Hospital admission risk program (HARP) Integrated care for clients with complex needs working party report



Victoria
The Place To Be

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March 2003

Published by Hospital Demand Management,
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March 2003

Also published on www.health.vic.gov.au/hdms/harp/index.htm

Authorised by the Victorian Government, 555 Collins Street, Melbourne.

Printed by Big Print, 520 Collins Street Melbourne 3000.

(0380303)

Preface

The Hospital Admission Risk Program (HARP) was established in 2001 as the prevention component of the Hospital Demand Management (HDM) Strategy.

The HARP Reference Group, chaired by Professor John Funder, oversees the implementation of HARP, including the allocation of funds to service providers, and advises on how hospital admissions and emergency department presentations can be prevented. HARP focuses on tertiary prevention - that is, avoiding unnecessary emergency presentations and hospital admissions and readmissions. HARP targets people who have manifest health need, often where their disease or condition is chronic or complex.

In July 2002 the HARP Reference Group formed seven working parties to undertake analysis in priority areas that provide opportunities to have a significant impact on preventing the avoidable use of hospitals.

These working parties were:

- Chronic Heart Failure
- Chronic Obstructive Pulmonary Disease
- Community–Hospital Interface
- GP–Hospital Interface
- Integrated Care for Clients with Complex Needs
- Mental Health, and
- Technology

This report presents the findings of the Integrated Care for Clients with Complex Needs Working Party.

The working party reports build on the information presented in the HARP Background Paper and have been produced to assist in designing projects for the 2003-04 HARP funding round.

The Department of Human Services would appreciate any comments, suggestions for further work or other feedback you may have on the contents of the working party reports. These can be forwarded to the HARP Project Officers, Ian Coverdale at ian.coverdale@dhs.vic.gov.au or Paul Williamson at paul.williamson@dhs.vic.gov.au and will be considered as we further develop the evidence around preventive initiatives.

Acknowledgements

This Integrated Care for Clients with Complex Needs Report has been produced by a Working Party of the HARP Reference Group supported by Carole Staley of Everitt Anderson Corporation. The Working Party membership included:

- Dr Peter Hunter (Chair) — St Vincent's Health
- Prof Gavin Becker — Melbourne Health
- Ms Sue Daly — Hospital Demand Management, DHS
- Ms Darnelle Eckersall — Municipal Association of Victoria
- Ms Marianne Egan — Austin & Repatriation Medical Centre
- Dr Jill Grogan — General Practice Divisions Victoria
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- Ms Alexis Hughes — Department of Health and Ageing
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- Dr Elizabeth Ozanne — University of Melbourne
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- Ms Carole Staley (Consultant) — Everitt Anderson Corporation
- Ms Colleen Tenni — Victorian Coordinated Care Trial
- Mr Paul Williamson — Hospital Demand Management, DHS

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Abbreviations

ACAS	Aged Care Assessment Service
ADL	Activities of Daily Living
ALERT	Assessment, Liaison and Early Referral Team (St Vincent's Health)
ARMC	Austin and Repatriation Medical Centre
BHS	Broadmeadows Health Service
CACP	Community Aged Care Package
CCT	Coordinated Care Trial
CGA	Comprehensive Geriatric Assessment
CGMC	Caulfield General Medical Centre
CHF	Chronic Heart Failure
CHIRP	Community Hospital Integrated Response Program (Eastern Health)
COPD	Chronic Obstructive Pulmonary Disease
DHS	Department of Human Services
ED	Emergency Department
EPC	Enhanced Primary Care (Medical Benefits Scheme)
GEM	Geriatric Evaluation and Management
GP	General Practitioner
HARP	Hospital Admission Risk Program
HDM	Hospital Demand Management
HITH	Hospital in the Home
INI	Initial Needs Identification
ISAR	Identification of Seniors At Risk screening tool
MBS	Medical Benefits Scheme
NDHP3	National Demonstration Hospitals Program Phase 3
NFPOA	No Fixed Place of Abode
NH	Northern Health
PCP	Primary Care Partnership
RAI-HC	Resident Assessment Instrument - Home Care
RDNS	Royal District Nursing Service
ROR	Rapid Outreach Response (Eastern Health)
SVAH	St Vincent's at Home (home nursing service)
SVHM	St Vincent's Health, Melbourne
TRACC	Treatment Response Rapid Assessment Aged Care (St Vincent's Health)

UK	United Kingdom
VAED	Victorian Admitted Episodes Dataset
VEMD	Victorian Emergency Minimum Dataset

Executive summary

Older people with multiple chronic conditions often have complex needs and are more likely to experience hospitalisation, which may lead to further functional decline[1,2]. These factors contribute to longer lengths of stay, increased risk of complications and adverse events[1,2]. People with complex needs receive care from a number of doctors and other health professionals both within and outside hospital walls3. Acute treatment is only one part of a complex care system involving home-based care, sub-acute care and other institutional care.

The healthcare system is complex and people have difficulty navigating the system due to inadequate linkage between organisations and services[3,4]. This leads to the concept of a whole system approach, integrating care across organisational boundaries, moving away from episodic interactions as acute exacerbations of illness occur and moving towards management of health across the continuum of care. People with complex needs require a comprehensive range of services, delivered across organisational boundaries, with clear assessment processes, access routes and pathways through services. The focus of integrated care places the older person at the centre of healthcare, encourages better management of the system and clarifies the roles and responsibilities of each organisation[5]. Within an integrated healthcare system, boundaries between organisations are not apparent to the consumer[5].

The Integrated Care for Clients with Complex Needs Working Party adopted the National Demonstration Hospitals Program Phase 3 definition of integration:

integration involves hospitals and the primary and community service sectors working together to establish and document systems that provide a smooth transition across sector boundaries that results in improved patient care, support for carers, better health outcomes, and optimal resource use[6].

The Working Party's focus was primarily upon integration between the acute and other sectors of the health system with the aim of preventing emergency department (ED) presentations and hospital admissions where possible.

There are three levels of integration: linkage; coordination; and full integration. These levels can be described as a continuum with "linkage" located at one end of the continuum and "full integration" lying at the other end of the continuum[7].

The move towards models of integrated care is an effort to manage the labyrinth of the healthcare system that has become increasingly complicated as additional services and funding streams have been introduced to encourage innovation, change traditional healthcare practices and address gaps in service provision. Within the healthcare system the essential foundation of coordination is a hierarchical ordering of services, with primary care being the point of entry for people with simple needs and as people's healthcare needs become more complex, referral to secondary services, such as medical specialists, or tertiary care within the acute hospital setting occurs[8]. However, the delivery of services to people with complex needs is the responsibility of many different healthcare professionals and

organisations across different healthcare sectors, with each being a distinct entity with it's own funding mechanism, budget and patient selection criteria. These various components of the system are not always coordinated around patient need and often work in parallel, with separate and distinct responsibilities that both overlap and leave important needs unmet[9].

There are various practices that support integration and whilst there is no one model of care for integration, these practices can be combined to create models of care that meet the requirements of the community that the model serves. There is a myriad of activity within organisations and across healthcare sectors that has been occurring over many years to better coordinate healthcare and assist people with complex needs to remain in their home environment. These activities and organisations are too numerous to acknowledge individually but some examples include work undertaken by the Primary Care Partnerships, Coordinated Care Trials, National Demonstration Hospitals Program, Effective Discharge Planning Strategy, GP Liaison positions, Royal District Nursing Service Liaison positions, Case Managers within various organisations and individual clinicians etc. The Hospital Admission Risk Program (HARP) is another initiative that is fostering better integration of services.

It can be questioned, why do we need yet another funding stream when the system is already too complex? Is this funding stream just adding another layer to the system and duplicating existing services? Would it not be more beneficial to provide these funds to existing services to bolster their resources and enable them to better meet demand? There is no doubt that the healthcare system is complex and that people experience difficulties navigating the system. Initiatives introduced over the years to promote streamlining of the system and targeted at those with special needs have improved access to healthcare for many people. However, the system continues to struggle to match resources to people's needs and will continue to do so given the ageing population. Therefore, it is necessary to think differently about the delivery of healthcare services, which takes additional time, energy and resources[2,10]. HARP provides both the impetus and funds to embrace new practices and models of service delivery. To ensure that HARP funding does make a difference, it is necessary to view the healthcare system as a whole, work in partnership with consumers and organisations across all healthcare sectors, identify gaps in service provision, develop strategies to address the gaps and build on and gain leverage from current services. HARP is supporting service system redesign through promoting patient centred integrated care.

The key practices that support integration include: single point of entry, "at risk" screening, comprehensive assessment, service coordination and case management, care planning including advance care planning, clear communication processes including shared health records, patient empowerment and self-management, quality use of medications and ongoing monitoring. Many of these strategies are currently used within the healthcare system but need to be implemented across

healthcare sectors through collaboration between organisations. Of these practices there are a number that warrant further exploration and implementation to promote integrated care.

The concept of a *shared medical record* between organisations involved in an individual's care is believed to facilitate full integration of healthcare across all sectors of the health system. Such a record would facilitate communication and ensure continuity of services. There is the opportunity for clinicians to have access to complete, continuously updated information and inform others of the client's progress and changes to the care plan[11-13]. Many HARP Projects are exploring the use of *electronic shared medical records* and are adopting the Primary Care Partnership Service Coordination Tools. However, whilst there is widespread use of information technology for collecting, storing and transferring patient data, there are few healthcare organisations that have introduced electronic medical records and there are a number of implementation barriers.

The national initiative *HealthConnect* has the potential to resolve these issues through the introduction of an integrated health record[14]. However, this is a complex initiative that will be introduced incrementally and is not immediately available[15]. Therefore, the identification, development and implementation of information systems to assist in clinical decision making, promote continuity of care and support consumers in making their own decisions regarding their health continues to be a high priority, particularly for those with complex health needs[1,3].

Developing the capacity of consumers to fully participate in their own healthcare, practice health promoting behaviours and more effectively navigate their way through the health system promotes independence and self reliance and assists with improving health outcomes[16]. The move towards integrated healthcare places the consumer at the centre of the health system with services designed around their individual needs. Strategies for promoting *patient empowerment and self-management* is an area that warrants further investigation and testing in the clinical setting.

Advance care planning is a topic that is receiving considerable attention, particularly in relationship to residents of Residential Aged Care Facilities. *Advance care planning* is a process involving discussion and documentation regarding the healthcare wishes of individuals in relation to end of life choices, often referred to as advance directives, living wills and medical power of attorney[17-19]. The process of advance care planning provides people with the power to gain control over their health and personal care particularly at the end-of-life[20]. The trend both nationally and internationally, is that this option is infrequently taken up, and if it is there are issues related to awareness of advance care planning having occurred and whether the advance care plan is valid[17,18,21-23]. Systematic implementation of advance care planning, particularly for those residing in Residential Aged Care Facilities, will empower people regarding end of life choices[24].

Medication management for clients with complex needs was identified as a major issue among HARP projects as many of these clients are on multiple medications, which are prescribed by a number of doctors including GPs and various medical specialists. Clients with complex needs are therefore vulnerable to medication misadventure. Whilst there are a number of initiatives targeted at the quality use of medicines eg: Domiciliary Medication Review, initiatives that target medication management have been identified as a gap within existing HARP projects. However, many projects identified the desire to review medication regimes upon the clients' return home. Medication management for clients with complex needs is an area that warrants further attention as a high priority for HARP.

As mentioned previously, there is no single model of integration, although there are generic principles of integration that can be adopted and modified to suit the needs of the integrating organisations. These generic principles assist to overcome impediments to integration, which can be classified as structural, strategic, professional, resource, communication and information technology barriers. The principles that support integration include:

- A *systems approach*, which is vital to improve the performance of the healthcare system. Importantly, the identification of current service gaps and bottlenecks and the enhancement of existing services to avoid duplication of effort have been identified as paramount to success, rather than creating new services that run in parallel.
- *Leadership* is vital to support the change management process that promotes the move towards integrated care. A key driver of change is the existence of strong leadership both at the strategic, management and clinical level, with all stakeholders articulating a common vision[5,25].
- *Relationship building* is vital to create an understanding between people from organisations across the various healthcare sectors. This level of communication is imperative to promoting insight into how these organisations work and what issues exist for them. Developing a shared understanding by the various participants provides the opportunity to work together to resolve these issues and a foundation for improving services for people with complex needs.
- Within a systems approach, *planning* is all-important. The planning process needs to involve the key stakeholders to ensure relationship building, facilitate communication with the broader service system and inform development of a shared vision, including aims and objectives. A mapping exercise is vital to ensure that new models of care do not duplicate services and that new services add value to the existing service system. Identification of the appropriate target group of people defines the scope of the service and allows services to be tailored to their needs, whilst identification of areas that need redesigning and infrastructure requirements enable appropriate resources to support the new integrated model of care. Identification of key milestones, expected outcomes and evaluation methodology assist with articulating timelines and what the change process is

striving towards and hence, allows evaluation of whether the aims of the model of integrated care have been achieved[5,6].

- When considering *resources and staffing* to create integrated models of care there are two considerations that need to be made. Firstly, what resources and staff are required to implement the change management process and secondly, what resources and staff are required to provide appropriate service delivery within the model of integrated care. Implementing a new model of care requires infrastructure, other than those resources required for service delivery. The change management process that is required to implement new models of care is resource intensive and unless dedicated staff are employed to support this process there is the potential for not achieving key milestones. Service delivery staff are focused upon clinical work and the competing demand of service development takes a lower priority in a busy clinical environment. Therefore, it is important to have dedicated staff to coordinate and manage the change process and continue to promote the vision through communication, liaison with key stakeholders and coordination of relevant meetings.
- The *service delivery* within integrated models of care needs to incorporate a number of practices ranging from a single point of entry to evidence based practice, see Section 4. These practices should be targeted at the needs of the community and address the desired level of integration as detailed in Table 7.1.
- The development of new service delivery models needs to occur within a *quality improvement framework* that incorporates feedback and *evaluation* to ensure that the new model is meeting the desired aims and objectives and is providing safe quality care. New models of care evolve over time and it is important to continually re-evaluate whether the model of care continues to be appropriate and provides a patient centred systems approach to healthcare[5,26].

  There are numerous benefits of integrated care for consumers, general practitioners and organisations. These range from a timely coordinated approach to care delivery to improved communication including the timely transfer of information, the reduction in duplication of effort, improved working relationships and a patient centred approach. However, whilst our current system lacks coordination, the lack of coordination functions as a rationing system. Better care coordination reveals unmet needs and may ultimately increase demands and healthcare utilisation, a consequence that should be anticipated[27].

Recommendations

1. Models of integrated care should be client focused, placing the client at the centre of the model and matching services to the clients' need regardless of which organisation can meet those needs.
2. Health services need to consider the levels of integrated care when developing models of care, ie linkage, coordination and full integration, and develop service systems that match the level of integration to the degree of client complexity.
3. Components of models of integrated care should be matched to clearly identifiable risk and needs of clients with complex needs (See Table 7.1).
4. Models of integrated care should be developed to address gaps in service provision building upon existing HARP projects and other infrastructure to avoid duplication in assessments and service provision.
5. Key principles for the development of integrated models of care should be incorporated, including:
    - Effective leadership at all levels of model development such as executive sponsors from each participating organisation and strong clinical leadership in all health care sectors eg: acute, community and general practice;
    - Involvement of stakeholders from the planning stage to facilitate relationship building and sustainability of models;
    - Examination of data to identify target group(s) and characteristics;
    - Mapping exercise using a systems approach to identify service gaps;
    - Definition of aims, objectives, model of service, key milestones, outcomes, evaluation methodology;
    - Identification of resources and staffing with consideration for those resources required to facilitate the change management process (time limited) and service delivery (ongoing to match demand);
    - Implementation within a quality improvement framework so that the service system is enhanced through continuous evaluation and feedback.
6. Models of integrated care need to consider community-based options for long-term management and follow up of clients with complex needs including clearly defined communication pathways between the various sectors and health professionals within the healthcare system.
7. Integrated models of care should adopt the Primary Care Partnership Service Coordination Tools and create opportunities for the sharing of medical records across organisations.

8. The role of the General Practitioner in the care of clients with complex needs is of vital importance and should be given due consideration when developing models of integrated care.
9. Models of integrated care should incorporate strategies for promoting patient empowerment and self-management.
10. Strategies to promote the adoption of advance care planning, particularly within Residential Aged Care Facilities should be encouraged.
11. Models of integrated care should incorporate strategies to improve the medication management of clients with complex needs who are at risk of medication misadventure in the community.

1 Background

The Victorian public health system, like others in Australia and internationally, has been experiencing unprecedented and sustained increases in demand. There are a range of factors that are contributing to this demand including

- the ageing population,
- new treatment options through advances in medical technology,
- a reduction in the availability of GPs for home visits and after hours care,
- the shortfall of residential aged care beds relative to demand,
- workforce shortages, particularly of nurses, and
- societal changes that have led to a reduction in the capacity of the informal carer network in the community.

The increasing demand has placed added pressure on hospitals with demand for medical admissions to public hospital services in Victoria (and other States) growing consistently at 3-4% per annum. The demand pressures are being particularly felt within the metropolitan public hospital sector where emergency admissions have grown at 7-8% per annum.

