Optimising hospital patient flow

Achieving optimum patient flow is at the very top of the healthcare agenda – it is a barometer for the health of the NHS itself. **James Ferris**, account manager for Aptean Medworxx, walks through the advantages of adopting a software-based system to deliver the evidence-based benefits prescribed by NHS Clinical Utilisation Review (CUR) policy.

Managing patient flow effectively is fundamental to any hospital and its operational efficiency and long term sustainability. Maximising the use of finite resources, while ensuring safe high quality patient outcomes, is a core objective that all healthcare providers strive to achieve.

The recent winter pressure and demand has seen elements of the debate become common currency beyond the confines of the care sector. Two defining themes – the identification of a winter bed crisis in the NHS, exacerbating what many identified as a systemic shortage of beds, alongside the risks and ramifications of a potential flu pandemic – have combined to place the issue of patient flow into sharp focus.

However, debate has often been dominated by emotive language describing patients left in A&E corridors, or of care journeys culminating in bed-blocking as elderly patients become 'stranded' in the wrong care setting. These defining events are routinely held-up as either representative of an NHS that is an unwieldy bureaucracy, or a system reeling from being consistently under-resourced and not designed to meet patient demand. Noticeably, health and social care systems that have adopted best practice to improve flow find themselves much better able to cope with external pressures than those that have not.

Breaking down the barriers

As our patient demographics get older and bigger, debates have concentrated on how the NHS should change and adapt. In 2014, the *NHS Five Year Forward View* (FYFV) called for greater integration of health, social care services, and of physical and mental health services. As a result Sustainability and Transformation Partnerships (STPs) and Accountable Care Systems (ACS) are providing a vehicle to enable providers and commissioners to collaborate in order to take accountability for a defined set of resources and make faster improvements in the quality of care.

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This reflects the desire to establish a working consensus to drive the aims of the FYFV, once having established: "a collective view of how the health service needs to change if it is to close the widening gaps in the health of the population, quality of care and the funding of services."[1] Success is dependent on the basis that: "The NHS will take decisive steps to break down the barriers in how care is provided."[2]

Timely and appropriate patient transitions are a key measurement of effective joined-up health care within the local health economy. It is at the core of national and local provider initiatives to ensure integrated care throughout patient pathways – with the aim of improving quality, reducing the cost of care and most importantly minimising unnecessary waits for patients.

The FYFV clearly points to how this integration may best be enabled: "The NHS needs to adapt to take advantage of the opportunities that science and technology offer patients, carers and those who serve… We will invest in new options for our workforce, and raise our game on health technology – radically improving patients' experience of interacting with the NHS."[3]

Technology removes the operational workarounds

Consequently, with new digital and technology advances, there is a significant opportunity to move to more individual and population-centred care. This will make it easier for the NHS to improve its understanding of patients and their individual needs, allowing providers to tailor services to groups to provide the biggest impact; improving patient outcomes and delivering system-wide efficiencies to free up resources for frontline services.

The emphasis of Clinical Utilisation Review (CUR) offers a scientific and internationally recognised approach to achieve this: "It (CUR) is an evidence-based ▶

process that enables both commissioning and provider organisations to objectively identify if patients receiving care in the most appropriate care setting at the right time."[4]

Significantly, implementing a web-based software CUR system automates many manual discharge processes that exist within hospitals while providing transparency as to whether it is appropriate for a patient to be in hospital. Too often variances in internal discharge processes or decision-making leads to patient delays, or worse, a patient readmission. The introduction of software – based discharge tools with in-built admission and discharge criteria has proven to remove a lot of the debate and subjectivity as to which patients are genuinely ready for discharge today – and what the next steps are.

Consequently the negative and inefficient effect of people working in isolation is reduced because patient discharge information, based on evidence-based assessments, can be easily shared across the organisation using purpose built technology rather than manual processes, phone calls or time consuming workarounds that lead to trawling of the wards. "By adopting the CUR process, and utilising the latest technology to

Case study: Web-based software CUR system

The Norfolk and Norwich University Hospital Foundation Trust (NNUH) is responsible for providing a broad range of acute clinical services to a population of around 900,000. The hospital provides secondary acute care and some specialist tertiary services, and is a centre for professional education, training and healthcare research for the East of England.

The Trust employs approximately 7000 staff, on two sites, and provides a total of 1200 beds. Like most large acute teaching Trusts the NNUH has to balance the combined impact of financial and staffing demands with the provision of high quality care and efficient patient flow. Demand for healthcare services is also increasing year on year, and Norfolk has a population with the oldest average age in the UK.

NNUH has sought to deploy innovation and new technologies in order to achieve improved and more rapid patient flow. The Trust has piloted a number of new operational initiatives in the last 12 months including the expansion of ambulatory emergency care services. This reduces the time patients wait to move to a nursing home or long term residential care by the deployment of individual care coordinators. The Trust has also developed the UK's first Older People's Emergency Department which is dedicated to patients over 80 years old. The Trust's main aim is to deliver continuous service improvement by monitoring and reviewing the efficiency of each step in the patient's acute hospital journey, and delivering solutions to problems which may retard optimum patient flow.

