only 18% of information sharing occurring through the electronic record keeping system. The most surprising finding was the skills and confidence gap. Despite 60% reporting good confidence to use systems, only 14% of occupational therapists felt confident to capture the impact of occupational therapy. Analysis of the survey findings identified that there was no significant difference in self-reported data knowledge confidence in different contexts of practice or at different points in an occupational therapists career. Those that rated themselves as having proficient data knowledge skills were employed in roles that were closer to data e.g. quality improvement and fellowships.

Conclusion Occupational therapists are high users of multiple electronic record keeping systems and the most frequently accessed professional development activity was system specific training. 60% of occupational therapists feel confident to use different systems in practice, however it is concerning that confidence drops to 14% when asked how this data is used to evidence the impact of occupational therapy. Occupational therapy information has three components, information that relates directly to the person e.g. ability or impairment and information that relates to a persons occupations and the environments in which these are carried out. As a profession, we need to increase our data literacy knowledge and skills in relation to knowing when it is appropriate to format our information in a structured, unstructured or semi structured way. Occupational therapists need to grow in confidence around how information needs to be structured to aid information sharing and if other formats are required for secondary purposes e.g. extracting and analysing information that relates to participation in occupations. The survey findings could be useful insights for pre and post registration providers of occupational therapy education, system developers, professional bodies and organisations who employ occupational therapists.

16 A FRIENDLY ACCESSIBLE DESCRIPTION OF THE 'L-TEST' – MEASURING (DIS)INFORMATION IN INCOMPLETE INCIDENT REPORTING

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Objective Incomplete incident reporting is concerning. England's Mental Health Units Use of Force Act 2018 (Seni's Law), responding to deaths and incomplete reporting, will mandate central restraint reporting per-person including ethnicity. 'L' is a proposed test for disinformation, i.e. 'false surprise' regarding true reports. Information, or 'surprise', is measurable as H = -log(p) 'bits', as defined by Shannon (1948).

The author explains his conjectured 'L-test', in a friendly accessible way. It is generalisable from incomplete restraint reports to other incomplete centralised safety reports. L is increased if complete reports seem falsely surprising consequent to noise from incomplete reports.

Methods Incident registers and minimum data sets are ubiquitous. Each hospital reports diverse incidents alongside measures of size or need. Notionally then data may include a) restraints; b) detentions … m) bed days n) injuries.

L postulates that each hospitals' report of {a, b, ... m, n}, implies signals of ratios (log a/log b), (log a/log m)… which each can be received from the set of reports and combined to estimate e.g. a typical ratio of safety events per-patient per-month. Omissions are noise.

Procedure:

1. Split the ordered list of complete report estimates into alternate halves E 'even' and O 'odd'.
2. Derive a probability p(E~O) that E and O are similar using Mann-Whitney U test, approaching p(E~O) =1.0 for large similar E and O. The test tolerates non-normally distributed estimates.
3. Calculate h(E~O) information as -log(p(E~O)), approaching zero as O and E seem unsurprisingly similar.
4. Construct a noisy odd group 'NO' made of O mixed with estimates from incomplete reporters.
5. Calculate h(E~NO) information, approaching high values as incomplete reporters make E seem falsely surprising.

L is the proportional increase in h(E~O) due to noise:

$$L = \frac{h(E{\sim}NO) - h(E{\sim}O)}{h(E{\sim}O)}$$

Results Estimate signals support funnel plotting, scatter plotting, and coefficients of determination (R^2) as a measure of correlation.

The author will show that omissions (allowing for size and Poisson distribution) can be obvious on visual inspection of funnel and scatter plots and aid categorisation.

Where the estimates follow a normal distribution among reasonably complete reporters, this can be used to plot a typical ratio and infer incidents, with confidence intervals, even in null reporters, from measures of size and need.

Funnel plots from safety reports may have interesting properties such as innate asymmetry; they may reflect institutional-social processes such as regulation and closure as much as academic processes such as purported 'publication' bias.

H varies with the effect of incomplete reports and has other desirable features such as being zero when there are no omissions.

Conclusion Omitted reports have a measurable effect upon the standing of complete reports.

The author responds to this observation quantitatively, showing the roots and reasoning behind their conjectured 'L-test', in a friendly accessible way, with reference to papers under submission, other public data, and toy data sets.

In summary, L can tell investigators which incomplete reports skew the overall picture most.

In a context of restricted resource, regulatory efforts could concentrate on the omissions which have the most distorting effect – the biggest L score.

17 ELECTRONIC RECORDING OF PATIENT OBSERVATIONS WITH SAFETY FUNCTIONALITY IN THE ELECTRONIC HEALTH RECORD (EHR) FOR THE CHILDREN'S HOSPITAL AT IN LEEDS

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Objective Electronic observations incorporating ePAWS (Paediatric Advanced Warning Score) was developed as a bespoke functionality within the EHR for implementation across the Children's Hospital. ePAWS supports the identification of patients at risk of deterioration using a graded 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

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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: