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WORKING GROUP ON PRIMARY AND COMMUNITY CARE PURCHASING

REPORT OF THE SUB-GROUP ON HOSPITAL AT HOME

HOSPITAL AT HOME - LESSONS FROM TRENT

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The Institute:

- provides advice and support to NHS staff on undertaking Health Services Research (HSR);
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- provides training in HSR for career researchers and for health service professionals;
- provides educational support to NHS staff in the application of the results of research;
- disseminates the results of research to influence the provision of health care.

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A Core Unit, which provides central administrative and co-ordinating services, is located in Regent Court within the University of Sheffield in conjunction with the School of Health and Related Research (ScHARR).

FOREWORD

Recent years have seen the emergence of evidence-based medicine, evidence-based commissioning and, to an extent, evidence-based policy. All GP practices in Trent and their Health Authorities face a range of similar issues. As decisions become more evidence-based, then the scope for sharing that evidence increases.

Following the establishment in Trent of the Working Group on Acute Purchasing, a similar group was set up to consider issues of importance to purchasers and providers of primary and community health care services.

The Department of General Practice at the University of Nottingham and the Nottingham Unit of the Trent Institute facilitate the Working Group on Primary and Community Care Purchasing. The topics for consideration were suggested at an initial meeting in 1996 of representatives from purchasing authorities, from primary and community care and from academic departments. Small groups consider the topics and draft reports are circulated for consultation and presented at subsequent Working Group meetings. Comments and suggestions received at those meetings are incorporated into the final text. The topics are approved by the Purchasing Authorities Chief Executives (PACE) group and the final reports are submitted to them prior to publication.

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EXECUTIVE SUMMARY

Hospital at Home was identified as a priority for examination by the Working Group on Primary and Community Care Purchasing at its first meeting in September 1995. A group was established to inform and advise purchasers on the commissioning of Hospital at Home schemes. The group reviewed the national and some international literature, focusing on efficacy, cost-effectiveness and managerial issues. A survey of Trent schemes conducted in 1994 was up-dated and reasons for success and failure sought from key informants.

Much of the literature on Hospital at Home has been descriptive and managerial. Current evidence suggests that both hospital avoidance and early discharge schemes are safe, but there is less consistent evidence about cost-effectiveness compared to hospital admission. A Cochrane review was published recently and several trials are to report soon.

The literature and local experience demonstrated a wide range of schemes in terms of their aims, structure, size and sustainability. Key predictors for success appear to be an inclusive needs assessment, detailed preparatory work, especially with referring clinicians, and a strong leader of and advocate for the scheme.

The report includes an appendix listing issues which commissioners might consider when developing or monitoring Hospital at Home schemes.

1. INTRODUCTION

In September 1995 the Trent Institute for Health Services Research initiated a Group to look at priorities for purchasing in Primary and Community Care. A number of topics were identified, including 'Hospital at Home'.

A Sub-Group was convened with the aim of making recommendations on good practice in purchasing/providing Hospital at Home schemes. Membership of the Sub-Group is given in Appendix 1.

This report updates a previous review of Hospital at Home in Trent (Harper 1994) and draws on local results of a national survey (Shepperd and Iliffe 1996). Our objectives were:

- To summarise the current rationale for and evidence on effectiveness and cost-effectiveness of Hospital at Home schemes.
- To describe current provision in Trent.
- To examine reasons for success and failure of local schemes.
- To define good practice in purchasing/providing Hospital at Home schemes.

2. BACKGROUND

2.1 What Is Hospital At Home?

In their Cochrane review, Shepperd and Iliffe (1997) defined Hospital at Home as 'a service that provides treatment that otherwise would require in-patient care, in the patients home, always for a limited time period'.

2.2 Why Hospital At Home?

The boundaries between hospital and home care are constantly shifting. In nineteenth century Britain, those who could afford it were cared for at home and hospitals were largely populated by the sick and poor. By the 1920s, this began to change and hospitals gained in popularity with the rich and newly emerged middle classes. Hence, the perception that acute hospitals form the centrepiece of health care systems is relatively recent, and it continues to dominate the health care picture both in terms of manpower and financial resources during the twentieth century (Marks, 1991). However, recent changes in the NHS such as the Patients' Charter and the NHS Community Care Act, have encouraged the provision of care in the community and increased patient choice. Patients now have higher expectations of care, as well as greater knowledge of their needs and of service availability.

The current interest in Hospital at Home appears to be driven by a number of factors (Marks 1991, Iliffe and Gould 1995):

- Policy pressure on managers in secondary care to transfer resources towards primary care;
- Regional differences in lengths of stay for similar conditions have drawn attention to potential savings from earlier discharge perhaps supported by Hospital at Home;
- The increasing proportion of the elderly and very elderly population;
- The high cost of constructing new hospitals;
- Problems of hospital acquired infection, excessive bed rest and psychological trauma associated with hospital stays;
- Unsuitability of acute hospitals for certain kinds of care;
- Better understanding of the possibilities of early discharge combined with intensive nursing care at home;

- Developments in home-based high technology care;
- The importance of providing consumer choice where possible;
- The high cost of traditional in-patient care;
- Advances in the delivery of depot antibiotics and narcotics; and
- The demand of patients for realistic alternatives to frequent hospitalisation.