Winter Pressures

The NNUH is committed to achieving and maintaining consistent results. As with most acute hospital systems, winter pressures on the service of increased admissions and higher rates of respiratory exacerbations and infectious illnesses such as flu and Norovirus, mean that, from time to time, short-term additional bed capacity is required. This additional capacity tests the whole health system as it very often results in sluggish patient flow and increased pressure on the already limited workforce.

Prompted by the long-term NHS plan for greater integration of health and social care services, and the development of Integrated Care Systems (ICS), NNUH deputy chief operating officer, Roberta Fuller explained the NNUH strategy: "We have been challenged by a number of problems in recent years including rising demand for acute admissions, a growing elderly population and slower patient flow.

"All these exert operational pressure on our bed capacity which has reduced over the past two years due to reduced staffing levels and the need to develop a higher ratio of high dependency beds within the hospital. Our commitment to service improvement involves trialling an extensive range of measures, each of which are a contribution to achieving optimum patient flow. We review the impact of each initiative and continue the projects which have worked well and had positive impact, whilst decommissioning the projects which do not deliver.

"We have focused on a number of projects aimed at improving internal patient flow within the hospital – such as the Red to Green campaign – and we have realised that the regular and automated reporting of information to inform the development and delivery of operational processes on the wards and departments is of vital importance.

"As well as a focus on process improvement we have also sought to secure the 'hearts and minds' of our staff in the delivery of improved care. The 'Last 1000 days' campaign, which promotes the value of the patient's time and their experience as the most important currency in healthcare, reminds health professionals of the importance of improving service efficiency as part of the overall care of their patients. We know that longer lengths of stay in hospital, especially for elderly patients, contribute to deconditioning and worse clinical outcomes. By working to improve

patient flow all health professionals contribute to "giving back to the patient some of the precious last days of life".

Software CUR system

A web-based software CUR system was implemented in the NNUH in September 2016. Full roll out was achieved by March 2017 and was the largest and fastest roll out in the UK. This achievement was recognised by NHS England. The system is live on 964 beds across the hospital, including the Acute Medical Unit (74 beds), the Surgical Assessment Unit (33 beds) and Paediatrics (33 beds). Data input is completed daily by Ward Sisters, and overall compliance ranges from 77% to 83%. As well as clearly identifying the top five reasons for delay, early data analysis has highlighted the shortfalls in integrated Community Services such as Outpatient IV Antibiotic Therapy (OPAT) and the management of VAC dressings. Combined potential annual bed day savings have been estimated at approximately £289,000.

Despite limited resources to support the project management of some of the new initiatives, the gradual application of faster and safer discharge processes, particularly for vulnerable and frail patients, has started to deliver a more efficient hospital and local health system. Other local health system partners have been inspired by the use of the software CUR system to understand better their patient flow dynamics. Better partnership working and information sharing

provide real-time evidence-based clinical decision support, healthcare organisations are able to address and quantify key operational issues from daily patient level assessment."[5]

Fundamentally the need for regular and automated reporting of information to inform the redesign and ongoing delivery of operational processes on the wards and across the wide health system is of vital importance to all providers.

Strategic perspectives

CUR is not only identifying patients ready for discharge (RFD) from an operational perspective, it is also providing hospitals and health economies insight into systemic bottlenecks or barriers that have a recurring impact on patient flow. One frequent example includes shortfalls in integrated Community Services such as Outpatient IV Antibiotic Therapy.

Another recent example was due to a delay in the testing of bloods which was leading to unnecessary patient stays in hospital. Blood samples were previously transported to pathology by portering services which, due to the very nature of demands on portering services, led to recurring discharge delays and poor use of bed capacity. A potential solution was identified through a pilot of the existing (but under-utilised) pneumatic tube system to transport bloods for testing.

Effective use of CUR enables both providers and commissioners to identify blockages to efficient patient flow around which solutions can be designed to improve flow, patient experience and overall service integration. The key however, is that the data is based on CUR evidence, not just someone's opinion or subjective viewpoint.

Minimising unnecessary stays in hospital is key to managing limited bed capacity and resource constraints. Equally for every day of stay in hospital that has been delivered beyond what is clinically necessary for the individual patient, comes at the risk and detriment of the patient's wellbeing and at a cost to the provider organisation.

Existing practices

Every hospital will either have a Patient Administration System (PAS) or a more advanced solution such as an Electronic Patient Record (EPR). PAS and EPR systems may have some kind of existing patient flow capability for bed management, or a system that at least shows the patient discharge status.

They will not however provide insight into the appropriateness of care, for example is it appropriate for the patient to be in this bed today? Was it appropriate for the patient to be admitted in the first place? Was it appropriate for them to continue staying at this level of care for the duration of their stay? Neither PAS nor EPR include internationally researched admission or discharge criteria that cover all levels of healthcare. Consequently, the systems do not provide transparency into every avoidable admission or avoidable day of stay.

