




SNOMED CT In Action Case Study

Using SNOMED clinical terms
in the National Digital
Platform Vaccinations Service

Summary


Paul Miller, national clinical lead for the National Digital Platform (NDP), talks to the SNOMED Implementation Team about the benefits of using SNOMED CT within NDP Vaccinations Service. In line with national strategy, the decision to use SNOMED CT for recording the target disease of the vaccine and the actual vaccine administered meant the data was standardised into a nationally recognisable format that can be shared throughout the NHS. The features provided by SNOMED CT also provide for richer data analysis, supporting research at a national and international level. The SNOMED vaccine data is also automatically translated to the historic coding system of Read v2 enabling data to be sent electronically to the individual's GP record. As the NHS in Scotland transitions to the use of SNOMED CT, standardisation of clinical data will enable data to be quickly available improving patient care, can reduce errors by removing the need to re-enter data, and support the Government's vision of contributing to world-class research. **Note. SNOMED and SNOMED CT are synonymous.**



Background

In December 2019, the Digital Health and Care Directorate of Scottish Government outlined their intention to implement the SNOMED CT structured clinical terminology system across NHS Scotland. The document 'Enabling, Connecting and Empowering: Care in the Digital Age' highlights that '*SNOMED gives clinical and care IT systems a single shared language. It contains all the terms needed, from procedures and symptoms through to clinical diagnoses and medications. This enables data to be recorded consistently and accurately which, in turn, makes exchanging information between systems easier, safer, and more accurate. We will roll out the use of SNOMED across Scotland.*'

The national dictionary of medicines and devices (dm+d) holds details of all the approved vaccinations for the UK. dm+d is part of the SNOMED family of products; the [model of dm+d](#) enabling searches at various levels of detail. For example, not only does it provide the approved vaccines in a standardised form, but it also includes the manufacturers product name as well as the overall Therapeutic Moiety. dm+d is updated every week and contains information such as price; dm+d also populates the SNOMED drug extension to provide the ontology element of the SNOMED product suite.




Read v2 codes are still used within GP IT systems in Scotland although Read codes are no longer maintained; this meant for new diseases such as COVID, suppliers were using their own codes. Maps exist from Read v2 to SNOMED and for a selected set of SNOMED terms to Read v2. Standardising on SNOMED meant that GP supplier systems are sent Read v2 codes enabling vaccinations to be recorded in GP systems, as well as future proofing NCDS for when the GP IT systems have transitioned to SNOMED under the current contract.

The NDP Vaccinations Service


When vaccinations are administered in Scotland, the details of the vaccine provided and the disease that vaccine is targeting, are entered into a national system known as the Vaccination Management Tool (VMT). This system uses SNOMED Clinical Terms for the target disease and the vaccine, although to the end user they are simply selecting the vaccines from the lists presented by the Vaccination Management Tool. The fact that the system records SNOMED codes in the background is hidden from users; they do not need to know the codes and just see the text descriptions. Data recorded by VMT is sent to the NDP Vaccinations Service.

Vaccines data stored on NDP can also come from other sources; for example, vaccines provided abroad and historically recorded vaccines.



In some cases it's not always possible to provide the manufacturer as well as the vaccine; the value of using dm+d is that it includes the Actual Medicinal Products (AMP) and the Virtual Medicinal Product (VMP). So when the AMP isn't known, the VMP can be used; dm+d then provides a means for data analysis to link these together as the same vaccine type. dm+d also provides for recording of partial medication information using what it refers to as the Virtual Therapeutic Moiety (VTM). This approach gives the NDP a robust way of recording vaccinations while retaining the ability to undertake data analysis using the SNOMED terminology. Further information on dm+d, including AMP, VMP and VTMs can be found on the [BSA website](#).

The NDP Vaccinations Service also links data using SNOMED CT for Target Diseases, for example COVID, Flu, Shingles, and Pneumococcal. This means that NDP uses a single language for its clinical data (disease and vaccination) supporting a common approach enabling better data analysis and which is consistent with national data strategy. In addition, these SNOMED CT codes can be translated into either the local supplier codes for new diseases such as COVID, or the READ v2 codes currently required for recording in GP IT systems.



Benefits

Strategic: The use of SNOMED CT aligns with national strategy and the direction of travel for Scotland in relation to using a single shared language across health and care.

Efficiencies: Data is captured once within the Vaccine Management Tool then messaged electronically to other systems (interoperability). This saves on data having to be re-entered which can introduce errors, but means data is within the systems that require the information.

Analytics: Using SNOMED CT enables a whole range of searches to be undertaken that take advantage of the links within the SNOMED terminology: for example the dm+d model allows the actual COVID vaccine administered to be recorded as well as identifying all COVID vaccines. The use of an international terminology also supports wider research as the data is already recorded in a form that can contribute to international research initiatives; previously effort would have been required to recode the data.

Unambiguous: The use of a single shared language enables the vaccine and target disease to be recorded in a standard form; anyone reading this, whether clinical or citizen, will always be presented with information using the same text.

Challenges and Developmental Requirements

The Vaccination Management Tool will be extended so that a single vaccine can be associated with multiple diseases captured using SNOMED CT e.g. MMR, and the number of vaccines captured using VMT will increase so that NDP holds the full vaccination history for individuals.

The overall business flow currently uses mapping tables developed specifically for this application; this will move to using the National Ontology Server when available. Other applications or use cases can then have access to the same mapping tables if required.

Providing citizen access to data held on NDP in Scotland will enable an individual to access their own immunisation record enabling them to understand if they need a booster or not, say for overseas travel. This has the potential to save administrative and clinician time in looking this information up for citizens. The advantage of using SNOMED CT is that everyone starts to use the same common language reducing ambiguity.

