Hospitals Forum
briefing
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NHS CONFEDERATION

The non-executive directors' guide to hospital data

Part one: Activity, pathways and datasets

Key points

- Detailed data is collected on service deliveries that take place in NHS hospitals in England. This data may be recorded by patient pathway stage, by speciality, by treatment provided, or by disease and treatment given.
- There are a variety of data sources available to NEDs – including the hospital's patient administration system and the NHS Choose and Book system.
- Analysis of data can provide valuable insights into forecasting service demand, and identifying how to better match capacity to demand by tackling issues like patient non-attendance or appointment rescheduling.

Understanding your organisation's data is an essential part of providing effective oversight. But data may not always give you the complete picture and it is important to first understand what data is available, how it is recorded and what these records are used for.

This *Briefing* will help non-executive directors (NEDs) better understand NHS data and how it can be used to determine what is going on in their hospital. For the purposes of this *Briefing* we examine data in the acute care setting only. Data is of course collected in primary care by GPs, pharmacists, dentists and opticians, but the various datasets are not linked by the NHS.

This *Briefing* introduces the scale of NHS activity, the range of activity, the patient pathway and the major datasets.

The scale of acute hospital activity

In England there are more than 70 million outpatient attendances and 15 million hospital admissions a year. An analysis of the total volume of hospital admissions reveals that two million of these relate to maternity services and babies, eight million are elective and five million are emergency admissions.

Examination of the admissions data reveals that the proportion of the population admitted to hospital increases with age; nearly two-thirds of patients admitted

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to hospital are over the age of 65 and the likelihood of admission is greater for older people – 83 per cent of people over 85 years of age will be admitted to hospital (see Figures 1 to 3).

The range of hospital activity

An extensive range of services are delivered in secondary care. These hospital services can be differentiated in five ways:

- by the stage on the patient's pathway – outpatient, diagnostics, daycase or inpatient
- by speciality, based on the age of the patient – for example, birth (obstetrics), childhood (paediatrics) and care of the elderly (geriatrics)
- by specialty, based on the part of the body that has the problem – which is then further categorised as a surgical or medical (non-surgical) case
- by treatment provided by other health professionals – for example, physiotherapy, speech therapy, dietetics
- by disease, and the treatment given.

Other services which support this clinical work include:

- 'hotel services' providing food, cleaning and portering
- technical support – for example, medical physics, maintaining diagnostic and treatment equipment and ensuring that it delivers the correct dosages; and IT departments
- estates (or building) services, looking after the provision of power and water, building maintenance and heating
- administration – the management of patient appointments which includes recording data about a patient's hospital contact, coding their treatment into agreed classifications, and the distribution of letters to GPs informing them of what is happening to their patients.

Key questions for NEDs to ask

- How often does your trust cancel and re-arrange appointments?
- What is the rate of hospital cancellation by specialty?
- What is your policy for DNAs – does this feel appropriate for your population?
- How many coders does your trust have and are they qualified?
- Is your trust able to consistently recruit qualified coders?
- What internal auditing is done on the accuracy of coding?
- How aware are doctors within your trust of the importance of the source documents to accurate coding?

The patient pathway

This *Briefing* reviews the standard patient pathways for adults admitted to a hospital.

Elective admissions

A patient makes an appointment at a GP practice. The doctor carries out an initial examination and possibly some tests before referring the patient to a named consultant. The patient then attends the hospital as an outpatient for an appointment with that consultant. One of the outcomes of this consultation could be a procedure (operation). When the patient is admitted to hospital for the procedure, it is classed as an elective admission – because the patient has chosen (or elected) to have the procedure. Elective admissions currently make up around 50 per cent of all hospital admissions and include orthopaedic procedures, such as hip replacement. However, as the majority of elective procedures are now carried out as day cases (no overnight stay required) these constitute a smaller proportion of bed occupants.

Emergency admissions

The largest proportion of hospital occupants are emergency admissions. The manner in which patients are admitted through the 'front door' of a hospital as an emergency case will vary from hospital to hospital. Some hospitals only have an A&E department, and patients are admitted straight onto wards from there. Many hospitals, however, now have special admitting units which can cover all emergency patients

and are often split between medicine and surgery. These are known variously as clinical decisions units (CDUs), acute medical units (AMUs) and medical and/or surgical admissions units.

A common example of a surgical admission is a patient with severe abdominal pain who has been sent in as an emergency by their GP.

An example of an emergency medical admission is an elderly patient with a urinary tract infection. In the elderly these infections can be debilitating and such patients are often described as being 'off legs'. With an elderly individual, the admission may have resulted following a phone call from a carer or GP.

