How can frontline expertise and new models of care best contribute to safely reducing avoidable acute admissions? A mixed-methods study of four acute hospitals

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Scientific summary

The safe reduction of avoidable acute admissions

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Background

The demand for emergency medical care in the UK has escalated annually, with a 47% rise in admissions between 1998 and 2013. Pressures on emergency departments (EDs) and acute medical admissions units adversely impact patient experience through overcrowding, long waits and potentially suboptimal decision-making. Consequences for acute hospitals include a persistent state of near-capacity bed occupancy, cancelled elective work and workforce pressures. There is a widely held view that many acute admissions might be avoidable. Variation by hospital in the proportion of admissions deemed avoidable is only partly explained by demographic and structural factors. A range of solutions has been proposed to meet demands for emergency care, including the development of new units linked to EDs, earlier senior input and hospital-based discharge teams. However, little research has investigated how these options might work in practice and meet patients' needs.

Aims and objectives

The study aimed to investigate how clinician expertise and models of care in four contrasting hospitals contributed to appropriate decision-making regarding acute admissions, and to capture how patients and carers experience the hospital urgent care system.

Key research questions

1. What influences operate on the acute admissions decision process?
2. How is the admissions process experienced by patients and practitioners?
3. How are the four models of care similar and different?
4. How can frontline expertise and new models safely reduce admissions?

Methods

The project used a multiple case study design and mixed-methods analysis of decision-making about admissions in four acute hospitals in South West England.

The primary research comprised two main parts:

1. value stream mapping (VSM) measuring time spent by practitioners on key activities in 108 patient pathways, with an embedded study of cost
2. organisational ethnography with participant observation and semistructured interviews, exploring the four acute care systems and incorporating 24 ethnographic case studies of patient journeys; the ethnography incorporated data from 65 patients, 30 carers and 282 practitioners of different specialties and levels.

We gathered data, and received support with interpretation, through a patient and public involvement group, and participation of practitioners and managers in learning sets, clinical panels and stakeholder workshops.

Critical realist evaluation was used as an overarching conceptual framework for the study, as a basis for synthesising findings from different data streams and developing principles for best practice.

Findings

Key difference between the sites

The structure of emergency care at the four sites included an ED and an acute medical unit. Underbridge and Waterbury were predominantly single entry point systems through their ED whereas there were other entry points at Porthaven and Churchtown for those referred by general practitioners (GPs). The four sites differed significantly in terms of routes of access, teams and special arrangements.

Porthaven: Key initiatives included the ED consultant 'controller', a hospital-based acute GP service (AGPS), a clinical decision unit (CDU) and an ambulatory care unit (ACU).

Churchtown: Key initiatives included a rapid assessment and triage team, an acute care of the elderly team, rapid outpatient review, and an onward care team and ambulatory care.

Underbridge: Key initiatives were the ED acute care unit, a nurse-led ambulatory emergency care unit, an integrated discharge team, an older person's assessment and liaison team, a range of rapid-access clinics and a recent pilot scheme to share primary care records.

Waterbury: Key initiatives were ED ambulatory care and observation units, 'Senior With A Team', a discharge assessment team and shared access to GP records.

This plethora of innovations to avoid inappropriate admissions was achieved through concerted team efforts under pressure. New ways of using hospital space were much in evidence. CDUs and observation wards could take potentially dischargeable patients with medical and/or social complexity 'off the clock', allowing time for tests, observation and safe discharge arrangements, but the use of such units varied considerably.

New teams assisting with admission avoidance were often welcomed but could be 'invisible' and were also affected by difficulties with interdepartmental relationships. The AGPS in Porthaven incorporated conversations with GPs to assess whether patients were to be admitted or be seen by acute GPs with a view to diagnosing, treating and sending them home. 'Frailty discharge teams' showed potential for linking patients with complex needs to community resources.

Mapping practitioner involvement, timing and waste

The VSM substudy enabled detailed descriptions of care provided to those whose admission was seen as uncertain.

Time to medical review: There was no significant association between time to first assessment and overall journey time, but time to senior involvement was associated with overall journey time. Few decisions were reached in the first hour, and decisions increased rapidly around the 4-hour target.

