A brief introduction to national secondary care data sets and their use in capturing and reporting pressure ulcer occurrence

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Pressure ulcers (PU) are a long-standing challenge to health care, impacting on quality of life (QoL) and allocation of time and resources (Guest et al, 2020). The COVID-19 pandemic has posed additional challenges, and an increase in PU occurrence was identified during the first wave of the pandemic (Preshma, 2020). Cohesive data capture and reporting processes are crucial in underpinning any local or system wide quality improvement initiatives in PU prevention and care.

This paper is the second of a three-part series. The first paper in the series described the predominant methods that have been used to capture the prevalence of PUs in England over the last 20 years. This second paper describes the use of one of the secondary care data set, the Secondary Use Services (SUS) which will form the basis for a new PU reporting system in acute care. Work on community reporting will form a second phase of the project.

A third paper will describe the use of the Model Health System to report on PU metrics and to drive quality improvement in PU prevention and care.

Background

The Patient Safety Thermometer (STh), launched in 2010, was one of the largest and longest-lasting non-mandated data collection exercises in NHS history. It had a powerful impact in its early years (Power et al, 2016) but more recent evaluations (NHS, 2013), research (Armstrong et al, 2018) and feedback have shown that the data were incomplete (Smith et al, 2016) and it was no longer able to support improvement in the intended way. The STh was riddled with variation in interpretation of definitions and data collection and validation processes across NHS organisations (Coleman et al, 2016). Due to this lack of standardisation and under-reporting, the STh data was not suitable for commissioning or benchmarking purposes, or to underpin quality improvement initiatives (Smith et al, 2016; Coleman et al, 2016).

Following a public consultation as part of changes to the NHS Standard Contract (NHS, 2021), data collection for the STh ceased in March 2020. Many NHS organisations now use their local incident reporting systems for capturing and reporting on PU data but, as discussed in the first paper of this series, PU incident reporting data is not adequate for commissioning, benchmarking or quality improvement purposes.

This paper introduces the concept of using more suitable data sources for the purposes of capturing and reporting PU metrics. The proposed new system uses data from existing data sources, reducing the burden of data collection for clinical staff. This approach is in line with the draft '*Data saves lives: reshaping health and social care with data*' (DHSC, 2021) strategy, which sets out the NHS data ambition which includes reducing the burden of data collection on the frontline staff and improving data quality to inform decision making at local and national level. The first phase of this work covers acute care and the use of the Secondary Use Services (SUS). A second phase of the work will address reporting in community settings using the Community Services Dataset Submission (CSDS) and work to develop the use of this data set will commence in summer 2021.

DATA SETS

An introduction to SUS

When a patient or service user receives care from a secondary care service, data are collected that records this activity. The recorded data

