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Hospital in the Home in NSW

by

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EXECUTIVE SUMMARY

Hospital in the Home (HITH) involves the provision of acute care interventions by health care professionals to patients in their place of residence. It is part of a world-wide trend in developed countries to move away from the provision of care within institutions. HITH programs have been operating in NSW since the 1980s, largely as initiatives of individual Area Health Services (AHS). As a result, different funding models and organisational arrangements exist. For example, HITH can be provided through hospitals and community services either as a general (hospital-wide) or specialist (based in a clinical division) program. Further, there is now considerable experience in the provision of HITH, both in Australia and internationally. This includes evidence about the relative effectiveness and cost-effectiveness of HITH services. This experience suggests that HITH provides a viable alternative for provision of acute health services, but there are a number of issues for health services managers to consider when deciding whether to implement HITH to ensure that it is most likely to provide a successful alternative to inpatient care. The aim of this paper is to set out these issues in the form of a resource document for health service managers.

There are more than 20 HITH programs currently operating in NSW. Generally speaking, those in metropolitan and greater metropolitan AHS are viable and are perceived as providing an alternative to inpatient care. Most of these programs offer a range of services across the entire AHS catchment. However, the position of HITH in rural NSW is less clear. While some rural programs are viable, others have ceased operation.

For many conditions, HITH is as safe, effective and feasible as traditional inpatient care and most patients and carers who experience HITH are satisfied with the service provided. Although increasing in quantity and quality, evidence about the cost-effectiveness of HITH is not clear-cut. One randomised controlled trial found that HITH saved resources, while two, including an Australian study, found that HITH can deliver care at a similar or lower cost than in hospital. However, most studies do not consider the impact of HITH on total health system costs. Further, it is clear that the relative costs of HITH and hospital services are context-specific and likely to vary across location, setting and different clinical and population groups.

Four models of care are proposed as being feasible for HITH. They are:

- 1** Hospital based program providing services within a particular specialty.
Patients remain the responsibility of the hospital, and services are provided by hospital staff.
- 2** Hospital based program providing services across the range of specialties.
Patients remain the responsibility of the hospital and services are provided by hospital staff.
- 3** Hospital based program providing services across the range of specialties.
Patients remain the responsibility of the hospital but services may be provided by both hospital staff and providers in the community (eg GPs, community nurses).
- 4** Community based program providing services across the range of specialties.
Patients are the responsibility of the program provider (eg Division of GP, Community Health Centre, Area Health Service) and services are provided primarily by providers in the community.

Within these different models, different funding arrangements may occur, although funding arrangements should in general not be specific to HITH. The different models have different strengths and weaknesses and the preferred model will depend on local circumstances. Diagram 1 sets out the main questions and issues which should be considered by local decision makers in the process of determining whether HITH is feasible and what possible model of care is most appropriate given the local circumstances. Both demand and supply side factors are considered. The resolution of most issues is highly dependent on local conditions including demographic and clinical factors, the presence of sufficient support from the community and providers and the availability of skilled practitioners.

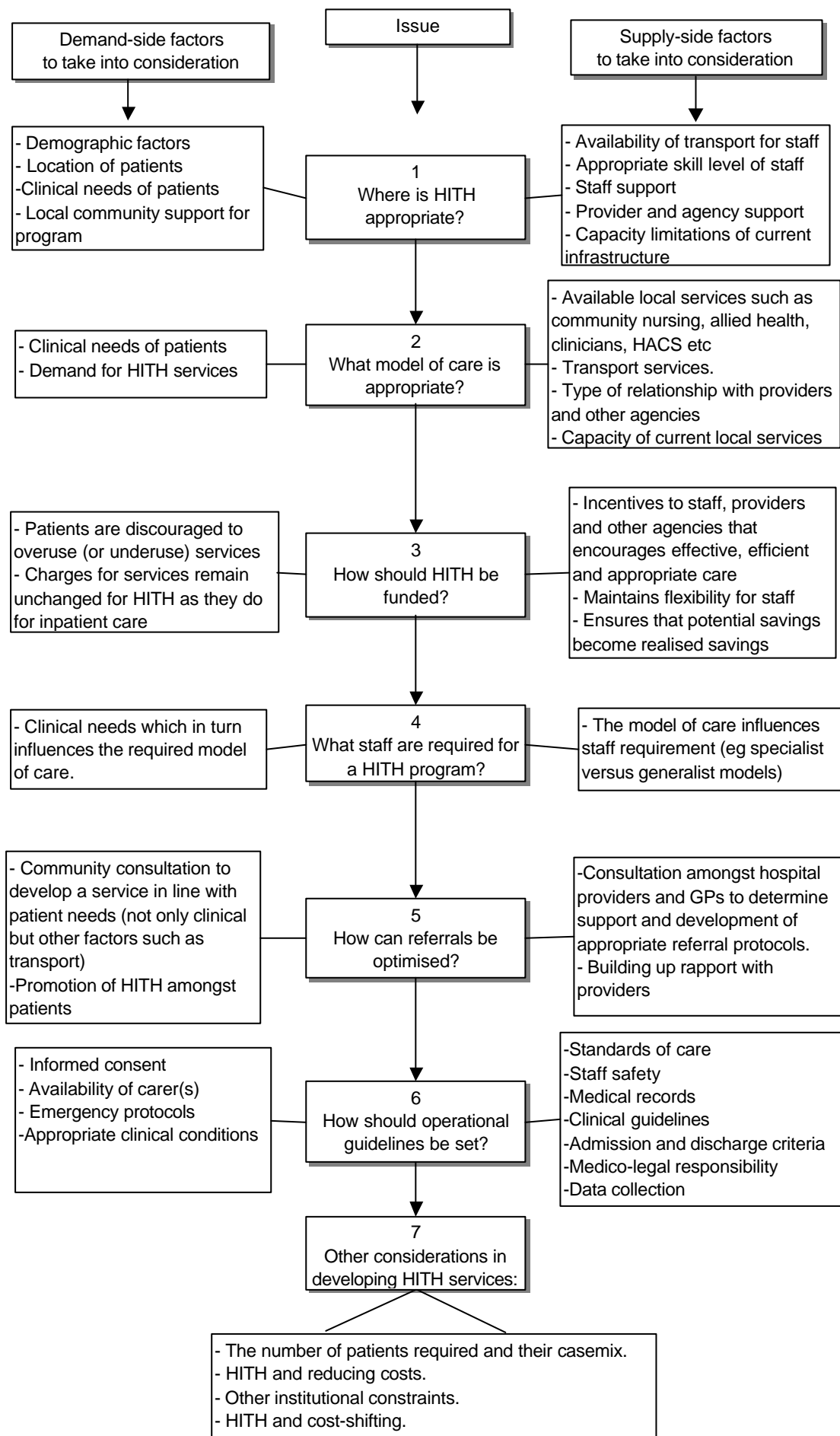
There are a number of alternative ways of funding HITH services in the NSW context:

