response strategy. To promote effective working, the functionality enables observations to be recorded via mobile device or ward computers and has enhanced safety features to support early identification of the deteriorating child. This work followed the successful development and implementation of eObservations incorporating NEWS2 for adult patients with a recognised improvement in the detection of deteriorating adults.

Methods ePAWS was developed from the existing paper based graded strategy. Logic within the functionality calculated the score and presents the relevant strategy advice to the user on observation submission removing the risk of calculation errors and ensuring appropriate actions are taken. Additional safety features including wristband scanning to support patient identification, requirement for a Registered Nurse countersignature for higher risk scores recorded by a clinical support worker, tasks generated for observation due time and for an intervention to be recorded for higher risk scores. To promote visibility, the ePAWS scores and related strategy colour present on the desktop, mobile and electronic white board. There is also the ability to set bespoke parameters for children with different physiological norms. The functionality displays the results in chart and table views with the ability to tailor this to view different trends.

Recognising the importance of the change in practice required for using the new functionality, an enhanced training and support plan was implemented utilising mandatory e-learning supported by a dedicated training team to provide group, one to one and go-live floor walking.

Results User engagement in the move to digital recording of electronic observations and ePAWS was seen across the Children's Hospital. Linking ePAWS to the electronic ward view was recognised to promote visibility of deteriorating patients and supporting staff to ensure observations are recorded and actioned in accordance with the strategy, promoting patient safety. Clinicians acknowledged the benefit of observations being recorded on a central digital system enabling all health professionals involved in the patients care to review the observations from anywhere in LTHT and externally. Clinician feedback recognised that a chart view which can be tailored to enable easy identification of trends e.g. looking at a patient's Blood Pressure over a period of time is valuable.

Supporting implementation with mandatory elearning to be completed prior to go-live and a dedicated support and training team ensured the functionality was quickly, effectively and safely embedded in practice. Staff highlighted the benefits of no missing paper documents, clear awareness of the actions to take and the additional patient safety from Registered Nurse countersigning for patients with higher scores.

Conclusion The implementation of electronic observations and ePAWS has been highly successful, with improvement in the escalation of care for deteriorating patients. The enhanced visibility and additional safety features within the system promote patient safety through clear, standardised strategy adherence.

The utilisation of e-learning and on the ward training and support during go-live was recognised to have supported the safe, timely transition to digital working. The e-learning is now part of the induction programme for all new trust clinical staff.

It is clear that functionality requires user training and support for it to achieve its potential for patient care and safety.

18 IMPLEMENTING SNOMED CT IN THE OXFORD ROYAL COLLEGE OF GENERAL PRACTITIONERS CLINICAL INFORMATICS DIGITAL HUB (ORCHID) SOME PROBLEMS ENCOUNTERED AND LESSONS LEARNED

John Williams. *FCI Trustee*

10.1136/bmjhci-2022-FCIASC.18

Objective Identification of significant problems encountered and solutions adopted while implementing SNOMED CT to replace legacy coding schemes in a busy research and surveillance unit using patient level coded General Practice data held in a database populated by extraction from a subset of English General Practices:

- Setting up a full SNOMED CT database from scratch
- Changing data extraction/search processes throughout the unit away from the use of legacy Read version 2 and Clinical Terms Version 3 codelists to reusable SNOMED CT 'variables' held in a library
- Establishing a robust process for curating, storing and maintaining SNOMED CT 'variables'

Methods Retrospective review of an implementation project.

- Setting up full SNOMED CT database. Research required to find clear instructions as to how the release files available from TRUD should be processed to build a fully functional database and to avoid pitfalls. Further research to develop understanding of SNOMED CT concept inactivation and how to mitigate effects
- Collation of legacy codelists into consistent format to pass through cross mapping tables
- Design and implementation of infrastructure to hold reusable SNOMED CT 'variables' taking into account naming, provenance, metadata to be included, handling of inactive concepts
- Development of robust and time efficient SNOMED CT variable curation process o Development of supporting tools o Training of clinicians to curate
- Explaining to researchers the concept of reusable 'variables' and the need for them to modify practices in order to match research and surveillance data needs to an existing library of 'variables' and to seek curation of new variables to fill gaps o Consideration of problems with defining research/surveillance data requirements
- Providing the means to search the library
- Explanation of the implications of inactivations
- Version controls
- Consideration of how best to convey the coverage and definition of 'variables' to others

Results

- SNOMED CT database successfully set up: Combination of experimentation, outdated advice found in grey literature, informal help from terminology expert colleague
- Legacy codelists: Found 350 in multiple formats, little or no provenance or definition, idiosyncratic naming. All translated in batch via cross mapping tables. Resulting outputs used as substrate for full curation. Only 154 of these taken forward. Full curation typically added many extra active and inactive concepts
- Infrastructure developed: Supporting:

- Unique naming and numbering of 'variables' o Agreed editorial principles for naming o Recording of dates and names of curator and checker
- Agreed metadata including output type, option for free text comment
- Storage of 'variables' in supertype/subtype format
- Generation of concept flatlists for searches on demand
- Agreed curation process, making best use of supertypes that can be added or subtracted. 'SNOMED CT helper tool' developed. Curating team trained in its use. All 'variables' checked by second team member
- Interaction with researchers.
- Difficulties with:
  - Shifting thinking away from fixed code lists
  - Obtaining plain English definitions of requirements
  - Matching requirements to existing 'variables'/to identify gaps; help needed from curation team
  - Explaining implications of inactivations
  - Scepticism about re-usability

Conclusions

- SNOMED CT database implementation hampered by poor quality, inaccessible, guidance
- Cross mapping legacy codelists of limited value. Significant time wasted in inferring definition/purpose. Curation against full SNOMED CT led to richer more complete concept lists, and rejection of some original concepts as erroneous. Less than half of legacy codelists were fully processed into the library. Better to start afresh and apply clear definition direct to SNOMED CT
- Infrastructure o 'Variables' stored in supertype/subtype formulation easily exportable as Expression Constraint Language (ECL) statement which is human readable and computable. Built-in mitigation for inactivations occurring over time
  - Easy to overlook resources required to design and implement fit for purpose supporting infrastructure
  - No agreed standards for:
    - Naming 'variables'
    - Associated metadata
- Curation process:
  - Good support tooling essential to achieving major savings in time and increased efficacy.
  - Curators should
    - Have clinical knowledge
    - Work as a team
    - Check each others' work
- Interaction with researchers o Reproducibility of 'variables' still dependent on code lists whereas SNOMED CT version plus ECL formulation might be more robust and meaningful
  - Data requirements evolve as projects develop, leading to variable mapping changes. Version control of documentation essential