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Leeds Teaching Hospitals NHS Trust case study:

Embracing SNOMED CT in emergency care

Summary

Leeds Teaching Hospitals NHS Trust decided to embrace SNOMED CT in their emergency department as a way to reduce duplication of data entry, ensure recording in a consistent way, and thus facilitating analysis, as well as supporting completion of the Commissioning Data Set (CDS) returns.This case study aims to provide an overview of their achievements.

Organisation profile

Leeds Teaching Hospitals NHS Trust provides hospital services for the population of Leeds and the surrounding area and acts as a regional centre for a number of specialties. In total they treat over a million patients every year, employing around 14,000 staff across six main sites.

Background

The aim of the work was to support the electronic recording of diagnoses in an emergency department in a way that was clinically meaningful and then to be able to produce from these recorded diagnoses the CDS returns. This activity was supported by the creation of a SNOMED CT subset for diagnoses in emergency medicine. The clinical terms within that subset were then mapped to the CDS codes.

The benefits are:

a.   Primarily, the subset supports clinicians to record electronically what is clinically relevant.

b.   Mappings to the emergency department CDS codes are used to meet the mandated requirement to report diagnoses as set out within the CDS.

Initially only diagnoses were mapped, although it is planned to create further subsets at a later date for other CDS data items such as investigations and treatments.

Prior to the introduction of the SNOMED CT subsets, the data quality of the CDS returns was felt to be sub-optimal and a high proportion of these returns had "other diagnosis" entered in this mandatory field. The close relationship of the clinical record to the secondary uses mandatory return has increased the accuracy of reporting on diagnosis in excess of 75%.

Business process

Before the Introduction of a SNOMED CT Subset In their electronic system diagnoses were selected from a list of approximately 40 high level diagnoses that had been created and managed locally to fulfil the CDS requirements, but was of little use clinically.

After the introduction of a SNOMED CT subset

An emergency department clinician from the national program created a subset of terms using SNOMED CT, which were then mapped to the CDS fields by the trust. The subset was loaded into their existing electronic system and the users now choose from the new list. The data quality has been improved and the CDS returns are now created automatically using the mapping table without the need for any manual input.

Approach

The list was started with the most commonly used emergency department diagnoses in the trust which was approximately 500 terms. A field "special diagnosis" was provided so that when no item in the list was appropriate something could be entered manually.

This list of special diagnoses is regularly audited and used to inform the expansion of terms in the subset. Input was also received from Australia and an international subset of SNOMED CT used for Emergency Medicine is developing. Each term is always mapped to the corresponding CDS return codes. The deliverables of the work are now a SNOMED CT subset of approximately 2000 terms, a mapping table of SNOMED CT to CDS return codes and a human readable view of each term.

Benefits and business case justification

The data quality prior to this project was less robust with frequent recording against the "other diagnosis" code. The decision to use SNOMED CT was that SNOMED CT moved them into alignment with the international direction; it provided a greater level of detail in a standardised format and would also allow comparing of data across different organisations.

Improved data quality means easier access to internal audits, with a greater level of detail and accuracy, for example regarding the emergency department attendances.

The Health Protection Agency is now taking an automatic feed of the SNOMED CT based diagnoses for infection surveillance which happens automatically in the background. SNOMED CT has a ready made taxonomy of clinical terms they can choose from.

The taxonomy provides a logical hierarchy which, for example, allows the retrieval of fractures irrespective of laterality. The emergency department work they do is aligned with best practice in the field. An audit six months after the introduction of the system showed a huge reduction in the lack of diagnoses of cases recorded; reducing from 30% down to 7%.

Challenges and lessons learned

In the first version it was found that all the required diagnoses were not available in their subset so the "diagnosis special" field was used frequently to capture these diagnoses. Following a number of audits with common items being added to the subset, these have become less frequent and they have been able to improve the quality of the data.

Training

Training is very limited; it fits in with the induction program that runs every four months. Individuals receive a short amount of training on the application within the induction and then are left to use it. Emergency department medical staff are encouraged to use the search facility rather than the hierarchical view of the data. If they choose the "diagnosis special" field, a warning comes up to discourage them from using this unless it is essential. The training is the same for all clinicians who use the system and no specific training on SNOMED CT is given. The fact that SNOMED CT provides medical terms for clinician use helps to make this effective.

- For more information on SNOMED CT visit: http://systems.hscic.gov.uk/data/uktc/snomed

- or to obtain information on the emergency department subset contact information email: information.standards@hscic.gov.uk

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