- 1** An identified block grant to the HITH program within the hospital/community health service budget (or to another agency providing the service);
- 2** The HITH program may have a cost-and-volume contract with the AHS, hospital, or with particular clinical divisions in the hospital.
- 3** Throughput based funding, where other clinical divisions purchase services from the HITH program;

- 4 HITH may be a program within a particular clinical division (no separately identified funding).

The choice of funding model will depend in part on the model of HITH provision adopted. Alternatives 1 and 2 impose the lowest risk on the HITH program, especially in the establishment phase, but may result in a higher cost per case if throughput is not achieved. Alternative 2 spreads risk more effectively between the HITH program and the funder than alternative 1 and has the advantage that the contract can be renegotiated. Alternative 3 may be feasible where other services within the hospital setting are also funded on a throughput basis, although alternative 2 offers many of the same advantages and allows for more overall cost control. Alternative 4 is appropriate where the HITH program is fully integrated within a clinical division (that is, staffed from within the division and, generally likely to be a specialist HITH program).

It is necessary for all HITH programs to be supported by appropriate operational guidelines, including procedures and protocols which cover issues such as standards of care, staff safety, patient records, admission and discharge criteria, consent, medico-legal responsibility and data collection. As questions remain about the relative costs of HITH versus conventional care, monitoring the quality of care should include mechanisms to assess these relative costs. Suggestions regarding items to be included in a minimum data set have been set out in the report.



1. INTRODUCTION

Hospital in the Home (HITH) has been operating in the NSW health system since the late 1980s. The initial impetus to develop such services grew in part from the Medicare Incentive Programs that were part of the 1988-1993 Medicare Agreement. These led to the development of a number of early discharge and other innovative programs, and created an environment in which HITH could develop. HITH services go beyond other services developed as alternatives to inpatient care, because of the nature of care provided and the extent to which they substitute for inpatient care. That is, HITH involves the provision of acute care by health care professionals that would otherwise need to be provided in an inpatient setting.

HITH services have been developed in all Australian States and Territories, although the degree to which it has formed an organised program varies considerably, partly as a result of different organisational arrangements for the provision of hospital and community services within each State and Territory. For example, in Victoria and South Australia, HITH is provided as a State-based program using casemix funding and State-based policies and procedures.

In NSW a number of HITH programs have been developed, largely as initiatives of individual Area Health Services. In general, these have been developed in response to specific historical and local pressures to ensure delivery of health programs which suit the needs of their populations. As a result, HITH exists in different AHS to varying levels, with different funding models and organisational arrangements. HITH has been operating in urban areas for several years, with one of the first programs in Australia operating at Royal Prince Alfred Hospital since the early 1990s and one of the best-known and most successful programs operating at the Prince of Wales hospital since 1995. In 1998/99 NSW Health expanded HITH to rural areas, through five rural pilots. A range of different models of organisation, funding and delivery of HITH services now exist within NSW. HITH is provided through hospitals and by community health services, and involves hospital-based specialists and nurses, as well as general practitioners and community nurses. Some programs are specialised programs, essentially operated from a particular clinical division within a hospital, whereas other programs are hospital wide and generalist.

Through these different programs, HITH has been demonstrated to be a useful model of care that allows for increased flexibility in service provision, increased responsiveness to consumers' needs, and has the potential for resource savings. In the context of the NSW Government Action Plan for Health, HITH represents one of the possible models of care that may be appropriate for AHS and hospitals seeking to provide improved service delivery. There is now considerable experience of the provision of HITH, both in Australia and internationally. Thus, it is possible to establish some principles for managers in the development of HITH services, to ensure they are most likely to provide a successful alternative to inpatient care. The aim of this paper is to provide a resource document for health service managers seeking to implement or expand HITH provision in NSW. Further detail on many of the generic HITH issues raised in this report can be found in the report *Consultancy to Progress Hospital in the Home Care Provision*. (1)

HITH: What do we know?

What is HITH?

To optimise the organisation, implementation and evaluation of HITH, it is important that a definition is agreed that is both comprehensive and useful. Because HITH covers a broad range of programs, settings of care, types of providers and organisational arrangements, it is difficult to identify an exact definition. However, it is generally agreed that HITH should be a substitute for acute inpatient care, that it should be undertaken in a place of residence and that it should require the skills of health professionals. The definition adopted for a 1999 Department of Health and Family Services project (1) and the recent evaluation of HITH in rural NSW were similar (2).

The DHFS report definition was:

Hospital in the home involves the provision of acute care interventions to patients in their place of residence. These interventions require health care professionals (ie. doctors, nurses) to take an active part in the patient's care. The place of residence may be permanent (own home) or a place of temporary residence such as with family or accommodation near the hospital.

Hospital in the home is a substitute for acute care provided in the hospital, thus if it did not exist the patient would be admitted to the hospital or have to remain in

the hospital. The program must also have provision for an appropriate level of emergency back up.

The recent rural evaluation defined HITH as:

the provision of acute health care which is provided to people living in the community, in their own homes or in their usual place of residence where the care provided is an alternative to acute inpatient care in the hospital.

