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Episode 7.03 Show Notes Improving hospital flow

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Learning Outcomes

Knowledge:

- To understand what patient flow is and why it is important
- To understand the consequences of poor patient flow in acute hospital - for the patient, the hospital and the staff

Skills:

- To know how to get involved in making changes to patient flow

Attitudes:

- To understand that patient flow is everyone's responsibility and a team game.

Definitions:

The term 'flow' describes the progressive movement of people, equipment and information through a sequence of processes. In healthcare, the term generally denotes the flow of patients between staff, departments and organisations along a pathway of care.



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Flow is not about the what of clinical care decisions, but about the how, where, when and who of care provision. How services are accessed, when and where assessment and treatment is available, and who it is provided by, can have as significant an impact on the quality of care as the actual clinical care received. The concept of using flow to improve care has received increasing traction within healthcare, especially in relation to reductions in patient waiting times for emergency and elective care. Awareness has been growing of the ideas, first tested in other industries, and results that organisations have generated by applying flow thinking to their organisations.

https://www.health.org.uk/sites/default/files/ImprovingPatientFlow_fullversion.pdf

Definition from staff - Daniel Woosey Physician Associate, Surrey and Sussex Healthcare

Practical Definition

It's the movement of patients from the front door of the hospital through the hospital process until they are discharged home.

Bed crises are now commonplace in our acute hospitals. Patients regularly wait in crowded emergency departments, breaching the four-hour target because of lack of available acute medical inpatient beds. There has been a year on year increase in emergency medical admissions and hospitals have consistently high bed occupancies. A common short-term solution to the problem is to 'board out' patients from medical wards to surgical wards or even temporarily to day units to facilitate patients to be transferred out of the emergency department.

[George J, Wilkinson I. Moving patients to create bed capacity. Journal of the Royal Society of Medicine; 2016, Vol. 109\(5\) 172-173](#)

Why worry about flow?

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A simple guide to congestion

On a free-flowing motorway, typically the right-hand lane will be occupied by cars travelling faster than the left and middle lanes. To travel safely at 70mph, a car needs about 100 metres of road. At slower speeds, less space is needed. The maximum capacity of a kilometre of road, assuming safe distances are maintained, is around 43 cars. The fastest cars will cover a kilometre in 32 seconds.

If more cars join the road, traffic will have to slow down to maintain a safe distance. In the managed motorway example, this allows 51 cars (20% more) to fit in a kilometre of road. The average journey time increases by only 4 seconds but total time for all road users jumps by 32% (28 to 37 minutes) (Transportation Research Board, 2008).

Once more traffic joins the road, speeds must reduce further. At 30mph, all of the lanes travel at the same speed, and three times as many vehicles can fit in a kilometre of road (see Table 1 for a breakdown of this). However, the average time taken to travel 1 km has almost doubled and the total time for all users has increased almost six times.

The fact that more congestion in a confined space means less speed, and less flow once a certain level of occupancy is reached, is well established in modelling of road traffic. Heavy congestion cannot be solved by asking people to drive faster. In fact, speed can only be increased by reducing congestion first.

The flow of patients through beds in a hospital reflects the same dynamics as the flow of traffic on a road. Just as cars moving more quickly require more road, patients who are moving through the hospital system more quickly use more bed space and resources at any one time.

This is because, relative to the amount of time they spend in a bed, more time must be spent preparing the bed for them, preparing it for the next patient, and carrying out



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processes for admission or transfer. As wards fill, this becomes less feasible. Just as with a full road, the speed of passage becomes limited

- **Peak occupancy** is when the most beds are full. It normally occurs around 8am, after overnight admissions and before patient discharge starts.
- **Peak flow** is when the most patients are being moved in and out of beds. It normally occurs in the late afternoon, as emergency arrivals and elective discharges peak.
- Flow needs space: every patient transfer requires sufficient resources for the process to happen without delay. After discharging the previous patient, this includes time for cleaning, patient transfer, handover and communication. Unless each of these is in place, the process will take longer than necessary, potentially leading to poor patient experience as queues build up. Furthermore, increasing amounts of staff time will be wasted waiting for patients and rescheduling work.
- When queues build up, work-around solutions such as 'boarding' patients on wards or providing care in the emergency department or assessment areas are used, often increasing delays.
- The amount of space needed to manage peak flow is dependent on the numbers of admissions and discharges and the time each takes. We estimate that between 2% and 4% of bed capacity is likely to be needed for this activity in most hospitals.

