

Care Closer to Home Rapid Evidence Review

Executive Summary

There is good evidence that hospital at home care is at least as safe and effective as care in a hospital setting, as long as patients are carefully selected. The evidence outlined in this paper is relevant to older adults across a range of conditions. There is robust evidence from three Cochrane Systematic reviews, and other supporting sources, that hospital at home patients have similar or reduced levels of mortality, similar levels of readmissions and fewer patients being in residential care at follow up than in-patient care. Hospital at home also significantly increased patient satisfaction.

1. Introduction

1.1 Policy background

Recent health policies in the UK have focused on shifting specialist care in some specialties into community settings. The aim of the shift is to enable people to live independently by offering more flexibility, accessibility and timely care closer to people's homes, giving greater choice and control over their health whilst reducing NHS costs and the increasing demand for hospital resources.

People across England are living longer. Although this is a positive trend in life expectancy with older people living well for more years, there is evidence showing that older people are the heaviest users of health and social care services as a result of a steady increase in the number of people living with acute and chronic health conditions. The following statistics were published by the Department of Health¹ regarding demography:

- By 2033 almost 25% of the population will be over 65
- The median age of people in hospitals nationally is 68
- An estimated 52% of over 65s have a long term condition
- Older people accounted for more than 40% of NHS spend
- An estimated 45% of health and community services expenditure is on people over 65.

In Devon the population has an older population structure than nationally. The impact of both the aging population and the inward migration of people retiring to Devon are having a significant effect on the differing age structure of some of our local communities. The resident population is growing at twice the national average. In Devon, the average age of a patient on an acute ward was 72.1 years and in a community hospital it was 83.8 years, based on the acuity audit that took place in May 2012. Therefore the average age of patients on wards in Devon were higher

¹ Department of Health Strategy Group, "Policy for Older People Guidance", (2010).
Department of Health cited in Older People Care Pathway Team, "Integrated care for older people: Examining workforce and implementation", (2011), Centre for Workforce Intelligence

than the national average and the age of patients in community hospitals were statistically higher than the acute wards.

Key national publications highlighting the need for more care closer to home include:

- 'Our Health, our care, our say: A new direction for community services' (2006) – Department of Health
- 'Shifting Care Closer to Home: Care Closer to home demonstration sites – report of the speciality sub groups (2008) – Department of Health
- 'Shifting Care Closer to Home' (2007) – Department of Health
- 'Shifting Care Closer to Home Review' – Department of Health
- 'Care Closer to Home – Narrative Report' (2012) – Royal College of Physicians
- 'Transforming the Delivery of Health and Social Care: The Case for Fundamental Change' (2012) – King's Fund

The NHS Confederation has highlighted the potential opportunities of shifting care closer to home. Delivering more care in the community is key to achieving the required efficiency savings, with specific measures in QIPP (Quality, Innovation, Productivity and Prevention) on minimising unscheduled hospital admissions, reducing the length of stay in hospital and increasing the number of people managing their own health.

An evidence review commissioned by the Department of Health to support the Transforming Community Services programme looked at more than 1000 studies on interventions that were not yet widespread for providing acute care in the community. It recommended that 'hospital at home' services should be a high priority for commissioners due to the relatively high quality of evidence that they have a positive effect.²

This paper provides an evidence review around hospital care at home. For the purposes of this review, 'care closer to home' is limited to 'hospital at home' services, defined as health care delivered in the home, that would otherwise have had to be administered in a hospital setting, for a limited time period.

2. Search Results

2.1 Search strategy

Two Cochrane systematic reviews were originally identified and considered in relation to this review. The first was Hospital at home admission avoidance³ (Shepperd et al) first published in 2008 and updated in 2011. The second was

² Ellins, J. and McIver, S. 'Evidence for transforming community services: Acute Services in the community' University of Birmingham 2009, accessed on 07.11.13 at <http://www.birmingham.ac.uk/Documents/college-social-sciences/social-policy/HSMC/publications/2009/Acute-services-in-the-community.pdf>.

³ Shepperd S, Doll H, Angus RM, Clarke MJ, Iliffe S, Kalra L, Ricauda NA, Wilson AD. Hospital at home admission avoidance. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD007491. DOI: 10.1002/14651858.CD007491

Hospital at home early discharge⁴ (Shepperd et al) published in 2009 and also updated in 2011. Additionally searches were run in NHS Evidence Journals and Databases using similar search terms for the time period 2008 onwards. The following terms were searched on MEDLINE, EMBASE, CINAHL, EconLit and also the Cochrane Collaboration Library; “hospital at home” AND Acute.