Thus, the critical features of HITH are that the care provided is a true substitute for acute inpatient care (rather than post-acute care) and that it is provided outside of the setting of the hospital.

Why establish HITH?

HITH is part of a world-wide trend in developed countries to move away from the provision of health care within institutions. There are social, scientific and economic reasons for the growing tendency to move care from institutions to community care. Evidence for the trend, which has occurred over the past 15-20 years, lies in the widespread closure of facilities built to accommodate, housing on a permanent basis, groups such as people with mental illnesses, those with more severe intellectual and/or physical disabilities and old people. Social reasons, such as a change in community attitudes towards the mentally ill, the disabled and the elderly have been the main drivers of this type of change. However, the trend has extended to the acute care setting and, over the past 10 years, the average length of stay in acute facilities has declined across a wide range of diagnoses from post-surgery to stroke. This marked change is largely the result of scientific advances.

Prior to World War Two, a great deal of acute health care took place in the home and home visiting by doctors and nurses (particularly midwives) was common. Since the 1950s, improvements in pharmaceuticals and surgical techniques, along with the development of management and organisational structures to provide care for large numbers of the sick, led to increased use of hospitals and concomitant growth in the number of hospitals. The availability of effective and efficient care in hospitals, combined with widespread reluctance to provide care elsewhere led to the attitude that most health care for serious illness was best provided within a hospital setting.

In the 1980s and 1990s, these same factors were instrumental in changing attitudes and

care settings. Developments in technology and changes in consumer preferences combined with a push for economic efficiency have contributed to moves towards programs such as HITH. The development of infusion pumps which were safe for home use, new intravenous antibiotics administered only once or twice per day, advances in information technology and surgical techniques all permit earlier discharge from the hospital (and in some cases avoid admission altogether). In addition, improvements in home sanitation, heating and the availability of telephones and other methods of communication make most homes suitable places in which to provide health care.

An increasing perception that hospitals have limitations has also influenced this trend. Hospitals may be impersonal and bureaucratic, have confused lines of authority and not facilitate communication between staff and between staff and patients. As well, there is increasing evidence of nosocomial infections especially in the very young, the old and those with a deficient immune system (3). Changing demographic patterns of cities have also exposed new weaknesses – often hospitals are no longer located where need for them is the greatest as the populations have shifted to the outlying areas away from inner city locations of most major hospitals (4).

In addition, the well-documented increase in demand for health care services by an ageing population combined with the high cost of constructing and maintaining hospitals has led health care funders to look for alternative methods of providing acute health care. HITH has often been advocated as a means of providing care that avoids the high infrastructure costs incurred by a hospital. Finally, individuals may have a general preference for receiving care in the comfort of their homes or at least value the choice of whether to receive some of their care in the home.

The combination of technological advances, shifting demographics, consumer preferences, changes in practice and the perceived weaknesses of the hospital system has resulted in an increased interest in care in the home. A number of commentators have suggested that many people, particularly the elderly, will benefit both physically and psychologically if they can be at home while receiving health care (5).

How well does HITH work?

Studies of HITH have found that it is both feasible and as effective as traditional hospital care for many conditions. For example, there is evidence from randomised

controlled trials that treatment using intravenous antibiotics for cellulitis and other infections and low molecular weight heparin for deep venous thrombosis is as effective as inpatient care (6); (7); (8, 9); (10, 11); (12). Although not as strong, there is also evidence that chemotherapy for cancer patients is safe and effective (13). Selected groups of post-surgical and rehabilitation patients may also achieve as good health outcomes with HITH as with conventional care (14); (15); (16); (17); (18); (19); (19); (20); (21). Reductions in length of stay (LOS) and use of professional service may also occur, but are not guaranteed. Studies of other patient groups such as older medical patients, psychiatric, paediatric and obstetric patients are less common, but some well-designed studies have demonstrated that HITH is feasible, safe and generally effective (22); (23); (24); (25); (26); (27); (28); (29); (30); (31). However, the small number of trials and patients mean that there is still some debate about the overall effectiveness of HITH for these conditions.

When asked, patients using HITH generally expressed satisfaction with the mode of care and most claimed they would both use the service again and recommend it to others. Likewise, there were no major complaints from carers, who form an important client group for HITH programs. However, high levels of satisfaction with care are a feature of the results of such evaluations by both patients and carers, no matter what the setting.

Is HITH cost-effective?

Although increasing, information from well-designed evaluation studies that incorporate assessment of costs and outcomes is limited. Over the past 2 years a number of randomised controlled trials of the costs and outcomes of hospital in the home (HITH) services have been published in the international literature (32); (14); (33);(34). The publication of these studies has been an important addition to the evaluation literature on HITH. Previously, a Cochrane Collaboration Review, undertaken in 1997 had found only one study meeting its criteria which had assessed costs (35). While other published studies of HITH have examined costs, many have been retrospective and uncontrolled studies (36); (37, 38); (39);(40). Even where studies have incorporated an appropriate comparator group, the costing approach has meant that the comparison of the two settings is not necessarily valid (37); (39); (41); (42). Therefore, prospective economic evaluations in a randomised controlled trial setting would fill an important gap in knowledge.

What is most notable about the recent results from controlled trials is that they confirm that there remains uncertainty about the relative cost-effectiveness of HITH services compared with usual care. One study found that hospital in the home was resource saving (32), another found that HITH can deliver care at a similar or lower cost than in hospital (although with a higher cost per day of care), and one study found that HITH was more costly than usual care for some aspects of care and for some groups (33). The single costing study included in the Cochrane Review found no difference in costs between the two groups (35). The only Australian RCT has demonstrated that HITH provides at least as good clinical outcomes at considerably lower cost (34). This result is particularly important in the Australian context because the generalisability to other HITH programs in Australia is likely to be greater. These conflicting results create a dilemma for policy makers and health service managers. As detailed above, there is sufficient experience to know that HITH is at least as safe and effective as usual care in many circumstances, particularly for rehabilitation and intravenous therapy (6); (15); (9); (11); (12); (19); (17); (21). Further, there is the widely promulgated idea that shifting services out of the hospital setting will ultimately improve efficiency, particularly by reducing the need to invest in capital. However, most studies do not consider the impact of HITH on total health system costs, including such factors as the flow-on effects of not having to construct new facilities, possible increases in throughput and changes in the provision of care (e.g. from specialist to GP or from doctors to nurses). Thus, for a policy maker who wishes to base health services planning on existing evidence of efficiency the results are not at all clearcut.