Over time the cumulative effect of these pressures has exceeded the capacity of the acute public health system to respond. Particularly between 1999 and 2001 there were periods when access to emergency services was limited resulting in delayed admissions for emergency patients, and increased occasions of ambulance bypass. Additionally, elective surgery waiting times increased as elective surgery has been reduced to accommodate greater pressure on emergency services.

In May 2001 the Victorian Government committed $582 million over a four year period through the Hospital Demand Management (HDM) Strategy to strengthen the capacity of the health system to manage the increasing demand pressures.

The HDM Strategy focuses on the service system as a whole rather than on fragmented or single organisations. It promotes appropriate pathways for people using health care services and encourages models of care that respond to current demands for health services. Collaboration between health providers is emphasised under this new approach.

Key aspects of the HDM Strategy are:

- Creating extra capacity through funding growth;
- Relieving pressure on hospital beds and emergency departments through diverting people to alternative options where clinically appropriate;
- Working with clinicians to improving patient management practices;
- Implementing a prevention strategy to reduce demand pressures – Hospital Admission Risk Program (HARP).

Further information on the HDM Strategy can be found at http://www.health.vic.gov.au/hdms/

In the first year (2001/02) of the HDM Strategy there was marked improvement in key indicators used to monitor health system pressure. Occasions of ambulance bypass at HDM hospitals decreased by 56% on the previous year while the percentage of people admitted to wards within target waiting times increased from 74% to 80%. The Victorian Government is building on these successes by extending the period of the HDM Strategy by two years to June 2007. In addition the scope of the HDM Strategy has been broadened to encompass elective demand pressures[1].

1.1 The Hospital Admission Risk Program

HARP is a major component of the HDM Strategy. It was established in November 2001 with the aim of implementing a prevention strategy to reduce the demand pressures on hospitals, by averting the avoidable use of emergency departments and inpatient services.

HARP will target prevention initiatives that are the most likely to be effective and deliver tangible and demonstrable outcomes. These initiatives will focus on people who have a manifest health need, often where their disease is chronic or complex. Priority will be given to high volume conditions and/or frequent users of the acute public hospital system.

Although HARP is targeting demand pressures on acute public hospitals it spans the continuum of care. The emphasis is on better supporting and proactively managing people in their homes and within the community rather than reactively responding to acute exacerbations of their conditions. By strengthening the continuum of care through a more integrated and cooperative service system, with clearer pathways and enhanced models of care that are patient centred it is expected that patients will be more effectively cared for. This will occur through:

- supporting people's independence and capacity to live within the community,
- clearer clinical pathways delivering better continuity of care,
- increasing capacity within the health system to respond to the health needs of people,
- creating greater cohesion between the public hospitals and the primary care and sub acute sectors,
- developing responsiveness in services and proactive management of health needs.

As an outcome of more effective management of patients across the continuum of care the preventive initiatives implemented are expected to reduce the rate of growth in the demand for public hospital services for targeted conditions and groups of people.

Figure 1.1 provides an outline of HARP.

1.1.1 The HARP Reference Group

The Department established a HARP Reference Group to bring together a range of key stakeholders with an interest and expertise on prevention and hospital utilisation to provide advice on:

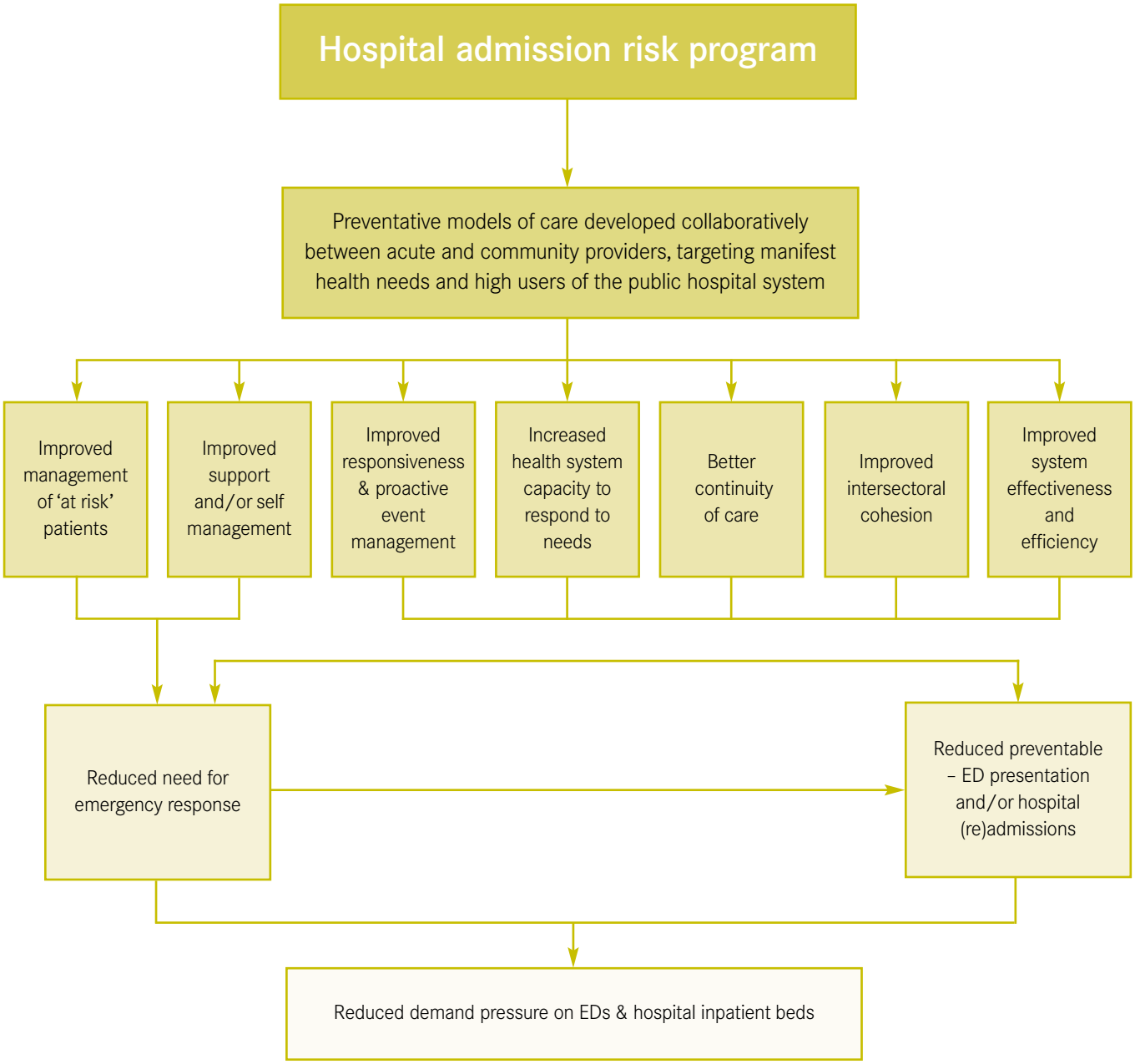
- Target population groups or conditions with most potential for preventing hospitalisations
- Models of care that have demonstrated efficacy
- Trends in morbidity and care options
- How to evaluate programs funded under HARP
- Allocation of HARP funds.

In July 2002 the HARP Reference Group established a series of working parties to undertake detailed work in priority areas that provide opportunities to have significant impact on the health status of people at risk of hospitalisation. The Working Parties completed there work in February 2003 and have each produced a report to contribute to the evidence base around prevention initiatives. The release of the reports has been timed to inform the 2003-04 HARP funding round.

The seven Working Parties are:

- Chronic Obstructive Pulmonary Disease
- Chronic Heart Failure
- Community–Hospital interface
- GP–Hospital interface
- Integrated care for clients with complex needs
- Mental Health, and
- Technology

Figure 1.1 Outline of HARP



1.2 Integrated care for clients with complex needs working party

1.2.1 Project background

Many elderly patients present complex medical, social and psychiatric challenges. They may suffer with "geriatric syndromes" such as depression, cognitive impairment, poor mobility, falls and incontinence, while they commonly experience functional decline during episodes of hospitalisation. This may contribute to longer lengths of stay, increased risk of complications, iatrogenic events, impairment of physical performance and additional need for sub-acute and/or residential care.

The Integrated Care for Clients with Complex Needs Working Party of the HARP Reference Group was established with the aim of examining current care coordination models for frail, elderly people with complex needs, and determining where these models can be extended and duplicated in order to reduce the number of people in this target group presenting to EDs and requiring hospital admissions.

1.2.2 Objectives

The objectives of the Integrated Care for Clients with Complex Needs Working Party were to:

- Undertake a targeted literature search to examine models of care for frail, older people with complex care needs.
- Identify and assess risk screening instruments currently used to identify elderly people at risk of ED presentation.
- Consider and summarise models of care that have been developed through HARP projects.
- Examine access issues in relation to home-based care services and recommend ways of improving communication and strengthening linkages across the continuum of care.
- Develop best practice principles which underpin models of care for frail, older people with complex care needs, in particular:
  - Initial assessment;
  - Ongoing monitoring and review;
  - Medication management.

1.2.3 Methodology

The Project has involved high level analysis of datasets used within the Victorian public hospital system. The project draws together the literature reviews and consolidated reports in order to assist with identification of and best practice principles for managing clients with complex needs.

Data analysis

Data analysis was conducted by DHS using hospital data drawn from an integrated dataset of three years VAED data, with the aim of profiling patients who are high users of the acute health system and who have complex conditions, demonstrated by a large number of concurrent diagnoses. In all cases caution should be exercised in interpretation of the data as these datasets are principally used for administrative and financial purposes. Additionally, changes in coding practice over time may have affected trends for some diagnoses.

Literature search and review

A targeted literature review was conducted using literature that provided overviews of models of integrated care and summary reports. Further literature was identified and sought from the bibliographies of these articles and reports. It was beyond the scope of this paper to undertake a detailed critical review of the literature and source original research.

Consultation with HARP projects

Consultation was undertaken with each of the HARP Projects that were identified as focusing upon integrated care for people with complex needs and the Victorian Co-ordinated Care Trial - Coordinated Healthcare. A summary of the consultations conducted it provided in Appendix B. The consultations explored models of care, key components of these models including risk screening processes and tools and best practice principles. However, the time available to undertake these consultations was limited and did not allow consultation with a broad range of stakeholders.

Project report

This report has drawn together the key findings from the data analysis, literature search and consultation with HARP Projects. The findings of these activities have been presented to the Working Party to further inform the development of specific recommendations for the targeting of future HARP funding.

2 Definition of the target group

2.1 Data analysis

This section provides:

- an overview of the dataset which has been used to summarise the emergency admissions data for 1999-00, 2000-01 and 2001-02 at the 13 major metropolitan public hospitals, the Royal Children's Hospital and the 5 major rural hospitals,
- a definition of complex patients for the purposes of this analysis, and
- a map of the Victorian postcode areas showing where complex patients predominate.

2.2 Overview of dataset

To transform the Victorian Admitted Episodes Dataset (VAED) from episodes of care level data into case level records for the financial years 1999-00, 2000-01 and 2001-02, a linkage algorithm based on all available variables for matching (date of birth, medicare number, country of birth, postal code, gender, hospital record number) was used. After this process was completed, a new identification number was assigned to the case-groups. The new identification number was not based on any original variable found within the VAED. All the variables noted above, other than date of birth and gender, were removed in order to de-identify the case level records.

This dataset provides the opportunity to analyse hospital utilisation data by individual patient over a 3-year period. In particular, this approach identifies overall hospital utilisation where patients were admitted to more than 1 hospital. In considering utilisation patterns for complex patients along with their potential to be admitted to more than one hospital, this analysis provides a more comprehensive representation of patterns of hospital admission for individual patients than is possible through routine analysis of the VAED.

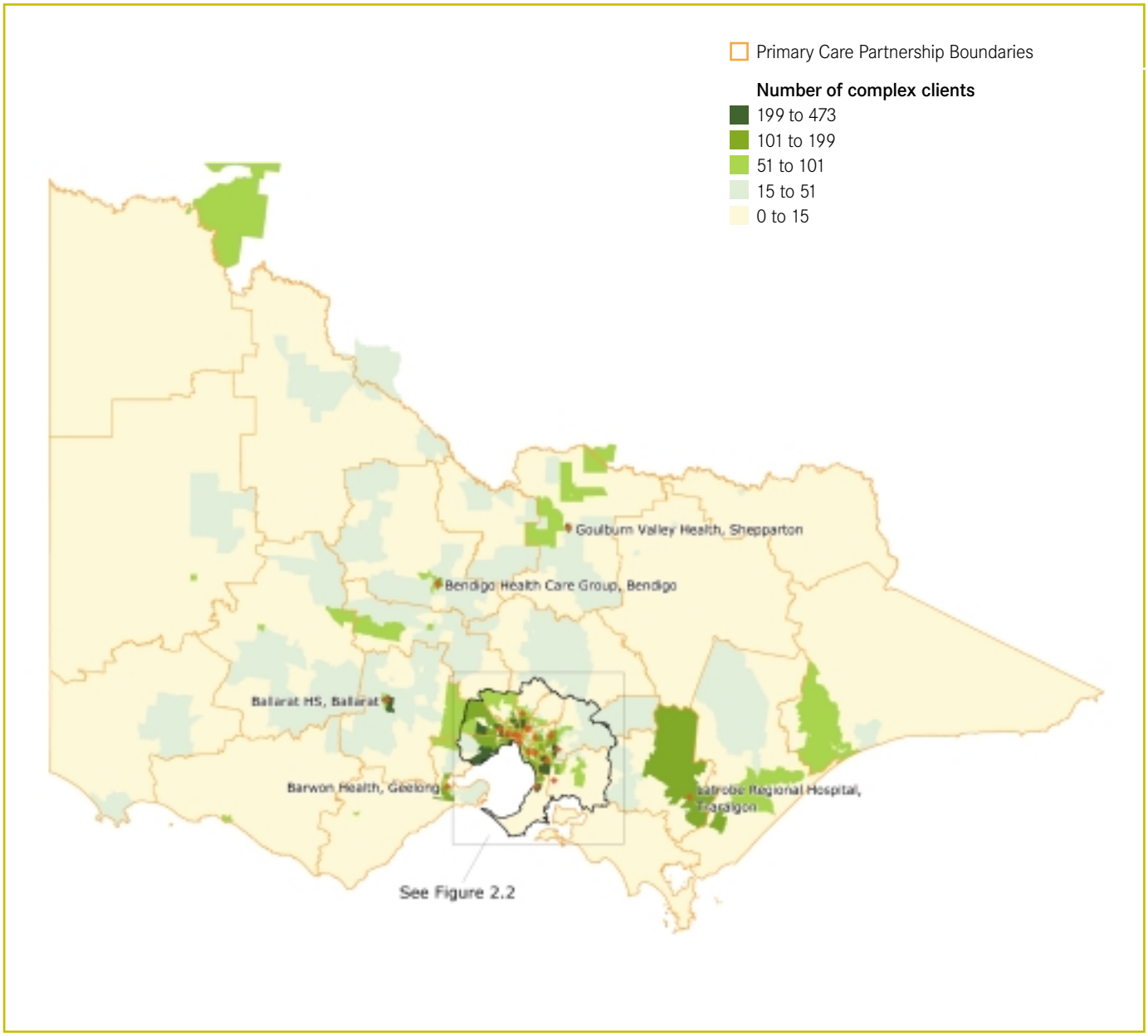
2.2.1 Definition of complex patients

Complex patients are defined as those patients who have had 4 or more emergency hospital admissions, (regardless of hospital) and inclusive of multi-day and same day episodes, in any of the 3 financial years that were included in the dataset. Elective hospital admissions have been excluded from this analysis. Please note that this definition is not intended to be all-inclusive. Rather, it provides an indication of the pattern of spread of complex patients.

