Hospital Admission Risk Program (HARP): Establishing the base for preventive services

Evaluation report: July 2001 to June 2003

Victoria
The Place To Be

Hospital Admission Risk Program (HARP): Establishing the base for preventive services

Evaluation report: July 2001 to June 2003

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Foreword

It is with great pleasure that I present the report – Hospital Admission Risk Program (HARP): Establishing the Base for Preventive Services, Evaluation Findings July 2001 to June 2003.

HARP targets people with health needs who frequently use the hospital system on an unplanned basis, often with chronic and complex conditions. As a community we need to respond better to their situation, and at the same time efficiently use the services that only hospitals can provide.

This is going to take a collaborative effort right across the continuum of care - hospital based services, community based services and GPs. It also means that HARP is a major undertaking for the diverse range of stakeholders involved.

Fundamental to HARP is health system change. While there is some evidence for what preventive strategies are likely to be effective, we really need to know how best to manage people with clearly identified risks of hospitalisation. HARP is based on action research projects, trialling new ways of caring for and managing people at high risk of hospitalisation.

By evaluating the outcomes of the program, we can work out what are the most effective ways to meet the health needs of these people. Without evaluating outcomes, there would be little point in HARP. What this report sets out is an initial cut of the findings that will (or will not) have implications for the strategic development of the health system across the board.

This document is the first formal report produced by BearingPoint on HARP activities. We don't have all the answers, and never will; we should, however, be able to report incremental gains in insight. On this basis we can improve the treatment of those in the community with chronic and complex conditions – and, importantly, the confidence that they have in their care.

The enthusiasm for change across the health care sector has been humbling, and has been a major driver in the success that HARP already is. All those involved should rightly feel proud of their contribution and achievements.

HARP will play a major role in informing future policy developments across the health sector, nationally and internationally. To all those involved, in the program and in evaluating its initial impact, our very sincere thanks as a community are due.

John Funder
Chairman
HARP Reference Group

This document is supported by a technical discussion paper that provides information about the methodology for the analysis presented in this report. The technical document is available to be down loaded at www.health.vic.gov.au/hdms/harp

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This report was compiled by BearingPoint Australia. We would particularly like to acknowledge the following team members for their contribution.

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The HARP Evaluation Subcommittee have both informed and supported the development of the HARP evaluation and the production of this report.

The evaluation subcommittee is chaired by Professor Jeremy Anderson of the University of Melbourne. Professor Jeremy Anderson's effort and leadership are valued. The Evaluation Subcommittee has the following members:

Dr George Braitberg	Austin Health
Professor Don Campbell	Monash University
Dr Jan Davies	National Institute of Clinical Studies
Ms Fiona Hearn	Royal District Nursing Service
Dr Peter Hunter	St Vincent's Health
Dr Craig White	Austin Health
Ms Sue Daly	Hospital Demand Management, Department of Human Services
Mr Ian Coverdale	Hospital Demand Management, Department of Human Services
Ms Catherine Lavars	Hospital Demand Management, Department of Human Services

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Dr Vijaya Sundararajan extensively worked in developing the algorithm to produce the linked dataset. This linked dataset developed by the Department, enables de-identified hospital utilisation data for individual patients to be analysed across hospitals, and has increased the depth of potential analyses within the HARP evaluation. Mr Neil Powers provided assistance in access to this dataset. Ms Catherine Nguyen coordinated data access for BearingPoint and assisted in the development of the data definitions.

Glossary

condition 'caused' events	Events that are caused by the condition of interest
condition 'involved' events	Events that involve treatment or investigation of the condition of interest but are not caused by it
condition 'uninvolved' events	Events that are not caused by, and do not involve treatment or investigation of, the condition of interest
cluster	A collection of projects/individuals that share a common feature or attribute
the Department	Department of Human Services
emergency admission	An unscheduled admission to hospital, excluding maternity admissions that do not come through the emergency department. Emergency admissions include: • general practitioner referred admission or self-referral for acute illness (such as unstable diabetes, chronic cardiac failure, pneumonia, asthma attack) • admission for injuries received in a home accident • admission for initial treatment of injuries received in an industrial or a road accident • admission for threatened miscarriage before 20 weeks. Emergency admission data are sourced through the Victorian Admitted Episode Dataset (VAED).
emergency presentation	An attendance at an emergency department that is reported on the Victorian Emergency Minimum Dataset (VEMD)
HARP	Hospital Admission Risk Program
HARP hospitals	Hospitals on which HARP projects have a direct impact
hospital emergency use	Both emergency department presentations and hospital emergency admissions
occupied bed days	The number of days of stay for patients/clients who were formally admitted for an episode
re-presentation	Presentation to an emergency department following a previous presentation, classified according to whether the two presentations occurred within 24 hours of each other, seven days or 28 days. Re-presentation data are sourced through VEMD.
service system functioning	The operation and performance of the service system

Executive summary

The Hospital Admission Risk Program (HARP) is the 'prevention' component of the Hospital Demand Management Strategy that the Victorian Government funds in response to increased demand pressure on public hospitals. The implementation of a diverse range of models and interventions is expected to improve people's health outcomes and reduce the preventable use of emergency departments and inpatient services.

This is the first formal public report on HARP that the Department of Human Services has released. It is based on HARP specific evaluation activities, drawing on information provided by projects funded in the 2001–02 and 2002–03 funding cycles, and routinely collected system level data (July 1999 to June 2003). While the evaluation is in its infancy, some projects have been operational since 2001–02 and their influence on hospital emergency demand is being recognised within the localised service system. These impacts are logically expected to filter through to service system level data. The challenges over the coming evaluation period will be to identify the relative effectiveness of the various models and interventions, consider the opportunities for project development, and provide relevant decision making information to the Department.

HARP projects comprise a range of prevention initiatives that have the potential to affect hospital emergency demand. In many cases, the initiatives are continually evolving, and the developmental nature of models and interventions is apparent within projects' core components. The projects target both service system functioning and service provision activities, with particular emphasis on patients who are high current users of hospital emergency services. The number of patients presenting to emergency departments on four or more occasions (within one financial year) rose by 18 per cent between 1999–2000 and 2002–03. Typically, these patients have chronic and complex conditions, with many having one or more conditions–frequently, chronic obstructive pulmonary disease (COPD), chronic heart failure (CHF) and/or diabetes.

The mix of the 74 operational projects considered for this report include nine projects with an emergency department care coordination orientation, seven projects with an acute primary care liaison focus, 13 target patients with COPD, 11 target people with CHF, nine target people with diabetes and 11 projects focusing on falls prevention. Other projects reflect innovative models and approaches to the management of people with chronic and complex needs. Project initiatives are generally supported by an evidence base that they are likely to help reduce emergency demand pressure.

Project teams have expended substantial effort in establishing their models and interventions within local contexts to help attain HARP outcomes and provide a basis for measuring the effectiveness of the projects. Projects have become 'live' at various stages over the reporting period, depending on the complexity of the model/intervention being implemented and the characteristics of the underlying local services system. They have generally taken longer than anticipated to become operational, for several key factors, including the difficulty in recruiting suitable staff, the time required to establish collaborative arrangements across sectors, the time required to develop the components and support mechanisms of the model/intervention, and the need to upskill existing clinicians to implement the model.

Much effort has been made to address the evaluation reporting requirement and develop a project evaluation approach. This work has included providing preliminary information on project activities and experiences to date. Project teams have had varying degrees of capacity to complete the evaluation tasks; overall, their efforts have been admirable. Over time, the data that the project teams are collecting will enable a direct assessment of each project's specific contribution to HARP objectives.

Project teams are self-reporting improvements in patient outcomes and reductions in emergency demand pressure at the local level. However, most have been unable to translate project activities into observed changes within the routinely collected system level data. At the system level, a review of indicators for relevant HARP hospitals indicated that demand pressure on emergency departments continues to increase in absolute terms, but that the relative rate of increase over time has slowed. Year-on-year data on emergency department presentations indicate increases by 3.2 per cent (1999–2000 to 2000–01), 7 per cent (2000–01 to 2001–02) and 4.4 per cent (2001–02 to 2002–03). Signs of a reduced rate of growth between 2001–02 and 2002–03 are also evident for the number of individuals presenting to emergency departments, re-presentations for any reason within seven days and 28 days, emergency department presentations and subsequent admissions, total emergency admissions and emergency related occupied bed days.

It is too early to attribute these changes directly to HARP projects, although the projects are doubtlessly contributing to reducing demand pressure. The magnitude of the HARP effect is as yet unascertainable and will be investigated further through the evaluation. In the interim, the Department, health services and projects have opportunities to enhance their contribution to HARP. To inform this process key issues that have emerged through the initial HARP evaluation activities are identified in this report. These issues relate to:

- project staffing, establishment/implementation, governance, design and funding
- project evaluation
- information systems
- brokerage
- service system pressure
- project models/interventions.

1 Introduction

The Hospital Admission Risk Program (HARP) is part of the Hospital Demand Management Strategy that the Victorian Government funds in response to increased demand pressure and capacity constraints on the Victorian public health system.[1] The strategy incorporates components that target both the demand and supply sides of health system pressure, by simultaneously expanding and improving the underlying capacity and operation of the service system (supply side), while reducing or preventing avoidable and/or inappropriate use (demand side). HARP is the strategy's 'prevention' component, focusing on reducing demand pressure by preventing the avoidable use of hospitals. It has been allocated $150 million over a four year period (2001–02 to 2004–05).[2]

HARP has funded a variety of strategies and initiatives that endeavour to reduce hospital emergency demand. These strategies and initiatives include innovative models of care and practices that improve the management of patients, increase the capacity of the health care system, enhance the continuity of care, improve communication and cohesion within the service system, and improve overall resource efficiency. Appendix A summarises the conceptual framework underpinning HARP.

This report is the evaluators' (BearingPoint) first public report on HARP based on HARP-specific evaluation activities.[3] The evaluation is exploratory in nature, seeking to inform future decision making of both the Department of Human Services and providers generally within the health care system. The evaluative emphasis is on providing information about which models and interventions work, and under what circumstances, to assist in the development of approaches to better manage hospital emergency demand. The evaluation is based on (1) information that project teams report via a series of templates and (2) available system level data. The project teams have been assisted in developing project-specific indicators for analysing and interpreting each project as an individual entity and as a contributor to the HARP objectives.

HARP has completed three funding rounds; while new projects are still at the planning or establishment stage, some projects have been operational for more than two years, and their impacts on hospital demand pressure should be helping to improve the overall performance of the service system. This report is based on projects funded in 2001–02 and 2002–03, from project reported information and routinely collected hospital system level data (July 1999 to June 2003). Information on the methods used to derive the system level data is outlined in the *HARP evaluation technical discussion paper*,[4] which has been separately provided to the Department.

This report provides:

- a synopsis of HARP projects and a review of hospital emergency use from the perspective of HARP hospitals
- an overview of the preliminary HARP clusters (projects/individuals that share a common feature and/or attribute)
- a summary of the key issues that have emerged through the initial evaluation activities to inform the development of HARP projects within the HARP context.

2 HARP impact in HARP hospitals

2.1 Overview

This chapter presents a synopsis of HARP projects and a review of hospital emergency use from the perspective of HARP hospitals (the metropolitan and regional hospitals that HARP projects affect). Its general purpose is to provide a broad context to the mix and characteristics of projects, and a basis for understanding the relative contribution of HARP projects to changing hospital emergency demand. Descriptive temporal data are presented in terms of emergency department presentation, re-presentation and admission variables.

HARP has been functioning for more than two years, and project activity to prevent or change the characteristics of hospital emergency demand should be starting to have an impact on the system. The extent by which this impact is identifiable is somewhat qualified by the number of patients who projects 'manage' and the time in which each project has been truly operational ('live'). It is not the intention in this report, therefore, to attribute any changes in the emergency demand variables to HARP; rather, the aim is to present descriptive statistics on what is happening within the system, so as to attribute any changes to HARP in subsequent evaluation reports.

2.2 HARP project summary

2.2.1 Project numbers

This report is based primarily on 74 operational projects identified in 2001–02 and 2002–03. These projects were not funded exclusively through the HARP funding stream, and some projects are included in the evaluation for their congruence with the HARP conceptual framework. In total, 85 projects have been considered in relation to the HARP evaluation:

- 43 projects selected in 2001–02
- 42 new projects established in 2002–03, of which one has ceased
- 18 individual projects that merged to form eight 'merged projects'.

The following table provides a breakdown of projects according to the health service or agency through which the project is funded.

Table 2.1: HARP projects

	Funding rounds		Number of merged projects		
	Number of 'new' projects, 2001–02	Number of 'new' projects, 2002–03	(*number of projects that merged*)	Number of projects that have ceased	Total 'current' projects
Austin Health	3	3	1 (2 projects)	–	5
Ballarat Health Service	2	1	–	–	3
Barwon Health	3	1	–	–	4
Bayside Health	4	1	1 (2 projects)	–	4
Bendigo Health Care Group	1	1	1 (2 projects)	–	1
Dianella Community Health	–	1	–	–	1
Djerriwarrh Health Service	–	1	–	–	1
Eastern Health	5	5	–	–	10
Goulburn Valley Health	2	1	1 (2 projects)	–	2
Latrobe Regional Health Service	2	1	1 (2 projects)	–	2
Melbourne Health	4	5	1 (3 projects)*	–	7*
Melbourne Division of General Practitioners	–	1	–	–	1
Northern Health	3	6	1 (2 projects)	1	7
Northern Division of General Practitioners	–	1	–	–	1
Peninsula Health	3	3	–	–	6
Plenty Valley Community Health Inc.	–	1	–	–	1
Royal District Nursing Service	–	1	–	–	1
Southern Health	2	2	–	–	4
St Vincent's Health	4	4	1 (3 projects)	–	6
Western Health	5	1	–	–	6
Women's and Children's Health	–	1	–	–	1
Total	**43**	**42**	**8 (18 projects)**	**1**	**74**

* Three projects that merged into a single project continued to report separately, so they have been included as individual projects within this report where appropriate.

2.2.2 Project models/interventions

There is considerable variety in the design and activities of HARP projects, while the commonalities include:

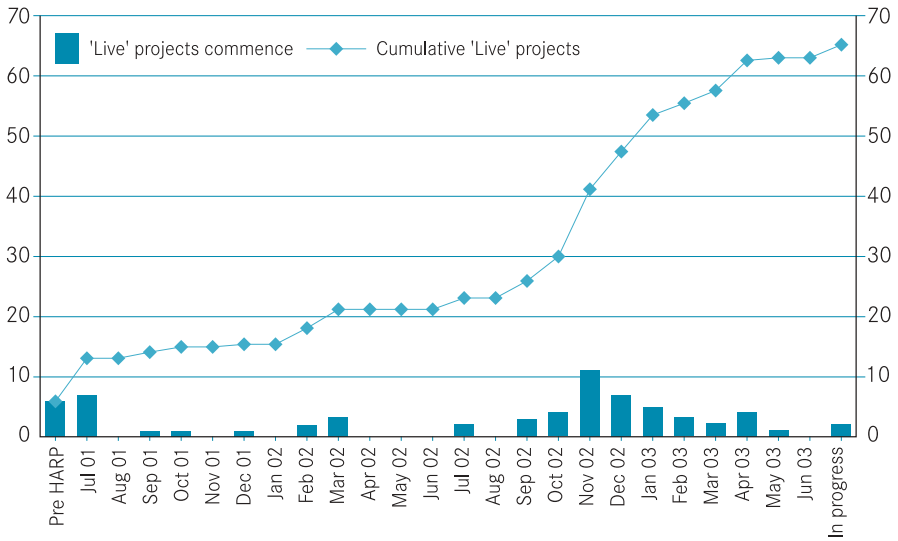
- 11 projects focusing on falls prevention
- nine projects with a primary orientation of emergency department care coordination
- seven projects with a principal orientation of acute/primary care liaison
- 13 projects targeting people with chronic obstructive pulmonary disease (COPD)
- 11 projects targeting people with chronic heart failure (CHF)
- nine projects targeting people with diabetes.

Appendix B provides three examples to demonstrate the diversity of project approaches.

2.2.3 Project commencement

There has been considerable variation in the effective 'live'[5] date of projects (the date on which projects commenced activities that would have an impact on hospital emergency demand). The following figure presents a summary of the month in which the projects included in this report became 'live' (excluding 10 falls clinic projects that were managed differently within the evaluation and two projects that reported within one reporting template).

Figure 2.1: Effective HARP projects' 'live' dates



2.3 HARP hospitals–hospital emergency use

This section presents information on a range of hospital emergency use variables: emergency department presentations, re-presentations and emergency admissions for HARP hospitals for 1999–2000 to 2002–03. The following figure lists the hospitals included within the analysis.

Figure 2.2: Hospitals included as HARP hospitals

Angliss Hospital	Monash Medical Centre
Austin and Repatriation Medical Centre	Latrobe Regional Hospital
Ballarat Base Hospital	Northern Hospital
Bendigo Hospital	Royal Children's Hospital
Box Hill Hospital	Royal Melbourne Hospital
Dandenong Hospital	St Vincent's Hospital
Frankston Hospital	Sunshine Hospital
Geelong Hospital	The Alfred
Goulburn Valley Hospital	Western Hospital
Maroondah Hospital	

As stated, the intention is not to attribute changes in hospital emergency use to HARP (as will be considered in subsequent evaluation reporting), but to (1) describe temporal changes for each analysis, so as to understand the health care system environment within which HARP projects were established and (2) provide a 'baseline' context for the evolving and dynamic service system. While there is the opportunity to begin to consider the 'HARP effect' (the impact of HARP on hospital emergency demand), any such inferences need to be considered relative to the proportion of patients on whom HARP projects have an impact, the time frame of the project's intervention (that is, the 'live' phase) and any confounding factors.

Temporal HARP hospital data are provided for:

- emergency department presentations
- emergency department re-presentations
- emergency department presentations and subsequent admissions
- emergency admissions.

2.4 Emergency department presentations

This section presents data for HARP hospitals in relation to:

- emergency department presentations
- individuals attending emergency departments
- emergency department discharge destinations.

2.4.1 HARP hospital emergency department presentations

The total number of HARP hospital emergency department presentations rose from 659,397 in 1999–2000 to 759,577 in 2002–03, representing a 15.2 per cent increase. The following table presents the number of emergency department presentations for 1999–2000 to 2002–03 for three defined aged cohorts. For each age cohort, the number of emergency department presentations increased between 1999–2000 and 2002–03, by 11.7 per cent for those aged under 15 years, 14.5 per cent for those aged 15–64 years and 22.2 per cent for those aged 65 years and over.

Table 2.2: Emergency department presentations, by age cohort

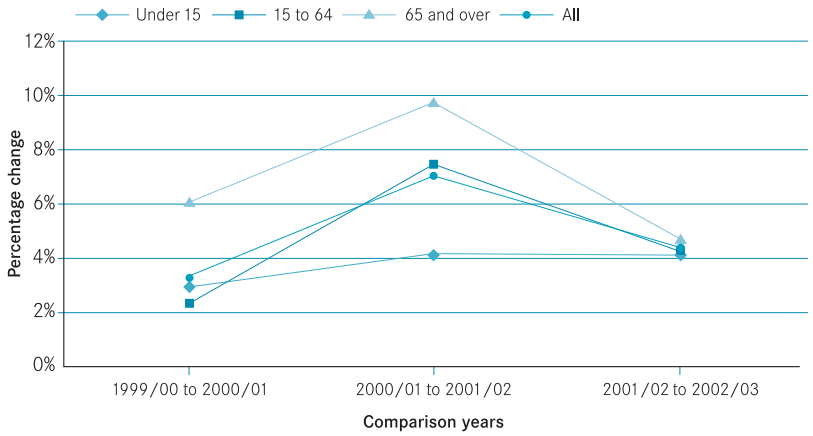
Age cohort	1999–2000	2000–01	2001–02	2002–03
Under 15 years	172,019	177,137	184,464	192,065
15–64 years	365,721	374,118	401,427	418,867
65 years and over	121,657	129,012	141,701	148,645
Total	659,397	680,267	727,592	759,577

The annual percentage change in emergency department presentations indicates an increase in the total number of emergency department presentations each year between 1999–2000 and 2002–03. The rate of increase varied between periods and across age cohorts. Overall, the trend was characterised by:

- increases in the number of emergency department presentations across all age cohorts in each period
- wide variation in the rate of increase in emergency department presentations across age cohorts within the first two comparison periods (1999–2000 to 2000–01 and 2000–01 to 2001–02), with the rate of increase converging between 2001–02 and 2002–03
- a higher rate of increase in emergency department presentations by people aged 65 years and over than by 'all' people in each comparison period
- a reduction in the rate of increase in emergency department presentations between 2001–02 and 2002–03 across all age cohorts.

The following figure presents the annual percentage change in emergency department presentations. Between 1999–2000 and 2000–01, the number of emergency department presentations rose across all age cohorts. Overall, the number increased by 3 per cent. The percentage increase in emergency department presentations was highest among people aged 65 years and over (6 per cent). This cohort accounted for approximately 19 per cent of total emergency department presentations, but contributed 35 per cent to the increase in total presentations. It thus contributed to the rise in the rate of emergency department presentations for 'all' patients exceeding that for the cohort aged under 15 years and the cohort aged 15–64 years.

Figure 2.3: Annual percentage change in emergency department presentations, by age cohort

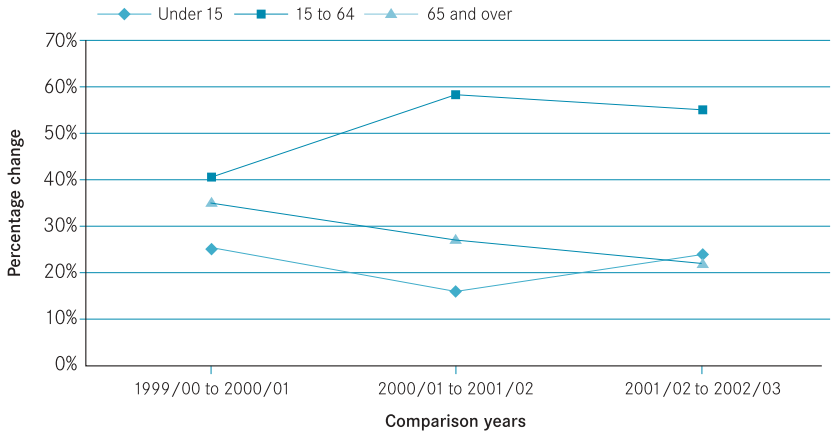


Between 2000–01 and 2001–02, the rate of increase in the number of emergency department presentations accelerated for all cohorts. Overall, emergency department presentations increased by 7 per cent, driven by increases in both the cohort aged 65 years and over (up 9.8 per cent) and the cohort aged 15–64 (up 7.4 per cent). The latter increase was more significant in its impact on the overall increase, because this cohort accounted for 55 per cent of total presentations.

A new trend emerged between 2001–02 and 2002–03: the number of emergency department presentations continued to increase, but at a lower rate of 4.4 per cent. The rate for the cohort aged under 15 years remained relatively stable, exhibiting only modest increases; the rates for the cohorts aged 15–64 years and 65 years and over fell from previous highs, slowing to 4.3 per cent and 4.9 per cent respectively. The closing of the spread of the overall annual percentage increases in emergency department presentations indicated a possible stabilisation of increases in emergency department presentation across age cohorts.

The following figure summarises the increase in each age cohort's number of presentations to HARP hospital emergency departments as a proportion of the total annual increase. Year on year, the proportion of additional presentations to emergency departments within the cohort aged 65 years and over fell from 35 per cent to 22 per cent. Over the same time, the proportion of additional presentations by the cohort aged 15–64 years increased from 40 per cent to 55 per cent.

Figure 2.4: Proportion of additional presentations to HARP hospital emergency departments, by age cohort



2.4.2 Individual patients attending HARP hospital emergency departments

The number of individual patients presenting to HARP hospital emergency departments increased by 14 per cent (or 60,985 additional individuals) between 1999–2000 and 2002–03. The following table presents the number of individual patients presenting to emergency departments for 1999–2000 to 2002–03.

Table 2.3: Individual emergency department presenters, by age cohort

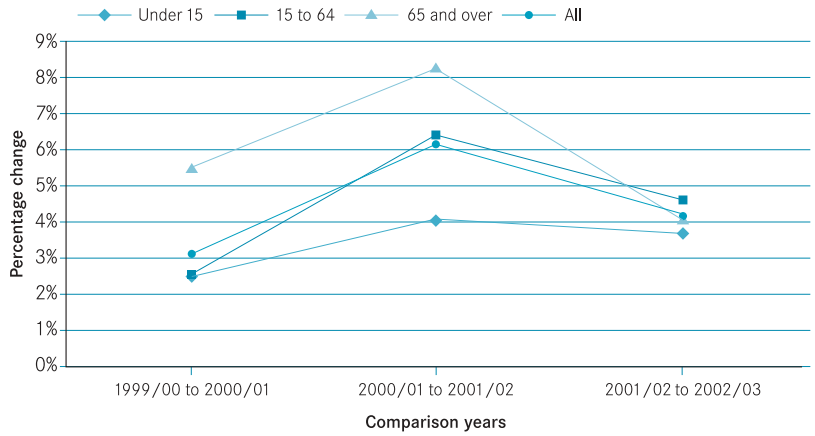
Age cohort	1999–2000	2000–01	2001–02	2002–03
Under 15 years	108,791	111,567	116,044	120,328
15–64 years	248,851	255,047	271,462	283,709
65 years and over	77,195	81,411	88,172	91,785
Total	434,837	448,025	475,678	495,822

People aged 15–64 years represented approximately 57 per cent of people presenting to HARP hospital emergency departments across each of the four years, while the cohort aged under 15 years represented approximately 24–25 per cent and the cohort aged 65 years and over represented 18–19 per cent.

Annualised trends

The annual percentage change in individual patients presenting to HARP hospital emergency departments was consistent with the trend in emergency department presentations. While the number of people presenting increased each year, the rate of increase fell from peak increases between 2000–01 and 2001–02. The following figure summarises the annual percentage change in the number of individual patients who presented at emergency departments.

Figure 2.5: Annual percentage change in the number of individual patients who presented at emergency departments, by age cohort



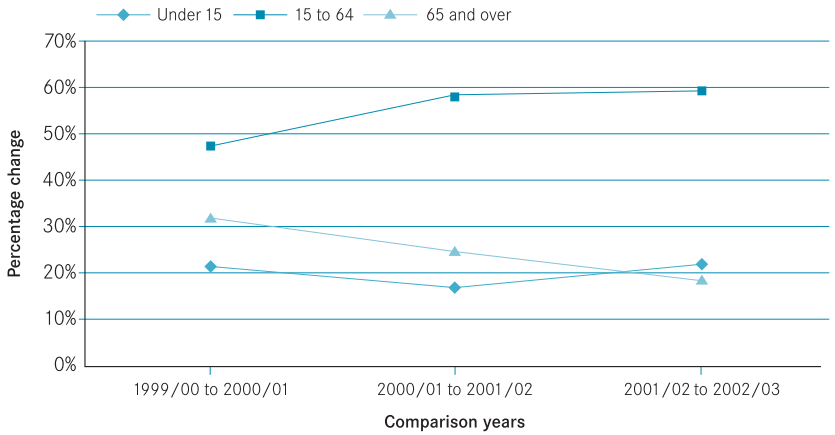
Between 1999–2000 and 2000–01, the number of individual patients presenting to emergency departments increased across all age cohorts. The largest percentage increase occurred within the cohort aged 65 years and over–5.5 per cent, representing an additional 4216 patients. In absolute terms, the cohort aged 15–64 years contributed the highest number of additional patients–6196, representing a 2.5 per cent increase.

Between 2000–01 and 2001–02, both the number and percentage change of individual patients rose across all age cohorts. The cohort aged 65 years and over exhibited the highest percentage increase–8.3 per cent, representing 6761 additional patients. Within the context of the 6.2 per cent increase in the number of patients across all cohorts, the cohort aged 15–64 years increased by 6.4 per cent, representing 16,415 additional patients. Given the high proportion of people presenting within this cohort (57 per cent), any increase has a significant impact on the total increase for all cohorts. The cohort aged under 15 years increased by 4 per cent, representing 4477 additional patients.

Between 2001–02 and 2002–03, the number of individuals presenting to emergency departments increased across all age cohorts, but at a lower rate than in the previous period. The cohort aged 65 years and over increased by 4.1 per cent (3613 additional patients), the cohort aged 15–64 years by 4.5 per cent (12,247) and the cohort aged under 15 years increased by 3.7 per cent (4284).

The following figure provides a summary of each age cohort's increase in the number of individuals presenting to HARP hospital emergency departments as a proportion of the total annual increase. Year on year, the proportion of additional patients presenting to emergency departments within the cohort aged 65 years and over fell from 32 per cent to 18 per cent. At the same time, the proportion of additional patients from the cohort aged 15–64 years increased from 47 per cent to 61 per cent.

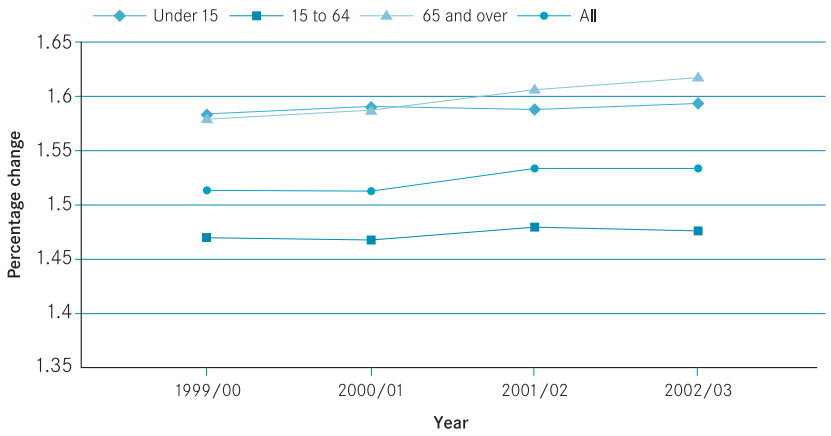
Figure 2.6: Proportion of additional patients presenting to HARP hospital emergency departments



Presentations per patient

The ratio of the number of presentations to emergency departments to the number of individual patients presenting to emergency departments indicates that the number of presentations per patient increased each year. The number of presentations per presenting patient within the cohort aged 65 years and over increased between 1999–2000 and 2002–03 from 1.58 to 1.62. The cohort aged 15–64 years exhibited some fluctuation, with the number of presentations per presenting individual falling in 2000–01, rising in 2001–02 and falling in 2002–03. Overall, the number of presentations per patient rose slightly, from 1.47 in 1999–2000 to 1.48 in 2002–03.

Figure 2.7: Emergency department presentations per presenting patient, by age cohort



2.4.3 Emergency department diagnosis–top 10

The following table details the top 10 emergency department presenting diagnoses for 2002–03.

Table 2.4: Top 10 emergency department diagnoses, 2002–03

Rank	Code	Description	Presentations
1	R074	Chest pain, unspecified	26,345
2	R104	Other and unspecified abdominal pain	25,008
3	B349	Viral infection, unspecified	21,587
4	A09	Diarrhoea and gastroenteritis of presumed infectious origin	15,084
5	S619	Open wound of wrist and hand part, part unspecified	12,442
6	S628	Fracture of other and unspecified parts of wrist and hand	11,214
7	J069	Acute upper respiratory infection, unspecified	10,695
8	N390	Urinary tract infection, site not specified	10,179
9	Z099	Follow up examination after unspecified treatment for other condition	10,003
10	L989	Disorder of skin and subcutaneous tissue, unspecified	9,516

Compared with the top 10 emergency department diagnoses in the preceding three years, the top three ranking diagnoses remained the same in 2002–03, although their order varied.

2.4.4 Emergency department discharge destination

Between 1999–2000 and 2002–03, changes in the frequency of discharge destination from HARP hospital emergency department presentations were mostly consistent with the increased number of emergency department presentations. The dominant discharge destination was 'home', which represented around 67 per cent of the discharge destinations within each year of data. The number of discharges to the 'ward' remained relatively constant over the four years (range: 153,030 to 158,676), but fell as a proportion of discharge destinations (from 23.5 per cent in 1999–2000 to 20.9 per cent in 2002–03), seemingly being replaced by short stay observation units. The following table details the discharge destination of people who attended HARP hospital emergency departments.

Table 2.5: Discharge destination following HARP hospital emergency department presentations

Discharge destination	1999–2000	2000–01	2001–02	2002–03
Residential care facility	0	416	632	487
Home	442,169	458,481	490,875	513,166
Ward	154,646	153,030	158,213	158,676
Short stay observation unit	0	2	9,620	14,093
Another hospital campus	18,793	20,045	18,745	19,482
Left at own risk, after treatment started	5,841	6,673	5,597	6,367
Left before being seen by doctor	35,401	38,363	40,591	43,860
Died within emergency department	905	887	1,007	885
Dead on arrival	1,641	2,169	1,926	1,978
Mental health residential facility	0	201	386	583
Total	**659,396**	**680,267**	**727,592**	**759,577**

2.5 Emergency department re-presentations

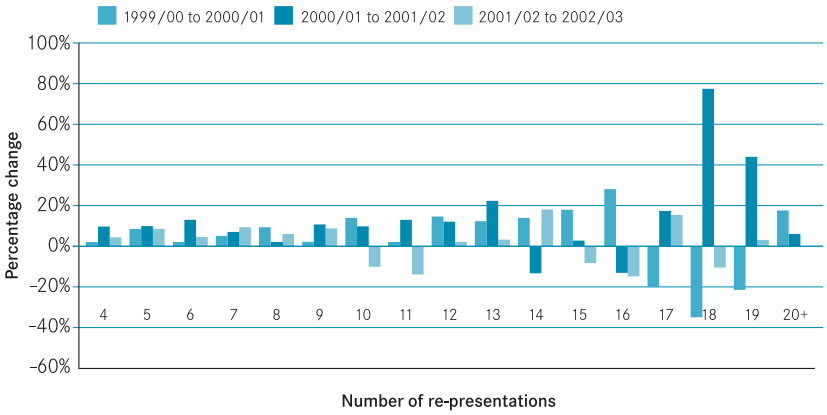
This section presents data for HARP hospitals in relation to:

- re-presentation frequency
- re-presentation for 'any reason'
- re-presentations for the 'same reason'.

2.5.1 Re-presentation frequency

In 1999–2000, 21,965 patients had four or more emergency department presentations; in 2002–03, this had increased by 18 per cent to 25,961 patients. The following figure presents the annual percentage change in the number of people that presented four or more times to HARP hospital emergency departments.

Figure 2.8: Annual percentage change in the number of emergency department re-presentations by individual patients



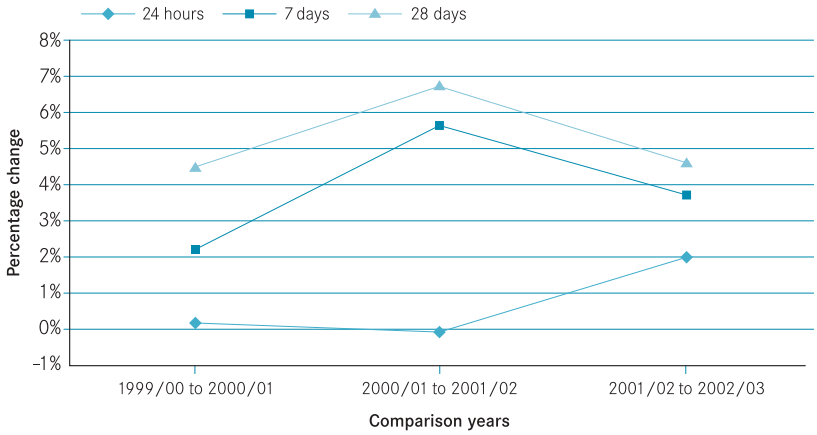
There was no consistent trend between comparison years for the number of emergency department re-presentations:

- The number of individuals representing rose each year, with the rate of increase falling between 2001–02 and 2002–03 for individuals who had made four, five, six, nine, 12 and 13 re-presentations.
- The number of individuals who had made 10, 11, 15, 16 and 18 re-presentations fell between 2001–02 and 2002–03.

2.5.2 Re-presentation for 'any reason'

The number of re-presentations for 'any reason' to HARP hospital emergency departments rose by 2 per cent between 1999–2000 and 2002–03 for re-presentations within 24 hours (from 29,796 to 30,436), by 12 per cent for re-presentations within seven days (from 72,512 to 81,205) and by 17 per cent for re-presentations within 28 days (from 117,942 to 137,491). The following figure summarises the annual percentage change in the number of HARP hospital emergency department re-presentations for 'any reason'.

Figure 2.9: Annual percentage change in HARP hospital emergency department re-presentations for 'any reason', by time between presentations

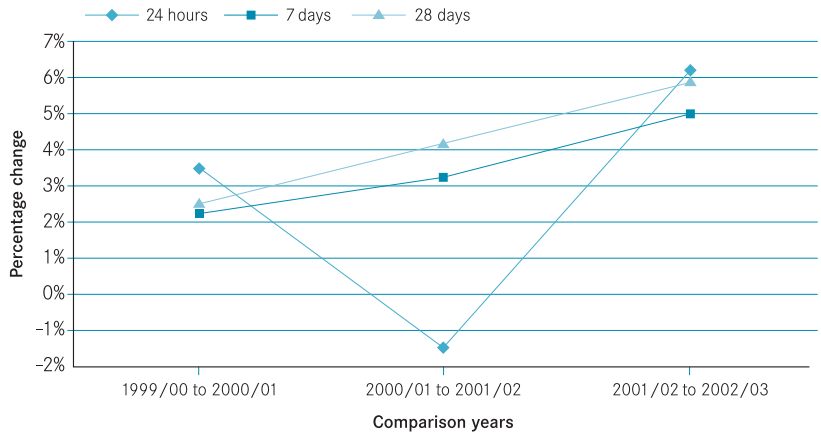


Re-presentations within 24 hours for 'any reason' remained relatively constant. The data indicate a small increase between 1999–2000 and 2000–01, a slight reduction between 2000–01 and 2001–02, and a 2 per cent increase between 2001–02 and 2002–03. The number of re-presentations within seven days for 'any reason' increased each year. The rate of increase peaked at 5.6 per cent between 2000–01 and 2001–02 and fell to 3.8 per cent between 2001–02 and 2002–03. The number of re-presentations within 28 days for 'any reason' similarly increased each year: the rate of increase peaked at 6.8 per cent between 2000–01 and 2001–02 and fell to 4.5 per cent between 2001–02 and 2002–03.

2.5.3 Re-presentation for the 'same reason'

Between 1999–2000 and 2002–03, the number of re-presentations to HARP hospital emergency departments for the 'same reason' increased by 8 per cent for re-presentations within 24 hours (from 7591 to 8200), by 11 per cent for those within seven days (from 18,098 to 20,045) and by 13 per cent for those within 28 days (from 27,422 to 30,994). The following figure presents the annual percentage change in the number of HARP hospital emergency department re-presentations for the 'same reason'.

Figure 2.10: Annual percentage change in HARP hospital emergency department re-presentations for the 'same reason', by time between presentations



Re-presentations within 24 hours for the 'same reason' increased by 3.3 per cent between 1999–2000 and 2000–01, but fell by 1.5 per cent between 2000–01 and 2001–02, before increasing by 6.1 per cent between 2001–02 and 2002–03. The number of re-presentations within seven days for the 'same reason' rose each year at an increasing rate–2.2 per cent between 1999–2000 and 2000–01, 3.2 per cent between 2000–01 and 2001–02, and 5.0 per cent between 2001–02 and 2002–03. The number of re-presentations within 28 days for the 'same reason' also rose each year at an increasing rate: 2.5 per cent, 4.2 per cent and 5.8 per cent in the three years respectively.

2.6 Emergency department presentation and subsequent admission

This section presents data for HARP hospitals in relation to emergency department presentations that resulted in subsequent admission to the same hospital.

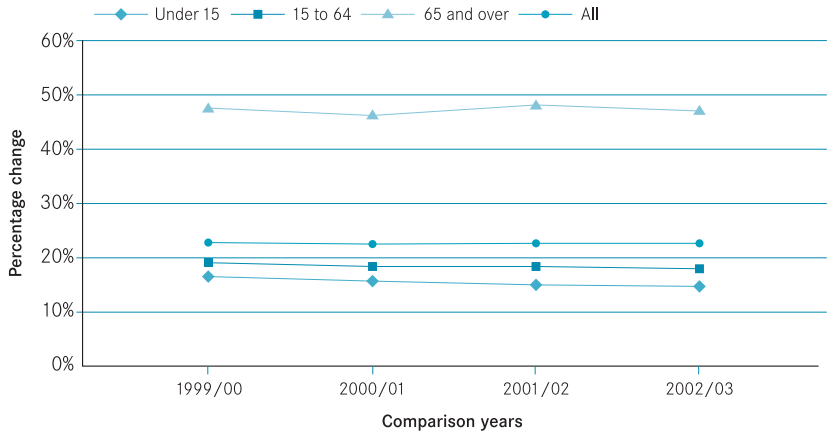
2.6.1 Emergency department presentation and subsequent admission

Emergency department presentation and subsequent admission is defined according to emergency department presentation and by whether the patient was admitted to the same hospital. Between 1999–2000 and 2002–03, the number of emergency department presentations and subsequent admissions increased by 11.6 per cent (from 154,573 to 172,479). However, there was notable variation in the patterns of change for the age cohorts between 1999–2000 and 2002–03:

- For the cohort aged under 15 years, the number of emergency department presentations and subsequent admissions fell by 1.5 per cent (from 28,277 to 27,866).
- For the cohort aged 15–64 years, the number rose by 8.4 per cent (from 68,168 to 73,876).
- For the cohort aged 65 years and over, the number rose by 21.7 per cent (from 58,128 to 70,737).

The following figure presents each age cohort's proportions of all HARP hospital emergency department presentations that resulted in admission.

Figure 2.11: Frequency of admission to the same hospital following HARP hospital emergency department presentation, by age cohort

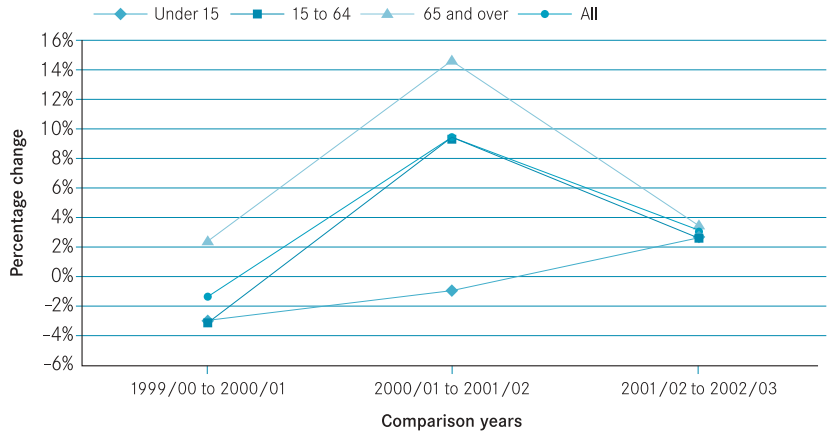


The following is a summary of the data across the four years:

- The rate of admission for 'all' patients was approximately 22–23 per cent.
- For the cohort aged under 15 years, 15–16 per cent of emergency department presentations resulted in an admission.
- For the cohort aged 15–64 years, 18–19 per cent of emergency department presentations resulted in an admission.
- For the cohort aged 65 years and over, 46–48 per cent of emergency department presentations resulted in an admission.

The following figure presents each cohort's annual percentage changes in HARP hospital emergency department presentation and subsequent admission

Figure 2.12: Annual percentage change in HARP hospital emergency department presentation and subsequent admission, by age cohort



Between 1999–2000 and 2000–01, reductions in the number of subsequent admissions from emergency department presentation occurred for all age cohorts except the cohort aged 65 years and over. For the cohort aged under 15 years, this trend continued into 2001–02, before increasing between 2001–02 and 2002–03. For the cohort aged 15–64 years, the trend increased between 2000–01 and 2001–02, and also between 2001–02 and 2002–03, but at a lower rate in the latter period.

For the cohort aged 65 years and over, the number of subsequent admissions from emergency department presentation increased each year, with a relatively small increase of 2 per cent between 1999–2000 and 2000–01, jumping to 15 per cent between 2000–01 and 2001–02, and falling to 4 per cent between 2001–02 and 2002–03. Overall, there has been a convergence in the rate of increase across all cohorts between 2001-02 and 2002-03.

2.7 Emergency admissions

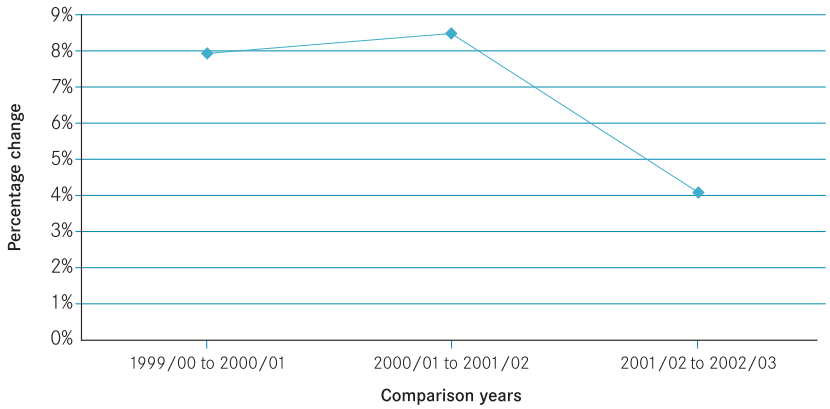
This section presents data for HARP hospitals–sourced through the Victorian Admitted Episode Dataset (VAED)–in relation to:

- emergency admissions
- emergency admissions for COPD, CHF or diabetes
- emergency admissions–occupied bed days
- emergency admissions–discharge destination.

2.7.1 Emergency admissions from all sources

The number of emergency admissions to HARP hospitals increased each year, from 243,584 in 1999–2000 to 296,619 in 2002–03–an increase of 22 per cent. While the absolute number of emergency admissions increased, the rate of increase varied. The following figure presents the annual percentage change in the number of emergency admissions.

Figure 2.13: Annual percentage change in HARP hospital emergency department admissions



Between 1999–2000 and 2000–01, the number of emergency admissions rose by 7.9 per cent. This trend remained relatively consistent between 2000–01 and 2001–02, when emergency admissions increased by 8.5 per cent. Between 2001–02 and 2002–03, however, the rate of growth in emergency admissions fell noticeably, down by 4 per cent.

2.7.2 Emergency admissions for COPD, CHF or diabetes

Preliminary cluster analysis (chapter 3) was used to determine the membership of admitted patients within the following three cohorts: COPD, CHF and diabetes. The following tables detail the emergency admissions for each cohort:

- the number of patients within each cohort who had an emergency admission
- the number of admissions classified as:
  - being caused by the condition;
  - involving but not caused by the condition (that is, involving investigation or therapeutic treatment)
  - being unrelated to the condition
- the number of admissions per patient.

Table 2.6: Emergency admissions profile for people with COPD

	1999–2000		2000–01		2001–02		2002–03	
Number of COPD cohort patients who had an emergency admission	10,249		12,267		13,424		14,697	
	Total	**Per patient**	**Total**	**Per patient**	**Total**	**Per patient**	**Total**	**Per patient**
Number of COPD caused emergency admissions	8,488	0.828	9,263	0.755	9,743	0.726	10,615	0.722
Number of emergency admissions involving COPD	5,110	0.499	4,093	0.334	3,895	0.290	3,977	0.271
Number of emergency admissions unrelated to the patient's COPD	5,678	0.554	10,553	0.860	13,546	1.009	15,165	1.032
Total number of emergency admissions for COPD cohort	19,276	1.881	23,909	1.949	27,184	2.025	29,757	2.025

Patients within the COPD cohort had fewer emergency admissions per patient each year that were caused by or involved COPD, and more that were for reasons unrelated to COPD.

Table 2.7: Emergency admissions profile for people with CHF

	1999–2000		2000–01		2001–02		2002–03	
Number of CHF cohort patients who had an emergency admission	15,218		18,967		22,257		23,628	
	Total	**Per patient**	**Total**	**Per patient**	**Total**	**Per patient**	**Total**	**Per patient**
Number of CHF caused emergency admissions	7,854	0.516	8,179	0.431	8,728	0.392	8,268	0.350
Number of emergency admissions involving CHF	10,502	0.690	9,890	0.521	10,363	0.466	10,354	0.438
Number of emergency admissions unrelated to the patient's CHF	9,276	0.610	17,958	0.947	23,986	1.078	27,242	1.153
Total number of emergency admissions for CHF cohort	27,632	1.816	36,027	1.899	43,077	1.935	45,864	1.941

Patients within the CHF cohort had fewer emergency admissions per patient each year that were caused by or involved CHF, and more that were for reasons unrelated to CHF.

Table 2.8: Emergency admissions profile for people with diabetes

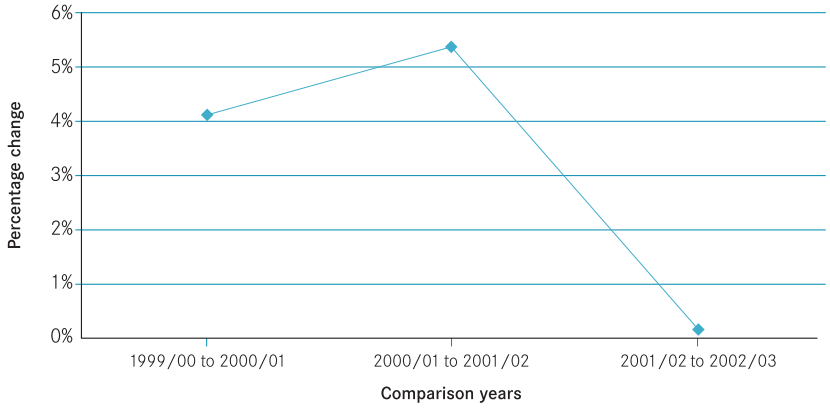
	1999–2000		2000–01		2001–02		2002–03	
Number of diabetes cohort patients who had an emergency admission	9,905		15,075		18,750		21,939	
	Total	**Per patient**	**Total**	**Per patient**	**Total**	**Per patient**	**Total**	**Per patient**
Number of diabetes caused emergency admissions	3,687	0.372	5,484	0.364	5,821	0.310	5,924	0.270
Number of emergency admissions involving diabetes	8,266	0.835	10,740	0.712	12,240	0.653	15,037	0.685
Number of emergency admissions unrelated to the patient's diabetes	5,090	0.514	10,585	0.702	15,823	0.844	18,816	0.858
Total number of emergency admissions for diabetes cohort	17,043	1.721	26,809	1.778	33,884	1.807	39,777	1.813

Patients within the diabetes cohort had fewer emergency admissions per patient each year that were caused by or involved diabetes, and more that were for reasons unrelated to diabetes.

2.7.3 Emergency admissions–occupied bed days

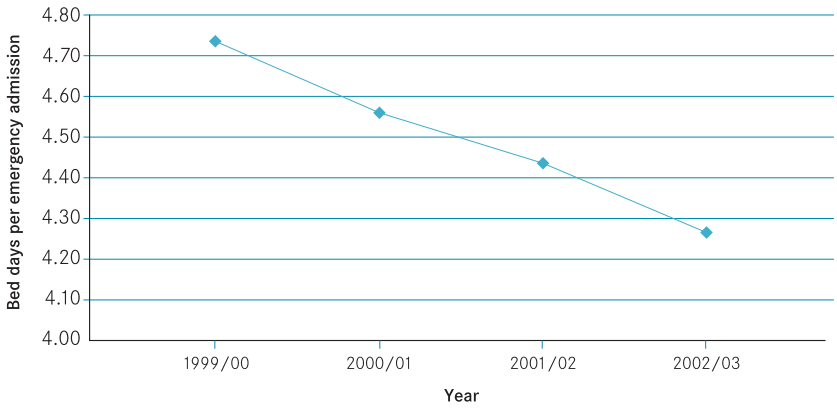
Between 1999–2000 and 2002–03, the number of hospital bed days relating to emergency admissions increased by 10 per cent, as illustrated in the following figure. The number increased each year, by 4.0–5.5 per cent in the first two comparison years and by a low 0.1 per cent between 2001–02 and 2002–03.

Figure 2.14: Annual percentage change in occupied bed days for HARP hospital emergency admissions



While bed days were increasing for emergency admissions, the average length of stay for emergency admission decreased. The average length of stay decreased from 4.73 days per admission in 1999–2000 to 4.27 days per admission in 2002–03, as illustrated in the following figure.

Figure 2.15: Average length of stay for HARP hospital emergency admissions



2.7.4 Emergency admissions–patient discharge destination

The following table provides a breakdown of emergency admission discharge destinations for patients admitted to HARP hospitals.

Table 2.9: Emergency admission discharge destination from HARP hospitals, by number and percentage of total emergency admissions

	1999–2000		2000–01		2001–02		2002–03	
Discharge destination	**Number**	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Aged care residential facility	3,485	1	3,485	1	3,732	1	3,486	1
Death	6,483	3	6,492	2	7,191	3	7,211	2
Left against medical advice	2,189	1	2,508	1	2,424	1	2,497	1
Mental health residential facility	115	0	102	0	166	0	183	0
Other formal separation	570	0	591	0	656	0	612	0
Other hospital or care centre	26,871	11	29,497	11	32,027	11	35,146	12
Private accommodation/ home	201,000	83	216,745	82	234,155	82	241,878	82
Statistical discharge*	2,871	1	3,463	1	4,770	2	5,606	2

* Refers to 'changes in Care Type within this hospital, the code in Separation Type is the same code as the Care Type of the new episode (that is, the episode that started as this episode finished)'.[6]

2.8 Summary of the key observations within data for HARP Hospitals

The preceding sections highlight the following points:

- The number of HARP hospital emergency department presentations rose by 15.2 per cent between 1999–2000 and 2002–03.
- Annual percentage increases in the number of presentations to HARP hospital emergency departments were highest for the cohort aged 65 years and over, with this number rising by over 22 per cent between 1999–2000 and 2002–03.
- In absolute terms, the highest number of additional people presenting to HARP hospital emergency departments was within the cohort aged 15–64 years.
- Both the number of individuals presenting to HARP hospital emergency departments and the average number of presentations per presenting patient rose between 1999–2000 and 2002–03.
- Each year, around 67 per cent of people who presented to a HARP hospital emergency department were discharged 'home'.
- The number of patients re-presenting to HARP hospital emergency departments (for both 'any reason' and the 'same reason') within seven days and within 28 days increased each year.
- For the cohort aged 65 years and over who presented to a HARP hospital emergency department, 46–48 per cent had a subsequent admission.
- The rate of increase in emergency admissions slowed from a peak of around 8 per cent between 1999–2000 and 2001–02, to 4 per cent between 2001–02 and 2002–03.
- The number of emergency admission related occupied bed days rose by only 0.1 per cent between 2001–02 and 2002–03.
- The number of occupied bed days per emergency admission fell in each of the years assessed.

2.9 Self-reported project experiences

In their August 2003 reports, project teams identified factors that had facilitated and hindered project processes, and the key lessons from their experiences of implementation. The projects involved a diversity of project models and interventions, different start dates and varying local context. Not surprisingly, the projects also varied in their identified facilitators, hinderers and lessons. Some project teams even identified particular factors as facilitators where other projects identified those factors as barriers.

The process of identifying key themes across project experiences is problematic for several reasons:

- Project teams did not necessarily provide exhaustive lists in each category, so lack of reporting may not necessarily imply that a specific factor was/was not an issue for the project.
- Project teams often did not provide a detailed rationale for their classification of a particular issue as a barrier, facilitator or lesson.
- Variation among the projects in terms of their implementation trajectory clearly skewed the project teams' perception of issues–for example, project teams initiated in 2001–02 tended to be less likely than those initiated in 2002–03 to identify establishment issues.
- The content of the reports was not objectively derived (for example, through external evaluation) but had passed through a number of filters–of which any might have resulted in subjective censorship of information–before final presentation. Anecdotal information provided to the evaluators indicated such censorship did occur in some cases.

Nevertheless, it is possible to provide a preliminary synthesis of project implementation experiences across the following key themes.

2.9.1 Project staffing

While several project teams reported that having highly skilled staff had been an important project facilitator, others identified difficulties in recruiting suitably qualified staff. Delays in recruitment slowed the speed with which many project teams could achieve operational readiness; consequently, these project teams had less time to demonstrate the effectiveness of their projects.

Staffing problems were exacerbated by staff resignation, necessitating more recruitment and either further delaying project development or increasing the workload of existing staff. The negative impact of staff resignation was particularly acute for projects in which the resignation was from a key position.

Recruitment difficulties were attributed to a range of factors, including:

- a general shortage of suitably qualified and available staff
- the multiplicity of projects, which led to too much competition for staff with similar skill sets
- a lack of interest among potential applicants in 'project work' (that is, short term employment with uncertain future prospects).

2.9.2 Project management/reporting

Projects appear to have been particularly advantaged by the inclusion of a project officer or manager who had time allocated to undertake the administrative tasks of the project (for example, reporting and data analysis). Where projects do not factor this role into their staffing profile/funding (in either a full time or part time capacity), the tasks have to be undertaken by someone employed for service provision, who may not have the requisite skills (because they were not employed for this role) or who thus needs to take time out from direct service provision, thereby having an impact on the services provided to clients. For this reason, project teams had variable capacity to discharge the same reporting requirements, with some project teams consequently being disadvantaged in terms of their ability to demonstrate project effectiveness.

A few projects situated in organisations with multiple projects were advantaged by the appointment of an individual to oversee the projects and assist in their administrative tasks. In a couple of cases, this advantage was facilitated by the pooling of project funds to provide evaluation support, either through the direct appointment of evaluative expertise to the organisation or through the engagement of consultants with this expertise. Projects situated in organisations that did not adopt this practice or have the funds available to provide sufficient administrative and/or evaluative support were thus at a comparative disadvantage.

A few project teams mentioned the reporting requirements associated with the external evaluation as an additional strain on project staff. This complaint seemed to be particularly linked to projects with little or no time allocated within the staffing profile for administrative/evaluative functions.

2.9.3 Project teams

Project teams generally reported that their commitment, enthusiasm and skill set were a major facilitator of the project's activities. The formation of project staff into fully functioning teams took time, particularly for large teams and those geographically spread across several sites. Further, when team members were employed through different agencies, the project could have faced organisational and administrative challenges.

There can be both positive and negative aspects to a multidisciplinary team associated with lines of accountability. One project team reported that the project leader should be incorporated into the line management structure for each of the disciplines involved; a few others reported that discipline-specific line management works well.

Depending on the nature of the project model, the location of the project team can be important in promoting its integration within the existing service system. The incorporation of emergency department care coordinators into the routine and structure of the emergency department, for example, appeared to be pivotal to the emergency department staff's acceptance of this intervention, while some community based teams experienced difficulty in accessing information and resourcing through the acute hospital system.

While some projects reported that implementing the project within an existing team was beneficial to the developmental process, others noted that this arrangement caused initial confusion over associated roles and responsibilities.

Regular team meetings were mentioned in a few instances as being important to team development. However, for project staff that were part time, on rostered shifts or geographically spread, creating opportunities for team meetings was challenging. The key message from several projects is that team formation and maintenance require both time and resources.

2.9.4 Project resources

Some project teams identified project funding as a facilitator. The reasons given appeared to relate primarily to brokerage funding, enabling the project to purchase services and/or equipment. Some project teams identified inadequate funding as a hindrance, constraining the project's ability to reach its full potential in meeting patients' needs or implementing strategies to improve the underlying services system.

For several projects, the increased reporting requirements highlighted the inadequacy of their budgets for administrative functions. While a project model might have been appropriately costed, the requirements for operating a project, as distinct from usual care, were not.

A few project teams reported increasing demands for their service, beyond their funded capacity. However, the pooling of funds across HARP projects within the same organisation enabled some projects to provide additional coverage or create joint appointments, or accommodate the sick/annual leave of project staff.

The projects varied in their fund holding arrangements, with some project teams explicitly reporting that the responsibility for managing project budgets had been devolved to the project. For other projects, the sponsoring organisation held funds, and committees were responsible for funding decisions. Within a project context of collaboration across sectors, the collaborating partners would need to decide together where the budget is held and how it is allocated.

Project funding is an issue requiring exploration, because the funding reported by some project teams was different from that specified by the Department. A few project teams experienced difficulty in obtaining project financial information from their respective organisations to report on expenditure. A couple of project teams also reported that the Department's notification of project continuation occurred very late in the financial year, thereby constraining potential project activity. For another project, the delayed flow of funding following project approval had a negative impact on project establishment timelines.

The material resources available to projects to support their activities appeared to vary across projects, with several identifying a lack of space as an issue. In some cases, this issue had an impact on the project's model because there was insufficient room in the project's setting for seeing patients or conducting group education sessions. In other instances, the lack of space had an impact on administrative tasks relating to patient management and project reporting. By contrast, a few projects at one particular health service reported that having a designated HARP office space was a facilitating factor.

2.9.5 Support for projects

Several project teams noted the strong support from the executive of the health service and/or community organisation(s) involved as having been a facilitating factor. In a few cases, this support involved the ongoing participation by the organisation's chief executive officer in maintaining links with the other stakeholder organisations. At the same time, a number of project teams noted that the competing multiple demands on senior staff meant those staff could not devote as much time to the project as might be desirable, and that project plans and budgets had underestimated the time commitment for sponsors.

Some project teams referred to the 'steering committee' or governance structure as having been important in facilitating the project, while one project noted that inconsistent attendance at meetings, and changes in representation had an impact on project development/decision making and made communication more complex than necessary.

Clinical leaders/champions were mentioned by several project teams as being important in assisting the change process necessary to support the introduction of the project model. Such champions could be quite influential in promoting the engagement of others, and they were evident in both acute and community sectors, and different health professional groups.

Many projects referred to the support given by 'grassroots' staff in the agencies and hospital departments associated with the project model, although a few mentioned that these clinicians resisted engaging with the project, despite the commitment of the more senior staff. Competing work demands and pressures also had an impact on staff's ability to become involved in project activities (for example, to refer or to participate) in both the acute and community sectors.

Many project teams perceived the Divisions of General Practice as providing a useful structure through which to contact general practitioners and engage them in project activities. However, many also acknowledged that heavy work loads and competing demands constrained the capacity for general practitioners to engage in additional projects, no matter how meritorious those projects might be.

2.9.6 Collaborative approaches across sectors

Collaboration across the acute and primary care sectors in the development of models/interventions is integral to the HARP conceptual approach. Many project teams reflected on the amount of time needed to build the trust and respect necessary for bridging the significant cultural differences between the acute and community sectors. For some projects, the time taken had a major impact on their progression to a 'live' stage.

To manage the interface between the two sectors and forge links across this interface appears to necessitate addressing the different expectations, processes, work practices and priorities in each sector. Project teams were advantaged where they could build on a previous history of collaborative working relationships.

The time required to foster initial collaboration needs to be supplemented with ongoing strategies to support and sustain the collaboration, which different cultures can erode. Link mechanism (such as acute/primary care liaison) appeared to provide a focal point through which this could occur in some projects. Several project teams reported that the involvement of a general practice liaison officer was helpful in their project's development.

Several project teams also provided examples of sectoral differences in practice that posed challenges to discrete elements of their model.

2.9.7 Target groups

Project teams defined their target groups with varying degrees of specificity and used different methods for patient identification. Some acquired patients through direct referral, while others relied on particular methods of identification and recruitment. Some required specific consent, while others did not. Facilitators, barriers and lessons, therefore, were generally specific to a project's particular combination of variables.

Ethics approval and consent were a problem for some projects but not others. A few project teams noted that patients not suitable for the project intervention were often referred, and that relying on busy staff to identify and refer might have resulted in suitable patients being overlooked. It may be easier in some instances to rely on identification of suitable patients through hospital databases, although some community agencies reported difficulties with this approach; further, this would not be appropriate for some target groups (such as suicide prevention).

Two project teams referred to difficulties with recruiting people from culturally and linguistically diverse (CALD) backgrounds. One noted that the difficulty of accessing interpreters in the acute setting had an impact on consent; another noted the lack of established community groups through which to publicise the project to Arabic people who were one of two CALD project target groups.

One project noted that defining the target group at the outset was important, while another mentioned that the multiplicity of HARP projects resulted in some patients being recruited to two or more projects, with some subsequent service duplication affecting project costs and time. A few projects indicated that the complexity of their patient cohort required time consuming case management, often beyond what the project team originally envisaged (and thus costed). This issue appeared to arise particularly when a project team advocated for access to residential care beds (for either permanent care or respite care).

2.9.8 Data systems

The inadequacy of data systems to support seamless care across a range of service providers was a major barrier for many projects. A real challenge has been the development of databases capable of straddling the different systems through which patients may pass, so as to capture data in a secure manner and/or allow for the confidential sharing of patient information between services. Without such readily accessible systems, some projects had to resort to interim and unsatisfactory arrangements.

Some project teams reported that the information technology department in the relevant health service provided valuable support in the development of project-specific databases. Others had access to expertise that enabled them to develop the database requirements for supporting the project through project appointed evaluators, while some projects had to 'go it alone', without direct access to additional information technology support.

Some project teams encountered difficulties when project-specific databases did not interface with hospital systems, making it a challenge to track HARP relevant indicators (for example, presentations/admissions) for managed patients. The variable nature of information technology capability among community based providers (including general practice) was a major hurdle for data collection. One project team even reported that the inadequacies of information technology capabilities among some providers meant those providers could not use email, affecting communication within the project.

A few project teams reported regular ongoing monitoring of data collected as being an important factor in ongoing project development. Several also mentioned having learned the need to establish adequate data systems at the outset of the project to enable routine monitoring of performance against key indicators. However, a couple of project teams noted (1) the need to be able to adapt this system to changing requirements as the project's model evolved and (2) the need for ongoing technical support for database maintenance.

For many projects, data collection problems were compounded by the introduction of the evaluation reporting requirements long after project commencement. Instead of having agreed data requirements specified from the outset (best practice), the late introduction of the evaluation required project teams to reappraise their data collection approaches; in some cases, this reappraisal necessitated further database development or adjustment, and limited the project team's ability to report retrospectively. A few project teams reported that the lack of standardised key performance indicators for the project model (emergency department care coordination) or meaningful HARP indicators (acute/primary care liaison) affected the development of data systems and project reporting.

2.9.9 Evidence based models

A few project teams noted that using evidence based models/protocols/pathways assisted project activity or clinician engagement, or that research helped them to identify interventions of relevance to their target populations. By contrast, others noted some resistance by clinicians to particular evidence based interventions. There appeared to be two main reasons for this resistance. In some cases, clinicians perceived evidence based protocols to be less suitable for patients with co-morbidities, because the singularity of each protocol's focus would necessitate multiple protocols (and too much paperwork) for each patient. In other cases, the traditional nature of the clinician/patient relationship meant some clinicians perceived patient self-management as a threat to professional autonomy or even as counterproductive to the patient's clinical management.

2.9.10 Project establishment/implementation

In addition to the above themes, the following aspects of project establishment/implementation were also identified.

The *time needed to develop mechanisms to support the project model* appeared to have delayed project 'live' dates. These development activities included developing relevant protocols, forms and processes to support the model, and finalising the agreements necessary to manage the model's implementation in the existing service system. Negotiating contracts and service agreements between the various organisations appeared to have been particularly onerous for complex projects that involved large numbers of providers. Nevertheless, time spent in the developmental work appeared to have paid dividends in the 'live' phase, with a few project teams reporting that clear referral pathways and protocols were facilitating factors in project implementation.

A few project teams mentioned *the connections formed among various HARP projects within a particular health service, or between a community based project and an acute based project,* as being an important facilitator in project development. A couple also noted that contact with staff implementing similar models in other health services was beneficial to their own development. A few reports acknowledged that the existence of particular HARP projects within the local service system benefited the patients being managed; for example, the other projects increased the range of available services to which emergency department care coordinators could refer people.

The upskilling and education of current clinicians was also reported as an important aspect of projects. While one project team noted that upskilling of existing staff was crucial in facilitating its project model, another noted the lack of funding available to equip clinicians with the requisite knowledge and skills to support the project model. Also noted were the mainstream clinicians' general lack of knowledge about mental health issues and drug/alcohol problems, and thus the need for increased education. One project team mentioned the need to ensure continuous education/training in a setting characterised by high staff turnover.

A number of project teams discussed *the capacity of the current service system to address the needs of patients*, including the following factors:

- the high workloads of, and multiple demands on, general practitioners, which have an impact on general practitioners' ability to engage in new projects
- the inability of community based services to respond in a timely manner (which is both a capacity issue and a time issue, with many services available only from 9 am to 5pm, five days a week) and concerns about increasing demands on those services
- gaps in current community services, which brokerage can sometimes alleviate
- long waiting lists for some services, particularly residential care services.

3 Cluster analysis

3.1 Overview

Integral to the evaluation approach is an analysis of clusters (projects or patients that share a common feature and/or attribute and thus can be conceptually grouped) to explore the impact of HARP across the dimension of interest. This chapter provides an overview of HARP from the perspective of clusters that have emerged as analytical categories through which it is possible to investigate HARP activity. The evaluation based reporting by project teams is still embryonic in nature. However, as the evaluation evolves and the project teams provide more information about each project, and as information on the 2003–04 HARP projects becomes available, the range of clusters will increase.

The clusters considered for this report were formed through an analysis of project information according to three classifications:

- event–specific cohorts of people who are at risk of an event occurring that would be likely to result in an emergency department presentation and/or admission
- model–specific models of care or interventions that share similar characteristics
- utilisation–specific patterns of frequent/high volume emergency department presentations and/or admissions.

The following table depicts the project based clusters presented in this report for each classification.

Table 3.1: HARP cluster classification

Classification	Inclusion
Event	COPD CHF Diabetes Falls
Model	Emergency department care coordination Acute/primary care liaison
Utilisation	Frequent/high volume acute service usage

3.2 Event based clusters

3.2.1 Introduction

From its beginning in 2001, HARP has funded a number of projects that target people who experience various conditions/events: COPD, CHF, diabetes and falls. Some projects focus solely on people with a specific condition/event (such as those targeting people with COPD), while others have adopted a wider perspective (such as those targeting people with chronic respiratory disease, where COPD is one of the conditions of interest).

This section is based on the analysis of:

- projects that defined their target group by focusing solely or partly on COPD, CHF, diabetes or falls
- VAED and Victorian Emergency Minimal Dataset (VEMD) data for patients identified as being a member of COPD, CHF, diabetes or falls cluster, where membership of a cluster is based on the first event during the evaluation period being either an emergency department presentation or a hospital admitted episode where the patient was treated for the condition of interest. (For further information on the cluster evaluation method, see the *HARP evaluation technical discussion paper* available on the HARP website at www.health.vic.gov.au/hdms/harp/.) For each of the event clusters, analyses were based on the following definitions:

  – *total* (all events within the cluster)

  – *caused* (all events caused by the condition, within the cluster)

  – *involved* (all events involving the condition but not caused by it, within the cluster)

  – *uninvolved* (all events not involving the condition, within the cluster).

This section's figures showing emergency department presentation do not have an 'involved' series because the concept could not be effected using the VEMD data on emergency department presentations.

3.2.2 Chronic obstructive pulmonary disease

The HARP Reference Group identified COPD as one of its priority areas for further investigation; in July 2002, it formed a working party to undertake an analysis that would inform the development of HARP projects. The resultant working party report is framed on four key principles for managing people with COPD (patient centredness, collaboration, expertise and evidence based practice)[7] and spans a range of dimensions to assist both current and future projects.

Given that COPD is a priority area within HARP, and a number of existing HARP projects have specified that people with COPD are within their target population, COPD has been selected as an analytical cluster for presentation within this report.

3.2.2.1 COPD project models

Projects that focus on improving the management of patients with COPD frequently also target other disease groups with their interventions and models of care. This section summarises the characteristics of projects that included people with COPD in their defined target population.

Projects' models depend on the identification of patients who are suited to the specific model of intervention–an identification that is achieved through direct referral and patient screening. All project models involve some form of assessment of patient needs to identify the service requirements. Services are then provided through a formalised process that involves one of the following: care facilitators, case management, disease management, coordination, individualised care plans or management plans.

The range of services/interventions provided to patients depends on whether the project is COPD specific or focused on the broader 'chronic disease' target group. Projects that are COPD specific have far greater synergy between the condition and the intervention, whereas chronic disease projects offer more generalised interventions. The range of services/interventions includes:

- home assessment and support
- action plans to promote the appropriate responses from the patients/carers to a disease related event
- disease management education for patients and carers to promote adherence to care and action plans
- self-management, education and support
- after hours support/services
- rehabilitation and maintenance programs
- exercise programs
- medication review
- physiotherapy
- dysphagia clinic.

Projects' models also focused on improving the operation of the service system by developing relationships among the multidisciplinary service providers, including information sharing with patients' general practitioners.

3.2.2.2 Factors facilitating COPD project implementation

Project teams identified the following factors as facilitating COPD model implementation:

- HARP staff promoting the chronic disease management approach
- the education of staff involved in associated agencies–hospital and community
- experienced staff with the relevant skill sets
- efforts to build on existing programs, initiatives and collaborative relationships
- enthusiastic support from the Department of Respiratory Medicine
- links to existing services and other HARP initiatives.

3.2.2.3 Factors hindering COPD project implementation

Project teams identified the following factors as hindering COPD model implementation:

- challenges faced by the hospital and the service providers trying to communicate about patients
- delays in the project's development process for multiple reasons, including difficulties in staff recruitment and a funding lag
- the requirement to provide staff training in best practice chronic disease management
- the need to identify pathways to provide a seamless service to patients
- when based in the community, difficulty in accessing the comprehensive relevant medical information available in hospital records
- lack of support from hospitals
- the inadequacy of information technology to share patient information.

3.2.2.4 Lessons from COPD projects

Project teams identified the following key lessons from COPD model implementation:

- the importance of an effective governance structure and open communication in developing a partnership approach by the hospital and service providers to underpin the model
- the importance of remembering that patients and carers learn differently, and the need to ascertain what will work for each patient
- the fact that good data collection processes ensure effective decision making and monitoring of the model, but that sharing of patient information across the sectors is difficult
- the importance of planning, the identification of service system pathways and the implementation of practices, processes, protocols and systems, before patient intake
- the importance of marketing the project within the community, particularly with general practitioners, to develop cooperative clinical pathways for clients
- the need for a multifaceted approach to engage general practitioners
- the time involved in building relationships
- the importance of clinician engagement
- the need to stratify the COPD management model according to individual patient needs and disease severity. Newly diagnosed patients with less severe disease respond well to educational strategies and pulmonary rehabilitation, whereas patients with end stage severe disease need access to ongoing community support services and may benefit from case management.
- the importance of the Chronic Disease Management Program as an effective resource
- the need to acquire as much information from patients as is possible and relevant
- the usefulness of home follow-up, which enables the detection of early warning signs and monitoring of the exacerbation of illness
- the need for a clear definition of the target group(s)

- the need for a multidisciplinary approach to identify a patient's needs
- the importance of being able to identify the impact of the disease on the person, their family and their lifestyle
- the need to reinforce to patients and carers constantly regarding how to manage their disease.

3.2.2.5 Overview of data for patients with COPD

This section provides a descriptive summary of data on 'COPD identified patients' for HARP hospitals over the period July 1999 to June 2003. The data are preliminary and the trends presented reflect the raw data generated by the approach used to determine cluster membership.

Emergency department presentations

- The number of total presentations increased each year, but the majority were not caused by COPD. COPD caused presentations made up approximately 3 per cent of all emergency department presentations in each of the years.
- The rate of increase fell each year for both COPD caused and uninvolved presentations.
- Total presentations increased by 72 per cent between 1999–2000 and 2002–03, while COPD caused presentations rose by 44 per cent and uninvolved presentations rose by 73 per cent.
- The numbers of people re-presenting to emergency departments with COPD (that is, the same condition) within 24 hours and within seven days were relatively low (less than 13 cases in each year).
- The number of people re-presenting to emergency departments with COPD (that is, the same condition) within 28 days initially increased–up by 165 per cent between 1999–2000 and 2001–02, and 11 per cent between 2000–01 to 2001–02–but fell by 14 per cent between 2001–02 and 2002–03.

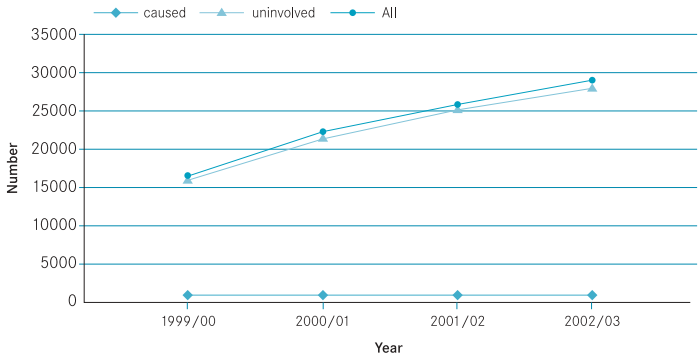
Emergency admissions

- While the total number of emergency admissions increased each year, the rate of increase fell each year.
- Emergency admissions caused by COPD increased each year by 5–9 per cent, while emergency admissions involving COPD declined between 1999–2000 and 2001–02, before recording a slight increase between 2001–02 and 2002–03.
- Emergency admissions where COPD was uninvolved increased both annually and in proportion to the COPD caused and involved presentations–a likely artefact of the method used to determine cluster membership.

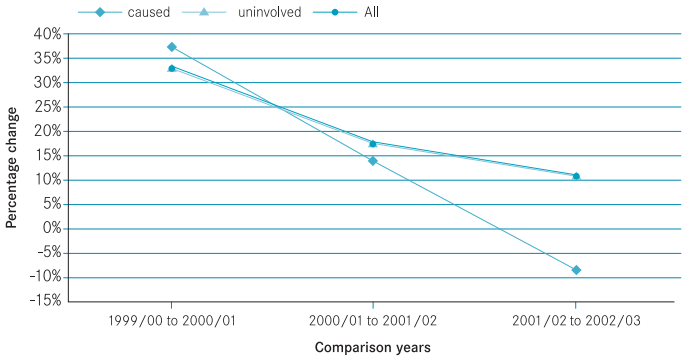
Summarised in the figures below are:

- emergency department presentations–raw number and annual percentage variation
- emergency admissions–raw number and annual percentage variation.

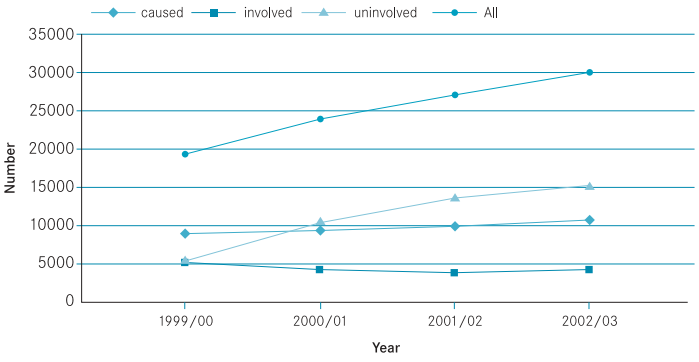
Figure 3.1: COPD summary figures



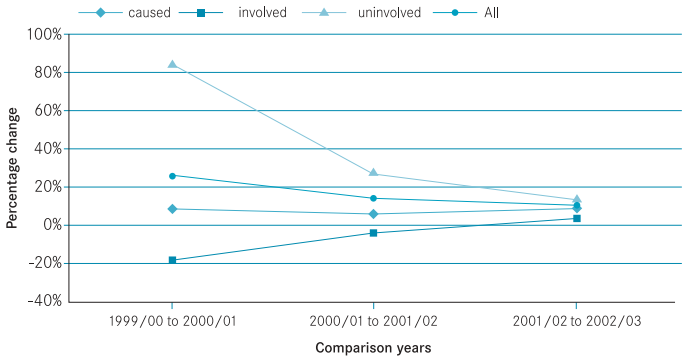
COPD patients: emergency department presentations



COPD patients: annual percentage change in emergency department presentations



COPD patients: emergency admissions



COPD patients: annual percentage change in emergency admissions

3.2.3 Chronic heart failure

The HARP Reference Group identified CHF as one of its priority areas for investigation; in July 2002, it established a working party to undertake an analysis that would inform the development of HARP projects. The resultant working party report recommended improvements in the standards of care for people with CHF, based on published scientific evidence.[8] It also referred to clinician perceived deficiencies in current services and outlined strategies through which these could be addressed, based on available reports.

Given that CHF is a priority area within HARP, and a number of existing projects have specified that people with CHF are within their target population, CHF has been selected as an analytical cluster for presentation within this report.

3.2.3.1 CHF project models

Projects that focus on improving the management of patients with CHF frequently also target other disease groups with their interventions and models of care. This section summarises the characteristics of projects that included people with CHF in their defined target population.

Projects' models depend on the identification of patients who are suited to the specific mode of intervention–an identification that is achieved through direct referral and patient screening. All project models involve some form of assessment of patient needs to identify the service requirements. Services are then provided through a formalised process that involves one of the following: care coordination, case management model/disease management, care planning or care facilitation.

The range of services/interventions provided to patients depends on whether the project is CHF specific or focused on the broader 'chronic disease' target group. Projects that are CHF specific have far greater synergy between the condition and the intervention, whereas chronic disease projects offer more generalised interventions. The range of services/interventions reported by projects included:

- medication review
- rapid service provision
- home assessment and support
- health promotion and prevention
- a chronic disease management clinic
- a structured exercise program to promote lifestyle changes
- the education and facilitation of self-management skills for patients
- a heart function/discharge clinic
- rehabilitation programs
- disease management education of patients
- after hours support for patients
- community maintenance programs
- access to specialist consulting services
- physiotherapy.

Projects' models also focused on improving the operation of the service system through:

- collaboration between agencies and organisations
- the education of team members
- communication and integration
- the support of general practitioners
- partnership development.

3.2.3.2 Factors facilitating CHF project implementation

Project teams identified the following factors as facilitating CHF model implementation:

- the commitment of health service providers to achieving the project outcomes
- efforts to build on existing programs and initiatives
- effective communication strategies
- the drafting of service agreements to clarify roles and responsibilities
- a team management approach that embraces patient empowerment and self-management
- a collaborative approach to patient management
- the development of supporting systems and processes before accepting patients
- new partnership development
- promotion of the project.

3.2.3.3 Factors hindering CHF project implementation

Project teams identified the following factors as hindering CHF model implementation:

- a lack of availability and capacity to attend multiple planning, review and patient meetings
- the time and resources needed for effective case management
- the resources and time required to educate health care providers
- difficulties in implementing best practice guidelines through clinical pathways, which is particularly time consuming when patients have co-morbidities and thus multiple pathways documentation
- the availability of physicians and general practitioners
- different work practices across departments/organisations
- a lack of capacity to exchange information electronically
- difficulties in establishing a secure network to share patient information
- poor communication processes associated with sharing patient information across agencies.

3.2.3.4 Lessons from CHF projects

Project teams identified the following key lessons from CHF model implementation:

- the importance of clinician engagement
- the need for ongoing education of multidisciplinary teams
- the importance of stakeholder involvement in the model's development
- the benefits of regular communication
- the need for continued support to promote self-management, promote continuity of care and improve quality of life
- the importance of planning, the identification of pathways and the implementation of processes before patient recruitment
- the importance of collaborative partnership agreements
- the importance of a multidisciplinary approach to address the needs of patients with chronic disease
- to ensure a model is sustainable, the need for it to be integrated within existing systems and procedures
- the fact that models that work within one organisation are not necessarily transferable to another
- the time needed for effective case management
- the fact that the changing dynamics of the patient/health care provider relationship are a large barrier
- the fact that disease management in complex patients needs a multidisciplinary team approach–that is, a more systematic approach.

3.2.3.5 Overview of data for patients with CHF

This section provides a descriptive summary of data on 'CHF identified patients' for HARP hospitals over the period July 1999 to June 2003. The data is preliminary and the trends presented reflect the raw data generated by the approach used to determine cluster membership.

Emergency department presentations

- The number of total presentations increased each year, but the majority were not caused by CHF.
- The rate of change in CHF caused presentations initially increased by 7 per cent between 1999–2000 and 2001–02, before falling by 6 per cent between 2001–02 and 2002–03.
- CHF caused presentations fell as a proportion of total presentations from 18 per cent in 1999–2000 to 10 per cent in 2002–03.
- The number of people re-presenting to emergency departments with CHF (that is, the same condition) within 24 hours was relatively low (less than 13 cases in each year).
- The number of people re-presenting to emergency departments with CHF (that is, the same condition) within seven days fell by 13 per cent between 1999–2000 and 2000–01, and rose by 19 per cent between 2000–01 and 2001–02, but then fell by 32 per cent between 2001–02 and 2002–03.

- The number of people re-presenting to emergency departments with CHF (that is, the same condition) within 28 days increased by 12 per cent between 1999–2000 and 2001–02 but fell by 6 per cent between 2001–02 and 2002–03.

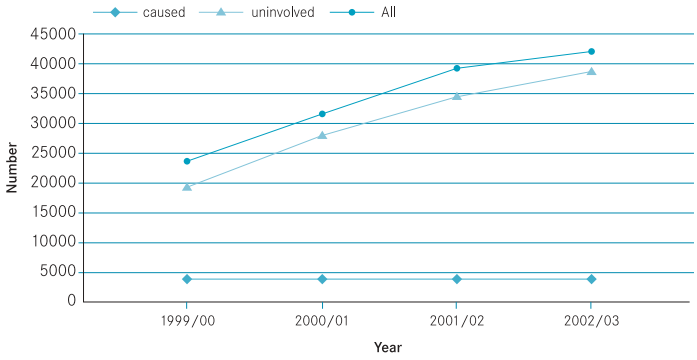
Emergency admissions

- While the total number of emergency admissions increased each year, the rate of increase fell each year.
- Emergency admissions caused by CHF increased by 4–7 per cent between 1999–2000 and 2001–02, and fell by 5 per cent between 2001–02 and 2002–03.
- CHF caused or involved emergency admissions fell as a proportion of total admissions.

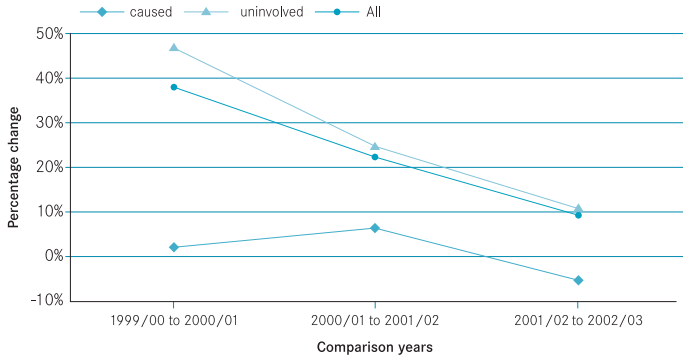
Summarised in the figures below are:

- emergency department presentations–raw number and annual percentage variation
- emergency admissions–raw number and annual percentage variation.

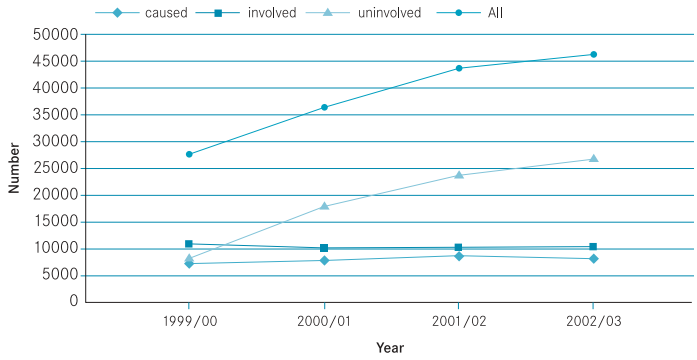
Figure 3.2: CHF summary figures



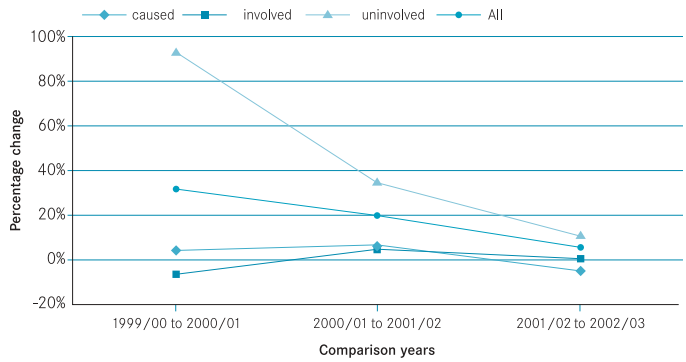
CHF patients: emergency department presentations



CHF patients: annual percentage change in emergency department presentations



CHF patients: emergency admissions



CHF patients: annual percentage change in emergency admissions

3.2.4 Diabetes

A number of project teams indicated that people with diabetes are included in their target population. Consequently, diabetes was selected as an analytical cluster for presentation within this report.

3.2.4.1 Diabetes project models

Projects that focus on improving the management of patients with diabetes frequently also target other disease groups with their interventions and models of care. This section summarises the characteristics of projects that included people with diabetes in their defined target population.

Projects models depend on the identification of patients who are suited to the specific mode of intervention–an identification that is achieved through direct referral and patient screening. All project models involve some form of assessment of patient needs to identify the service requirements. Services are then provided through a formalised process that involves one of the following: case management, care coordination and management, or disease management.

The range of services/interventions provided to patients depends on whether the project is diabetes specific or focused on the broader 'chronic disease' target group. Projects that are diabetes specific have far greater synergy between the condition and the intervention, whereas chronic disease projects offer more generalised interventions. The range of services/interventions reported by projects included:

- increased access to specialist consulting services
- home medication review
- enhanced patient education, evidence based care and care coordination
- specialist diabetic foot care service
- self-management, education and care coordination
- education, a diabetes outpatients clinic, home visits as required and self-care planning
- a diabetes exercise program
- podiatry assessment
- optometry assessment.

Projects' models also focused on improving the operation of the service system through;

- the upskilling/education of staff
- collaboration among agencies
- communication between health professionals
- the development of a role for a credentialed diabetes nurse educator
- management in general practice, intra/intersectoral planning, communication and liaison.

3.2.4.2 Factors facilitating diabetes project implementation

Project teams identified the following factors as facilitating diabetes model implementation:

- the support of organisations/professionals
- the fact that a project complements general practice, enhancing the way in which general practitioners work
- the targeting of a population whose needs are not being met
- the provision of support and interest from general practitioners and the community
- efforts to build on existing programs
- the existence of working relationship between organisations.

3.2.4.3 Factors hindering diabetes project implementation

Project teams identified the following factors as hindering diabetes model implementation:

- general practitioners' perception of 'projects' not remaining for the long term
- general practitioners' relationships with other professionals in the community
- general practitioners' perceptions of appropriate patients, which are not always the same as the project's perceptions
- uncertainty about the Department's commitment to continue funding the program
- the different needs/demands of the workforce/stakeholders
- different work practices across departments/organisations.

3.2.4.4 Lessons from diabetes projects

Project teams identified the following key lessons from diabetes model implementation:

- the importance of clinician engagement in the project
- the need to earn respect and allow relationships to develop over time
- the fact that collaboration across health care sectors can provide multidisciplinary care that incorporates community based and acute specialist services
- the importance of general practitioner champions of a project
- the need for multidisciplinary approaches to addressing the identified needs of chronic disease patients
- the need to accept credentialed diabetes nurse educators as an integral part of general practice
- the fact that project flexibility allows credentialed diabetes nurse educators to vary their approach according to the practice context
- the importance of after hours service and ease of access in allowing people with diabetes to present earlier with issues
- the impact of service availability and accessibility on the incidence of hospital admissions and patients' quality of life

- the benefits to health care providers and patients from a cohesive system that targets high need populations
- the fact that ongoing follow-up is a key to improved health outcomes.

3.2.4.5 Overview of data for patients with diabetes

This section provides a descriptive summary of data on 'diabetes identified patients' for HARP hospitals over the period July 1999 to June 2003. The data are preliminary and the trends presented reflect the raw data generated through the approach used to determine cluster membership.

Emergency department presentations

- The number of total presentations increased each year, but the majority were not caused by diabetes.
- The rate of change in diabetes caused presentations increased by 12 per cent between 1999–2000 and 2001–02, before falling by 3 per cent between 2001–02 and 2002–03.
- Diabetes caused presentations fell as a proportion of total presentations from 15 per cent in 1999–2000 to 6 per cent in 2002–03.
- The number of people re-presenting to emergency departments with diabetes (that is, the same condition) within 28 days increased by 31 per cent between 1999–2000 and 2001–02, then decreased by 23 per cent between 2001–02 and 2002–03.

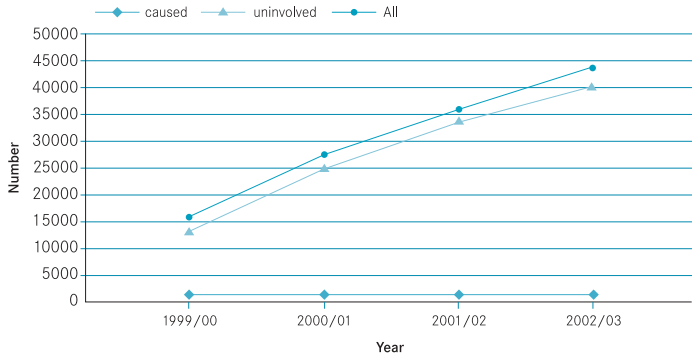
Emergency admissions

- While the total number of emergency admissions increased each year, the rate of increase reduced each year.
- Emergency admissions caused by diabetes increased by 61 per cent between 1999–2000 and 2002–03.
- Diabetes caused or involved emergency admissions fell as a proportion of total admissions.

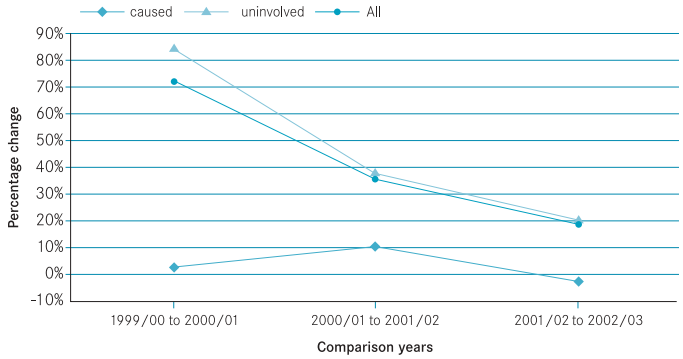
Summarised in the figures below are:

- emergency department presentations–raw number and annual percentage variation
- emergency admissions–raw number and annual percentage variation.

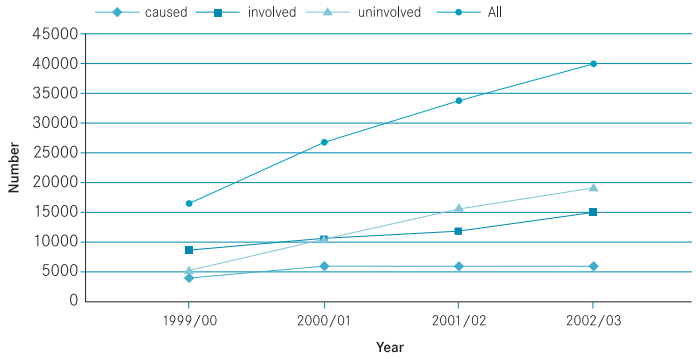
Figure 3.3: Diabetes summary figures



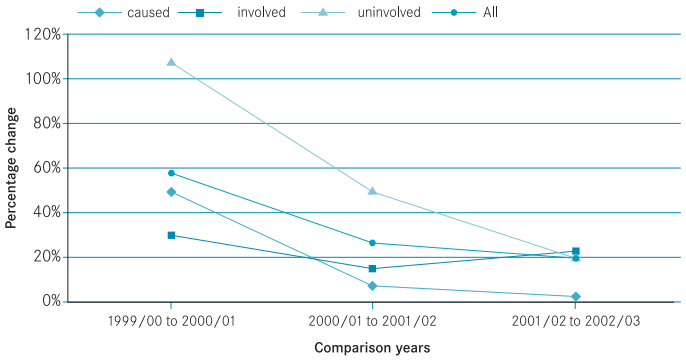
Diabetes patients: emergency department presentations



Diabetes patients: annual percentage change in emergency department presentations



Diabetes patients: emergency admissions



Diabetes patients: annual percentage change in emergency admissions

3.2.5 Falls

The HARP background paper identified that 'falls in older people are a major public health concern in terms of morbidity and the cost to health services' and that a large body of evidence exists about a range of interventions to minimise falls.[9] Given that many falls result in injuries with varying degrees of severity, resulting in emergency presentations and sometimes admissions, a focus on falls prevention is congruent with the conceptual framework for HARP.

HARP's contribution to falls prevention within Victoria has occurred in three separate ways:

- one-off funding of $0.5 million in 2001–02 for the Department's Aged Care Branch for falls prevention projects
- ongoing funding from 2001–02 for 10 falls clinics in different health services across the State
- a community based falls prevention project at Melbourne Health.

3.2.5.1 Aged Care Branch falls prevention projects

The Service Development Unit of the Aged Care Branch within the Department's Rural and Regional Health Services Division manages a range of falls prevention initiatives. The $0.5 million provided by HARP in 2001–02 as one-off funding for falls prevention was distributed across the range of initiatives managed by this unit. Consequently, the HARP contribution to falls prevention through this means cannot be linked to specific 'projects', but is important to note within the evaluation context.

3.2.5.2 Falls clinics

During the 2001–02 funding cycle, HARP contributed close to $1 million to the Continuing Care Programs Unit of the Programs Branch of the Department's Metropolitan Health and Aged Care Services Division, to expand existing falls clinics and develop new clinics within Victoria. This funding has been maintained as part of the recurrent funding allocation within HARP. The Continuing Care Programs Unit is also contributing approximately $900,000 on a recurrent basis for falls clinics. This combined funding has meant that each region has a falls clinic and that total funding for falls clinics has been distributed more equitably across the State.[10] Of the 16 falls clinics operating within Victoria, 10 receive HARP funding.

Falls clinics within the HARP evaluation

The falls clinics that have received funding through HARP are being managed differently from other HARP projects within the evaluation for the following reasons:

- The clinics are funded administratively through a different division within the Department (as part of an established program) so have never been required to report as Hospital Demand Management Strategy or HARP 'projects'. The clinic staff are unlikely to be aware that their funding source comes partly or totally from HARP or to view their activities as part of a 'project'.
- A 'clinic' typically comprises one half-day session per week, during which a small number of patients at high risk of recurrent falls and falls related injuries are assessed and subsequently managed (either directly or through referral). Clinics are funded for the services provided and not for any 'project' related administration and evaluation.

- Based on a department commissioned external evaluation of three Victorian falls clinics,[11] a minimum dataset (MDS) of outcome measures has been developed and is being piloted with clinics. Given the relatively small number of patients seen per week, and the timeframe over which data on each patient need to be collected (six months after assessment), it will take time to build the data in this MDS to an acceptable level for analysis.

  As a result, falls clinics are not required to report through the HARP evaluation as separate 'projects'. Instead, the HARP evaluation will access the data in the Falls Clinic MDS about the impact of falls clinics once the data accumulate. The final HARP evaluation report will incorporate this analysis.

  Evidence for falls clinics

  Within the final report on the evaluation of falls clinics, the National Ageing Research Institute outlined key findings from:

- a review of research literature on falls clinics
- an analysis of data from three Victorian falls clinics: Melbourne Health (the Extended Care and Rehabilitation Service), Northern Health (the Bundoora Extended Care Centre) and Barwon Health (the Grace McKellar Centre).

  The literature review noted results from a randomised control trial using a multidisciplinary comprehensive assessment and targeted management program for a high falls risk group (older people presenting to emergency departments after a fall) that resulted in a significant reduction in falls. The report also cited seven pre–post studies of multidisciplinary falls clinics in which the average proportion of clients falling after the falls clinic intervention was reduced by over 50 per cent.

  The analysis of data from 163 clients managed within the three Victorian falls clinics showed results consistent with the literature. This sample had an average age of 76 years and a median number of falls of three (range: one to 100 falls) in the six months before attendance at the falls clinics. At six months following assessment at the falls clinics, almost half of the clients reported not having fallen during the six month clinic intervention period; those who had continued to fall reported a reduced frequency of falling. The evidence provided by the report suggests that the intervention represented in falls clinics is congruent with the HARP conceptual framework, and that the clinics funded through HARP are likely to contribute to HARP outcomes.

3.2.5.3 Melbourne Health's falls prevention project

This project is the only identifiable 'falls project' funded through HARP. The project's target group are people over 60 years of age who present to the emergency department of the Royal Melbourne Hospital following a fall and who live in the catchment areas of the Doutta Galla and Moreland community health centres. The project estimated that 1729 people (age 65 years and over) from this catchment area attended the Royal Melbourne emergency department in 2000 and 2001 as a result of a fall. Of this group, 131 attended more than once for fall related reasons and 711 experienced a fracture from their fall.

In addition to age, residential address and emergency department presentation following a fall, the following criteria are used to determine people's eligibility for inclusion in the project:

- having a mechanical fall
- living in the community, not residential care
- not having severe cognitive impairment
- not being referred to any other rehabilitation program for falls assessment/management.

The project's model of care

The project's aim is to implement a targeted, multifaceted community based falls prevention program. Eligible clients are identified in the emergency department; where possible, information on the program is provided and consent for referral is obtained while the patient is still there. Where this approach is not possible, the hospital based falls coordinator contacts clients, informs them of the program and seeks verbal consent for referring them to the community based falls prevention coordinator. With clients' consent, the relevant community health service conducts a home visit during which a complete bio–social–environmental assessment is made to determine the risk of future falls. Strategies to minimise risks are discussed and, with consent, the client is referred to the appropriate community service.

Multifaceted targeted interventions follow from the home based assessment, depending on the risk factors identified. They include home modifications, vision assessment and referral to a physical strength and balance program. The client's general practitioner is also sent a summary of the assessment and a copy of guidelines for falls and fracture management. The project reports level 1 evidence indicating that multifaceted and targeted interventions reduce the risk of future falls.

Project activity

Between December 2002 (when the project became 'live') and June 2003, 95 people were referred to the project, of whom 60 were assessed and 45 were subsequently referred to different services. Some people referred to the project were ineligible because they were in residential care.

For January–June 2003, the project reported the following data:

- 81 per cent of eligible patients were referred to the community based falls coordinator within 10 days of hospital discharge
- 61 per cent of eligible patients were assessed within two weeks of referral to the community based falls coordinator.
- 98 per cent of eligible patients during this period received:
  - home hazard assessment
  - falls risk assessment
  - osteoporosis risk assessment
  - an individual care plan
  - a referral to a strength and balance program.

- The general practitioners of all assessed patients were sent:
  - a copy of falls and fracture management guidelines
  - a summary of the guidelines.

  The project will follow up all assessed patients at six months and 12 months post assessment.

  Project experience

  The project reported that the early establishment of an effective team interaction between the hospital based and community based falls coordinators assisted the project development. However, several issues arising from project implementation have had an impact on the project:
- The hospital based falls coordinator has faced an unexpected work burden, having to search hospital databases to ensure eligible patients are not missed because emergency department activities have not fully integrated patient ascertainment.
- Recruitment has been lower than expected, with only 33.5 per cent of the total emergency department falls presentations being eligible for the project.
- The length of time needed for the initial assessment and subsequent follow-up has had an impact on the response time and the number of patients seen in a week. This time increases when the person seen has a cognitive impairment or comes from a CALD background.
- The high proportion of eligible people from a CALD background (46 per cent) has led the project to consider the preparation of project information and support materials (such as the care plan) in different languages.
- The administrative activities, coupled with limited administrative support and limited access to office equipment/files within Community Health, have had an impact on direct service delivery. The need to organise patient six monthly follow-up creates further potential for the impact of these issues. Consequently, the project is planning to recruit additional administrative support staff.
- The waiting time for patient access to community based services following assessment has varied, depending on availability. The project plans to employ allied health staff to alleviate this problem.
- General practitioners have shown limited engagement in the project, and a review of the current processes is planned.

3.2.5.4 Overview of data for patients who fall

This section provides a descriptive summary of data on the cohort of 'falls identified patients' for HARP hospitals over the period July 1999 to June 2003. The data are preliminary and the trends presented reflect the raw data generated through the approach used to determine cluster membership.

Emergency department presentations

- The total number of presentations for falls increased each year.
- Falls represented the primary reason for emergency department presentation by this cohort in 1999–2000; in subsequent years, presentations not involving falls became more frequent for this cohort.
- The rate of change in presentations caused by falls annually increased by 3–5 per cent between 1999–2000 and 2002–03.

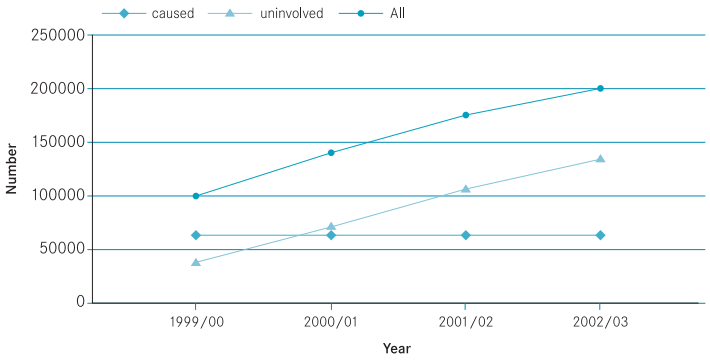
Emergency admissions

- The total number of emergency admissions increased each year, at a reducing rate for this cohort.
- The proportion of annual emergency admissions caused by falls was low, at 1–1.6 per cent.
- Emergency admissions that involved falls represented 34–46 per cent of admissions each year.

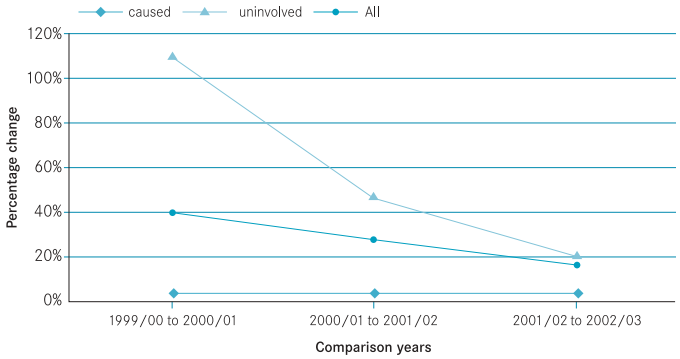
Summarised in the figures below are:

- emergency department presentations–raw number and annual percentage variation
- emergency admissions–raw number and annual percentage variation.

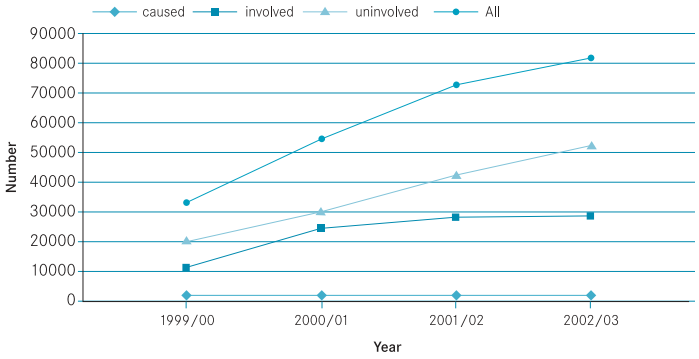
Figure 3.4: Falls summary figures



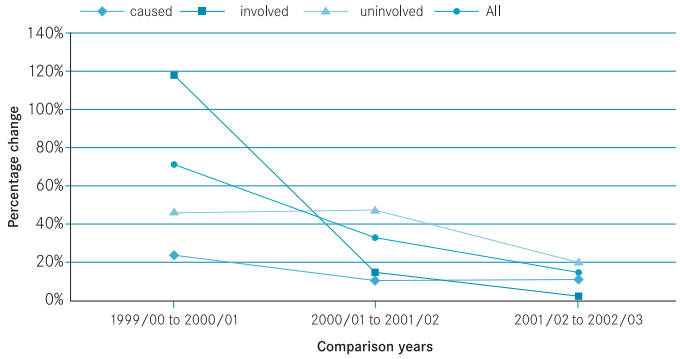
Falls patients: emergency department presentations



Falls patients: annual percentage change in emergency department presentations



Falls patients: emergency admissions



Falls patients: annual percentage change in emergency admissions

3.3 Model based clusters

3.3.1 Emergency department care coordination

From its beginning in 2001, HARP has funded a number of projects–some new and others pre-existing–that provide emergency department care coordination. This is not surprising, given the context within which the Hospital Demand Management Strategy (of which HARP is a major component) was developed. The increasing demand on emergency services in 2001, as evident in the frequency of ambulance bypass and the waiting times at emergency departments, necessitated a range of strategies to reduce the emergency demand pressure. Emergency department care coordination was one such strategy.

The broad aim of this model of care is to ensure safe and effective discharge into the community for people who present at an emergency department and who do not require admission. The reasoning is as follows:

- People who present to an emergency department could have been admitted because there was no person to arrange their discharge to services within the community, so emergency department care coordination could prevent unnecessary admissions.
- People will be less likely to re-present to an emergency department if their non-emergency needs are met by the services to which care coordinators refer them.

The model of care coordination is thus congruent with the HARP conceptual approach.

3.3.1.1 Projects with emergency department care coordination

While a number of projects are implementing emergency department care coordination as a major intervention, their approaches vary considerably. Some projects use this model as their sole intervention–that is, the project was established for this purpose and continues to provide this service within the hospital. In other projects, emergency department care coordinators also provide their services for admitted patients deemed to be 'at risk', so the model co-exists with an inpatient variant within the project. A few projects that implemented emergency department care coordination have merged with other projects in response to local factors and developing synergies, blurring the care coordination component.

The operational forms of the emergency department care coordination model also vary across the following dimensions:

- the use of a screening tool to identify patients
- the scope of the targeted population
- the assessment process
- brokerage
- review/follow-up of patients outside the emergency department.

3.3.1.2 Factors facilitating emergency department care coordination project implementation

Project teams identified the following factors as facilitating care coordination processes:

- the support of the staff in the emergency department departments and, in some cases, the explicit support of the emergency department director
- the strategy of getting 'runs on the board' to promote support within the emergency department
- regular educational sessions with emergency department staff to accommodate staff rotation
- the support of other sections in the hospital structure, including management
- the support of community organisations, along with their cooperative responses within their resource abilities
- the ongoing support of the project's steering committee
- the integration of this model within the routine processes and structure of the emergency department, and sometimes the location of the emergency department care coordinators within the emergency department
- the appropriate staffing mix of the emergency department care coordination team, and their flexibility in terms of roles
- the appointment of a team leader to coordinate and manage the team, along with the supervision of the emergency department care coordination staff by the respective allied health manager
- the upskilling of staff (for example, patient discharge and resourcing skills) and the multiskilling of staff in some cases
- the introduction of other HARP projects, which has widened the range of services that can be offered to clients and, in one case, helped increased the coverage of emergency department hours through a joint appointment
- access to explicit services to support patients at weekends
- the nursing/medical staff's identification of the target population via risk screening on clients' arrival at the emergency department, along with the development of clear protocols for referral
- the ability to cross service boundaries in planning the package of care.

3.3.1.3 Factors hindering emergency department care coordination project implementation

Project teams identified the following factors as hindering care coordination processes:

- allocated or available non-clinical time being limited due to the high service delivery demand, thus restricting the capacity for developmental and evaluation work even though demand for this work is rising due to the number of HARP projects and HARP evaluation requirements
- the lack of defined key performance indicators at a Statewide level and, in some cases, the limitations of the current data collection system

- difficulties in the recruitment of suitably qualified staff, along with problems with covering the staff for a service that needs to operate 24 hours per day, seven days per week, and accommodate staff leave
- a rotation roster that may contribute to staff burnout
- professional issues across discipline boundaries, given the staff mix involved in the emergency department care coordination team
- unexpected pockets of resistance from some staff groups
- budget constraints, including the lack of access to brokerage funds in some cases, or insufficient brokerage funds to pay for the range of services needed (including equipment hire after hours and on weekends)
- the time needed to ensure people are placed in mainstream services and find other funding sources to sustain clients' service needs, beyond the project's short term brokerage funds
- the limited capacity to implement care plans in the evenings and on weekends, given that most community services and some subacute and ambulatory services operate during standard business hours, Monday to Friday only
- the lack of availability of crisis accommodation
- requests for care coordination from patients previously discharged.

3.3.1.4 Lessons from emergency department care coordination projects

Project teams identified the following key lessons from care coordination projects:

- the commitment and support of emergency department staff (and other staff teams with whom emergency department care coordinators work) are essential to this model
- ongoing management and clinical leadership within the hospital is required to support the model, including ongoing management of cultural change processes in the emergency department
- the establishment of networks with community services is essential, and emergency department care coordinators need to keep up to date with the range of services and initiatives available
- the inclusion of a mix of professional disciplines can assist in model implementation, but forming this staff mix into an effective functioning emergency department care coordination team requires effort. Issues can arise as a result of discipline-specific line management structures, so the team's management 'leader' needs to be included within the line management structure, particularly for matters pertaining to staff appraisal
- a viable database and reporting criteria need to be established before this model is implemented, and resources (technical and administrative) need to be provided to maintain the database
- the model is patient centred, rather than service focused, and assists patients to navigate the complexity of the service system and manage lengthy waiting periods
- the assessment and identification of needs and issues contributes to effective discharge planning and smoother and more efficient referrals to appropriate services, while also increasing the efficiency of emergency department processes

- the model contributes to ensuring the people do not fall between the gaps of a fragmented service system, and it is facilitated by access to brokerage funds.

3.3.2 Acute/primary care liaison

Since its inception in 2001, HARP has focused not only on strategies that seek to improve the care provided to people who have manifest health needs or who are frequent users of the public hospital system, but also on the mechanisms needed to improve the functioning of the service system. Through strategies that improve communication and cohesion across the various services and provide clearer pathways across the care continuum, people should be cared for more effectively. Consequently, the avoidable use of emergency department and inpatient services should fall, having a positive impact on the rate of growth in demand pressure on public hospitals.

The importance of changes in the underlying functioning of the services system to the HARP approach is evident in the fact that two of the seven working parties that the HARP Reference Group established in July 2002 to analyse priority areas focused on aspects of the interface between services: the community–hospital interface and the general practitioner–hospital interface. For this reason, acute/primary care liaison was selected as an analytical cluster for presentation in this report.

3.3.2.1 Projects

The HARP conceptual framework specifies that acute and community providers are to develop collaboratively the preventive models of care implemented in projects. Consequently, it is not surprising that most existing HARP project teams identified core components of the liaison and collaboration between services in the HARP schema documents that they submitted to BearingPoint.

However, seven existing projects focus solely on the interface between the acute and primary care sectors, and strategies to reduce fragmentation in the services system. These projects do not have clients as their target populations and do not provide services directly to clients. Instead, they focus on the services system, the providers within that system, and the structures and processes that underpin the delivery of care within the system. These seven projects form the acute/primary care liaison cluster discussed below.

3.3.2.2 Project variation

Acute primary care liaison projects vary in some defining features, including:

- the links focus–some focus on improved links between the acute sector and general practice, while others focus more broadly on links between the acute sector and primary care (including general practice)
- the location of the project–not all projects are sited within the acute setting (for example, the staff employed at Eastern Health's project, are located in the Division of General Practice)
- the level of HARP funding available to the project for its activities (ranging from $150,000 to $300,000 per year)
- the liaison activities (that is, the discrete interventions through which the project seeks to improve the local service system).

Many aspects of the variation among projects are linked to (1) the unique features of the services system within which each project is situated and (2) the degree of previous collaboration among services on which the project builds. At Austin Health, for example, the Hospital Primary Care Liaison Unit (HPCLU) has evolved from a close collaboration between Austin Health and the two local Divisions of General Practice (North East Valley and Northern) a collaboration that was formally consolidated through a 'heads of agreement' in 1996. Since being established in 1998, the Austin Health General Practitioner Liaison Committee has facilitated a range of collaborative initiatives, and this work was augmented in 2000 with the appointment of a general practitioner liaison officer. The HPCLU was a natural next step in this evolving cooperation, representing an expansion to include liaison with the wider primary care sector.

By contrast, much of the early work in Peninsula Health's project was associated with developing the memorandum of understanding between the health service and the Mornington Peninsula Division of General Practice, with final sign-off in February 2003. Similarly, a major focus in Western Health's project has been the development of a partnership framework to accommodate a variety of partnership arrangements.

3.3.2.3 Project activities

Across the projects, activities have included strategies to:

- improve the information provided to general practitioners by the health services (for example, legible and timely discharge summaries, notification of patient admission or death, and an up-to-date directory of services)
- ensure hospital records of patients' general practitioners are up to date (so as to reduce the notation 'unable to ascertain')
- increase the knowledge and understanding of staff within each sector about each other's role, via newsletters and education sessions, for example
- formalise links among services (for example, the partnership framework of Western Health)
- address the specific needs identified in formal surveys of providers
- facilitate an increase in the uptake of joint initiatives (such as projects), case conferencing (Enhanced Primary Care items) and mutual representation at relevant meetings
- increase opportunities for primary care providers to access hospital based clinics and education sessions where appropriate
- diversify the range of community based activities at which the acute sector is represented (for example, Primary Care Partnership involvement).

3.3.2.4 Project achievements

Achievements vary according to a project's specific activities, as shown by the following examples:

- *Austin Health*: a downward trend in the percentage of 'unable to ascertain' general practitioner entries in Austin Health patient management systems; the availability of general practitioner lists in the emergency department for use by patients who do not have a nominated general practitioner; general practitioner involvement in intern/medical officer orientation processes and regular education programs; and a 15 per cent response rate from general practitioners to the annual survey.

- *Northern Health*:

– The Northern Hospital: 21 per cent response to the general practitioner survey of satisfaction with services at the hospital; 100 per cent compliance with discharge summaries faxed to general practitioners within 24 hours; and demonstrated use of the General Practitioner Register by 85 per cent of hospital ward clerks following training by the project

– Bundoora Extended Care Centre (BECC): 100 per cent notification of general practitioners of patient admission, transfer and death within 24 hours of event; 100 per cent accuracy of general practitioner details recorded for each patient at admission; and 100 per cent of discharge summaries dispatched to general practitioners on day of discharge

- *Peninsula Health*: sign-off of the memorandum of understanding between Peninsula Health and the Mornington Peninsula Division of General Practice; an increase in the proportion of discharge summaries sent electronically to general practitioners (from 10 per cent to 30 per cent over three to six months)
- *Eastern Health*: 158 general practitioner responses to survey and 216 Eastern Health staff responses to survey; completion of web based contact list and service directory.

3.3.2.5 Factors facilitating acute/primary care liaison project implementation

Projects teams identified the following factors as facilitating acute/primary care liaison:

- strong support from the relevant Divisions of General Practice and, where applicable to the project focus, the relevant primary care services
- a history of working relationships and a desire by stakeholders to increase the level of communication and collaboration
- senior management support (from both sectors) and clinical leadership from senior clinicians
- identified individuals in both sectors who drive the project and take responsibility for it
- reciprocal representation at relevant meetings and the inclusion of general practitioners in clinical and educational activities within the acute sector
- an understanding of the differences between the two cultures, finding common ground to initiate change and formalising the relationship
- a good understanding of the hospital-wide administrative and clinical systems
- support for information technology solutions to improve communication for change management strategies
- the use of other programs (such as the Enhanced Primary Care items) where relevant to support liaison activities
- adequate funding
- a focus on communication through the general practitioner liaison officer role.

3.3.2.6 Factors hindering acute/primary care liaison project implementation

Project teams identified the following factors as hindering acute/primary care liaison:

- the size and complexity of the health service
- the cultural differences between the two sectors, with different needs, priorities and work imperatives affecting the project's ability to forge links across these differences
- differences in funding streams between the acute sector and general practice
- the complexity and range of funded programs within and outside the organisation
- the time necessary to achieve any significant cultural change
- the multiple responsibilities of senior staff involved in the project, along with the associated time constraints
- delays in the recruitment of staff (or, in one case, the replacement of senior project staff)
- glitches with the information technology solution, taking time to resolve
- a shortage of general practitioners in the region, affecting their engagement in project activities
- the location of the project in the Division of General Practice, resulting in poor access to hospital resources/information
- the lack of a detailed project plan
- the time needed to develop the submitted project plan through a detailed and extensive survey of needs to ensure the plan is appropriate
- late notification of project funding for the following year (last week in June), hindering project development because hospital budget forecasts are required much earlier
- a lack of resources for discrete liaison activities.

3.3.2.7 Lessons from acute/primary care liaison projects

Project teams identified the following key lessons from acute/primary care liaison:

- improved communication is important for building trust between the acute and primary care sectors, and for efficient and effective patient management across the interface
- complex hospital systems and the 'individuality' of general practice lead to multiple and, at times, unexpected barriers to communication and entrenched perceptions that can be time-consuming to identify, although it is vital to do so
- hospital staff do not fully understand general practitioner issues in the community, so a general practitioner liaison unit is important for informing hospital staff about general practitioners, strategies to enhance communication with them, and advice on the services that general practitioners offer
- all opportunities for communication should be 'mined'. While the responsibility for liaison ultimately resides with all clinicians in both sectors, the coordinating/facilitating role of the general practitioner liaison officer assists this process

- improved systems and communication channels are critical in regions with workforce shortages and a dearth of after hours primary medical care services, where many consumers have to use the emergency department as a de facto general practitioner service
- information technology solutions cannot solve communication problems, although they can assist the process
- an HPCLU can play a significant role in building links through its impartial capacity to be involved across the interface and to assist in the incremental process of change management that is required
- strong support from both the primary care sector and within the acute services at all levels is essential to this model's success
- while many improvements have been achieved, much more needs to be done with the many opportunities through which to forge links
- the department's late notification of project funding for the next year (last week of June) has a negative impact on the development of liaison focused activities because hospital budget forecasts are required much earlier
- it is not always prudent to use designated funds for information technology development early in the project because, for sustainability, the best software needs to be purchased and identification of what is required may take many months
- ilt can be difficult to identify and measure data for acute/primary care liaison projects and link the data to positive outcomes in terms of hospital demand
- it is important to develop a detailed project management plan with clear aims and measurable outcomes. Given the limited resources, it is also important to prioritise activities and workload.

3.4 Utilisation based clusters

3.4.1 Frequent/high volume acute service use

Within a context of increasing emergency demand pressure, people whose pattern of acute service use suggests they are frequent attendees or high volume users are of particular interest. The analysis presented in the HARP background paper indicated that 12.3 per cent of all emergency department presentations in 2000–01 consisted of 15,440 patients presenting to the same emergency department on four or more occasions. In the same year, 18,330 patients had three or more emergency separations. This preliminary analysis prompted the interest by the HARP evaluation in those people who presented often and/or had several emergency admissions.

It is not surprising that the preventive initiatives targeted through HARP focus on people with a manifest health need, often where the disease or condition is chronic or complex, and that priority is given to high volume and/or frequent users of the acute public hospital system.[12] Changes in the delivery of services to this priority population, across the continuum of care, have the potential to reduce the frequency and/or high volume of acute service use.

An exploration of patterns of frequent and/or high volume service use is integral to the evaluation of HARP. This will be facilitated through the Department development of a linkage algorithm for analysing de-identified hospital use data for individual patients

across hospitals. This analysis will provide a accurate picture of acute service use patterns because an individual may present, sometimes resulting in admission, to more than one hospital.

A number of project teams identified their target populations as 'chronic and complex patients'–a categorisation that tends to be based on a very broad description, in which factors such as clinical condition, co-morbidities and clinical judgement appear to be defining features. Few projects specifically mentioned frequent/high volume service use as a criterion for inclusion in their target population. Where use is referenced, it is often as one of several subsets within the target population–for example:

'admitted with primary diagnosis of diabetes and related complications >2 times in previous 12 months' (a subset of the project population)

'admitted with primary diagnosis of cardiac failure >2 times in last 12 months' (a subset of the project population)

'frequent users of emergency department and inpatient services' and 'frequent users of outpatients services' (two subsets of the project population)

'older people with complex medical needs and a high level of service usage who often experience a significant length of stay on admission to inpatient beds' (a subset of the project population).

One project uses a definition for frequent presenters based on a point system for classification, defining its target population as 'frequent presenters' determined via the following:

'a frequent presenter = 5 points or more, where 1 point is allocated for an emergency department presentation, and 1 point allocated for an admission'.

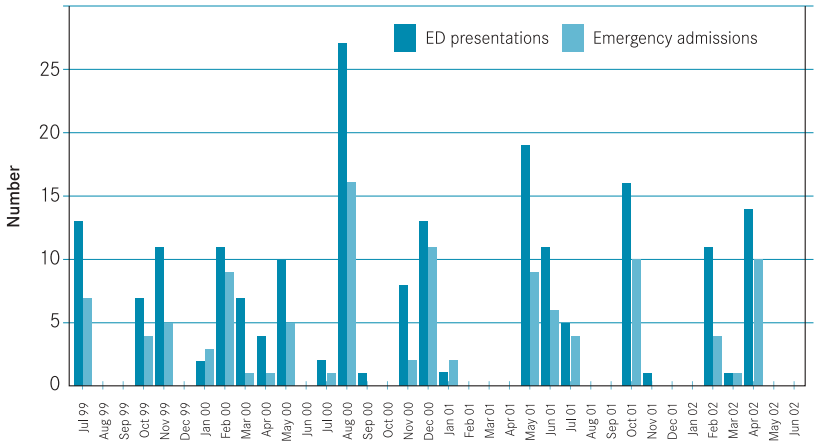
3.4.1.1 High utilisation case studies

The following two de-identified case studies illustrate the complexity of patients whom HARP projects manage.

Case study A

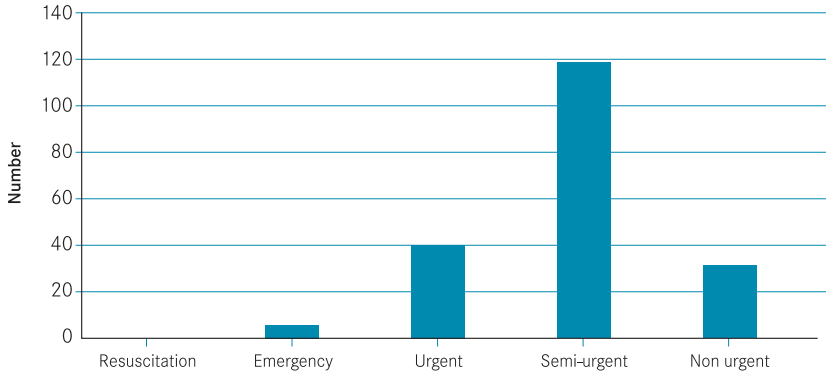
This case study depicts the service use of a non-indigenous male (aged 30–40 years at the time of his first presentation) within the period July 1999 to June 2002. In this period, the patient's service use reflected a combination of 195 emergency presentations and 111 emergency admissions across five different metropolitan hospitals. The distribution of presentations and admissions varied across these hospitals, with the number of presentations ranging from one to 106, and the number of admissions ranging from one to 62. The following figure depicts the frequency of these emergency presentations and admissions in each month of the three years in which they occurred.

Figure 3.5: Case study A–service utilisation



The following figure depicts this patient's emergency department presentations according to the triage category assigned to the presentation.

Figure 3.6: Case study A–emergency department presentation triage classification



Excludes one classification: 'dead on arrival'.

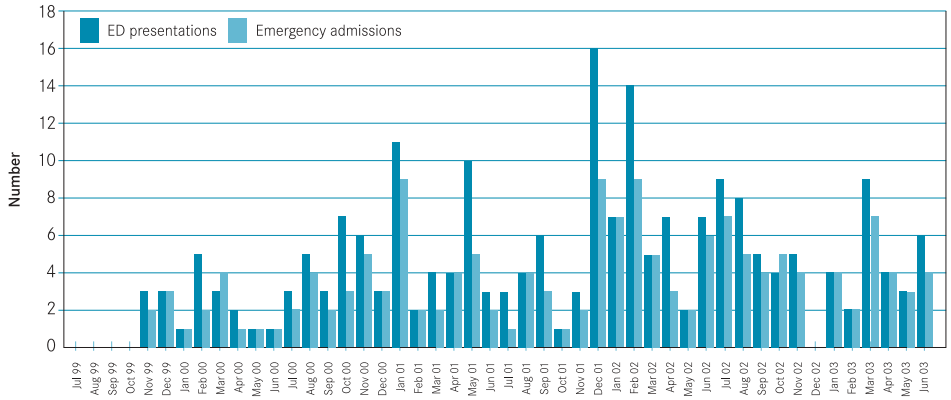
The most frequent principal diagnosis assigned to the patient's emergency presentations was the diagnosis related group (DRG) F100 (mental and behavioural disorders due to psychoactive substance use, acute intoxication). The remaining presentations covered 20 different diagnoses, plus a small number of missing data.

From the total of 111 emergency admissions for this patient, the overwhelming majority (105) involved a one day length of stay. Of the remainder, two admissions were for two days and four admissions involved each for the following lengths of stay: four, six, seven and eight days. The DRG V60Z (alcohol intoxication and withdrawal) was the diagnosis for 83 per cent of these admissions.

Case study B

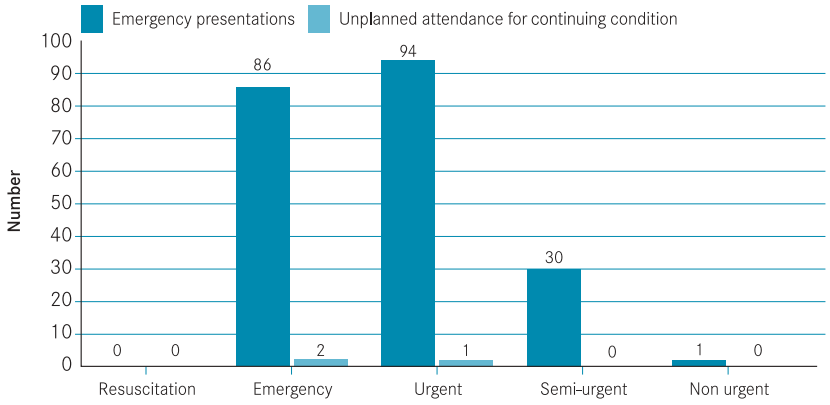
This person is a male in the cohort aged 65 years and over. Within the dataset spanning the period July 1999 to June 2003, this patient's use of acute services involved 214 emergency presentations and 159 emergency admissions, across six different hospitals. The distribution of presentations and admissions varied across these hospitals, with the number of presentations ranging from two to 167, and the number of admissions ranging from one to 118. The following figure depicts the frequency of these emergency presentations and admissions in each month of the four years in which they occurred.

Figure 3.7: Case study B–service utilisation



The following figure depicts the type of emergency presentation by triage category for the 214 presentations.

Figure 3.8: Case study B–emergency department presentation triage classification



The most frequent principal diagnosis assigned to emergency presentations was DRG R074 (chest pain unspecified). The remaining presentations covered 32 different principal diagnoses, plus a small number of missing data.

From the total of 159 emergency admissions, the majority were for one day length of stay, ranging up to one admission for 10 days. Sixty-four per cent of admissions were for the DRG F74Z (chest pain), with the remainder spanning 23 different DRGs.

4 Implementation–issues

The overall purpose of HARP is to implement interventions and models of care that are effective in improving people's health and wellbeing, and that reduce the preventable use of acute health services. The evaluation brief is to identify (1) interventions and models of care that are effective in achieving this purpose and (2) the factors that contribute to program sustainability–that is, to identify what works and under what conditions.

Project teams specified for inclusion within the HARP evaluation expended considerable effort to address the initial baseline reporting requirements for the evaluation and to provide preliminary information on their implementation experiences. Based on this information, it is clear that the mix of projects in 2001–02 and 2002–03 reflected a range of initiatives that were congruent with the HARP conceptual framework and that had the potential to influence the rate of growth in emergency demand. Most of these initiatives were supported by an evidence base indicating a real potential for improving people's health and wellbeing, and/or improving the underlying services system for more effective service delivery.

The challenge for project teams is to translate these initiatives into the real world context of the service delivery system and to demonstrate their effectiveness in contributing to HARP outcomes within the evaluation period. Although projects had different start dates, they are now almost all operational. They have all faced many similar challenges, including difficulties in recruiting suitably qualified staff and establishing new collaborative arrangements within the underlying service system. They are now well positioned to make real impacts on hospital emergency demand, and their effectiveness will become evident over the evaluation period.

This chapter outlines the key issues that have emerged through the initial HARP evaluation activities. These issues were selected to inform the development of projects, so as to help project teams maximise their opportunities to be effective within the HARP context, and to provide the Department with information on strategies to support HARP initiatives and on policy issues relevant to the roll-out of HARP models/interventions. Information is presented in relation to:

- project level developments within the HARP context
- policy level issues for consideration during the development of HARP initiatives.

Future evaluation reports will make recommendations in relation to the issues identified. Recommendations have not been provided at this time due to the early stage of the evaluation and the need to ensure a substantive basis exists for any recommendations that are made. Consequently the issues identified in this report will be re-appraised in the light of subsequent data, which allow recommendations to be made with greater confidence.

4.1 Project level developments within the HARP context

Based on the experiences of HARP projects, a number of issues have the potential to influence the success of the project model/intervention in both contributing to HARP outcomes and demonstrating the intervention's effectiveness for the HARP evaluation. These issues will influence the development of the broader service system's capacity to manage hospital emergency demand.

4.1.1 Project staffing

Issues that have emerged in relation to project staffing have been discussed in section 2.9.1. In summary projects identified the importance of highly skilled project staff as a project facilitator. Difficulties however were associated with recruiting suitably qualified staff and this hindered project progress in achieving operational readiness. Staffing problems were further exacerbated by staff resignation, in particular when the resignation was from a key position. Recruitment difficulties were attributed to factors including shortage of qualified staff, the multiplicity of projects and a lack of interest among potential applicants in project work.

4.1.2 Project establishment/implementation

Issues that have emerged in relation to project establishment/implementation have been discussed in section 2.9.10. Projects identified that developmental work to support the project delayed project 'live dates'. This work however appeared to have paid dividends in the 'live' phase, with a few project teams reporting that clear referral pathways and protocols were facilitating factors in project implementation.

4.1.3 Project governance

Project teams reported on the importance of their representative governance structure for project development. They noted that strong executive level support from the collaborating partners represented on this structure was particularly effective in assisting the implementation of a new model/intervention within the existing service system. Some projects did not have such governance structures, being managed through existing lines of authority within their sponsoring organisations.

The crucial role of the sponsor/governance committee in supporting projects to maximise their potential covers:

- *project resources*–ensuring the project is adequately supported in terms of the resources necessary to maximise the project's operational effectiveness. These resources can include the physical setting for the project, the administrative and technical (information technology) support available, and the organisational support provided to the project to discharge its reporting requirements
- *project scope*–ensuring the scope of activities conducted by the project are congruent with the HARP conceptual framework
- *project planning*–ensuring project planning is realistic in terms of both the scope of activities and the timeframe for their achievement, and ensuring activities are congruent with HARP and the funding available
- *collaboration*–ensuring the collaboration between acute and community based services is supported throughout the organisations working on the project
- *brokerage*–ensuring business rules and operating procedures are in place to inform brokerage decisions and minimise the risk of brokerage expenditure exceeding the funds available

- *patient management*–ensuring future planning considers the implications (for patients and services) of any cessation of HARP funding. This is particularly important for projects that have been functioning for some time, during which they have become closely integrated into 'usual care'
- *evaluation*–ensuring the project has the appropriate infrastructure and expertise available to support its evaluation activities.

The projects varied in the support available to them for undertaking project activity and for discharging their reporting responsibilities; in turn, the level of support had an impact on their ability to demonstrate project achievements within the HARP context. Variations were apparent in:

- *support for project activity*–for example, differences in the provision of infrastructure to projects (including office space and information technology)
- *support for 'routine' reporting*–for example, differences in the level of difficulty in obtaining project financial information
- *project funding allocations for evaluation activity*–that is, significant variation in the HARP funded resources available to undertake evaluation activities
- *support for evaluation activities*–for example, the advantage to projects that had access to evaluation expertise in completing the required HARP evaluation activities.

This variation suggests sponsors/governance committees need to review the support provided to projects to optimise project teams' opportunities to demonstrate the effectiveness of their intervention/model as a mechanism for delivering outcomes congruent with the HARP conceptual framework.

4.1.4 Project design

4.1.4.1 Project target group

Project teams defined their target groups of patients with varying degrees of specificity, which has had interrelated consequences for both the characteristics of the project model/intervention and the ability of the project to demonstrate 'effectiveness' within the HARP context:

- the less specific the patient target group being managed by the project, the more likely the project is to include individuals who have a limited 'capacity to benefit' from the intervention/model in terms of HARP outcomes
- the more patients that a project manages, the fewer resources the project has to provide services to individual patients; consequently, patients who have a capacity to benefit potentially receive fewer resources

Projects with broadly described, undifferentiated target groups are likely to manage a greater volume of patients. However, without clearly delineated criteria linked to HARP outcomes, the target cohort may include patients who have a limited capacity to benefit from the HARP perspective. Projects need to ensure a balance between the number of patients managed and the 'recruitment' of patients who will benefit from the project intervention/model. This is not an easy task, particularly given the significant number of

patients with unmet needs. However, within the context of HARP and the need to identify models and interventions that reduce emergency demand pressure, projects need to either:

- review their eligibility criteria to ensure they manage patients who have a capacity to benefit within the HARP context

  or

- differentiate their patient cohorts (and their subsequent data) into appropriate subclassifications, to clarify the effectiveness of the project model in managing patients of interest from a HARP perspective.

4.1.4.2 Service system functioning

Projects that focus on improving the functioning of the underlying services system–such as those that use acute/primary care liaison–face different challenges within the HARP evaluation context. They must demonstrate that project activity contributes to improved links that will improve the care of patients who have the capacity to benefit from the HARP perspective. Projects need to ensure the activities on which they focus have a clear rationale from the HARP perspective, showing the logical connection between the activity and HARP, and illustrating the attainment of suitably selected indicators.

4.1.5 Project funding

4.1.5.1 Project models and activities

Project teams identified factors associated with project funding as both facilitating and hindering their project. Some identified project funding as a facilitator. The reasons given appeared to relate primarily to brokerage funding, enabling the project to purchase services and/or equipment. Some project teams identified inadequate funding as a hindrance, constraining the project's ability to reach its full potential in meeting patients' needs or implementing strategies to improve the underlying services system. In a few instances, project teams reported increasing demands for their service, beyond their funded capacity to address.

Many projects appear to have received less funding from the Department than original submissions requested. Approaches outlined in submissions were not fully implemented, therefore, and project management and administration in particular appear to have been severely restricted where project teams strove to allocate the majority of their funding to a particular model/intervention.

4.1.5.2 Fund holding arrangements

As identified in section 2.9.4 the projects varied in their fund holding arrangements, with some project teams explicitly reporting that the responsibility for managing project budgets had been devolved to the project. For other projects, the sponsoring organisation held funds, and committees were responsible for funding decisions. Within a project context of collaboration across sectors, the collaborating partners would need to decide together where the budget is held and how it is allocated. Some projects experienced difficulty in obtaining project financial information from their respective organisation to report on expenditure.

In some cases, notification by the Department of continued project funding occurred late in the financial year and constrained potential project activity. In other cases, the late notification caused concern for project staff on contract. Timely notification of continued funding is a particularly important issue for projects for which the recruitment of suitably qualified staff is a major issue.

4.1.6 Evaluation activities

4.1.6.1 The project comparator

For project teams to demonstrate the effectiveness of their intervention, they need to specify the differences between HARP outcomes for patients managed by the project and those outcomes associated with 'usual care'. Without a system level 'flag' to differentiate those patients managed through HARP from other patients, any comparative data provided by projects will be crucial for informing the effectiveness of the projects' intervention within the HARP context. Projects with access to local evaluation expertise appear to have been advantaged in developing their comparative approach; in many cases, however, the project comparator was underdeveloped.

4.1.6.2 Project reporting

The external evaluation relies on the information provided by project teams. For this reason, the more abundant the information provided, the greater is the understanding of what a project is doing and what is working/not working at the local level.

As identified in section 2.9.2 projects appear to have been particularly advantaged by the inclusion of a project officer or manager who had time allocated to undertake the administrative tasks of the project (for example, reporting and data analysis). Where projects do not factor this role into their staffing profile/funding (in either a full time or part time capacity), the tasks have to be undertaken by someone employed for service provision, who may not have the requisite skills (because they were not employed for this role) or who needs to take time out from direct service provision. Further, a few project teams situated in organisations with multiple projects were advantaged by the appointment of an individual to oversee the projects and assist in their administrative tasks. Projects thus had variable capacity to discharge the 'standardised' reporting requirements.

In a couple of cases, project teams were advantaged by the pooling of project allocated funds to provide evaluation support, either through the direct appointment of evaluative expertise to the organisation or through the engagement of consultants with this expertise. Projects situated in organisations that did not adopt this practice or have the funds available to provide sufficient administrative and/or evaluative support were thus at a comparative disadvantage.

4.1.7 Information systems

Section 2.9.8 identifies issues that have emerged in relation to information systems. In summary the inadequacy of data systems to support seamless care across a range of service providers was a major barrier for many projects that resulted in some projects resorting to interim and unsatisfactory arrangements. Significant challenges included the development of databases capable of straddling the different systems through which patients may pass, obtaining adequate support in the development of project specific

databases, difficulties when project databases did not interface with hospital systems, and the variable nature of information technology capability across the acute and community sectors.

Also, for many projects, data collection problems were compounded by the introduction of the evaluation reporting requirements long after project commencement.

4.2 Policy level issues for consideration during the development of HARP initiatives

Prevention initiatives are continually evolving, and the composition of HARP evaluation projects reflects this developmental nature. Some projects pre-date HARP–or its antecedent, the 'prevention' component of the Hospital Demand Management Strategy–and others reflect the more recent articulations of HARP. This evolution is likely to continue as the new projects funded in 2003-04 translate their submissions into operational forms, and in the light of further knowledge and experience. Within this evolving context, the following issues are important considerations.

4.2.1 Brokerage

The decision to permit some projects to use allocated funding to purchase services from alternative agencies, so as to alleviate blockages within the system, is intuitively appealing. Patients appear to commonly remain within the acute setting because community based services are either unavailable after hours or already at full capacity. The use of 'brokerage' funds permits the projects to use alternative services that would otherwise not be available. Some project teams stated that access to brokerage funds has facilitated the project in service provision.

However, a number of implications and considerations relating to brokerage funding need to be taken into account:

- *Servicing of patient needs beyond the scope of the project.* The extent by which any additional services are provided to patients should be considered within the context of the project aims and objectives, and in relation to HARP. Given that the majority of patients are likely to have a certain level of 'unmet needs', projects have to identify which needs to meet in relation to 'prevention', as opposed to providing services to meet all identified needs. This is a crucial decision because projects that 'overservice' patients limit the opportunity to demonstrate both the effectiveness and cost effectiveness of their models.
- *Queue jumping by patients for existing community based services*. The offer of brokered services allows informed consumers to bypass 'normal' service access points by attending one of the HARP projects. There is the need to ensure the implementation of an equitable system for all patients who require community based services.
- *Project financial accountability and sustainability.* To support brokerage decisions at the 'clinician' level, processes need to be established to ensure brokerage expenditure is accountable and within the boundaries of the available funds. The larger and more complex projects become, and the more diffuse the decision making avenues are, the greater the opportunity for expenditure to exceed available funding. Business rules and operating procedures need to be established to inform brokerage decisions such as which patients, under what conditions, for how long and at what cost.

- *Integration of patients who receive brokered services into the existing service system.* The use of brokerage funds should be intended for short term service provision, with the aim of allowing the patient to access services within the existing service system. However, pressure on established service providers may create access blocks and necessitate the continued provision of brokered services to patients in the medium term. Ultimately, such provision is beyond the scope of brokerage funding for HARP projects.
- *Generalisability.* At the policy level, the intended objectives of using brokerage funding within the service system need to be considered. There are significant implications for health care funding from a system-wide roll-out of brokerage based services, including:
  - the potential to transfer funding from hospitals to community based care
  - the mechanisms and associated costs needed to ensure brokerage expenditure is maintained within funding boundaries
  - the impact on the cost effectiveness of interventions from purchasing services at the prevailing 'market price'.

