

Monitor

Making the health sector
work for patients



Moving healthcare closer to home: Literature review of clinical impacts

About Monitor

As the sector regulator for health services in England, our job is to make the health sector work better for patients. As well as making sure that independent NHS foundation trusts are well led so that they can deliver quality care on a sustainable basis, we make sure: essential services are maintained if a provider gets into serious difficulties; the NHS payment system promotes quality and efficiency; and patients do not lose out through restrictions on their rights to make choices, through poor purchasing on their behalf, or through inappropriate anti-competitive behaviour by providers or commissioners.

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Introduction

This paper is part of a suite of materials developed to support providers and commissioners making decisions about schemes to move healthcare currently provided in acute hospitals to community-based settings.¹ As set out in our [summary paper](#), many providers and commissioners facing both demand growth and capacity constraints may be considering these schemes, particularly as they could deliver clinical and patient experience benefits.

It is important to ensure that pathway changes to deliver more healthcare closer to home bring about patient benefits or at least do not result in worse patient outcomes. The purpose of this literature review is to support provider and commissioner decision-making by setting out a summary of existing evidence on possible clinical impacts of moving healthcare closer to home. However, providers and commissioners should take care to review the clinical model of any scheme in detail to measure any clinical and quality benefits a scheme may deliver and to ensure it does not deliver harm.

The review looks at services to provide healthcare in community-based settings instead of in hospital, focusing on older patients who can particularly benefit from these services. We have not conducted our own analysis on clinical impacts and we have not included schemes to improve primary care or the proactive management of long-term conditions.

It includes hospital bed audit data and literature identified from searches in Pubmed, a database of biomedical literature from MEDLINE, life science journals, and online books.² The review searched for terms related to key services that move healthcare out of hospital and to problems for patients (harms) that can arise specifically in hospital. This search found approximately 50 relevant articles, including articles summarising previous evaluations of providing care out of hospital.

The literature we reviewed finds clear benefits to returning patients home if they no longer need additional healthcare. It also finds there could be benefits to providing equivalent healthcare in community-based settings as alternatives to acute hospital care. Analysis of hospital bed audit data shows there is an opportunity to move substantial numbers of patients in acute hospitals either straight back home or to settings more appropriate to their needs. Patients can avoid harm and are generally happier receiving equivalent healthcare in community-based settings. Clinical outcomes for patients receiving equivalent healthcare in community-based settings

¹ All the other materials are available at www.gov.uk/guidance/moving-healthcare-closer-to-home

² Preliminary research also included recent papers on moving healthcare out of hospital in the secondary literature. Searches in Pubmed (www.ncbi.nlm.nih.gov/pubmed) covered papers published after 2000.

can also often be as good as, and occasionally better than, those delivered in acute hospital settings, although a few studies do show a risk of problems for patients.

Therefore our review suggests that from a clinical viewpoint, local health systems should first consider how best to avoid admissions and assist discharge from acute hospitals for patients who have less severe health needs and do not need acute hospital level healthcare. Delivering healthcare for more severely ill patients in community-based settings may also provide patient benefits, but there are greater clinical risks and the benefits are not always as clear, so it is important to make sure that these schemes demonstrate the 'enablers' for long-term clinical success identified in the [implementation paper](#).³

Bed audits suggest that many patients currently cared for in acute hospitals could be treated elsewhere

Bed audits, which assess patients' care needs in acute hospitals to identify patients who can be treated in alternative settings, find that up to 50% of bed days in these wards could theoretically take place in other settings.⁴ However, this is an upper limit; many bed days identified cannot be avoided, for example due to the time at which the patients present in hospital or due to lack of available alternatives. Figure 1 shows the alternative locations of healthcare for patients who could be treated out of hospital in analysis by the North West Utilisation Management Unit.

