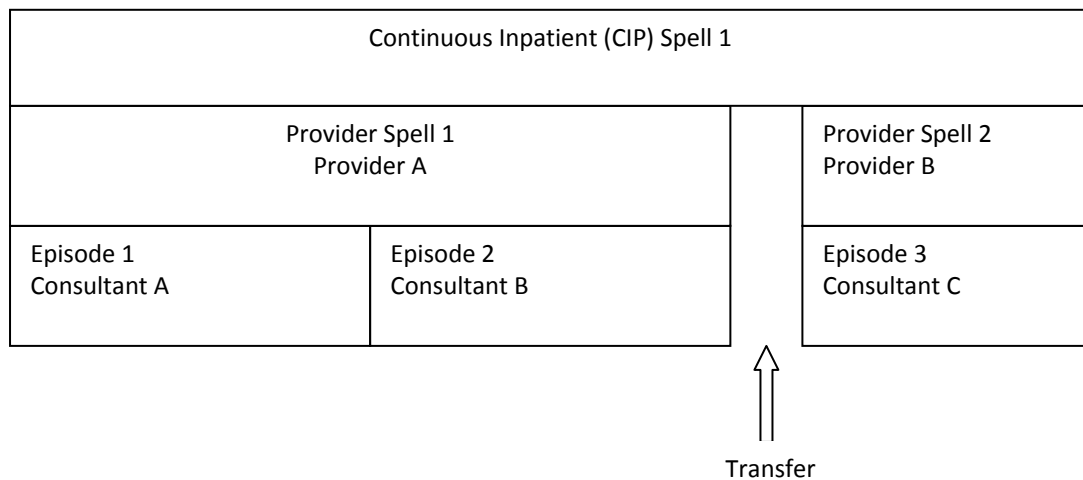


The data source for this tool is the clinical indicator data set covering hospital discharges in England during 2007-08. This data is derived from Hospital Episode Statistics (HES) which is a data warehouse containing details of all admissions to NHS hospitals in England. It includes private patients treated in NHS hospitals, patients who were resident outside of England and care delivered by treatment centres (including those in the independent sector) funded by the NHS.

In order to generate a number of indicators a clinical indicator data set has been generated from HES data. The HES data, in turn, has been populated via the Secondary Uses Service (SUS) from Patient Administration Systems (PAS) in NHS provider locations.

HES is a data warehouse containing information about the episode of care that a patient has received; an episode is defined as the time a patient spends in the continuous care of one consultant using the hospital site or care home bed(s) of one health care provider. A patient may be transferred from the care of one consultant to that of another during a stay in a particular hospital; the total period spent in one hospital during one stay is known as a provider spell. A patient may also be transferred from one provider to another; the total period from admission to hospital to eventual discharge is known as the continuous inpatient (CIP) spell.

So, a CIP spell consists of one or more provider spells, and a provider spell consists of one or more episodes.



The majority of hospital spells consist of one episode but because many clinical indicators require a full view of the patient experience from admission to discharge it is necessary to consistently construct CIP's from the constituent episodes.

Some key points about the detail of the construction of the clinical indicator extract are listed below

- while the source HES data is split by financial year, clinical indicator data is derived from multiple data years in order to generate complete patient spells even where they overlap the year end.
- a number of fields are used to group episodes together into a single record for a spell.
- selected attributes from the first and last episode in the spell are made available.
- the sequence of spells for a patient can be examined, allowing, for example, analysis of readmissions.

The clinical indicator data is linked with the Office for National Statistics (ONS) mortality data which covers all deaths occurring in England and Wales, this enables analysis of mortality both within and outside hospital.

The resulting data set has been 'spelled' and attributes from the first and last episode in the spell are available for analysis. Due to availability of data it was decided to use the attributes of the first episode in the main, except where the attribute of the final episode was required - for e.g. to determine the discharge method of the spell.

The data was first limited to ordinary admissions, day cases, and delivery related spells by applying the filter `first_class pat in 1, 2, 5`; deaths in hospital were excluded, since the length of stay is not under clinical control - `last_dismeth <> 4`; spells which ended in the year in consideration were selected - `Spell_Disdate between 2007-04-01 and 2008-03-31`; and those spells without an admission date were excluded - `Spell_admidate is not null`.

A flag was set to distinguish between spells where the patient had diabetes, and others by considering the 20 `First_diag` fields - where any of these was E10, E11, E12, E13 or E14 the record was marked as being in relation to diabetes.

The measures length of stay (LoS), day cases and emergency readmissions were then calculated. `LoS = average(Spell_LoS)`, note that LoS is zero where the admission and discharge occur on the same day.

day cases = where `first_classpat = 2`

emergency readmission = where readmission date is less than 28 days after the prior spell discharge date and the readmission method is in 21, 22, 23, 24, 28

Groups of provider / PCT, HRG Chapter, Diabetes Status and measure were then extracted. Groups with fewer than 30 records were excluded since these relatively small numbers were not considered to be statistically significant. This resulted in a number of groups where there was no non-diabetic (expected) value to pair with the diabetic (observed) owing to, for example, provider X supplying only non-diabetic records for HRG Y; these single sided groups were excluded.

The data was then limited following NHSIC policy on small number suppression and in order to mitigate against risk of patient identification from data. Records where the observed number of bed days, day cases or emergency readmissions was less than 6 were excluded, along with any resulting single sided groups.

The data was then finally limited by excluding Mental Health and Unknown HRG Chapters, and excluding unknown or invalid provider / PCT codes.