

# VICTORIAN DEPARTMENT OF HUMAN SERVICES

## EVALUATION OF THE INTERIM CARE PROGRAM

### FINAL REPORT

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# 1 EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

The Interim Care Program commenced as a pilot initiative in five Metropolitan Health Services in the 2001/02 financial year in response to an upsurge in demand for hospital services which created difficulties in gaining access to acute care beds. A number of possible explanations for the reduction in access to acute beds have been suggested. One suggestion is that a significant number of mainly older people who have completed their acute or sub-acute treatment cannot be discharged to the community, mainly because of insufficient community care services, or a lack of suitable residential aged care places (for those assessed as suitable for residential aged care placement).

The Interim Care Program is designed to provide ongoing active management of these patients pending placement in more appropriate accommodation. To be eligible for the Interim Care Program, a patient is deemed to have completed their acute or sub-acute episode of care, and have been assessed as eligible for placement in a residential aged care facility. The program was initially intended to operate for a two-year period.

The urgent identified need for a transitional program as part of a broader Hospital Demand Management Strategy required that Interim Care needed to be speedily implemented. This rapid implementation resulted in necessarily reduced levels of essential preliminary planning. The relatively rapid implementation of Interim Care was accompanied by ongoing changes to design and operations of the program at each participating health service.

Notwithstanding the fast pace of implementation, the capacity of the Interim Care Program to substantially and materially impact on the broader health and residential aged care systems has been constrained by important systemic issues regarding supply and distribution of acute, sub-acute and residential aged care services. Accordingly, the findings of the evaluation should be considered in the context of both the circumstances of the program's origins, and in the larger service system context.

### 1.1.1 INTERIM CARE OBJECTIVES

The objectives of the Interim Care Program are:

- *At the Patient Level:*
  - To work actively with families, carers, service providers and patients to find appropriate accommodation;
  - To provide an appropriate level of care to patients who are waiting to move to residential or similar care; and
  - To maintain the patients' functional abilities while in Interim Care.
- *At the Health Service Level:*
  - To provide quality care during the patients' temporary stay in Interim Care; and
  - To improve patient 'flow' from acute and sub-acute care through the system.

### 1.1.2 MODELS OF INTERIM CARE

#### CORE MODELS OF CARE

Three basic variants of care have been used at the five health services in the pilot Interim Care Program. The models of care are:

- **Hospital-Based Interim Care model.** This model uses existing or expanded facilities and care staff resources within the health service. This model operates at Melbourne Health, Southern Health, and at St Vincent's Health.
- **Residential Care-Based Interim Care models.** The dominant example of this model reviewed in this evaluation is a sub-contracted bed based services approach. In this approach, agreements are established with contracted providers whereby the health service pays for a specified number of beds in the provider's facility for a specified period. The main health services using this model are Eastern Health and Northern Health.
- **Home-based Interim Care model–** Northern Health also operates a Home-based model where patient care is contracted out community service providers.

The main models in terms of patient throughput and health service resources are shown below:

Health Service	Eastern Health	Northern Health			Melbourne Health	Southern Health	St Vincent's Health
Type of facility/ Ward Name	Supported Residential Service (EH-SRS1)	Broadmeadows Health Service	2 Private Nursing Homes (NH-RACF1 and NH-RACF3), and Hostel(NH-RACF2)	Transitional Care Program	Interim Care Ward integrated with other subacute patient types	3 North	Ellerslie
Model Type	Residential Care-Based	Hospital-Based	Residential Care-Based	Home based	Hospital-Based	Hospital-Based	Hospital-Based
Location	Outer Eastern suburbs	Broadmeadows	Northern suburbs	N/A	MECRS	Kingston Centre	St George's
Type of facility	Supported Residential Service	Sub acute	2 High Care Facility and Low Care Facility	N/A	Sub acute	Sub acute	Sub acute
Number of Interim Care "beds"	24	6 <sup>1</sup>	9 +3+ 5=17	6 (equivalent)	30	24	20
Can provide care for high level patients	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Standard Resident Charge	Yes	Yes	Yes	No	Yes	Yes	Yes

<sup>1</sup> The six beds at Broadmeadows Health Service are standard GEM beds.

Health Service	Eastern Health	Northern Health			Melbourne Health	Southern Health	St Vincent's Health
Number of patients discharged 1/7/01-31/3/02 (VAED reported)	326			72 (health service data 1/7/01-30/6/02)	137	124	201
		98					
Number of occupied bed days 1/7/01-31/3/02 (VAED reported)	7,043			4,579 (health service data 1/7/01-30/6/02)	4,612	3,277	2,740
		3069					
Average Length of Stay in days (Interim Care Program only)	22.8			45.2 (health service data 1/7/01-30/6/02)	45.2	30.0	15.8
		34.7					
% patients who are discharged home	13%			26% (for home based model only)	4%	8%	7%
		14					
Mortality rate (%)	6%	4%			4%	6%	3%

## **OTHER INTERIM CARE MODELS**

Other models operating in the health services are outlined below and in more detail within the report.

- Eastern Health has a strategy where they sub-contract bed-based services on an ad hoc basis;
- The Nursing Care @ Home Service is a Home-based Model that commenced at Eastern Health at the start of the 2002/2003 financial year. Case management is contracted to Care Connect (Angliss and Maroondah) and to Uniting Care (Box Hill). Additional services such as nursing, allied health, and PCAs are contracted either through Care Connect or with relevant agencies in the person's local community (although this was not in operation in the period covered by the evaluation);
- Melbourne Health has commenced a small Home-based service for Interim Care patients. In August 2002, approximately 10% of the patients who access Interim Care at Melbourne Health had a trial at home via this program. Brokered services are used to provide care plans to patients on the service. The services are brokered through the providers that are used for Post Acute Care and Community Aged Care Packages (CACPs) services;
- Southern Health has used residual Hospital Demand Management funding for ad hoc sub-contracting of private hospital beds for acutely ill non Interim Care patients, and to accommodate Interim Care patients within exempt residential beds and supported residential services. This model ceased operation in 2002-2003;

### **1.1.3 PARTICIPATING HEALTH SERVICES**

The five Health Services involved in the pilot are: Northern Health, Southern Health, Eastern Health, Melbourne Health and St Vincent's Health (formerly known as the Sisters of Charity). The first four Health Services have received additional funds to provide Interim Care, while St Vincent's Health provides the program from within existing resources.

Although the six GEM beds at Broadmeadows Health Service were not originally considered as part of the pilot, it was included in the evaluation as the Program is an important part of the overall strategy at Northern Health.

## **1.2 EVALUATION AIMS AND METHODOLOGY**

### **1.2.1 AIMS**

The aims of the evaluation are to assess:

- the effectiveness of Interim Care in achieving its objectives in each participating Health Service; and
- the efficiency of the program with regard to the use of funds provided.

The three main models of Interim Care are evaluated in this report. A secondary aim of the evaluation is to assess their comparative effectiveness within the context of each Health Service.

### **1.2.2 METHODOLOGY**

A literature review examined the historical context and driving factors in the development of the Interim Care Program. The review also included examples of similar models in Australia and internationally, and indicators of quality for the Interim Care Program.

Stakeholders in each health service were consulted. These included:

- Interim Care Program Managers

- Case Managers and care staff;
- Health Information Managers; and
- Financial Controllers.

Consultations were also held with the Commonwealth Department of Health and Ageing, nominated key people within the Department of Human Services, and staff who provide care in a contracted environment. Following individual health service ethics processes, focus groups and surveys were held with current and former patients and carers of the Interim Care Program.

Program documentation was also reviewed, as well as quantitative data from the health services and the Department of Human Services. Data from the Commonwealth and Australian Bureau of Statistics was also utilised in the evaluation.

The period of Interim Care activities covered in the evaluation was July 2001 to March 2002. The key findings of the Evaluation of the Interim Care Program are discussed below.

### **1.3 THE EFFECTIVENESS OF THE INTERIM CARE PROGRAM**

Effectiveness is considered under a number of sub-headings.

#### **1.3.1 IMPACTS ON PATIENT FLOWS**

- A primary driver in the development of the Interim Care Program was the significant number of patients waiting for a place in a residential aged care facility. A measure of the effect of the Interim Care Program on patient flow used in the evaluation was the number (or percentage) of patients waiting placement for residential aged care in the health service particularly in acute beds. In the three health services with relevant data, there was a considerable reduction in the number, and percentage, of acute beds occupied by patients waiting for residential aged care. This improvement in patient flow has resulted in increased availability of acute beds at the health services.
- There is sufficient evidence to attribute the desired changes noted in the number of acute beds occupied by patients waiting for residential aged care placement to the Interim Care Program. The two main explanations are the specificity of the statistic being related to the Interim Care Program's target group (patients waiting for residential aged care), and the timing of the noted changes corresponding with the Interim Care Program's commencement in the health services.
- Because of the presence of other Hospital Demand Management Strategies, it is difficult to reliably attribute all or most changes in ambulance bypass rates to the Interim Care Program. However, at Northern Health, with a smaller number of acute beds, Interim Care resulted in a greater marginal effect on the increase in the total number of beds in the health service. The marked reduction in ambulance bypass at Northern Health (72%) from 2000-2001 to 2001-2002 may be largely attributed to the Interim Care Program.

#### **1.3.2 PROVIDING APPROPRIATE LEVELS OF CARE TO PATIENTS**

- The program documentation, interviews with key program staff and consultations with patients/carers, revealed a commitment across the health services to communicate with families to ensure that their needs are met and to find accommodation. The Northern Health Home-based Interim Care model provides a unique focus for patients and families who have the ability to be supported in the community, and provides patients with enhanced choice in fulfilling their needs. The Interim Care models rely on extensive input from social workers at the health services. They are reliant on the Social Work Departments and Case Managers to ensure a smooth and timely transition from acute/subacute part of the health service to the Interim Care Program.

- The role of social workers and case managers is critical to the success of the Interim Care Program. This role is important both for maintaining patient flow, and in facilitating appropriate placement for the patient. Staff have a major role in ensuring that patients who have been assessed as being suitable and eligible for residential care are informed of the system and the process of entry into the residential care system. Program staff provide objective and independent information to patients who are in the acute/subacute wards and the Interim Care Program, about residential aged care facilities that can provide culturally appropriate services.
- The patient and carer focus groups, service-level consultations, and patient data indicate that across a range of measures such as access, acceptability, continuity, appropriateness, and service range, the different Interim Care Programs were able to provide a level and quality of care appropriate for this group of patients. Whilst a level of care that is suitable for patients that are more dependent can be provided in the Hospital-based model, the Residential Care-based model can also provide for most patients considered eligible for the Interim Care Program. The Home-based Interim Care model is not appropriate for all patients deemed eligible for Interim Care. However, this model demonstrates that a certain level of care could be provided safely to these community-based patients, with possibly enhanced patient outcomes.

### **1.3.3 MAINTAINING PATIENTS' FUNCTIONAL ABILITIES WHILE IN INTERIM CARE**

- The Barthel Index Score is intended as a measure of functional assessment for the Interim Care Program. The Barthel Index Score is administered on admission to and separation from the Interim Care Program.<sup>2</sup> The proportion of valid Barthel Index Scores in the Interim Care Program as a whole that remained static or improved between admission and discharge was 90%. For the four health services (where there was a sufficient number of valid records), the percentage of patients with Barthel Index Scores that did not reduce between admission to and discharge from the Interim Care Program varied between 88 and 100%. There were no differences in average Admission Barthel Index Score between health services, and the range of Barthel Index Scores between health services was similar.
- There was widespread agreement amongst the medical and nursing staff involved in the Interim Care Programs that the Barthel Index Score was not a particularly valid measure of function for the Interim Care patients, as it was originally designed for patients who had suffered a stroke and does not contain a domain for cognitive function.
- Despite this, the Barthel Index Score data indicates that the Interim Care Program has largely fulfilled the aim of maintaining patients' functional abilities, notwithstanding that the Interim Care patients are generally elderly, and may have multiple medical diagnoses.

### **1.3.4 SEPARATION OUTCOMES**

- There are differences in the percentage of patients formally discharged to home, with Eastern Health and Northern Health higher at 13 and 14% respectively, and the other health services varying between 4 – 8 %. The Home-based Program at Northern Health accounted for the majority of patients discharged home from Northern Health's Interim Care Programs. The VAED data was unable to isolate the specific models at Eastern Health to adequately investigate the higher than average discharge home rates.
- The Home-based Interim Care model at Northern Health demonstrated that patients could be safely supported at home, and that 26% of Interim Care Program patients remained at home when discharged from the Interim Care Program. Most of these patients were supported with the use of community packages and linkages after their discharge from the Program. The conclusions relating to the Home-based Interim Care model are that a proportion of Interim Care patients can safely wait for placement to a residential care placement at home, and a proportion of Interim Care patients can be discharged to home, with appropriate support.

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<sup>2</sup> Department of Human Services (2001) "PRS/2 Manual 11<sup>th</sup> Edition"

- Rates of mortality of patients in the Interim Care settings are similar across health services at between 3 to 6%.
- A high admission Barthel Index Score, (ie over 63, equating to higher functional status) was associated with an increased likelihood of a patient being discharged home at three of the health services, whilst a Barthel Index Score of 15 or below was associated with a markedly reduced likelihood of being discharged home. This finding illustrates the need for a tool that is acceptable to the health services, which can also be used to assess whether a patient has the potential for a trial at home. The tool would ideally use a multidisciplinary assessment methodology and incorporate the patient's physical and social domains.

### **1.3.5 LIMITING FACTORS – THE IMPACTS OF ACCESS TO RESIDENTIAL CARE AND COMMUNITY-BASED CARE**

Two major systemic factors currently limit the effectiveness of Interim Care. Broadly, two groups of systemic factors are important: firstly, access to residential aged care places; and secondly, access to appropriate community-based services.

#### **ACCESS TO RESIDENTIAL AGED CARE PLACES**

- The projected population growth for persons over 70 years of age for the metropolitan health regions in Victoria over the next 5 years is estimated at between 6.3% (Southern Region) and 11.8% (Western Region). The proportion of people aged over 80 within this subpopulation is expected to grow substantially in the next 5 years. This will increase the demand for residential aged care beds to a greater extent than is reflected in the growth of numbers of people aged 70 and over.
- The supply of residential aged care beds in metropolitan Melbourne is expected to grow in the next 2 years due to the allocations and approvals by the Commonwealth Government in 2000-2002. As at June 2001, the overall supply of residential places was less than the number of places using the ratios of beds per 1000 people aged 70 years and over. The continuing growth in the number of ageing people in Melbourne, and the likely continuation of the time-lag between operational and planned ratios of residential care places, implies a continuation of excess demand over supply of residential aged care places.

#### **ACCESS TO COMMUNITY-BASED SERVICES**

- The limited number of suitable community-based care options and services is a significant barrier to health services' ability to discharge patients who have otherwise been assessed as eligible for residential aged care to their homes. As most patients are elderly, and generally have chronic and often progressive conditions, a short time-limited period of care in the community is not suitable. These patients need ongoing care, regular monitoring and case management. Program managers from most of the health services indicated that there is a significant waiting period of months, not weeks, for community care options. This waiting period is a downstream limitation to the Interim Care Program, and is a significant barrier to patients being discharged to home from the Interim Care Program. One of the main issues facing the Northern Health Home-based Program is accessing timely and appropriate levels of care when the agreed period of participation in the Interim Care Program has been completed. The contract with the Northern Health Home-based Program and the patient states that the Program will provide care for up to three months, although the Program provided care for longer periods for 28% of patients.

## **1.4 THE EFFICIENCY OF THE INTERIM CARE PROGRAM**

Two main measures of efficiency are discussed in the report: the comparative costs of providing Interim Care and length of stay.

### **1.4.1 COST COMPARISON**

One of the efficiency components of the evaluation compares the costs of the main Interim Care approaches with the costs of a range of alternative care settings for patients awaiting residential aged care placement. These include care provided in an acute setting, subacute bed day rates paid for Geriatric Evaluation and Management

(GEM) and Rehabilitation, and the estimated cost of providing care in a (Commonwealth-funded) Residential Aged Care facility.

Differences in the nature of available data have required some differences in costing methodology adopted for the various models. Notwithstanding these methodological differences, the following initial conclusions can be drawn:

- The cost per patient-day of providing one of the Hospital-Based Interim Care Programs (Melbourne Health) appears comparable to that of providing acute care for patients in the two AR-DRGs that account for most Interim Care patients (AR-DRGs Z64A and Z64B). The cost is also comparable to the subacute bed day rate for GEM and for Rehabilitation Level 2.
- The other two Hospital-Based Interim Care Programs (St Vincent's Health and Southern Health) appears to be lower in cost than acute care for the two main DRGs, and closer to the Interim Care bed day rate. Part of the apparent difference between Melbourne Health and the other two Hospital-Based models at St Vincent's Health and Southern Health may be explained by differences in the scope of non-salary cost inclusion. The cost allocations at Melbourne Health were the most comprehensive among the three Hospital-Based sites. This makes it difficult to ascertain the extent to which the true costs of providing Interim Care differ between the hospitals. A further explanation for the higher costs at Melbourne Health may be related to the provision of Interim Care in the GEM setting. This could increase the apparent costs due to the inseparability of GEM from Interim Care costs.
- The range of Residential Care-Based model costs appears to be in a lower cost band than Hospital-Based models on a per patient-day basis. Substantive differences between EH-SRS1 and NH-RACF1 costs are explained by the different bed day rates charged by the respective providers, and differences in the scope of cost inclusion (ie. NH-RACF1's costs may be underestimated).
- The Northern Health Home-based model appears to be the lowest cost model when costs are compared on a per patient-day basis.
- The estimated range of revenues received by providers of Commonwealth-Funded Residential Aged Care in Victoria for Level 3 Residential Care subsidy patients is \$123 to \$150 per patient-day.

#### **1.4.2 LENGTH OF STAY**

Length of stay (LOS) of Interim Care patients varies markedly between health services. The length of stay of the Interim Care patients is partially a function of the availability of residential aged care places in a health service's catchment, and partially due to internal health service processes. The Interim Care LOS data only reflects a part of the LOS of the episode of the health service, and does not account for factors such as the time between health service admission and Interim Care admission, time between ACAT Assessment and Interim Care admission, timing of listing at residential care places, the influence of other Hospital Demand Management Strategies, and the type of ward that the patient was residing in prior to the Interim Care admission.

The mean of the LOS of the Interim Care patients is 27.0 days, whilst the median is lower at 18 days, and the mode is much lower being 8 days. This is consistent with a right skewed distribution that is a common feature of LOS distributions relating to diagnostic groupings. This distribution is caused by the majority of patients having low lengths of stays, and a small number of patients with high length of stays influencing the mean to be a higher value than the other measures of central tendency.

**Table 1-1: Interim Care LOS Aggregate Measures by Health Service<sup>3</sup>**

Measure	Eastern	Melbourne	Northern	Southern	St Vincent's
Number of patients	326	137	99	124	201
Mean	22.8	45.2	34.7	30.0	15.8
Median	15	30	21	23.5	14
Standard Deviation	24.2	42.2	37.7	24.7	12.7

The table above illustrates considerable variation in LOS measures in the Interim Care Program across health services. Melbourne Health has clearly the highest mean and median LOS. St Vincent's Health has the lowest mean and median LOS, and also has a lower standard deviation compared to the other health services.

Northern Health has the greatest variation in LOS measures with the median equal to 21 days, and the mean LOS 34.7 days, the second highest of the health services.

St Vincent's Health program, which has an established residential placement service, is an example of a design that appears to work well in achieving an efficient throughput of patients through the health service. Patient throughput is assisted considerably by the relative ease of access to residential care places in the St Vincent's region. Significant success factors of this model also include intense case management, and ensuring that key performance indicators of critical points in the care cycle are met. KPIs are not unique to St Vincent's, but St Vincent's appears to place a greater emphasis on them as short and long-term operational monitoring tools. Up-to-date access by staff to this information is a key success factor for the Program, as it provides an opportunity for proactive and reactive action to be undertaken in a timely manner. The key performance indicators used by St Vincent's are outlined in Appendix B to the report.

## 1.5 IMPLICATIONS OF THE EVALUATION'S FINDINGS FOR FUTURE DIRECTIONS

### 1.5.1 THE CONTINUING NEED FOR THE INTERIM CARE PROGRAM

The Interim Care Program was established in response to a perceived need in the metropolitan health services in Victoria to provide a mechanism to increase the availability of acute beds. The catalyst was the number of patients occupying acute and sub-acute beds whilst awaiting residential placement in Victoria. This factor was perceived as one of the causes of reduced patient flow through the acute wards, and ultimately limiting entry to hospitals, as evidenced by Ambulance Bypass rates.

The number of residential care places in Victoria has increased over the past few years, as evidenced by the increasing trend in operational ratios of residential care places. The operational ratios however, are still below the planning ratios, and are unlikely to match them in the next two to three years.

There appears to be service gap in the acute/subacute hospital system. This apparent gap relates to patients who are assessed in hospital as eligible for residential aged care. These patients wait a median time of around three weeks in Australia for a placement in a residential aged care facility. This three-week gap relates to the process of family discussion and finding a placement that is geographically, socially, and culturally appropriate. Although current low numbers of residential aged care facilities may increase the entry period on a local basis, it is likely that most patients, carers, and families will continue to take two to three weeks to make a decision regarding placement. Considering there are nearly 5,000 ACAT assessments in hospitals each year in Victoria, a significant number of bed days are required to care for these patients between assessment and placement.

<sup>3</sup> Victorian Admitted Data Set (VAED) 2001-2002

It is clear from the evaluation's findings that the acute and subacute systems may not be the most appropriate environment to care for these patients. The Interim Care Program has demonstrated that, using a variety of models, it can provide for patient's care needs for those who have been assessed as eligible for residential aged care.

An argument for the continuation of the Interim Care Program can be made on the grounds that:

- The Interim Care Program has achieved its aims of improving patient flow and accessibility to acute beds as evidenced by the reduction in the number of acute beds occupied by people assessed as eligible for residential care;
- The acceptance of the program as evidenced by the occupancy rate of approximately 90% in the Interim Care Programs in all the health services in the first six months of 2002;
- The general phenomenon of the large number of ACAT assessments that occur in hospitals each year, and the need to provide a certain level of care for patients assessed as being eligible for residential aged care in the period between the ACAT assessment and residential aged care placement; and
- The general phenomenon of an interval between ACAT assessment and residential care placement of about 2-3 weeks due to families considering their care options, even if patient throughput is near optimal, and residential aged care ratios are near planning ratios<sup>4</sup>.

