



research digest

March 2013 Issue 4

REDUCING EMERGENCY ADMISSIONS: WHAT WORKS?

This digest provides an overview of what works in reducing emergency admissions. It provides links for busy service leaders to more comprehensive reviews of evidence, and highlights interesting new research underway. As the evidence is dispersed and hard to interpret, this digest brings together the latest research and extracts key findings for those delivering and commissioning care.

Overview

How can service leaders manage emergency admissions better? Over the last ten years, emergency admissions have risen by more than a third.¹ A substantial proportion is judged to be avoidable. All hospitals have seen year-on-year increases, but there is great variation between hospitals and localities. The majority of emergency admissions are elderly people with co-morbidities – the bed days occupied by those over 75 years old rose by two-thirds in the last ten years. At the same

time, there are a third fewer general and acute beds than there were 25 years ago.¹ Getting a better grip on emergency admissions is important – not least because they cost more than all planned hospital stays and procedures combined. And provider attention has been even more focused, given recent changes to the national tariff that ensure that increases in emergency activity will only be paid at a marginal rate of 30 per cent. What can be done about this? And why are some places more successful than others in reducing emergency admissions?

This digest reviews existing evidence on what works in reducing emergency admissions. This is a complex area where it is often difficult to make sense of the evidence. It builds on excellent overviews by Sarah Purdy^{2,3} and earlier work by Chris Ham⁴, updating these reviews with recent evidence from major research initiatives like the Whole System Demonstrator evaluation⁵ and other work by the Nuffield Trust on admission trends, as well as new pooled evidence on case management.⁶ It identifies some pointers for service leaders, while

Read more to find out:

- What others are doing to divert or prevent avoidable emergency admissions
- What the evidence says about the effectiveness of different kinds of interventions in primary and secondary care – from virtual wards to GPs in emergency departments
- What information you need to prioritise local actions on reducing avoidable admissions
- What new research will add to the evidence on what works

Contents

- Overview page 1
- Five questions to ask your board page 3
- Further resources page 8
- Relevant NIHR-funded research in progress page 10

At a glance

- Emergency admissions are rising year on year, with fewer acute beds.
- NHS organisations are trying different models to prevent and reduce avoidable emergency admissions – from risk prediction tools, case management, hospital alternatives and telemedicine, to different ways of organising acute admissions in hospitals.
- As the evidence base is complex and difficult to interpret, this digest pulls together the dispersed information for service leaders.
- Evidence to date suggests some impact of particular initiatives in target populations, such as education with self-management in asthma and specialist heart failure interventions. However, most other interventions appear to have no effect in reducing emergency admissions in a wide range of patients.
- Poorly controlled studies of interventions aimed at ‘frequent fliers’ can be misleading – the apparent impact in reducing admissions may have happened anyway, due to regression to the mean.
- Research is of variable quality – every locality should make efforts to evaluate the impact of local initiatives and more well-designed studies are needed to strengthen the knowledge base.
- Six current NIHR-funded research studies are highlighted, which should provide more information by 2014 on what works in reducing emergency admissions for clinicians, managers and patients.

taking heed of recent cautions on mistaken assumptions and overstated claims.⁷ The digest also showcases exciting new NIHR-funded research projects underway on relevant topics – from getting a better understanding of variation in avoidable admissions to evaluating virtual wards and other alternatives to hospital admission. These should provide useful

evidence for service leaders trying to make a difference in reducing avoidable emergency admissions.

What works?

Current overviews have emphasised the way in which emergency admissions are part of a complex health and social care system. Interventions to manage admissions range widely – from broad health and social care integration schemes to targeted managed care programmes for particular diseases.³ This is a vast and complex evidence base, where single studies are unlikely to provide conclusive answers. Evaluations of interventions are context-dependent and many involve combinations of individual components. This makes it difficult to attribute effect to particular interventions – although impact is likely to be greater in combination.⁴ Overall, the quality of research is often poor, limiting

our ability to draw conclusions about effectiveness. In particular, there are very few high-quality studies of cost effectiveness. However, published reviews do enable us to point to interventions that appear more promising than others, and to highlight uncertainties where further research is needed.

