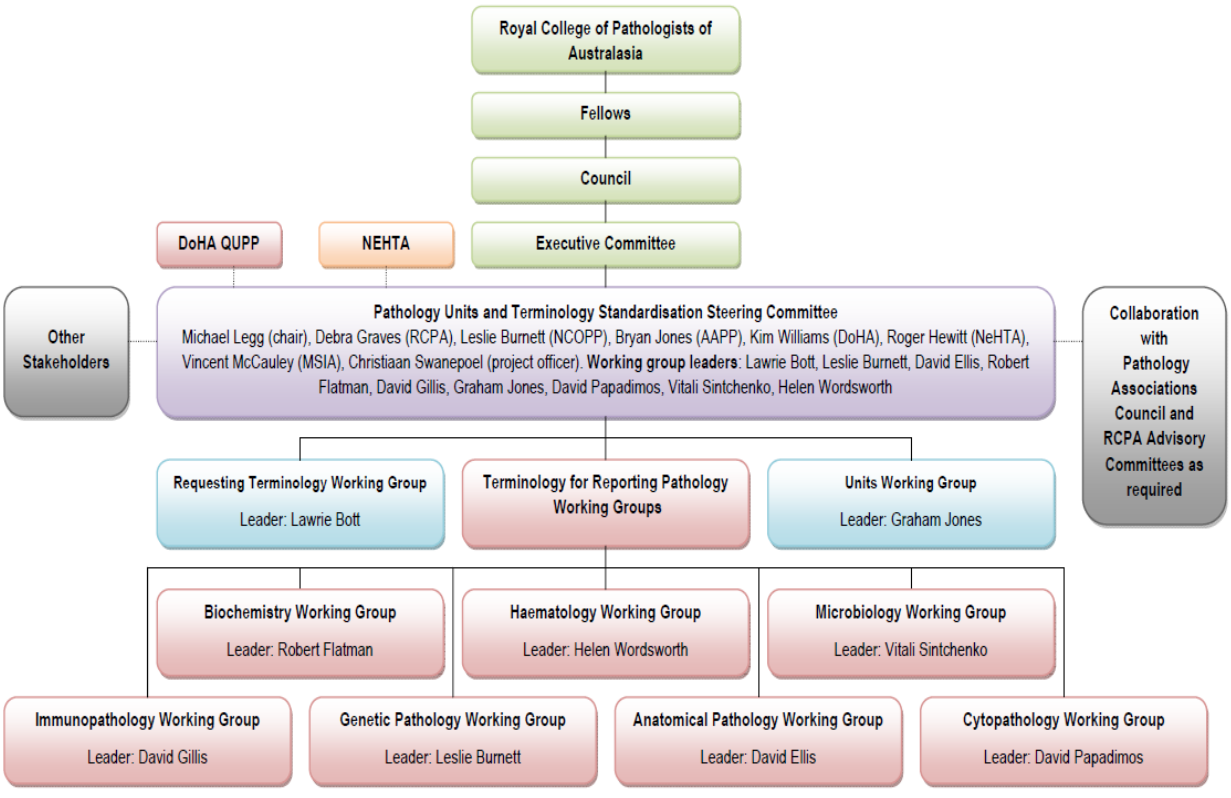
The Working Groups

The working groups responsible for the execution of the PUTS project are:

- Units working group
- Terminology used for requesting pathology working group

Terminology used for reporting pathology in reports working groups:

- Anatomical and Cytopathology
- Chemical Pathology
- Genetic Pathology
- Haematology
- Immunopathology
- Microbiology



Progress reports from the Steering Committee and the Working Groups

The Steering committee

Steering committee has met 4 times to date.

During the initial meetings the working groups were assembled and project governance planned.

Currently the committee is working the Editing Rules and Principles for the project.

The draft document, which will be circulated soon for comment, will have sections on:

- The selection of LOINC codes in terms (high level generic methodless where possible);
- Methods to prevent trending and charting of incompatible results in electronic health records and aggregated repositories such as clinical registries;
- Lexicographic principles for the preferred names of tests for requesting and reporting. Length of test names on rendered (electronic / paper) reports; units; specimens etc.

