Government of **Western Australia**
Department of **Health**

Review of admission and discharge referral practices for the metropolitan hospital emergency departments

Professor Bryant Stokes
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Delivering a **Healthy WA**

Acknowledgements

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Important Disclaimer:
All information and content in this material is provided in good faith by the WA Department of Health, and is based on sources believed to be reliable and accurate at the time of development. Commercial and in-confidence data has been removed from this report.

Acronyms used within report

AHMC	Australian Health Ministers' Conference
AHPRA	Australian Health Practitioner Regulation Agency
AHS	Area Health Service
AIHW	Australian Institute of Health and Welfare
AKDH	Armadale Kelmscott District Hospital
ATS	Australasian Triage Score
CAHS	Child and Adolescent Health Service
CCT	Care Coordination Teams
CoNeCT	Complex Needs Coordination Team
COPD	Chronic Obstructive Pulmonary Disease
DALYs	Disability Adjusted Life Years
ECU	Edith Cowan University
ED	Emergency Department
EDIS	Emergency Department Information System
EDDC	Emergency Department Data Collection
ESRG	Extended Service Related Group
FHHS	Fremantle Hospital and Health Service
FINE	Friend In Need-Emergency
FTE	Full Time Equivalent
GP	General Practitioner
GPAH	GP After Hours
GPEH	GP Extended Hours
HATH	Hospital at the Home (Silver Chain Program)
HITH	Hospital in the Home
JHC	Joondalup Health Campus
KEMH	King Edward Memorial Hospital
LHN	Local Hospital Networks
LOS	Length of Stay
ML	Medicare Locals
NMAHS	North Metropolitan Area Health Service
OPH	Osborne Park Hospital
PAC	Post Acute Care
PHC	Peel Health Campus
PMH	Princess Margaret Hospital
PRA	Priority Response Assessment (Silver Chain Program)
RACF	Residential Aged Care Facility
RAILS	Rehabilitation and Aged care Intervention Liaison Service
RCL	Residential Care Line
RITH	Rehabilitation in the Home
RGH	Rockingham General Hospital
RPH	Royal Perth Hospital
SCGH	Sir Charles Gairdner Hospital
SDH	Swan District Hospital
SHRAC	State Health Research Advisory Council
SJA	St John Ambulance
SJAA	St John Ambulance Australia
SMAHS	South Metropolitan Area Health Service
WACHS	WA Country Health Service
YTD	Year To Date

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Executive Summary

This Review is concerned with examining both pre-hospital admission and post-discharge processes, and the reasons for patient referrals to current community nursing hospital in the home services.

In total 139 people were interviewed and participated in the Review over a four-month period including:

- Area Health Service Executives
- Hospital Executives (from both public and private sectors), managers and operational staff
- Department of Health Executives and managers
- Non-Government Organisation CEOs and managers
- Health Consumer Council Representatives.

During this review it became apparent that there were a very large number of Hospital in the Home Services which duplicated activities in many geographical areas, some services were over utilised and some community based care options were under used.

It is clear that current patient referral and management processes are complex, and not coordinated. The historical development of these services appeared to arise in response to the demands of an increasing and ageing population as well as escalating pressure on hospital beds. It has now become clear to clinicians that adequate and safe care can be offered in the community when a patient's clinical condition permits and extended lengths of hospital stay are not necessary in a large range of conditions.

The acceptance of community based hospital in the home and community nursing services as referral pathways for Emergency Departments' patients is only being slowly accepted in WA. This is because of the caution of clinicians who want to be assured that safe care is provided after an initial short patient assessment and observation period in an ED.

The development of community based but hospital standard patient activity appears to have taken place in an uncoordinated manner, as each Health Service looked into and established its own requirements. At the same time one of the large providers of these services namely the not-for-profit Silver Chain Nursing Association Inc. (Silver Chain), reintroduced the Silver Chain Liaison Nurses at RPH, Fremantle Hospital, and SCGH along with Silver Chain nurses supporting secondary hospital sites. These nurses are available for liaison work, connecting hospitals with the community.

Silver Chain in Western Australia is a very large organisation which used to run Nursing Homes as well as providing community nursing including some Out Post Nursing in remote areas of the State. More recently the Silver Chain Service has devolved itself of nursing homes and directs its activities in Community Nursing.

The resources of this organisation are extensive and well organised. Currently the nursing services are overseen for clinical governance by a medical advisory committee. At this time some hospital clinicians remain loath to refer patients and use the services of this organisation because of uncertainty over clinical standards. In the Reviewer's opinion this is more perceived than real and a recommendation is made which hopefully will overcome this uncertainty.

The Priority Response Assessment Service (PRA) service run by Silver Chain provides very good clinical care under the FINE Program and works in conjunction with the Residential Care Line.

In essence the recommendations in this report support the ongoing use of the Silver Chain Service to carry out “Hospital at Home Services” (HATH) for simple conditions which should be agreed by hospital clinicians working with the medical governance of Silver Chain. The current WA public hospital based “Hospital in the Home” (HITH) program should be used to assist chronic disease management programs and those patients with complex medical and social issues who require frequent hospital admission if care is not well coordinated. This review recommends that there be improved coordination between all health services so that common clinical protocols are used across the WA health system. In particular each health service should develop protocols of work to prevent post code cross over and therefore produce a much more timely and cost efficient program to the WA community.

The Review recognises the importance of relationships at the interface between primary care and hospital providers. Recommendations within this Review focus upon these key areas.

Recommendations

The Review notes that the existing system appears to adequately address the needs of uncomplicated patients. The need to better meet the demands of complex patients has been acknowledged by the establishment of programs such as Complex Needs Coordination Team (CoNeCT). In exploring future options, the value of and lessons from current arrangements need to be appreciated and a novel approach must seek to improve upon existing practice. The Review observed no consistency in referral practice between and within hospitals and a cacophony of community based providers, both public and private. Recommendations were formulated to streamline these approaches.

It should also be noted that the Review saw no cause to consider present clinical pathways to be inappropriate. The number of patients whose discharge from emergency departments could be further expedited is low and thus the impact upon consumption of emergency beds may be marginal. The Review did however observe the impact of chronic disease, especially when coupled with complex medical and social needs, upon patients and the health system. It is with the latter in mind that many recommendations below were formulated.

Options

1. Maintain the existing system with refinements to ensure all suitable patients are referred from emergency to Hospital in the Home (HITH) and Silver Chain's Hospital at the Home (HATH) and staff are appropriately informed on availability of community services.
2. Create a two-tiered system whereby patients requiring short term interventions for non-complex care are referred to Silver Chain's HATH service and patients with chronic disease and complex medical and social needs are managed by North Metropolitan Area Health Service (NMAHS) and South Metropolitan Area Health Service (SMAHS) HITHs in conjunction with specialist staff and general practitioners.

In either option one or two, a central service operating from one tertiary site may be established to coordinate ambulatory adult care across the metropolitan area.

The principal recommendation from this Review is implementation of Option 2.

As the outcomes of the national reforms crystallise; and Medicare Locals (MLs) mature, the roles and responsibilities of these and the Commonwealth in the care of patients outside of hospitals need to be explored and pathways for patient transitions established.

Operation of emergency departments

It is recommended that*:*

1. Additional resource be allocated to Care Coordination Teams based in Emergency Departments so expansion of the nature of the cohort seen to address the needs of patients across a larger age range and socio-demographic group.
2. An assessment of the need for, and costs and benefits, of expanding after-hours access from ED to diagnostic services, especially imaging, as this has been cited as a reason for ED to admit patients to short stay units.
3. Criteria for referral of low acuity patients and clinical pathways for ongoing care should be developed.
4. Residential Care Line staff members, ED discharge coordinators and CCT Social Workers continue to work closely with low care Residential Aged Care Facilities to ensure they are in a position to accept patients back into their facility after hours.

The relationship with Silver Chain

It is recommended that:

5. Structures are established to permit increased collaboration between hospital staff and Silver Chain to address current concerns regarding the robustness of clinical governance structures within Silver Chain. Specifically, the current medical directors of HITHs should formally be engaged in the clinical governance activities of Silver Chain's activities in these programs. In this way, shared care protocols for common patient presentations may be developed.
6. *healthdirect* Australia's protocols should be updated to include referral to Silver Chain's Priority Response Assessment service.
7. WA Health explore safety and quality mechanisms to ensure Silver Chain participates in WA Health's sentinel events reporting program.

Operation of Hospital in the Home programs

It is recommended that:

8. Emergency departments, outpatient and in-patient services refer patients with ambulatory care sensitive conditions (such as cellulitis, deep vein thromboses, pyelonephritis) to Silver Chain's HATH.
9. HITHs provide only specialist services not appropriate for referral to Silver Chain's HATH i.e. patients with complex care needs or patients with chronic diseases.
10. HITH teams should refer patients enrolled in one HITH but living within the catchment of another HITH team to the latter. To facilitate this:
    - patient care, referral and communication protocols are developed
    - the geographical boundaries of the various HITHs are re-assessed and agreed between AHS.
11. Secondary hospitals which currently do not have a HITH should use Silver Chain's HATH for low acuity patients and a tertiary HITH for complex patients.

The relationship with primary care

It is recommended that:

12. The location of after hours and extended hours general practices, particularly when co-located, should be readily accessible for patients awaiting care in emergency departments.
13. Where triage staff suggest to patients that they may wish to consult a GPAH or GPEH or other community provider, patient details (demographic and clinical data consistent with the detail usually obtained at triage) should be documented.
14. Information programs on the availability of alternate services are developed for both patients and healthcare professionals.
15. The feasibility and benefits of allocating reserved outpatient appointments for urgent referrals are examined.
16. The chronic disease health network, NMAHS planning teams and SMAHS clinical clusters develop protocols and clinical pathways for the referral of patients between primary care and hospital services, to avoid unnecessary emergency presentations.

Establishment of care teams and pathways to ensure continuity of care for chronic disease management:

It is recommended that:

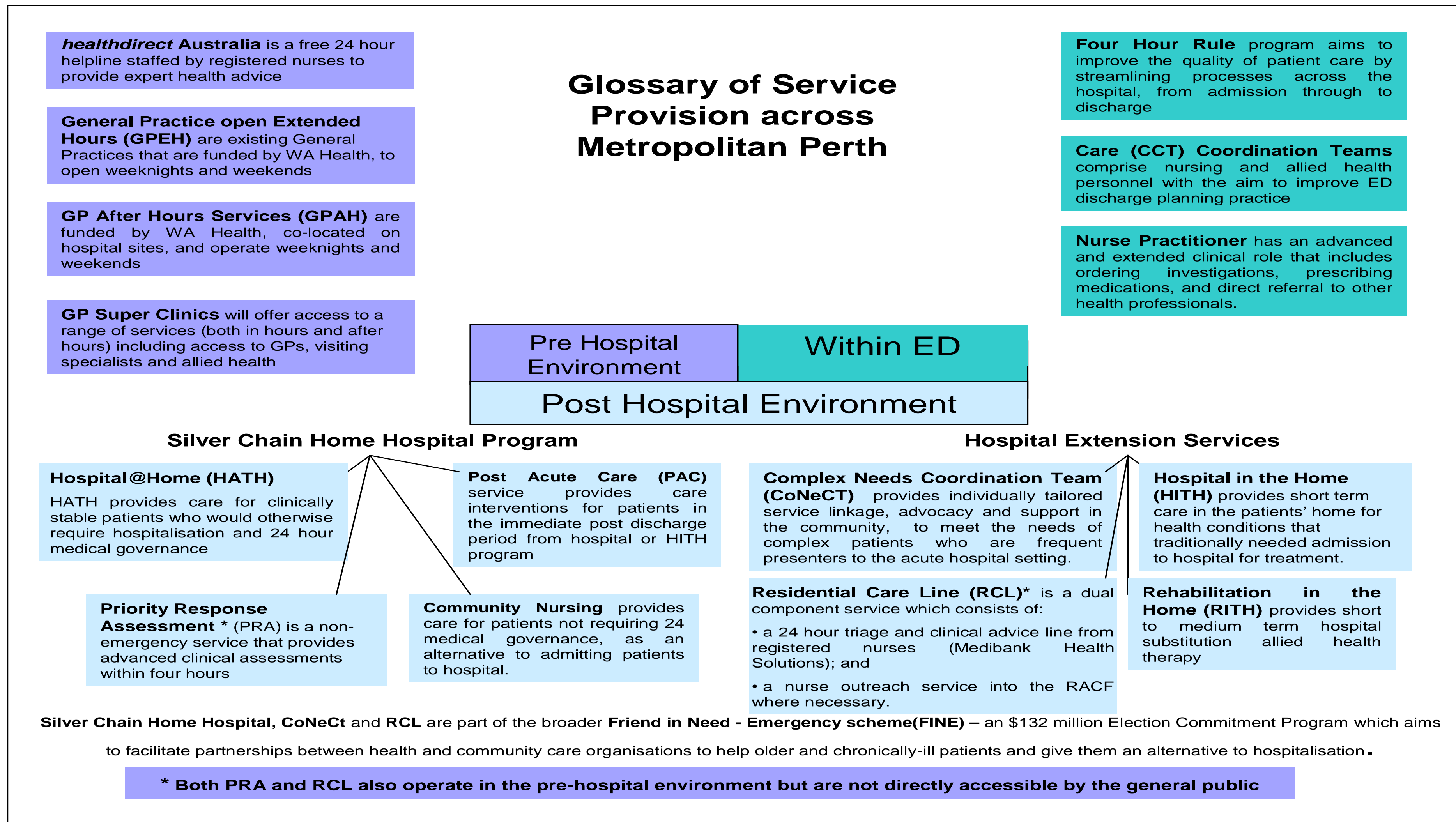
17. Hospital based HITHs, RITHs and CoNeCT teams amalgamate their FTE and resources such that medical, allied health and other support structures to patients are delivered by a single unified team operating over the AHS. A current model exists in the NMAHS Home Link structure.
18. Health services work with local primary care providers (MLs, General Practice divisions or networks) to develop referral and discharge pathways for chronic diseases including mental health. These pathways should incorporate continuity of care models which see engagement of hospital specialist nursing services with at risk patients who frequently require hospital admission while in the community.
19. Development of these pathways may be enhanced by a common membership across chronic disease health network, NMAHS planning teams and SMAHS clinical clusters, clinical lead forums in LHNs and MLs.
20. Current paradigms for the funding of inpatient and outpatient care will need to be examined to ensure that no disincentives prevent continuity of care and that care provided to patients following the acute admission is recognised.
21. The Health Information Network continues to explore all options to improve communications between WA Health hospital sites and General Practice to ensure that exchange of clinical information is safe, timely and seamless, consistent with national e-health standards and aligned to the implementation of e-health capability by General Practice.

This report should be read in conjunction with the Glossary of Service Provision across metropolitan Perth (see next page).

Summary of Services and Providers

Numerous services and providers exist in the pre-hospital and post-hospital environs and are relevant to this Review. The schematic below seeks to explore the roles and inter-relationships between these players.

Schematic summary of key services and providers of ambulatory care



1. Introduction: Establishing the Review

Across WA Health's metropolitan services there are eight public emergency departments. These are situated within:

- Sir Charles Gairdner Hospital (SCGH)
- Royal Perth Hospital (RPH)
- Fremantle Hospital and Health Service (FHHS)
- Swan Districts Hospital (SDH)
- Armadale-Kelmscott District Hospital (AKDH)
- Rockingham General Hospital (RGH)
- Joondalup Health Campus (JHC)
- Peel Health Campus (PHC).

Additionally, but outside of the scope of this Review, private facilities such as St John of God Murdoch, and King Edward Memorial Hospital (KEMH) and Princess Margaret Hospital (PMH) provide emergency services within the Perth metropolitan area. Similarly, the emergency facilities within WA regional and rural areas were outside the scope of this Review.

Driven by recognition that delays in treatment are associated with increased adverse patient outcomes, the Four Hour Rule Program was initiated in WA Health in April 2009. The program seeks to ensure that ED patients are seen and admitted, discharged or transferred within a four hour timeframe, unless required to remain in the ED for clinical reasons. This program required significant restructure to improve coordination across all departments within a hospital. The program was implemented in a three stage process. Of the hospitals in this Review, FHHS, RPH and SCGH were initiated in stage one and required to reach their target of 85 per cent patients managed within the four hour timeframe by April 2011. The stage two hospitals (AKDH, RGH, SDH and JHC) commenced the redesign process in October 2009 and are expected to achieve the 85 per cent target by October 2011.

The Four Hour Rule Performance Quarterly Report published by the Performance Reporting Branch, Department of Health indicates the following outcomes for January-March 2011 for the above hospitals.

Table 1: Four Hour Rule Performance of metropolitan public emergency departments for the January to March 2011 quarter

	FHHS	RPH	SCGH	AKDH	SDH	RGH	JHC	PHC
Attendances	13,989	18,626	15,448	13,130	10,114	11,575	18,664	10,020
Disposition* in 4 hours	78%	80%	68.6%	76.5%	69.8%	79.8%	68.6%	82.5%
Admitted in 4 hours	57.8%	63.1%	53.8%	49.9%	36.6%	40.5%	26.1%	73.5%
Transferred in 4 hours	66%	62.9%	37.6%	50.6%	56.6%	53.5%	52.2%	41.5%
Departed in 4 hours	93.1%	94.3%	88.8%	84.5%	75.5%	87.4%	84%	87.7%

*Includes patients seen and admitted, transferred or discharged within 4 hours of initial presentation

The demand for emergency services in WA public hospitals is rising. In comparison to the January-March 2010 quarter; the above figures represent the following increments.

Table 2: Increase in emergency department presentations in January to March quarters from 2010 to 2011

FHHS	RPH	SCGH	AKDH	SDH	RGH	JHC	PHC
14.1%	12.7%	10.4%	14.1%	10.9%	1.1%	14.2%	6.4%

Opportunities to streamline the care of patients were sought. Much service redesign within hospitals has already been undertaken and proximal interventions were therefore explored. WA Health funds GPAH and GPEH services (see definitions in Figure 1) across both metropolitan and rural WA. Of significance is the ability to provide treatment in the patient's own environment thus facilitating return to pre-morbid state and obviating the need for hospital admission. Nationally and internationally, there is an understanding of the opportunities for care to be provided outside of the hospital environment. Both NMAHS and SMAHS provide hospital in the home services. WA Health funds Silver Chain to support the provision of further such services.

This Review occurred in the temporal context of the Commonwealth's National Health and Hospital Reform and thus also seeks to explore opportunities to be derived from the establishment of MLs and LHNs.

In March 2011, the Director General for Health Mr Kim Snowball engaged Professor Bryant Stokes to undertake a review of ED services with specific reference to the use of hospital substitution options. Dr Audrey Koay, Dr Sharon Stewart and Ms Sarah McKerracher were seconded to the Review. The Terms of Reference are detailed in Attachment A.

The Report attempts to follow the path taken by patients as they present to ED and begins with an introduction to the processes within EDs. This is followed by a discussion of Silver Chain's Home Hospital (in particular its HATH service) and HITH as these are referral options for patients with ambulatory care sensitive conditions from ED. The interface with primary care is specifically discussed as the environment from which some patients are referred, to which patients return, and in which much opportunity may rest in the light of the Commonwealth's reforms.

As part of the Review process, the team interviewed 139 key stakeholders including:

- Chief Executives of NMAHS, SMAHS, Child and Adolescent Health Service (CAHS) and WA Country Health Service (WACHS),
- Executive Directors
- emergency staff
- HITH personnel from the hospitals named in the Terms of Reference
- external stakeholders including the Health Consumers Council, St John Ambulance (SJA), Divisions of General Practice and Silver Chain.

Appendix C outlines the list of interviewees.

The Review team wishes to acknowledge the contributions, patience and feedback of these persons without whom the task ahead would have been impossible.

2. The Operation of Emergency Departments

Emergency departments are oriented to deliver short-lived episodes of unplanned time-critical diagnosis and care over a 24 hour, 7-day a week cycle. Patients presenting to the ED may require many different interventions to complete their care and the ED operates on a multidisciplinary basis. Patients are triaged upon presentation and thereupon transferred to a cubicle in the ED either directly or via the waiting room for assessment, investigation and initiation of treatment by nursing and medical staff. During this time, they may also be assessed by allied health staff. Patients are then discharged home, referred to another inpatient or outpatient service, or admitted to the hospital. For many patients, it is their first contact with the hospital and perhaps the broader health system. Therefore, the ED represents a significant opportunity to establish linkages to facilitate the flow of patients through the ED/hospital and continuity of care.

Both KEMH and PMH are to be acknowledged for the specialised role they play in providing emergency care to obstetric, gynaecological and paediatric patients, though it is not uncommon for women with an acute gynaecological complaint to present to a tertiary or general hospital emergency. The data below does not capture these hospitals.

Friend in Need - Emergency (FINE)

Friend in Need – Emergency (FINE) scheme is a $132 million Election Commitment program which aims to facilitate partnership working between health and community care organisations to help older and chronically-ill patients and give them an alternative to hospitalisation. Programs funded from the FINE program include:

- Residential Care Line (RCL);
- Complex Needs Coordination Team (CoNeCT);
- Silver Chain Home Hospital Program; and
- Care Coordination Teams (CCT) within ED.

Further details on each of the programs will follow.

From where do patients come?

The Emergency Department Information System (EDIS) database captures the demographic and clinical information of patients attending ED. This data is maintained by hospitals and collated as Emergency Department Data Collection (EDDC) data by the Health System Improvement Unit in the WA Department of Health. Data from EDIS indicates that in the 12 month interval between 2009/2010, 403,960 patients presented to the metropolitan public emergency departments captured within the Terms of Reference of this Review.

Of the 77 per cent of patients who attended as emergency presentations of their own accord or upon behest of a relative, 4.7 per cent presented with a written GP referral and 0.5 per cent presented following GP advice but without a referral letter. A further 17 patients (0.004 per cent) are recorded upon EDIS as having been advised to attend an ED by *healthdirect* Australia. In the 2008-2009 calendar year, 45 patients (0.01 per cent) were recorded as having presented to ED following *healthdirect* Australia advice. A further 541 (0.14 per cent) and 373 (0.09 per cent) patients are noted as been referred by a nursing home in 2008/9 and 2009/2010 respectively.

The pre-hospital context merits discussion as it is from this setting that patients are referred to (or otherwise present to) emergency departments. This setting includes providers such as Silver Chain's Priority Response Assessment Service (PRA), Residential Care Line, *healthdirect* Australia and St John Ambulance.

***healthdirect* Australia**

healthdirect Australia is the collective trading name for the National Health Call Centre Network Limited and its contractors who provide nationwide access 24 hour a day to healthcare triage, advice and information. It is provided by Medibank Health Solutions.

healthdirect Australia is a nurse-operated telephone triage and information helpline. Registered nurses are supported by computerised decision support systems. From July 2011, nurses are able to refer selected patients to medical staff for telephone consultations. Governance is provided by the National Health Call Centre Network executive, which oversees the Clinical Governance Advisory Group; Finance, Risk Management and Audit Committee; and Corporate Governance.

Funding is derived by federal, state and territory governments. The contract between governments and *healthdirect* Australia includes indices for referral rates, caller compliance with *healthdirect* Australia instructions and a requirement to audit the appropriateness of advice and referrals.

Data from *healthdirect* Australia's latest quarterly report, covering the period October-December 2010, indicates a total of 186,479 calls in this period. Of these, 55,625 were from WA. Sundays were the busiest day of the week followed by Saturday and Monday. For any day of the week, the busiest time was 6.00pm-10.00pm followed by 10.00am-12.00pm. Average call lengths were approximately 9.2 minutes.

The age group most represented is 1-4 years of age followed by patients aged less than 1 year of age. The most common age group for adults is 30-34 years of age. Female callers represented 75.15 per cent of calls while 21.66 per cent were male.

The proportion of *healthdirect* Australia calls that terminate with a referral to further medical care from a GP (within 24 hours) was 46.8 per cent. A further 12.5 per cent of calls end with advice to attend an ED, with 3.1 per cent of callers advised to request an ambulance. 25.7 per cent of patients are provided advice to enable self-care at home. Currently, *healthdirect* Australia protocols do not allow referrals to Silver Chain's PRA service. These protocols are determined nationally and the PRA is limited to WA. Nevertheless, there is potential for this option to be included. Given that the PRA staff members have access to GP advice and point of care testing this may substitute for GP or ED attendance.

Of concern was the issue of patient compliance on the advice provided. In a recent study of ED attendances at RPH, it was identified that patients stated that they had been advised by *healthdirect* Australia to attend the ED when the opposite had actually been advised.

> *"There's a lot of people that said that Health Direct referred them and in fact we hadn't. We might have said to them, "You need to stay at home or see your GP," and they decided, "Oh, I'm going to rock up anyway." So I mean that is an interesting one because we actually have to work on those people that, you know, say that they're going to stay home and then they don't end up complying, so there is an element of non-compliance that we need to work on."*

As noted previously, the contract between Governments and *healthdirect* Australia does include efforts to increase caller compliance with instructions.

Residential Care Line

The Residential Care Line (RCL) program commenced in 2004 and aims to prevent avoidable ED presentations and hospital admissions from nursing home patients. There are two components to this program:

- the RCL call centre
- RCL Outreach Services.

The RCL program is coordinated by the WA Department of Health and funded under the Friend In Need –Emergency (FINE) program.

The RCL call centre is staffed by and co-located with *healthdirect* Australia. Although sharing the same host (Medibank Health Solutions), the RCL call line has a separate line and phone number to *healthdirect* Australia. It offers 24 hour, 7-day a week telephone triage service to staff in RACFs and a single point of access to outreach services.

The RCL Outreach service provides clinical nursing assessment and interventions to residential aged care facilities between 8.00am-4.00pm, 7 days a week. The RCL outreach service is staffed by registered nurses working within WA Health hospitals. There are RCL coordinators at SCGH, RPH and FHHS (which also service SDH and RGH).

The RCL also provides additional services such as access to specialist support including:

- geriatrician advice
- case by case education for facility staff
- evidence based best practice information and education e.g. regarding wound management, as requested
- coordinated range of multidisciplinary services in collaboration with general practitioners.

In addition, RCL may liaise with staff from WA hospitals to facilitate safe and effective discharge to residential aged care facilities.

Outside of the hours of operation of the RCL Outreach service, RCL refers patients requiring assessment to Silver Chain's PRA service. Interviews with RCL staff indicate that while this is a satisfactory arrangement, the quality of the service provided to residential aged care facilities may be enhanced by greater understanding of these environments.

In the 2009/10 financial year RCL Outreach Service delivered 5856 episodes of care. Over the six month period from July to December 2010 the RCL Outreach Service delivered 2,974 episodes of care, preventing 857 avoidable ED presentations (based on clinical judgement).

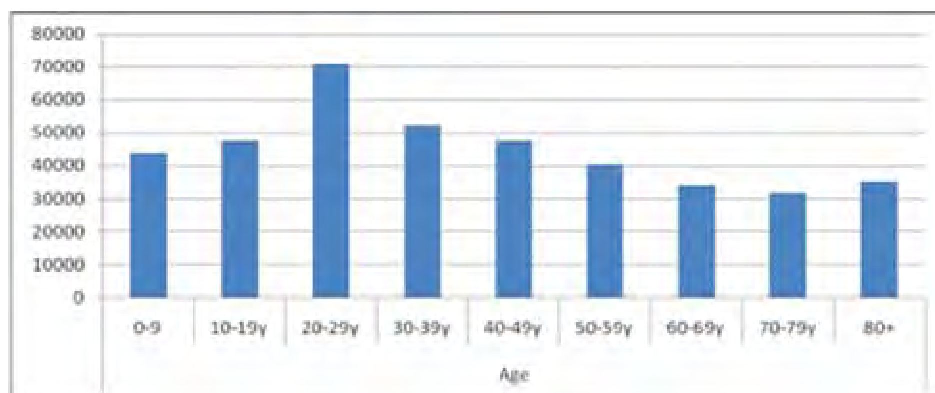
Silver Chain Nursing Association Priority Response Assessment Service (PRA)

The Silver Chain Home Hospital program includes the PRA service which provides community based clinical assessments of patients within four hours leading to the provision of short term interventions or referral for ongoing care. A more detailed discussion of the role of Silver Chain in the delivery of ambulatory and pre-hospital care is provided in section 3.1.

Who uses public metropolitan emergency departments?

Attendance at public metropolitan EDs (excluding KEMH and PMH) by age is captured below.

Figure 1: Age profile of patients attending metropolitan public ED in 2009-2010



The EDDC captures the reason for ED attendance in one of several chapters. The following table describes in broad terms, the diagnosis associated with an ED presentation. Together, the cases below account for 359,165 presentations in 2009-10.

Table 3: Presentations to metropolitan public ED by diagnostic chapters in 2009-2010