Summary of evidence on interventions to reduce inappropriate admissions

A high-level summary of selected earlier findings on interventions to prevent and reduce emergency admissions is given in Figure 1 on page 4. Some evidence relates to changes in primary and community care, which may prevent people being admitted. Other work is focused on changes in secondary care to reduce the number of people admitted to hospital from the front door. But

‘Addressing the challenge of rising unplanned admissions is a top priority for CCGs. This will require a good local understanding of the cause of the problem as well as potential solutions. It seems inevitable that these solutions will require that the health and social care systems work differently and in ever greater collaboration.’
Dr Johnny Marshall
(NHS Confederation)

in order to grasp the evidence behind these top-line findings, it is essential for service providers and commissioners to have a better understanding of local data and what it tells you about the reasons for emergency admissions.

Understanding patterns of admission

A five-year analysis of routine data by the Nuffield Trust has yielded some interesting findings behind the rise in admissions.⁸ On average, emergency admissions rose by 12 per cent between 2004 and 2009. But they fell by up to a third over this period for some hospitals, while in others they almost doubled. Although there has been much debate about the effect of demographics on healthcare use, the ageing population accounted for less than half of the increase in emergency admissions in this study. Of particular note in this analysis was the marked increase in short-stay admissions and low mortality, suggesting changes in clinical thresholds for admission over time and impacts of other initiatives, such as four-hour targets in emergency departments.

Attempts have been made to identify avoidable admissions. There are no absolute categories of avoidable admission – for instance, it may be appropriate to admit a frail elderly woman living on her own with a low-level chest infection in an area without effective intermediate care. But some areas have identified certain types of conditions that should be managed outside hospital – such as non-specific chest

Five questions to ask your board: supporting decisions across a regional health and care economy

- Do you know your rate of emergency admissions – how does this compare with others like you? (What is your rate of admissions and rate of conversion from A&E attendances to admissions? What is the rate of variation by different referral routes, including GP out of hours?)
- Do you know how many of these might be avoidable and why? (How accurate is your disease coding? Can you identify tracer ‘avoidable’ conditions, such as blocked urinary catheters or non-specific chest pains? Have you sampled recent admissions and patient stories to identify blockages and system weaknesses across urgent care, such as gaps in intermediate or community services?)
- What admission diversion schemes do you have in place in secondary care and are you evaluating their impact? (Do you have assessment units in the hospital? Are patients reviewed early by a senior emergency medicine clinician in the emergency department? Have you considered using GPs in emergency departments?)
- Are you using any prediction tools to identify patients at risk of emergency admission and are you evaluating their impact? (What are the lessons from other localities using these tools? How will you measure impact?)
- What admission avoidance schemes do you have in place in primary care and are you evaluating their impact? (These might include virtual wards, hospital at home schemes or case management programmes in the community, as well as use of telemedicine.)

pains (not due to myocardial infarction), minor head injuries and blocked urinary catheters.⁹ Resources have been developed for clinicians for some of these emergency conditions that might be managed on a same-day basis, thus avoiding admission.¹⁰

Much focus is on referrals from general practice, but local audits show the importance of other routes to emergency admissions – from out-of-hours providers, hospital outpatient clinics, walk-in clinics and patients attending A&E departments. The configuration of services and their use vary greatly in

different parts of the country, and local intelligence is needed to understand patterns and potential for change. For instance, variation in GP out-of-hours admission rates may help to identify particular practices and their characteristics, such as opening hours, which could have an impact on admission rates.

Overall, current knowledge on patterns and trends of admissions highlight the need to consider emergency admissions as part of a complex web of urgent care. Much focus has rightly been on the interface between primary care, emergency departments and

the hospital. But to understand the ways in which emergency admissions can be managed, we also need to know the system around it – which includes GP out-of-hours services, walk-in centres, NHS Direct, same-day GP urgent care services, social care, 999 ambulance and patient transport services. Research has been commissioned that will address this directly. It aims to investigate the characteristics of the emergency and urgent care system – its configuration, integration and accessibility – and how these affect avoidable emergency admissions. (See research study one on page 10.)