As demands on acute services continue to rise, concern mounts over the costs of maintaining patients in sophisticated, high technology hospitals. There is now increased interest in developing community-based acute home care.

2.3 Types of Hospital at Home Schemes

Many Hospital at Home schemes are not new. In France, "Hospitalisation à domicile" has existed since the 1960s, and began by providing terminal care to cancer patients at home. These independent non-profit-making schemes are now firmly established within the French health service. They retain control over admissions, operate within their own guidelines, and are separate from both the hospital and community sectors. (Clarke 1984, Marks 1991).

Hospital based home care schemes (HBHC) facilitating the early discharge of a range of patient groups are common in the USA. High technology home care, such as intravenous drug administration and blood transfusion, is well established. These schemes usually have close ties with acute hospitals and may be encouraged by the different structure of incentives in insurance based systems of health care. Anderson (1992) reported a three fold increase in the number of HBHC programmes in the decade 1980-1990. In New Brunswick, The Extra Mural Hospital is an organisation which delivers "a comprehensive continuous service of diversified care in the home." (Steward 1985).

In the UK, provision of Hospital at Home schemes is notable for its small scale and diversity. A recent survey of 136 UK health authorities revealed 139 existing and 100 planned schemes, although the definition used was broader than in this review (Shepperd and Iliffe 1996).

Schemes may be categorised according to:

- Their target group;
- Their aim (admission avoidance, early discharge or both);
- Their organisation (community based or hospital outreach).

2.4 Target Groups

Children

Many reasons have been given for implementing Hospital at Home schemes for children, (While, 1991). As well as avoiding the emotional trauma and parental anxiety of separation, limited health service resources are more effectively used and the incidence of hospital acquired infection is reduced.

A Hospital at Home scheme for children was set up in 1984 in Nottingham, based in and supported by a fully integrated child health service. The aim was to shorten hospital stays and, where possible, avoid hospital admission altogether. Dryden (1989) discovered that liaison with general practitioners (GPs) and community staff was vital. Care was shared between hospital and community teams, alongside parents taught to cope with many sophisticated treatments. Most care is long-term and includes dying children. The service is available 24 hours a day, seven days a week.

An observational study of a paediatric home care scheme in Tower Hamlets, serving a population of disadvantaged and ethnic minority families, reported on its acceptability and costs (Tatman et al 1992). The home care team had a clear role in supporting, teaching and reassuring patients, with the result that families were positive about the service and confident about the care they were giving, not seeing it as a burden but as part of their daily routine.

In neonatal care, a randomised clinical trial in the US demonstrated that early hospital discharge of very low birth weight babies after an average of 11 days with home follow-up was safe and cost-effective (Brooten et al 1986). Re-admissions and hospital follow-up were not increased compared with a control group, nor were there any differences in measures of physical and mental growth. The follow-up services provided were hospital-based providing continuity, support and education to parents, many of whom were poor. The authors

concluded that, in addition to the families of high risk infants, society as a whole stands to benefit in many ways that cannot be quantified. Similar conclusions have been reached by Censullo (1986) and Raff (1986).

There is general support for the Department of Health's policy that children should not be admitted to hospital, even for short stays, unless there is no alternative (Harper 1994). Numa and Oberkaid (1991) found that of children whose admission could be medically justified, 65% were fit for discharge within 12 hours. Day surgery for children doubled between 1970 and 1983, due to selection of operative procedure, expert anaesthesia and nursing and support for the family in the community (Atwell and Gow 1985). The maintenance at home of children on "high-tech" treatment (Dryden 1989) avoids admissions and out-patient visits to the hospital.

Adults

Schemes may admit an undifferentiated range of patients or be targeted to patients with specific conditions, such as early discharge of orthopaedic conditions (Parker et al 1991). Undifferentiated schemes may offer admission avoidance, early discharge or both, and tend to attract a frail elderly population (Wilson et al 1997).

Palliative Care

Reference has already been made to the care of dying children in their own homes but the need for provision of care for adults is far greater. Hospices are established throughout the UK providing a high standard of in-patient, day and home care mainly to cancer patients, including several hospices especially for children. While a great deal of attention is directed towards in-patient units, well over half the number of patients dying of cancer are cared for at home by hospice and palliative home care services working alongside the primary health care teams. These services may be provided by a voluntary hospice or by Macmillan nurses and Marie Curie Cancer Care. Hospital at Home may contribute to the range of services in terminal care.

2.5 Aim of Schemes

Prevention of hospital admission

Frequently, the reasons for admission to hospital are not clinical but relate to social circumstances. A hospital bed becomes a refuge for the patient and a reasonable and rapid

solution for the GP. Since bed blocking, whether due to inappropriate admission or delayed discharge, is a major problem, attention is being directed towards solutions, including Hospital at Home schemes.

A recent study by Pringle and Falk-Whynes (1994) was carried out to quantify avoidable medical admissions as seen by hospital doctors and GPs in the Doncaster area. Up to 32% of admissions were seen as avoidable with current resources and up to 43% avoidable with enhanced community services. Strategies suggested by doctors to reduce avoidable admissions were all medically orientated and included a telephone advice service, a review of the domiciliary visiting service and GP beds. Hospital at Home and enhanced social/community services were not embraced by doctors as the main options for change.