From a data perspective, there is no seamless linkage between the primary care data sets and that generated by hospitals. Within the secondary care setting itself, the use of three separate data sets within hospitals can make tracking the patient pathway from beginning to end a challenge.

The major datasets

The data recording system in use in hospitals today was set up prior to the introduction of PbR. Despite the fact that the data that underpins hospital income (as defined by PbR) has become a business-critical issue, the way that clinical information is recorded has not changed.

At the present time three major datasets are recorded in a hospital:

- data for outpatients
- data specific to A&E
- data for admitted patients.

These three datasets have a certain amount in common – all record personal information, basic administrative details and some clinical information. The administrative details will include the patient's personal information and the date of contact with the hospital.

This data is captured in a patient administration system (PAS) which contains the three unlinked data sets. The information in the PAS is published centrally (in a patient-anonymised form) by the Health and Social Care Information Centre as the Hospital Episode Statistics (HES) database.

Who records the data?

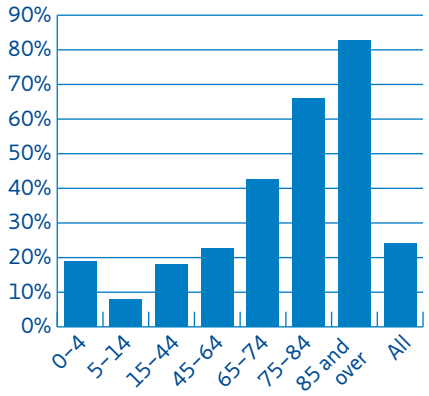
All three datasets, personal details and some of the administrative data - such as date of attendance and admission - are normally recorded by an administrative assistant such as an outpatient or ward clerk. Nursing staff should ensure the recorded data is correct.

How is clinical activity recorded?

For outpatients and A&E cases, limited clinical data is recorded at the time of the event. For admitted patient care, clinical information is usually recorded by a team of individuals known as clinical coders.

Clinical coders interpret the information recorded by clinicians and convert this into a set of codes. There are two sets of information that are recorded by coders; diagnoses and procedures.

Figure 1. Proportion of age band admitted to hospital



Note: maternity admissions excluded

Figure 2. Number of outpatient attendances by age

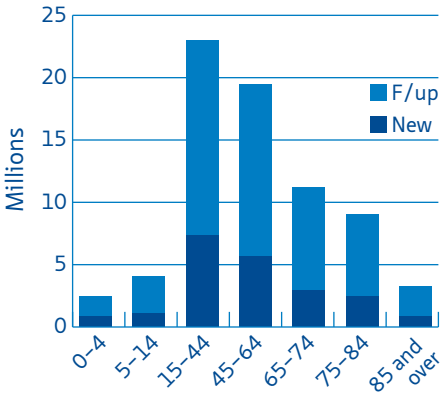
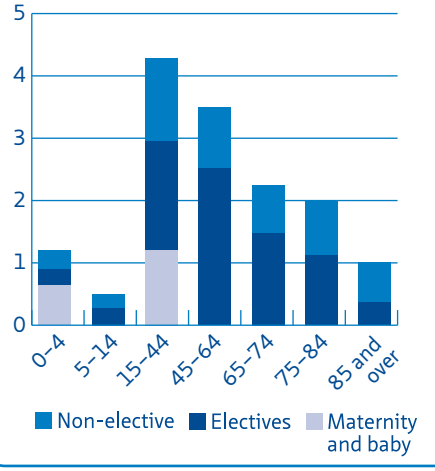


Figure 3. Admissions to hospital by age band



The majority of hospital activity is recorded using the PAS, and nationally and internationally accepted classification systems are used when recording activity. Patient diagnoses are recorded using International Classification of Diseases (ICD) codes – also known as ICD-10 – and procedures are recorded using operating procedure code supplement (OPCS) codes.

While ICD and OPCS codes are the universally mandated classification systems used in the UK, these codes are not always universally applied in the same way; hospitals adopt slightly different approaches to the way an admission type is recorded, including whether or not to include information details such as whether an admission is via GP.

Similarly, a patient who is a regular attender for renal dialysis, chemotherapy or radiotherapy may have their treatment recorded differently depending on the hospital they attend. Indeed, some trusts do not even record regular attenders (patients attending a hospital without using a bed and not having a treatment that would classify them as a day-case).

Payment by Results

Payment by Results (PbR) is the current classification for determining how much a hospital should be paid. PbR uses around 1,400 classifications – or healthcare resource groups (HRGs) – which are further sub-divided by whether a case was a planned or emergency admission, the specialty of the responsible consultant and the age of the patient.