Waste and value: During these journeys, the ratio of value (patient contact) to waste (predominantly non-contact waiting time) averaged 45.5%. Mean waste time at Underbridge was less than that at Churchtown, Porthaven and Waterbury; mean value time was higher at Porthaven than that at Churchtown, Underbridge and Waterbury.

Waiting time: Waiting times were similar across sites but distributed differentially. In Porthaven, 50% of observed waits were for investigations/results, compared with 22–28% at other sites. At Underbridge, 28% of waits were for staff availability, compared with 21% at Porthaven, 12% at Waterbury and 8% at Churchtown. At both Churchtown and Waterbury, about 40% of waiting was attributable to waiting for beds, compared with 9% at Porthaven and 3% at Underbridge. Waits for discharge after final decisions also differed between sites.

Senior input and discharge rates: Senior input was associated with increased discharges but not total treatment time. The site with lowest proportion of those who were attending admitted had the greatest senior involvement in admission decisions. Overall, however, three initiatives contributed in this site: the consultant 'controller' to oversee ED activity; a CDU within ED for 'off the clock' observation and investigation; and the AGPS, which saw GP referrals for same-day treatment.

Organisation and practitioner experience

Ethnographic analysis revealed practitioners' experiences and underlying organisational pressures.

Target pressures: Practitioners highlighted tensions in their efforts to ensure safety, avert 4-hour target breaches and provide patient-centred care. Practitioners referred to inappropriate attendances being mainly the result of agents outside the hospital, including GPs, care homes and emergency call services. ED teamwork was valued by practitioners from different professions, but relations could become strained with teams and units working with different time frames and priorities.

Senior input: Senior ED clinicians played a variety of roles: overseeing departments, maintaining patient flow, supporting juniors and seeing patients. Consultants tended to 'fix' problems rather directly, and they would 'cherry-pick' patients with complex conditions or those they could discharge quickly. Little time was available in hospital emergency systems for seniors to train staff in triage, decision-making and safe discharge planning. Advanced nurse practitioners generally had limited roles in decision-making (except at Underbridge), and they associated this with limited authority as well as certain areas of knowledge. Experienced middle-grade doctors with knowledge of local systems aided rapid and appropriate decision-making.

Decision-making: Decision-making was an evolving process combining viewpoints of different grades of emergency or other doctors, other professionals, discharge teams, and patients and carers. There was tension between some practitioners' risk aversion and the system's focus on avoiding breaches of the 4-hour target.

Clinical need was not always the primary consideration. Practitioners could be swayed towards admission by time of day, staff shortages, busyness, clinical complexity, lack of community options for discharge and, particularly, the 4-hour target. Target compliance was a basic factor influencing the moment at which decisions were made. Admissions occurred when there was uncertainty and breach time approached, in order to obtain time for assessing a patient's condition.

Patient experience

Patterns of emergency attendance

Patients were generally reluctant to attend hospital because of a culture of endurance, especially among the elderly, and because of widespread concern for NHS staff and overloaded services. Collaboration between patients, carers and practitioners allowed EDs experiencing high demand to be sustained as repositories for a broad spectrum of health and social care needs. Despite patients' preference for primary care, past experiences of deficiencies in GP services, long waits for outpatient appointments and shortfalls in home care could undermine confidence in community systems for urgent care. They were sometimes uncertain about the seriousness of symptoms and feared bothering staff unnecessarily, or failed to attend ED when this was needed. On rare occasions, patients declared the priority of their own interests, and made pragmatic use of ED visits to obtain quick testing and diagnosis.

Carers' and relatives' roles

Carers' contributions to patient safety included observing symptoms, raising the alarm, filling gaps in patients' histories and discussing patients' condition with practitioners; this was especially important when patients arrived without referral letters or were too unwell to respond. Carers would aspire to being partners in decision-making, but were rarely acknowledged in this capacity, especially when staff considered that the patient's voice should come first. Carers lacked channels to formalise and support requests for their concerns either to avoid or argue for an admission. If they promoted hospital stays for elderly patients, they could come into conflict with patients' wishes and clinical advice.

Patients' expectations and experience

Patients' expectations about the probability of an overnight stay, admission or discharge were influenced by the advice of community practitioners and paramedics, and also by doctors in ambulatory or bedded areas of departments. Patients appreciated efficiency as well as 'customer-aware' care in a system that was chronically busy. Late-night transfers, bed moves and discharges were sometimes carried out in ways that were expedient for the system but had a negative impact on patient experience.