Of the 50% of patients who could be treated in alternative settings, as Figure 1 (page 6) shows around 80% of bed days are for patients who could, in principle, be treated more appropriately in other services such as intermediate care, rehabilitation and reablement, district nursing, social care or mental health. However, it is important to note that there are constraints on this in practice. For example, the alternative service suggested by the review may not exist in the local health economy. Equally, where it does exist, it might have specifications that exclude some patients,⁵ might not have capacity or be closed when it is needed, leading to delays. Many of the community-based schemes we reviewed aim to address the needs of patients who

³ www.gov.uk/guidance/moving-healthcare-closer-to-home#implementation-considerations

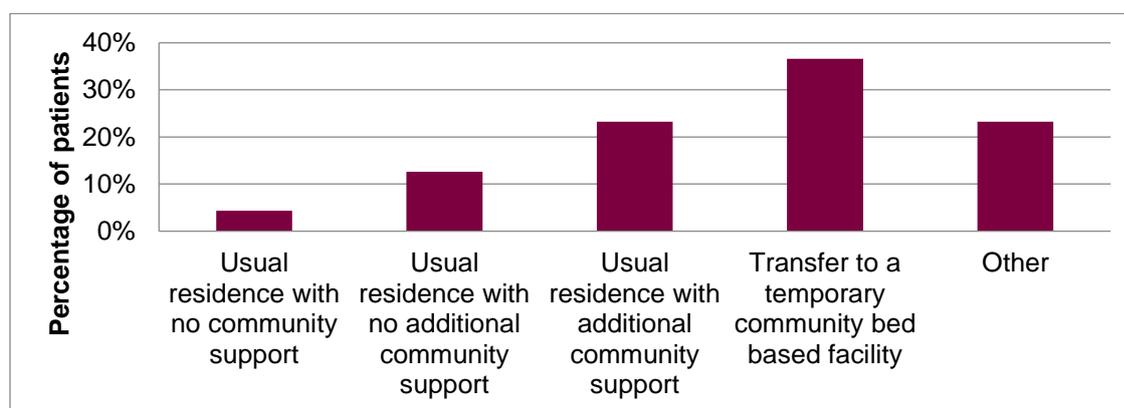
⁴ Studies carrying out bed audits at a large number of acute hospitals across UK (data supplied to Monitor by North West Utilisation Management Unit and the Oak Group). These reviews assess patients in the acute hospital, typically in the adult general medicine, elderly medicine, general surgery and trauma and orthopaedics wards, and report whether the patient needs acute level care and what alternative locations could meet their needs. For example, the appropriateness evaluation protocol implemented by the North West Utilisation Management Unit involves an independent reviewer assessing patient notes at around noon the day after admission, and in some reviews, following up with patients for approximately 10 days after admission. The reviews can be tailored to the configuration of existing services so that they are more representative of the local health economy and highlight opportunities to improve the configuration of these services.

⁵ For example, patients who wander at night or patients where funding arrangements are not yet agreed.

could be treated in community-based settings but continue to have some severe health needs. These patients require some intensive health intervention.

For the remaining 20% of these bed days, the patient could have returned to their usual place of residence without additional support. Some patients may have been waiting for prescriptions or for previous social care packages to be reinstated, but they did not have immediate health needs that required them to be in an acute hospital. Not admitting these patients to, or discharging these patients from, acute inpatient wards will directly benefit acute provider operations by releasing capacity.

Figure 1: Appropriateness evaluation protocol study: alternative care locations for patients who could be treated out of hospital⁶



If a patient does not need acute care, being in an acute hospital can be harmful

Acute hospitals expose patients to potential avoidable harm. Hospital-acquired infections are a risk – a 2011 survey found that 6.4% of patients contracted a hospital-acquired infection (Hopkins et al, 2012).⁷

The risk is greater for older patients. The risk of hospital-acquired infections is higher for paediatric⁸ and older patients (Hopkins et al, 2012). Immobility can also lead to particular problems for older patients and they may be able to maintain greater mobility in community-based settings. A study of healthy older adults found that 10 days of bed rest led to a 14% reduction in leg and hip muscle strength and a 12% reduction in aerobic capacity: the equivalent of 10 years of life (Kortebein et al, 2008). There is also anecdotal evidence from this research that older patients are

⁶ Data from a point prevalence survey provided by North West Utilisation Management Unit to Monitor which covered 554 patients, of whom 254 could be treated out of hospital. North West Utilisation Management Unit have confirmed that this data is representative of recent data from their reviews, which have covered over 40,000 individual patient pathways and 29,000 care events across 46 providers.