In summary, it is difficult to draw firm conclusions about the relative cost-effectiveness of HITH and hospital services from existing economic evaluation studies. Importantly, it is clear from the result of well-designed studies that the relative costs of HITH and hospital services are context-specific, varying across location, setting and different clinical and population groups.

Thus, there now exists sufficiently good evidence of the safety, efficacy and effectiveness of HITH that planners and clinical managers can feel confident that, from a clinical perspective, it represents a feasible and appropriate alternative to hospital care in many circumstances. What remains to be determined is whether HITH represents a more efficient model of care in different settings. This discussion paper focuses on

providing guidance to decision makers on how to determine the question of relative efficiency.

How can HITH services be funded?

There are two distinct issues in funding HITH services. The first issue is who pays for the service and the second is how do service providers get paid? The first issue is complex, as there are many potential sources for HITH funds. For example, potential funders include:

- Commonwealth Government
 - through the Medicare and the Pharmaceutical Benefit programs; and
 - Commonwealth Medicare grants.
- Private insurance funds
 - with recent and proposed legislative changes that allow private funds to cover services outside the hospital.
- Area Health Services
 - hospital funding
 - community services funding
 - separate program funding

The second issue is the way that the funding system pays for HITH services. In the NSW context, examples of broad funding arrangements include:

- Block funding of HITH programs by the AHS to hospitals, community agencies or both;
- Funding from within existing hospital budgets;
- Cost and volume service contracts with the AHS.

Such broad funding options as those listed above still provide some flexibility in the way in which health care providers are remunerated. For example, the organisation that manages the HITH service may reimburse community nursing services on a fee-for-service basis (eg a predetermined price for every service), a capitated basis (eg a predetermined price for every patient) or on a salaried system (eg irrespective of the number of services or patients).

Choosing the most appropriate type of funding system will depend, for a large part, on local factors. However, what is important in determining which funding system to choose is to ensure that the incentives for all agencies are such that they are encouraged to provide effective, efficient and appropriate services. Section two will outline some of the factors that should be taken into consideration when determining a funding model.

What models of HITH are relevant in NSW?

Every state and territory in Australia has some form of HITH program. Organisational and funding arrangements for HITH vary across and within the States and Territories, thus there is considerable diversity in where and how HITH is provided. For example, some programs are funded to meet all the health care needs of their clients, while in others, the costs of medical services or pharmaceuticals may be wholly or partly met by MBS, PBS or the client themselves. Organisational arrangements also differ, particularly the extent to which the HITH program is integrated into the hospital or community-based care sectors.

In 1998, the Commonwealth Department of Health and Family Services (now the Department of Health and Aged Care) commissioned CHERE to identify and document the extent to which Hospital in the Home (HITH) programs had been developed in Australia and what had been achieved in relation to the aims of HITH (1). In the course of the consultancy, all identified HITH programs and services were surveyed regarding the nature and detail of programs and a wide range of HITH providers and funders were consulted. The resulting report provided an overview of the current state of development of HITH in Australia and included details of key issues for the advancement of this type of service, particularly funding arrangements.

The study collected information on HITH programs which were operating in NSW in 1998. There were 19 programs identified in that study, operating across 11 Area Health Services. Most programs offered a range of care, with IV therapy and post-surgical care being common to many programs. In general HITH programs in NSW operated out of a hospital.

The information from this survey has been updated. All AHS were asked to provide details of HITH programs, and the previously identified programs were also asked to provide updated information about current status. Table One provides a summary of the

programs that are currently underway. Two AHS that did not previously have programs have commenced programs, and two other AHS have new and/or expanded programs. Some HITH programs underway in the 1998 survey are no longer operational. Some programs have changed their focus, or expanded to be area-wide.

Thus, in general, in the metropolitan and greater metropolitan AHS the HITH programs have consolidated their position as a viable alternative to in hospital care. This includes new and expanded programs in some of these AHS. Most of the programs in metropolitan and greater metropolitan AHS offer a range of services, and a number of the programs provide services across the AHS, even where they operate out of a particular hospital.

However, in rural AHS the position of HITH is less clearcut. While some programs have remained viable or expanded, there has been less stability within programs, and a number of programs have ceased operation.

TABLE 1: HITH PROGRAMS IN NSW

Area Health Service	Hospital	Type of Program	Status
Central Sydney AHS	Royal Prince Alfred	Acts as a hospital ward	Current
Hunter AHS	Royal Newcastle (PACC)	Community health and nursing based providing multi-disciplinary care from nurses, occupational therapists and physiotherapists.	Current
	John Hunter ('out and about')	Home IV therapy	Current
	Mater (MACS)	Post acute care	Current
South Eastern Sydney AHS	Prince of Wales	Acute, substitution of admissions, IV antibiotics, blood transfusions	Current
Illawarra AHS	Wollongong, Shellharbour and Nowra	Community mid-wives program	Current
	Wollongong Hospital	Early discharge/alternative to admission	Current
	Shoalhaven Hospital	- Post acute - Early discharge - Alternative to admission	Current
The Childrens' Hospital, Westmead	The Childrens' Hospital, Westmead	- IV antibiotics	Current
		- Total parental nutrition	Current
		- Home ventilation	Current
		- Home traction orthopaedic	Current
		- Tracheostomy management	Current
		- Burns and surgical	Current
		- Cystic fibrosis clinic	Current
Wentworth AHS	Nepean Hospital (providing outreach services for people in local area and from Springwood and Katoomba Hospitals)	Post acute care and Nepean outreach service providing services for: - Directly admitted from ED - IV antibiotics - Support & education - Nursing home support - Medical and surgical patients	Current
Central Coast AHS	Area based, not hospital based	- IV antibiotics - Supported early discharge after surgery - Warfarin stabilisation - Ortho geriatrics - IV infusion clinic	Current
Greater Murray AHS	Albury		no longer operational
Western Sydney AHS	Community Health based, providing services for Westmead, Auburn, Blacktown and Mt Druitt	PACC (majority of patients would fit in HITH definition, although some services are community care)	Current
		- Surgery - Geriatrics - Cardiology - Respiratory - Infectious diseases - Haematology	Available soon
		Mt Druitt Hospital	Palliative care
Northern Sydney AHS	Blacktown Hospital Royal North Shore Hospital, APAC	Post-maternity midwifery	Current
		Two programs: HITH and Post acute care.	Current
		- IV antibiotics - Anticoagulation therapy - Pre & post surgery - Short term sub-acute medical patients. - IV drug administration	Current
South Western Sydney	Fairfield Hospital	Acute care outreach	Current

Area Health Service	Hospital	Type of Program	Status
	Campbelltown, Bankstown, Fairfield, Liverpool.	Multi-disciplinary	Current
Southern AHS	Moruya and Batemans Bay Bega and Pambula		Current no longer operational
Far west Northern rivers	Broken Hill Tweed Heads		Current no longer operational
	Lismore	Adult	no longer operational
	Lismore	Paediatrics	Current
Greater Murray AHS	Nil		
New England AHS	Nil		

What models of care are feasible?

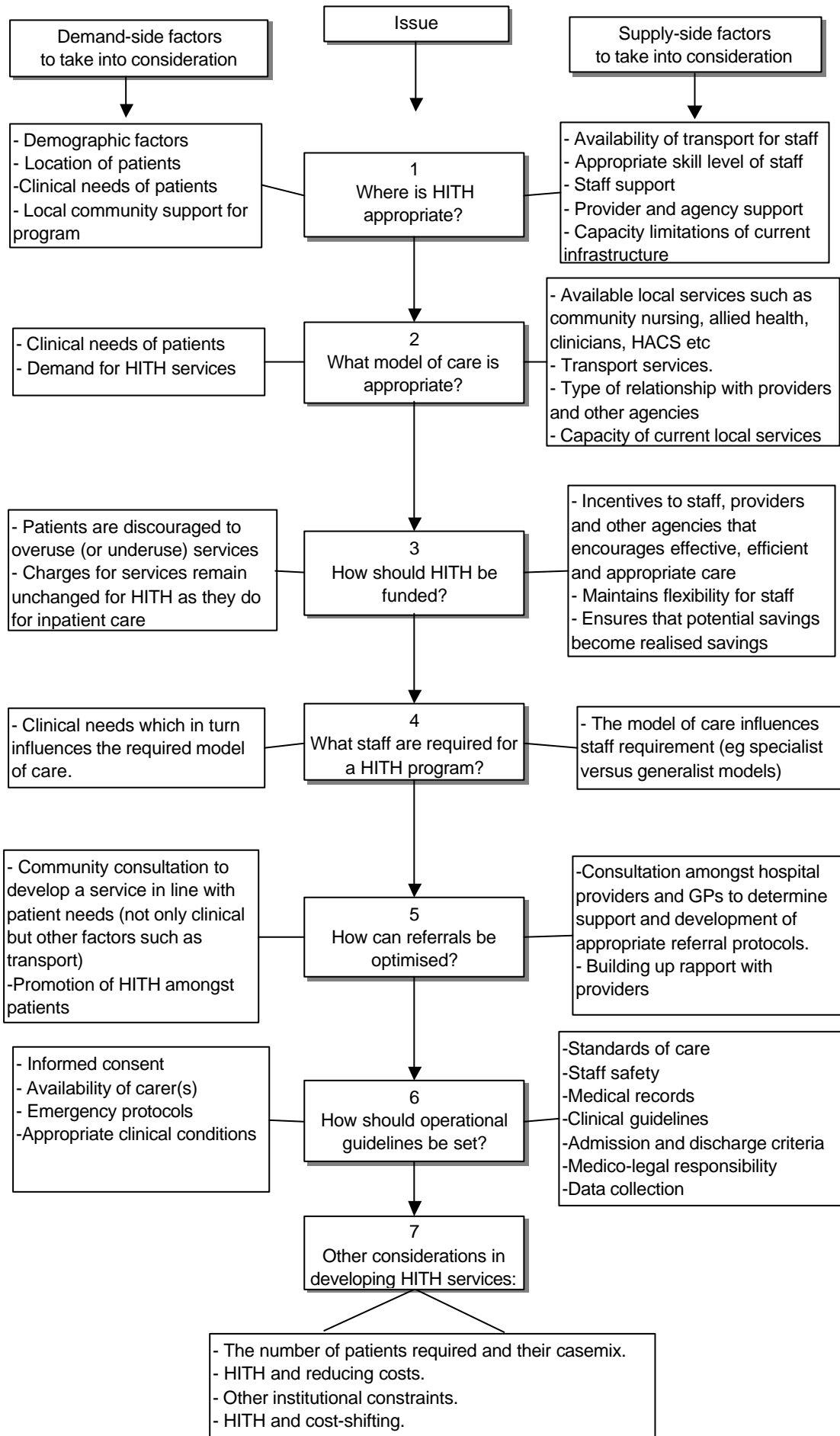
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Within these different models, different funding arrangements may occur, although funding arrangements should in general not be specific to HITH. The different models have different strengths and weaknesses. The preferred model will depend on local circumstances, as will be discussed in section 2.

2. ISSUES TO BE CONSIDERED IN DECISIONS ABOUT DEVELOPING OR EXPANDING HITH

Given the AHS structure in NSW, it is appropriate for local managers (at least at AHS level) to determine whether HITH is appropriate for a particular setting. Below are a list of questions and issues which local managers should consider when deciding on the feasibility of providing or expanding HITH services. Developing an appropriate HITH service requires the bringing together of the needs of patients and the available local resources. Hence, it is useful to think of these issues in terms of demand and supply factors. Diagram 1 sets out the main questions and issues according to whether these occur on the demand side of the service or the supply side.