2.3 Map of Victorian postcode areas showing where complex patients predominate

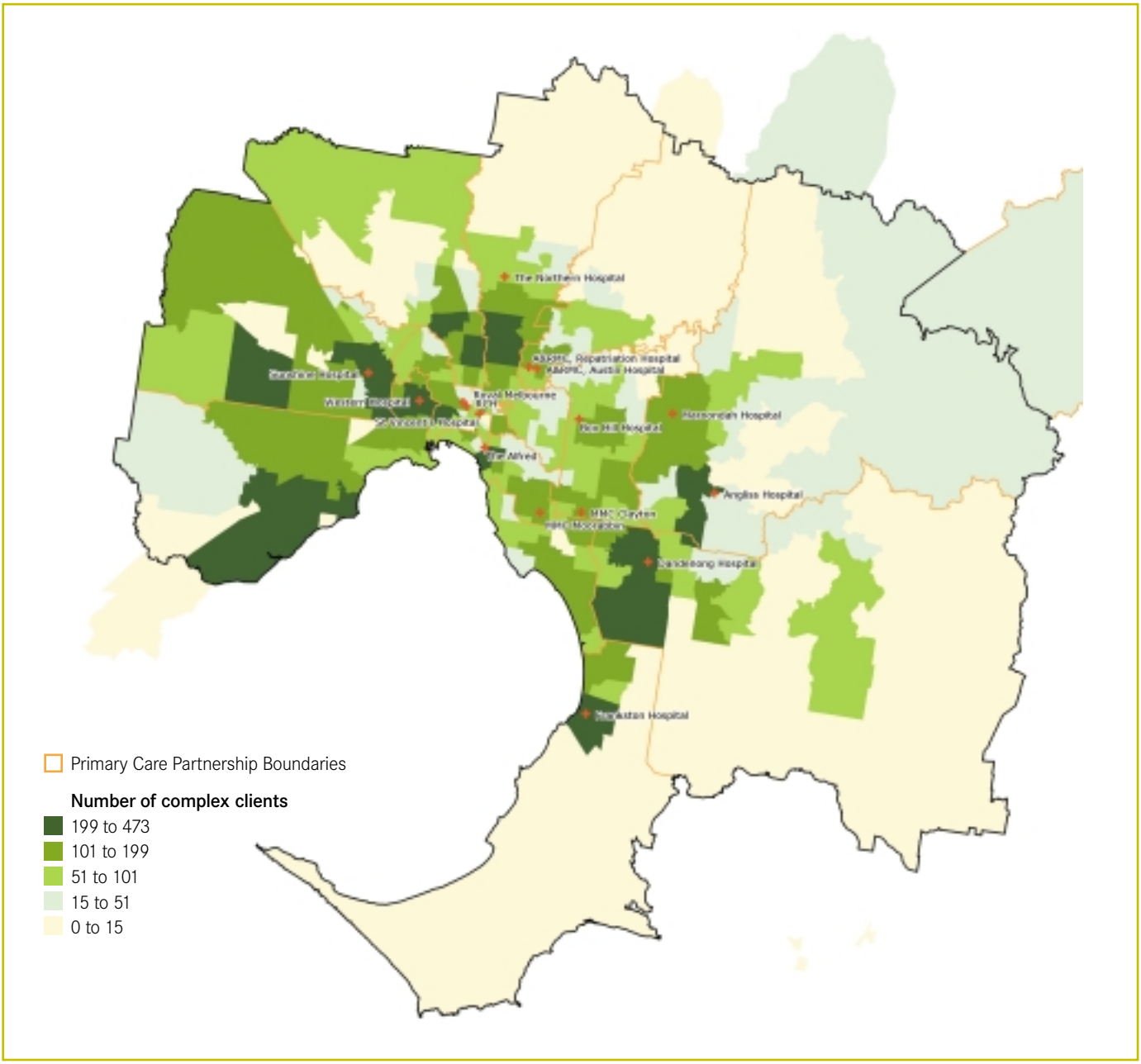
The following charts show the volume of complex patients within each postcode in Victoria along with the Primary Care Partnership boundaries.

Figure 2.1 Map of Victorian postcode areas showing where complex patients predominate



The range breaks are determined according to a calculation that puts similar clusters of data into each range. This ensures that the ranges are well represented by the averages and that the data values in each range are fairly close together.

Figure 2.2 Map of metropolitan postcode areas showing where complex patients predominate



As indicated on these maps the postcode areas with the highest number of complex needs patients are Frankston (473), Dandenong (440), Reservoir (402), St Albans (399) and Sunshine (390). A full listing of postcodes with more than 101 complex needs patients is at Appendix A.

3 Overview of integrated care

The Patient Management Task Force (DHS, 2000 - 2001) identified that older people often have chronic conditions with an array of co-morbidities that are complex and frequently include depression, cognitive impairment, poor mobility and incontinence. They may also suffer functional decline during hospitalisation. These factors contribute to longer lengths of stay, increased risk of complications and adverse events[1]. Additionally, older people with chronic illnesses receive care from a number of doctors and other health professionals both within and outside hospital walls[3]. Acute treatment is only one part of a complex care system involving home-based care, sub-acute care and other institutional care[1].

There are many initiatives proliferating to address chronic illnesses for example, disease management programs, clinical practice guidelines and disease specific rehabilitation programs. However, these initiatives are disease specific and may not take into consideration the interplay between multiple chronic illnesses. A study conducted by Wolff et al (2002) exploring people with multiple chronic conditions found that they were likely to have more hospitalisations and were at greater risk of incurring complications associated with inpatient care[2]. Additionally, the importance of *primary care* and the *coordination of care* were highlighted as preventive measures to avert hospitalisation for ambulatory care sensitive conditions[2].

The healthcare system is complex and people have difficulty navigating the system due to inadequate linkage between organisations and services[3,4]. There is a common view that services for older people must work together if they are to meet people's needs and delay further functional decline[5]. This leads to the concept of a whole system approach, integrating care across organisational boundaries, moving away from episodic interactions as acute exacerbations of illness occur and moving towards management of health across the continuum of care. People with complex needs require a comprehensive range of services, delivered across organisational boundaries, with clear assessment processes, access routes and pathways through services. The focus of integrated care places the older person at the centre of healthcare, encourages better management of the system and clarifies the roles and responsibilities of each organisation[5]. Within an integrated healthcare system, boundaries between organisations are not apparent to the consumer[5]. Case Study 1 demonstrates the complexity of the healthcare system and the system failures that can occur when services are not integrated and coordinated across sector boundaries, see Figure 3.1.

Figure 3.1 Case Study 1 – Jim

Jim is an 83-year-old man who suffered a stroke more than six months ago, resulting in a dense right-sided hemiplegia and confining him to a wheelchair. He recently returned home following an extended period in hospital/subacute care (ie six months). Jim resides with his wife of sixty years, who is also elderly and consequently is limited in the amount of physical support that she can provide, but both are reluctant to be separated and wish to remain in their own home together. However, Jim's wife provides all care for her husband, except transferring him out of bed in the mornings and showering him. She experiences difficulty with transferring him to and from the wheelchair, particularly to the toilet due to the confined space within the bathroom. She is unable to leave Jim alone as he is impulsive and may attempt to get up from his wheelchair or require something of her in her absence.

Upon discharge from hospital, referral was made to a community nursing agency. The community nursing agency visited shortly after Jim's return home and undertook a thorough assessment and identified the need for referral to a number of services to provide adequate support to maintain Jim at home. These services included Linkages for case management and provision of home based services, the local government for home help and personal care and the Aged Care Assessment Service (ACAS) to review bathroom equipment and provide approval for Linkages. The services were arranged in collaboration with Jim's GP who visits Jim weekly.

The nursing agency commenced visiting on a daily basis (on week days only) to assist with hygiene and did so for six weeks, when visits were reduced to twice per week. The reduction in visits coincided with the introduction of personal care workers from the local council, five days per week. Subsequently, Jim receives daily visits from personal care workers for hygiene assistance, with two of these being provided by the nursing agency. The nursing agency plans to have a registered nurse visit monthly to monitor the situation.

Visits conducted by the registered nurse included assessment and, liaison and coordination with other service providers to assist with the introduction of their services. The ACAS, a Continence Nurse Advisor, the local government, Linkages and the Carer's Respite Centre all conducted additional assessments. However, the only assistance provided to date has been personal care through the nursing and local government agencies, as there are waiting lists for the other services. Additional services required include case management, evening visits to assist with transferring Jim to bed, modification of bathroom equipment and in-house respite. Without the timely introduction of these services Jim's wife will exhaust her capacity to continue to support Jim at home and there is a risk that Jim will

fall during transfers or when unattended resulting in injury requiring re-hospitalisation. Additionally, Jim's wife may become unwell and require hospitalisation due to physical exertion and the stress of caring for her heavily dependent husband , which will also create a crisis regarding who will care for Jim in her absence.

This case demonstrates inadequate discharge planning as Jim was in hospital for a period of six months and planning for adequate services to ensure that he and his wife could remain safely at home did not occur until after he returned home. Upon returning home at least six assessments were conducted which had little impact upon the amount of support provided in the short term. Both Jim and his wife expressed frustration at the numerous assessments that were undertaken and could not understand the complexity of the service system or why this information could not be communicated between the appropriate agencies thus minimizing the number of assessments. Additionally, their frustration was exacerbated by the slow delivery of services.

The concept of integrated care has a number of definitions dependent upon the context in which is it used and by whom. Therefore, for the purposes of the HARP Integrated Care for Clients with Complex Needs Working Party, it was important to clearly define the intent of the term. The following definitions were used to inform the definition for the Working Party.

Initial work, undertaken by Leutz (1999), in developing a framework for defining integration in healthcare resulted in the following definition of integration:

a search to connect the healthcare system (acute, primary medical, and skilled) with other human service systems (eg: long term care, education, and vocational and housing services) in order to improve outcomes (clinical, satisfaction and efficiency).

Populations that may benefit from integration have physical, developmental, or cognitive disabilities - often with related chronic illnesses or conditions. Integration can occur at the policy, finance management and clinical levels.

The means of integration include joint planning, training, decision making, instrumentation, information systems, purchasing, screening and referral, care planning, benefit coverage, service delivery, monitoring and feedback[10].

Using Leutz's framework, Kodner and Kyriacou (2000) define integrated care as:

a discrete set of techniques and organisational models designed to create connectivity, alignment and collaboration within and between the cure and care sectors at the funding, administrative and/or provider levels. The goals are to enhance quality of care and quality of life, consumer satisfaction and system efficiency for patients with complex problems cutting across multiple sectors and providers[7].

In Australia, the National Demonstration Hospitals Program Phase 3 (NDHP3 1998-2001), under the auspice of the Department of Health and Ageing, focused on integration between health services[6]. The projects funded under NDHP[3] spanned the healthcare continuum and included pre-admission services, discharge planning, surgical outpatient clinics, acute chest pain assessment, breast care services, orthopaedic case management, palliative care, GP to hospital referral processes, GP to ED communication, ED aboriginal liaison services and integrated aged care programs[6]. The Department of Health and Ageing and the NDHP3 lead hospitals agreed on the following definition:

The NDHP3 approach to integration involves hospitals and the primary and community service sectors working together to establish and document systems that provide a smooth transition across sector boundaries that results in improved patient care, support for carers, better health outcomes and optimal resource use[6].

3.1 Definition of integration

The Integrated Care for Clients with Complex Needs Working Party adopted the NDHP3 definition of integration, which adequately encompasses integration across the healthcare sectors. The Working Party's focus was primarily upon integration between the acute and other sectors of the health system with the aim of preventing ED presentations and hospital admissions where possible.

3.2 Other terminology related to integrated care

Leutz (1999) acknowledged the term "integration" has a wide range of meanings ranging from closer coordination of clinical care for individuals to organisations that provide care across all sectors of the healthcare system[10]. Additionally, terms such as vertical and horizontal integration, structural and clinical integration are all used when considering integration within and between healthcare organisations.

3.2.1 Horizontal and vertical integration

Horizontal integration refers to integration that occurs within a healthcare sector; Primary Care Partnerships (PCPs) and Metropolitan Health Services are examples of horizontal integration.

Vertical integration refers to integration that occurs across healthcare sectors and is a particular feature of many HARP projects, which are attempting to integrate care across acute health services and the community care sector.

3.2.2 Structural and clinical integration

Structural integration occurs when different providers/organisations are brought together under the same governance with the aim of achieving clinical integration. However, for structural integration to be effective there needs to be shared processes for day-to-day activities to promote clinical integration. Clinical integration may occur with or without structural reform, where separate organisations work together to develop shared processes, for example HARP projects[28].

3.3 Levels of integration

According to Leutz (1999), there are three levels of integration:

1. Linkage

2. Coordination

3. Full integration[10,12].

These levels can be described as a continuum. Located at one end of the continuum is "linkage" with "full integration" lying at the other end of the continuum[7].

3.3.1 Linkage

Linkage is a minimalist, least-change approach to integrated care, which operates within the context of existing and fragmented systems[7]. Organisations may develop protocols to facilitate referral or collaboration to deal with patients' needs. However, the organisations continue to function within their respective jurisdictions, responsibility and operational rules[12].

3.3.2 Coordination

Coordination is a more structured form of integration than linkage but still operates within separate structures of the healthcare system. Coordination is generally focused upon those clients, frail aged and or disabled, who are receiving health and social care from more than one organisation. The coordination model of integrated care involves the development and implementation of an infrastructure to manage the full spectrum of care and services for the target group promoting information sharing and mechanisms to alleviate confusion, poor communication, fragmentation and discontinuity within and between sectors of the health system[7,12].

The main tasks are coordinating benefits (where does health coverage end and long-term care begin); coordinating use of services; sharing clinical information in a planned manner; managing transitions between settings; and assigning primary responsibility for coordinating care. Coordination identifies points of friction, confusion, or discontinuity between systems and establishes structures and processes to address problems[10].

3.3.3 Full integration

Full integration represents the complete overhaul and consolidation of all or most responsibilities, resources and funding for patient management/care for a particular target group of clients/patients[7]. This entails either creating or pooling resources from multiple systems[10]. The funding streams and services are bundled together and managed by a unified service network using similar mechanisms and techniques found in the coordinated models above. The integrated organisation is responsible for all services, either under one structure or by contracting some services with other organisations[7,12].

Table 3.1 uses "patient information" and "clinical practice" as sample service dimensions to illustrate the different levels of integration.

Table 3.1 Service dimensions within levels of integration

Level of integration	Patient information	Clinical service
Linkage	Provided when asked, asked for when needed.	Health professionals understand and respond to special needs in primary care.
Coordinated	Define and provide items/reports routinely in both directions.	Know about and use key workers (eg. discharge planners).
Integrated	Use a common record as part of daily joint practice and management.	Multidisciplinary teams manage all care.

Dimension of Service (Leutz, 1999) sourced from Alexander, 2001[6].

3.4 Principal features of integrated care

Table 3.2 summarises the principal features that are required to develop and operationalise integrated care with an indication of their presence within each level of integrated care, demonstrating the continuum from linkage to full integration[7].

Table 3.2 Key factors and relationship to levels of integrated care

Key factors	Description	Linkage	Coordination	Full integration
Jurisdictional boundaries	Complexity of governmental policy formulation, administration and regulation with respect to the provision of health and social care	0	✓	✓✓
Funding mechanism	Division and structure of funding for health and social care	0	✓	✓✓✓
Governance and management	Legal and administrative relationships among and between stakeholders	0	✓	✓✓✓
Strategic planning	Stakeholder involvement in joint planning and community needs assessment	0	✓✓	✓✓✓
Focus on continuum of care	Consideration of, and alignment with patient needs regardless of existing limitations in system, sector or setting (eg available services and eligibility)	✓	✓✓	✓✓✓
Comprehensive Service Package	Ability to bundle and access a broad range of needed health and social care services from anywhere on the continuum of care	0	✓✓	✓✓✓
Network Relationships	Nature of working arrangements among and between institutions and providers	✓	✓✓	✓✓✓
Patient Screening	Ability to identify and target at-risk populations	✓	✓✓	✓✓✓
Multidisciplinary assessment	Commitment to performing comprehensive multidimensional patient evaluations	0	✓✓	✓✓✓
Primary care	Synchrony with GPs, other components of the primary care sector, as well as specialists	0	✓✓	✓✓✓
Care management	Planning, arrangement and monitoring of needed care across time, place and discipline	0	✓✓	✓✓✓
Continuity coverage and care	Control over transitions between benefits, settings and providers	0	✓	✓✓✓
Teamwork	Ongoing communication and collaboration among, and clinical management by, a multidisciplinary group of providers	✓	✓✓	✓✓✓
Information sharing	Access to and use of shared clinical, administrative, and financial information on a manual and/or automated basis	✓	✓✓	✓✓✓
Systems outcomes	Overall responsibility for total quality and costs.	0	✓✓	✓✓✓

Source: Adapted from Kodner & Kyriacou[7]

4 Key components of models of integration

The next two sections provide an overview of approaches taken to better integrate care and meet the needs of people with complex needs. Section 4 explores various practices that support integration, whilst Section 5 explores various models of care, which use a combination of these practices. It should be noted that these sections are not exhaustive and do not address all components contributing to integration within our current healthcare system. There is a myriad of activity within organisations and across healthcare sectors that has been occurring over many years to better coordinate healthcare and assist to maintain people with complex needs in their home environment. These activities and organisations are too numerous to acknowledge individually but some examples include work undertaken by the Primary Care Partnerships, Coordinated Care Trials, National Demonstration Hospitals Program, Effective Discharge Planning Strategy, GP Liaison positions, Royal District Nursing Service Liaison positions, Case Managers within various organisations, and individual clinicians etc. HARP is another initiative that is fostering better integration of services.

It can be questioned, why do we need yet another funding stream when the system is already too complex? Is this funding stream just adding another layer to the system and duplicating existing services? Would it not be more beneficial to provide these funds to existing services to bolster their resources and enable them to better meet demand? There is no doubt that the healthcare system is complex and that people experience difficulties navigating the system. Initiatives introduced over the years to promote streamlining of the system and targeted at those with special needs have improved access to healthcare for many people. However, the system continues to struggle to match resources to people's needs and will continue to do so given the ageing population. Therefore, it is necessary to think differently about the delivery of healthcare services, which takes additional time, energy and resources[2,10]. HARP provides both the impetus and funds to embrace new practices and models of service delivery. To ensure that HARP funding does make a difference, it is necessary to view the healthcare system as a whole, work in partnership with consumers and organisations across all healthcare sectors, identify gaps in service provision, develop strategies to address the gaps and build on and gain leverage from current services. HARP is supporting service system redesign through promoting patient centred integrated care.