⁷ There is no evidence to suggest that the rate of hospital-acquired infections would be different among patients who could be treated closer to home.

⁸ This review does not assess the impacts of community-based healthcare on paediatric patients.

more likely to suffer from falls in the unfamiliar hospital environment, and if they suffer from dementia are more likely to be disorientated.⁹

This suggests that there may be an opportunity to improve healthcare for older patients by offering community-based services as an alternative to acute care. Analysis by the North West Utilisation Management Unit, working with commissioners and providers, suggests that typically over 60% of avoidable bed days were for patients over the age of 65. In addition, older patients are more likely to have complex long-term conditions, or to enter hospital with existing social care needs. This means that these patients are more likely to require step-down health or social care services on discharge, and experience delayed transfers of care (Oliver et al, 2014).

Evidence suggests that community-based healthcare, when delivered well, can benefit patients

Table 1 (page 11) sets out a summary of selected literature on clinical outcomes when equivalent healthcare is moved from acute to community-based settings.¹⁰

There is some evidence of improved clinical outcomes for patients from being treated in community-based settings. This is particularly the case for older patients: community-based interventions for older people have been shown to reduce the number of hospital admissions, falls and moves into long-term healthcare (Beswick et al, 2008). Early supported discharge for stroke patients has been shown to reduce rates of illness and increase likelihood of survival (Laver et al, 2014), while home visiting, which offers health promotion and preventive care for older patients, is associated with a significant reduction in mortality (Elkan et al, 2001).

Some studies show reductions in readmissions, for example a substantial reduction in readmissions for patients with chronic obstructive pulmonary disease (COPD) treated at home (Ricauda et al, 2008). Geriatric assessment and multidisciplinary intervention for older patients after discharge demonstrated lower rates of 30-day admission and 18-month emergency admissions, and patients who were functioning better both physically and mentally (Caplan et al, 2004). Studies of early supported discharge and rehabilitation and reablement services have demonstrated a reduction in the ongoing social care needs of those patients (Glendinning et al, 2010; Shepperd et al, 2009b; Lewin et al, 2013).

⁹ In discussion with trusts that have provided case studies of community services and collaborated with Monitor on assessing community healthcare services.

¹⁰ These papers were selected on the basis that they covered key services, and reported the most important metrics related to quality of healthcare.

Patients themselves overwhelmingly report higher satisfaction when treated in community-based settings (Shepperd et al, 2009 and 2009b; Leff et al, 2005; Sibbald et al, 2008; Munton et al, 2011). Community-based treatment can provide or support some of the key things that older people report are important to them: such as being in their own home; remaining socially engaged and contributing to their family or community, including being caregivers; having independence, dignity and choice; not being a burden; and continuing with activities that give their life meaning (Oliver et al, 2014). Studies have also found improvement in quality of life measures and depression for patients treated at home (Tibaldi et al, 2009; Ricauda et al, 2008).

Many studies found that patients treated at home had the same clinical outcomes as patients treated in inpatient hospital care. For example:

- A review of studies of services to avoid hospital admission through treatment at home looked at data from five trials for a total of 844 patients. It found no change in mortality three months after patients would have been admitted, and a significant improvement in mortality at six months. There was an increase in readmissions to hospital, but it was not statistically significant, while there was no difference in how well patients functioned or their quality of life (Shepperd et al, 2009a).
- A review of studies of services to support patients in early discharge from hospital looked at data from 13 trials for a total of 1899 patients. It found that for patients recovering from strokes and older patients with a mix of conditions, there was insufficient evidence of a difference in mortality, although there was evidence of an increase in readmissions (discussed further below) (Shepperd et al, 2009b).
- A study of 100 patients with acute decompensation of chronic heart failure found no significant difference in mortality or subsequent hospital admissions, but did find that patients treated at home had a longer average time to first admission, a better quality of life and were eating better (Tibaldi et al, 2009).
- A study of 104 older patients with exacerbations of COPD found no difference in mortality for patients treated at home, but did find an improvement in readmission rates, quality of life and depression (Ricauda et al, 2008).

A few studies have identified negative clinical outcomes. One review of early discharge hospital at home showed significantly increased readmission rates for older patients with a mix of conditions (Shepperd et al, 2009b). However, this finding was based on only three studies out of 13 reviewed in detail, because of lack of data for individual patient data meta-analysis. A study also showed slightly lower rates of success when GPs carry out minor surgery (George et al, 2008).