Identifying patients at risk of admission

A key requirement of any proactive scheme to reduce emergency admissions is identifying patients at highest risk. This is needed in order to target resources – from regular visits by district nurses to multidisciplinary case management initiatives. In the past this has focused on

Figure 1. Interventions to prevent and reduce emergency admissions

Primary care	Continuity of care with a GP may reduce admissions, but general evidence on the preventive effect is weak.
	Integrating primary and secondary care (managed disease networks, shared care and disease pathways) can be effective – cost effectiveness less certain.
	Telemedicine (see glossary on page 8) appears to reduce admissions, but no evidence of cost savings. Earlier evidence shows some impact for heart failure patients.
	Integrating health and social care may be effective (such as joint teams for older people pioneered in Torbay and elsewhere).
	No strong evidence of effectiveness for case management (including multidisciplinary virtual wards) – but some evidence of impact of intensive case management for heart failure.
	Hospital at home admission avoidance schemes appear to provide similar outcomes to inpatient care and may generate some savings – but schemes to get people home sooner (supported discharge) appear to increase chances of readmission.
Secondary care	Patient self-management can be beneficial – but evidence mixed of impact on admissions and costs.
	Acute assessment units (which take different forms) can reduce admissions to general wards and stay, but cost effectiveness unknown at present.
	Early review by senior clinician in emergency department is effective.
	GPs working in emergency department – may be effective but cost effectiveness unknown and evidence weak grade.

Source: Adapted from Purdy 2012³ and Purdy 2010² (edited and updated, for example on telemedicine)

Case study one: Whittington Health – integrated hospital/ community model

Whittington Health serves a diverse population of 443,000 in north London. Since 2011, it has worked as one integrated team across hospital, community services and social care. One of the three divisions, each with a clinical lead, is for integrated care and acute medicine. This provides a range of hospital, community and social care services for people with complex needs (such as the frail elderly) and those with long-term conditions. The integration between hospital and community services has

made it easier to provide ambulatory care for people that previously may have needed an emergency admission. District nurses and community matrons visit emergency departments and acute medical units daily to identify patients who can be better managed at home. An example of this is providing IV antibiotics at home rather than as an inpatient.

Source: *Whittington Health Annual Review 2012*

threshold modelling – identifying people with a history of repeat emergency admissions. However, Martin Roland has pointed to the weakness of this approach, given the well-observed trend of regression to the mean.⁷ Recent studies of hospital avoidance schemes, from the evaluation of Evercare¹¹ to the more recent Partnerships for Older People Pilots¹², have shown little effect on admission rates. Indeed, in the case of the integrated care pilots, a careful evaluation actually showed an increase in emergency admissions.¹³ These initiatives have been targeted at people with past multiple admissions and illustrate the effect of regression to the mean⁷ – people with a history of frequent attendance would tend to have fewer future visits without any intervention. This can lead to false claims about an intervention working. Without controls, we do not know.

More sophisticated forms of predictive modelling are now used, using a range of risk factors.

These might include demographic, diagnostic, pharmaceutical and service use data about particular patients to predict future demand. Different tools are in use – at present, there is little good evidence on which works best. One particular study underway at present evaluates the impact on emergency admissions of introducing a predictive risk tool to practices in Wales (see research study two on page 11).

As models get more accurate in predicting those patients at highest risk of admission, there has been further work to identify those sub-groups of patients most likely to benefit from preventive schemes. In the US these are known as ‘impactability models’ – to predict patients or groups of patients most likely to respond to admission diversion initiatives and therefore enhance the cost effectiveness or impact of these schemes. There is an interesting debate about possible unintended consequences for access and equality, if patients

predicted to have poor compliance (such as those with addictions or forms of mental illness) were systematically excluded from preventive schemes.¹⁴

Virtual wards and other forms of case management

Once patients at risk of admission have been identified, resources can be targeted at them. This often involves some form of case management – a programme of care around a person with complex needs, usually led by a nurse. The NHS tends to use less intensive forms of input than the US equivalents, which can make comparison difficult. Evidence suggests little effect of case management in reducing general admissions – for instance, a large study of case management for the frail elderly showed no significant impact on rate of emergency admission or bed days.¹¹ A recent systematic review showed no reduction in unplanned hospital admission in the majority of studies.³ However, there were some positive effects

Case study two: Southbury surgery, Enfield – practice-based admission avoidance

Using the ‘unique care’ principles developed some years ago at Castlefields Health Centre in Cheshire, this practice developed assertive outreach case management at a practice population. This provided an opportunity for district nurses and social workers for the elderly to work together proactively to reduce hospital admissions. This involved active case finding of patients using a validated measure and then assessment and management by the community matron and social worker, working with a lead GP, of very high and high-risk patients. Individual care

plans were developed for each of these patients. The community matron and social worker also provided a hospital inreach service for patients over 65 years admitted on the scheme to facilitate early discharge and ensure continuity of care. Local evaluation using a rough before-and-after model suggest promising results in reducing admissions.