Patients' need for information and basic nursing care

Patients were generally unaware of their status as either medically expected or ED patients and the 4-hour target that applied to their care in ED. Patients aspired to individualised care, information about delays and good communication. At the same time, they self-rationed expectations of receiving the 'softer' dimensions of care, making allowance for pressures on staff time and NHS resources. Patients' most commonly expressed requests and complaints concerned availability of staff to provide basic nursing care, including fluids and food; information about reasons for delays; and updates on their status in the system.

Implications and conclusions

The synthesis process generated a range of specific hypotheses about how practice in acute care may be improved in relation to how practitioners work and how systems should be designed. Key components are listed below.

Practitioner interactions

The experience and engagement of patients and carers/families may be optimised by demonstrating understanding about the patient's discomfort, distress and predicament; eliciting and acting on preferences; actively involving individuals in decisions; providing information about progress through the system; and routinely attending to care needs.

Patient expectations about being admitted may be managed by being clear early in the pathway that patients may go home, and providing 'ambulatory spaces' that allow individuals to be seated and clothed. Patients' and carers' (sometimes different) anxieties about illness being managed at home may be addressed by discussing risks, negotiating compromises and involving senior practitioners in decisions.

The ability of junior doctors to make good decisions may be enhanced by pathways to specialist teams and diagnostics being clear, known, easy and reliable; having easy access to clinical records from hospital and primary care; and seniors supporting and coaching juniors in making decisions. Seniors may deploy their expertise in various ways: by selecting cases in which they may maximise use of skills and experience, and by advising on decisions without seeing patients.

System factors: using resources to manage flow and improve decision quality

During the pre-hospital phase, patients may be directed to the appropriate place/team by GPs referring patients to medical teams, where appropriate; encouraging GP–clinician conversations to 'triage' and direct GP referrals to correct teams; and ambulance staff liaising with GPs or the admission avoidance team prior to transfer to ED.

Overall flow and capacity within EDs may be managed by having a senior doctor and nurse with an overview of all patients; information systems to monitor capacity and flow; and patient areas visible from central positions, while also guarding privacy.

Safe discharges from acute care may be facilitated by identifying and managing complex patients early; liaising with GPs about plans and follow up; having specialist 'hot' clinics or acute diagnostics available; involving hospital and community-based teams specialising in admission avoidance; utilising ambulatory or CDUs that are 'off the clock' for those needing time-consuming investigations or 'watchful waiting'; and providing clear information to the patient, family and community teams on 'safety netting'.

Conclusions

The current dichotomisation of admission or discharge driven by the 4-hour target is conducive to rapid decision-making and maintenance of flow, but does not necessarily support optimal decision-making or patient-centred care. With insufficient time, unnecessary admissions may occur by default. Basic patient care may suffer. Models of care that allow space and time to gather information, observe, investigate and plan are likely to result in better care. Authoritative, experienced skilful practitioners may and do play a key role in safely reducing admissions through early senior input as well as by supporting juniors, taking an overview of all patients and contributing to service design. Safe discharge from hospital acute care may be supported by community teams and beds, access to GP records, 'hot' clinics, ACUs and collaboration from medical specialists.

Although some further gains may probably be made in the hospital setting by optimising the flexible use of space, time and experienced practitioners, we conclude that new community-based models of care are also required to support safe reduction of avoidable admissions. In particular, if patents with more complex multiple needs were assessed by community teams with medical input, unscheduled attendances for hospital acute care could be reduced, dissipating the current extreme pressures on hospital systems and delivering more person-centred care.

Recommendations for further research

These findings highlight how much may be learned from observing and interviewing patients, carers and practitioners, and emphasise the value of patient-centred research. There is a need to research both specific components of acute care delivery as well as whole-system innovations involving pre- and post-hospital care, and a range of different research methodologies is required. There is a clear research need to prospectively evaluate whether or not innovations such as pre- and in-hospital AGPSs, improved medical data exchange, greater use of ambulatory care, CDUs and different staffing models may safely reduce rising rates of ED attendance and acute admissions. The need to work with patients and professionals to identify the solutions that work best is emphasised.

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