There can be risks in treating patients in community-based settings

A risk is that patients are not admitted, or are discharged too early, without alternative services to address their need. It was the outside the scope of this study to review studies that focus on avoiding admissions or reducing length of stay in acute hospitals where alternative services were not put in place. However, it was not always clear in the literature whether alternative services were provided. For example, a study found an association between earlier discharge (under 10 days) for hip fracture patients and an increased risk of death, but it did not include any information on where the patient was discharged to or what rehabilitation or reablement was provided (Nordström et al, 2015).

If many extra patients are treated in community-based settings, these services will require additional resources. However, existing services are already facing challenges in meeting financial, demand and capacity pressures, at the same time as tackling difficulty with recruitment (Foot et al, 2014). As a result there is a risk that patient care in community services may suffer.

In addition, patients may be at greater risk in community-based settings than in an acute hospital if their needs escalate quickly. See our paper on [implementation considerations](#) when moving healthcare to community-based settings for details of how some providers have addressed the risks associated with treating patients with more acute needs whose needs may escalate.

Further evidence is needed to reach firm conclusions

Although the literature summarised above suggests that there are generally good or equal outcomes for patients from delivering healthcare in community-based settings, more evidence is needed. There are not many studies on impacts¹¹ and many studies are based on small patient cohorts. For example, in reviews of studies of admission avoidance and early supported discharge services (reviewing 10 and 26 studies respectively), average patient cohorts were approximately 130 and 150 respectively (Shepperd et al, 2009a and 2009b). This may be because many of these schemes are small pilots or are evaluated when they are not fully established (Bardsley et al, 2013), there is a lack of linked datasets for tracking longer term impacts or there is generally less data available in community settings.

Publication bias may also mean more positive findings are reported. There is a risk that the services that are written about are those that are well run and successful; publication bias could also limit the extent to which negative studies appear in the literature. It is therefore important to continue to assess the impacts of

¹¹ For example, analysis of the Cochrane library stated that 'the relatively small number of out-of-hospital-based systematic reviews and trials does not comprehensively cover the broad scope of out-of-hospital health care' (Smith, 2007).

moving healthcare out of hospital, including both standard services and new services.

Finally, a positive finding does not always mean the community is the best care setting for the patient. Studies have identified failures in the care of older patients, include a lack of advice on how to manage long-term conditions and less access to psychological therapies (discussed in Oliver et al, 2014). A well-run community-based scheme is likely to demonstrate positive findings compared with a system that is failing these patients. However, if the needs of these patients are already met well by the acute and existing community services, a new scheme may not be able to deliver any further benefits.

Table 1: Key studies of schemes to provide healthcare in community-based settings¹²

Author	Date	Description	Service included in study	Patients	Patient quality metrics		
					Improved	No significant change	Worsened
Beswick et al	2008	Review of 89 trials including 97,984 people (international)	Community-based complex interventions in preservation of physical function and independence	Older people	<ul style="list-style-type: none"> • Nursing-home admissions • Risk of hospital admissions • Falls • Physical function 	Mortality	
Caplan et al	2004	Study of 739 patients (Australia)	Comprehensive geriatric assessment and multidisciplinary intervention after discharge	Older people	<ul style="list-style-type: none"> • 30-day admissions • 18-month emergency admissions • Time to first emergency admission • Physical and mental function 	<ul style="list-style-type: none"> • Admission to nursing homes • Mortality 	
Elkan et al	2001	Systematic review and meta-analysis of 15 studies (international)	Home visiting programmes	Older patients	<ul style="list-style-type: none"> • Mortality • Admissions to long-term institutional care 	<ul style="list-style-type: none"> • Admissions to hospital • Health • Daily living activities 	

¹² These papers were selected on the basis that they covered key services, and reported the most important metrics related to quality of healthcare. Papers are listed in alphabetical order