4.2.2 Service system pressure

While HARP was established as part of the strategic approach to reduce emergency demand pressure, it has two side effects for the service system generally, with project teams identifying both as important considerations:

- *Pressure deflection and dispersion.* Some project strategies deflect acute emergency demand from a single site to an array of community based services. This dispersion may make increasing demand less visible but not necessarily less of an issue. Rather, the problem may be spread across multiple service providers, of which each experiences its own increasing demand pressure but without having a 'system-wide' indicator to highlight the magnitude.
- *Generating additional service pressure.* Numerous projects reported the identification of 'unmet' patient health care needs that necessitate referring the patient to additional services. While some projects received HARP funding to either pay or provide such services, the majority of projects in the evaluation period relied on the capacity of the existing service system to meet the identified needs. The impact of this arrangement on non-HARP funded services could be substantial, particularly within an existing environment of waiting lists and tightening eligibility criteria. The additional pressure on existing services has the potential to create service bottlenecks and increase queuing and waiting times for all patients; in turn, patients may access acute services to address their unmet health care needs, thereby undermining the original intent of HARP.

  While a number of HARP projects add capacity within the community sector, some project teams noted that an important issue is the ability of community based services generally to meet the needs of patients. Concerns included:

- the high workloads of, and multiple demands on, general practitioners, which have an impact on general practitioners' ability to engage in new projects
- the inability of community based services to respond in a timely manner (which is both a capacity issue and a time issue, with many services available only from 9 am to 5pm, five days a week) and concerns about increasing demands on those services

- gaps in current community services, which brokerage can sometimes alleviate
- long waiting lists for some services, particularly residential care services.

4.2.3 Project models/interventions

For the evaluation to address its brief of identifying effective models and interventions within the HARP context, it is necessary to first identify the models/interventions. Across the projects, a range of models/interventions are congruent with the HARP conceptual framework and will provide useful insights into the effectiveness of these models in contributing to the achievement of HARP objectives, thus informing decisions on a wider roll-out within the Victorian system.

However, due to a combination of factors–including the evolving nature of HARP, the retrospective designation of some local initiatives as HARP projects, and the variation in local contextual developments–the identification of models/interventions is not always a clear-cut process. It is particularly problematic where:

- projects perceive themselves, and appear to be perceived within the local health service, as 'usual care', rather than as formally constituted projects with governance structures and recognised project parameters
- models are so idiosyncratic compared with the structure and processes of the localised service system that they are not transferable/generalisable
- models have become blurred through interpretation by project mergers.

Consequently, the Department and the health services have issues to consider in terms of further developments. The following are among the implications of project based (that is, time limited) funding for projects regarded as 'usual care' at the local level, particularly where a project has become integrated into the current service delivery:

- any cessation of project funding would have consequences for the service system structure where project elements have become so enmeshed in the structure that it would be difficult to disentangle them. Emergency department care coordination is an example: this model appears to have become integrated into the local structure and processes of care, and to be highly valued for its contribution to managing local emergency demand. As such, the cessation of project funding would have major consequences for the local system
- any cessation of project funding has consequences for patient management, which may not necessarily be conducted on a trial basis (with consent) but as part of usual care.

There are also implications for projects deemed to be 'usual care' within an evaluative context that seeks to identify what works and under what conditions. The placement of these projects within the HARP evaluation necessitates considerable 'project-type' reporting to demonstrate the effectiveness of an intervention, as distinct from routine 'service-type' reporting that has a monitoring function. Such projects do not appear to necessarily have had the local 'project' support structures to assist them in this reporting activity.

Similarly, both the Department and the health services have to consider the implications of project mergers. Over the evaluation period, a number of project mergers occurred in response to the developing conceptual orientations (in terms of prevention) and the changing local context. Within a dynamic context, change is inevitable; implementation

experience, coupled with local learning, can lead to such mergers being perceived as logical and practical developments. However, project mergers can constrain the evaluative opportunity to identify discrete transferable models that work. The original models can become less discernible and increasingly locally specific, and their potential impact within a HARP context can become less apparent.

Appendixes

A Outline of HARP and the evaluation

A.1 About HARP

A.1.1 Overview

HARP is the 'prevention' component of the Hospital Demand Management Strategy. Through HARP, $150 million over a four year period has been allocated to fund strategies and initiatives that endeavour to reduce hospital emergency demand. The strategies and initiatives include innovative models of care and practices that improve the management of patients, increase the capacity of the health care system, enhance the continuity of care, improve communication and cohesion within the service system, and improve overall resource efficiency. Three funding rounds have been completed and, while new projects are still at the planning or establishment stage, some projects have been operational for more than two years. The impacts of these latter projects on hospital demand pressure should be contributing to improving the overall performance of the service system.

A.1.2 Hospital Demand Management Strategy

The Victorian Government recognised that the health care system was experiencing unprecedented and sustained increases in demand for health care services across the spectrum of health and community care. The increasing demand was placing significant pressure on hospitals, with:

- demand for public hospital services in Victoria growing by 3–4 per cent per year
- increases of 7–8 per cent per year in emergency admissions (metropolitan public hospital)
- increases in the frequency of ambulance bypass
- longer waits within emergency departments.[13]

In response, the Victorian Government committed $582 million over four years (2001–02 to 2004–05) to a Hospital Demand Management Strategy to strengthen the capacity of the health system to manage the increasing demand pressures. The strategy's focus has been on the service system as a whole, rather than on fragmented or single organisations.[14] It promotes the development and use of appropriate pathways for people using health care services, and it encourages models of care that respond to current demands for health services.[15] The key aspects of the strategy are:

- creating extra capacity through funding growth
- relieving pressure on hospital beds and emergency departments by diverting people to alternative options where clinically appropriate
- working with clinicians to improve patient management practices
- improving working conditions that will attract and retain nurses
- implementing a prevention strategy to reduce demand pressure on hospitals–namely, HARP.

A.1.3 HARP aims and objectives

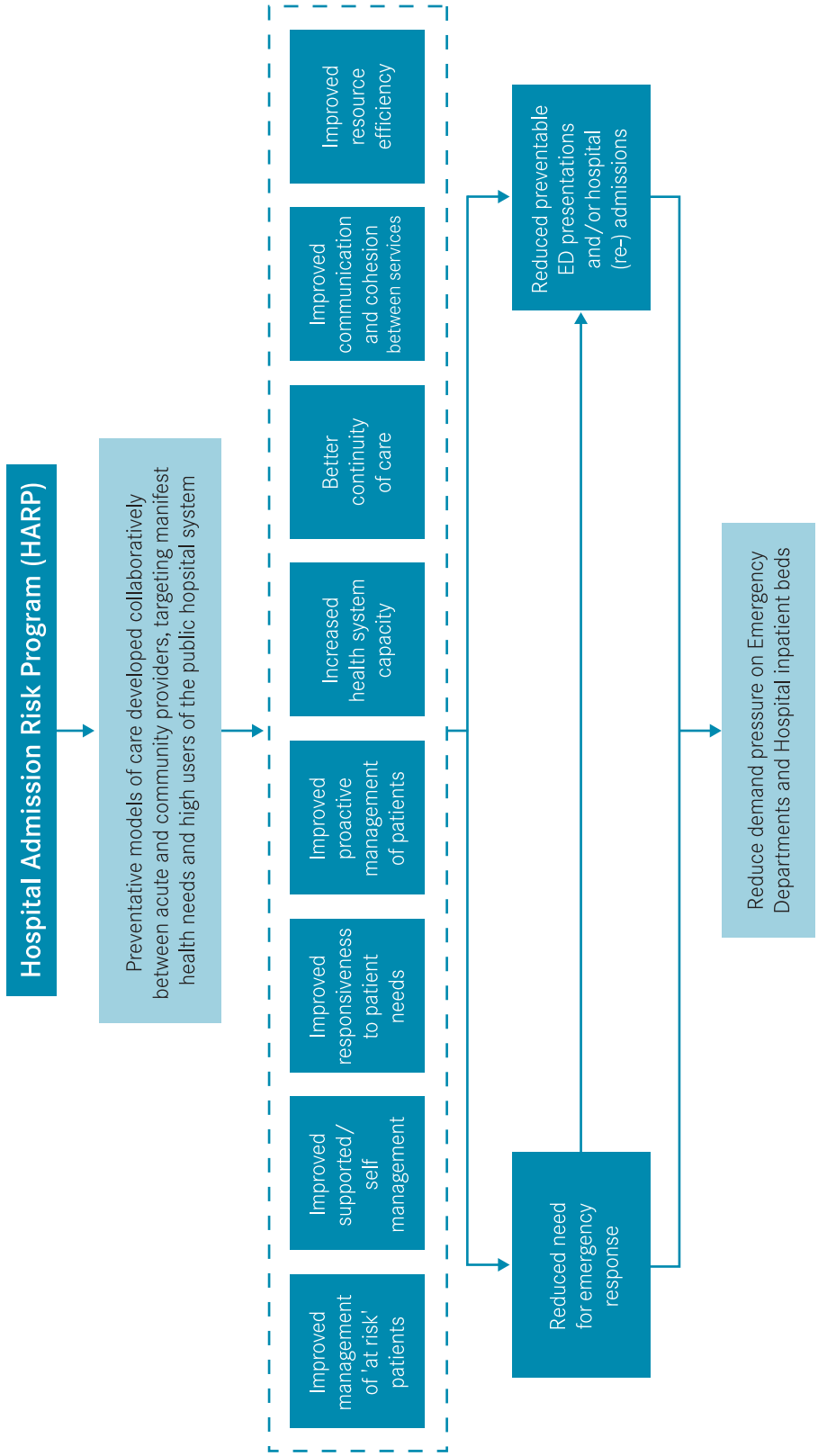
The primary aim of HARP is to implement 'models of care that better manage emergency presentations and emergency admissions to public hospitals through initiatives that involve the hospital and community'[16] to:

- improve people's health outcomes by:
  - supporting independence and capacity to live in the community
  - increasing capacity within the health system to respond to health needs of people
  - developing responsiveness to, and proactive management of, people's health needs
  - ensuring clearer clinical pathways that deliver better continuity of care
  - creating cohesion between public hospitals and the subacute and primary care sectors
- reduce the preventable use of emergency departments and inpatient services, as reflected in:
  - a reduction in the rate of growth in presentations to emergency departments for relevant conditions
  - a reduction in the rate of growth in admissions and re-admissions to inpatient services for relevant conditions
  - a decrease in the length of stay for people with relevant conditions who are admitted to hospital.

The figure below summarises the relationship between HARP and the attainment of outcomes consistent with the Hospital Demand Management Strategy, noting the following:

- HARP is a collection of preventive models of care (strategies and initiatives).
- HARP contributes to reduced demand pressure by achieving eight objectives that:
  - reduce events that result in the need for an emergency response
  - reduce the rate of growth in emergency department presentations
  - reduce the rate of growth in hospital admissions.
- HARP contributes to the Hospital Demand Management Strategy by reducing growth in demand pressure on emergency departments and hospital inpatient beds.

Figure A.1.1: HARP framework



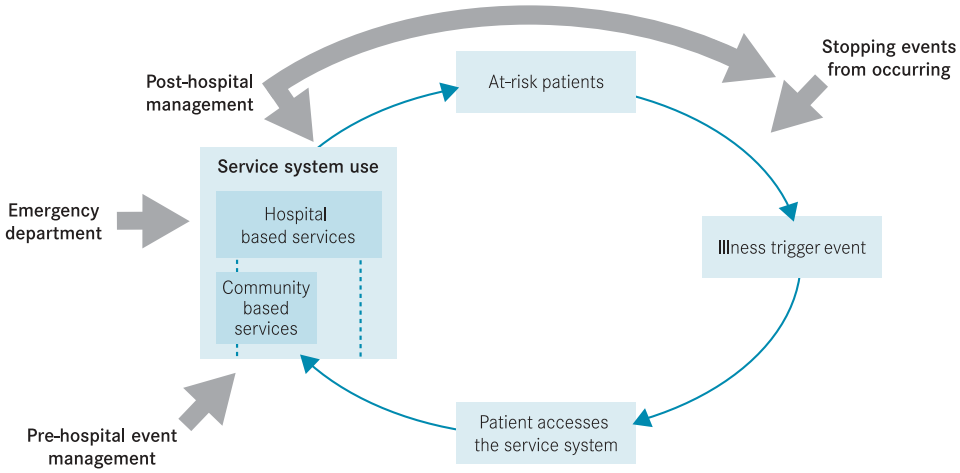
A.1.4 Conceptualisation of HARP

Conceptually, HARP strategies and initiatives can be perceived in relation to an implied transition of at-risk patients through the service system, such that the service system has the opportunity to prevent deviations in health and/or wellbeing or, where these deviations occur, to divert or influence the characteristics, format and structure of care provided. HARP focuses on influencing both the stages of patient transition and the interface between the stages. This has led to four broad areas in which HARP projects contribute to reducing hospital emergency demand:

- *Stopping events from occurring*. Some HARP strategies and initiatives have a direct impact on the patient, in terms of maintaining health and wellbeing so as to 'prevent' or improve the management of events that cause emergency presentation to hospital.
- *Pre-hospital event management*. Some HARP strategies and initiatives have an impact on the operation of the underlying primary and community based service system to provide alternative treatment/management options for patients.
- *Emergency department event management.* Some HARP strategies and initiatives change the management of patients who present to the emergency department.
- *Post-hospital management.* Some HARP strategies and initiatives respond to patients' needs as the patients re-enter the community following hospitalisation, recognising that patients may require targeted assistance to ensure their condition is appropriately managed and thus to reduce the likelihood of event re-occurrence.

The figure below summarises the patient transition and the HARP opportunities to reduce hospital emergency demand.

Figure A.1.2: HARP conceptual model



A.1.5 HARP evaluation timeline

The Hospital Demand Management Strategy commenced in May 2001, and HARP was established as a formal program in November 2001. The following table provides a timeline of key HARP events and developments.

Table A.1.1: HARP evaluation timeline

Date (month/year)	Activity
May 2001	Hospital Demand Management Strategy commenced; the notion of a 'prevention' component was established
June–July 2001	2001–02 funding round (H01 projects)
November 2001	HARP was established as a formal program
December 2001	HARP Reference Group was established
March 2002	HARP Evaluation Subcommittee was established
April–July 2002	2002–03 funding round (H02 projects)
July 2002	HARP working parties were established
November 2002	BearingPoint was appointed as the evaluators
February 2003	HARP working parties reported to the HARP Reference Group
March 2003	Working parties' reports were launched
March–June 2003	2003–04 funding round (H03 projects)
May 2003	BearingPoint submitted an internal report to the Department
May–June 2003	BearingPoint implemented an evaluation processes
July 2003	*Evaluation*–understanding template and HARP schema completed
August 2003	*Evaluation*–six monthly report completed
October 2003	Department presented 'linked' hospital evaluation data to BearingPoint
November 2003	BearingPoint presented an interim internal report to the Department
March 2004	HARP first public evaluation report published
June 2005	HARP evaluation final report to be published

A.2 Evaluation of HARP

A.2.1 Overview

BearingPoint (formally KPMG Consulting) is conducting the HARP evaluation. The evaluation is exploratory in nature, seeking to inform future decision making for both the Department and providers generally within the health care system. The emphasis is on providing information about which models and interventions work, and under what circumstances, to help the development of approaches to better manage hospital emergency demand.

The evaluation is based on information that projects reported through a series of reporting templates. The projects have been assisted to develop project-specific indicators that are consistent with analysing and interpreting a project as both an individual entity and a contributor to the HARP objectives. The final HARP evaluation report in due for completion in June 2005.

A.2.2 Evaluation requirements

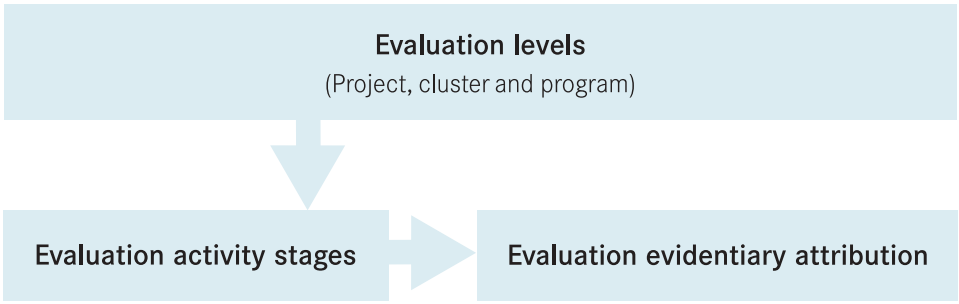
The HARP evaluation is required to address the success of funded projects in achieving the specified objectives and aims of the program. Specifically, it is required to identify interventions and models of care that:

- are effective in improving clinical outcomes
- reduce the preventable use of acute health services
- identify the factors that contribute to the program's sustainability.[17]

A.2.3 Evaluation framework

The evaluation approach consists of three evaluation levels, three stages of evaluation activities and the use of an evidentiary attribution approach to assess the contribution of individual project outcomes to expected HARP outcomes. The figure below depicts this evaluation approach.

Figure A.2.1: HARP evaluation framework



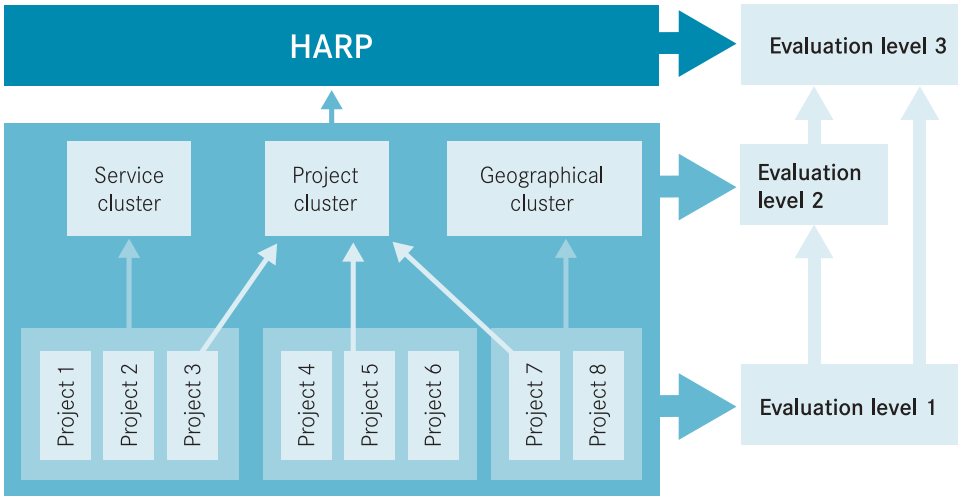
A.2.3.1 Evaluation levels

HARP is an amalgamation of projects that share a common endeavour through multiple objectives to reduce hospital emergency demand. For this reason, the success of HARP depends on the relative contribution of individual projects and, where relevant, the contribution of clusters of projects. The evaluation of HARP thus incorporates three levels of evaluation:

- *Level 1: project evaluation*–the evaluation of individual projects as discrete entities. This level involves assessing the extent by which a project attains its specific objectives and assessing the project's contribution to HARP aims and objectives. It contributes to both the cluster evaluation (level 2) and the program evaluation (level 3).
- *Level 2: cluster evaluation*–the evaluation of projects/individuals that share a common feature or attribute. This level provides an opportunity to consider the impact of the HARP models and approaches within a broader context and variety of settings.
- *Level 3: program evaluation*–the evaluation of HARP as a single entity. This level involves assessing the synthesis of the similarities and differences among project and cluster activities and outcomes, so as to (1) assess the overall impact of HARP on hospital demand pressure from the viewpoint of the service system and (2) consider the extent to which the program achieved its aims and objectives.

The following figure summarises the evaluation levels within the context of projects, clusters and the program.

Figure A.2.2: HARP evaluation levels



A.2.3.2 Stage of evaluation activity

The adoption of a staged evaluation activity approach provides a common evaluation basis across the three evaluation levels, to ensure consistency and completeness in the evaluation where:

- projects are diverse in term of facets such as design, implementation, scope, aims, objectives and expected outcomes
- clusters are defined in terms of systematic collaborations and/or analytical constructs
- the program is based on the 'additive' contribution of projects and clusters to the overall HARP aims and objectives.

The staged approach incorporates the following three stages:

Stage 1: background and context (understanding the program and its projects)

- Project level information collected through:
  - *The understanding template*, providing information on project context and justification, aims, objective and scope, the project intervention/model, appropriateness and evidence base, funding, and project structure
  - *the HARP schema information sheet*, providing information on the relationship between the project and HARP, and identifying and developing the indicators to inform the evaluation
- Program level information collected through departmental reporting and documentation.

Stage 2: measurement and assessment (collecting information pertaining to the evaluation questions)

- Project and cluster level information collected through:
  - *the six monthly reporting template*, which projects complete twice yearly (February and August) on project activity, process, impacts and outcomes
  - *the reflections template*, which is collected at the end of the evaluation period, providing projects with the opportunity to outline insights into issues and lessons that contribute to policy and program development from a variety of stakeholder perspectives
- Program level information collected through the existing hospital data systems:
  - the Victorian Emergency Minimum Dataset (VEMD), providing emergency department information
  - the Victorian Admitted Episode Dataset (VAED), providing inpatient information.

Stage 3: interpretation (analysing and interpreting information relative to policy and program development)

- Interpretation of the implications (identified from the lessons learned) for policy and future program development, and of the critical success factors for change and barriers to change.

A.2.3.3 Evidentiary attribution

The establishment of HARP within the dynamic environment of the underlying service system accentuates the need for an evaluation approach that allows for attributing an indicative assessment of cause and effect. The evaluators' approach to developing a 'picture' of evidence involves considering:

- the theoretical justification and rationale of the project/cluster interventions and models
- the contribution of the projects/clusters to their specified objectives
- other factors and influences that have contributed to observed changes in emergency pressure.

A.2.4 Evaluation progression

This section provides an overview of the activity conducted as part of the evaluation. The parties involved in the development of the evaluation approach have been:

- BearingPoint (the evaluators)
- the Department of Human Services
- the HARP Evaluation Subcommittee.

The following table summarises the evaluation activity.

Table A.2.1: HARP evaluation activity

Activity	Description
Program development	Conceptual framework (January 2003) • Clarification of HARP within the context of the Hospital Demand Management Strategy • Presentation of a conceptual framework of HARP • Characterisation of the current HARP projects within the context of the conceptual framework and the Hospital Demand Management Strategy
Evaluation development	Evaluation framework (February 2003) • Overview of the evaluation approach • Outline of the evaluation tools Evaluation workshop–workshop guide (March 2003) • Preliminary presentation of the evaluation approach to HARP participants at a workshop held during the 'Meeting patient needs, managing patient demands' conference Evaluation tools: the evaluation guide, the understanding template, the HARP scheme information sheets and the six monthly reporting template (May 2003) • Finalisation of the evaluation process and tools
Evaluation implementation	Evaluation guide and templates sent to projects (May 2003) • Provision of the evaluation guide and templates to the projects Workshops–presentation of evaluation approach (June 2003) • Assistance provided to projects through 11 workshops
Departmental reporting	Internal report (May 2003) • Report based on the projects' completed Hospital Demand Management Strategy six monthly reports
Evaluation	Collation and assessment of the understanding templates, the schema information sheets and the six monthly reporting template (August 2003) • Evaluation activity for current report.

A.2.5 Future evaluation activities timeline

The final evaluation report is due to be completed in June 2005. The following table summarises the evaluation activity and reporting that projects will undertake to inform the evaluation.

Table A.2.2: Future evaluation activities timeline

Date	Activity
February 2004	Six monthly report (project reporting)
August 2004	Six monthly report (project reporting)
February 2005	Six monthly report (project reporting)
February 2005	Project reflections template (project reporting)

A.2.6 Evaluation challenges

The evaluation of HARP is being conducted within the context of the evolving service system; few projects have opted for a randomised control design, and the majority of projects rely on a before/after evaluation design to identify their contribution to reducing demand pressure. The limitations of such an approach are well documented,[18] and the evaluation is constrained to being conducted within such parameters. This section outlines some key challenges of the evaluation.

A.2.6.1 Attribution of the HARP effect

Within the service system, a magnitude of activities at the local, State and federal levels are contributing to changing hospital demand pressure on both demand and supply fronts. Attribution of the contribution of individual HARP projects to changes in demand pressure is one of the primary challenges of the evaluation, particularly where there is some 'softness' (validity and rigour) in the comparative basis for the majority of projects. Without directly attributable data, the evidentiary attribution approach provides a basis on which greater certainty can be achieved. However, the evaluative rigour from the application of such an approach accentuates the opportunity for error in the evaluation findings.