A similar proportion of avoidable admissions was found in a recent study of 170 consecutive GP referrals to secondary care, of which 34% were considered by independent assessors to be avoidable (Elwyn-Jones and Stott 1994). The reasons given included failure between the primary/secondary interface, and failure to use the available resources. There was a need to improve GPs' knowledge of available services and their skills to use them.

In Bristol, Coast et al (1995) found that a screening tool identified about 20% acute admissions as 'avoidable', but a panel of GPs felt this was an over-estimate. They concluded that few resources could be saved by providing alternatives.

Hospital at Home schemes are an alternative to hospital admission. However, there are workload implications for GPs (Wilson et al 1997A). Primary Care Teams do not welcome additions to their workload unless these are accompanied by new resources. If resources are to be released for investment in primary care, there will have to be a reduced demand for hospital care (Coulter 1995).

A specific group where admission may be avoided is stroke patients. An RCT, which attempted to assess the effects on hospital admission rates of providing a home care service, showed no difference between the trial and control patients in terms of mortality or functional recovery, and a paradoxical rise in the use of hospital beds by trial patients. The service was not made clear to GPs and hospital staff who, respectively, refused it or regarded it as competition. The organisational failure has clear implications for setting up Hospital at Home schemes.

Probably the most significant attempts at preventing hospital admission have been directed towards the elderly. An early example was a fairly modest Hospital at Home scheme introduced in Seaton, Devon, in place of building a local hospital (Mounce 1989). It served mainly an elderly population with the aim of preventing people having to go in to hospital. This is a good example of New Brunswick's strategy of "making beds available without building". The success of the service depended largely on the nurse manager having a clear and considerable clinical role and the reliable secretary was invaluable. Local and bank nurses were employed and much care was supplied by a nursing auxiliary who combined nursing with domestic duties. Subsequently, intensive home support schemes to avoid admission of the elderly have been set up widely across the UK (Shepperd and Iliffe 1996)

Facilitation of early discharge/Rehabilitation at home

Parker et al (1991) have listed several advantages of Hospital at Home rehabilitation. Patients are less likely to become confused in a familiar environment, and social support and contacts are maintained. An earlier study from Peterborough found that patients with hip fracture treated in Hospital at Home returned more rapidly to their normal activities (Pryor 1989).

Hollingworth et al (1993) compared patients with hip fracture who had Hospital at Home as an option for rehabilitation with patients without such a service. The direct costs to the health service were significantly less for those with access to early discharge, but re-admission rates were higher. The authors pointed out that re-admission may bear no relation to the quality of Hospital at Home care, as previous studies had shown no differences in outcomes. "What is more important is to identity and monitor the underlying complication rates that occur". Their paper was followed by letters from irate GPs objecting to the workload and costs being transferred to them. Later studies on early discharge of orthopaedic patients have failed to demonstrate economic advantage (Hensher et al 1996).

2.6 Organisation of Schemes

Community based schemes

In the UK, these are usually run by Community Trusts, offer care for a broad range of conditions, and emphasise admission avoidance. Medical responsibility usually remains with the GP.

Hospital based schemes

These usually offer early discharge and have close links with a specific department. Early discharge of orthopaedic patients is the most common example. Medical responsibility is likely to remain with the consultant.

3. SUCCESSES AND FAILURES OF HOSPITAL AT HOME SCHEMES

3.1 Successes

In a report based on examination of recently established UK schemes, the Primary Care Support Force (1997) identified ten critical factors in delivering a successful Hospital at Home scheme. These were:

a) Clear entry and exit requirements;
b) Involvement of consultant and other hospital staff;
c) Apparent benefits to all stakeholders (patients, GPs, community services, hospitals);
d) Sufficient volume of activity;
e) A focus on patient / carer education and self-help;
f) Recognition of special care needs;
g) Rapid availability of specialist equipment;
h) Ability to deliver care for 24 hours per day;
i) Clear clinical accountability, protocols and explicit working agreements; and
j) Incorporation of the right to re-admit to a hospital bed immediately.

Iliffe and Gould (1995B) support many of these conclusions and also emphasise the importance of skill mix. They offer advice about key features in introducing schemes. These include:

a) Addressing public and professional concerns about cost cutting, safety and workload;
b) Adequate pump-priming to include communication with stakeholders, staff training and access to equipment;
c) Acknowledgement that savings in hospital costs will not be immediate and that parallel funding will be needed.

3.2 Possible Reasons for Failure

Although difficult to document, it appears that many Hospital at Home schemes have been short lived. One reason could be lack of mainstream funding after pump-priming. In many

cases, this could have been avoided by tackling the desirable features listed above. Iliffe and Gould (1995B) list some common problems and their possible causes.

PROBLEM	POSSIBLE CAUSES
Under-utilisation	Team too small, unavailable Team under-equipped or under-skilled Clinician resistance
Season variation in referral	Referral driven by bed availability not need
Over-treatment	Failure to taper care
High re-admission rate	Entry criteria too broad or ignored Clinical care inadequate Insufficient nursing input
Poor functional outcomes	Insufficient rehabilitation

This checklist emphasises the importance of detailed specification from the start of the scheme and ongoing audit to ensure that problems, such as the above, are identified. An example of an evaluation package is shown in Appendix 2.

4. ECONOMIC ISSUES

Specific Hospital at Home services providing high technology, e.g. intravenous nutritional support, intravenous antibiotic therapy, respiratory care, are cheaper than conventional in-patient care (Taylor 1989, Marks 1991), with savings being between 15% and 30% for home parenteral nutrition and over 50% for home care for respiratory failure.

Early discharge after hip replacement supported by a general Hospital at Home service also saves resources, with an estimated six bed days and £720 saved per hip fracture if 40% of all individuals having hip replacements had access to Hospital at Home services (Hollingworth et al 1993).

There is less evidence on cost avoidance through prevention of admission through use of a Hospital at Home service, although early results of a trial are encouraging (Wilson et al 1997).

Few studies have achieved a comprehensive review of all costs including direct and indirect costs to patients; costs to carers and their families; total costs to local health authorities and voluntary agencies and the community at large.

Economic Issues are discussed in more detail in Appendix 3.

5. HOSPITAL AT HOME IN TRENT

5.1 The 1994 Survey

In 1993 the Regional Nurse Director at Trent Region (Anne Southworth), commissioned a survey from ScHARR, University of Sheffield of Hospital at Home schemes in the region. A postal survey was carried out of all listed units in the Trent Region, excluding those for mental handicap, learning disabilities and acute psychiatry. Units delivering exclusively domiciliary terminal care were noted but not followed up, as these services are extensive and were considered outwith the remit of the commission. Health Authorities were also approached for information regarding schemes which they were purchasing.

A deliberately brief questionnaire was sent to the Director of Nursing Services in purchasing authorities and in provider units, asking if the Health Authority was at present purchasing, or intended to purchase in the next six months, schemes which were an alternative to hospitalisation. Respondents were asked to classify the schemes as facilitating early discharge from hospital, preventing admission to hospital, or providing domiciliary terminal care; to identify the main patient groups, and to state whether the scheme was being evaluated. The response rate was 98% (44/45).

In 1994 the results were as follows: 8 Hospital at Home schemes were being provided in hospital and community-based Trusts/units; 6 units described 'outreach' schemes which respondents did not define strictly as Hospital at Home but thought that they were relevant; there were 6 proposals for schemes and 5 "possibly being considered".

5.2 Update of 1994 Survey

In 1997 a telephone survey of schemes recorded in 1994 was carried out, from which it was found that in the intervening three years there has been both increased provision of services and the withdrawal of others. (See Tables 1, 2 and 3). These results were confirmed by information from an independent postal survey conducted by Iliffe et al in 1996/97.

The situation is changing daily as alternatives to hospitalisation are desperately sought by Health Authorities and Trusts. This is accelerated by the approach of winter and the threatened blockage of emergency beds. An additional stimulus is the provision, by the new

government, of extra funds to Health Authorities, in conjunction with Social Services, for the purpose of facilitating discharge from and avoiding admission to hospital of patients.

5.3 A Selection of Case Studies

Since the Trent survey of 1994 there have been changes in Hospital at Home services which are relevant to purchasers and providers. The following brief case studies describing schemes which have ceased, schemes which are new and schemes which are being planned, illustrate some of the organisational factors underlying the operation of Hospital at Home.

Table 1 - Hospital at Home Schemes in Trent, 1997 - Purpose, Purchaser and Provider

Health Authority	Scheme	Purpose	Purchaser	Provider
Barnsley	Intensive home support	ED medical elderly	HA	Barnsley CPS Trust
Doncaster	Paediatric orthopaedic	ED children	HA	Doncaster RI Trust
Doncaster	Avoiding admission	AA medical admissions	HA	Doncaster RI + Community Trust
Leicester	Intensive home support	AA medical elderly	HA	Fosse Health Trust
North Derbys.	Assessment unit	AA	HA	CNDRH Trust
Nottingham	Paediatric acute	ED & AA children	several purchasers	QMC Trust, Nottingham City Trust, Nottingham
Nottingham	Paediatric mobile respite care	ED, AA	several purchasers	QMC Trust, Nottingham City Trusts, Nottingham
Nottingham	Gynaecology and obstetric patients	ED, AA	QMC	QMC Trust, Nottingham
Nottingham	Intensive home support	ED orthopaedic, stroke and elderly and AA medical admissions	SS & City Challenge funds	Nottingham Community Trust
Nottingham	Community rehabilitation	Facilitating ED & rehabilitation for stroke patients		Nottingham Community Trust
North Notts.	Intensive home support	ED, AA elderly	HA	Central Notts Healthcare Trust
Rotherham	Intensive home support	AA medical admissions	HA and SS	GP practices + nursing and SS input
Sheffield	Crisis intervention team	AA medical admissions	HA	Community Health Sheffield Trust
Sheffield	Facilitating discharge	ED and rehab for elderly medical	HA	Community Health Sheffield Trust
Sheffield	Community rehabilitation Teams	ED for stroke and orthopaedic patients	HA	Community Health Sheffield Trust
Sheffield	Paediatric acute	Avoid admission of acutely ill children	HA	Sheffield Children's Hospital Trust
Southern Derbys.	Early post-op discharge	ED for orthopaedic patients	HA	Southern Derbys Community Trust
Southern Derbys.	Intensive home support	ED for elderly medical patients	HA	Derbyshire RI, Derby City and Southern Derbys. Community Trusts

ED= early discharge AA= avoidance of admissions HA= Health Authority SS= Social Services

Table 2 - Hospital at Home Schemes in Trent, 1997 - Scope, Evaluation and Comments

Health Authority	Scheme	Scope	Evaluation	Comments
Barnsley	Intensive home support	nurse-led, 12 places, max. stay 14 days	in-house	new service, district-wide
Doncaster	Paediatric orthopaedic	for children treated for fracture	in-house	
Doncaster	Avoiding admission	admissions unit + community nurse intervention team.	independent	
Leicester	Intensive home support	nursing and therapies up to 24 hours	independent	RCT funded for 3 years. Serves inner city, includes cultural linkworkers. Interim results suggest lower episode costs than acute hospital.
North Derbys.	Assessment unit	12 bed unit receiving medical admissions for multidisciplinary assessment	HA	new service, enables 25% discharge elsewhere
Nottingham	Paediatric acute	facilitates discharge and prevents admission of infants, children	independent	long-standing service
Nottingham	Paediatric mobile respite care	includes terminal care	independent	works closely with acute team
Nottingham	Gynaecology and obstetric patients	ED following hysterectomy; ED & PA following miscarriage & ectopic pregnancy	in-house	extended since initial service
Nottingham	Intensive home support	24 hour community nursing	independent	pilot scheme to be extended end 1997
Nottingham	Community rehabilitation	multi-disciplinary team	independent	new service, serves inner city, includes multilingual co-workers
North Notts.	Intensive home support	9 month pilot for patients >65 years old, without specific diagnosis; including 7 GP practices, consultants, therapists, District Nurses	3 monthly	to start end October 1997
Rotherham	Intensive home support	nurse care of all grades, medical support from GPs + social support from SS.	independent	new service; includes one TPP
Sheffield	Crisis intervention team	especially for >65 years	independent	city-wide service
Sheffield	Facilitating discharge	patients discharged to nursing home for nursing care, and for rehabilitation provided by community therapists	independent	
Sheffield	Community rehabilitation Teams	two CR teams facilitate ED home for stroke and orthopaedic patients requiring rehabilitation	independent	pilot scheme to be extended if successful

Health Authority	Scheme	Scope	Evaluation	Comments
Sheffield	Paediatric acute	Nurse-led observation unit to avoid admission of GP referrals	in-house	re-allocation of service
Southern Derbys.	Early post-op discharge	GPs provide medical cover	HA	'sold' to GPs by consultants; GPs provide medical cover; no financial arrangement
Southern Derbys.	Intensive home support	Intensive home support 6 weeks; 7.30-2200; particularly for elderly inner city patients	no	partial success; extended hours; slow to start; GP reluctance; should have been 'sold' by medics, not nurses
		ED= early discharge	HA= Health Authority	

Table 3 - Outreach Schemes in Trent, 1997

Health Authority	Scheme	Purpose	Purchaser	Provider	Scope	Comments
Doncaster	special care neonates	ED, AA	Doncaster Royal Infirmary Trust	Doncaster Royal Infirmary Trust	pre-planned discharge and home monitoring to prevent re-admission	
Leicester	intensive support neurological patients	ED, AA	Leicester Royal Infirmary Trust & GPFH	Leicester Royal Infirmary	avoid admission and facilitate discharge of patients with chronic neurological conditions	
Sheffield	Burns unit	ED	HA	Northern General Hospital Sheffield	support for patients at home following treatment	
Sheffield	special care neonates	AA	Northern General Hospital and Sheffield Children's Hospital Trusts	Northern General Hospital Sheffield	babies receiving oxygen therapy & terminally ill babies	community nurse incorporated into hospital-led service
Sheffield	paediatric	ED, AA	Sheffield Children's Hospital	Sheffield Children's Hospital	for medical and surgical paediatric patients	support for paediatric oncology patients also provided
Southern Derbys.	paediatric	AA	HA	Derby Children's Hospital	for children with chronic and terminal illness	

ED= early discharge
AA= avoidance of admission
HA= Health Authority

a Schemes which have ceased

Early post-operative discharge: Because of long waiting lists and in an attempt to increase throughput of orthopaedic patients, one Health Authority (HA) supported an Early Discharge initiative of the Orthopaedic Directorate of a District General Hospital (DGH). Early post-operative discharge of patients was to be facilitated by home visits made by nurses who would identify any barriers which may be present. The scheme operated for one year from August 1993 and was abandoned for three reasons:

i) The nursing assessment was found to be insufficient; assessment by physiotherapists and occupational therapists was also needed;
ii) GPs were suspicious of extra work.
iii) Consultants were reluctant to discharge early.

The scheme has been replaced by a multi-disciplinary pre-operative assessment of patients. This is not considered by the DGH to be Hospital at Home.

Early post-operative discharge: Another scheme set up to facilitate early post-operative discharge of orthopaedic patients failed because of poor co-ordination. When it came to be implemented, the intended population could not be identified.