[Karakusevic, S \(2016\) Understanding patient flow in hospitals. Nuffield Trust briefing. Nuffield Trust.](#)

The consequences of poor flow are well known:

- EDs becomes crowded, stressful and unsafe

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- Patients are admitted as 'outliers' to wards that are not best suited to manage their care, which may mean they have worse clinical outcomes
- Ambulatory care services, clinical decision units, even catheter labs and endoscopy units may fill with patients waiting for ward admission
- Inpatients are shuffled between wards to make room for newcomers
- Staff are overstretched and routine activities slow down dramatically
- Clinical outcomes are measurably worse, particularly for frail older people, who suffer more harm events and may decondition due to extended periods in hospital beds
- Patients' and carers' time is wasted due to delays and slow care processes, and their experience is adversely affected.

[NHS improvement: National priorities for acute hospitals 2017 Good practice guide: Focus on improving patient flow July 2017](#)

Principles of good flow

Six principles underpin good non-elective patient flow

1. **Flow is a team sport** – 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.
2. **Flow needs focus from the top** – there should 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.

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3. **Flow is seven days a week** – attendances and admissions occur relatively consistently through the week and so should reviews, transitions and discharges.
4. **Flow is about case mix** – use analytical tools to understand the acuity of patients attending the ED and how this varies across the day and the week. Use this information to match resources to demand.
5. **Flow needs patient input** – pathways and individual patient journeys should be regularly reviewed with patients to appreciate where flow is being blocked, see things from their perspective and improve processes and systems.
6. **Flow needs to be maintained at times of pressure** – systems will come under significant stress. Tried and tested escalation processes should be implemented when they do, to protect assessment and short stay wards, clinical decision units, ambulatory emergency care and acute assessment services. Escalation should be meaningful and the whole system needs to act to relieve pressure where it occurs.

[NHS improvement: National priorities for acute hospitals 2017 Good practice guide: Focus on improving patient flow July 2017](#)

Poor quality healthcare systems deliver poor results – for patients, staff and taxpayers. Much of the previously experienced growth in NHS funding was predicated on the assumption that more resource and capacity was required to improve the quality of, and access to, healthcare. However, many have observed that these increases did not deliver the proportionate improvements expected.

https://www.health.org.uk/sites/default/files/ImprovingPatientFlow_fullversion.pdf

Only 10% of patients stay in hospital over 7 days, but these patients use 65% of beds and generate 32% of income (Hospital Episode Statistics, 2016). Redesigning this phase of care appears to offer very large system benefits.

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Frailty patients are no different.

From the NHS-I document - Report then links into SAFER and red/green days

Outcome

Frail patients are identified as soon as they present to the ED or directly to assessment services, and receive specialist, high quality, person-centred care on the non-elective pathway. They are discharged without delay when their acute care is complete, with the right level of support to continue their recovery and rehabilitation in their own home.

Core principles

- Frailty should be identified and measured at the front door using an evidence-based assessment tool (for example, the Rockwood Clinical Frailty Scale).
- There should be a multidisciplinary team that is competent to deliver holistic assessment and management of older people (through comprehensive geriatric assessment).
- The frailty pathway should be embedded in processes in the ED, AEC, CDUs, AMUs and on specialty wards.
- Patients with frailty should be actively involved in their care and the provider able to demonstrate shared decision-making/patient-centred care. Patients should be routinely asked what is most important to them and their responses clearly documented.
- Hospitals should be aware of what happens to patients with frailty who leave their service. This is a central part of providing care to these patients.



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SAFER: (infographic [here](#))

S – Senior review. All patients will have a senior review before midday by a clinician able to make management and discharge decisions.

A – All patients will have an expected discharge date and clinical criteria for discharge. This is set assuming ideal recovery and assuming no unnecessary waiting.

F – Flow of patients will commence at the earliest opportunity from assessment units to inpatient wards. Wards that routinely receive patients from assessment units will ensure the first patient arrives on the ward by 10 am.

E – Early discharge. 33% of patients will be discharged from base inpatient wards before midday.

R – Review. A systematic multi-disciplinary team review of patients with extended lengths of stay (>7 days – 'stranded patients') with a clear 'home first' mindset.

This is specifically mentioned in the [NHS long term plan](#) - published in Jan 2019.

1.34. The NHS and social care will continue to improve performance at getting people home without unnecessary delay when they are ready to leave hospital, reducing risk of harm to patients from physical and cognitive deconditioning complications.

What can the MDT do to help?

NHS I report - AHPs supporting patient flow

Patient flow is a team sport'. Without AHPs there would be no flow. Patients would languish in hospitals, inappropriate admissions would flood in and discharges would grind to a halt.

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AHPs, the third largest professional group in the NHS, are highly trained autonomous professionals whose collaborative work with medical, nursing and social care colleagues is the engine of patient flow.

This report showcases some good examples of where AHPs working together with other parts of the MDT improve care and improve flow.