A.2.6.2 Magnitude of the HARP effect

Within the context of system level analysis, the contribution of individual projects to reducing demand pressure for a specific condition/issue may be relatively small. If, for example, a condition has a high prevalence and an associated high frequency of emergency department attendance, but the project is targeting a relatively small subgroup of the prevalent cohort, then the contribution of the project to changes in the system-wide data may be insignificant. In such circumstances, assessing the project within the service system context will have a limited benefit, unless the subgroup can be isolated within routinely collected data. Projects will be encouraged to pursue increased comparative rigour in their evaluation approaches.

A.2.6.3 Assessment of the cost effectiveness of HARP

Consideration of the cost effectiveness of HARP projects is a challenge, given the large number of projects being evaluated and the limited availability of information on both the effectiveness and costs attributable to specific interventions and models. While there will be some opportunity to undertake more detailed assessment within the context of case studies, estimates of the cost effectiveness of the majority of projects will be based on attribution estimates of effectiveness and costs from the available literature.

A.2.6.4 Dynamic nature of HARP–evolving projects

HARP projects are not static in their design, which has an impact on the evaluation parameters at both the project and cluster levels. As projects develop and evolve, the project indicators may need to be amended to incorporate changes in the project model or intervention. Also as projects change, so does their evaluation. The need for projects to maintain accurate and quality information to pass on to the evaluators will be critical for ensuring projects contribute to the HARP evaluation.

B HARP projects–illustrative examples

The projects specified for inclusion in the HARP evaluation reflect a diverse range of strategies and initiatives that endeavour to reduce hospital emergency demand. They include innovative models of care and practices to improve the management of patients, increase the capacity of the health care system, enhance the continuity of care, improve cohesion and communication within the service system, and improve overall resource efficiency.

Projects have completed an extensive process of describing their approach according to a specified format, including a description of (1) the evidentiary basis for their approach and (2) the project's links within the HARP conceptual framework. They have also reported on project activity and experiences to June 2003.

Given the number and diversity of project approaches, it is not possible to represent them all within this report. This appendix presents an overview of three projects that illustrate the mix of patients and models of care included within HARP.

B.1 Aged Care Outreach Service

The Aged Care Outreach Service (ACOS) at Northern Health seeks to address two major issues. The first issue relates to the high number of clients from residential aged care facilities who present and/or are admitted/re-admitted to The Northern Hospital.

- There were 520 hospital admissions in 2000, increasing to 776 in 2001.
- Twenty-eight per cent of patients discharged from the hospital to residential aged care facilities over a one year period were re-admitted within six months.
- The average length of stay for residential aged care facility clients was 11 days per admission, well above the hospital's average of 3.7 days.
- Hospital admissions from residential care in 2000–01 cost approximately $2.7 million, with re-admissions costing $1.6 million.

The project identified that many of the conditions causing admission could have been comfortably managed, with adequate support services, in the residential aged care facilities.

The second issue relates to the increasing number of clients with palliative care needs who present and/or are admitted/re-admitted to The Northern Hospital via the emergency department.

- From October 2001 to March 2002, 60 referrals by care coordinators were to inpatient and community palliative care services.
- Only 37 per cent of the hospital's patients referred to a palliative care service had input from a palliative care consultant.

The project identified that this issue was caused by both a service gap at the hospital and a need to coordinate the palliative care process across existing services.

The project seeks to address these two issues through four broad strategies (or project arms), each of which builds on the existing service system in different ways. The following sections briefly summarise these project arms.

B.1.1 Project arms

B.1.1.1 ACAS Rapid Response Residential Arm (ARRRA)

This project arm operates through the Bundoora Extended Care Centre. It was developed following the success of the centre's ACAS Rapid Response Community Arm (an initiative established in 2000 with Hospital Demand Management Strategy funding).

The two target groups are:

- people living in a low level residential aged care facilities whose care needs change quickly or unexpectedly, resulting in the need for additional service support to maintain them in their current environment, OR whose circumstances change such that they can return home from residential care when adequate supports are put in place
- staff in seven specific residential aged care facilities, each chosen for a particular reason– for example, an ethno-specific facility and high volume users of the acute hospital system.

ARRRA provides a rapid response service to clients and providers in low level residential aged care facilities. This service consists of an onsite assessment by a multidisciplinary specialist aged care team, case management, the brokering of 'additional services' during crisis situations, and assistance with listing/accessing other residential aged care facilities that are more appropriate to changing client needs. Supplementing this service is an educational component for staff in the selected facilities, to improve their knowledge and practical skills for coping with complex clients at risk of hospitalisation.

B.1.1.2 Residential Care Intervention Program in the Elderly (RECIPE)

This program was set up as a randomised control trial managed by staff from the Northern Clinical Research Centre at The Northern Hospital. It targets patients from residential aged care facilities who are admitted to The Northern Hospital with one of the following diagnoses: pneumonia, urinary tract infection, chest pain, heart failure, COPD with infection, senility (debility), transient ischemic attack/cerebrovascular accident, seizure, gastrostomy tube intervention, syncope, cellulitis, type 2 diabetes mellitus, chronic wound, anaemia and volume depletion.

This target group has been expanded since the original submission to include a wider range of diagnoses, to ensure sufficient patient numbers are recruited over the project timeframe to provide statistically significant data on intervention outcomes. Patients are excluded if they are identified as needing palliative care within the hospital, if they are receiving medical reviews from a hospital interim care program, if written informed consent cannot be obtained from the patient and their relatives, or if the facility in which the patient resides is outside the hospital's catchment area.

The model of care for intervention group clients in RECIPE is essentially a mobile aged care clinic that provides a post-discharge team review (geriatrician and nurse) in the residential aged care facility. This service is supplemented where necessary by interventions for a six month follow-up period, including rapid service provision for intercurrent illness (for example, urinary catheter insertion or the administering of intravenous diuretics), care coordination and multidisciplinary case conferences, and further facilitation/onsite assessment as requested.

B.1.1.3 The Aged Care Shared Care (ACSC) residential arm

This arm of the project was established through Broadmeadows Health Service to work within the municipalities of Hume and Moreland. It has structural links with the work done through the Aged Care Shared Care program (another HARP project) and the Geriatric Evaluation Unit at Broadmeadows.

The target group are clients (aged over 65 years) who are seen by the Aged Care Shared Care Community team or admitted to the Broadmeadows Geriatric Evaluation Unit, who have particularly complex needs, who are transferring from a low level residential aged care facility to a high level one, who are entering residential care for the first time, or who would normally require longer inpatient admissions before being ready for discharge.

The ACSC model is a supported discharge of complex patients to residential care, provided by a clinical team consisting of a physiotherapist, an occupational therapist and a clinical nurse consultant. This team provides an individualised care plan (developed in cooperation with the residential aged care facility staff) for the transition period, and may liaise with general practitioners and facilitate case conferencing as part of this process.

B.1.1.4 The Integrated Palliative Care arm

This arm was established at The Northern Hospital and targets patients with life limiting illness (that is, those illnesses identified as palliative) whom either hospital or residential aged care facility staff refer. The model provides end-of-life care planning and education for patients and their families, inpatient liaison and consultation with community services to ensure smooth transition of care following hospital discharge. The Integrated Palliative Care arm is staffed by clinicians specialising in palliative care: a physician, a clinical nurse consultant and a social worker.

B.1.2 Project management and governance

The project has an overall steering committee that also acts as a reference group. The committee comprises representatives from all four arms, together with representatives from the Royal District Nursing Service, Melbourne City Mission, the Northern Aged Care Managers Network and the emergency department at The Northern Hospital, and a consumer representative. The project's funding from the Department is held by the Northern Health Service and distributed to four different cost centres according to an agreed percentage breakdown determined at project inception. A project manager (0.5 equivalent full time) has been appointed.

The project works closely with two other HARP projects within the Northern Health Service (the General Practice Liaison projects at Bundoora Extended Care Centre and The Northern Hospital) and also with the Community Link HARP project at Austin Health, acting as a co-purchaser for residential care clients at risk of presentation to the Austin.

The project team identified the following factors as being critical to its success:

- brokerage funds for purchasing services. Many clients depend on 1:1 care to prevent hospital admissions and enable them to remain in their current environment until they return to a previous level of functioning or are transferred to another facility. This level of care requires additional staffing in low level facilities, which must be purchased because these facilities do not have the staffing resources (quantity or qualified) to manage these clients safely.

- project staffing–that is, highly skilled, experienced staff with the ability to operate across sectors are essential
- community confidence
- partnerships with general practitioners, residential aged care facilities and other service providers
- the development of advance care plans
- Northern Health Service executive support.

B.1.3 Project activity

The project team reported the following numbers of patients managed by each project arm since the project's inception:

- 127 patients managed by ARRRA
- 21 patients managed by RECIPE
- 20 patients managed by the ACSC residential arm
- 79 patients managed by the Integrated Palliative Care arm.

The following numbers of clinical contacts/interventions were provided by each project arm:

- 742 by ARRRA (October 2002 – June 2003)
- 145 by RECIPE (November 2002 – June 2003)
- 29 by the ACSC residential arm (November 2002 – June 2003)
- 365 by the Integrated Palliative Care arm (November 2002 – June 2003).

The numbers of services purchased for patients were 21 by ARRRA, 27 by RECIPE and two by the ACSC residential arm. The number of services purchased for patients managed by the Integrated Palliative Care arm could not be reported due to a technical problem with the database.

B.1.4 Project achievements

The project team reported the following achievements:

- Thirty emergency department admissions were averted by each of ARRRA and RECIPE.
- The length of stay fell for the intervention group patients in RECIPE, averaging 8.5 days compared with 18 days for the control group.
- Seventy per cent of patients referred to ARRRA by the residential aged care facilities and classified as category 1 received immediate service (that is, service within 24–48 hours).
- Two case studies showed savings of $7592 (ARRRA) and $44,161 (arm unspecified) from using the project, compared with usual care.
- Following a series of in-service education sessions for residential aged care facilities, best practice clinical procedures have been implemented for CPR, diabetes, dementia and aggression management.
- The Northern Hospital now has regular palliative care in-service sessions for nursing staff, and has initiated palliative care practice changes (such as the correct use of syringe drivers, the implementation of pain charts and the review of prescribing protocols for medical officers).

- Staff who manage residential care clients now have better knowledge and skill, and an increased understanding of the complexity of funding arrangements for residential aged care facilities.

B.1.5 Project lessons

The project team reported the following lessons from its experiences:

- Clients are better managed in their own aged care facility environment whenever possible, with benefits including: patient and family appreciation of the onsite service; improved communication between families and facilities, leading to improved satisfaction and quality of care; and the lower cost of maintaining a non-acute client in their own environment.
- Alternatives to inpatient care/transfer to other facilities exist.
- Quick response time prevents unnecessary complications.
- The residential care sector is diverse, and medical cover and the ability to maintain trained staff are key issues. Residents in low level facilities who require increasingly higher levels of care are not always adequately resourced and may need additional support to be maintained in their own environment. Waiting lists for high level care can be prolonged, particularly for clients with behavioural issues, and these clients are expensive to support.
- General practitioners are very busy and appreciate the assistance of a hospital based team in terms of medication review, prescribing and advanced care planning. They are often unable to attend case conferences because they have other commitments.
- Funding for residential aged care facilities is extremely complex, and the issue of State versus federal funding is a further complication. Ageing in Place and patient entitlements are interpreted very differently, leading to variable support for residents who are designated as ageing in place. In this context, the effective use of brokerage funding requires a clear outline of responsibilities before additional services are purchased.

B.2 Disease Management Unit

The Disease Management Unit at The Alfred Hospital was established in January 2000 (pre-HARP), with the aims of:

- reducing re-admission rates
- reducing emergency department presentations
- reducing average length of stay
- improving the quality of life for patients with multiple medical conditions.

The project's target group are patients with multiple chronic co-morbid conditions who have been recently hospitalised and are at risk of re-admission. Patients are typically elderly people with multiple co-morbidities, including ischaemic heart disease, congestive heart disease, chronic obstructive airways disease, diabetes and social problems.

The model of care reported by the project team involves the following components:

- Regular post-hospital review of patients. These reviews are conducted in clinics operating at The Alfred's outpatient department or the Caulfield Community Health Centre, by general physicians with subspeciality expertise in respiratory medicine, nephrology, cardiology, anaesthesia and gerontology. They are based on a flexible schedule according to the

number/complexity of the problems, but typically take 30 minutes every two to four weeks, and involve the patient's general practitioner.

- Proactive community follow-up. Nurses provide a proactive telephone contact before every clinic appointment, to prompt attendance, identify barriers to attendance, identify any disease exacerbation, and arrange any procedures/results necessary before the clinic appointment. For patients meeting specific criteria, a consultant and care coordinator may make a home visit.
- Care coordination. Full time nurse coordinators arrange, monitor and assess the need for community services, and liaise with all services and providers.
- Communication with providers. Activities include: sending written documentation and the care plan to the patient's general practitioner on the day of consultation; calling the general practitioners during the review if necessary; case conferencing with the general practitioner as required; making a referral to the local pharmacy for a home medication review; and making written referrals to community services (after contacting them by telephone).
- Patient education and self-management. This component involves referring patients to specialist education sessions and providing written material, with plans to establish depression education sessions, COPD group education sessions, a weight loss program, and a patient diary.

B.2.1 Project management and governance

The Disease Management Unit is accountable to the Director of Ambulatory and Community Services and has a project manager to support the clinical team. Medical staff involved in the unit are part of The Alfred's Professorial General Medical Unit and accountable to its head, while nursing staff are accountable to the Director of Ambulatory and Community Services. Bayside Health received department funding in 2001–02 and 2002–03 for the unit.

The project team identified the following factors as being critical to its success:

- executive support and sponsorship
- clinical leadership
- nurse care coordinators for providing continuity of care and links across service providers
- telephone contact of patients before Disease Management Unit reviews to maintain attendance rates
- the development of strict criteria for patient referral, to ensure efficiency and facilitate flexible access for the target population
- outcome analysis to identify quality improvement and measure project effectiveness
- the development of strong relationships with patients' general practitioners at the start of patient enrolment in the Disease Management Unit.

B.2.2 Project activity and achievements

During January–June 2003 period, the project's activity included:

- the management of 165 new patients (with 560 patients managed between January 2001 and June 2003)
- 70 clinics at The Alfred and 10 at the Caulfield Community Health Centre
- 1064 clinic reviews.

All patients received reminder calls before clinic reviews, and the project reported a 92 per cent attendance rate for January–June 2003 (which has been maintained since January 2002).

The project is collecting data on enrolled patients' emergency department presentations, admissions, length of stay and bed days, based on cohorts enrolled every six months. The following two tables show the data reported for two such cohorts.

Table B.2.1: Disease Management Unit, patient hospital use

January–June 2002 cohort (n = 176)

Data item	Six months pre-enrolment	Six months post-enrolment
Total hospital admissions	327	239 (↓ 27%)
Total bed days	2000	1547 (↓ 23%)
Average length of stay	6.1	6.4
Total emergency department presentations	271	123 (↓ 55%)

Table B.2.1: Disease Management Unit, patient hospital use

July–December 2002 cohort (n = 168)

Data item	Six months pre-enrolment	Six months post-enrolment
Total hospital admissions	329	217 (↓ 34%)
Total bed days	2071	1386 (↓ 33%)
Average length of stay	6.2	6.3
Total emergency department presentations	273	129 (↓ 53%)

A general practitioner satisfaction survey undertaken in February 2003 indicated that 67 per cent of respondents either agreed or strongly agreed that the Disease Management Unit has been an added benefit in the medical management of complex co-morbid patients. Similarly, a patient satisfaction survey undertaken in March 2003 found that 80 per cent of respondents knew why they were attending the unit and felt staff gave them adequate explanations of their condition. Over 60 per cent rated the care they received as excellent, while 30 per cent rated it as good.

B.2.3 Project lessons

The project team reported the following lessons from its experiences:

- Clinical leadership is vital.
- Monthly team meetings to communicate, seek team input and progress expansion plans and vision are essential to the functioning of this model.
- Being flexible in patient reviews and accommodating urgent reviews are important for the implementation of this model.
- Researching the work of others is beneficial in implementing interventions that will benefit the target population (for example, self-management and patient education strategies).

B.3 Hospital in the Home General Practitioner Liaison Project

St Vincent's Hospital has operated a tertiary hospital based hospital in the home (HITH) program–'St Vincent's at Home'–since the Department's introduction of the HITH Program in 1994. The program is well established and continuing to expand. The concept of involving general practitioners in this program was considered at St Vincent's in the late 1990s but did not progress beyond the conceptual stage after early support. In 2001, the concept was re-evaluated and supported in the atmosphere of hospital/community/general practitioner integration. A proposal was developed and submitted to the Department, which approved funding for 2001–02.

The HITH General Practitioner Liaison Project forms one element of a seven point strategy for emergency demand management at St Vincent's. It addresses primarily the issue that patients with acute illness who could be managed by their general practitioner on the HITH Program have not been able to enrol in the HITH Program without first attending the emergency department. This issue has contributed to demand on the emergency department and added a layer of service complexity for general practitioners and patients. Both general practitioners and emergency department staff became frustrated with the requirement for patients to present to the emergency department to receive services that community services could easily provide.

Accordingly, the project's aim is to diversify treatment options by introducing general practitioner participation in the HITH Program. The project's target population thus involves the following two interconnected groups:

- The general practitioners recruited to the program. These are predominantly, but not exclusively, from two Divisions of General Practice: the Melbourne Division of General Practice (whose geographic catchment has the highest rate of patient presentation at St Vincent's emergency department) and the Inner Eastern Division of General Practice (which has a high patient presentation rate to this emergency department, as well as an established collaborative relationship with St Vincent's Health).
- Patients who can be safely treated under the HITH Program. Patients must meet the strict established HITH admission criteria. (While the project applies to patients with all diagnoses usually treated under the HITH Program, the following four diagnoses have priority as the most appropriate for general practitioner management in the establishment phase: cellulitis, pneumonia, pyelonephritis and deep vein thrombosis).

The project's model of general practitioner participation in HITH involves the following core components:

- Assessment of general practitioner needs in relation to HITH. The project team undertook extensive stakeholder, industry and consumer consultation and a literature review to (1) understand the issues relating to general practitioner participation in the project and (2) develop the necessary supports for this participation.
- Recruitment of general practitioners. The project team developed admitting rights and credentialing protocols, a reimbursement policy and promotional packs, visited general practices and advertised the program through the Divisions of General Practice, to encourage general practitioners to apply and participate.
- Direct general practitioner admission. To facilitate general practitioners' direct referral of patients to HITH, the project team developed referral protocols and tools, and created clinical documentation procedures and tools.
- General practitioner involvement post-discharge. The project team established a process to facilitate general practitioner involvement in HITH care after a patient presents to hospital. This process includes educating emergency department and hospital staff about the project, and screening emergency department patients for suitable candidates.
- Clinical support. To provide general practitioners with the acute skills that they require to actively and safely participate in HITH, the project team provides a program of clinical support, including clinical pathways and protocols, specialist back-up links and continuing medical education sessions.
- Clinical care provision. Activities include HITH service process redesign, the appointment of a HITH General Practitioner Liaison Project nurse and ongoing HITH clinical staff meetings.
- Evaluation. Ongoing evaluation of the model is used to monitor the other components to ensure the model's effectiveness.

B.3.1 Project management and governance

This project is overseen by a steering committee that comprises representatives of the hospital's executive, St Vincent's at Home, general practice, and the hospital's emergency department and medical and surgical units, along with the General Practitioner Liaison Officer and the project manager. Operationally, the project manager reports to the St Vincent's At Home Manager and works closely with the HITH General Practitioner Liaison Project nurse and the HITH staff. St Vincent's at Home addresses clinical issues concerning general practitioners, while the project manager deals with general practitioner recruitment, appointment and remuneration. The project received funding in 2001–02 and 2002–03 for its activities.

The project team identified the following factors as being critical to its success:

- general practitioner engagement in acute healthcare provision
- positive outcomes for patients
- hospital endorsement of clinical guidelines
- physician agreement to provide clinical backup to general practitioners
- reduced confusion among general practitioners about the definition of HITH
- the ability to provide service promptly in response to general practitioner referrals
- clinical communication between general practitioners and St Vincent's.

B.3.2 Project activity and achievements

Since its inception, the project has managed 130 patients. The major conditions have been cellulitis and pneumonia, with fewer deep vein thrombosis and pyelonephritis patients treated than originally anticipated. Based on its own analysis of the data, the project team estimated that it has substituted 102 emergency presentations and 426 bed days.

The project team is using the Australian Council on Healthcare Standards HITH outcome indicators to monitor the management of patients. It is also comparing the data for HITH General Practitioner Liaison Project patients with the data for all St Vincent's HITH patients. From March 2002 to June 2003, the two sets of data appeared to show relatively few differences (from the comparative data provided, and in view of the project's small number of patients)–for example, 19 per cent of the project's patients had an unplanned return to hospital, compared with 14 per cent of all HITH patients.

Direct general practitioner referral accounted for 31 of the patients managed during January–June 2003, with the remainder referred to general practitioners post-hospital discharge. By June 2003, 100 general practitioners were affiliated with the project. A survey of the affiliated general practitioners in November 2002 indicated that they appreciated the improved communication about patients via the mandatory verbal handover from hospital medical staff. Of the survey respondents, 85 per cent felt they knew how to make a referral to the HITH General Practitioner Liaison Project and 100 per cent were prepared to be involved again should the opportunity arise.

General practitioners affiliated with St Vincent's as associate visiting medical staff are entitled to clinical education and access to support from senior physicians, which will assist in patient management. The development of evidence based guidelines for general practitioners for the common HITH diagnoses is anticipated to also contribute to patient management.

B.3.3 Project lessons

The project team identified the following key lessons from its experiences:

- Acute tertiary hospitals can engage general practitioners in HITH treatment of acute patients.
- General practitioners are receptive to clinical support in the form of clinical guidelines, lectures and case based consultation with specialists.
- Hospital initiated HITH care, then subsequent transfer to general practitioner involved HITH care, is a more effective method of engaging general practitioners than is relying on general practitioner initiation of HITH care.
- The provision of general practitioner involved HITH care in aged care facilities is difficult to implement in the short term.

Footnotes

1 Department of Human Services 2002, Hospital Demand Management Strategy 2001–02: Summary of findings from project annual reports, Melbourne.

2 There has been a subsequent commitment to extend HARP to 2007.

3 Appendix A contains a summary of the HARP evaluation framework.

4 BearingPoint 2004, HARP evaluation technical discussion paper, Melbourne.

5 The 'live' date is an estimate based on information received from projects.

6 Department of Human Services 2002, VAED Manual, 12th edn, Melbourne.

7 Department of Human Services 2003, Hospital Admission Risk Program (HARP): chronic obstructive pulmonary disease working party report, Melbourne.

8 Department of Human Services 2003, Hospital Admission Risk Program (HARP): chronic heart failure working party report, Melbourne.

9 Department of Human Services 2002, Hospital Admission Risk Program (HARP): background paper, Emergency Demand Coordination Group, Melbourne.

10 Information provided to BearingPoint by the Continuing Care Programs Unit, September 2003.

11 National Ageing Research Institute 2002, Evaluation of falls clinics and development of a measurement and outcomes framework, Final report for the Department of Human Services, Melbourne.

12 Department of Human Services 2002, Hospital Admission Risk Program (HARP): background paper, Emergency Demand Coordination Group, Melbourne.

13 Department of Human Services 2002, Hospital Admission Risk Program (HARP): background paper, Emergency Demand Coordination Group, Melbourne.

14 Department of Human Services 2002, Hospital Admission Risk Program (HARP): background paper, Emergency Demand Coordination Group, Melbourne.

15 Department of Human Services 2002, Hospital Demand Management Strategy 2001–02: Summary of findings from project annual reports, Melbourne.

16 Department of Human Services 2002, Hospital Admission Risk Program (HARP): background paper, Emergency Demand Coordination Group, Melbourne.

17 As specified in the Department of Human Services tender document no. T2602.

18 See, for example, John Øveretveit 1998, Evaluating health interventions, Melbourne, Open University Press.

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