Intensive home support: Start-up funds for a pilot scheme of 6 'notional beds' in the patients' homes were purchased by a HA with the Community Trust providing the care. After one year the pilot ceased as the Community Trust could not afford to meet the additional costs to themselves.

b A scheme which was delayed

Intensive home support: (North Nottinghamshire) This service, supported by the HA, and which incorporates GPs, district nurses, hospital consultants and professions allied to medicine (PAMs) was due to start at the end of 1996. It was delayed but started in October 1997. The process has been facilitated by the appointment of a co-ordinator and clearly illustrates (i) the length of time required to organise a scheme which overlaps boundaries amongst professionals and Trusts and (ii) the necessity for a designated and committed individual to pursue it resolutely.

c Schemes which have been successful

Where a scheme has been successful there has inevitably been a highly committed individual behind it, as well as having the commitment of the referring doctors.

Early post-operative discharge: (Southern Derbyshire) This scheme, in which post-operative care is provided by the Community Trust, has operated successfully since 1993. It was originally supported by the HA but is now purchased by the hospital Trust. One reason for its success is that it was 'sold' to the GPs by the orthopaedic consultants. It was also enthusiastically embraced by the senior nurses.

Avoidance of admission: (Sheffield Children's Hospital) In the wake of a reconfiguration of acute services by the HA, an ambulatory ward for children was closed. Within a tight schedule of approximately one month the staff on the ward moved to the nearby Children's Hospital and set up a GP Referral Unit to which children could be referred for observation, diagnosis and treatment. The objective is to avoid admission whenever possible. This was achieved by the dedication of the paediatric consultant and the nursing sister who were determined to make it work. Subsequent audit over the first six months has indicated success in avoiding admission of 50% of referrals.

5.4 Lessons Learned

Although it was difficult to obtain information in several cases, some clear conclusions about the situation in Trent can be drawn:

- The most sustainable schemes are hospital based and costs are often built into those of the hospital Trust;
- Many schemes have failed. Reasons include insufficient needs assessment, lack of negotiation with stakeholders, small scale, lack of 24 hour availability;
- Most schemes have been insufficiently evaluated / audited, so that success or failure may be difficult to define and potential lessons lost.

6. CONCLUSIONS

- There are several long standing schemes in the Region which appear successful. Further lessons may be learned by examining them in more depth.

- The clearest need is for schemes that deliver care to children and care for terminally ill patients. In both cases, Hospital at Home needs to work closely with other providers.

- Hospital at Home schemes have proved acceptable to patients and carers.

- Hospital based schemes have proved more sustainable, perhaps because they face fewer structural and cultural barriers.

- Experience with admission avoidance schemes has been varied. Of the checklist developed by the Primary Care Support Team, early involvement of all stakeholders (especially GPs) seems pivotal.

- More evidence of the efficacy and cost-effectiveness of admission avoidance and early discharge schemes may be available from results of a systematic review (Shepperd and Iliffe 1997) and recently completed randomised trials.

7. RECOMMENDATIONS

- Hospital at Home should be commissioned as one of several possible approaches to meeting increased demand for in-patient care.

- All schemes should have a clear specification and be regularly audited. There would be advantages in developing a common instrument for this.

- A register of schemes should be established. In future, this could include external accreditation.

- Schemes should be developed in partnership with purchasers, providers and other agencies (especially social services).

A systematic review on the effectiveness of Hospital at Home is available on the Cochrane Library (Shepperd and Iliffe, 1997).

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Appendix 1

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Appendix 2

EVALUATION PACKAGE - ADAPTED FROM ILIFFE (1995)

There are few guidelines that allow purchasers to judge the effectiveness and the cost-effectiveness of planned or existing schemes. Iliffe (1995), proposed an evaluation package for adult hospital at home schemes which was based on a review of published and unpublished literature and discussion with selected groups.

Purchaser checklist

Purchasers considering long-term funding of a Hospital at Home service, which is already functioning, will want to supplement the information given by providers with investigations of the problematic areas of Hospital at Home provision. These include:

		Enquiry Method
1- SERVICE DEVELOPMENT		
Has time been devoted to involving NHS professionals?		Interviews with clinicians, hospital staff, community staff, PAMs & GPs
Have possible public concerns been addressed?		Contact with CHC and other relevant local agencies
Is there a working relationship with social services?		Formal approach to local social services, interviews with community staff.
2- STAFF		
Does skill mix match case mix?		Provider data set
Does the Team communicate well with hospital staff?		Interviews with hospital staff and a sample of patients
Is skill sharing occurring?		Interviews with hospital staff and a sample of patients

Are staff available when needed?		Interviews with hospital staff, GPs and a sample of patients
3- ORGANISATION		
Is clinical responsibility clearly defined?		Provider data set
Does it actually work?		Critical incident analysis
4- OUTCOME MEASURES		
Are discharge destinations described for all patients?		Provider data set
Do they match treatment intentions?		Analysis of random sample of records
Are outcomes comparable with routine care?		Interviews with a sample of hospital patients not involved in Hospital at Home scheme.

Provider checklist

Provider units developing or maintaining a Hospital at Home service will need to obtain for their own purposes, and for purchasers, a minimal data set which answers the following questions:

1. Is there a clear and unambiguous operational policy, covering admission criteria, clinical responsibility, the processes of care, and discharge procedures?
2. Can case mix, clinical outcomes and discharge destinations be described in detail?
3. Is the service safe, and is there a mechanism for analysing adverse outcomes? (for example, through critical incident analysis of emergency re-admissions or unexpected deaths);
4. Is the acceptability of the Hospital at Home service to patients and their carers being measured?