Source: Keating P, Sealy A, Dempsey L, Slater P (2008). *Journal of Integrated Care*

in intensive case management with specialist input for people with heart failure. There is also evidence of the impact of case management in reducing length of stay, if not decreasing admissions.³ This is interesting and not fully understood, but may relate to the role of case managers/community matrons in being able to 'pull' people out of hospital by coordinating discharge and arranging packages of care at home.

More recently, there has been much attention on multidisciplinary case management in the form of virtual wards. Support is provided to patients at home by multidisciplinary teams (which might include community matrons, nurses, GPs, pharmacists, physiotherapists and social workers) who meet regularly, share patient notes and where care is coordinated by a ward clerk. It should be noted that these schemes differ greatly from area to area, including key features such as whether or not predictive

models are used for case finding or whether there are regular multidisciplinary ward rounds.¹⁵ These differences need to be taken into account when service leaders review results of evaluations. A major research project on virtual ward schemes in Croydon (which pioneered this approach) and Wandsworth is due out shortly (see research study three on page 12).

Other alternatives to hospital

Hospital-at-home schemes have proved popular, where structured clinical care is provided at home. Systematic reviews by Shepperd of evidence in the form of trials show that outcomes are equivalent to inpatient care at the same or lower cost.¹⁶ Interestingly, the evidence to date appears stronger for hospital at homes for admission avoidance rather than supported discharge, where costs appeared higher with increased levels of readmission compared to hospital care for older people with a mixture of conditions.¹⁷

Other evidence on alternatives to emergency admissions comes

from mental health, particularly a recent NIHR-funded evaluation of crisis houses and community-based hostels, suggesting that they may provide satisfactory and cost-effective alternatives to inpatient psychiatric wards for a range of patients, including acutely ill patients with psychoses and other disorders.¹⁸ Other work is needed to understand better the range of intermediate services and alternatives to hospital care that may play a part in reducing emergency admissions for certain groups of patients. A particular target group is the very old (85 years and over), where admissions are increasing and alternative models are being developed in some parts of the country (see research study four on page 13).

Self-management

Evidence on the impact of education interventions and support for self-management is mixed. Purdy points to various studies that show the impact of reduced admissions from programmes for chronic obstructive pulmonary disease

Case study three: South Tees Hospitals NHS Trust ambulatory emergency care

South Tees has provided comprehensive ambulatory emergency care service for a wide range of emergency presentations from patients attending A&E or referred by GPs to the acute admissions unit. This service provides a series of scheduled ambulatory emergency care clinics, with access to diagnostic facilities. This includes rapid assessment and access clinic for evidence-based treatment of conditions such as deep vein thrombosis and pulmonary embolism. Pathways

and specialist team links cover a range of services, from diabetes and COPD to chest pains. Clinics provide a one-stop shop with outpatient pathways and close collaboration with GPs. A key feature of the service is a contact point for GPs and others (such as palliative care teams) to coordinate emergency care.

Source: NHS Advancing Quality Alliance (2011)

(COPD) and asthma (although an overview of studies in asthma showed reduction in hospital use in only half of asthma studies). Initiatives such as the expert patient programme, while increasing patient confidence, do not appear to show much impact on hospital admissions.¹⁹ Evidence in this area tends to relate to particular diseases and is difficult to synthesise. A current study is reviewing published evidence on self-care support interventions, looking particularly at impact on healthcare utilisation rates (see research study five on page 14).

Telemedicine

Much hope has been invested in telemedicine – a general term covering a range of activities from remote patient-doctor consultations (telehealth) to monitoring devices in the home (telecare) – as a way of supporting people with long-term conditions and preventing and reducing avoidable admissions. Research evidence to date has been mixed, but studies have shown particular benefit for people with heart failure in telehealth initiatives (sometimes combined with case management).² The most compelling evidence has come from the US, with research showing impact on reduced health service use for the frail elderly, particularly for automated vital signs monitoring and telephone follow up by nurses, although cost effectiveness was less clear.

Recent interest has focused on an ambitious study of telemedicine in England. In 2006, the Department of Health announced

the establishment of three pilots, as part of the Whole System Demonstrator project, to test the benefits of integrated health and social care supported by assistive technologies. Different bundles were adopted in demonstrator sites in Newham, Cornwall and Kent across three tracer conditions – heart failure, COPD and diabetes. This is believed to be the largest ever trial of telemedicine with over 3,000 patients and a large multi-stranded evaluation. Most parts of this research were completed in 2012, although some results are still being published. The strand led by the Nuffield Trust focused on impact on hospital use and mortality. Although this study found indications of an impact on emergency admissions and deaths, it did not conclude that there was a reduction in hospital costs due to telehealth.³

The mechanisms by which telehealth may have led to reductions in emergency admissions are not known. It was also noted that the variability in telehealth and telecare interventions across and within the three sites make it difficult to draw conclusions about effectiveness of particular components. In addition, authors noted a spike in admissions in the control group at an early stage of the study, likely due to trial recruitment processes (i.e. doctors more alert to problems in the 'care as usual' arm or patients becoming more anxious as a result of being entered into a trial), which may have contributed to the observed differences in emergency admissions between

control and intervention groups. For commissioners and managers it is still difficult to draw simple top-line messages on the likely impact of particular telemedicine interventions on care, cost and emergency admissions.

Models of admission

Most hospitals now have an observation or medical assessment unit, closely linked to the emergency department and receiving patients direct from GPs. These are short-stay units focused on diagnosis and short-term management. Some are dedicated geriatric admission units, recognising that the majority of patients who could be admitted are frail older people with multiple conditions. There is surprisingly little evidence on the relatively recent phenomenon of assessment units. A review published almost ten years ago of research prior to that time suggested that observation units reduce the number of admissions to general wards and shorten the length of stay.²⁰ More research is needed on this important front door of the hospital – the NIHR has commissioned an observation study (see research study six on page 15) of different models of acute admissions which will be of interest.

Conclusions

Health service organisations are increasingly focused on the need to manage emergency admissions – and reduce those that are avoidable. This is a complex area and attempts to tackle the 'problem' of emergency admissions

needs to take into account the whole urgent (and other) health and social care system and very local patterns of provision and activity. Evidence in this area is difficult to interpret and covers a broad area, from alternatives to admission to changes in the organisation of the front door of hospital care. Much published research is of uneven quality, with reliance in some cases on small-scale initiatives or assessments of effect without controls. Much evidence too is located within condition-specific or specialist silos and may address only one part of a service without looking at impact on the system as a whole.

Best-quality reviews to date⁸ suggest little impact of interventions in reducing

emergency admissions, beyond some evidence of effect for particular patient groups such as those with congestive heart failure. While this may be disappointing and research points to no 'silver bullets' in reducing admissions, there are other findings that point to improved quality or patient satisfaction with different models. Overall, the evidence shows the diversity of models being developed in the NHS. We need better evidence in order to identify future models and processes that are likely to lead to improvements in patient care. Service leaders can take active steps to understand local activity and drivers within their health and social care system and to be realistic about what will make a difference.

Further resources

More practical guidance and information relating to preventing emergency admissions may be found at a number of sites including:

NHS Improvement
www.improvement.nhs.uk

NHS Institute for Innovation & Improvement
www.institute.nhs.uk

Advancing Quality Alliance
www.advancingqualityalliance.nhs.uk

Primary Care Foundation
www.primarycarefoundation.co.uk

College of Emergency Medicine
www.collemergencymed.ac.uk

NHS QUEST (quality/safety in foundation trusts)
www.quest.nhs.uk

Glossary

Ambulatory care	Care provided on an outpatient basis, as an alternative to hospital admission or treatment as an inpatient.
Case management	Initiatives to plan, coordinate and review the care of people with complex long-term conditions by a lead practitioner. This can take different forms – many schemes in the NHS are led by community matrons and may be less intensive than the US equivalents.
Hospital at home	Diverse schemes to provide active treatment by healthcare professionals in the patient's home for a condition that otherwise would require acute hospital inpatient care, and always for a limited time period. These can include schemes as alternatives to hospital admission or to get people home sooner (supported discharge) – the evidence on these has been reviewed separately.
Telemedicine	General term used to describe all forms of clinical healthcare delivered remotely through information systems. This includes telehealth (including patient/doctor consultations by telephone or video), telecare and telemonitoring (monitoring devices in the home relaying health status such as blood glucose levels direct to healthcare system).
Virtual ward	New initiatives applying the function of a traditional hospital ward over a community-based setting to people at risk of hospital admission. They are configured differently but usually involve a lead nurse, ward clerk and ward rounds involving a multidisciplinary team with shared records.

