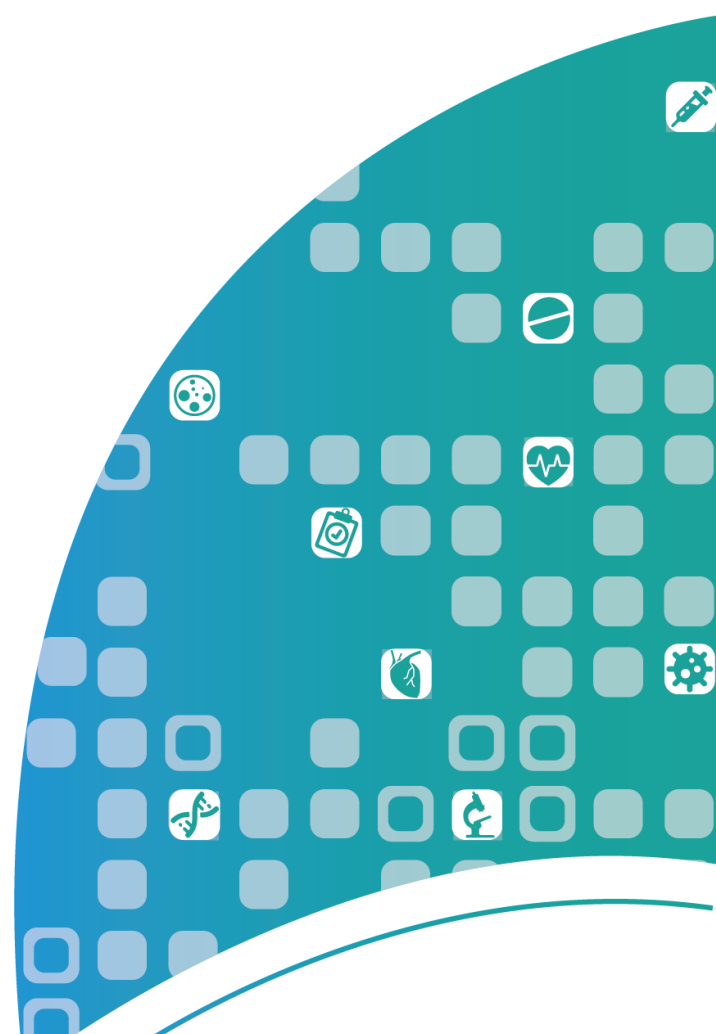


SNOMED CT in Action Case Study

Using the NHS Scotland Terminology Server in the National LIMS (Laboratory Information Management System) for mapping codes



Summary

Doug Robertson, Deputy Laboratory Computer Manager from NHS Grampian, discusses with the SNOMED CT Implementation Programme Team the mapping efforts undertaken by the LIMS Implementation Programme Team and the Laboratory Diagnostic Networks, to support the integration of SNOMED CT into the new national LIMS (Laboratory Information Management System), and how using the NHS Scotland Terminology Server is proving to be a key factor in the success of the work.

Doug advises the primary objective for both the LIMS Implementation Team and NHS Scotland's laboratory community, is to establish the most effective process for mapping codes for SNOMED CT adoption into the National LIMS Product (Magentus Evolution) as a replacement to the now retired READ code and older SNOMED coding (versions 2, 2.5 and 3) standards. In line with the Digital Foundations section of NHS Scotland's Digital Health and Care Strategy. The NHS Scotland Terminology Server has been a valuable commodity in assisting with the mapping work and will be a vital asset to ensure precision and accuracy is achieved during this work.

Background

NHS Scotland is on its way to becoming home to one of the UK's largest connected laboratory medicine networks, following the appointment of Magentus (formerly Citadel Health) as the single supplier for NHS Scotland's Laboratory Information Management System (LIMS). Laboratory teams from across NHS Scotland will be involved with the LIMS Implementation Team to transition NHS Scotland territorial health boards to the new LIMS product, following an agreed implementation plan.

Currently there are a few NHS Scotland health boards not part of the consortium due to them not having an immediate requirement to procure a new LIMS, however, the national framework contract for LIMS is open to any health board for call-off by the end of March 2027. The new system is Magentus Evolution vLab software, which is also undergoing implementation in NHS trusts in England.

The new system will cover disciplines including blood sciences, blood transfusion, cellular pathology, microbiology, and genetics. It will standardise processes, workflow, and coding with the aim of helping to share lab data across Scotland.

The implementation of a common, modern LIMS product is required to help realise the aims of NHS Scotland's digital strategies and this will be a key enabler for the National Laboratories Programme to deliver NHS Scotland's strategic aim for clinical laboratory services in the form of a distributed service model.

Laboratories from across all NHS Scotland's territorial health boards perform over 100 million tests per year and employ over 4,000 staff.

NHS Scotland Terminology Server

NHS Scotland implemented a new Terminology Server in July 2022. The server has multiple functions, one notable example of how its implementation has demonstrated its use and functionality, is the work being carried out by the LIMS Implementation Team and the Laboratory Diagnostic Networks involving mapping work for test results:

- From Evolution test codes to SNOMED CT Observable and Procedure concepts
- Effected disciplines - Haematology, Biochemistry, Immunology Serology, Blood Transfusion Service, Microbiology
- Upon completion, the mapping outcomes will be uploaded to the Terminology Server

Subject matter experts from Scotland's diagnostic networks are generating the mapping work for test results by using the Terminology Server components Shrimp, and Snapper to achieve the required outcomes.

The main objective of this work is to update READ codes and older versions of SNOMED codes to SNOMED CT. The team is working on three main areas:

- Creating concept maps to map LIMS data to SNOMED CT

- Cellular Pathology - to replace old versions of SNOMED coding i.e. versions 2, 2.5 & 3 codes
- The requirement is to update the old SNOMED codes to new SNOMED CT codes by creating value sets and Labs specific reference sets.
- Genetics – creating reference sets for Genetics Laboratories

Benefits of Using the Terminology Server

The three main benefits of using the Terminology Server are being able to make the maps, maintain the maps and use the maps:

- Not having the Terminology server would likely involve using other software... likely Excel + the SNOMED CT Browser. While this would still be possible, it would make the process significantly more complicated. One of the benefits that Shrimp gives you for example is the ability to easily navigate up and down from parent and child terms, something that's not possible in the SNOMED CT Browser alone.
- When it comes to maintenance, mapped terms that have been replaced by other terms are updated on terminology server, thus reducing the overhead at keeping the tables up to date.
- When it comes to using the maps themselves, the terminology sever provides a standardised FHIR REST API. This gives a single-source-of-truth to access the mapping information for every service that needs to use them. It removes the requirement to create static copies of the maps and embed them in other systems.

Additional Benefits

- This work will help assist the expedition of the cessation of the use of READ and older versions of clinical coding.
- Being able to share standardised test results in real time across all NHS Scotland labs and downstream systems.
- Improved interoperability.
- Maintains functionality for the user.

Challenges

Understanding the impact of the new process on users.