Each question and issue are explored in the subsequent discussion. Appendix A is intended to aid local decision makers by providing a checklist of issues to assist them in determining whether HITH is feasible and what possible model of care is most appropriate given their local circumstances.



Where is HITH appropriate?

Demographic and location factors important in determining the relative efficiency of HITH and conventional care include the size and population density of the catchment area for the hospital and the geography of the catchment area. The costs of travel are an important factor in determining the relative costs of HITH. This is relevant to both urban and rural settings, because it is travel time rather than distance that is most relevant to costs. In metropolitan areas, this has meant that in some tertiary referral hospitals, HITH is confined to patients who lived within a defined geographical radius of the hospital, despite the fact that the catchment area is much larger. In rural settings, the dispersion of patients may mean that HITH is not a cost-effective alternative, although it may be viable with appropriate administrative and staffing arrangements, and it should be recognised that it may meet the needs of some patient groups.

What model is appropriate in a particular setting?

The decision about the appropriate model in a particular setting will depend on a number of factors: whether there is widespread support for the program or a strong clinical champion within the hospital, or elsewhere in the health system; the likely number and type of patients being considered for the program; and geographic factors. Some programs are located within hospitals, while others are community based. Similarly, some programs are hospital wide and centrally administered, while others are based within a particular clinical stream. Here there is a trade-off between minimising administrative costs as a share of total costs, and increasing clinical acceptance. There may be greater clinical acceptance (with a flow-on effect to referrals and throughput) for programs which are hospital based and relatively specialised.

HITH has been shown to be successful, both as hospital based and community based programs. Therefore it is essentially a local decision as to which program structure is likely to be appropriate. However, there is some evidence that hospital based programs are likely to have greater acceptance from clinicians, and thus achieve a satisfactory referral rate earlier in the program's life. This may affect costs of provision.

Similarly, HITH programs can be successfully operated as hospital-wide programs or from within a particular clinical stream or clinical division. Again, this is essentially a local decision. The choice of model may in part depend on the costs of service provision of the particular model of care chosen. For example, the costs of using a hospital-based doctor can be readily compared with the costs of using a general practitioner.

How should HITH be funded to ensure efficient provision?

Strictly, how services are paid for should not directly affect resource use or costs. However, identifying the burden of finance on different parties is important to decision-makers (particularly if a program shifts costs to patients). In addition, funding arrangements can affect the comparative efficiency of services indirectly, because the incentives created by funding arrangements may lead services to be organised in a particular way (for example, if different service providers fall under different jurisdictions). In addition, without careful assessment, financial impacts can be confused with real resource effects.

It is more complex to disentangle the impact of the financial incentives created by funding arrangements on the success of a program. These impacts are real in the sense that they have an effect on resource use (intensity and level of service provision). However, there is a risk that the method of funding services may limit the set of models of provision available in a particular setting.

Within NSW there are a number of alternative ways of funding HITH services:

- 1 An identified block grant to the HITH program within the hospital/community health service budget (or to another agency providing the service);
- 2 The HITH program may have a cost-and-volume contract with the AHS, hospital, or with particular clinical divisions in the hospital.
- 3 Throughput based funding, where other clinical divisions purchase services from the HITH program;
- 4 HITH may be a program within a particular clinical division (no separately identified funding).

The choice of funding model will depend in part on the model of HITH provision adopted. Alternatives 1 and 2 impose the lowest risk on the HITH program, especially in the establishment phase, but may result in a higher cost per case if throughput is not achieved. Alternative 2 spreads risk more effectively between the HITH program and the funder than alternative 1 and has the advantage that the contract can be renegotiated. Alternative 3 may be feasible where other services within the hospital setting are also funded on a throughput basis, although alternative 2 offers many of the same advantages and allows for more overall cost control. Alternative 4 is appropriate where

the HITH program is fully integrated within a clinical division (that is, staffed from within the division and, generally likely to be a specialist HITH program).

What staff are required for a HITH program?

A range of factors within the control of service managers may affect the relative costs of HITH and conventional care. In particular, the choice of staff for the HITH program may be relevant to both costs and outcomes. There is considerable diversity in clinical staff involved in HITH provision in NSW. Some programs use hospital based medical specialists while others use general practitioners to provide medical care. There is also variation in the skills and experience and type (hospital/community) of nursing staff employed. Programs also varied in the extent to which they use other allied health professionals and the arrangements under which staff are employed. These factors are relevant to the costs of providing certain types of care (because of different remuneration levels), the amount of down-time in the program and the overall costs of care.

How can referrals to HITH be optimised?

The relative costs of HITH and conventional care will also be affected by issues relating to the referral mechanisms for HITH. In particular, the stage of an admission at which a patient is considered for HITH is critical in determining the extent to which HITH is substitute rather than additional care for patients, and in maximising the throughput of the HITH program. Some facilities have arrangements for patients to be assessed for HITH at multiple points in the stay (pre-admission, immediately after admission or pre-operatively). This maximises the opportunity for HITH to be an efficient alternative, rather than where patients are only assessed for HITH just prior to transfer to HITH, for example, close to the end of a hospital stay.

The extent to which HITH is acceptable to health care clinicians is an important factor in the success of HITH programs. This is a complex issue because it can be influenced by organisational arrangements, but is also subject to local factors which are difficult to predict in advance and difficult to change.

How should operational guidelines be set for HITH?

As with any health care service or program, it is necessary for HITH to be supported by appropriate operational guidelines, including procedures and protocols. Although in

many ways HITH service provision is similar to the provision of acute care within hospital walls, there are some important differences which should be taken account of when procedures and protocols are designed and implemented. The following issues should be considered when planning a HITH program.