References

1. Royal College of Physicians (2012). *Hospitals on the edge? A time for action*.
2. Purdy S (2010). *Avoiding hospital admissions. What does the research evidence say?* King's Fund.
3. Purdy S, Paranjothy S, Huntley A, Thomas R, Mann M, Huws D, et al (2012). *Interventions to reduce unplanned hospital admissions: a series of systematic reviews*. NIHR Research for Patient Benefit.
4. Ham C (2006). *Reducing Unplanned Hospital Admissions: What does the literature tell us?* Birmingham: Health Services Management Centre, University of Birmingham.
5. Steventon A, Bardsley M, Billings J, Dixon J, Doll H, Hirani S, et al (2012). *Effect of telehealth on use of secondary care and mortality: findings from the Whole System Demonstrator cluster randomised trial*. BMJ 2012;344.
6. Huntley A L, Thomas R, Mann M, Huws D, Elwyn G, Paranjothy S and Purdy S (2013). *Is case management effective in reducing the risk of unplanned hospital admissions for older people? A systematic review and meta-analysis*. Family Practice.
7. Roland M and Abel G (2012). *Reducing emergency admissions: are we on the right track?* BMJ 2012;345.
8. Blunt I, Bardsley M, Dixon J. *Trends in emergency admissions in England 2004-2009* (2010).
9. Coleman P and Nicholl J (2010). *Consensus methods to identify a set of potential performance indicators for systems of emergency and urgent care*. J Health Serv Res Policy 15(2): 12-18
10. NHS Institute for Innovation and Improvement (2012). *Directory of Ambulatory Emergency Care for Adults (3rd edition)*.
11. Gravelle H, Dusheiko M, Sheaff R, Sargent P, Boaden R, Pickard S, et al (2007). *Impact of case management (Evercare) on frail elderly patients: controlled before and after analysis of quantitative outcome data*. BMJ 2007, 334:31.
12. Steventon A, Bardsley M, Billings J, Georghiou T, Lewis G (2011). *An evaluation of the impact of community-based interventions on hospital use: A case study of eight Partnership for Older People Projects (POPP)*. Nuffield Trust.
13. Roland M et al (2012). *Case management for at-risk elderly patients in the English integrated care pilots: observational study of staff and patient experience and secondary care utilisation*. International Journal of Integrated Care, Volume 12.
14. Lewis G H (2010). *"Impactability Models": Identifying the Subgroup of High-Risk Patients Most Amenable to Hospital-Avoidance Programs*. Milbank Q. 88(2): 240-255.
15. Lewis G H, Wright L and Vaithianathan R (2012). *Multidisciplinary Case Management for Patients at High Risk of Hospitalization: Comparison of Virtual Ward Models in the United Kingdom, United States, and Canada*. Population Health Management; 15(5).
16. Shepperd S et al (2008). *Admission Avoidance Hospital at Home*. Cochrane Database Syst Rev.
17. Shepperd S, McClaran J, Phillips CO et al (2010). *Discharge planning from hospital to home*. Cochrane Database Syst Rev.
18. Slade M, Byford S, Barrett B, Lloyd-Evans B, Gilbert H, Osborn D, Skinner R, Leese M, Thornicroft G, Johnson S (2010). *Alternatives to standard acute inpatient care in England: short-term clinical outcomes and cost-effectiveness*, British Journal of Psychiatry, 197, s14-s19.
19. Griffiths C, Foster G, Ramsay J, Eldridge S and Taylor S (2007). *How effective are expert patient (lay led) education programme for chronic disease?* BMJ 2007; 334.
20. Cooke M, Fisher J, Dale J, McLeod E, Szczepura A, Walley P, Wilson S (2004). *Reducing attendances and waits in emergency departments: a systematic review of present innovations*. Report of National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO).