5. Is the organisation of the service acceptable to staff working in it?
6. Are utilisation patterns by hospital clinicians and GPs documented?
7. Are the workload and the processes of care documented in ways that would allow comparison of costs with a hospital ward?

This approach to audit should reveal whether provider objectives are being met, and problems within Hospital at Home provision that need to be solved.

Appendix 3

HOSPITAL AT HOME: THE ECONOMIC CONSIDERATIONS

The effect of Hospital at Home by definition is to transfer hospital care to the home. Hospital at Home has been promoted as a potentially effective means of replacing costly in-patient care with cheaper domiciliary care. It has centred upon three main benefits - namely, that better quality of care and health outcomes may be achieved at home; that patients may prefer to receive their care at home; and that home care may be less costly than conventional in-patient care. By this, we may presume that it leads to substantial savings from reducing the pressure on beds and, therefore, potential saving on capital and overheads.

Similarly, purchasers want to increase the choice available to consumers of health services and to move away from hospital-based care where it is not necessary. Therefore, Hospital at Home is a service with some attractions for purchasers. However, to make an informed decision, purchasers need to know the conditions for which Hospital at Home is suitable, the proportion of their population which might use it, the acceptability of the service to patients and its cost-effectiveness.

Cost-effective studies of Hospital at Home are few and far between, considerations of savings in home care are complex. Most studies found cost savings when compared with in-patient treatment, and some studies demonstrated huge cost reductions. However, in a review of the literature, a major problem for purchasers and providers is that those savings may not actually release funds for developing services, but may be used for alternative uses on the ward. Nonetheless, this would still represent an opportunity cost saving, since these alternative uses should yield additional benefit. A patient in the home would also avoid continuous observation, and many aspects of daily care, including "hotel" services, and thus reduce the cost of nursing care, catering and other services. These apparent "savings" or reductions in opportunity costs have to be weighed against any subsequent use of hospital services, and the increase in other costs.

Townsend et al (1988) compared a community support scheme using care attendants with standard aftercare for their effects on independence and morale of elderly patients discharged from hospital and in their use of health and social services. Hospital re-admission rates within 18 months of discharge were significantly higher in the control group

and they spent more time in hospital. Their results supported the hypothesis that lack of support in the community results in increased use of health services, and a cost shifting from health services to social services and carers at home.

A review of the costs and benefits of a community special care baby service in the UK was carried out by Curiel and Davies (1988). Annual costs for 1985 were quantified. The authors estimated that, compared with the cost of providing continuing in-patient neonatal care, early discharge saved roughly £250,000 and concluded that the community specialist nursing service allows more efficient use of overstretched neonatal services and has advantages for both mothers and babies.

With regard to early discharge, the Peterborough Hospital at Home scheme has been the subject of several publications. Pryor et al (1988) reported total costs of providing home nursing for 56 patients to be less than the cost of nursing care in hospital. Knowelden et al (1991) demonstrated that the median daily costs of caring for cancer and CVA patients were of the same order in Hospital at Home as in hospital wards, but for post-operative care they were much less. Parker et al (1991) demonstrated in their study that 7.4 orthopaedic and 0.9 geriatric bed days for those patients within the Hospital at Home scheme were saved. These costs were offset against the cost of additional community resources for Hospital at Home. This represented a substantial saving in hospital bed days for the purchasers.

Hollingworth et al (1993) examined the economic impact of an even larger sample of consecutive early post-operative discharge (EPOD) after hip fracture in the Peterborough Hospital at Home scheme. The data were collected from 1 January 1987 to 31 December 1991. The study consisted of 1,104 patients of whom 292 (26.5%) were discharged to the Hospital at Home scheme. The groups did not differ significantly in age, sex, mental scores and mobility before hospital admission. All costs, where necessary, were adjusted to 1991/92 costs. The authors concluded that the mean cost per episode was significantly greater at £5,606 per patient without access to early discharge, as compared to £4,491 for those who had access to the Hospital at Home scheme. When Hospital at Home costs were included, the comparable costs were £5,606 as to £4,884 respectively. The authors used the cost apportionment approach, and the cost of treatment was broken down into its various components, e.g. hotel costs, theatre costs, medical costs, ward costs, overheads and other treatment expenses. A distinction was then made as to which components varied with length of stay and were, therefore, the variable costs affected by early discharge.

Patients who were discharged to Hospital at Home spent a mean of 11.5 days under hospital at home supervision, comprising on average 45 hours with a patient aide and 17 hours with a senior nurse. The use of NHS resources per patient episode is summarised in table 1 below:

Table 1: Use of selected resource areas by patients treated for fractured hip

	Patients with access to Hospital at Home scheme	**Patients with no access to Hospital at Home**
In-patient cost (£)	4,591	5,606
In-patient cost plus Hospital at Home cost (£)	4,884	
Breakdown [£(%) costs] of resource use:		
Ward	1,556(32)	1,943(35)
Hospital at Home	293(6)	
Hotel	1,104(23)	1,434(26)
Overheads	545(11)	703(12)
Medical	504(10)	640(11)
Theatre	455(9)	457(8)
Other treatments	427(9)	429(8)
Mean days of stay:	32.5(1.98)	41.7(3.49)
Orthopaedic ward	16.4(0.72)	22.4(1.37)
Geriatric ward	13.5(1.71)	18.1(3.17)
Other ward	0.5(0.17)	0.6(0.32)
Re-admission	2.2(0.45)	0.6(0.26)
Hospital at Home stay:		
All patients	4.3(0.24)	
Patients actually discharged to Hospital at Home	11.5(0.36)	
n = 1,104	**292**	**812**

Source: Hollingworth et al (1993), Cost analysis of early discharge after hip fracture

O'Cathain (1994) examined certain costs of EPOD in Southern Derbyshire. She showed that Hospital at Home, by discharging patients on average seven days earlier, avoided hospital charges of £770 per patient, on average. A more detailed and broad costing exercise would be necessary to determine cost-effectiveness of this scheme.