A third systematic review was identified looking at hospital at home for acute exacerbation of chronic obstructive pulmonary disease.⁵ A further individual paper was identified in the search regarding hospital at home for elderly patients with acute decompensation of chronic heart failure⁶ (Tibaldi, V et al).

An additional search was run on NHS Evidence to review other relevant literature including commissioning guides, evidence summaries, grey literature, health technology assessments, known uncertainties, medicines current awareness, policy and service development and primary research.

Studies or reviews of mental health, obstetric and paediatric hospital at home schemes were excluded (to align with the Cochrane Review exclusions). In addition, end-of-life hospital at home was not considered, although Shepperd et al have also reviewed this area of care.⁷

2.2 Evidence reviewed

The following sections give overviews of the three Cochrane Systematic Reviews identified and also an overview of the other references identified.

2.2.1 Summary of Hospital at home admission avoidance, Shepperd et al

Introduction

- Admission avoidance hospital at home is a service that provides healthcare treatment in a patient’s home for a condition that would otherwise require acute in-patient care.
- A specific service is delivered by healthcare professionals where care is needed for a limited period of time. If hospital at home was not available the patient would need to be admitted to an acute hospital ward. This type of service is being introduced in different ways in many countries in an attempt to reduce the demand being seen for acute hospital admissions.

⁴ Shepperd S, Doll H, Broad J, Gladman J, Iltis S, Langhorne P, Richards S, Martin F, Harris R. Hospital at home early discharge. *Cochrane Database of Systematic Reviews* 2009, Issue 1. Art. No.: CD000356. DOI: 10.1002/14651858.CD000356.pub3

⁵ Jeppesen E, Brurberg KG, Vist GE, Wedzicha JA, Wright JJ, Greenstone M, Walters JAE. Hospital at home for acute exacerbations of chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* 2012, Issue 5. Art. No.: CD003573. DOI: 10.1002/14651858.CD003573.pub2

⁶ Tibaldi V, Isaia G, Scarafioti C, et al. Hospital at Home for Elderly Patients With Acute Decompensation of Chronic Heart Failure: A Prospective Randomized Controlled Trial. *Arch Intern Med*. 2009;169(17):1569-1575. doi:10.1001/archinternmed.2009.267

⁷ Shepperd S, Wee B, Straus SE. Hospital at home: home-based end of life care. *Cochrane Database of Systematic Reviews* 2011, Issue 7. Art. No.: CD009231. DOI: 10.1002/14651858.CD009231.

- The objectives of this systematic review were to determine the effectiveness and cost of managing patients with admission avoidance hospital at home compared with in-patient hospital care.

Methodology

- The review carried out a thorough search for articles published up to the end of January 2008 and unpublished studies were also considered by contacting providers and researchers known to be involved in this field. Studies were selected where randomised controlled trials had been conducted, recruiting patients aged 18 and above. The studies compared admission avoidance hospital at home with acute in-patient care and they selected studies where patients were admitted to hospital at home either via the emergency department or directly from the community, thereby avoiding all contact with the hospital.
- The data was extracted and study quality assessed by two independent authors. Ten studies were included and of these, 7 provided individual patient data (IPD) and of these, 5 contributed to the (IPD) meta-analysis.
- Although the study searched for studies recruiting patients aged 18 and above, the majority of studies included people who were on average between 70 and 80 years old, and therefore the results may not be applicable to people in younger age groups. Generally the methodology used for this review and the studies included within it are robust and in general the results can be accepted.

Results

- The results of this review show, compared with in-patient care, admission avoidance hospital at home showed a non-significant reduction in mortality of patients at 3 months, which then showed a significant reduction in mortality at 6 months follow up.
- Admission avoidance hospital at home may, therefore, reduce mortality. During treatment, patients who are treated by hospital at home may still require a hospital admission should their condition change, and the studies found a non-significant increase in admissions in hospital at home patients.
- The review found no significant differences between the two models of care for functional or cognitive ability.
- The results showed increased patient satisfaction with admission avoidance hospital at home. Some results also showed carer satisfaction was higher with hospital at home but the sample size was not great enough to draw a valid conclusion.
- Economic analysis was only available from two studies and from these, when informal care was excluded, admission avoidance hospital at home was less expensive than admission to an acute hospital ward.