Relevant NIHR-funded research in progress

Below are examples of recently commissioned studies funded by the National Institute for Health Research (NIHR) Health Services & Delivery Research programme that relate directly to reducing emergency admissions. Some of these were funded following a particular priority call for research on unplanned admissions in 2011. For details of these and other NIHR research activity, contact www.nihr.ac.uk

Study one: Understanding system characteristics of urgent care affecting avoidable admissions

Current data has established variation in the rate of emergency admissions and widespread belief that some of this is avoidable. But we do not know why some areas have high or low rates of hospital admission, or the population and system characteristics that might affect this across the whole web of emergency and urgent care.

This study uses mixed methods to describe and explain variation in emergency admissions where there is potential to avoid admission if urgent care systems perform well. It starts with a basket of conditions defined by experts as

'rich in avoidability' – ranging from non-specific chest pains to falls. This indicator will be used to map variation in admissions across localities. Different population and system variables will be identified to explain variation using routine data. Having done this, the team will carry out in-depth case studies at sites with high and low admission rates for a deeper understanding of what might influence differences. The study should result in a better understanding of how different emergency and urgent care services affect avoidable emergency admission.

For more details of this study (due to complete in 2014), please visit www.netscc.ac.uk/hsdr

Contact

Alicia O'Cathain, ScHARR,
University of Sheffield
a.ocathain@sheffield.ac.uk

Will be helpful to managers:
in identifying particular system characteristics associated with low rates of emergency admissions.

Study two: Using clinical prediction models in Wales to identify patients at risk of emergency admission

A new predictive risk stratification tool is being introduced in Wales after similar (but distinct) models used in England and Scotland. The Welsh tool will stratify people into four risk categories based on likelihood of emergency admissions in the next year. This tool is being introduced in general practices in south west Wales.

This mixed-methods study will examine the effectiveness and cost effectiveness of using this

tool and its impact on emergency admissions. It is a quasi-experimental study, using an approach called stepped-wedge design, which enables comparison between practices and before and after they start using the tool. Service use, patient satisfaction and costs will be compared. In addition, the research project will examine implementation of this new approach, considering barriers and levers for practice staff on the ground.

For more details of this study (due to complete in 2015), please visit www.netscc.ac.uk/hsdr

Contact

Helen Snooks, University of Swansea
h.a.snooks@swansea.ac.uk

Will be helpful to managers:
in seeing how practices can make best use of risk prediction tools and their impact on admissions.

Study three: Evaluating impact of virtual wards in reducing emergency admissions

Virtual wards were pioneered in Croydon to identify patients at high risk of emergency admission and use some of the staffing, structures and features of hospital care to provide preventative and coordinated care at home. Each is linked to a specific group of practices with a catchment of around 30,000 patients and ward capacity of around 100 'beds'. Each patient receives daily review ('ward round') from a multidisciplinary team, who are office based and input in person or by phone. The team includes community matrons, nurses, GPs, pharmacists, physiotherapists and social workers as well as other specialist staff (such as a tissue viability nurse). Other key features are shared patient notes and coordination by a ward clerk. Many places are now adopting virtual

wards, but their impact on social and emergency care is not known.

This is the first study to provide robust analysis of virtual wards, using exemplar sites in Croydon, Devon and Wandsworth. The study uses mixed methods including 'difference in difference analysis' – using a range of person-linked health and social care data to track use of services by people in virtual wards and matching these with comparator populations. Over 2,000 patients were involved in intervention sites for this project. The study also includes detailed economic analysis to compare the costs of running a virtual ward with the costs of caring for comparator populations and impact on reducing emergency admissions and intensive social care.

For more details of this study (due to complete early in 2013), please visit www.netscc.ac.uk/hsdr

Contact

Geraint Lewis
geraint.lewis@nhs.net

Will be helpful to managers:
in identifying the costs of running a virtual ward, impact on emergency admissions and optimal case load for those starting new services from scratch.

Study four: Reducing emergency admissions for people over 85 years

Over 10 per cent of all emergency admissions are people over 85 and it is set to rise. This poses real challenges to service managers, as these people have longer stays in hospital, experience more complications and find it harder to return home. There is great variation in time trends in the rate of hospitalisation for this age group across the country. Some parts of the country have invested in schemes – from community alternatives to hospital to particular triage and assessment centres in acute settings.