All AHPs should:

- ask what they need to start, stop or do differently to support patient flow across the system and to gain the most value from AHPs skills
- review the 10 clinical standards of the seven day hospital services programme (NHS England, Seven Day Services Clinical Standards, 2017) to ensure AHP services support the ambition for patients, admitted as an emergency, to receive high quality consistent care, whatever day they enter hospital
- use the 'state of readiness for future care' framework (see Annex) to review utilisation of the workforce: — are all professions working at the top of their scope of practice? — what skills are or can be shared to reduce duplication and silo working? — what can we train others to do and safely delegate?
- support cultural change, particularly moving from risk aversion to a culture of embracing positive risk as part of AHPs' professional duties (Royal College of Occupational Therapists 2018)
- evaluate, improve and demonstrate the impact of AHPs' contribution (Priority 3, AHPs into action)

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- ensure that AHPs are aware of, support and where appropriate, lead initiatives such as the SAFER patient flow bundle, Red2Green days, 'end PJ paralysis' and 'last 1000 days' campaigns, recognising the value of their input.

[Allied health professions supporting patient flow: a quick guide](#)

This links into the principle of Kaizen and the small incremental improvements - its the small things that really matter and add up to make bigger changes.

To date, virtually all attempts to improve flow have focused on **single** organisations or pathways. Hardly any have sought to **improve flow across the entire primary, acute and social care spectrum**. The task of bridging the entrenched cultural differences between professions and bringing together organisations that have often been governed, funded, inspected and regulated in isolation has been too daunting for most

[The challenge and potential of whole system flow](#)

This study sought to identify common design flaws that limit the impact of flow initiatives.

Methods

This qualitative study was conducted a Canadian regional health system in which a number of flow initiatives had yielded no overall improvement in system performance. Interviews with 62 senior, middle and departmental managers, supplemented by ~700 documents on flow initiatives, were analysed using the constant comparative method.

Results



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Findings suggested that smooth flow depends on linking a defined population to appropriate capacity by means of an efficient process; flawed initiatives reflected failure to consider one or more of these essential elements. Many initiatives focused narrowly on process, failing to consider that the intended population was poorly defined or the needed capacity inaccessible; some introduced capacity for an intended population, but offered no process to link the two. Moreover, interveners were unable to respond effectively when a bottleneck moved to another part of the system.

Conclusions

Typically, flawed initiatives focused on too small a segment of the patient journey to properly address the impediments to flow. The proliferation of narrowly focused initiatives, in turn, reflected a decentralised system in which responsibility for flow improvement was fragmented. Thus, initiatives' specific design flaws may have their roots in a deeper problem: the lack of a coherent system-level strategy.

[Kreindler SA Six ways not to improve patient flow: a qualitative study. BMJ Qual Saf. 2017 May;26\(5\):388-394.](#)

Suggestions from the Nuffield Trust report:

- **Reduce the volume of patients by redesigning assessment, diagnosis and short stay care.**

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- Most activity growth is for short-stay patients. Redesigning the 'front' of the hospital may improve care, but this is unlikely to be sufficient to solve flow problems. •
- **Reduce the time spent in hospital by redesigning rehabilitation and discharge processes.**
 - Only 10% of patients stay in hospital over 7 days, but these patients use 65% of beds and generate 32% of income (Hospital Episode Statistics, 2016). Redesigning this phase of care appears to offer very large system benefits. •
- **Improve control systems to provide real-time workflow information to improve both individual patient care, system management and support process improvement.**
 - Around 90% of patients spend less than 6 days in hospital and use only 35% of hospital space with an average stay of 1.1 days (Hospital Episode Statistics, 2016). Very small changes in length of stay (measured in minutes) and small changes in the time taken to prepare beds can cause significant disruption. Hospitals need systems that reduce non-value-adding time and provide real-time operational data to support real-time decision making and service planning.

Some examples:

Blackpool Victoria Hospital - Patient tracker

You can see from these examples that it is often actually really small things that make the difference.



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Curriculum Mapping

This episode covers the following areas (n.b not all areas are covered in detail in this single episode):

- NHS Knowledge Skills Framework
 - EF3 Transport and logistics
 - HWB1 - level 3
 - HWB2 level 3
 - G2 level 2
 - G5 level 2
 - G7 level 2
- Foundation curriculum
 - 1. Acts professionally - Personal Responsibility
 - 11. Obtains history, performs clinical examination, formulates differential diagnosis and management plan - Discharge Planning
- Core Medical Training
 - Time management and decision making
 - The patient as central focus of care
 - Principles of quality and safety improvement
 - Quality Improvement (including Audit)
 - Management and NHS structure
- GPVTS program
 - 2.03 The GP in the Wider Professional Environment
 - Section 3.05 - Managing older adults - Core Competence: Working with colleagues and in teams
- Geriatric Medicine Training Curriculum
 - 3.2.6 Planning Transfers of Care and Ongoing Care Outside Hospital
 - Time management and decision making
 - The patient as central focus of care
 - Principles of quality and safety improvement
 - Quality Improvement (including Audit)
 - Management and NHS structure

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