### **1.5.2 GUIDING THE DEVELOPMENT OF FUTURE INTERIM CARE PROGRAMS**

- Any decision by a health service to commence or expand an Interim Care Program should be made after considering a range of factors. The key groups of factors that should be considered include:
- Potential planning options;
- Flexibility of care options and patient outcomes; and
- Relative costs of the different Interim Care models.

These are discussed in more detail below.

#### **POTENTIAL PLANNING OPTIONS**

Quantifying demand for more Interim Care places is difficult because the Program has been operating for a relatively short time. Factors that may need to be considered are:

- Current and projected ratios of residential aged places in the health service catchment (this information will be primarily based on Commonwealth planning data);
- Availability of sufficient community-based services in the health service catchment to enable people to remain in their community;
- Ratio of Interim Care beds to acute or subacute beds in the health service;
- Historical Interim Care Program data; and

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<sup>4</sup> The last two dot points refer to system-wide phenomena and do not in themselves imply that Interim Care is universally required.

- Patient flow statistics.

If the local region's current and projected supply of residential aged places or community options is significantly less than anticipated demand or planning ratios, there may be a more compelling argument for more Interim Care places. The relative waiting periods for residential places and community care packages may influence the type of model that is considered. For instance, if waiting periods for community options are very high, a Home-based Interim Care model may be less attractive as discharging options from the Program may be limited.

The ratio of Interim Care beds to acute or subacute beds in combination with Interim Care Program data may be used to assist planning for Interim Care beds in the future. The following indicators may be relevant:

- Ratio of Interim Care patients to the number of patients ultimately discharged to residential aged care within a specified time period; and
- The average time between ACAT assessment and Interim Care Program admission may be used to inform the development of an optimal bed ratio for health services. The average time between ACAT assessment and Interim Care Program may be dependent on the type of Interim Care model. A Hospital-Based model may be more likely to generally have a smaller time between ACAT assessment and Interim Care admission than a Home-based model, as the internal transfer from an acute bed to a Hospital-Based Interim Care bed may be relatively uncomplicated in logistical terms

#### **FLEXIBILITY OF CARE OPTIONS AND PATIENT OUTCOMES**

If a health service has a perceived need to commence or increase their number of Interim Care beds, they will need to consider the type of Interim Care model required.

Two important considerations are the flexibility of care offered by the models and patient outcomes.

It could be argued that the Home-based Interim Care model offers a greater likelihood of a better outcome being discharged to the community. However, a Home-based model is unlikely to be viable without the support of either a Hospital-Based model or a Residential Care-Based model operating in the same health service. For patients assessed as eligible for residential care, there may be a subset of patients who may be suitable for a trial at home. For the majority of Interim Care patients, who are unable to take advantage of a trial at home, a Hospital-Based or Residential Care-Based model may be required to fulfil their care needs in the short term until residential aged care placement. If a Hospital-Based or Residential Care-Based model already operates in a health service, then a Home-based model may be a reasonable option to investigate for expansion as it promotes the ethos of community care.

A Hospital-Based model offers a care option for the more dependent Interim Care patients in an environment that has similarities to acute or subacute wards. There is usually greater access to medical supervision, and usually greater skilled nursing input.

The Residential Care-Based and the Home-based Interim Care models offer greater opportunities for a graduated increase in the number of Interim Care beds compared to the Hospital-Based model, as case management services and service support can be incrementally increased.

#### **RELATIVE COSTS OF DIFFERENT INTERIM CARE MODELS**

The available evidence suggests that the Hospital-Based model has the highest cost structure, and may require significant seed funding to implement (if capital expenditure is required). If the health service has spare bed capacity, this may reduce the initial capital required for implementation.

Both the implementation and ongoing costs of the Residential Care-Based model and Home-based Interim Care models are lower than for the Hospital-Based model. The *per diem* cost of the Residential Care-Based model (as implemented in the sub-contract bed model variant) is more expensive than the Home-based model depending

on the agreed contract. However, the placement options (generally residential aged care) from the Residential Care-Based model may be more accessible and timely than the “ideal” placement option provided by the Home-based model, which is a Linkage, EACH package or CACP. The *per episode* cost of a Home-based model may be more closely aligned with the Residential Care-Based model as the Home-based model often funds patients for an extended period, although this was not specifically examined in the Cost Comparison in the evaluation.

### **1.5.3 OPPORTUNITIES FOR PROVIDING CARE IN THE COMMUNITY**

The Home-based Model (ie the Transitional Care Model at Northern Health) appears to have had success in discharging patients to home with support who would otherwise have been placed in a residential aged care facility. The Program demonstrated that a significant number of patients could be discharged home, and that they can continue to remain at home at least for a few months.

One of the main issues facing the Transitional Care model has been a lack of available community care options for patients when Home-based Model funding expires. Patients sign a contract at the start of the Program agreeing that the Program is only responsible for providing their care at home for a maximum period of three months. The lack of community care options available to patients makes rigid application of this timeframe difficult in many cases. The availability of community care options varies depending on patient characteristics, locality, and the advocacy skills of case managers. Waiting periods for Linkages or Community Aged Care Packages can be up to 12 months, and EACH packages are not widely available. Although the funding for Home-based Model care is meant to cease after three months, there have been instances of care continuing for periods of up to 10 months.

If a suitable ongoing package cannot be organised, and the patient and family are coping well at home, the program managers believe they have a duty of care to continue supporting the client. The alternative options are both undesirable - either placement in a residential care facility, or transfer to a hospital bed.

The potentially long wait for community care packages represents a significant financial risk for the ongoing viability of the Home-based Model. On the other hand, the cost comparison study demonstrates that on a per diem basis, the Home-based Model is significantly less expensive than the other Interim Care models. The low per diem cost for the Home-based Model may enable the service to realistically provide funding for an extended period.

### **1.5.4 A STRUCTURED APPROACH TO DETERMINING A PATIENT’S SUITABILITY FOR A TRIAL AT HOME**

The success of the Home-based Model emphasises the importance of comprehensive assessment of the available options and potential of the patient. This model demonstrates that for some patients, a home-based model of Interim Care may be appropriate. A structured and systematic approach to the identification of candidates for a trial at home is required. Factors to be considered when determining the suitability of a trial at home with support may include domains such as:

- Medical;
- Physical;
- Functional;
- Family and Carer Support;
- Social;
- Accessibility to support services; and
- Home set-up – aids and appliances.

The most appropriate method of assessing these domains and the complex interaction between the domains and individual needs of patients is via a multi-disciplinary assessment. Such an approach is consistent with the case management processes that currently exist at the health services for this group of patients. The assessment can

be undertaken in the Acute, Subacute, or Interim Care Programs, though ideally it should be performed before admission to the Interim Care Programs.

If a patient is identified as being a candidate for discharge to home, the next step is to determine any barriers to their placement at home. The barriers will be related to the domains identified above. Strategies to reduce a barrier to going home may include admission to a subacute bed, if the patient has a complex medical history or a reversible physical deficit. Minor home modifications, and aids and appliances may also be used to provide a suitable home environment for a patient.

The Interim Care Programs operate in an environment where significant sub-acute inpatient rehabilitation options already exist via the rehabilitation and GEM wards. There are also significant community based rehabilitation options operated by the five health services available to people after they complete an inpatient episode.

### **1.5.5 INNOVATIVE APPROACHES TO THE FUNDING OF COMMUNITY-BASED PROGRAMS**

Patients assessed as eligible for residential care may still have their care needs fulfilled in a home environment. In the case of Community Aged Care Packages (CACPs) the Commonwealth has primary funding responsibility. But the patient can also be supported at home by a number of community programs including Linkages and HACC. A greater availability of Extended Aged Care at Home (EACH) packages would also cater for those people with higher dependency. Eligibility for residential aged care does not exclude eligibility to receive community programs.

In the context of future Interim Care operations, an opportunity may exist via the Commonwealth Aged Care Innovative Pool to assist the smooth transition between the Home-based Model and ongoing care with minimal disruptions to care and case management. There is already a joint Commonwealth-State project for a bed-based service being funded under this scheme in Victoria and there may be scope for similar services to be considered. As Commonwealth and State Governments both have a key stake in the subject area, a formal process to further investigate these issues is warranted.

An additional option for consideration might include the provision of state-funded immediate access to appropriate community-based services. An example of this strategy might be to extend the existing Post Acute Care program<sup>5</sup>.

## **1.6 RELATIVE STRENGTHS AND WEAKNESSES OF THE INTERIM CARE MODELS**

The following table presents an overview of the strengths and weaknesses of the three main types of Interim Care models that have been piloted in the five health services in metropolitan Melbourne. It should be noted that the relative merits of different care inputs (eg staff type) were not the subject of this evaluation, and accordingly, no conclusions can be drawn in relation to patient outcomes as they may be influenced by these inputs.

Notwithstanding the above caveat, the different models of care have specific strengths and weaknesses as shown in Table 1-2 below. The features of the models have a local context depending on the circumstances of the health service implementing and running the model. The models should be considered within this context, and the future development of the Interim Care models should take account of the local resources that are available to be used for Interim Care.

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<sup>5</sup> For patients assessed as eligible for residential care, but who have also been assessed as suitable for a trial at home, this group of patients may not be considered as Interim Care patients but as part of the relevant community-based services program. If this system were implemented, Interim Care patients might be defined as those patients who are assessed as eligible but deemed not suitable for a trial at home.

**Table 1-2: Strengths and Weaknesses of Interim Care Models**

	<b>Hospital-Based</b>	<b>Residential Care-Based</b>	<b>Home Based</b>
<b>Strengths</b>	<ul style="list-style-type: none"> <li>• Generally greater access to medical and skilled nursing care to reflect needs of patient group;</li> <li>• Intensive case-management model most evident with this Interim Care model;</li> <li>• Allows earlier access to patients who are more dependent;</li> <li>• Usually medical records continuity;</li> <li>• Ward may be at the same site as the acute/subacute wards, thus minimising disruption to the patient.</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively cost effective;</li> <li>• Health Service may influence quality control through use of market power as a consumer;</li> <li>• Greater flexibility of staffing to reflect needs of patient group;</li> <li>• Possible greater flexibility of bed numbers;</li> <li>• Minimal infrastructure required by health service;</li> </ul>	<ul style="list-style-type: none"> <li>• The most cost effective model available;</li> <li>• Focus is on the ability of the patients;</li> <li>• Minimal infrastructure required by health service;</li> <li>• Possible greater flexibility in capacity / bed numbers;</li> <li>• Most consistent with client choice;</li> <li>• May reduce need for residential aged care placement;</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• Less cost effective than other Interim Care models;</li> <li>• Reduced flexibility of staffing profiles in relation to the needs of the patient group;</li> <li>• Cases of buildings / infrastructure being inappropriate for needs of patients;</li> <li>• Significant amount of capital seeding may be required for establishment.</li> </ul>	<ul style="list-style-type: none"> <li>• May pay a premium to guarantee access;</li> <li>• Ad hoc models: reduced quality control and possible reduced input by social workers.</li> </ul>	<ul style="list-style-type: none"> <li>• Possibly reduced access in more distant areas;</li> <li>• Probably need other models to supplement as not all patients are appropriate for this model of care;</li> <li>• Relies on numerous agencies;</li> <li>• Possible difficulty accessing community packages at the completion of the Program;</li> </ul>

## 1.7 RECOMMENDATIONS

The Interim Care Program operates in the transitional phase between acute, sub-acute and residential aged care sectors. This brings with it a variety of complex issues relating to jurisdictional responsibility, operations, management, and funding of the program. A collaborative, coordinated approach to this transitional care domain will be required.

***Recommendation 1***

***It is recommended that the Commonwealth and State governments collaborate in order to develop agreement on a consistent approach to the acute-residential aged care transition.***

The evaluation of the Interim Care Program demonstrates that there is a service gap in the community that is not particularly well served by existing acute, community, and residential aged care mechanisms. The Commonwealth Government's recent launch of the Innovative Pool scheme appears to be a suitable mechanism that could address the needs of at least a sub-set of Interim Care patients. The Innovation Pool scheme currently provides about \$15 million to trial projects that may reduce demands on the residential aged care system. Exploration of the potential of this scheme may be a practical focal point in the Commonwealth-State collaborative process.

***Recommendation 2***

***It is recommended that the Interim Care Program continue. Implementation should be considered on a case-by-case basis.***

The evaluation demonstrates that in general, the Residential Care-Based Interim Care model is preferable to the Hospital-Based model. It is important however, that each health service contemplating an Interim Care Program, follow a suggested decision pathway in order that an appropriate choice is made for the service's local circumstances.

***Recommendation 3***

***It is recommended that the Department of Human Services develop design and implementation guidelines to assist agencies in the choice of an appropriate Interim Care strategy.***

The evaluation demonstrated that home based Interim Care models can provide a safe environment for some Interim Care patients waiting residential aged care placement and may improve patients' discharge options from the Program.

***Recommendation 4***

***It is recommended that health services with Interim Care Programs operate a Home-based Interim Care model (in addition to bed-based models) for those patients assessed as suitable for a home-based trial.***

In addition to guidelines aimed at assisting health services to choose and design a suitable Interim Care Program, there is a need for additional guidelines to assist the operational and quality aspects of Interim Care.

***Recommendation 5***

***It is recommended that the Department of Human Services develop comprehensive operating guidelines to support the future operations of the Interim Care Program.***

The guidelines should include issues such as:

- ***Patient assessment protocols.*** For example, these would include the role of multi-disciplinary assessments in determining whether a patient is suitable for a trial at home. (This issue needs further research – in particular, further research should be conducted into the choice of a functional assessment tool suitable for use with Interim Care patients on admission.) The alternative tool options should include cognition as one of the domains. Alternatives that require further research may include: Functional Independence Measure (FIM); Handicap Assessment Resource Tool (HART); RUG III ADL Scale; and KATZ Index of Independence;
- ***Patient information guidelines.*** For example, patient information should be provided in a timely and accurate manner to the patient, carer and family to enable all parties to consider their options in an informed manner.
- ***Patient complaints and appeal processes.***
- ***Patient support and assistance protocols.*** For example, this could include the role of case managers or other staff in assisting patients who do not possess adequate family or carer support, to list at residential care facilities that are suitable for patients' needs; monitor and review the availability of residential aged care facilities places in their region; and assist in matching patients to the most appropriate option.
- ***Standards and quality.*** This would include the requirement for all agencies providing services to Interim Care patients to meet minimum quality requirements. These quality requirements may be either State or Commonwealth derived, depending on the jurisdictional circumstances;
- ***Performance indicators.*** An important future issue for both the Department and agencies is the need to develop Key Performance Indicators (eg to assess patient flows through the Interim Care Program);
- ***Service mix expectations.*** Examples might include: allied health resources directed at the Interim Care Programs (availability, purchasing arrangements etc.); and availability of recreational activities at the Interim Care Programs;
- ***Co-payment guidelines.*** Patient fees to be charged to Interim Care patients.
- ***Admission and discharge protocols.*** This extends also to rules of case enumeration and other data collection activities.

## 2 INTRODUCTION AND BACKGROUND

The Interim Care Program commenced as a pilot initiative in five Metropolitan Health Services in the 2001/02 financial year in response to an upsurge in demand for hospital services which created difficulties in gaining access to acute care beds. One cause is seen to be a group of older people, who have completed their acute or sub-acute treatment, and are waiting in hospital to return to the community. The Interim Care Program provides active management of those patients to secure more appropriate accommodation. The program is initially intended to operate for a two year period.

### 2.1 AIMS OF THE EVALUATION

The aims of this project are:

- to assess the effectiveness of Interim Care in achieving the objectives below in each participating Health Service; and
- to assess the efficiency of the program with regard to the use of funds provided to the program.

Three models of Interim Care are being tested. Thus another aim is to assess their comparative effectiveness considering the context of each Health Service.

The objectives of Interim Care are:

- *At the Patient Level:*
  - To work actively with families, carers, service providers and patients to find appropriate accommodation;
  - To provide appropriate care to patients, who are waiting to move to residential or similar care; and
  - To maintain the patients' functional abilities while in Interim Care.
- *At the Health Service Level:*
  - To provide quality care during the patients' temporary stay in Interim Care; and
  - To improve patient "flow" from acute and sub-acute care through the system.

### 2.2 SCOPE

The five Health Services involved in the pilot are: Northern Health, Southern Health, Eastern Health, Melbourne Health and St Vincent's Health (formerly known as the Sisters of Charity). The first four Health Services have received additional funds to provide Interim Care, while St Vincent's Health is providing the program from existing resources. Interim Care is being offered in three ways:

- Hospital-Based service;
- Residential Care-Based service (the mechanism being brokered services purchased from an external facility); and
- Home-based program with brokered services.

Some Health Services are operating more than one Interim Care model.

The period of the Interim Care evaluation was from July 2001 to March 2002.

## 2.3 BACKGROUND TO THE INTERIM CARE PROGRAM

In recent years there has been an increasing demand for acute health services. This greater demand has its origins in a number of trends. External factors may include the increase in the State's population, especially in the older age groups. The very oldest age group aged 85 years and over, has a hospitalisation rate 4.5 times that of the 70-74 year age group. Furthermore, the proportion of people over 75 years consulting their GP has declined by 14%, possibly because they have presented to hospitals instead. Factors internal to the Health Services may result in the prevention of immediate or timely access to acute care due to the lack of bed availability. This can have a number of causes such as organisational or patient management practices or perhaps insufficient capacity. The response by the Department of Human Services in the review period has been to negotiate individually-tailored strategies with hospitals to find ways to effectively manage increasing demand for acute services. This is known as the Hospital Demand Management Strategy. Among the strategies being trialled is a program termed "Interim Care".

One of the perceived causes for the reduced access to acute beds was a group of older people, who have completed their acute or sub-acute treatment, and are waiting in hospital to return to the community. The majority are awaiting placement in residential care, especially high care. This slowing of patient flow at the exit point is widely perceived by hospitals to have a significant impact at the entry point of the system. A shortage of community-based residential aged care places is regarded as contributing to the problem. Five metropolitan hospitals put forward Interim Care proposals to help manage the above phenomenon. There were common ideas amongst the submissions. The Department developed guidelines for the proposals under the concept of the Interim Care Program. Funding for this pilot program started in July 2001 and will continue for a two-year period.

To be eligible for the Interim Care Program, a patient must be deemed to have completed their acute or subacute episode of care.

## 2.4 DEFINITIONS AND CONCEPTS

**Aged Care Assessment Teams (ACAT):** Teams of health professionals with a range of skills who have delegation responsibility for access to Commonwealth-funded facilities and programs. They provide information, advice and assistance to older people who are having difficulty living at home.

**Community Aged Care Places (CACCP):** Community Aged Care Packages are funded by the Commonwealth to provide planned and coordinated packages of community care services to help older people with complex care needs remain living in their own homes.

**Extra Services Place:** Residential aged care facilities offer residents a higher standard of accommodation, food and services at a higher charge. Extra service arrangements recognise that there are residents who are prepared to pay additional charges for higher level services. Extra services are intended to extend the range of options available to residents and offer more flexibility and choice.

**Extended Aged Care in the Home (EACH):** a pilot scheme that aims to provide care for people in their homes who have been assessed as eligible for high level residential care.

**Geriatric Evaluation and Management (GEM):** sub-acute care of chronic or complex conditions associated with ageing, cognitive dysfunction, chronic illness or disability. The conditions require review, treatment and management by a geriatrician and multi-disciplinary team for a defined episode of care.

**Home and Community Care (HACC):** HACC programs provide a number of individual services and care for frail older people and people with disabilities living at home, and their carers. Commonwealth, State and Territory governments jointly fund HACC services. A range of groups provide these services, for example, state and local government agencies, non-profit community and voluntary organisations and religious and charitable organisations.

**High Care:** Beds in a residential aged care facility that tend to care for people with a greater degree of frailty, often in need of continuous nursing care. Provide care to patients assessed as Residential Classification Scale 1-4. Formerly known as nursing homes.

**Low Care:** Beds in a residential Aged Care Facility that generally provided accommodation and personal care, such as help with dressing and showering, together with occasional nursing care. Provide care to patients assessed as Residential Classification Scale 5-8. Formerly known as hostels.

**Hostel:** Now known as low care facilities.

**Nursing Homes:** Now known as High Care Facilities.

**Nursing Home Type:** is a funding classification. A Nursing Home Type patient is defined as such after 35 days of continuous hospitalisation, unless the medical practitioner certifies under Section 3B that the patient is in need of acute care.

**Resident Classification Scale:** Funding for the care of residents in residential aged care facilities is varied based on their relative care needs. Through the Resident Classification Scale, all residents are categorised into a care category. The category determines a level of subsidy.

**Rehabilitation:** Pro-active and goal-orientated sub-acute intervention and offers a coordinated, multidisciplinary range of services which provide assessment, treatment, review, discharge planning, and follow up.

**Sub-Acute Care:** specialised health care delivered to patients who need time rather than intensity and who require a range and mix of clinical and professional skills rather than the focussed management of a single or principal speciality. A term that incorporates both Rehabilitation and Geriatric Evaluation and Management (GEM) services.

**Supported Residential Services (SRS):** provide accommodation and personal care for a wide variety of residents, including older persons who need some assistance with activities of daily living. Not funded by State or Commonwealth Governments.

## 3 METHODOLOGY

### 3.1 STAGES OF THE EVALUATION

The Evaluation of the Interim Care Program was undertaken in seven stages outlined below.

#### 3.1.1 STAGE 1 - LITERATURE REVIEW

The aim of this stage was to collect background information regarding the development of the Interim Care Program and to inform the evaluators of methodological considerations considered important for the evaluation. The literature review investigated:

- The historical context and driving factors in the development of the Interim Care Program;
- Indicators of quality for the Interim Care Program;
- Examples of similar models in Australia and internationally;
- Costs of alternative models of care;
- Scoping potential outcome variables for the evaluation; and
- Program logic that can be applied to the evaluation.

#### 3.1.2 STAGE 2 - ETHICS APPROVAL

The evaluators contacted the five health service's Human Research Ethics Committees to determine whether ethics applications were required. Four of the health services required ethics applications, whilst the fifth health service received advice that ethics approval was not required. Health Outcomes International completed ethics applications in a format required by the respective health services.

Ethics approval was granted in all cases.

#### 3.1.3 STAGE 3 - DESIGN AND PROCESS EVALUATION

The aim of Stage 3 was to gather qualitative and quantitative information from the five health services in the pilot program to map the specific designs and processes of the various Interim Care models. The methodology included program documentation review and consultations with key persons within the five health services. Consultations were followed up with further requests for information as necessary. The consultants also visited each Interim Care Program site.