Conclusion

- The study shows that when looking particularly at 70-80 year olds, the outcomes for many patients were equivalent or slightly better for admission avoidance hospital at home than for in-patient care. There are variations in which conditions this would be most appropriate for, and consideration would need to be given to the level of

informal care available and needed for patients, as this review was unable to conclude on carer satisfaction.

- With regards to costs, the fact that the costs of informal care are excluded makes any conclusions on cost difficult for the population being considered.

2.2.2 Summary of Hospital at home early discharge, Shepperd et al

Introduction

- Published in 2009 in the Cochrane Database of Systematic Reviews. The review was an update of a previous review in 2005.
- The primary objective was to determine, in the context of a systematic review and meta-analysis of randomised controlled trials, the effectiveness and cost of managing patients with early discharge hospital at home compared with in-patient hospital care.
- 'Early discharge hospital at home' was defined as a service that provides active treatment by a health professional in a patient's home for a condition that would otherwise have required acute in-patient care in a hospital setting.
- The studies covered patients aged 18+ who had had a stroke, had elective surgery, or elderly patients with a range of conditions. Long term care, obstetric, paediatric and mental health hospital at home schemes were excluded from the review.

Methodology

- No significant methodological problems were identified; the review was carried out robustly according to Cochrane review standards. Studies were independently assessed for rigour. Unpublished studies were sought.
- The authors performed a meta-analysis on individual patient data (IPD) from 13 out of the 26 studies included in the review. Published data was analysed from the remaining studies.
- Comparison between health outcomes was limited by the different measurement tools and reporting methods used in the studies. A direct comparison of costs was not possible due to the difference in calculation methods between studies.

Results

- For patients recovering from a stroke and elderly patients with a mix of conditions there was no significant difference in mortality between hospital at home and acute care.
- Overall, there was insufficient evidence of a difference in readmission rates between hospital at home and in-patient care. For patients recovering from a stroke, there was no significant difference in readmission rates between hospital at home and in-patient care at three month and six month follow up. However, for older patients with a mix of conditions allocated to hospital at home, readmission rates were significantly increased at three month follow up.

- For patients recovering from a stroke and for elderly patients with a mix of conditions, patients allocated to hospital at home were significantly less likely to be in a residential care home at six month follow up.
- Evidence on cost-effectiveness was mixed.
- Overall hospital at home appears to increase patient satisfaction. One trial cited 'good communication, frequent and timely visits, and close attention to detail' as positive aspects of the service from the patient perspective.

Conclusion

- The type of patient and condition selected appears to have an important effect on effectiveness. One trial of stroke patients found that home-based care was more cost-effective than hospital care if limited to those whose condition was less severe.
- The review does not support the widespread adoption of early discharge hospital at home services within health care services that already have well developed primary care services. On the other hand nor does it support the discontinuation of services where existing schemes for the patient groups outlined above; it is not prohibitively expensive or significantly different in effectiveness. Cost-effectiveness and improved health outcomes may well depend on local implementation, including achieving a large enough volume of appropriate patients being allocated to the service.

2.2.3 Summary of Hospital at home for acute exacerbations of chronic obstructive pulmonary disease, Jeppesen et al

Introduction

- The review was published by the Cochrane Collaboration in 2012 including new studies and changed conclusions from the original publication in 2003.
- It aimed to evaluate the efficacy of hospital at home compared to hospital inpatient care in acute exacerbations of chronic obstructive pulmonary disease (COPD).

Methodology

- The review only considered randomised control trials where patients presenting to the emergency department with exacerbation of their COPD were randomised to either hospital at home or hospital admission. Trials were only included where patients randomised to hospital at home services were discharged within 72 hours of presenting to the emergency department and after an initial assessment by the hospital medical team. Studies were included where they only selected patients for trials where patients would have met the criteria for hospital at home at the time they attended.
- The first search was conducted up to and including August 2003 and the updated search was conducted up to February 2012. The databases searched were MEDLINE, EMBASE, CINAHL, DARE, HTA, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials (CENTRAL), and Cochrane Airways Group Register of trials (CAGR). Reference lists were checked for

evaluations of hospital at home and included where relevant and unpublished studies were sought by contacting researchers and the WHO International Clinical Trials Registry Platform was searched for on-going trials. Studies were not restricted by language in any way. Selection of studies was done by three authors according to the pre specified inclusion criteria.