How is data used for contracting?

The NHS contracting rules set down the principles by which payments to acute trusts are made. Under the standard contract, hospital income is determined by PbR – a payment per patient which is linked to the complexity of the service that has been provided.

This complexity is defined by a set of healthcare resource groups (HRGs); groupings that represent patient events judged to consume a similar level of resource. At present there are 1,400 HRGs which are used as units of 'currency' and support standardised healthcare commissioning in England.

Payments are based on details taken from the PAS and submitted to the NHS commissioner. The commissioner has a short period of time to challenge the data.

However, in practice it is not unusual for commissioners and acute trusts to come to an arrangement that is different – such as a block contract (a fixed price for all activity, irrespective of volumes).

For both outpatients and A&E attendance, a simple 'fee per attendance' model is used. Within outpatients, the fee will vary by specialty and according to whether it is a first or subsequent ('follow up') attendance.

Choose and Book

Having introduced the different data sets, next we'll examine the first part of an elective pathway – how a patient is referred and is given an appointment. One way of booking an appointment is through Choose and Book, a national electronic referral system that allows patients to choose which hospital or clinic they go to and the time of their first outpatient appointment. The overall objective is to make Choose and Book the 'everyday method of referral' in the NHS.

When a referring clinician and their patient agree that a referral to a specialist in acute care is required, the clinician is able to enter specific search criteria into Choose and Book and generate a list of appropriate services for the patient to choose from. These services are known as directly bookable services (DBSs).

The system can search for a suitable appointment to be booked at a given time, or the patient can be given an appointment request letter that includes their unique booking reference number (UBRN) and a password. This gives the patient clear instructions on how they can book their appointment later either by phone or via the internet.

When an appointment is booked for a service with no appointment slots available, the referral is placed on an appointment slot issues (ASI) worklist, which is managed by the trust. The most common reason for the unavailability of appointment slots

is that the trust is unable to match demand for a particular service.

Reports obtained from the Choose and Book system can provide a wide range of useful information; for example, how many referrals have been made at provider and speciality level or how many appointments have been booked and whether there has been an increase in referrals to a specialty in a particular area. Other information, including the age/gender of patients treated, pre-requisite investigations required and alternative services is also recorded.

Outpatients

Outpatient activity is the most routine patient pathway. An outpatient appointment can be categorised as a 'new' visit – the first time that a patient has been seen by a particular specialty for a given episode of illness – or a follow-up appointment.

Outpatient activity is recorded through the PAS. For hospitals trusts, the number of attendances is important because this is the basis on which activity is paid for by the commissioner. In any given trust there can be up to 100 different specialities that offer outpatient clinics.

The routine data items recorded for outpatients include patient details such as name, date of birth and the GP with whom the patient is registered with. The patient's NHS number will also be recorded as this is the key index for all systems. The speciality to which the referral was sent is recorded, but presenting problems are not. The number of patients that do not attend appointments (DNAs) is also recorded by specialty, as well as any cancellations or appointments that have to be re-booked.

Once a patient has been seen, the outcome is recorded from a number of options which include whether the patient was discharged, given a further appointment or added to the waiting list for a procedure. If a patient is asked to come back again, the next appointment is counted as a follow-up. There are often restrictions on the ratio of new to follow-up patients because commissioners want to discourage hospitals 'holding onto' patients.

Outpatient procedures have their own tariff; payments associated with outpatient tariffs are generally lower as procedures are generally less complex.

Other things to consider about outpatients

Outpatient appointments are generally led by a consultant. However, the patient may be seen by a more junior member of the team and, in some cases, by another clinical professional acting in an independent capacity; for example, a specialist nurse or consultant. Unlike junior doctors, nurse specialists have their own tariff.

Consultants may want diagnostic tests carried out and will ask a patient to re-attend as a follow-up for a discussion of the test results. This 'loop' into diagnostics used to be a common cause of delay. However, more clinics are being set up as 'one-stop' services where diagnostics are provided when the patient first attends.

The non-executive directors' guide to hospital data

This *Briefing* is the first in a series of four – the 'Non-executive directors' guide to hospital data' – which have been developed to increase the non-executive director's understanding of NHS data and give them the confidence to ask the right questions about it. All the *Briefings* will be available from the NHS Confederation and CHKS websites.

The Hospitals Forum

The Hospitals Forum aims to identify the most important issues for hospital service providers, and then work to influence national policy and support and inform members on those priorities.

For more information on our work, see **www.nhsconfed.org/hospitals** or email **membership@nhsconfed.org**

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