- **Standards of care:** the same standards of care as would apply in a hospital should be set for a HITH program. However, they may need to be adapted for the different setting and may need modification to allow for the use of different equipment and methods of care. The relative lack of on-the-spot supervision and assistance for staff, particularly nursing staff, may necessitate the employment of more senior staff. Similarly, the wide range of skills and expertise necessary and the mix of technical, interpersonal and management skills required may indicate the need for education programs for prospective staff.
- **Ensuring staff safety:** As staff may be visiting patients at home, both in and out of standard hours, it is important that workable procedures to ensure their safety are put in place. Suggested procedures include having written consent from the patient for staff of the HITH program to enter their home, having staff carry mobile phones, having two staff members attend a home visit or having security personnel accompany staff if a home situation causes concern.
- **Patient records:** Patient records are a critical communication tool in HITH programs. All staff should be prepared to contribute to a central patient record, even if they have a duplicate record for other purposes. Careful consideration needs to be given to who has access to the record, where it is kept while active, how it is updated and what happens when more than one HITH staff member visits a patient. There are strong arguments for an active file to be securely stored at the patient's home and for it to be able to be incorporated into the medical record when the patient is discharged from HITH or if the patient is admitted to hospital.
- **Admission and discharge criteria:** It is crucial that clear admission criteria be set for each HITH program. The criteria should be designed to ensure that only appropriate patients are admitted to HITH and that they are admitted at the appropriate time during their episode of care. As well as considering health-related aspects it may be necessary to use social and environmental criteria to select patients for HITH. In addition, patient and carer preferences for the location of care should be taken into account. In setting admission criteria, it should be borne in mind that HITH is a substitute for acute care. Thus, if a patient would not normally be admitted to hospital, he or she should not be admitted to HITH. In the same way, appropriate

policies are necessary to ensure that HITH patients are discharged from the program judiciously. Strategies to ensure that this happens may include a requirement that approval be granted for LOS longer than estimated, the use of clinical pathways and the regular assessment of patients' needs for care. Procedures for referral to other services also need to be in place to ensure that patients do not continue to be treated by HITH staff when less intensive community-based care may be more appropriate.

- **Consent:** To meet the high standards expected of health care, HITH programs should have in place arrangements for information about the Program and individual care plan to be available to patients and carers. Negotiation about the rights and responsibilities of both parties is a useful pre-requisite to consent. There are important differences between HITH and inpatient care to be considered here. In agreeing to be admitted as a hospital inpatient, individuals are giving implied consent to their treatment which they can withdraw by leaving the hospital; it is unlikely that consent to HITH care can be withdrawn in the same way. Similarly, health care providers do not require permission from a patient to enter the hospital building in the same way they do to enter an individual's residence. Thus, signed consent forms, although not a legal requirement in NSW may benefit both provider and patient.
- **Medico-legal responsibility:** Patients of HITH services which are organised, operated and delivered by staff employed by a hospital are likely to be protected in terms of medico-legal responsibility in the same way as inpatients of the hospital are. However, the issue of medico-legal responsibility is less clear for patients of community-based or combined HITH programs. Area Health Services considering implementing HITH should contemplate asking for legal advice on this matter.
- **Data collection:** For the purposes of monitoring and evaluation, data on the costs, processes and outcomes of HITH should be collected. In general, these will not be different from data collected for similar patients treated in the hospital. However, because HITH is a substitute for acute care, and it is important to ensure that, beyond its establishment phase, a HITH program does not add to the costs of care, specific data regarding the inputs to care should be collected (see below).

3. OTHER CONSIDERATIONS IN DEVELOPING HITH SERVICES

How many patients and what casemix of patients are required for a viable HITH program?

The referral rate and throughput required for a viable HITH program will vary depending on the administrative and staffing arrangements. If the program is to stand alone and be separately administered and staffed, it will need sufficient throughput to justify the additional administrative costs required for this. Alternatively, if flexible staffing arrangements can be introduced, and the HITH program operates as an extension of the hospital ward (in smaller hospitals) or clinical division (in larger hospitals), it may be possible to run a viable HITH program with relatively small throughput. This would require staff to work across both settings (hospital and HITH) as needed, to minimise “down time”. In the initial survey it was found that in some rural hospitals, there was sufficient throughput for a viable HITH program, but the impact on hospital throughput led to increased costs overall.

The casemix of the patients referred to the HITH program is also likely to be relevant to costs. A generalist program is likely to have a higher throughput, but costs may be higher because of the range of skills required by staff, and the need for some specialist services. However, specialist programs are only likely to be viable in tertiary referral settings.

Is HITH likely to reduce costs?

The comparison of costs of HITH and conventional hospital care is complex. The evaluative studies which have been undertaken do not provide clear evidence that HITH is cheaper, although it may be in particular circumstances. Many of the determinants of relative costs are locally specific. Assessment of opportunity costs is likely to be context specific and vary with local factors. In particular, because HITH represents an alternative means of providing acute care interventions (rather than being a new intervention), whether it is more efficient will in part depend on the specific resource constraints that operate for the hospital or AHS, and on the alternative uses that might be possible for any resources freed up by the provision of HITH. Many of these factors will be relatively straightforward. For example, HITH is more likely to be an efficient method of provision when the catchment population is not widely geographically dispersed. However, there may be other less obvious factors to be considered. For

example, what does the provision of HITH mean for staffing within particular hospital wards? These factors can only be identified at the local level, and thus, prospective local assessment of costs must complement the results of evaluative studies from other settings.

However, the local assessment of the relative costs of HITH and conventional care can be confounded by funding arrangements for both types of services, and by other constraints on service delivery (such as program boundaries). Thus, it is important to be aware of the incentive structures created by specific funding arrangements (for example, by the provision of output based funding for some services and not for others, or by different pools of funds for payment for specific services).

What other institutional constraints or factors need to be considered?

An AHS or hospital considering whether to introduce HITH must also be cognisant of the impact of Commonwealth/State division of responsibilities for hospital and other health services. In particular, regulation of private health insurance is a federal matter, and this means that there may be particular constraints on provision of HITH services to private patients. Pilot programs have been undertaken allowing insurers to fund the provision of HITH services to private patients. Changes to health insurance legislation have been enacted to allow private patients to be eligible to receive private health insurance cover for services provided by HITH programs. More information about eligibility for hospitals and other providers seeking to provide these services is contained in Commonwealth Department of Health and Aged Care circulars.