Section 4 provides an overview of various practices that support integrated care for people with complex needs. Many of these strategies are currently used within the healthcare system, but need to be implemented across healthcare sectors through collaboration between organisations.

4.1 Single point of contact/entry

A single point of contact or entry is a mechanism for accessing services within healthcare organisations and the healthcare system[12]. The notion of a single point of contact is essential for creating a seamless system of care, with the users unaware of transitions between departments and across organisations. A single point of contact acts as a triage point, collecting initial information that can be transferred to the appropriate service providers upon referral without the need for the client to repeatedly retell their story.

Whilst a number of HARP funded projects refer to the concept of a single point of contact, this term requires clear definition in relation to integrated care. In some instances a single point of contact may be to that particular organisation or for the entire health system, i.e. there are varying degrees as to what that single point of contact provides access. In many instances, the term single point of contact refers to a process where a person is referred to a program and the person in receipt of the referral assumes responsibility for navigating the service system, i.e. undertaking a needs assessment and linking the client to appropriate services both internally and externally to that organisation. Alternatively, the term single point of contact may be relevant to that organisation only. Either way, organisations are recognising the need to assist clients and other healthcare providers to navigate the services within and between their organisations. The concept of integration evolves over time and as projects become more established and relationships strengthen with shared processes (including documentation), the single point of contact will become more sophisticated.

4.2 Early intervention strategies

Early intervention strategies incorporate identification of "at risk" clients, ie those who are high users of the system or have the potential to be high users of the system. Repeated presentations to EDs are related to a number of factors including:

- Chronic medical conditions with frequent relapse[29,30];
- Poor quality of care at initial visit[29];
- Inadequate primary care of certain chronic conditions[29];
- Social and or psychological characteristics of patients[29];
- Problems with social services[30];
- Carer problems[30];
- Medication problems[30];
- Poor health on discharge[30];
- Inadequate preparation for discharge[30];
- Inadequate information provided to GP[30].

Pearson et al (2002) reported that a relapse or complication of the original illness, followed by carers' difficulties were the commonest reasons given by GPs and hospital staff for representation[30]. McCusker et al (2000) identified interventions to reduce representations including: improvement in the quality of ED care; improved liaison between the ED and ambulatory and community services; referral of selected patients to a GP or for a specialized geriatric assessment, to identify and manage underlying problems; home visits by a nurse; and education of the patient and family, including provision of information on alternative sources of care in the community[29]. Therefore, given the possibility of preventing representations, it is important to identify those patients that are at high risk of return to target them for intervention[29].

"At risk" clients are being identified for HARP projects through a variety of mechanisms including:

- Data mining and recruitment of identified clients to the project;
- Identification of complex clients by GPs;
- Establishment of "at risk" registers;
- Working with specific Residential Aged Care Facilities; and
- Risk screening in ED.

Additionally, the use of call centres/telephone triage has the potential to direct clients to more appropriate services; however, the evidence supporting the effectiveness of telephone triage is not yet well developed. The HARP projects are also incorporating comprehensive assessment to determine and anticipate needs, and facilitate appropriate care planning including linkage to community-based services, which may be considered an early intervention strategy as needs anticipation may reduce future demand for acute hospital services.

4.2.1 Risk screening

Risk screening is a method of identifying clients with additional needs, other than the reason for presentation to ED or healthcare organisation, that would benefit from further interventions (such as referral to other services, comprehensive assessment and case management) in an effort to better coordinate care and improve health outcomes.

McCusker et al (2000) conducted a study to develop a screening tool to identify elders in the ED at increased risk of adverse health outcomes including representation to ED, death, long-term hospitalisation or "nursing home" admission, or functional decline during the six months following the ED presentation[29]. The study involved administering a 27 item self report questionnaire (24 questions, one with four sub questions) developed by a multidisciplinary committee based on a literature review and previously administered questionnaires. See Table 4.1.

Table 4.1 Screening questions

1. What is your age? (65-74, 75-84, 85 or over)
2. Your sex? (male, female)
3. Do you live alone? (yes, no)
4. Do you live in a foster home, nursing home, or residence for the elderly? (yes, no)
5. In comparison with other people your own age, do you think you are in good health? (yes, no)
6. Before the illness or injury that brought you to the ED, did you have any health problems that required you to limit your activities? (yes, no)
7. Before the illness or injury that brought you to the ED, did you need someone to help you on a regular basis? (yes, no)*
8. Since the illness or injury that brought you to the ED, has there been a decrease in your ability to get about? (yes, no)
9. Since the illness or injury that brought you to the ED, have you needed more help than usual to take care of yourself? (yes, no)*
10. During the past year, have you had:
a) Heart disease (yes, no)
b) Diabetes (yes, no)
c) Cancer (yes, no)
d) Stroke (yes, no)
11. Have you visited a hospital ED during the past month (not counting this visit)? (yes, no)
12. Have you been hospitalised for one or more nights during the past six months (excluding a stay in the ED)? (yes, no)*
13. Did you trip or fall two or more times during the past six months? (yes, no)
14. In general, do you hear well? (yes, no)
15. In general, do you see well (yes, no)*
16. In general, do you have any serious problems with your memory? (yes, no)*
17. In general, do you feel sad and depressed? (yes, no)
18. During the past year, have you been affected by the death of a person close to you, or another serious event? (yes, no)
19. Do you take more than three different medications every day? (yes, no)*
20. Do you take pills to help you sleep? (yes, no)
21. Do you drink alcohol (wine, beer, etc.) every day, not counting drinking with meals? (yes, no)
22. Do you usually have daily contact with other people? (yes, no)
23. In case of need, can you count on someone close to you? (yes, no)
24. Do you usually have enough income to meet your daily needs? (yes, no)
A positive response was present for answers of "yes" to items 3-4, 6-13, and 16-21, and for answers of "no" to items 5, 14, 15, and 22-24.
*Questions in the Identification of Seniors At Risk (ISAR) scale

Source: McCusker et al, *Academic Emergency Medicine* 2000;7(3):249-59.[29]

Following analysis of the results a small number of questions were identified that could be used to construct a screening tool, Identification of Seniors at Risk (ISAR), to identify patients at high risk of return to the ED. The tool, displayed in Table 4.2 comprises six self-reported questions on functional dependence (premorbid and acute change), recent hospitalisation, impaired memory and vision, and polymedication[29].

Table 4.2 Identification of seniors at risk screening tool

1. Before the illness or injury that brought you to the ED, did you need someone to help you on a regular basis? (yes, no)*
2. Since the illness or injury that brought you to the ED, have you needed more help than usual to take care of yourself? (yes, no)*
3. Have you been hospitalised for one or more nights during the past six months (excluding a stay in the ED)? (yes, no)*
4. In general, do you see well (yes, no)*
5. In general, do you have any serious problems with your memory? (yes, no)*
6. Do you take more than three different medications every day? (yes, no)*
NB. Responding "Yes" to 2 or more indicates risk.

Source: McCusker et al, *Academic Emergency Medicine* 2000;7(3):249-59.[29]

McCusker et al (2000) concluded that a small number of self-reported questions could be used to construct a screen to identify patients at high risk of functional decline and other adverse health events including those at risk of return to the ED[29]. The ISAR scale is effective in predicting early return (within 30 days of initial presentation), but less effective at predicting frequent return (three or more ED presentations within six months following the initial presentation)[29]. McCusker et al (2000) suggest the purpose of screening and the nature of any intervention to be conducted should be considered before selecting specific screening questions[29]. The relevance of the specific questions is detailed in the results of their study. It is of interest to note that a single question on lack of support was a strong predictor of frequent return to the ED. McCusker et al (2000) note that lack of social support has been linked in the elder population to higher risks of mortality, and higher rates of hospital admission, which suggests that increasing social supports for the elderly may reduce hospital utilisation[29].

In 1998, DHS commissioned a study to develop a risk screening tool for service needs following discharge from the acute care sector[31]. The study revealed that the 12-item version of the Risk Screening Tool resulted in a 90 per cent correct classification of service need. When the tool was shortened to four items, 86 per cent correct classification was still achieved. The four factors found to be most predictive of service need are as follows:

- Patient likely to have self care problems;
- Patient lives alone;
- Caring responsibilities for others; and
- Patient used services before admission[31].

The Post Acute Care Service Risk Screening Tool was validated and recommended for wide use for patients admitted to acute care facilities[31]. The ARMC risk tool, described below, appears to be modelled on this tool. Details of the Post Acute Care Service Risk Screening Tool can be located at www.health.vic.gov.au/discharge/riskscreen.htm.

Risk screening tools being used by HARP Projects were requested during key informant interviews; however, many of these were in development phase and were unavailable to share. Examples provided included:

1. Austin and Repatriation Medical Centre (ARMC) ED Risk Screen Tool and Aged Continuum Care Team Assessment Form; the Risk Screen Tool is in the process of being integrated into the Emergency Nursing Assessment Medical Record.

- The Risk Screen Tool is used for all patients over 70 years of age; younger disabled with age related type conditions/issues (eg. Parkinson's, Multiple Sclerosis and/or a psychiatric illness); and patients with complex medical and/or psychosocial conditions and issues.
- Specific questions include:
  - Does the patient live alone?
  - Does the patient have decreased functional ability? (eg. falls, incontinence, help with cooking, hygiene)
  - Has the patient used community services prior to admission? (eg. home care, meals on wheels)
  - Is the patient a carer of another?
  - Has the patient been an inpatient or presented to Emergency twice or more in the past 28 days with the same condition?
- One tick or more indicates a positive risk screen and facilitates the initiation of a comprehensive assessment.

2. St Vincent's Health Melbourne Assessment, Liaison and Early Referral Team (ALERT) Risk Screening Tool is completed for all patients assessed in ED and is designed to assist with further investigation of the patient's circumstances (ie history of presentations, social situation, level of supports, etc) and to ensure that there is documentation of the ALERT assessment, including outcome.

- All patients presenting to ED have their details reviewed including: name, age, presenting problem, visit history, number of presentations to ED within 3-6 months, demographics and next of kin.

- Patients with identified risk factors are categorized (see Table 4.3) into one of three categories:
  - Category 1 - The patient should definitely be assessed for diversion/ongoing ALERT case management, ie have an "ALERT Risk Screen" (assessment) form completed.
  - Category 2 - The patient should be considered for assessment if they have one or multiple risk factors in Category 2 and depending on the patient's current medical and psychosocial situation.
  - Category 3 - The patient should be referred on or may require liaison with other service(s) within or outside of SVHM eg Koori Hospital Liaison Officer or St Vincent's at Home (SVAH).

Table 4.3 SVHM risk factors by category

Category 1	Category 2	Category 3
Post discharge risk management	Limited social supports	Koori
Multiple presentations to ED	Living alone (Rooming House, boarding house, NFPOA)	RDNS patient
Non-compliant with medications/treatment	Difficulty with ADLs/mobility	SVAH Patient
Multiple falls (including fractures)	Chronic illness	Veterans Affairs
Unresolved placement issues	Mental illness	Requires Allied Health
Difficulties with substance abuse	Major carer for another	Has a case manager
Homeless	Impaired cognition/communication	
Has represented within 28 days	Declines community services	
	Non-English speaking background	
	Elderly (65+)/frail	
	Presents from Residential Care	

Source: ALERT Intake Procedure

4.3 Assessment

Screening and assessment are seen as the first step in entering the service system[11]. The process of screening highlights those patients who warrant further assessment. However, it is necessary to define the scope of the service system for which the screening and assessment is being undertaken; as the wider the service system, the broader the scope of screening that is required[11]. In the case of HARP Projects the scope of the screening and assessment is to identify those patients that are amenable to interventions that will reduce their requirement to access the acute health system. HARP screening and assessment is undertaken as an adjunct to assessments focused upon the presenting problem. Therefore, the scope of screening and assessment within HARP projects is comprehensive with the aim of identifying a range of needs, which may be met by other service providers (such as aged care, primary care sector including community health and GPs), and not exclusively the person's medical condition. As such, many HARP Projects are building upon existing assessment processes and tools, for example, Aged Care Assessment Service (ACAS) assessment tools and PCP Service Coordination Tool templates.

After an international literature review and a national practice review, a range of Service Coordination Tool templates were developed as part of the PCP strategy within Victoria. The PCPs are developing an integrated approach to service coordination through the implementation of shared practice, processes, protocols and systems across member agencies within the primary care sector. The scope of the tools was defined by those services, agencies and GPs involved in PCPs[11,32].

The Service Coordination Tools comprise a suite of templates that include demographic data (Consumer Information), Service Coordination Plan, Summary and Referral, Consumer Profiles including living arrangements, health conditions and behaviours, functional screen and psychosocial profile and Consumer Consent[32]. These tools create a platform for the sharing of information between organisations and their broad adoption provides the potential to reduce repeated history taking. However, individual organisations need to supplement the templates with specific assessment tools geared to their specialist needs[32]. The Consumer Information, Summary and Referral and Profile forms used in an Initial Needs Identification (INI) process should trigger what formal assessments and/or urgent services are required. Consumers should be informed about the range of service options that are available to meet their needs, which is not limited to the services provided by the organisation undertaking the INI[32]. Table 4.4 summarises the components and purpose of the Service Coordination Tools.

Table 4.4 Purpose of the service coordination templates

Component	Purpose
Consumer information	Demographic and social details of the consumer, contact person/s and GP, and how the information was obtained.
	Codes to record source of referral, other demographic information and benefits, entitlements and insurance status.
Summary and referral information	Summary of presenting problems and a text box to record other relevant information.
	Describes current services used in the last three months, and proposed initial action plan. Completed at the end using information from other profiles if appropriate.
Supplementary profiles	
Living arrangements	Codes and comments for living arrangements, legal, financial and employment, carer profile.
Health conditions	Overall health, pain, vision hearing and falls, list of conditions and medications.
Psychological Profile	Covers mental health, wellbeing, social and family supports and disability criteria.
Functional profile	Functional screen for ADLs and self-care.
	Screening questions for cognitive and behavioural problems, with prompts for further assessments.
Health behaviours	Screen for risk factors, nutrition and physical activity, with prompts for further investigation.
Developing a service coordination plan	Key worker, review date, participants' list, evidence of assessment of need, case conference/date and information given to consumer.
	Action plan for each goal including dates, action, review date, who is responsible.

Source: DHS, 2002[32]

One HARP project is giving consideration to using the Resident Assessment Instrument for Home Care (RAI-HC). The RAI is a validated protocol driven assessment tool for frail elderly and disabled individuals, developed as part of an international collaborative effort. The RAI-HC includes 30 Clinical Assessment Protocols that can be used to support care planning and outcome measures, displayed in Table 4.5. The RAI has been and continues to be used by the Victorian Coordinated Care Trial (CCT) and work was undertaken to develop electronic care planning. However, difficulties were encountered which precluded the effective sharing of care plans, for example, organisations' firewalls.

The RAI-HC was developed by inter*RAI* (a non-profit corporation established in 1994 in Washington DC) as part of an international collaborative effort to create a common assessment language for frail elderly and disabled individuals receiving community-based services. inter*RAI* believes that standardized assessment provides crucial information about the needs of the elderly population which is rapidly growing world-wide. Comprehensive evaluation, (including functional, psychosocial and environmental needs), is the key to care planning decisions resulting in quality care for the individual and information for wider policy issues (www.interrai.org).

Table 4.5 Clinical assessment protocols of the RAI-HC

Clinical assessment protocols		
Functional performance		
ADL/Rehabilitation potential	Instrumental activities of daily living	Institutional risk
Health promotion		
Sensory performance		
Communication disorders	Visual function	
Mental health		
Alcohol abuse and hazardous drinking	Cognition	Behaviour
Depression and anxiety	Elder abuse	Social function
Health problems syndromes		
Cardio-Respiratory	Dehydration	Falls
Nutrition	Oral health	Pain
Pressure ulcers	Skin and foot conditions	
Service oversight		
Adherence	Brittle support system	Medication management
Preventive health measures: immunisation and screening	Reduction of formal services	Environmental assessment
Palliative care	Psychotropic drugs	
Continence		
Bowel management	Urinary incontinence and indwelling catheter	

Source: Lydall-Smith et al, Victorian Coordinated Healthcare Trial[4]

4.3.1 Comprehensive geriatric assessment

Comprehensive geriatric assessment (CGA) is a process that defines an elderly person's medical, psychosocial, functional and environmental resources and problems, and links these with an overall plan for treatment and follow-up. It utilises the planning and coordinating skills of a spectrum of health professionals, including geriatricians, other specialist physicians, nurses, social workers, pharmacists and allied health staff, who devise individual care plans for patients[33]. Exploration of various models using CGA is undertaken in the Section 5.3.

Many HARP Projects identified assessment of individuals' healthcare needs as an essential element to implementing a plan of care that will adequately meet these needs and ultimately reduce presentations to the acute hospital. A number of projects include CGA particularly those that are integrated with an ACAS or geriatric unit. In many instances, the initial assessment will be undertaken by a member of the multidisciplinary team, often a nurse, with the opportunity to refer to other members of the team dependent upon the needs identified eg: geriatrician.
In other projects, a member of a rapid response team and/or the care coordinator undertakes a holistic assessment and if necessary the client will be referred onto the ACAS, or alternatively, the GP is encouraged to undertake annual health assessments of people over 75 years of age, accessing the Medical Benefits Scheme (MBS) Enhanced Primary Care (EPC) items and working in collaboration with a geriatrician.