There is a huge amount of expertise, time and effort invested into the creation, research and ongoing maintenance of CUR clinical criteria sets. For that reason CUR is often integrated with EPR and PAS solutions as a complementary capability, the same applies for traditional electronic whiteboard solutions.

The NHS SAFER Patient Flow initiative "*Red to Green Days*" is a useful visual management system designed to assist in the identification of wasted time in a patient's journey. A Red Day is a day of no value to the patient. A Green Day is when a patient ▶

has paved the way for easier integration of services across the acute, community and social care sectors. The software has enabled NNUH to improve compliance with clinical information recording to 85%, reduce 'ready for discharge' patients by 18% and reduce 'avoidable admissions' by a further 5%.

Providing charity

Roberta Fuller observed that the software helps to provide clarity at all levels of the patient journey through the acute hospital, and potentially beyond, if the local health system partners decide to adopt the product. "Effective use of the system enables us to identify blockages to efficient patient flow and gives us a focus around which to design solutions," she noted.

"We are working with our clinical teams to empower medical and nursing staff to understand the impact of their daily work processes and decisions, and to design improved services for patients which can minimise harm and support more rapid recovery. Regular reports have been designed at NNUH to answer the questions most frequently asked. The Trust is currently in the process of embedding the use of this data as part of business as usual. We have high hopes for the continued use to support the ongoing delivery of service improvements as we explore the use of new technologies and techniques to manage the optimum flow of patients from arrival to discharge."

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receives acute care that can only be provided in hospital and actively progresses them towards discharge.

Applicable to in-patient wards in both acute and community settings, the approach works effectively with CUR and is used to reduce help minimise delays as part of the SAFER patient flow bundle.[4]

Four key questions that are addressed to the patient's experience illuminate what may be causing delays and unnecessary waiting along the pathway.

One other very poignant patient flow campaign focuses on patient time in hospital. Reducing unnecessary stays in hospital for the patient is a prioritised message in the NHS. *The Last 1000 days campaign* – commissioned by the NHS Director of Nursing with the Elderly in Mind – asks: if you had 1000 days left to live, how many would you choose to spend in hospital?[7] Patient time as the key metric of performance and quality is best measured from the perspective of the person. There are days of care – avoidable bed days – that are often not visible to hospital operational and management teams because they simply do not start discharge planning from admission, meaning avoidable days of care are often missed. Nor do they have an effective means to evidence unnecessary stays with reliable data to act upon. Achieving good flow requires expertise and focus on the right areas, which means you need reliable data. Getting it right brings job satisfaction, reduces stress and improves patient outcomes.

An empowering solution

An efficient software-based CUR solution will deliver patient assessments that can be conducted daily by nurses in under two minutes. Prior to the introduction of CUR, operational and clinical teams are often asking similar questions however they aren't being applied in a scientific manner for every patient every day, nor are the questions based on a standardised set of evidence-based criteria.

CUR helps introduce standardisation and removes the subjectivity and variance out of the discussion. However one other intangible advantage of using criteria to drive discharge planning is because it empowers staff to make decisions. Staff are often more empowered, before the information previously used was just anecdotal, now they have the proof. We often see there is more ownership in a discharge of the patient, whereas before the use of CUR no one was taking leadership and the journey was slower.

Through the use of software however, the transparency of information enables clinical teams to have a clear picture as to what are the blocks of discharge – and who needs to take responsibly to unblock it. To support this there should also be senior clinical and executive leads for flow who use live data to track flow across the hospital, identify unnecessary variation and troubleshoot where there are bottlenecks.

A sound investment?

The biggest challenge for a Trust is the culture change involved in introducing a software-based CUR system. It is crucial to gain nurses' confidence in new technology and demonstrate that it will not increase their daily burden. CUR typically replaces outdated existing manual practices and workarounds with a more streamlined approach, and this appeals to operational teams where resources are often stretched.

Furthermore, introducing ownership and accountability for the patient journey from the point of admission requires strong leadership from a trust's senior team and engagement with partners. However, optimising flow also require engagement from partner organisations. Patients often visit many different health and social care professionals and departments before, during and after their hospital stay. All organisations, departments and staff groups in and outside hospitals need to collaborate and act together – for example, through shared assessments and interventions to deliver effective and responsive patient care. As a result many organisations introduce integrated discharge teams constituted from acute, community, mental health and social care as a consequence. These teams have responsibility for managing the transition and in the process help to improve integration between services.

The emphasis is clear. To fully achieve the kind of transformation identified in the FYFV, STPs and ACS, trusts will need to supplement their core capabilities with more advanced innovations and solutions. This will include tools to identify patients who are at high risk of an adverse event and are likely to be amenable to a particular intervention (ie 'impactable' patients); electronic patient records that give clinicians across all care settings a full picture of their patient's health and well-being and tools to support the monitoring of wider system programmes. It will also require the addition of enhanced tools to integrate clinical workflow with patient activation data to ensure patients are being treated in the right place at the right time.

Crucially, it will require a fundamental cultural shift in how clinicians, managers and patients use new digital technologies, data and innovations to support delivery of ongoing service improvements to manage flow and deliver positive outcomes for patients every time. CSJ

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