The National Laboratory Medicine Catalogue (NLMC): Editorial Principles from the NHS in the United Kingdom will be used as an important input for the Australian editorial rules.

The Working Groups

All the working groups had face-to-face kickoff meeting in October 2011 where they were introduced to the concepts of clinical terminology, SNOMED CT, LOINC coding etc. The groups also spent time on their project plans and setting appropriate milestones.

The working groups meet fortnightly by teleconference.

A summary of the accomplishments of the individual groups follows:

The Units working group

Standardisation of units for therapeutic drugs

The working group reflects the RCPA's recommendation that mass units be used routinely for the reporting of therapeutic drug concentrations with the exception of assays where there are current uniformity of reporting in molar units (eg lithium and Methotrexate) and drugs which are also present as endogenous substances where the units used routinely should be used.

The AACB, ASCEPT, RCPA & RACP Common Units for Reporting Drug concentrations Working Party recommendations will be published in MJA in the near future.

Unit Surveys

Surveys have been sent to the Biochemistry, Haematology and Immunopathology working groups. The goal here is to classify tests into groups according to the general agreement of the units in use for reporting test results. Where there is no consensus on the units for a test, opinion will be sought from the relevant RCPA Advisory Committees and other stakeholders.

The response from the working groups to this survey was not strong and alternative approaches to engagement in this specific area have now been developed. A review undertaken by the Units Working Group concluded the most likely reason related to how the question was asked.

The alternative approach developed by the Units Working Group makes use of the existing RCPA QAP communication channels. The approach is to use exception reporting with an uncomplicated fax-back survey with a single question which is to be distributed with the QAP programs. This approach is to be tested on the QAP tumour marker program in the next fortnight.

Unified Code for Units of Measure

A draft guide was developed, which will be used as an introduction to the Unified Code for Units of Measure (UCUM) and used for education of clinical and laboratory professionals.

Requesting Pathology Working Group

Standardised Department of Origin codes

The PUTS project was requested by the Department of Health and Ageing to provide terminology for use as a component of metadata for the index entry of pathology reports in the PCEHR.

This index entry will be used to identify the section of a laboratory where a report originated from. The current HL7 codes from Table 0074 (Diagnostic Service Section ID) were considered inappropriate for Australia.

The working group drafted and approved a proposal for display mnemonics to be used for the pathology laboratory ID's in table 74 and suggested a mnemonic 3 characters wide to allow multiple index entries on a single line pathology episode entry on the index screen of the PCEHR.

Choice of Terminology for Requesting Pathology

SNOMED CT was chosen by the working group as the principle terminology for requesting pathology tests in Australia.

However it was noted that SNOMED CT is not fit for all domains. Genetic Pathology for example is not covered well and Gene-ontology may be a better terminology source.

The individual reporting working groups will give guidance to alternative terminologies where SNOMED CT has gaps.

Standardisation of SNOMED CT terms for requesting pathology

The group had contributions of request names from four large laboratories ranked by frequency.

The mapping of the request names to SNOMED CT is progressing well. The working group started with the most frequently requested tests. The process is slow as the group is still developing principles for considering and selecting the correct SNOMED CT concepts.

At this stage 62 of the ranked requests are mapped. Due to queries with the selection of the ranking of the most frequently requested tests the group agreed to use the frequency data of a single laboratory in the first instance to simplify the process.

The target is to map the top 60 requests from this ranked data before public comment will be invited.

Terminology for Reporting Pathology Working Groups

Microbiology Working Group

Mapping of organisms to SNO-MED CT

Working group members contributed frequency ranked organism names (around 3000) from their Laboratory Information Systems. The bulk of these organism names have been mapped to SNOMED CT terms in the organism hierarchy. This list will be edited to remove ambiguous entries and clinical concepts before public comment will be sought.

LOINC subset for tests on the Communicable Diseases Network Australia list

The working group produced a draft subset of LOINC codes for the serology and molecular tests that are used to establish laboratory diagnosis of notifiable conditions in Australia according to case definitions outlined by the Public Health Laboratory Network (PHLN). The list will be updated with tests for conditions which are about to become notifiable eg MRSA and ROTA virus.