4.4 Integrating care management and care pathways

Both overseas and Australian experience indicate that case management is ideally targeted to individuals who are likely to receive the most benefit ie those with complex needs requiring intense management from a range of different organisations, as this is where case management is deemed most cost effective[8]. Additionally, not all people require case management as the majority are independent and capable of making decisions, however, they may require assistance and guidance to navigate the service system[5,8]. (Please refer to the HARP Background paper for a broader overview of case management[34]).

Therefore, the focus of many HARP Projects is on service coordination as a way of integrating care management and creating care pathways through the system. The choice of the term service coordination has been carefully selected here, as many organisations use terms such as care management, case management and service coordination interchangeably, however, when analysing the proposed processes of HARP Projects it is clear that service coordination is the role that is being performed. The Victorian Coordinated Care Trial has clearly identified the need to differentiate between the concepts of service coordination and case management. Whilst these two roles are similar, the role of service coordination is less intensive than that of case management. Service coordination involves establishing a working relationship with the client and other service providers including the GP, undertaking

a comprehensive generalist assessment, developing a needs based care plan, coordinating the introduction of various services and monitoring and reviewing the client as required, possibly over a limited time frame[4,35]. Whereas, case management tends to be more intensive and longer term, with the Case Manager often providing aspects of hands on care. The differences and similarities between the two roles are clearly articulated by Coordinated Healthcare in Table 4.6.

Table 4.6 Comparison between service coordinators and case managers

Similarities	Differences
They have detailed knowledge of what services are available and to whom.	
They organise services for clients.	In some cases, Case Managers provide "hands on care" (particularly case management of people with mental illness).
They do "assessments" where necessary, although the level of assessment varies.	Case management is often long term, in depth contact is more frequent.
They liaise with service providers.	Service Coordinators always provide a comprehensive generalist assessment.
They develop, monitor and review care plans	Case Managers may have greater depth of understanding of a client's social relationships and supports.
	The general case load (number of clients assigned) of a Case Manager is significantly less than a Service Coordinator.
	A Service Coordinator operates in a more autonomous and flexible manner related to the client need rather than the funding mechanism.

Source: Lydall-Smith et al, Victorian Coordinated Healthcare Trial[4]

The Audit Commission (UK, 2002) identified that for effective integrated care it is important to have a lead person who works as a service coordinator or case manager assisting older people to access and move between services[5]. Ideally this person:

- Is based in the community, but retains contact with the older person if they need to go into hospital;
- Can operate across organisational boundaries, bringing in services from the NHS, local authorities and the voluntary sector, according to the older person's needs;
- Has a proactive focus on keeping older people well and at home;

- Manages pathways of care;
- Has access to resources, often pooled budgets; and
- Works in a defined locality and has excellent networks and knowledge of what is available in that area[5,12].

Case Study 2 demonstrates a person with complex needs where service coordination across the continuum of care is required, see Figure 4.1.

Figure 4.1 Case Study 2 – Bob

Bob is a 74-year-old man who lives alone and has no children. He suffers with multiple co-morbidities including: CHF, pulmonary hypertension, chronic renal failure, failed right femoral bypass, chronic leg ulcers, psoriasis, diabetes, retinopathy, hypothyroidism and epilepsy. The main symptoms related to his health issues include pain and difficulty sleeping due to arterial insufficiency in his leg, constipation and exacerbations of CHF; however, Bob is reluctant to accept further vascular surgery and is also reluctant to accept home support services. Bob prefers to use the local acute public hospital for medical care and only attends his local GP for repeat prescriptions.

Over a five month period Bob presented to the ED five times and was admitted to the ward on four occasions, transferred to HITH on two occasions (one being a direct admission) and transferred to a step down facility on another occasion. Additionally, Bob attended five separate outpatient clinics on numerous occasions and had input from allied health including social work, podiatry, physiotherapy, occupational therapy, a diabetic educator and community nursing. Follow up outpatient's appointments were arranged after each admission and clinical information forwarded to the GP.

This case portrays a man who has chronic health problems, which are deteriorating and limiting his capacity to remain at home without a significant introduction of community based supports. The case also demonstrates a significant use of a tertiary hospital's services including a complex array of health professionals and interventions. There appears to be limited planning for at home care including development of a plan of care in the event of an "emergency". Encouraging Bob to accept his situation including assistance in the home environment is crucial for the successful implementation of community based services.

The appointment of a service coordinator to coordinate care across all care settings and plan and liaise with stakeholders, including involvement of the GP using the case conferencing and care planning EPC items and engaging a behavioural psychologist to work with Bob may make a difference to this situation. Regular monitoring and a shared electronic care plan that includes an "emergency plan" would improve care coordination and management of exacerbations of illness.

To provide optimal patient care it is necessary to carefully balance the caseloads of service coordinators and case managers; if they are set too high, they can negatively impact outcomes, yet if they are set too low, staffing costs may suffer. Caseloads may vary by organisation according to the following factors:

- Acuity of patient population and complexity of the clients[35,36];
- Service coordination/case management goals[36];
- Definition of service coordination/case management[36];
- Interactions with clients and other healthcare providers, including the number of GPs the person is in contact[35,36];
- Professional experience of service coordinator/case manager[36];
- Resources available to service coordinators/case managers[36];
- The geographic area covered[35];
- The current status of a client. More intense contact will be required at particular times such as during transition from the acute sector to the community and during significant decision points[35].

In line with the aim of most HARP Projects to prevent duplication of current services, care management focuses upon short-term service coordination to facilitate linkage with "mainstream" services including case management, if necessary, and maintain the flexibility to respond to new cases. For example, following risk assessment and identification of those "at risk", a more thorough assessment is undertaken that includes exploring services that are currently involved with the client including GP interaction. HARP Projects seek information from these services and establish their role and utilise existing service coordinators/case managers if possible; where service coordinators/case managers are not involved but are required, every effort is made to link the client to already existing services.

In a minority of instances ongoing case management may be implemented, for example, the ALERT program at SVHM institutes ongoing case management where the patient:

- Has had multiple presentations to ED;
- Is treated by multiple medical/surgical units and requires a single worker across units;
- Is homeless and/or socially isolated;
- Presents with multiple risk factors and would benefit from short term intervention or outreach case management;
- Refuses community services and is at high risk of re-presentation;
- Has a history of borderline coping in home/social environment;
- Has represented as a result of unplanned readmission and/or failed discharge;
- Is borderline between living in community with supports and requiring residential care.

Figure 4.2 demonstrates the role of short term case management, bridging the gap until long term case management is available.

Figure 4.2 Case Study 3 – Mary

Mary is a 57-year-old woman with a history of CHF, end stage liver disease, alcoholic brain injury and is legally blind. She presented to the ED with encephalopathy due to poor medication compliance and continued alcohol abuse. At the time of presentation to ED she was not coping at home and was refusing services other than fortnightly visits from the RDNS Homeless Person's Program, home care for cleaning and shopping and having her dosette filled at a community pharmacy. After two days in hospital, she discharged herself, only to represent two days later with further deterioration. She was assessed as a client "at risk" and received service coordination and case management for the duration of her hospital stay and until she could be linked into long-term case management.

The "interim" case manager knew Mary from previous encounters and thus a relationship and trust already existed. Mary was upset at her loss of independence but was reluctant to accept further services. The "interim" case manager worked with Mary, undertaking a thorough assessment including medication compliance. Mary was encouraged to accept an extended range of services including: occupational therapy assessment; more frequent home nursing visits, personal care, home help services, and referral for the Blind Society to improve day to day management eg: use of microwave for meal preparation. Applications were also made to the Ministry of Housing to review her accommodation and for CACPs. There was a waiting list for CACPs, therefore, the "interim" case manager continued to work with Mary until long term case management was available through CACPs. Following discharge home, the case manager undertook home visits and arranged further services as required, including telephone connection for emergency and incoming calls, personal alarm and a respite bed when Mary's condition deteriorated further. Mary could be maintained at home without further representations to the ED and the "interim" case manager monitored her situation until the CACPs case manager became involved.

4.5 Care planning

The development of a care plan detailing services and activities that are required to assist in maintaining the person at home occurs following comprehensive assessment of the person and liaison with key service providers including the GP. The development of the care plan needs to occur in collaboration with the client and family to ensure that it reflects their choices and preferences. Involving the client in the care planning process empowers the client to be involved in his or her own care

and is more likely to be met with compliance. The care plan serves as a tool for communication between service providers and should clearly define roles and responsibilities.

Participants of HARP projects identified the need to develop individual care plans for people and indicated the desire to develop clinical pathways and protocols that are used across the continuum of care and shared between organisations. At this stage of the projects, these have yet to be developed and organisations are exploring methods of sharing care plans across organisations including electronically. However, the concept of sharing care plans electronically is presenting a number of issues related to privacy constraints and availability of both software and hardware to enable this process. The Victorian Coordinated Healthcare Trial identified that the joint development of care plans and protocols in collaboration with multiple organisations led to shared knowledge and skills, understanding of issues experienced by each agency and assisted to develop trust and relationships between clinicians leading to strong partnerships in caring for mutual clients.

4.5.1 Advance care planning

A specialised area of care planning, advance care planning, is a topic that is receiving considerable attention, particularly in relationship to residents of Residential Aged Care Facilities. Advance care planning is a process involving discussion and documentation regarding the healthcare wishes of individuals in relation to end of life choices, often referred to as advance directives, living wills and medical power of attorney[17-19].

The majority of residents in "nursing homes" are over the age of 75 years and suffer from multiple chronic diseases and functional impairment. Advances in biomedical technology provide the means to delay the moment of death ie through the use of antibiotics, resuscitation, chemotherapy, kidney dialysis and supportive nursing care[37]. Increasing numbers of elderly patients are presenting to EDs for acute medical management[19]. In these instances it is difficult to establish what level of treatment the person desires, given the "crisis" circumstances and difficulties with cognition and communication[19]. Anecdotal evidence confirms that dying patients are often transferred to hospital with no knowledge of or respect for the individual's choices.

The process of advance care planning provides people with the power to gain control over their health and personal care particularly at the end-of-life[20]. In Victoria, the Guardian and Administration Act 1986 and Medical Treatment Act 1998 make provision for people to appoint a person empowered to make decisions on their behalf[21]. However, the trend both nationally and internationally, is that this option is infrequently taken up, and if it is there are issues related to awareness of advance care planning having occurred and whether the advance care plan is valid[17,18,21-23]. The Patient Management Task Force (DHS, 2000-2001) recommended that awareness and use of the Medical Treatment Act 1998 be raised amongst hospital clinicians, ethicists, GPs, palliative care specialists and consumers,

and for Residential Aged Care Facilities to adopt processes to support residents regarding end of life choices[24].

The systematic implementation of advance care planning in the Residential Aged Care setting would empower both residents and their families regarding end-of-life choices. There appears to be few studies related to the feasibility of systematically implementing advance care planning. However, those that have been reported suggest that systematic implementation, in the community or hospital setting, can increase the uptake of advance care planning, thereby empowering individuals to be actively involved in key decisions at this crucial time of life[20,38].

4.6 Communication

Communication between organisations at both the organisational and clinical level and with consumers is vital to supporting integrated care. Information needs to flow between organisations and teams involved in providing care to clients with complex needs[6]. At a management level, information systems are required to analyse system performance and inform planning and service development[5].

Strategic alliances between hospitals and community-based organisations are being developed to support the HARP projects and in some instances, funds are being directed to community-based organisations to employ staff for the HARP projects. Hospitals and community-based organisations are entering into service agreements specifying performance indicators, anticipated outcomes and process issues, such as grievance procedures. Communication regarding the development of models of care is occurring through structured processes involving the establishment of steering committees with representation from key stakeholders.

4.6.1 Shared health record

The concept of a medical record that is shared between organisations involved in an individual's care is believed to assist in full integration of healthcare across all sectors of the health system. Such a record would facilitate communication and continuity of services. There is the opportunity for clinicians to have access to complete, continuously updated information and inform others of the client's progress and changes to the care plan[11-13].

Within HARP projects, communication between organisations regarding care plans and service delivery is generally verbal/manual via telephone, facsimile and/or letter. As previously mentioned, a number of projects are considering the uptake of the Service Coordination Tools developed by the PCPs. However, whilst there is a widespread use of information technology for collecting, storing and transferring patient data, there are few healthcare organisations that have introduced electronic medical records. The majority of projects have considered electronic options such as shared records incorporating assessments and care plans. Bayside Health has been funded through the National Demonstration Hospitals Program Phase 4 to develop an electronic record and is considering the inclusion of information detailed

in the Service Coordination Tools, including an electronic care plan, that has the potential to be accessed by a number of organisations.

Benefits associated with electronic records are numerous and include the ease of sharing information between healthcare organisations but a number of barriers have been identified by HARP projects including:

- The Health Records Act and Information Privacy Act which came into effect in July 2002 has implications for the sharing of client information between healthcare organisations;
- Ownership and control over access to the record;
- The use of electronic medical records is not widespread;
- The availability of information technology within healthcare organisations is variable, with some reporting limited access;
- The cost of changing from a paper based to an electronic system;
- The computer literacy of staff and the cost of education;
- Different systems within healthcare organisations and the ability of these systems to "communicate" with each other;
- Data safety and privacy.

Similar to Australia, the Audit Commission (2002) reports developing integrated care is hampered by information technology systems that fail to connect[5]. The Patient Management Task Force (DHS, 2000-2001) identified that by linking healthcare providers through clinical information systems and the use of electronic health records (based on a unique patient identifier) there would be improved capacity for early intervention and coordination of care, and GPs, hospitals and community healthcare providers would be better able to work towards delivering a seamless healthcare service1. Unfortunately, the realisation of improved information technology and shared electronic records is where most organisations are continuing to encounter difficulties.

The national initiative *HealthConnect* has the potential to resolve these issues through the introduction of an integrated health record, that will be a compilation of an individual's health information in the form of summary reports for each health event[14]. However, this is a complex system that will be introduced incrementally and is therefore not immediately available[15].

Hence, the identification, development and implementation of information systems to assist in clinical decision making, promote continuity of care and support consumers in making their own decisions regarding their health continues to be a high priority, particularly for those with complex health needs[1,3].

4.7 Patient empowerment and self management

Developing the capacity of consumers to fully participate in their own healthcare, practice health promoting behaviours and more effectively navigate their way through the health system promotes independence and self reliance and assists with improving health outcomes[16]. The move towards integrated healthcare places the consumer at the centre of the health system with services designed around their individual needs.

The Centre for Advancement in Health explains that chronic condition self-management involves the person with the chronic disease engaging in activities that protect and promote health, monitoring and managing symptoms and signs of illness, managing the impacts of illness on functioning, emotions and interpersonal relationships and adhering to treatment regimes[39].

The Royal Australian College of General Practitioners has produced Chronic Condition Self-Management Guidelines for GPs/Allied Health to assist GPs and other healthcare professionals in facilitating self-management in patients with chronic conditions. The guideline provides a framework for effective interactions and management strategies[39].

Work conducted by Lorig et al (2001) regarding Chronic Disease Self Management Programs demonstrated that self-management can improve elements of health status and reduce healthcare costs through reduction in outpatient attendance and length of hospital stay[40]. Strategies for promoting patient empowerment and self-management is an area that warrants further investigation and testing in the Victorian setting.

4.8 Medication management

Medication management for clients with complex needs was identified as a major issue among HARP projects as many of these clients are on multiple medications, which are prescribed by a number of doctors including GPs and various medical specialists. It was reported that clients were often confused as to what to take, particularly when discharged from hospital as newly prescribed drugs may vary from those previously taken. Upon returning home, these clients may resume taking medications previously prescribed in addition to those newly prescribed. Additionally, different brand names may lead the client to double dosing.
Whilst there are a number of initiatives targeted at the quality use of medicines eg: Domiciliary Medication Review, initiatives that target medication management have been identified as a gap within existing HARP projects. However, many projects identified the desire to review medication regimes upon the clients' return home. Medication management for clients with complex needs is an area that warrants further attention as a high priority for HARP.

4.9 Monitoring

Monitoring of clients with complex needs is beneficial for observing the effect of chosen interventions and identifying early warning signs of deterioration, which enables early intervention. Monitoring also provides information about what motivates clients to adhere to treatment regimes and provides the opportunity to review progress and to adjust the care plan accordingly[39]. Overall, responsibility for ongoing monitoring of patients appears to lie with the GP and service providers involved with the clients. Some projects indicated the ability for intermittent follow up and monitoring by service coordinators to establish that care plans continue to meet the client's needs or for specialist follow up eg: Aged Care Shared Care model. The role of ongoing monitoring of clients may develop as HARP projects move beyond early implementation.

5 Models of integrated care

The move towards models of integrated care is an effort to manage the labyrinth of the healthcare system that has become increasingly complicated as additional services and funding streams have been introduced to encourage innovation, change traditional healthcare practices and address gaps in service provision. Within the healthcare system the essential foundation of coordination is a hierarchical ordering of services, with primary care being the point of entry for people with simple needs and as people's healthcare needs become more complex, referral to secondary services, such as medical specialists, or tertiary care within the acute hospital setting occurs[8]. However, the delivery of services to people with complex needs is the responsibility of many different healthcare professionals and organisations across different healthcare sectors, with each being a distinct entity with it's own funding mechanism, budget and patient selection criteria. These various components of the system are not always coordinated around patient need and often work in parallel, with separate and distinct responsibilities that both overlap and leave important needs unmet[9]. Models of integrated care attempt to overcome these issues by combining the key practices, explored in the previous section, into models of care.