The framework of the data collection was as follows:

- Local historical context to the development of the Interim Care Program;
- Other initiatives that were being developed within the health services to cope with hospital demand problems;
- The specific type of Interim Care models that have been developed;
- Changes that have been made to the models since their inception and the reasons for the changes;
- Staffing structures;
- Funding structures;
- Medical Records issues;

- Discharge planning;
- Information provided to patients;
- Use of Patient's Fees;
- Quality Assurance Practices; and
- Barthel Index Score.

Following site visits and documentation review, a description of each health service's model prepared and forwarded to each health service for verification.

#### **3.1.4 STAGE 4 - ECONOMIC EVALUATION**

The aim of stage 4 was to undertake a cost comparison of the Interim Care Program's models. The cost comparison involved comparing costs between the Interim Care models and to other models of care. The other models of care that were considered valid for comparison were:

- Acute;
- Subacute – Rehabilitation;
- Subacute – GEM;
- Residential Care.

Secondary data collection for this stage involved the evaluation team's health economist consulting with key financial staff within the health services, and requesting financial records relevant to the Interim Care Programs. The health economist needed to gather relevant data from Commonwealth sources, such as the National Hospital Cost Data Collection, and the Aged and Community Care Branch of the Commonwealth Department of Health and Ageing.

The health economist also liaised with the Victorian Department of Human Services regarding methodological matters.

#### **3.1.5 STAGE 5 – PATIENT AND CARER CONSULTATION**

The aim of Stage 5 was to gain clients' insights into the Interim Care Program from the clients of the service – the patients, their families and carers. The methodology was via a primary data collection involving focus groups, written surveys, and a telephone survey.

The research method utilised was a quasi-experimental design. The focus groups were undertaken with patients who were currently or recently had been an inpatient in the Interim Care Program. To ensure a random selection of the patients, the wards or programs provided encrypted Unit Record (UR) numbers of all Interim Care patients in the Program to the consultants. The consultants sent back to the wards/program managers a selection of 12 UR numbers. Patients and their carers, represented by the 12 UR numbers were invited to participate in the focus group by the program managers. Documentation explaining the purpose of the focus group together with consent forms was distributed to selected patients. If ward staff believed that a patient was cognitively impaired, the ward staff informed carers of the survey, and provided the accompanying documentation.

The focus groups were all held on-site at the Interim Care facility.

For two of the health services, surveys were sent to 30 current and past patients of the program.

For the Home-based Model, to reduce the burden on patients, carers, and families, telephone interviews were conducted with seventeen people, who were recently discharged or current patients (or carers or families).

### **3.1.6 STAGE 6 - MEDICAL RECORDS EVALUATION**

The Health Information Manager on the evaluation team gathered information about medical record practice by interviewing health service managers nominated by the each health service. In addition, a medical records review was undertaken at two of the health services.

### **3.1.7 STAGE 7 - SUMMATIVE EVALUATION**

The aim of this stage was to assess the outcomes of the Interim Care Programs from two perspectives:

- as five discrete programs being organised at each health service;
- as one program, with five units or operational components, corresponding to each health service.

The methodology involved the gathering of secondary data from a variety of sources including:

- Department of Human Services Victorian Admitted Episode Dataset (VAED);
- Department of Human Services other data sources;
- Commonwealth Department of Health and Ageing Operational Residential Care Places in Australia;
- Health Services' internal data sources; and
- Australian Bureau of Statistics – demographic data.

The main source of quantitative data utilised in this evaluation is the Victorian Admitted Episodes Dataset (VAED). Health Outcomes International requested an extract of the VAED from the Victorian Department of Human Services. The extract of data was in the form of a .dbf data file, on a CD-ROM format. The VAED data extracted relates to discharged patients in the first nine months of the Interim Care Program, from 1<sup>st</sup> July 2001 to 31 March 2002.

Other sources of quantitative data include the Quarterly Bed Census, Ambulance By-Pass, and Emergency Department Waiting Times from the Department.

The five health services in the pilot have provided data relating to their LOS, and other parameters such as number of acute bed days occupied by patients deemed eligible for residential care.

The Commonwealth Department of Health and Ageing supplied data in a hard copy and electronic form, of the number of operational residential care places and CACPs by region and statistical local area.

#### **ANALYSES UNDERTAKEN**

Descriptive analytical procedures were undertaken on the data. These included, when appropriate, measures of central tendency such as median, mode and mean, with accompanying measures of dispersion, such as standard deviation.

A minor scoping procedure was undertaken to model and analyse variables associated with the separation mode from the Interim Care Program. The method used for this procedure was Data Mining (binary recursive splitting).

### 3.2 METHODOLOGY EVALUATION SUMMARY

The following table summarises the methods that were used to evaluate the Interim Care Program, related to the terms of reference of the evaluation.

**Table 3-1: Methods used in the Evaluation of the Interim Care Program**

Evaluation Perspective	Method				
	Design Evaluation	Interviews	Medical Records Review	Cost Comparison	Data Analysis
<b>Effectiveness</b>	✓	✓	✓		✓
• Program Logic	✓				
• Activity/Throughput					✓
• Patient Characteristics					✓
• Separation Outcomes		✓			✓
• Functional Assessment		✓			✓
• Demand/Supply of Residential Aged Care Places		✓			✓
• Medical Records Evaluation	✓	✓	✓		
• Quality of Care		✓	✓		✓
<b>Efficiency</b>		✓		✓	✓
• Cost Comparison		✓		✓	✓
• Length of Stay					✓

## 4 EVALUATION OF THE EFFECTIVENESS OF THE INTERIM CARE PROGRAM

The effectiveness of the Interim Care Program was evaluated in terms of design or program logic, activity or throughput, patient characteristics, separation outcomes, functional assessment, demand/supply of residential care places, medical records evaluation, and quality of care. The results of these analyses are outlined below. The results of the medical records evaluation are outlined in Appendix C.

### 4.1 DESIGN ATTRIBUTES OF THE INTERIM CARE PROGRAM

The design attributes of the Interim Care Program were assessed using a 'Program Logic' approach. The approach and analysis follows below.

#### 4.1.1 THE PROGRAM LOGIC APPROACH

Program logic refers to the underlying logic that guides the development of a health program<sup>6</sup>. A number of issues identified in the literature review have influenced our approach to the assessment of the Interim Care Program logic. Furthermore, it is important to consider the contextual, historical and political influences that have guided the development of the Interim Care Program. The program logic evaluation enables us to pose questions relating to the rationale of the program, its ultimate objectives, and to examine alternative ways in which program outcomes may be achieved.

In particular, an analysis of program logic must recognise four important components (Lipse, 1990 in Hawthorne op cit.):

- ***A clearly defined problem*** – in this context, the key problem identified is that of patient flow from acute to aged care settings following an acute episode;
- ***Specification of the program's inputs*** – these have been determined at the outset via the funding mechanisms in place, number of Interim Care places available and infrastructure available to the program. External inputs, especially acute and residential aged care places must also be considered in this context;
- ***Intrinsic and extrinsic processes upon which the program relies*** – particularly important in the Interim Care Program are discharge planning processes and case management strategies; and
- ***Specified expected outcomes of the program*** – the program's objectives are clearly articulated in program documentation and evaluation brief.

#### 4.1.2 ASSESSING THE INTERIM CARE PROGRAM LOGIC

A key issue in an assessment of program logic for the Interim Care Program relates to the genesis or design of the program. The following observations reflect the soundness of the rationale behind the program's development:

- The first principle of the Interim Care Program that should be challenged is whether the program should actually exist. It may be argued that the program would not be required if there were, for example:
  - Sufficient support for people to remain in their own homes (enhanced by greater carer support, in-home support etc.);

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<sup>6</sup> Hawthorne, G. (1999) Health Programs and Stages in the Evaluation Cycle. University of Melbourne.

- Sufficient numbers of residential aged care places; or
- Better distributed acute, sub-acute and aged care services in accordance with population characteristics, seasonal changes, demographic trends etc.

As this is not the case, the rationale for existence of the program seems logical.

- The time delay of approximately 1-3 weeks between patients being assessed as eligible for residential care, and their placement to a facility may create a service gap that Interim Care fills;
- Whilst there is a clear need for better transition between acute and aged care services, it is unclear whether the service delivery model is the most appropriate mechanism for facilitating the transition. This reflects the fact that the Interim Care Program is a unique service – a sound evidence-base is still being developed;
- The ways in which the Interim Care service models were devised is also interesting to analyse. The Interim Care model was 'built' from service-level responses to an identified need – there are inherent positive and negative aspects of such an approach, including:
  - **Positive features**
    - The service providers are in a good position to identify what might work and the barriers that need to be overcome;
    - The program represents a local response to the issue of bed blockage and delayed transition to aged care, and enables program operators to build upon existing relationships between acute, sub-acute and residential aged care service systems.
  - **Negative features**
    - Some Interim Care models have been derived from existing service perspective, with the objective of utilising existing infrastructure, staff etc – this appears to have been a function of convenience and may not necessarily reflect best practice;
    - The response is a state-based response to a State *and* Commonwealth issue – the problem of lowered acute hospital bed throughput and access to residential aged care is unlikely to be met by Interim Care alone; and
    - By requesting acute services to propose responses to the issue of lowered bed access, there was an inherent risk of bias – seeking proposals from alternative service providers may have resulted in a significantly different approach. This does not assume that one approach is superior to the other, but that alternative approaches may have been developed if program genesis was managed in a different way.
- The program's development appears predicated on the assumption that acute wards are not the most appropriate environment for a patient to be waiting for a long term community placement.

Clearly, the development of the program was based on the need for a quick response to an urgent need, within a system that was not ideal in terms of service availability and structure. Therefore, many of the issues identified above cannot be addressed retrospectively. The presence of other strategies as part of the Hospital Demand Management Strategy indicates that Interim Care represents just one of a number of approaches aimed at reducing the supply: demand gap in acute emergency services.

#### **4.1.3 SUMMARY REMARKS**

The program logic of the Interim Care Program poses analytical challenges due to the way in which the program developed, and the relative dearth of evidence documenting its design and implementation. The analysis does, however, identify a range of evaluation issues that must be considered in order to assess the appropriateness, efficacy, efficiency and quality of the program at the client, service and system level.

Of the key program logic components discussed above, a number of summary remarks may be made. Summary comments are broadly categorised below.

### **ASSUMPTIONS UNDERPINNING THE INTERIM CARE PROGRAM**

The following assumptions appear to underpin the program. These assumptions are further considered in this evaluation.

- There was an urgent identified need for a transitional program as part of a broader Hospital Demand Management Strategy – the urgency of implementation may have reduced the level of preliminary planning supporting the program's development;
- The Interim Care Program is a pilot, and many features of the program are iterative – this is illustrated by the varied and incremental development of Interim Care models;
- The development of the Interim Care Program acknowledges the fact that the service system is not (and will not be) perfect and that demand for service is likely to continue to exceed supply;
- The State can only address part of the issue of acute - aged care transition – there is clearly a need for Commonwealth government involvement to more adequately address the issue; and
- Systemic issues regarding supply and distribution of acute, sub-acute and residential aged care services in the short term are unlikely to be addressed in the short term – significant research and planning is required to achieve the required system-level change.

### **EXPECTED OUTCOMES OF THE PROGRAM**

The principal anticipated outcomes that are expected of the program design appear to be:

- Reduction in problems of access to acute beds, sub-acute beds and ambulance bypass;
- Reduced length of stay for older people waiting for aged care placement; and
- Other service and system-level indicators.

