

Hospital at home

What is it and why do it?

Hospital-at-home schemes (HaH) are a popular response in many countries to the increasing demand for acute hospital beds linked with rising admissions and subsequent costs. They have become popular particularly for people presenting with COPD exacerbations because of the rising admissions and costs attributed to this condition. These schemes are an alternative to traditional hospital care and aim to provide short term acute medical care, within the patients' home, including residential and nursing homes. In an attempt to redress rising health care costs and in particular the cost of hospital admissions they have been part of government policy for ten years, however there is little evidence that they reduce overall acute hospital use or that they are cost efficient, although they are popular with patients.

HaH services provide treatment and support for acute episodes through monitoring of the patient's condition, allowing provision of care in the comfort of their own environment. While the schemes both avoid admission and enable early discharge, recent emphasis has been on avoiding admission. Additionally the pressure on clinical commissioning groups to move services from secondary to primary care means there is now a real need to consider HaH in the broadest context. Although cutting costs is the main goal of HaH there are other perceived benefits including reducing the risk of adverse events, rehabilitating patients in their home environment, and supporting self management as well as reducing dependency on the acute sector.

Admission avoidance and early/supported discharge schemes for COPD

A Cochrane systematic review in 2003 concluded that HaH was a safe and effective treatment approach for selected patients with exacerbations of chronic obstructive pulmonary disease (COPD). One in four patients presenting to hospital as an emergency may be suitable for home treatment with nursing support,¹ although early initiators of the services

felt that this was a conservative estimate and that many more patients could be supported through these services.²

Early/supported discharge schemes and admission avoidance are different models for providing home care:

- **Early/supported discharge schemes**

Most of the evidence for HaH is in this context.^{3,4} These schemes involve getting people out of hospital as quickly as possible; in the case of COPD this will follow admission for an exacerbation. Trials have shown that hospital length of stay is reduced through these schemes although the total length of care may be increased.³ Early/supported discharge is usually undertaken by specialist teams who support the patients by home visits and/or telephone support for a set period of time often around two weeks. The overall management of the patient during this time usually remains the responsibility of hospital physicians.⁴

Those cared for in early/supported discharge services had similar mortality and disability rates to hospitalised patients however although patients had less chance of being admitted to residential care there were by higher hospital admissions.⁴ Evaluation of these services shows no strong evidence of reduced costs, but they are popular with patients.^{4,5}

- **Admission avoidance schemes**

There are two types of admission avoidance schemes aiming to reduce COPD hospital admissions and are gaining in popularity as they avoid hospital admission altogether, however they are less well evaluated.^{4,5}

- a) *Case management*

This involves health care professionals who coordinate and manage care for people with complex chronic conditions and arises from evidence from the USA that Evercare led to lower rates of hospital admission and significant financial benefits.⁶ In 2004 in the UK modern matrons took on this role hoping to reduce emergency bed days by 5% by 2008.⁷ There has been little formal evaluation of the success of this approach.

- b) *Specialised COPD teams*

This involves specialist health care professionals coordinating and managing care for people with predominantly COPD and are focused on management of exacerbations and prevention of these leading to a hospital admission. Again evaluations are anecdotal rather than robustly evaluated.

There is a problem in defining which patients to be case managed as the evidence indicates that the population at highest risk of admission varies over time.⁸ Uncontrolled studies suggest that specialist teams result in lower admission rates than those under active case management. Additionally there may be little impact on patients with many previous admissions whose admission is not driven by exacerbations but complex problems. While these services impact on the quality of patient care, there is no substantial evidence that they effectively reduce overall hospital admissions with little actual cost saving.⁵

Who is suitable?

In making the decision to support a person in their own environment, several questions need to be asked:

- Who is going to provide the additional input required to support the patient?
- Can the patients rapidly and easily obtain help should they deteriorate?
- Can additional pharmacological treatment be delivered in the home environment?
- Is it possible to identify patients at high risk of rapid decline or failure to cope such that they should not be offered home treatment?