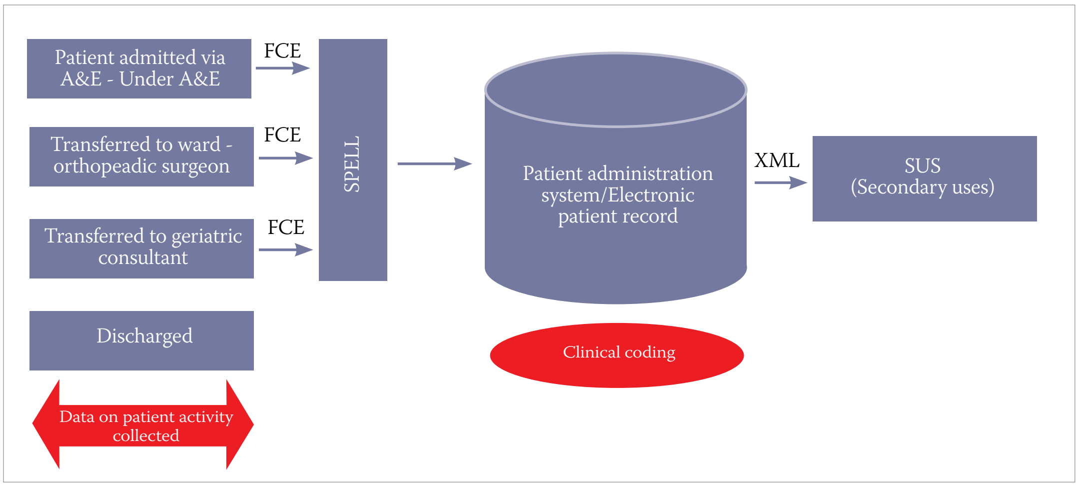

Figure 1. Flow of information from clinical notes into SUS

are sent to NHS Digital and stored in the SUS, which is a secure data warehouse that stores patient-level information in line with national standards and codes. SUS serves as a data source for Commissioning Data Sets (CDS) from which Hospital Episode Statistics (HES) data is extracted.

HOW DOES DATA FLOW INTO SUS?

Clinician contact with patient

Clinical information capture comes from clinicians who provide care for the patient. Activities such as diagnosis, assessment, referral or treatment, are recorded immediately after clinical care using local data capture systems which may be a paper-based system, such as recording in paper clinical notes or via direct entry into an Electronic Patient Record system (*Figure 1*).

In order to have accurate PU data in SUS, clinical notes need to be accurate and clear to enable accurate coding.

Clinical coding

Once information on patient activity has been captured by clinicians in the patient's clinical record, the record is coded by a clinical coder within six weeks of the patient's discharge. This translates the narrative of a patient encounter into a coded record using ICD-10 codes (International Statistical Classification of Diseases and Health Related Problems version 10, ICD-10) for diagnoses and OPCS for interventions.

ICD-10 is an internationally agreed set of clinical classification standards mandated nationally for use across acute care in the NHS. It consists of groupings of concepts (codes), plus definitions and business rules for their use. ICD-10 permits the systematic analysis, interpretation and comparison of morbidity data collected. ICD–10

Table 1. Relevant ICD 10 codes for pressure ulcers are:

Code	Definition
ICD-10 code L89 (ICD.Codes, 2021a)	Used when the presence of a pressure ulcer is noted in a clinical record. This is identified by the clinical coder.
ICD-10 code Y95 - nosocomial condition (ICD.Codes, 2021b)	Used to code hospital-acquired conditions. This is a condition that is contracted from the environment or staff of a healthcare facility. Note: The absence of this code does not automatically mean the PU was not present on admission, but rather that the clinical documentation was not explicit.
Present on admission (POA)	This flag positively and negatively records if the condition was present on admission.

Table 2. Practical examples of accurate coding of PU occurrences

	Pressure ulcer status				
Scenarios	**On admission**	**During episode of care**	**On discharge**	**Clinical coding**	
1.	No PU	Develops PU	Still has PU	L89	Y95
2.	No PU	Develops PU	PU has healed	L89	Y95
3.	No PU	Develops PU but is transferred to a specialist hospital (not in same organisation)	Still has PU	L89	Y95
4.	No PU	Develops PU but is transferred to another hospital (in same organisation)	Still has PU	L89	Y95
5.	Has a PU	PU remains the same	Still has PU	L89	Present on admission
6.	Has a PU	PU deteriorates to a more severe category	Still has PU	L89	Present on admission

hence provides a means of classifying diagnoses.

ICD-10 codes for pressure ulcers exist for a range of relevant issues as shown in *Table 1*.

Coded episodes are then transferred into SUS as Extensible Markup Language (XML) files used to structure data for transport and automated incorporation into the central record at NHS Digital.

The coded record is part of a Commissioning Data Set (CDS) enabling clinical activity to be costed in a standardised way, informing Payment by Results (PbR) and providing the basic data for analysis of hospital activity in the Standard Extract Mart (SEM).