These outcomes do not necessarily reflect individual outcomes. From an individual perspective, it is unlikely that health status improvements would be observed in the target group given their eligibility criteria. This however, may be an unintended outcome of Interim Care that should be monitored. From a social perspective, more important outcome indicators may include (for example):

- Facilitation of client choice;
- Satisfaction with level and quality of care; and
- Involvement of the client/family in care decisions.

### **POTENTIAL FOR COMPARISON**

Whilst this evaluation has been able to assess service efficiency, quality (to some extent) and effectiveness, the program logic assessment has provided the opportunity to focus on future service design and service configuration options. Some issues however, remain unclear. For example, it is unclear whether the Interim Care Program achieves better or more appropriate results than either of the following alternatives:

- More residential aged care places;
- More opportunity for convalescence;
- More acute care places;
- Re-distribution of aged care places using a different allocation method (ie revising the 100 places per 1000 population 70+);
- Re-distribution of acute care beds; and
- Additional community support services could be directed to supporting hospital discharge of Interim Care type arrangements.

These alternatives have been considered in this evaluation, although definitive answers cannot be provided at this stage.

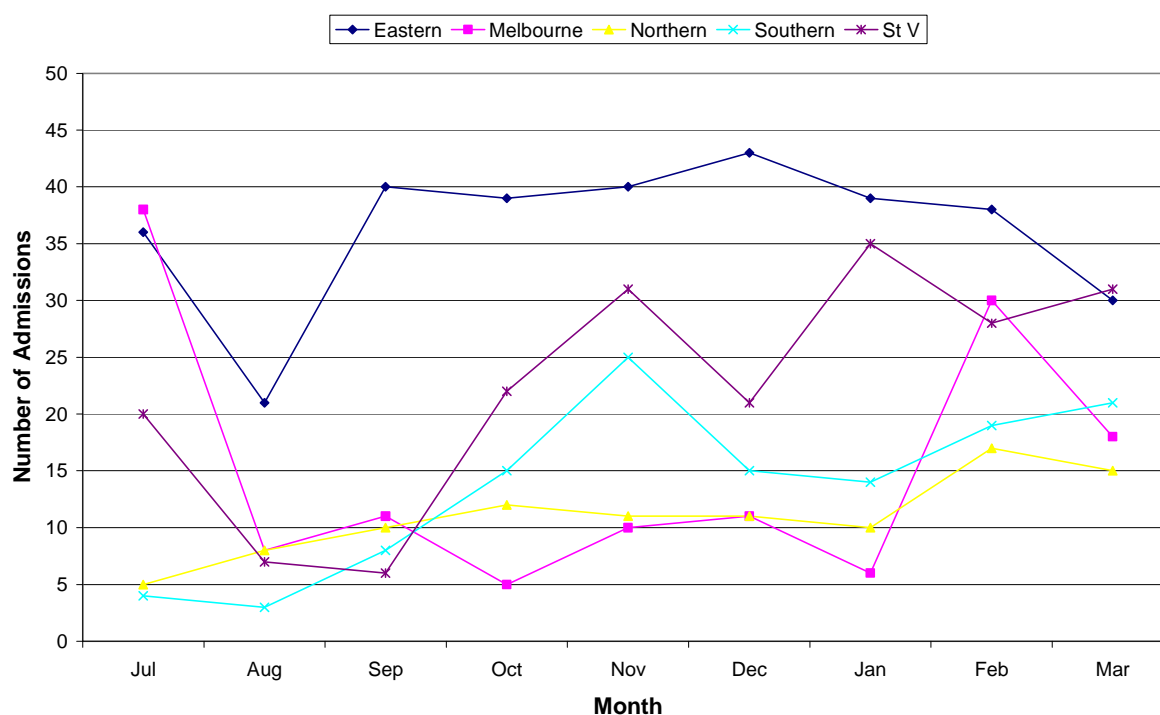
## 4.2 INTERIM CARE ACTIVITY AND PATIENT FLOWS

The analysis of the effects of the Interim Care Program on hospital systems needs to be viewed in context of the other Hospital Demand Management Strategies. A summary of these strategies is shown in Section 6.1 of this document.

### 4.2.1 OVERVIEW OF INTERIM CARE PROGRAM ACTIVITY

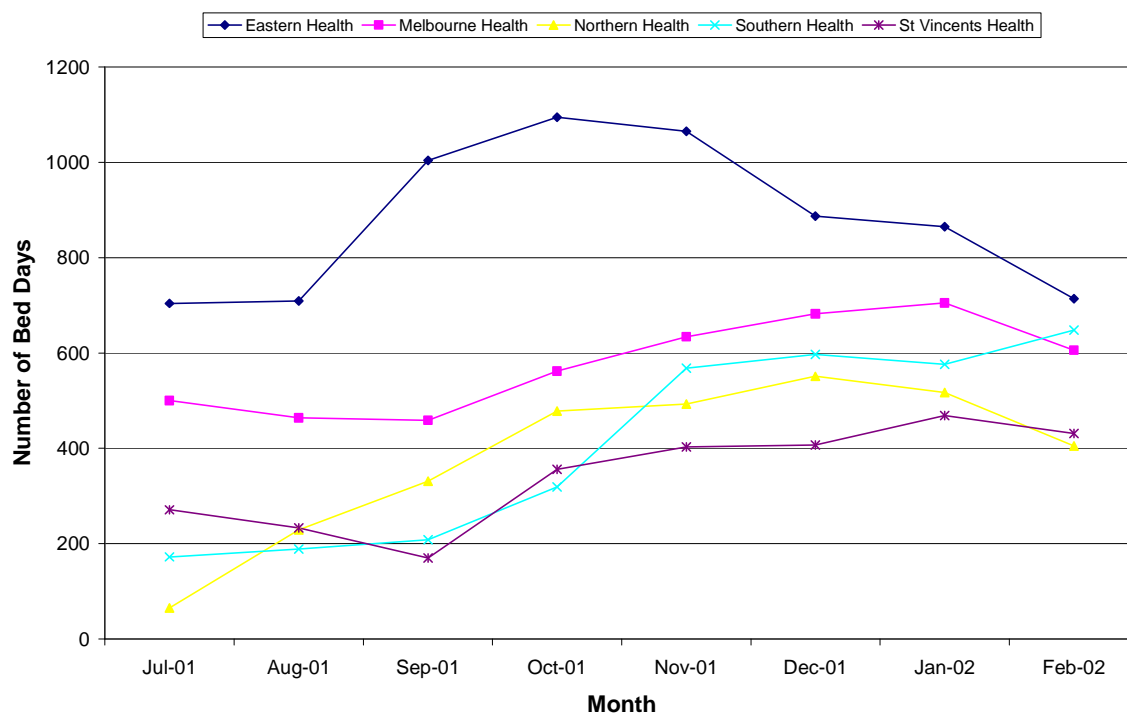
The following figures<sup>7</sup> summarise admission and bed day activity at all Interim Care locations.

Figure 4-1: Number of Admissions to the Interim Care Program by Health Service 2001-2002



<sup>7</sup> Victorian Admitted Episodes Data Set 2001-2002

Figure 4-2: Number of Interim Care Bed Days by Health Service 2001-2002



Figures 4-1 and 4-2 above show the number of admissions and the total number of bed days utilised in the Interim Care Program in the first nine months of the program's operation. There is a general increase in the number of bed days over time, reflecting the general trend of a growth in capacity of the Program.

The reduction in the number of bed days utilised in the last month of the analysis (Feb 2002) may be a function of patients having been admitted to the program but not discharged and thus not being represented on the VAED Interim Care sample. Therefore, the graph above is unlikely to be a true indicator of the number of bed days utilised in the Interim Care Program in February.

The sharp increase in the Southern Health bed day utilisation numbers in November 2001 reflects that the ward at Kingston did not open until November 12, 2001. Most of Interim Care bed days utilised prior to this date in Southern Health were arrangements with private hospitals and aged care facilities for the short-term provision of beds.

Likewise, the Interim Care ward at St Vincent's Health, Ellerslie, was not fully operational until October 2001, and the number of Interim Care bed days and admissions prior to this were low. The number of Interim Care admissions at St Vincent's increased markedly in September and October 2001 as Ellerslie came on-line.

Northern Health have had a number of models within the Interim Care Program gradually come on stream throughout late 2001 and the bed days utilised gradually increases over the nine months.

Melbourne Health generally has a relatively low number of admissions compared to the other health services, but a high number of utilised bed days. This reflects the high Interim Care average length of stay at Melbourne Health compared to the other health services.

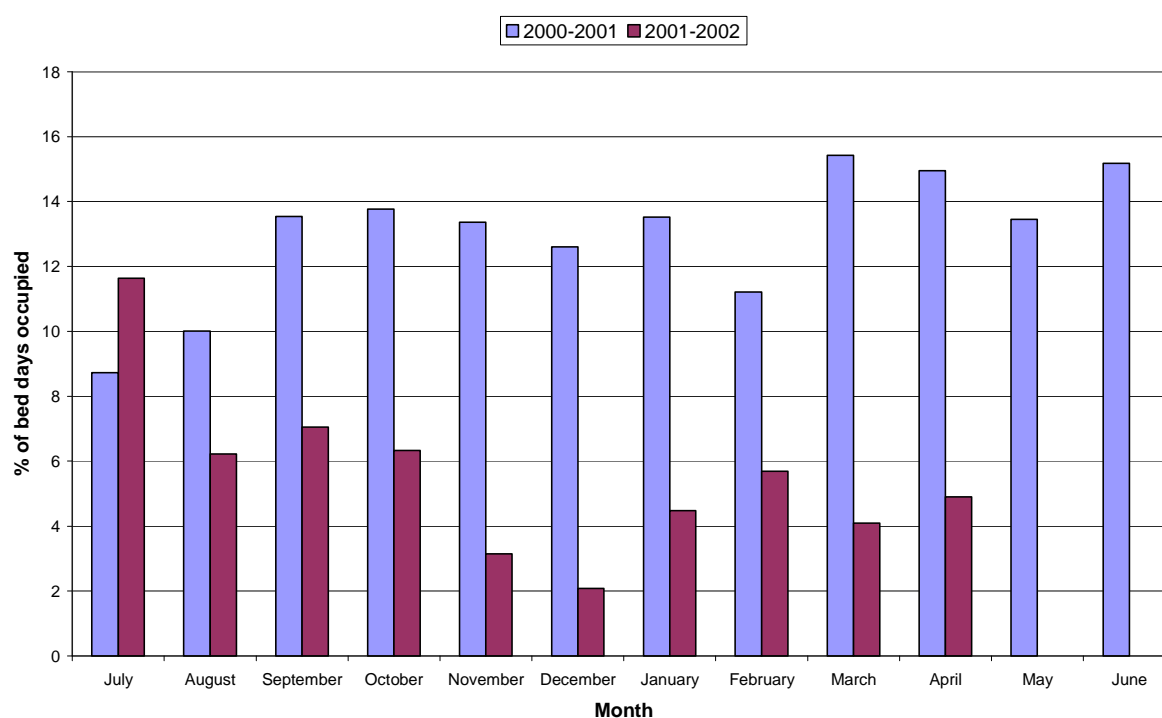
## 4.2.2 KEY PATIENT FLOW PATTERNS AND TRENDS

### RESIDENTIAL CARE OCCUPANCY IN ACUTE BEDS

A key effectiveness indicator for Interim Care relates to the numbers and usage characteristics of residential care eligible persons occupying acute care beds.