Results

- Eight trials were included which equated to 870 patients, 501 of which were treated by hospital at home and 369 as inpatient care. Results showed a significant reduction in readmission rates for hospital at home patients compared with hospital inpatient care of acute exacerbations of COPD.
- A trend towards lower mortality in the hospital at home group was identified, however the pooled effect estimate did not reach statistical significance. The evidence was considered too weak to make firm conclusions regarding health related quality of life, lung function and direct costs.

Conclusion

- The authors conclude that for selected patients presenting to emergency departments with exacerbations of COPD, treatment can be successfully and safely provided at home with support from respiratory nurses. They found evidence they considered of moderate quality that hospital at home may be advantageous with respect to readmission rates in these patients.
- Evidence showing a trend towards reduced mortality rates compared to conventional inpatient treatment was not statistically significant.
- For the other outcomes considered, the evidence was considered to be of low or very low quality and therefore no conclusions on these factors can be drawn.

2.2.4 NICE Guidance

The National Institute for Health and Care Excellence (NICE) recently published guidance on the management of COPD in adults, and they recommend that the impact of exacerbations of COPD in adults is managed through use of hospital at home or assisted discharge schemes. They state that hospital at home and assisted discharge are safe and effective, but that there are insufficient data to make firm recommendations about which patients are most suitable for the service. Patient selection should depend on the resources available and absence of factors associated with a worse prognosis, for example, acidosis. Patient preferences should also be taken into account.⁸

2.2.5 Summary of Hospital at home for elderly patients with acute decompensation of chronic heart failure, Tibaldi et al

Introduction

⁸ NICE Clinical Guidelines (CG101): Chronic obstructive pulmonary disease: Management of chronic obstructive pulmonary disease in adults in primary and secondary care (2010)

- This study evaluated the feasibility and effectiveness of a physician led hospital-at-home service for patients with acute decompensation of chronic heart failure.

Methodology

- This study was a prospective, single-blind randomised control trial looking at patients aged 75 and above admitted to hospital for acute decompensation of coronary heart failure.
- Patients were assessed for suitability for treatment at home and those that were eligible were given baseline assessments and randomly assigned to the general medical ward (n = 53) or the geriatric hospital at home service (n=48).
- On discharge a re-evaluation of patients and care givers was carried out and a complete follow up evaluation was given at 6 months.

Results

- Patient mortality was 15% at 6 months across the sample with no significant differences between the different care settings.
- The number of subsequent hospital admissions was not statistically different in the two groups, but the length of time to first additional admission was longer for hospital at home patients.
- Only the hospital at home patients showed improvements in depression, nutritional status and quality-of-life scores.

Conclusion

- For patients meeting the relevant eligibility criteria, substitutive hospital at home care is a viable alternative to traditional hospital inpatient care for elderly patients with acutely decompensated coronary heart failure.
- The study showed clinical feasibility and efficacy with the alternative.

3. Conclusion and Summary

- There is good evidence that hospital at home care is at least as safe and effective as care in a hospital setting, as long as patients are carefully selected.
- Admission avoidance hospital at home can significantly reduce mortality at six months in older adults.
- For patients recovering from a stroke and elderly patients with a mix of conditions, early discharge hospital at home showed no significant difference in mortality.
- Hospital at home participants were significantly less likely to be in residential care at follow-up.

- Overall, there was insufficient evidence that early discharge hospital at home patients were any more likely to be readmitted to hospital, but older patients with a mix of conditions were significantly more likely to be readmitted, which implies that patient selection is essential.
- For patients with acute exacerbations of COPD, hospital at home significantly reduced readmission, but the evidence was too weak to draw firm conclusions on health outcomes and costs. NICE have independently reviewed the evidence on managing patients with exacerbations of COPD and have recommended that hospital at home schemes be implemented, again with careful patient selection.
- The randomised controlled study on elderly patients with acute decompensation of heart failure showed that hospital at home was a safe and effective intervention.
- Across conditions, hospital at home increases patient satisfaction, though the evidence on the impact on carers is not conclusive.
- The extent of how cost-effective a scheme will be is influenced by local implementation, including achieving a large enough volume of appropriate patients being allocated to the service. Hospital at home has the potential to reduce costs but this should not be taken as a given; local evaluation and monitoring is key. Informal care costs should be included in order to measure the cost impacts on patients and carers.

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