This study uses comparative case studies to consider examples of

areas that have witnessed the highest and lowest increases in the rate of admissions of those aged over 85. Areas (acute trust, commissioner, community and social services) at each end of this distribution have been identified and the research team is exploring the system characteristics that might explain these differences. Methods include analysis of quantitative data and a range of qualitative methods to explore what happens within whole care systems. Emerging solutions will be tested in two service collaboratives in the East Midlands.

For more details of this study (due to complete in 2013), please visit www.netscc.ac.uk/hsdr

Contact

Andrew Wilson, University of Leicester
aw7@le.ac.uk

Will be helpful to managers:
in identifying recommendations for reducing emergency admissions for people over 85.

Study five: Review of evidence of impact of supported self-care on hospitalisation rates

There is a broad evidence base on models of self-management support, including peer groups, nurse-led coaching and use of telecare. However, the evidence is more limited around the impact of these interventions on hospital admissions and other forms of utilisation. This review will try to identify models of self-management support that show demonstrable reductions in healthcare use (particularly, but not exclusively, hospital admissions) without compromising patient outcomes.

For more details of this study (due to complete in 2013), please visit www.netscc.ac.uk/hsdr

Contact

Peter Bower, University of Manchester
peter.bower@manchester.ac.uk

Will be helpful to managers:
in identifying the forms of organisational support for self-care that reduce costs and admissions without compromising quality.

Study six: Avoidable acute admissions (AAA) decision-making: a mixed-methods study

Different hospitals have different ways of organising the 'front door' of acute admissions. A range of practitioners are involved in decisions about admissions at different points in the pathway. Different models and admission processes have emerged but little is known about what influences decisions and subsequent impact on the system.

The study uses a mixed-method case study design to evaluate four different acute admission sites across two data collection periods. The case study sites have been selected for innovation and diversity. Models include a

locality with an acute GP service and acute sector hub; admission decisions led by a consultant physician; an emergency department-led system; and a more traditional organisational model of emergency departments with junior hospital doctors seeing patients first. Case studies will include an ethnographic analysis of wider healthcare systems (pathways, teams, governance, commissioning) through observation and interviews with lead clinicians and managers; and through a quantitative analysis and modelling of key processes of care, and an embedded study of costs.

For more details of this study (due to complete in 2014), please visit www.netscc.ac.uk/hsdr

Contact

Jon Pinkney, Plymouth University
Peninsula School of Medicine
jonathan.pinkney@pms.ac.uk

Will be helpful to managers:
in understanding different models of acute admission and their impact on patients, activity and costs.

Health Services Research Network

The Health Services Research Network (HSRN) is a membership network for organisations and bodies across the UK with an interest in health services research. We aim to connect all universities, commercial and professional organisations, charities and NHS bodies with an interest in HSR. We define health services research as all research that underpins improvements in the way health services are financed, organised, planned and delivered, including health technology assessments and health policy research.

For further details about HSRN's work, visit www.hsrlive.org

About the NIHR

The National Institute for Health Research (NIHR) is funded through the Department of Health to improve the health and wealth of the nation through research. Since its establishment in April 2006, the NIHR has transformed research in the NHS. It has increased the volume of applied health research for the benefit of patients and the public, driven faster translation of basic science discoveries into tangible benefits for patients and the economy, and developed and supported the people who conduct and contribute to applied health research. The NIHR plays a key role in the Government's strategy for economic growth, attracting investment by the life-sciences industries through its world-class infrastructure for health research. Together, the NIHR people, programmes, centres of excellence, and systems represent the most integrated health research system in the world.

www.nihr.ac.uk

Department of Health disclaimer

The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NIHR SDO programme or the Department of Health.

This publication was produced by NHS Confederation Events & Publishing.
Engage more effectively with your audience, tel 0844 800 9753

Alternative formats can be requested from:
Tel 0870 444 5841 Email publications@nhsconfed.org
or visit www.nhsconfed.org/publications

© HSRN 2013. You may copy or distribute this work, but you must give the author credit, you may not use it for commercial purposes, and you may not alter, transform or build upon this work.

The NHS Confederation is a registered Charity no: 1090329

Stock code: INF34901

NHS CONFEDERATION



The NHS Confederation
50 Broadway London SW1H 0DB
Tel 020 7799 6666
Email enquiries@nhsconfed.org
www.nhsconfed.org