The following figures show the number, expressed as an absolute or a percentage, of acute beds by health service occupied by patients deemed eligible for residential care<sup>8</sup>. This can be utilised as a measure of the effect of the Interim Care Program on aspects of patient flow within health services. This statistic can only be used as a comparator *within* health services, not *between* health services, as the data is collected in a non-uniform method at each site.

Figure 4-3: Percentage of Acute Bed Days occupied by Patients waiting Residential Placement by Month Northern Health (Northern Hospital)<sup>9</sup>

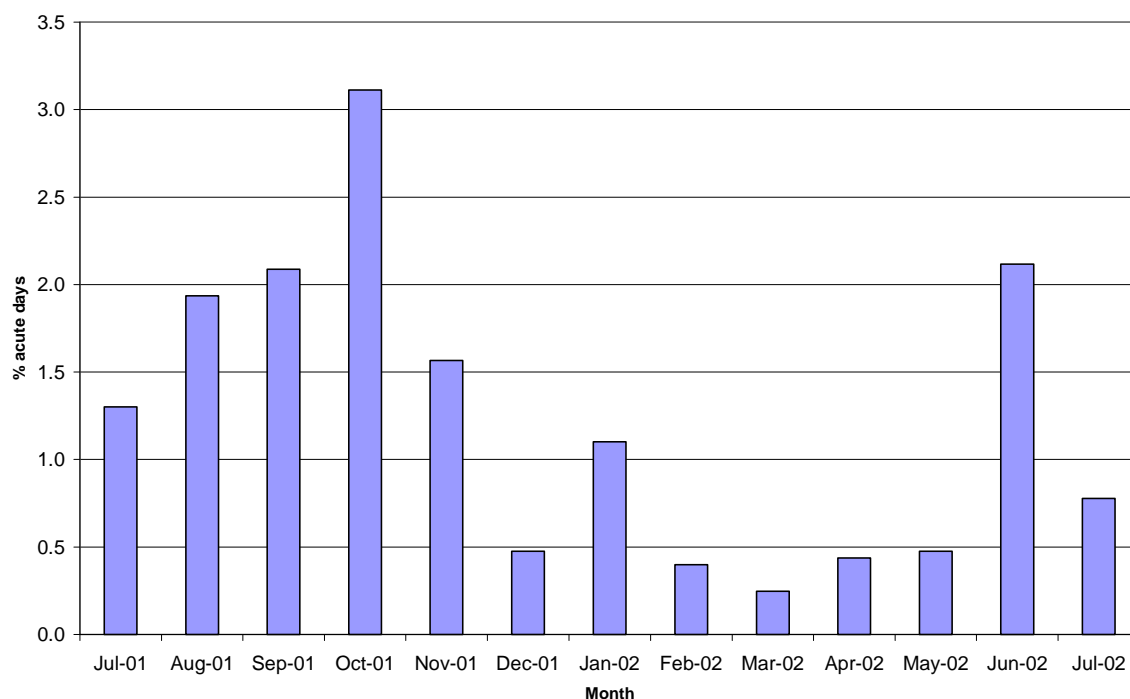


At Northern Health, there is a marked increase in the percentage of acute beds being occupied by patients eligible for residential care in August 2000 from around 8-10% to 12-14%. The increased rate of occupancy is maintained until August 2001. The rate of occupancy then reduces to a lower level of about 3-6% until the end of the available time series in April 2002. The number of acute bed days occupied by patients assessed as eligible for residential care reduced by 54% from the 2001-2002 financial year, to the first 10 months of the 2001-2002 financial year at Northern Health.

<sup>8</sup> An application to become an approved care recipient must be made on an authorised form. The Aged Care 'Application and Approval' Form (2624) was developed for this purpose and came into effect on 1 October 1997. Aged Care Assessment Teams (ACATs) undertake the assessment of people seeking care and complete this form to approve people as care recipients. To be eligible, a person must have significant care needs that can be appropriately met through the provision of a particular type of care. In the case of residential care, the person is eligible if: the person has physical, medical, social or psychological needs that require the provision of care; and those needs cannot be met more appropriately through non-residential care services.

<sup>9</sup> Northern Health Program Data

**Figure 4-4: Percentage of Acute Bed Days occupied by Patients waiting Residential Placement St Vincent's Health (St Vincent's Hospital)<sup>10</sup>**

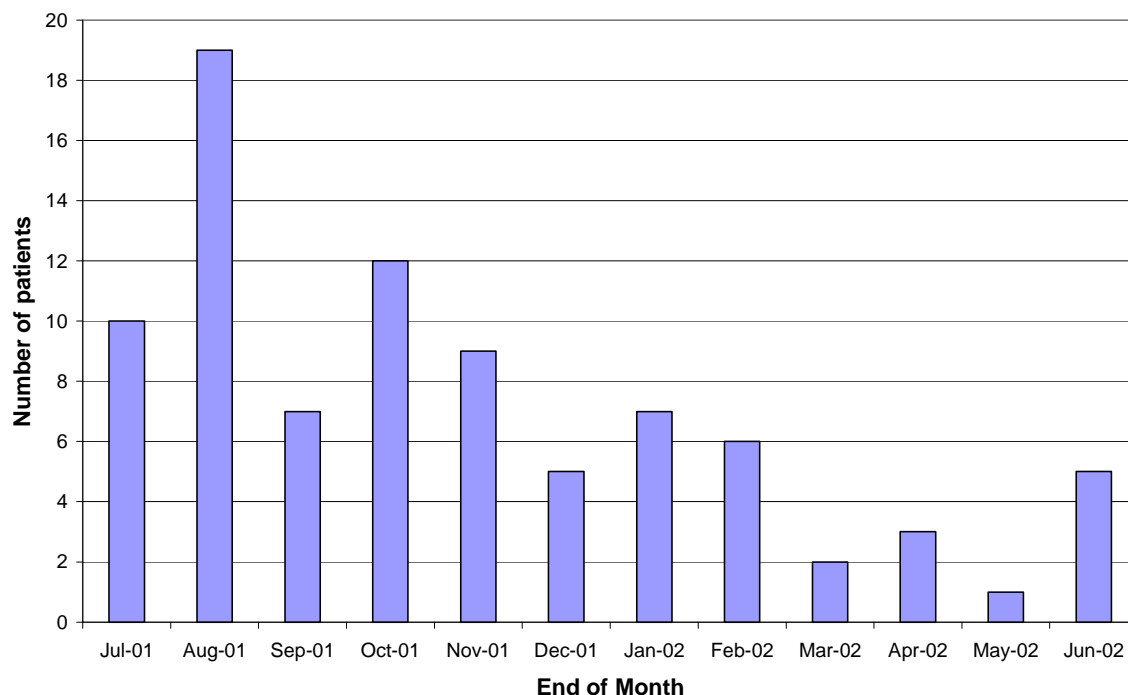


The monthly percentage of acute bed days occupied by patients eligible for residential care is shown above. Note that as the Interim Care Program came on stream in October 2001, there is a marked drop in the percentage of monthly acute bed days occupied by patients eligible for residential care.

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<sup>10</sup> St Vincent's Health Program data

**Figure 4-5: Number of Patients waiting Residential Placement at the End of Month in Acute Days Melbourne Health (Royal Melbourne Hospital)<sup>11</sup>**



This data is a snap shot on the last day of each month. It details how many patients at each respective campus (and thus the number of beds) occupied by patients awaiting residential care. Sourced from Melbourne Health Quality Indicators – Indicator 7: Access.

The data for Melbourne Health in the financial year of 2001-2002 shows a general downward trend in the number of patients deemed eligible for residential care waiting in acute beds.

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<sup>11</sup> Melbourne Health Program data

### AMBULANCE BYPASS DATA

An intended effect of Interim Care is that positive impacts on high and rising ambulance by-pass rates would be observed. The following information analyses the relationship between Interim Care and ambulance bypass rates.

Figure 4-6 Ambulance Bypass Rate (number of occasions) by month, Northern Health<sup>12</sup>

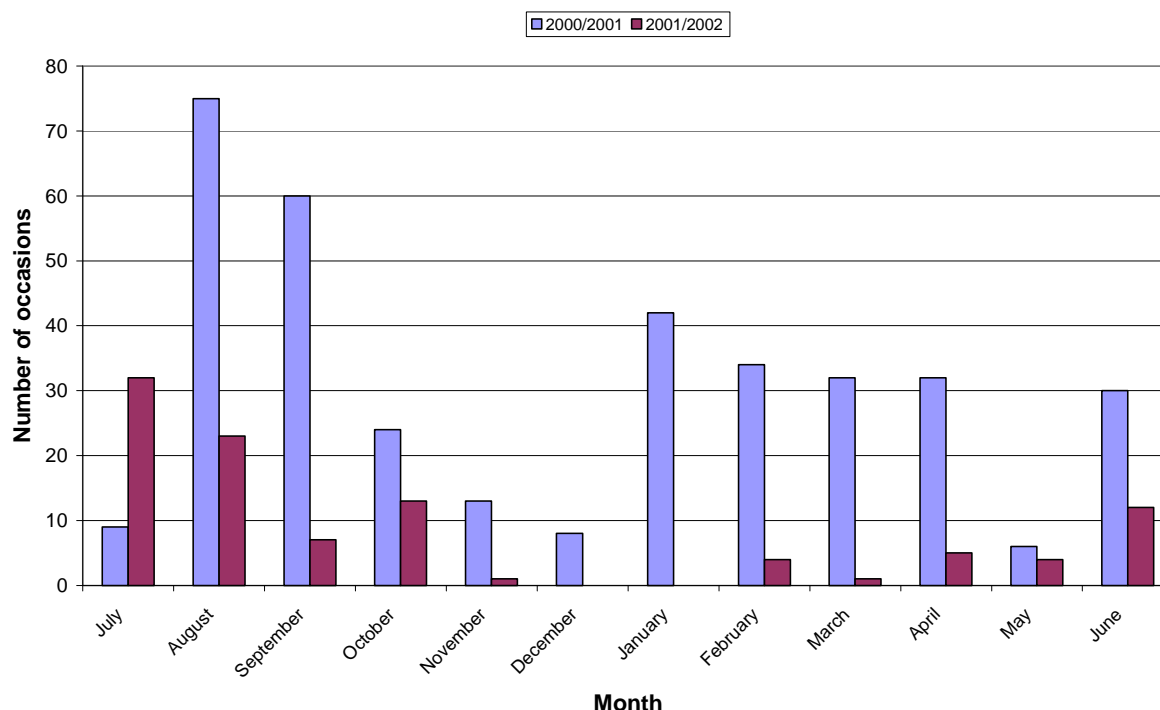


Figure 4-6 above shows the number of occasions of ambulance bypass at The Northern Hospital by month comparing the financial years 2000-2001, which was the year prior to implementation of the Interim Care Program, and the year 2001-2002. The graph shows a dramatic reduction in the number of ambulance bypass occasions in the year 2001-2002 compared to the previous twelve months. There was a total of 102 bypass occasions at The Northern Hospital in 2001-2002 compared with 365 in 2000-2001, a reduction of about 72%.

There were marked reductions in the ambulance bypass rates at all of the five health services involved in the Interim Care Programs, as shown in Appendix E. However, full attribution of the change in the ambulance bypass rate to the Interim Care Program needs to be considered in the context of other concurrent programs implemented at the health services that are also aimed at improving hospital demand performance. It is apparent however, that Interim Care is a significant explanatory factor in the observed reductions in Ambulance Bypass cases. Although Northern Health are also operating other hospital demand programs, the small number of acute beds at The Northern Hospital has resulted in the Interim Care Program having a greater marginal effect on the ambulance bypass rates.