5.1 Telephone triage

In Australia, approximately 86 per cent of the population sees a GP at least once per year, making GPs the most frequent point of first contact with the healthcare system[41]. General practice offers patients continuity of care both with the same practitioner and in linking care between different services, often acting in a gatekeeper role, for example, referring on to other services if appropriate[41].
GPs are often seen as the care coordinator of patients' healthcare. However, people can experience difficulties with accessing GPs in a timely manner, particularly after hours and in rural and remote areas or where GPs are scarce and there is a number of days wait for an appointment. Additionally, GPs are limited in the amount of time they can spend in linking people with other services.

Increasingly, the concept of telephone triage is gaining attention as a vehicle for linking people with the appropriate services, particularly after hours in the absence of GP coverage[42,43]. There are a number of health related call centres and telephone triage initiatives operating in Australia, as explored in the HARP Background Paper (page 48)[34]. A number of HARP projects are implementing telephone triage as a component of broader models and using telephone triage to direct clients to appropriate services such as a community based Care Coordinator, after hours primary care clinic and to follow up clients following discharge home from the ED. However, the evidence supporting the effectiveness of telephone triage is not yet well developed.

5.2 Case management affiliated with GP practices

The role of case managers affiliated with GP practices is a model of care aimed at better coordinating the client's care and assisting with transitions between care sectors and has been explored in the United Kingdom (UK)[5,44]. In this model of care, older people who are at risk of hospital admission, or who are heavy users of services are targeted for case management by a primary care team, with the case manager being a community nurse. The nurse assesses and provides follow up care for the client, which could include health education, practical advice or referral to other services. Additionally, when clients are admitted to hospital, contact can be maintained and the case manager can coordinate their discharge arrangements, finally reviewing the patients at home. In this model of care the GP and primary care team take on the coordinating role and work across professional and organisational boundaries[44]. The case manager relieves the GP of some of the burden of facilitating access to and coordinating social and health interventions[12]. Whilst this model is specific to the UK health system, variations on this theme may be applicable in the Australian setting.

5.3 Specialised geriatric care

Increasingly, as hospitals and organisations are attempting to deal with the rising demand for their services, particularly by older people, health service provision is incorporating the principles of geriatric practice. Specialised geriatric units within acute hospitals have demonstrated that the loss of functional independence is not an inevitable consequence of acute illness and hospitalisation amongst older patients (previously explored in the HARP Background Paper34)[45]. Other models of specialist geriatric care that promote integrated care include:

- Outpatient Geriatric Evaluation and Management;
- Aged Care Shared Care programs;
- In-home CGA;
- Preventive nurse home visits.

5.3.1 Outpatient geriatric evaluation and management

Geriatric evaluation and management (GEM) is a term describing the combination of CGA and case management by an interdisciplinary team of healthcare professionals that can occur in outpatient, inpatient or home care settings[33,46]. Engelhardt (1996) undertook a study to compare usual primary care with outpatient GEM and suggests that outpatient GEM results in more effective coordination of healthcare, and reduced ED presentations and hospital admissions[46]. Engelhardt (1996) noted that studies conducted previously to evaluate Outpatient GEM had mixed outcomes and therefore, the model Englehardt evaluated included methods to improve care and reduce healthcare utilization[46]. The key components of the model of care included:

1. Establishing a GEM team comprising geriatrician, nurse practitioner and social worker, with the geriatrician supervising the patients' overall care and consulting with the nurse practitioner as needed.
2. Having a lower-cost nurse practitioner provide most of the direct medical care, consulting with the geriatrician as needed;
3. Conducting a comprehensive assessment of the psychosocial as well as the functional and medical needs of the patient;
4. Emphasizing prevention and health promotion;
5. Centralizing care in the GEM clinic by de-enrolling, that is terminating patients from medical and surgical sub-specialty clinics after a specialist agreed their direct involvement was no longer necessary;
6. Monitoring the use of emergency room and inpatient services using a customized software program linked to the hospital mainframe computer; and
7. Minimizing use of the emergency room during day shifts. This was accomplished by educating patients and caregivers about how to access GEM providers through telephone consultations for nonemergent problems and by instructing them how to page GEM providers in order to arrange unscheduled visits[46].

Outpatient GEM intervention included:

1. An initial comprehensive assessment;
2. The development and implementation of a care plan;
3. Periodic reassessment;
4. Monitoring and updating the care plan; and
5. Coordination of referrals to other health and social service providers[46].

One HARP project has adopted a similar model of care, using a broader interdisciplinary team and is including a shared care role with the GP. The Shared Care model of care is a method of reaching more patients with specialist expertise. The client continues to be managed by their GP in collaboration with a geriatrician, and in this case an interdisciplinary team. This is particularly important as geriatric medicine is a relatively new specialty and treatments are advancing rapidly and becoming more complex. Ultimately, specialists are more knowledgeable about the management of conditions within their area of expertise[16].

5.3.2 In-home comprehensive geriatric assessment

Similar to the concept of Outpatient GEM, in-home CGA provides a systematic approach to assessing and meeting the needs of elderly people. A randomised controlled trial conducted over three years by Stuck et al (1995) evaluated the effect of annual in-home CGA conducted by gerontic nurses in collaboration with geriatricians. The aim of conducting in-home geriatric assessment was to detect and modify biologic, psychological, social and environmental risk factors for disability[47].

This model of care involved:

- Annual CGA performed in the home by a gerontic nurse including: medical history taking and a physical examination; hematocrit and glucose measurements in blood samples obtained by finger stick; a dipstick urinalysis and a mail-in faecal occult-blood test; evaluation of functional status; oral health; mental status (presence or absence of depression and cognitive status); gait and balance; medications; percentage of ideal body weight; vision and hearing; extensiveness of social network; quality of social support; and safety in the home and ease of access to the external environment.
- Discussion of each case with the geriatricians and development of rank-ordered recommendations.
- In-home follow up visits every three months to monitor the implementation of the recommendations, make additional recommendations if new problems were detected, and facilitate compliance.
- If additional contact was considered necessary, the nurse telephoned the participant or was available by telephone.
- All the participants were encouraged to take an active role in their care and to improve their ability to discuss problems with their physicians (NB. Only in complex situations did the nurse or geriatricians contact the patients' physician directly)[47].

Stuck et al (1995) found that this intervention resulted in a significant reduction in the number of persons who required assistance in performing the basic activities of daily living (ADLs) and a significant reduction in the number of permanent "nursing home" admissions[47]. The intervention was not a substitute for usual care (medical and social services) but instead was integrated with such care. Intervention patients consulted their physicians more frequently than control patients, which may have been a direct effect of recommendations made by the nurse[47]. Stuck et al (1995) concluded that this model of care may help prevent disability but could not determine which aspects of the model were most effective[47].

A similar study conducted by Dalby et al (2000) explored the impact of home visits by a gerontic nurse compared with usual care. The nurse completed a comprehensive assessment, developed a care plan together with the GP, patient/family and other healthcare professionals. Follow up visits and phone calls were conducted over a 14 month period. The nurse worked as a case manager by integrating community services into the client's care plan[48].
The trial failed to show any effect of a visiting nurse other than vastly improved vaccination coverage and a tendency towards higher usage of health services[48].

Even so, the authors concluded that their model of care demonstrated a unique format for care provision to elderly people living in the community. The visiting nurse was flexible and responsive to the needs of the patients and their caregivers and provided anticipatory care that was proactive and preventive in nature[48].

The premise behind these two models is that timely recognition and prevention of health problems among elderly people can improve their health[47,48]. However, the proactive identification of new problems may actually increase healthcare utilisation.

5.3.3 Comprehensive discharge planning and follow up

Using a similar approach to the two previous models, the use of a gerontic nurse to provide comprehensive discharge planning and follow-up post discharge has been explored by Naylor et al (1999) and findings suggest that this intervention reduces readmissions and lengthens the time between discharge and readmission.

In this model of care gerontic nurses assumed discharge-planning responsibility for patients aged 80 years and older from the time of admission to four weeks following discharge. Intervention group patients and their caregivers, if available, received a standardized comprehensive discharge planning and home follow up protocol designed specifically for elders at high risk of poor post discharge outcomes. The protocol guided patient assessment and management and specified a minimum set of visits to be conducted by the nurse. The nurse, in collaboration with the patient's physician, could individualize the protocol to suit the patient's specific needs. The protocol included the following:

- Gerontic nurse visit to the patient within 48 hours of admission and then at least every 48 hours until discharge;
- At least two home visits by the gerontic nurse (1 within 48 hours after discharge, a second 7-10 days after discharge);
- Additional visits were arranged based on the patients' needs with no limit on the number;
- The gerontic nurse was available by telephone 7 days per week (8am to 10pm on weekdays and 8 am to noon on weekends);
- At least weekly gerontic nurse initiated telephone contact with patients or caregivers[49].

The gerontic nurse completed physical and environmental assessments and targeted efforts at increasing patients' and caregivers' ability to manage unresolved health problems. Based on individual needs the interventions focused on medications, symptom management, diet, activity, sleep, medical follow-up and the emotional status of patients and caregivers. A variety of strategies reinforced teaching including written instructions and medication schedules. Through home visits and telephone follow up, the nurse addressed questions or concerns from patients, caregivers, or health team members; monitored patients' progress; and collaborated with physicians to make adjustments in therapies and obtain referrals for needed services[49].

5.4 ED care coordination teams

With the ageing population, EDs worldwide are treating a higher proportion of elderly people[50-53]. The elderly population is at high risk of functional decline and other adverse events including higher levels of readmissions following presentation to ED[50-53]. Whilst many ED clinicians recognise these risks, the focus within ED is upon diagnosing and treating the presenting problem and time pressure may lead to other geriatric complaints being overlooked53. McCusker (2001) identifies deficiencies in the care of the elderly within the ED environment including failure to recognize problems that could benefit from more careful assessment (either in the ED or another setting), failure to refer to appropriate community services and failure to communicate to the GP in a timely fashion the problems identified and interventions implemented at the ED visit[50].

Recognition that these clients stand to benefit from comprehensive discharge planning and CGA has led to the development of care coordination roles and teams (usually nurses and social workers) within the ED[52,53]. The roles and teams vary dependent upon the model of care implemented however, they all have common themes invariably commencing care coordination by implementing a screening process to identify "at risk" clients. A comprehensive assessment of "at risk" clients is undertaken to identify needs other than the reason for presentation. The needs assessment informs both the treatment and discharge plan, whether the client is to be discharged directly from the ED or after an inpatient stay. Early identification of needs and proactive discharge planning help to assist with returning the client home with adequate supports, reducing functional decline, admission rates and inpatient length of stay and, in some studies, unscheduled return visits to the ED[50-54].

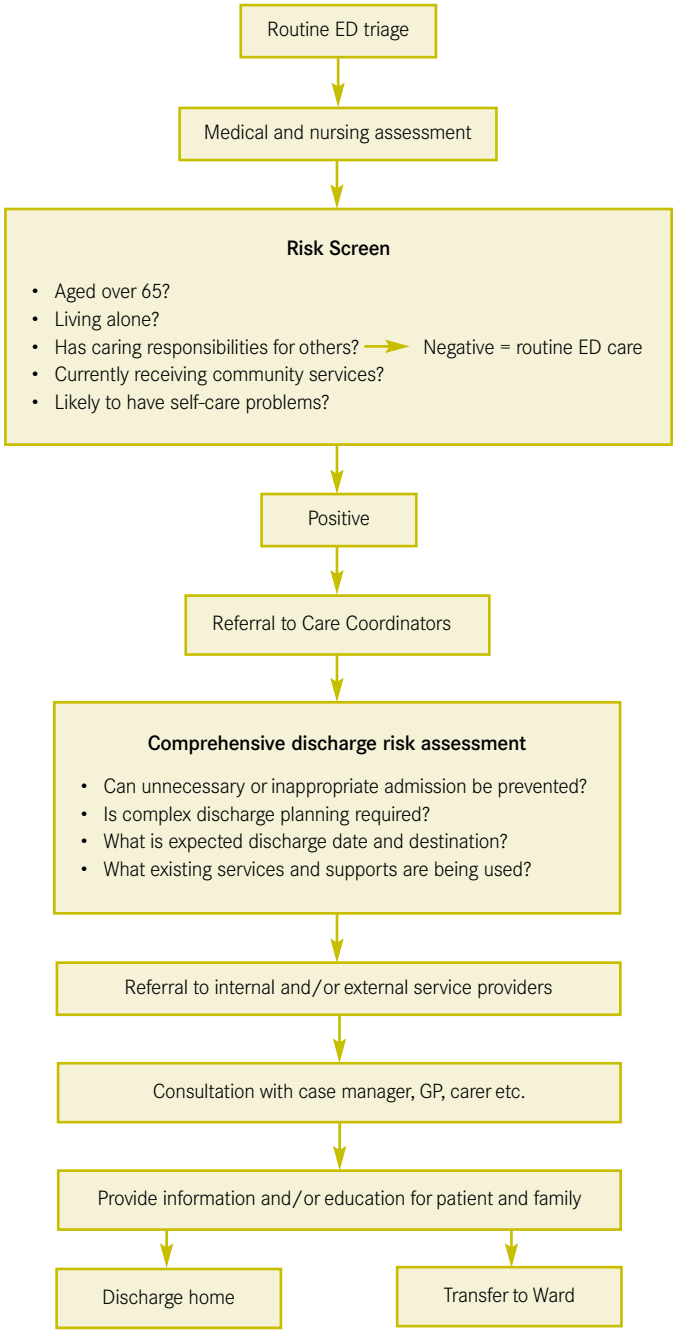
McCusker (2001) conducted a study using a two stage intervention consisting of: 1) administration of a screening tool to all patients over 65 years presenting to ED (ISAR see Section 4.2.1 Risk Screening page 39); and 2) a standardized geriatric assessment for those identified as "At risk"[50]. After completing the assessment, the nurses consulted with hospital ED and geriatric staff and made referrals, as needed, to the local community health centre, the GP, the geriatric outpatient clinic or other community services[50]. McCusker (2001) suggests the results indicate that this intervention improved the continuity of care between the hospital and community and significantly reduced the rate of functional decline without any concomitant increase in length of stay in the ED or in societal costs[50].

The keys to success for this model of care include:

- The focus needs to be on those "at risk"[50,54];
- The intervention needs to be systematic, feasible and quick[50];
- There needs to be rapid transfer of information to community partners[50];
- There needs to be a rapid response from community partners for optimal results, or timely access to a range of community based services including nursing, allied health, GP, social supports eg: with brokerage funds[50,54];

The Royal Melbourne Hospital has implemented a Care Coordination Team within the ED and a flow chart of this model is provided in Figure 5.1.

Figure 5.1 ED care coordination referral and assessment process



Source: Moss et al, *MJA*, 2002; 177(8): 435-39[54]

Components of care that could be offered in addition to this model of care include:

- Considering the impact of offering more intensive and longer term interventions[50];
- More appropriate settings for risk screening and comprehensive assessment which may prevent ED presentations eg: home, outpatient clinics[50];
- Domiciliary visit by liaison worker within 48 hours to evaluate the success of discharge, including extra help provided, and to enquire about any problems relating to pre-discharge concerns.

A number of HARP projects have implemented this model of care with variations and expansions, for example, employing staff to work as service coordinators within the community setting; maintaining the service coordination or case management intervention over a longer time frame; or undertaking CGA in the outpatient setting. A further extension of this model of care could be to add an ongoing monitoring component, particularly when the service coordinators are community based (ie in a community health centre, district nursing service). This would enable proactive identification of deterioration in the condition of the client and early intervention to avert a presentation to ED. Where technology is used to undertake distance monitoring of frail elderly prone to falls, the community based service coordinator could take on the role of regularly reviewing results, consulting with the client/family and appropriate medical personal either by telephone or visit[55].

5.5 Residential aged care

There is a perception that once a person is admitted to a residential aged care facility that this facility will be able to meet all of their needs. However, there are significant numbers of residents who are transferred to hospitals for acute medical illnesses[56]. Hospitalisation of these residents is expensive and can cause further functional decline[57].

Kutner (1998) has summarised the factors that are known to have an association with hospital admission from residential aged care facilities including:

- Level of care to which the resident is assigned when entering the facility (there is a higher rate of hospitalisation among people admitted to lower levels of "nursing home" care);
- Presence or absence of a "Do not hospitalise" order;
- Acuteness of the illness of which the resident is hospitalised;
- Whether the acute care evaluation occurred in the evening or day;
- Lack of reimbursement for acute care in the "nursing home";
- Underlying medical complexity or morbidity of "nursing home" residents;
- Number of ADL dependencies of the resident;
- High frequency of infections in "nursing homes";
- Pressure from family or nursing staff to transfer the resident;

- Poor doctor/nurse communication;
- Physician convenience (admitting the patient to a hospital relieves the physician of having to travel to the "nursing home" to provide care);
- Insufficient number of adequately trained nursing staff members;
- Availability of in-house support services (radiology, laboratory, pharmacy)[57].