Tests on the CDNA list overlap with tests on the RCPA QAP Serology programs. Since the tests on the Serology program are more frequently requested work on the CDNA subset is postponed until after LOINC codes have been standardised for the QAP Serology tests.

LOINC subset for tests covered by the RCPA QAP Serology programs

The working group started with mapping of LOINC codes to serology tests covered by the RCPA QAP Serology programs.

To progress this work more rapidly a face-to-face meeting is being organised for the end of March. During this 3 hour meeting an attempt will be made to finalise the PUTS Microbiology Serology Subset.

Anatomical Pathology Working Group

Structured reporting of cancer

Initially the working group started work on the Gastric Carcinoma structured reporting information model but decided to switch to the Melanoma protocol as the prototype for LOINC coding because it is more pertinent to current international standardisation activity that Australia is involved in.

An information model was created and terminology binding to the synoptic elements have been done. The documents are in a final stage of preparation for public comment.

Generic Anatomical Pathology report

A generic anatomical pathology report structure with LOINC binding was produced. Public comment will be invited in March 2012.

Cytopathology Working Group

The cytopathology working group created an information model for a cervical cytology report according to the NHMRC endorsed Australian Modified Bethesda System (AMBS). LOINC codes have been assigned to the mind map.

Dr David Papadimos invited public comment from the RCPA Cytopathology advisory committee. Based on the feedback, the model will be refined before wider public comment is invited.

Genetic Pathology Working Group

Generic Genetic Report Template

The working group produced a draft generic genetic report template with candidate LOINC codes. Dr Leslie Burnett will invite comments from the RCPA Genetic Pathology advisory committee in March 2012.

The decision for the generic genetic pathology report template was made because there are potentially 30,000 genes that could be analysed. LOINC will not be able to provide codes for all the variations that could be tested for.

Report elements were chosen at the most generic level in an attempt to satisfy the requirements of molecular genetic pathology and cytogenetic tests.

Requesting of genetic pathology tests.

The working group is working on a concept document with an alternative manner for requesting genetic pathology tests based on "clinical questions at a higher level of understanding".

It is anticipated this concept document will be distributed for public comment towards the end of March 2012.

Immunopathology Working Group

The Immunopathology working group produced a draft LOINC subset for auto-antibody testing. Dr David Gillis invited public comment on this subset from the Australasian Society of Clinical Immunology and Allergy and RCPA Immunopathology Advisory Committee.

Biochemistry Working Group

The biochemistry working group standardised LOINC codes for the reporting of therapeutic drugs to match with the recommendations of the AACB, ASCEPT, RCPA & RACP Common Units for Reporting Drug concentrations working Party.

The Chair, Robert Flatman, is in the process of finalising the LOINC subset for public comment.

The intent is to publish this subset as a companion guideline when the Common Units for Reporting Drug concentrations working Party's recommendations are published in the first half of 2012.

The next objective is to standardise LOINC codes for the biochemistry tests in the QAP Chemistry programs.

Haematology Working Group

The working group is currently busy with standardising LOINC codes for the reporting of the high volume Haematology tests. Concurrently recommended units for these tests are being selected.

This process is nearly finished and it is anticipated that the first draft Haematology LOINC subset will be presented to the RCPA Haematology Advisory committee for comments in March 2012

Please note: In all cases public comment will be sought on the output from the working groups in the PUTS project.

Frequently Asked Questions

What is LOINC?

LOINC (Logical Observation Identifiers Names and Codes) was developed by the Regenstrief Institute in Indiana, USA, to provide a definitive standard for identifying clinical information in electronic reports. One of the main goals of LOINC is to facilitate the exchange and pooling of results for clinical care, outcomes management, and research. LOINC codes are intended to identify the test result or clinical observation. The latest release version 2.38 (2011-12-3) contains 68,350 terms, an increase of 3,346 since the June 2011 version.

For more detailed information visit: http://loinc.org

Website & Newsletters

A PUTS webpage is being finalized at this time. Output from the working groups will be available for comments and future reference.

http://www.rcpa.edu.au/Publications/puts.htm

If you want to comment on the news letter, offer to review documents, or receive future copies of this newsletter please contact Christiaan Swanepoel at *chriss@rcpa.edu.au*.