The major issues are in the person's ability to manage at home and adhere to medical advice, their ability to operate any necessary equipment (nebuliser or oxygen cylinder) unsupervised, as well as their current smoking status if oxygen is required. Studies have demonstrated factors which identify group characteristics of patients at an increased risk of relapsing or requiring admission to hospital during an exacerbation of COPD:

- Increasing age

- Those with a longer duration of COPD
- Increasing severity of impairment of FEV₁
- Increased frequency of exacerbations
- Those with chronic mucus hypersecretion
- People with co-morbidities (especially heart disease)
- Use of home oxygen or maintenance steroids
- Failure of first-line treatment
- A previous history of relapses
- Generalised debility or malnutrition⁴

Referral and 'red-flag' issues

Referral

Referral for HaH is likely to be for a COPD exacerbation and patients may be referred for medical treatment, requiring for example oxygen therapy, nebuliser therapy, inhaler therapy, intravenous antibiotics, physiotherapy, occupational therapy, social care or general monitoring of their condition.

Referral criteria for home care are based on early supported discharge criteria but are mainly applicable to admission avoidance as in primary care blood gases are rarely undertaken and chest x-rays will not be performed. Pulse oximetry will be an important part of assessment.

Red Flags

- Impaired level of consciousness
- Acute confusion
- pH <7.35 if blood gases have been measured
- Acute changes on the chest radiograph
- A concomitant medical problem requiring inpatient stay
- Chronic confusion i.e. dementia
- Insufficient social support
- No telephone and residence geographically removed from hospital
- New hypoxaemia⁸

Assessment

There are several objectives of the assessment process when considering a patient for home management of exacerbation of COPD:

1. Confirm the patient has a diagnosis of COPD.
2. Confirm the patient has had an exacerbation. This may show as more purulent sputum, increased sputum in volume or viscosity, increased temperature, an increase in breathlessness or simply a change from the usual for the individual.
3. Check whether there is an alternative explanation for the deterioration and

look for 'red flags'

4. Determine that it is safe to manage the patient at home.
5. Tailor the treatment to the patient and the exacerbation. i.e. steroids and antibiotics⁸
6. Review

Primary care role

Considerations for primary care include:

- How will patients be identified?
- How are referrals made to services and who can initiate these?
- What are the hours of the service and what happens outside of these hours?
- Who has the ultimate responsibility for the patients?
- Has the assessment been thorough?
- How is communication across the community team ensured?

Discussion

Although widely implemented, here is current uncertainty whether HaH services lead to better or the same health outcomes compared with inpatient care. Nice 2004 recommendations for provision of the services were that:

- Hospital-at-Home and assisted discharge schemes were safe and effective and should be used as an alternative way of managing patients with exacerbations of COPD who would otherwise need to be admitted or stay in hospital. Grade A Evidence
- The multi-professional team required to operate these schemes should include allied health professionals with experience in managing patients with COPD, and may include nurses, physiotherapists, occupational therapists and generic health workers. Grade D evidence
- There was currently insufficient data to make firm recommendations about which patients with an exacerbation were most suitable for Hospital-at-Home or early discharge. Patient selection should depend on the resources available and absence of factors associated with a worse prognosis, such as acidosis. Grade D Evidence
- Patients' preferences about treatment at home or in hospital should be considered. Grade D Evidence¹⁰
Any consideration of hospital at home services should consider the following:
 1. Think about homecare (and by implication of supporting self-care and self management).
 2. If the change in focus in the NHS is

away from acute admission ensure that there is appropriate and competent care in the community.

3. Look at true integrated working. Some patients during the course of their disease will require hospital admission and the emphasis shouldn't be keep them at home at all costs.
4. Ensure good channels for communication and record keeping.
5. Ensure services are safe and supported.

Although Hospital at Home is seen as an opportunity to reduce the pressures on existing healthcare facilities as well as providing choice for patients and their families the firm evidence for cost effectiveness has not really been proven.⁵ In the likely development of further HaH services prospective primary areas for research should be the measurement of mortality and readmission, with particular attention to the transfer of patients between hospital-at-home and inpatient care. Future studies should also include a formal, planned economic analysis.⁵

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