In one of the only studies linking acute care and home care to form a single episodic measure of resource use, Jacobs et al (1995) showed that patterns were very different for medical and surgical cases, home care costs 25% of a medical episode and only 5% of a surgical episode. For surgical cases, the marginal cost of an extra surgical day is about equal to the marginal cost of an extra short-term home care case - a 1 day reduction in a surgical in-patient length of stay would cover the cost of a home care stay. Medical cases would require a 3 days reduction in in-patient cost.

Hensher et al (1996) undertook an economic evaluation of three orthopaedic Hospital at Home schemes in West London. A detailed cost analysis of each of the Hospital at Home schemes and of care on orthopaedic wards in each of the hospitals was undertaken. The cost analysis focused on nursing, rehabilitation and "hotel" costs; drug and surgical costs were ignored, as no grounds existed on which to believe that they would differ between Hospital at Home and in-patient care. A key result of this exercise was the finding that, in three major orthopaedic procedures, Hospital at Home appears to add extra days to the length of a patient's total episode. It appears, therefore, that Hospital at Home currently allows patients to be discharged from hospital two or three days earlier than would otherwise be the case, but does so by replacing these bed days with a disproportionately longer Hospital at Home stay. As a direct result, the cost of an episode of care for any of the three main orthopaedic procedures is presently greater under Hospital at Home than using a standard in-patient care package.

Another potential significant difference in resource use between Hospital at Home and standard in-patient care may lie in their differential use of the physical infrastructure of health service buildings and capital stock. When added to the total direct and overhead cost estimates developed, a "full" cost per bed day was obtained. It is immediately apparent that, whilst many times greater than the opportunity cost of the capital used by Hospital at Home schemes, the annualised capital replacement cost for the wards is still only a fraction of the full cost of any of the acute wards. Incorporating the opportunity cost of capital in this way

adds literally only a few pence to the cost of a Hospital at Home bed day, while adding about £4 to the cost of an acute orthopaedics bed day.

In all studies the cost of intangible benefits such as relief of boredom, closer contact with family and friends, return to higher level of functioning and familiarity of food and environment was not quantified, yet it remains an important aspect of receiving care at home. Particularly striking are those which have demonstrated the important implications for combined input from health and social services in the discharge of the elderly. Significant reductions in costs have been observed for community paediatric care which, in addition, comply with the widely advocated policy of avoiding admission of children to hospital if at all possible. Balinsky and Nesbitt showed that only a few studies took into account indirect costs to the patients. The major factor in this calculation is the cost arising from the carer being unable to continue his or her own occupation while attending to the patient.

Several other factors ought to be taken into consideration. The cost of in-patient stay is concentrated towards the early part of the admission. The patient is sicker, more tests are performed and the intensity of physician and nursing contact is high. Many home care patients will still incur this cost prior to being accepted for a home care programme, which means that the savings are at the less cost intensive end of hospitalisation. In the event of early discharge, the hospital is able to fill the bed with another patient, thus improving throughput and efficiency. This will increase overall hospital costs unless they are financed on a casemix basis. Thus, the provision of such a service cannot be justified by savings alone.

Length of stay in acute hospitals has been reduced steadily over recent decades, but can be reduced even further with Hospital at Home. This reduces the costs of treating certain patient groups and means either that more of the same may be treated or the number of beds may be reduced. An important constraint on changes has been that reducing length of stay might increase costs through higher patient throughput. Another feature of Hospital at Home is that of cost-shifting. GPs are concerned that Hospital at Home schemes might shift the cost of patient care onto them. If social care is provided, this shifts the costs from Health to Social Services. In addition to Health Authorities, GP fundholders are now purchasers of health care for patients. While GP fundholders are unlikely to want to pay for expensive care e.g. drugs bills, they might well be interested in purchasing respite care, rehabilitation and "generic" care from Hospital at Home schemes. Therefore, Hospital at Home may be seen

as either a complement or a supplement. Proponents of Hospital at Home schemes would argue that their aims are not for financial savings but to improve patient outcomes (Haggard & Benjamin, 1992).

To sum up the economic considerations, many authors have demonstrated the cost-effectiveness of Hospital at Home care for a range of patients from the new-born to the elderly, and for early discharge and nursing "high-tech" care at home. Therefore, Hospital at Home is a potentially cost-effective substitute particularly for post-operative days of surgical acute care, and for less severe chronic diseases. Patients appear to suffer no ill effects, and show faster psychological recovery. However, there is still much to know about its potential use, acceptability and cost-effectiveness for specific conditions to allow purchasers to make an informed choice.

Source

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