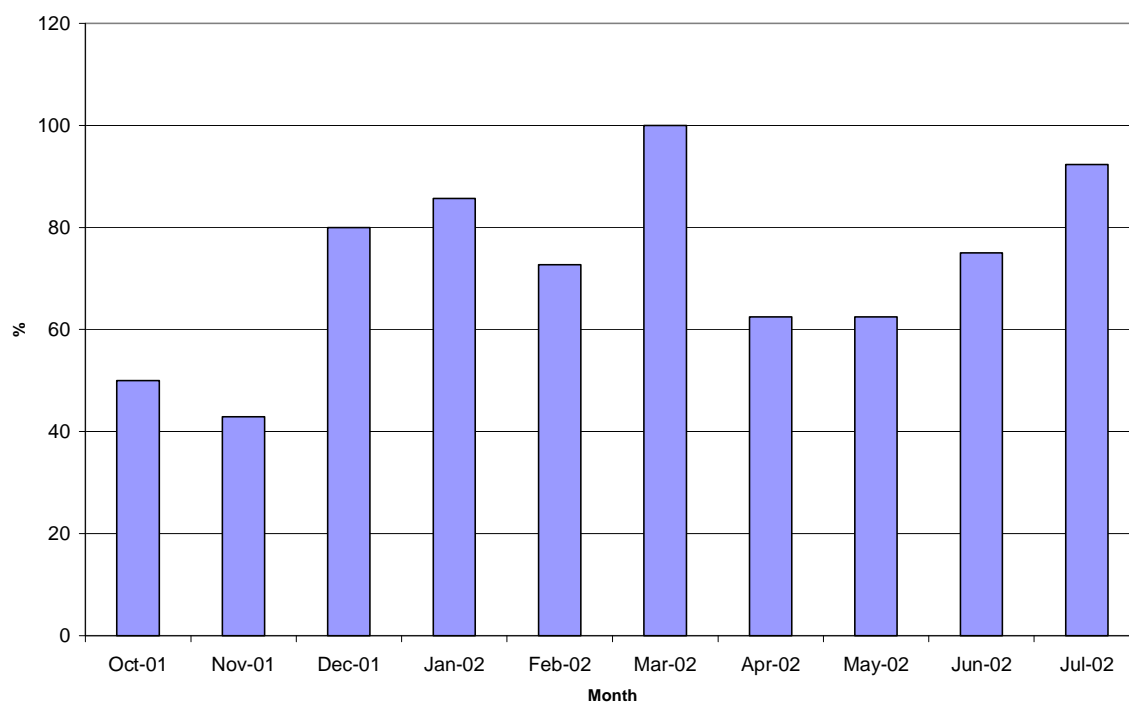
#### 4.2.3 THROUGHPUT CAPACITY OF THE INTERIM CARE PROGRAM

The throughput capacity of the Interim Care Programs refers to its ability to transfer patients from acute/subacute beds that are waiting for residential care placement. One measure of the capacity of the Interim Care Program is the number of patients admitted to the Interim Care Program expressed as a percentage of patients who were

<sup>12</sup> Department of Human Services

discharged to residential care from the health service. This statistic was only available for Eastern Health, Southern Health, and St Vincent's Health services.

**Figure 4-7: Percentage of Acute Patients assessed discharged to High Level Residential Care admitted to the Interim Care Program St Vincent's Health<sup>13</sup>**



The percentage of patients at St Vincent's Health who were discharged to high level residential care, and admitted to the St Vincent's Interim Care Program varies between 60 -100% two months after the Program commenced. Comparable time series data was not available from Eastern Health. Overall, Eastern Health discharged 482 patients to high level care via the Interim Care Program in the 2001-2002 year. This represented 40% of all high level care residential placements (total = 1,198) from the acute and subacute facilities in Eastern Health.

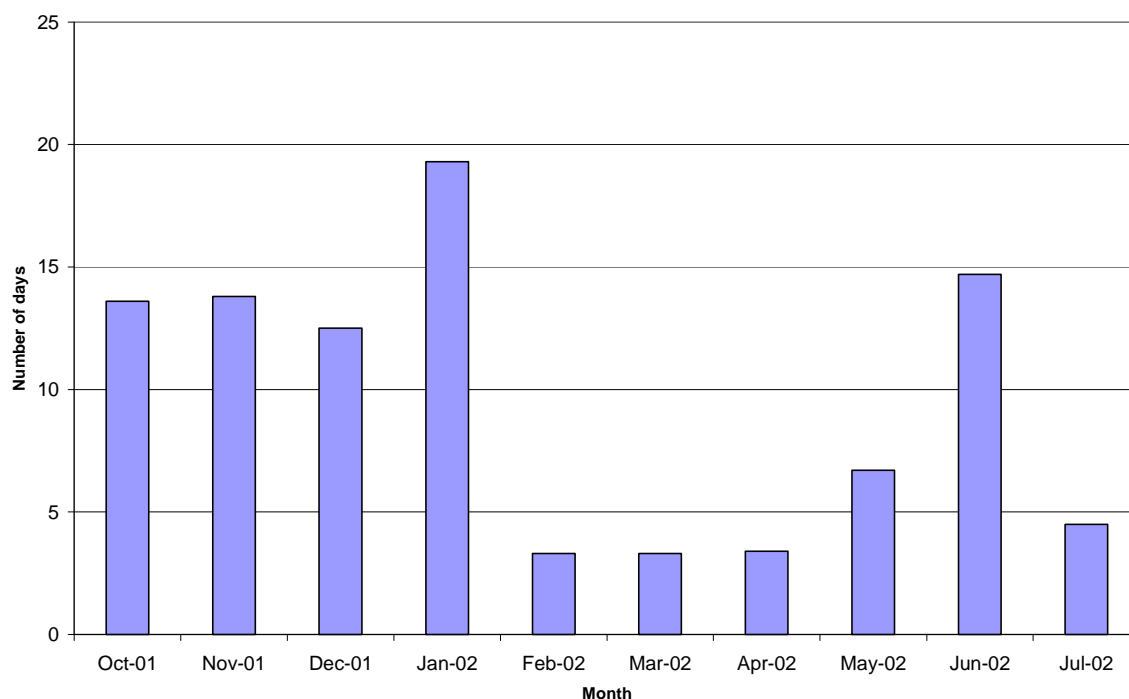
At Southern Health in the financial year 2001-2002, 195 patients were deemed eligible for residential care. Of these, 102 were admitted to the Interim Care Program. This equates to 52.3% of the total of 195 patients.

Another measure of capacity is the time difference between being assessed as medically fit for placement and actual discharge to Interim Care.

At Eastern Health, for the 2001/2002 financial year, considering patients discharged to EH-SRS1 only, 151 patients waited an average of 13.1 days. Three patients were considered outliers, with waiting times of 64, 104, and 142 days. If these patients are excluded from the analysis, the average waiting time reduces to 11.2 days. For the first six months of the year 2002, the average waiting period is 8.6 days, with 81 patients being discharged to EH-SRS1.

<sup>13</sup> St Vincent's Program data

**Figure 4-8: Average Number of Days between ACAT Assessment and Placement in the Interim Care Program St Vincent's Health<sup>14</sup>**



The same statistic can be shown for St Vincent's Hospital in a time series figure (Figure 4-8). The overall average length of time between ACAT assessment and placement in the Interim Care Program is 9.3 days since the program commenced in October 2001. There are two distinct periods in the analysis corresponding to Phase 1 of the Interim Care Program (October 2001- mid-January 2002), and Phase 2 (mid-January 2002- ). The period of Phase 2 shows a marked drop in the average time between ACAT assessment and placement in the Interim Care Program.

### 4.3 CHARACTERISTICS OF INTERIM CARE PATIENTS

The results of an analysis of the Interim Care Program's patient's demographic, age, gender, and diagnostic characteristics are outlined in this section. The data were extracted from the VAED.

#### 4.3.1 INTERIM CARE PROGRAM LOCATION AND PLACE OF RESIDENCE

**Table 4-1: Residence of Interim Care Patients by Region**

	Barwon SW	Eastern	Gippsland	Grampians	Hume	Northern	Southern	Western
Eastern Health		316	1		1	11	3	
Melbourne Health						73		53
Northern Health						95		3
St Vincent's Health	1	82		2		89	10	11
Southern Health		25					65	

<sup>14</sup> St Vincent's Program data

Through record linkage methods, 841 of the 887 patients on the VAED database could be linked to their Victorian Local Government Area.

The analysis demonstrates that the vast majority of Eastern Health Interim Care patients reside in the Eastern Region catchment, and Northern Health Interim Care patients reside in the Northern Region. Melbourne Health Interim Care patients live in Northern or Western Regions. St Vincent's Interim Care patients reside in the Eastern and Northern Regions, with minor representations from the Southern and Western Regions. Southern Health Interim Care patients reside mostly in the Southern Region with a third of patients from the Eastern Region.

As expected, there is minimal representation from patients from the five rural regions of Barwon, Gippsland, Grampians, Hume, and Loddon-Mallee. Loddon-Mallee had no patients in the Interim Care Program.

### 4.3.2 DIAGNOSIS PROFILE OF INTERIM CARE PATIENTS

#### PRINCIPAL DIAGNOSIS

The principal diagnosis is defined as the '...diagnosis established to be chiefly responsible for occasioning the patient's episode of care in hospital' (DHS 2001). For each patient episode, up to 25 secondary ICD-10-AM<sup>15</sup> diagnoses are available for reporting. In the VAED dataset pertaining to Interim Care, the maximum number of reported secondary diagnoses was six. The secondary diagnoses are not rated in level of importance.

The Australian Refined Diagnosis Related Groups (AR-DRGs) classification of the two most common groupings in the Interim Care Program is shown below<sup>16</sup>.

AR-DRG	Descriptor	Percentage of patients in the Interim Care Program
Z64A	Other Factors Influencing Health Status Age>79	60.5%
Z64B	Other Factors Influencing Health Status Age<80	32.1%

AR-DRGs Z64A and Z64B account for 92.6% of the AR-DRGs in the VAED dataset. The combined frequency with which these DRGs occurred was reasonably consistent across the five health services in the scope of the evaluation.

Of the 534 Interim Care patients, with the AR-DRG being Z64A, 533 had the principal diagnosis of Z751. Of the 284 Interim Care patients, with the AR-DRG being Z64B, 283 had the principal diagnosis of Z751. The descriptor for the diagnosis Z751 is "Person awaiting admission to adequate facility elsewhere".

The Z751 diagnosis, like the Z64A and Z64B AR-DRGs, does not provide an adequate profile of the types of disorders that are prevalent in the Interim Care patients.

<sup>15</sup> Defining and classifying medical and health related terms are the core activities of the National Centre for Classification in Health (NCCCH), which has recently published the Australian modification of the *International statistical classification of diseases and health related problems, 10th revision (ICD-10-AM)*<sup>15</sup>. The National Centre for Classification in Health (NCCCH) is located at the University of Sydney, and Queensland University of Technology. ICD-10-AM was introduced in July 1998 in hospitals and other healthcare agencies in New South Wales, the Australian Capital Territory, Victoria and the Northern Territory. It was introduced in the remaining States in July 1999. The Australian Bureau of Statistics has been recording cause of death using the classification system *International classification of diseases (ICD)* and its predecessors since 1907.

<sup>16</sup> VAED

































































