Another issue which need to be considered is the relationship between general practitioners providing services within a HITH program and the HITH provider. Such services are part of the HITH program, and should not be funded under the MBS.

Will HITH encourage cost-shifting?

HITH services cross program boundaries and as such, they are subject to the potential for cost-shifting. There is a danger that a service will appear to be more efficient when in fact it has shifted costs to other settings. Equally, program boundaries may create barriers to more efficient provision: there may be a lower cost provider of a particular sort of care, but funding arrangements preclude their use. Funding arrangements can

also create incentives for particular types of patients to be referred to HITH, or for particular models of care provision to be adopted.

4. EVALUATING HITH

A significant issue that emerged from the literature is that it is not possible to make a definitive determination about relative costs for HITH versus conventional care.

Therefore, it is important that, in addition to the usual monitoring of quality of care, HITH programs put in place mechanisms to assess the relative costs of HITH and usual (e.g. hospital) care. As this should not impose additional burden on service providers, any data collection should be designed in such a way as to allow appropriate comparisons. That is, the minimum amount of data required to compare HITH and hospital care should be collected. Such a minimum data set would consist of:

- Patient characteristics including age, sex, other demographic details, diagnosis on admission, co-morbidities. It may also be appropriate to collect details regarding family situation etc and location of residence;
- Whether the patient was offered HITH and result – including the reason not offered or the reason refused
- Length of stay in HITH and hospital care
- Number of visits (HITH)
- Who visited
- Travel for visits
- Length of visits
- Type of services provided
- Number and time taken in arranging, undertaking other contacts with patient and with other providers or patient family
- Mode of discharge
- Unplanned readmission.
- Resources utilised in promoting HITH services in the community and with providers;
- Administration costs specific to HITH

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APPENDIX A: CHECKLIST FOR HITH

Question	Information needed	Factors to consider	Checklist
Is HITH feasible?	<p data-bbox="392 351 974 414">Is the patient casemix suitable for HITH services?</p> <p data-bbox="392 422 974 454">Do patients have sufficient support at home?</p> <p data-bbox="392 502 974 534">Are suitable transport arrangements in place?</p> <p data-bbox="392 574 974 606">Are there any waiting lists?</p> <p data-bbox="392 798 974 829">Does the community support HITH?</p> <p data-bbox="392 837 974 901">Do staff have sufficient skills to undertake HITH or are there opportunities to train staff?</p> <p data-bbox="392 981 974 1013">Do staff and management support HITH?</p> <p data-bbox="392 1061 974 1165">Are there allied health agencies in the catchment area and do they support and are able to support HITH services?</p> <p data-bbox="392 1212 974 1316">Are there a sufficient number of providers in the catchment area and do they support HITH?</p>	<p data-bbox="1008 351 1870 414">Not all services can be delivered at home. Therefore, the type of care needed has to be in line with the services offered by HITH.</p> <p data-bbox="1008 422 1870 486">Most, if not all, patients require some assistance at home and therefore carers need to be available.</p> <p data-bbox="1008 502 1870 566">Patients and staff need to have access either through public or private transport.</p> <p data-bbox="1008 574 1870 638">HITH can potentially ease waiting lists but only under certain scenarios. For example, if:</p> <ol data-bbox="1008 646 1870 790" style="list-style-type: none"> <li data-bbox="1008 646 1870 710">1. There are medical waiting lists and a shortage of beds (as opposed to a shortage of resources) <li data-bbox="1008 718 1870 750">2. HITH uses fewer resources than hospital care, at the margin. <li data-bbox="1008 758 1870 790">3. HITH programs provide additional resources. <p data-bbox="1008 798 1870 829">Without community support, HITH is likely to be under used.</p> <p data-bbox="1008 837 1870 981">Staff need to be skilled in a wide variety of procedures, be able to work independently, make judgements on the progress of patients and educate patients and carers. Skill levels may need to be improved and ongoing funding needs to be available to train staff.</p> <p data-bbox="1008 989 1870 1053">Without staff and management support, HITH is likely to be under used.</p> <p data-bbox="1008 1061 1870 1204">List the types of facilities available that can potentially assist in service provision. These facilities need to have the capacity to support HITH and may be either existing hospital or community type services.</p> <p data-bbox="1008 1212 1870 1348">Need to establish whether there are opportunities to integrate and coordinate primary, acute and community care. Providers need to support HITH, willing to refer patients and able to provide services.</p>	

Question	Information needed	Factors to consider	Checklist
What model of care is appropriate?	Can a catchment area be defined or will this HITH service be Area wide?	<p>The answer to this question is dependent on a number of factors. These include:</p> <ol style="list-style-type: none"> 1. Whether a generalist or specialist type program is envisaged. 2. Where HITH is to be based (eg hospital department, community nursing service or a separate facility) 3. proposed scope of the HITH program 4. economic considerations in determining whether an Area wide or a local service would be more viable and/or efficient. 5. proposed funding arrangement (eg block funding or output based funding) 	
	What is the size of the catchment area, in terms of travel time?	Travel time can be a major cost of HITH programs. The catchment area will determine likely resource cost of such travel and, given budget constraints, may impose certain criteria on the model of care. For instance, arrangements with community nursing groups or care plans with patients may ease the travel burden.	
	What are the clinical needs of clients?	The model of care needs to fit the clinical needs of patients. This in turn impacts on the appropriate level of skills and services available. It also impacts on the operating hours of HITH, emergency protocols and consumables such as pharmaceutical requirements, equipment and possibly home modifications.	
	What other facilities/services can provide HITH care?	Better coordination of health care services amongst various service providers is a desirable feature. HITH provides the opportunity to coordinate primary, acute and community care but requires planning and support from all sections of the system. The model of care will be partly determined by the support of other agencies and the services that they intend to provide.	
	What are the opportunities to improve the coordination of services between acute, community care and primary care?		