Author	Date	Description	Service included in study	Patients	Patient quality metrics		
					Improved	No significant change	Worsened
Glendinning et al	2010	Study of 1,015 patients (UK)	Reablement	Older patients	Quality of life and social care-related quality of life		
Laver et al	2014	Overview of five systematic reviews and 21 randomised controlled trials. Outcome reported only for relevant services (international)	Early supported discharge	Stroke patients	<ul style="list-style-type: none"> • Morbidity • Mortality 		
Leff et al	2005	Study of 455 community-dwelling older patients who required admission to an acute care hospital (USA)	Hospital at home	Acutely ill older patients (USA)	Satisfaction Fewer complications (some evidence)	Achievement of quality standards	
Ricauda et al	2008	Randomised, controlled, single-blind trial with 104 patients (Italy)	Hospital at home	Older patients with exacerbations of COPD	<ul style="list-style-type: none"> • Hospital readmissions • Depression • Quality of life 	Mortality	

Author	Date	Description	Service included in study	Patients	Patient quality metrics		
					Improved	No significant change	Worsened
Shepperd et al	2009a	Review of 10 trials (1,327 patients), of which five contributed to individual patient data meta-analysis (844 patients) (international)	Admission avoidance hospital at home	Patients over 18 years	<ul style="list-style-type: none"> • Mortality at six months • Patient satisfaction 	<ul style="list-style-type: none"> • Mortality at 3 months • Admissions (non-significant increase) • Functional ability • Quality of life 	
Shepperd et al	2009b	Review of 26 trials (3,967 patients), of which 13 contributed to individual patient data meta-analysis (1,899 patients) (international)	Early supported discharge hospital at home	Patients recovering from a stroke and older patients with a mix of conditions	<ul style="list-style-type: none"> • Move to residential care • Patient satisfaction 	<ul style="list-style-type: none"> • Mortality 	<ul style="list-style-type: none"> • Readmission rates (for older patients with a mix of conditions)
Sibbald et al	2008	Interviews with service providers at 30 sites, interviews with commissioners, GPs and hospital doctors at 12 sites; economic case studies in six sites; and patient surveys at 30 sites	New services to move specialist care into the community	All patients	<ul style="list-style-type: none"> • Patient-reported waiting times, technical quality of care, satisfaction and access 	<ul style="list-style-type: none"> • Patient-reported co-ordination or interpersonal quality of care 	

Author	Date	Description	Service included in study	Patients	Patient quality metrics		
					Improved	No significant change	Worsened
		plus at nine conventional outpatient services (UK)					
Tibaldi et al	2009	Randomized controlled trial of 101 patients (Italy)	Hospital at home	Older patients with acute decompensation of chronic heart failure	<ul style="list-style-type: none"> • Time to first readmission • Depression • Nutritional status • Quality-of-life scores 	<ul style="list-style-type: none"> • Mortality • Number of readmissions 	

References

- Bardsley M, Steventon A, Smith J, Dixon J (2013) *Evaluating integrated and community-based care: How do we know what works?* Nuffield Trust. Available at: www.nuffieldtrust.org.uk/publications/evaluating-integrated-and-community-based-care-how-do-we-know-what-works
- Beswick AD, Rees K, Dieppe P, Ayis S, Gooberman-Hill R, Horwood J, Ebrahim S (2008) Complex interventions to improve physical function and maintain independent living in elderly people: a systematic review and meta-analysis. *Lancet* 371 (1): 725-735.
- Caplan GA, Williams AJ, Daly B, Abraham K (2004) A randomized, controlled trial of comprehensive geriatric assessment and multidisciplinary intervention after discharge of elderly from the emergency department -- the DEED II study. *Journal of the American Geriatrics Society* 52 (1): 1417-1423.
- Edwards N (2014) *Community services: How can they transform care* The King's Fund.
- Elkan R, Kendrick D, Dewey M, Hewitt M, Robinson J, Blair M, Williams D, Brummell K (2001) Effectiveness of home based support for older people: systematic review and meta-analysis, *BMJ* 29:323 (7315): 719-25.
- Foot C, Sonola L, Bennet L, Fitzsimons B, Raleigh V, Gregory S (2014) *Managing quality in community health care services*. The King's Fund.
- Glendinning C, Jones K, Baxter K, Rabiee R, Curtis LA, Wilde A, Arksey H, Forder JE (2010) *Home Care Re-ablement Services: Investigating the longer-term impacts (prospective longitudinal study)*. University of York Social Policy Research Unit.
- George S, Pockney P, Primrose J, Smith H, Little P, Kinley H, Kneebone R, Lowy A, Leppard B, Jayatilleke N, McCabe C (2008) A prospective randomised comparison of minor surgery in primary and secondary care. The MiSTIC trial. *Health Technology Assessment* 12(23): iii-iv, ix-38.
- Hopkins S, Shaw K, Simpson L (May 2012) *English National Point Prevalence Survey on Healthcare-associated Infections and Antimicrobial Use, 2011* Health Protection Agency.
- Kortebein P, Symons TB, Ferrando A, Paddon-Jones D, Ronsen O, Protas E, Conger S, Lombeida J, Wolfe R, Evans WJ. (2008) Functional impact of 10 days of bed rest in healthy older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 63(10):1076-81.
- Laver K, Lannin NA, Bragge P, Hunter P, Holland AE, Tavender E, O'Connor D, Khan F, Teasell R, Gruen R (2014) Organising health care services for people with an acquired brain injury: an overview of systematic reviews and randomised controlled trials. *BMC Health Services Research* 17 (14): 397.
- Leff B, Burton L, Mader SL, Naughton B, Burl J, Inouye SK, Greenough WB 3rd, Guido S, Langston C, Frick KD, Steinwachs D, Burton JR (2005) Hospital at home:

feasibility and outcomes of a program to provide hospital-level care at home for acutely ill older patients. *Annals of Internal Medicine* 6:143(11): 798-808.

Lewin GF, Alfonso HS, Alan JJ. Evidence for the long term cost effectiveness of home care reablement programs. *Clinical Interventions in Aging*. 2013, 8, 1273-81.

Munton T, Martin A, Marrero I, Llewellyn A, Gibson K, Gomersall A (2011) *Getting out of hospital? The evidence for shifting acute inpatient and day case services from hospitals into the community* The Health Foundation.

Nordström P, Gustafson Y, Michaëlsson K, Nordström A (2015) Length of hospital stay after hip fracture and short term risk of death after discharge: a total cohort study in Sweden, *BMJ* 350: h696.

Oliver R, Foot C, Humphries R (2014) *Making our health and care systems fit for an ageing population* The King's Fund.

Ricauda NA, Tibaldi V, Leff B, Scarafiotti C, Marinello R, Zancocchi M, Molaschi M (2008) Substitutive "hospital at home" versus inpatient care for elderly patients with exacerbations of chronic obstructive pulmonary disease: a prospective randomized, controlled trial. *Journal of the American Geriatrics Society* 56 (3): 493-500.

Shepperd S, Doll H, Angus RM, Clarke MJ, Iliffe S, Kalra L, Ricauda NA, Tibaldi V, Wilson AD (2009a). Avoiding hospital admission through provision of hospital care at home: a systematic review and meta-analysis of individual patient data. *Canadian Medical Association Journal* 20:180 (2), 175-182.

Shepperd S, Doll H, Broad J, Gladman J, Iliffe S, Langhorne P, Richards S, Martin F, Harris R (2009b) Early discharge hospital at home. *Cochrane Database of Systematic Reviews*. 21 (1): CD000356.

Sibbald B, Pickard S, McLeod H, Reeves D, Mead N, Gemmell I, Coast J, Roland M, Leese B (2008) Moving specialist care into the community: an initial evaluation. *Journal of Health Services Research & Policy* 13 (4): 233-9.

Smith E, Jennings P, McDonald S, MacPherson C, O'Brien T, Archer F (2007) The Cochrane Library as a resource for evidence on out-of-hospital health care interventions. *Annals of Emergency Medicine* 49 (3): 344-50.

Tibaldi V, Isaia G, Scarafiotti C, Gariglio F, Zancocchi M, Bo M, Bergerone S, Ricauda NA (2009) Hospital at home for elderly patients with acute decompensation of chronic heart failure: a prospective randomized controlled trial. *Archives of Internal Medicine* 28: 169 (17): 1569-1575.

This paper is part of a suite designed to increase awareness of the impact of moving care out of hospital. For more materials see [Moving healthcare closer to home](#)



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