Issues with clinical coding

A coded record should provide a summary of all the information about the status of the patient, their diagnoses and their treatment. However, if clinicians are not involved in clinical coding and or are unaware of coding processes, some important information may not to be included in the clinical record and thus missed out at the coding stage. A definitive diagnosis of PU must be clearly stated in the clinical record used by the coder in order for it to be captured. Omitted or unclear information in the clinical record can lead to a significant difference between the richness of information available in the clinical record and that which ends up in the coded data.

Clinicians record information on the occurrence and level of PU damage during initial assessment and ongoing care. In organisations where coders only look at medical notes, it is possible that PU information may not be coded if it is only recorded in nursing records (both paper and electronic). Uncoded PU information will not appear in subsequent SUS reports.

Accuracy and completeness of coding relies on clinical coders having access to all relevant clinical records and being able to accurately interpret and extract their content.

Coders typically use either hard copy notes or information within electronic patient records (EPR) or in some instances information held in a variety of other electronic data collection systems within their organisation, although they may not have access to them all.

Coders can only code definitive diagnoses or procedures recorded on clinical records. For example, a patient with chest pain with a 'possible', 'likely', or 'query' heart attack would be coded as chest pain. If the clinical information instead says 'probable' or 'treat it would be coded as a heart attack. Subtleties in the language lead to significantly different coding. Also, coders cannot interpret test results. For example 'blood pressure 150/90' would not be coded as high blood pressure. It is also unreasonable to expect coders to infer what else might normally be recorded but has not been. They can code what is clearly recorded (Dunn et al 2021).

Episodes and spells

Coded clinical activity data in SUS are reported in terms of either finished consultant episode (FCE) and spells. A FCE is the time that a patient spends under the care of one consultant while a hospital provider spell is the total continuous stay of a patient with the same healthcare provider. This may consist of multiple finished consultant episodes as shown in *Figure 1*.

DISCUSSION

Safe and efficient patient care relies on high quality data to inform quality improvement of clinical care. The National Wound Care Strategy Programme (NWCSP) and the National Stop the Pressure Programme jointly agreed in 2020/2021 to use existing national data sets as the data source for reporting PU occurrence.

A new reporting system has been developed based on national coding and data sets routinely used in secondary care. The SUS data is being used as the data source for this nationally commissioned reporting system to capture PU data from acute care providers. The new national PU reporting system data will be presented in spells to represent a complete stay in hospital. The new PU reporting system will be hosted on the Model Health System. The initial focus will be to ensure that NHS secondary care organisations are consistently reporting on the absence or presence of PUs and whether these were present on admission.

Data reporting in community settings will use the Community Services Dataset Submission (CSDS) and work to develop the use of this data set will commence in summer 2021, as a second phase of this work. The new reporting system will require effort to address lack of data completion, imprecise data, poor coding of PUs in health care records and inconsistent use of some data fields. The responsibility for this does not sit within a single profession, but with all clinicians who provide care to patients, and with those responsible for coding clinical records.

The first priority is to ensure the accurate coding of presence or absence of PU (ICD-10 L89), and whether this was present on admission (POA). As seen in *Table 2*. This will require clinicians to record the presence (or absence) of pressure ulceration as part of clinical assessment and to ensure this information is clearly recorded in the patient's medical and nursing notes. It is then the responsibility of the clinical coder to accurately apply the relevant PU code to that clinical information. The accurate coding of PU information will ensure that data extracted from SUS to populate the new reporting system will be accurate and reliable.

CONCLUSION

Quality improvement for clinical care depends on accurate patient information that in turn depends on accurate coding. Understanding the process of clinical coding is a key step towards improving clinical data. In the first instance, clinical data sets are likely to require significant work to improve their accuracy, but more accurate datasets will more accurately reflect the level of pressure harm within a care organisation. Collecting data through existing data sources will reduce the burden of data collection for clinical staff.

A new PU reporting system will be launched in pilot format in a small number of organisations in September 2021 via the Model Health System portal. The next paper in this series will introduce users to the Model Health System.

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