A number of HARP projects are extending their services into residential aged care facilities, with the focus on providing rapid assessment and intervention to avert a transfer to hospital. In some instances, HARP projects are working strategically with these facilities and identifying staff training needs and providing education regarding acute management of patients to enable the resident to remain in their own environment rather than transferring them to hospital.

Methods that have been proposed to prevent hospitalisation of residents of residential aged care facilities include:

- Providing skilled services (for example, IV therapy; a specialized unit within the "nursing home" to care for acute illnesses; early detection of and intervention in acute illness; laboratory, pharmacy, and imaging capabilities; case management for individuals at high risk for hospitalisation; and periodic health screening examinations);
- Changing staffing (for example, registered nurses available at all times and on-site geriatric nurse practitioners or physicians);
- Providing financial incentives to treat serious acute illnesses on site (case-mix reimbursement);
- Offering "nursing home" residents or surrogates the opportunity to express their preferences regarding hospitalisation in the event of an acute illness (advance care planning);
- Changing "nursing home" policies (for example, infection control, enteral feeding, catheter care, and pressure sore care)
- Providing mental health programs for "nursing home" residents[57].

Overall, the focus is on improving the resources available within these facilities and promoting best practice, through staff training and education, promoting multidisciplinary involvement and the development and implementation of clinical practice guidelines[56-58].

5.6 Coordinated care trials

The Coordinated Care Trials (CCT), which took place in the 1990's in Australia and are soon to enter their second phase, demonstrated a model of fully integrated care. A central premise of the trials was that better coordination of the care of people with chronic or complex needs would reduce hospitalisation and the savings could cover the costs of coordination[27]. Whilst these trials varied from site to site the key components of these models included:

- Recruitment of people with complex and ongoing needs;
- Service Coordinators/Case Managers working in collaboration with the GP as the care coordinator;
- Comprehensive assessment and multidisciplinary care planning;
- Provision of a package of care through brokerage funds;
- Funds pooling from a range of organisations to support the service provision component of the model of care[8,59].

Figure 5.2 demonstrates the role of service coordination with a CCT model of care.

Figure 5.2 Case Study 4 – The Brown family

Mr & Mrs Brown (88 & 91 years old respectively) are an elderly couple living with their 68-year-old daughter. Mrs B has a history of hypertension, osteoarthritis, degenerative disc disease, anaemia and visual impairment. Mr B has a history of rheumatoid arthritis, hypertension, emphysema, skin cancer and brain lesions. Their daughter, Jenny, is also unwell and has end stage COPD, osteoporosis, visual impairment and anxiety. Jenny is the most frail of the three and is oxygen dependent, confined to a wheel chair and requires assistance with most ADLs. Mrs B provides this assistance but with difficulty due to her own debility. Mr B also assists where he can. The three live in a mutually dependent situation without the support of community services. They are all at risk of institutional care should one of the family succumb to their underlying health problems.

Their GP referred them to the Coordinated Care Trial and involvement was initiated by a Service Coordinator in collaboration with the GP. Initially the family was reluctant to accept services but once a relationship was developed with the Service Coordinator the family agreed to accept a range of services including hygiene assistance for both Jenny and Mrs B from the district nursing service, meals on wheels, in home respite to allow both Mr & Mrs B to go out, occupational therapy aids and physiotherapy assessment and treatment for both Mrs B and Jenny. Mrs B also commenced attending a Day Centre twice per week. As Jenny's condition deteriorated she was referred to a palliative care service for further support.

The Service Coordinator provided support, information and assistance to this extended family. Without the involvement of the Service Coordinator, this family probably would not have accepted these services and continued to struggle on independently. The Service Coordinator was able to arrange a package of services from a number of service providers and monitor the situation to arrange further services as the need arose. The organisation of appropriate services may have prevented hospitalisations or institutionalised care for one or in fact all three members of this family.

Esterman (2002) summarises the general findings of the trials stating they did not demonstrate improved health and well being of the participants. A significant reduction in hospital admissions in the intervention compared with the control group was seen in only three of the trials, and for most trials an accrued operating deficit was found. However, there were a number of shortcomings with the trials including: timeframe for the trials; difficulty recruiting clients; all participants received the same intervention regardless of severity of illness; interventions varied between trials; and the SF-36 was not an optimal tool for assessing benefits[27]. The trials did provide a number of benefits including participants reporting appreciation of the extra coordination of their care[27].

The second phase of these trials will take into consideration the short comings of the first trials including increased timeframe (3 years), targeted interventions and outcome measures that will be more sensitive to the type of intervention[27].

Esterman (2002) makes an interesting observation suggesting that lack of coordination in a complex care system operates as a functioning rationing system, so that better care coordination reveals unmet needs and may ultimately increase demands and costs to the healthcare system[27].

5.7 Mental health framework for service delivery

The Mental Health Framework for Service Delivery was launched in 1994 in response to the need for a common approach to the delivery of mental health services and has been implemented and modified over time[60]. Clinical mental health services in Victoria are provided on an area basis, and include adult mental health services, child and adolescent mental health services, and aged persons mental health services[61]. Service providers also have access to a range of statewide services such as the personality disorder service, neuropsychiatric services etc[61]. The area mental health services have been mainstreamed into general health services, providing a range of functions which in the case of adult mental health services, include an acute inpatient facility and crisis assessment and treatment, continuing care, and mobile support and treatment services within the community[61].

Entry to the area mental health services occurs through referrals from GPs, public psychiatrists, other generic agencies or self-referral to the area community mental health service where assessment and treatment is initiated and may include admission to an inpatient service. Patients admitted to the inpatient service are then transferred back to the area community mental health service for ongoing monitoring and intervention as required. Upon cessation of the need for mental health services the client is re-referred for ongoing management by mainstream services eg: GP, generic agencies etc[62].

Within this model of care, case management is pivotal for the coordination of services. For some clients, case management may be no more than a simple tracking and monitoring of their progress through the service system; whereas, other clients require greater and more protracted involvement by the case

manager[60]. A clinical staff member, generally from the area community mental health service, is appointed as case manager for each client. The case manager ensures that each client has a comprehensive needs assessment, which informs the development of an Individual Service Plan. The case manager liaises with all service providers, whether community or inpatient based regarding the clients service plan. A case is closed when a client no longer uses public mental health services whether as a result of improvement in the condition or when the client's needs are being met by mainstream services. The transition from mental health services to mainstream services is monitored by the case manager and continues until the client is adequately integrated into mainstream services[60].

5.8 Summary of models of integrated care

Consultation was undertaken during October 2002 with a series of HARP projects and the Victorian Coordinated Care Trial - Coordinated Healthcare, which focus on improving management of high users of the acute health system (see Appendix B). The focus of the consultation was to explore the concept of integrated care within their models and identify best practice and barriers that were being encountered. The findings are those self-reported by HARP projects and do not include perceptions of other stakeholders ie service providers interfacing with HARP projects. Therefore, caution should be used when interpreting the findings, as they do not accommodate a broad range of views, which was not possible within the scope and time constraints of the project.

It should be noted that at the time the consultation was undertaken, most of the HARP projects were still in the development phase including:

- Data mining to refine the target group;
- Refining the model of care;
- Appointing staff.

Table 5.1 summarises the key components of each model of service delivery. Bayside Health and Southern Health models are complex models incorporating a number of different strategies such as a call centre for triaging of patients to appropriate services, access to GPs after hours, rapid response service for home based assessment, community based service coordinators and an "At risk" register for patients who are high users of the acute health system. The ARMC and Eastern Health Community Hospital Integrated Response Program (CHIRP) are building on their ED Care Coordinator models by establishing community based service coordinators who will ultimately take referrals directly from community based healthcare providers, perform an immediate assessment (within 24 hours) and develop a plan of care including brokerage of extra community-based services to avert a presentation to the acute hospital. The service coordinators will provide short-term case management and service coordination until the client is appropriately integrated into mainstream community-based services. SVHM Treatment Response Rapid Assessment Aged Care (TRACC) and the Eastern

Health Rapid Outreach Response (ROR) projects are building upon their ACAS and creating a fast stream to enable a timely response to urgent referrals coupled with the ability to broker services to support the client in the community in the short term until they are adequately integrated into mainstream services. Broadmeadows Health Service (BHS) is developing an Aged Care Shared Care model where the GP maintains the role of care coordinator but has access to support, advice and education from a multidisciplinary team which will provide both assessment and follow up services in the home and outpatient setting with the aim of improving the management of elderly people with complex issues. Northern Health (NH) has a series of projects including a rapid response team oriented to responding to people in crisis in the community and those in residential care, including education and advance care planning for staff, residents and family in residential care. Northern Health's project also has a palliative care component with the aim to improve the management of palliative care clients. Additionally, there is a randomised control trial comparing the intervention of assessment, education, geriatrician/nurse input, care plans including advance care planning and close liaison with GPs for residents in residential care, with usual care.

Table 5.1 Summary of HARP models of care including the Victorian CCT

Components	ARMC	Bayside	BHS	Eastern CHIRP	Eastern ROR	Northern	Southern	SVHM	Coordinated Healthcare (NH)
Service Description	Community/ RR	RR, Service Coordination	Shared Care	Community/RR	ACAS+	Residential Care, RR, Palliative, RCT	RR, Service Coordination	ACAS+	Service Coordination
Single Point of entry/contact	In ED initially	✓	✓	In ED initially	✓		✓	✓	✓
Call centre		✓					To F/U discharges; telephone advisory service		
Direct entry from community	At a later date once project established		Clients identified by GP	At a later date once project established	✓		✓	✓	✓
"At risk" register		✓	✓		ID Residential Care Facilities	✓			
Risk screening	In ED, INI	✓ Tools TBA	? MAS	In ED, INI	MAS		DHS - EDS	INI	
Early Discharge Planning	In ED			In ED				In ED (ALERT)	
Comprehensive Assessment	In ED (Aged Care Assessment	Community based	✓		Aged Care Assessment	Introduce common assessment tool		✓ conducted by gerontic nurse	RAI
Care Coordination	Referred to Community-based Service Coordinator	Care managers based in community organisations		Referred to Community-based Care Coordinator	Short term		Provide access to	✓	✓
Case management	Short term	✓	GP as care coordinator	Community based Care Coordinators	Short term	Short term		Short term	Service coordination
Share Records	TBA ?RAI	Electronic care plan (TBA)	TBA				TBA		Explored sharing of RAI/ Care Plan
Care planning	✓	✓	✓ including advance care planning	✓	✓	✓ including advance care planning	✓ Preventative Care Plans and Self Management Strategies	✓	✓ e-care planning, RAI
Clinical Pathways/ CPGs Clinical Protocols		✓	✓				✓		✓

Table 5.1 Summary of HARP models of care including the Victorian CCT (continued)

Components	ARMC	Bayside	BHS	Eastern CHIRP	Eastern ROR	Northern	Southern	SVHM	Coordinated Healthcare (NH)
Home based	Community-based Service Coordinator, Rapid Response	✓	Home based assessment & monitoring Care Coordinator	Home based assessment by Community	✓	Home based assessment	✓	✓	✓
On-call service	✓	24/7			7 days per week		7am -11pm		✓
Service Brokerage	✓	✓		✓	✓	✓	✓	✓	✓
GP involvement	Liaison/Care planning	Case management meetings	Partnership with GPs	Liaison/Care Planning	Linkage, liaison & support	Liaison, increase availability, case conferencing	Divert Triage 4 & 5 to GP/Primary Care Centre	Care Planning	Care Coordinator
Monitoring	GP, Service Providers		GP, multidisciplinary team home or OPA			✓			GP, Service Providers
Education			GPs		Residential Care	Residential Care, community providers	Consumers		
Funds Pooling									✓
Residential Care					✓	✓	✓	✓	

Overall the key premises behind these models are:

- Triaging of patients to appropriate services rather than presenting to an acute hospital inappropriately.
- Rapid response team to provide assessment and care planning in an effort to avert a crisis and/or unnecessary presentation to hospital.
- Service coordination to assist with navigating the complex service system and improve knowledge of and access to available services.
- Brokerage of services to supplement existing services ie so that services are in place in a timely manner.
- Services, whilst under the auspice of an acute hospital, are focusing on making a difference in the community/home/residential care setting ie moving the services out beyond the hospital walls, taking the services to the client rather than the client coming to the hospital.

Table 5.2 summarises the models of care identified in both the literature and HARP projects indicating the level of integration within these models.

Table 5.2 Level of integration within models of care

Model of Care	Clinical	Structural	Horizontal	Vertical	Linkage	Coordination	Full Integration
Telephone Triage	✓			✓	✓		
GP Practice – Case Management	✓			✓		✓	
ACAS +	✓			✓		✓	
Outpatient GEM	✓				✓		
Aged Care Shared Care	✓			✓		✓	
In-home CGA	✓			✓	✓		
Comprehensive Discharge Planning & F/U	✓			✓		✓	
ED/Community based care coordination	✓			✓		✓	
Residential Aged Care	✓			✓		✓	
Coordinated Care Trials		✓		✓			✓
Area Mental Health Services	✓	✓		✓		✓	

6 Optimising best practice

NDHP3 identified that there is no single model of integration, although generic principles of integration can be adopted and modified to suit the needs of the integrating organisations. The principles are listed in Table 6.16. The main principles outlined in Table 6.1 have been expanded upon in the following subsections (Section 6.1 to Section 6.7) drawing from the literature and consultation with various health service providers.

Table 6.1 Generic principles to support integration

1. Executive and senior clinical staff across hospital and community or healthcare organisations support the commitment to integrate services.
2. Organisations have an agreed understanding of what integration means for health services and the outcomes being sought from the integration process.
3. The provision of integrated services is based on identified needs of population groups.
4. Evidence based best practice informs integration of new services.
5. Service agreements or memorandums of understanding outline service delivery provisions and the scope of integrated services.
6. Appropriate resources, including human, physical and financial resources, are allocated to integrate services.
7. Cultural differences existing between consumers, hospital staff, and primary and community healthcare providers are identified and negotiated to optimise working relationships.
8. Organisational structures and processes are re-designed to deliver integrated patient care.
9. Health professionals understand their roles and are accountable for delivering integrated services.
10. Service providers, both clinical and non-clinical, are educated to undertake integrated roles.
11. Consumers, hospital staff, and primary and community healthcare providers are collectively responsible for implementing integration strategies.
12. Effective communication is established between consumers, hospital staff, and primary and community healthcare providers.
13. Patients' rights are understood and acknowledged.
14. An interdisciplinary team plans and coordinates patients' care through different stages, from waiting list and/or pre-admission/emergency, through admissions, to discharge and back to the community.
15. Education and support of patients and carers is provided to enable self-management and maintenance of health at optimum levels.
16. Integrated information systems are established.
17. Quality and safety of patient care is evaluated using agreed evaluation strategies.

Source: adapted from NDHP3 A Resource for Integrating Health Services[6]

6.1 Systems approach

The concept of integrated care is supported by a systems approach that encompasses the continuum of care and moves away from the episodic approach of traditional acute healthcare[26]. Within a systems approach, networks are built between organisations and healthcare sectors and other resources in the community[26]. Care is coordinated across conditions, healthcare providers and settings[26]. New services and programs are built upon the existing infrastructure to compliment and enhance service delivery. The consumer is placed at the centre of the service system and the emphasis is upon their needs rather than what the "organisation" can provide[5]. Taking a systems approach to healthcare involves having a broader view of all the services and interventions that people need to access, where these are available and how they fit together[5].

There are numerous strategies that can be employed to promote a whole system approach including blurring the boundaries between organisations through shared budgets and resources, for example joint staff appointments[5]. Some of these strategies will be explored further in later sections (Section 6.2. to Section 6.7).

The principle of a systems approach has been identified, by a number of participants in HARP projects, as being vital to improve performance of the healthcare system. Importantly, the identification of current service gaps and enhancement of existing services to avoid duplication of effort has been identified as paramount to success, rather than creating new services that run in parallel.

6.2 Leadership

Change management processes are vital to support the move towards integrated care. A key driver of change is the existence of strong leadership both at the strategic, management and clinical level, with all stakeholders articulating the same vision[5,25].

Leaders in the change management process need to clearly articulate the vision, work collaboratively with staff and key stakeholders at all levels of organisations, communicating clearly and repeatedly the goals and strategies to achieve integrated care. Without strong leadership, the change process can stall with people reverting to traditional practices. In the United Kingdom, the process of integration of services for older people revealed the following leadership competencies that promoted and supported integration:

- Modelling and acting as a champion for partnership behaviour, so that working across boundaries is seen as normal behaviour;
- Developing healthy relationships with peers across the system to build a leadership team;
- Taking joint responsibility, with other members of the leadership team across the whole system, for delivering improved services and holding each other to account for inaction or failure;

- Supporting actions that benefit older people and the system as a whole, even if these are not the most favourable for their own organisation;
- Creating an organisational culture in which whole system working can flourish;
- Identifying "win/win" solutions to shared difficulties, where possible;
- Agreeing and communicating consistent messages about the system's values, vision and priorities, in particular by placing older people at the centre;
- Valuing staff who work in a whole system way;
- Supporting innovation, celebrating success and learning from failure; and
- Sharing financial risk[5].

6.3 Relationship building

Along with leadership, developing relationships with people from organisations across the various healthcare sectors is vital to creating an understanding of the different organisational cultures. This level of communication is imperative to promoting insight into how these organisations work and what issues exist for them. Developing a shared understanding of issues experienced by the various participants provides the opportunity to work together to resolve these issues and provides a foundation for improving services for people with complex needs[5].

Participants of HARP Projects identified that a shared understanding of organisational cultures was important to inform the development of service provision models that improved integration. A number of strategies were identified to foster relationship building including:

- Shared model development;
- Shared protocols;
- Joint staff appointments;
- Rotation of staff between various organisations; and most importantly
- Placing the consumer at the centre of the service provision model, rather than working within organisational constraints, for example:
  - Knowing what else is available in the system and who else can help[5],
  - Working alongside other professional groups[5], and
  - Taking responsibility for bringing in the right care or service, when it is needed[5].

Additionally, working in collaboration to develop models of care and protocols promotes trust between clinicians across organisations, which leads to trusting each other's professional practice and avoids the need to duplicate assessments and other activities.

6.4 Planning

Within a systems approach, planning is all important and there are many areas that require consideration including:

- Who are the key stakeholders?
- What are the service gaps and bottlenecks within the system (which can be identified through a mapping exercise)?
- Who is the target group and what are their views?
- What areas require redesigning?
- What infrastructure is required to address gaps in the service system?
- What is the cost?
- What are the key milestones of the model development?
- What are the expected outcomes and how are these going to be evaluated?

The planning process needs to involve the key stakeholders to ensure relationship building, facilitate communication with the broader service system and inform development of a shared vision, including aims and objectives. The mapping exercise is vital to ensure that new models of care do not duplicate services and that new services add value to the existing service system. Identification of the appropriate target group of people defines the scope of the service and allows services to be tailored to their needs. Whilst identification of areas that need redesigning and infrastructure requirements enable appropriate resources to support the new integrated model of care. Identification of key milestones, expected outcomes and evaluation methodology assist with articulating timelines and what the change process is striving towards and hence, allows evaluation of whether the aims of the model of integrated care have been achieved[5,6].

6.5 Resources and staffing

When considering resources and staffing to create integrated models of care there are two considerations that need to be made. Firstly, what resources and staff are required to implement the change management process and secondly, what resources and staff are required to provide appropriate service delivery within the model of integrated care. With regards to the latter, both the literature and consultations with various projects suggest the requirement for multidisciplinary teams that have the ability to provide services across organisations[5]. The need for additional allied health staff both within and following presentation to the ED and within the community was highlighted by participants in HARP Projects, as a service gap, particularly, social work, occupational therapy and behavioural psychologists. Additionally, it was identified that staff within multidisciplinary teams needed to take a generalist approach in their assessments and service provision whilst being a resource for their particular area of expertise to other members of the team. Multidisciplinary teams enable the development of mutual respect for other

healthcare disciplines, rather than staff working within discipline silos[35]. Staff within integrated models of care require clear roles, responsibilities and accountabilities.

Implementing a new model of care requires infrastructure, other than those resources required for service delivery. The change management process that is required to implement new models of care is resource intensive and unless dedicated staff are employed to support this process there is the potential for not achieving key milestones. Service delivery staff are focused upon clinical work and the competing demand of service development takes a lower priority in a busy clinical environment. Therefore, it is important to have dedicated staff to coordinate and manage the change process and continue to promote the vision through communication, liaison with key stakeholders and coordination of relevant meetings.

6.6 Service delivery

The service delivery within integrated models of care needs to incorporate a number of practices, many of these have been outlined in Section 4. In summary, service delivery models need to:

- Incorporate evidence based practice, which assists with reducing variations in practice and therefore integration of care can occur more easily;
- Ensure timely access to services through:
  - Single point of entry,
  - Access points within the community,
  - Risk screening and comprehensive assessment,
  - Flexible approach to service delivery including short term interventions whilst facilitating referral onto mainstream services for long term care and the brokerage of services to bolster the service system in the short term;
- Promote continuity of care including:
  - Service coordination to assist with navigation of the service system,
  - Case management across the continuum for complex cases, and
  - Care planning and care pathways across organisations;
- Communication systems to promote the timely sharing of information and knowledge between patients, clinicians and organisations;
- Be patient focused and encourage self-management including:
  - Input from consumers regarding development of the service system,
  - Consideration of patient and carer experience, and
  - Education regarding self-management.

6.7 Quality and evaluation

The development of new service delivery models needs to occur within a quality improvement framework that incorporates feedback and evaluation to ensure that the new model is meeting the desired aims and objectives and is providing safe quality care. New models of care evolve over time and it is important to continually re-evaluate whether the model of care continues to be appropriate and provides a patient centred systems approach to healthcare[5,26].

6.8 Impediments to effective integration

There are a number of impediments to effectively developing models of integrated care that have been identified in both the literature[5,6] and through consultation with various HARP Projects. These barriers are listed below; many of the principles described in Section 6.1 to Section 6.7 are strategies that can be implemented to minimize these barriers.

6.8.1 Strategic and structural barriers

Integration requires different organisations and healthcare sectors to work together to provide a system wide approach and to achieve this a number of strategic and structural barriers need to be overcome including:

- Different philosophies, cultures and priorities within organisations collaborating to integrate care;
- Lack of understanding of the benefits of integrated care;
- Different views regarding best practice models of care;
- Issues related to "ownership" of aspects of care provision between organisations and healthcare sectors;
- Different geographical boundaries of organisations collaborating to integrate care;
- Multiple funding sources from a range of levels of government leading to different objectives and accountability requirements;
- Organisations at different stages of development with practices that promote integration.

6.8.2 Professional and cultural barriers

When working in collaboration with healthcare professionals from different disciplines and organisations a number of barriers may be encountered including:

- Professional territories/rivals;
- Lack of confidence and trust in the competence of others;
- Fear of and/or resistance to change;
- Lack of knowledge of the roles and responsibilities of others; and
- Deciding who is accountable including medico-legal issues.

6.8.3 Resource barriers

As highlighted in Section 6.5 resources are required to facilitate integration of services and a lack of resources may be experienced for variety of reasons including:

- Staff turnover and difficulties with recruitment for all categories of staff including GPs, geriatricians, nurses and allied health staff;
- Existing workloads and time commitments;
- Workload related to promoting and sustaining integration of the services, which is often based upon personal relationships and dependent upon these people remaining in the organisation;
- Workload related to change management and sustaining these changes over time; and
- Brokerage funding arrangements do not allow organisations to recruit additional permanent staff, which limits opportunities for staff development and succession planning.

6.8.4 Communication barriers

Communication is a vital component for achieving integrated care between disparate organisations and may be hampered by:

- The large number of stakeholders involved in integrating care;
- Difficulties organising suitable meeting and forum times that suit all stakeholders;
- Links not having been established between different organisations; and
- Limited consultation between key stakeholders.

6.8.5 Information technology barriers

Information technology can be used as an effective tool to promote communication between key stakeholders, organisations and healthcare sectors but information technology is something that hampers many projects for a number of reasons including:

- Lack of strategic direction at local and national levels;
- Lack of information technology resources including:
  - Incompatible software,
  - The limited use of electronic records,
  - Availability of adequate hardware and software,
  - The ongoing cost for upgrading hardware and software;
- Duplication of data collection;
- Ownership of data;
- Limitations of the privacy legislation;

- Reluctance to use technology;
- Issues regarding computer literacy and cost of staff education to improve literacy; and
- Fragmented patient records.

7 Summary

Integrated care is based upon a systems approach to healthcare, and is vital to meet the needs of those clients who have complex needs and seek services from a variety of health professionals across different organisations and sectors of the healthcare system. Integrated care is client focused with the aims of improving client care, supporting carers and ultimately leading to better health outcomes and use of healthcare resources. Leutz (1999) clearly indicates that fully integrated care may only be effective and efficient for a sub-group of patients, those with complex needs[10]. Leutz extols five laws of integration and these should to be considered when contemplating the integration of services:

1. You can integrate *all of the services for some of the people*, some of the services for all of the people, but you can't integrate all of the services for all of the people.
2. Integration costs before it pays.
3. Your integration is my fragmentation.
4. You can't integrate a square peg in a round hole.
5. The one who integrates calls the tune[10].

Section 6 - Optimising best practice, addresses many of these laws. Of primary importance for HARP projects is the concept of which services should be integrated and how to match these with the client demographics of the community that is being served.

Table 7.1 summarizes the levels of integration and identifies components of models of care that reflect these levels and matches these components to the degree of client complexity. The concepts displayed in this table are to be considered in a continuum with clients with low level complexity requiring basic linkage of services whilst those with high levels of complexity benefiting from coordination and full integration of services. Client complexity is usually indicated by increasing age and the interplay of multiple co morbidities and psychosocial issues. However, the individuality of clients needs to be considered and matched to the appropriate services.

Table 7.1 Integrating Services for Clients with Complex Needs Framework

Service Integration	Patient Complexity* Minimal	Moderate	Complex
Linkage • Organisations function within existing jurisdictions, responsibility and operational rules • Informal communications with other organisations for sharing of information and referral	• Single point of contact eg: Telephone Triage	• Outpatient GEM • In-home CGA eg: ACAS + • Self-management education • Comprehensive discharge planning and follow up	
Coordination • The development and implementation of infrastructure to manage the full spectrum of care and services required by the target group ie established protocols. • Includes coordinating benefits, coordinating use of services; sharing clinical information in a planned manner; managing transitions between settings; assigning primary responsibility for coordinating care.		• "At Risk" register • Comprehensive assessment • Care coordination ED or community based ie Acute/primary care liaison • Care Planning • Clinical Pathways / CPGs • Falls clinics • Disease management	• On-call service • Mobile rapid assessment • Case Management community based • Service brokerage • Ongoing monitoring • Drug & Alcohol Liaison worker
Full Integration • Consolidation of most responsibilities, resources and funding for patient management/care for a particular target group of clients eg. multidisciplinary teams, common record, bundled funding.			• Case management • Shared Records • Funds pooling eg: Coordinated Care Trials

* Patient complexity is variable dependent upon the individual but is generally considered to increase with age, the number of comorbidities and psychosocial issues.

7.1 Recommendations

Models of integrated care should be client focused, placing the client at the centre of the model and matching services to the clients' need regardless of which organisation can meet those needs.

Health services need to consider the levels of integrated care when developing models of care, ie linkage, coordination and full integration, and develop service systems that match the level of integration to the degree of client complexity.

Components of models of integrated care should be matched to clearly identifiable risk and needs of clients with complex needs (See Table 7.1).

Models of integrated care should be developed to address gaps in service provision building upon existing HARP projects and other infrastructure to avoid duplication in assessments and service provision.

Key principles for the development of integrated models of care should be incorporated, including:

Effective leadership at all levels of model development such as executive sponsors from each participating organisation and strong clinical leadership in all health care sectors eg: acute, community and general practice;

Involvement of stakeholders from the planning stage to facilitate relationship building and sustainability of models;

Examination of data to identify target group(s) and characteristics;

Mapping exercise using a systems approach to identify service gaps;

Definition of aims, objectives, model of service, key milestones, outcomes, evaluation methodology;

Identification of resources and staffing with consideration for those resources required to facilitate the change management process (time limited) and service delivery (ongoing to match demand);

Implementation within a quality improvement framework so that the service system is enhanced through continuous evaluation and feedback.

Models of integrated care need to consider community-based options for long-term management and follow up of clients with complex needs including clearly defined communication pathways between the various sectors and health professionals within the healthcare system.

Integrated models of care should adopt the Primary Care Partnership Service Coordination Tools and create opportunities for the sharing of medical records across organisations.

The role of the General Practitioner in the care of clients with complex needs is of vital importance and should be given due consideration when developing models of integrated care.

Models of integrated care should incorporate strategies for promoting patient empowerment and self-management.

Strategies to promote the adoption of advance care planning, particularly within Residential Aged Care Facilities should be encouraged.

Models of integrated care should incorporate strategies to improve the medication management of clients with complex needs who are at risk of medication misadventure in the community.

Appendix A

Table of complex needs patients by postcode

Post Code	Suburb/Town	Patients	Post Code	Suburb/Town	Patients	Post Code	Suburb/Town	Patients
3199	Frankston	473	3029	Hoppers Crossing	153	3040	Essendon	119
3175	Dandenong	440	3150	Glen Waverley	153	3121	Richmond	119
3073	Reservoir	402	3130	Blackburn	149	3805	Narre Warren	118
3021	St Albans	399	3155	Boronia	146	3075	Lalor	117
3020	Sunshine	390	3051	North Melbourne	144	3195	Mordialloc	116
3630	Shepparton	285	3028	Laverton	142	3131	Nunawading	115
3156	Ferntree Gully	282	3070	Northcote	142	3060	Fawkner	114
3182	St Kilda	258	3166	Oakleigh	141	3065	Fitzroy	113
3011	Footscray	252	3152	Wantirna	139	3153	Bayswater	112
3058	Coburg	252	3192	Cheltenham	134	3201	Carrum Downs	112
3174	Noble Park	251	3204	Ormond	134	3825	Moe	111
3350	Ballarat	238	3031	Kensington	133	3025	Paisley	110
3072	Preston	231	3844	Traralgon	132	3032	Ascot Vale	109
3012	West Footscray	218	3162	Caulfield	131	3068	Clifton Hill	108
3181	Prahran	214	3205	South Melbourne	131	3169	Clarinda	107
3030	Werribee	200	3931	Mornington	129	3194	Mentone	107
3046	Glenroy	199	3216	Belmont	128	3840	Morwell	107
3136	Croydon	189	3337	Melton	128	3939	Rosebud	107
3168	Clayton	186	3071	Thornbury	127	3044	Pascoe Vale	106
3977	Cranbourne	185	3134	Ringwood	127	3976	Hampton Park	106
3550	Bendigo	184	3183	Balaclava	127	3048	Coolaroo	104
3056	Brunswick	182	3015	Spotswood	125	3135	Heathmont	104
3196	Chelsea	177	3074	Thomastown	124	3037	Sydenham	103
3198	Seaford	174	3128	Box Hill	123	3083	Bundoora	103
3163	Carnegie	171	3013	Yarraville	122	3165	Bentleigh East	103
3171	Springvale	166	3023	Deer Park	122	3019	Braybrook	102
3047	Broadmeadows	162	3081	Heidelberg West	121			
3214	Mitcham	161	3177	Doveton	120			

Appendix B Consultations

Project	Organisation	In Attendance
Community Link Rapid Response Service Establish a rapid response service for older people presenting to the ARMC ED, Banyule, Darebin or Eltham Community Health Centres or local GPs and implement case management strategies for each individual.	Austin and Repatriation Medical Centre	Allison Harle, Demand Management Coordinator Liz Stickland, Project Manager - Community Link Rapid Response Service
Better Care for Older People Project Provide comprehensive community based support program for older frail and chronically ill people focusing on cardiovascular and pulmonary disease, cancer, diabetes and mental illness.	Bayside Health, Caulifield General Medical Centre	Philip Cornish, Director Community & Ambulatory Care CGMC Marita Scott, Project Manager Better Care for Older People Chris Millsteed, Project Director, NDHP Project 4, CGMC Katy Fielding (DHS)
Rapid Outreach Response Provide a multidisciplinary rapid assessment response to frail, older clients who have experienced a significant increase in dependency as a result of their medical status	Eastern Health, Peter James Centre	Moyra Kwan, Manager Aged Care Assessment Service
Community Hospital Integrated Response Program (CHIRP) Enhance the interface between ED and primary healthcareproviders and ensure that clients are better managed in the community	Eastern Health, Whitehorse Community Health Centre	Evie Soldatos, Clinical Coordinator HARP & HDM Eastern Health
Northern Health Aged Care Outreach Service Develop a multidisciplinary service model with community and residential care providers that will increase the capacity of the local health system to respond to the needs of older people with chronic and terminal illness.	Northern Health, Northern Hospital & Bundoora Extended Care Centre	Sally Western - HARP Project Manager Northern Health
Aged Care Shared Care Model Develop and pilot a shared care arrangement for elderly people, involving GPs, which will provide high quality community, inpatient and post discharge care to older people to assist them to live as independently as possible.	Northern Health, Broadmeadows Health Service	Maree Cuddihy, General Manager Genevieve Juj, Manager of Ambulatory Care
Treatment Response Rapid Assessment Aged Care: Facilitating Appropriate Community Care Establish an integrated system that has the capacity to provide comprehensive assessment and coordination of services from a centralised hub, including access to a suite of service options including acute, sub-acute and post-acute	St Vincent's Health, St Vincent's Hospital	Silvio Pontonio, General Manager for Continuing Care
Care in Context Provide a range of interventions that identify and better manage complex conditions outside of acute settings, including earlier assessment, risk profiling, improved triage protocols, care coordination and a widely accessible, multi-agency care plan	Southern Health, Monash Medical Centre	Robyn Batten, Director Primary Care and Mental Health Greg Young, General Manager South East Alcohol and Drug Services, Manager Integrated Care Louise Corbin, Project Leader - Care in Context
Coordinated Care Trial	Coordinated Healthcare, Northern Health	Colleen Tenni (Director - Coordinated Care) Carmel O'Connor

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