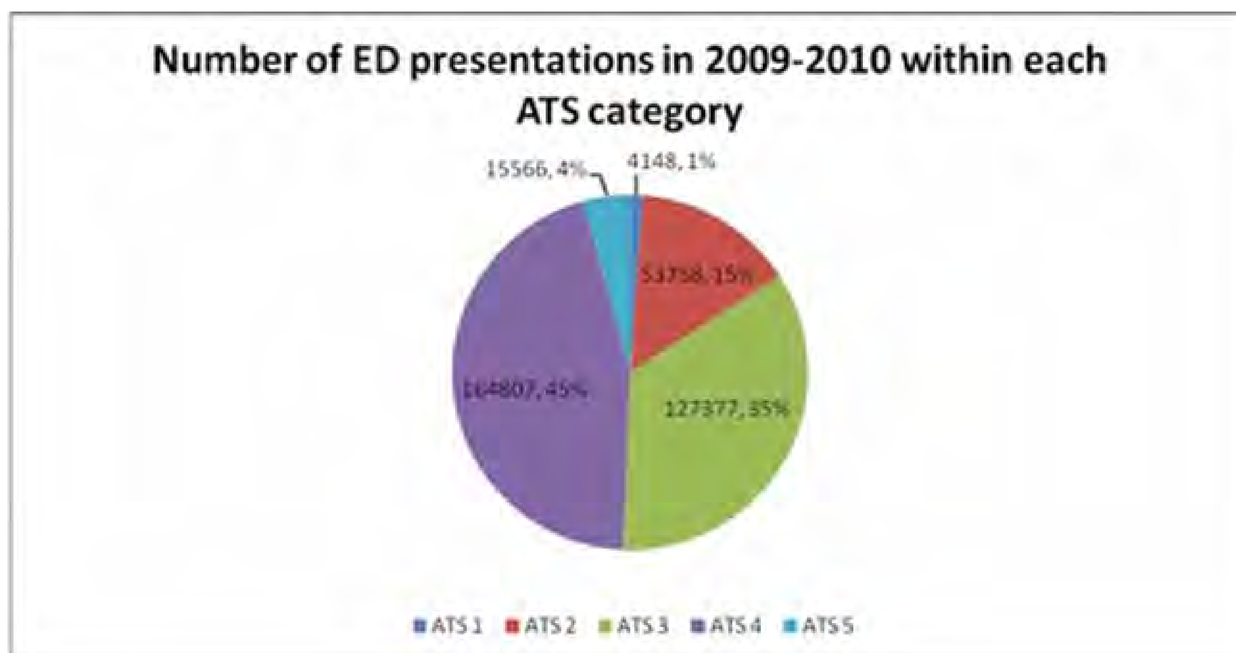
	2009-2010
Injury, poisoning, certain other consequences of external causes	112,321
Symptoms, signs, abnormal clinical and laboratory findings not elsewhere classified	52,290
Factors influencing health status and contact with health services	29,257
Diseases of the respiratory system	28,975
Diseases of the digestive system	24,090
Diseases of the circulatory system	18,693
Certain infectious and parasitic diseases	16,391
Diseases of the genitourinary system	15,135
Mental and behavioural disorders	13,700
Diseases of the skin and subcutaneous tissues	11,803
Diseases of the musculoskeletal system and connective tissues	12,003
Diseases of the nervous system	6,873
Diseases of the eye and adnexae	4,458
Diseases of the ear and mastoid process	3,896
Pregnancy, childbirth and the puerperium	2,931
Endocrine, nutritional and metabolic diseases	2,646
Diseases of the blood, blood forming organs and immune system	1,766
Neoplasms	1,447
External causes of morbidity and mortality	490

Caveats in interpreting such data include:

- The broad categorisation within EDIS which does not necessarily permit closer examination of the reasons for attendance.
- The potential variability associated with assigning patients to specific categories e.g. a patient with an adjustment disorder presenting following an overdose attempt could reasonably be classified as either poisoning or as mental and behavioural disorders.
- The distinction between a working diagnosis derived in emergency department and one established following further investigation during an in-patient stay.

The Australasian Triage Score (ATS) defines the urgency with which a patient should be reviewed and both the ATS and a breakdown of emergency presentations by ATS categories are as follows:

Figure 2: Presentations to metropolitan public ED by ATS categories in 2009-2010



Management of patients and issues arising within emergency departments

Upon triage, patients are "streamed" according to clinical need and urgency. Although the specifics vary between sites, generally, patients are allocated as those who are low acuity and may be "fast-tracked" towards discharge, and high acuity patients who are likely to be admitted. A variety of clinical staff are involved in the care of patients including medical, nursing (including nurse practitioners), allied health, care coordination teams and discharge coordinators. This interplay is necessary to ensure all the patient's needs are addressed. As a consequence of the Four Hour Rule program, new roles such as the Navigator[1] or Director of Patient Flow[2] have been introduced.

1 Navigator - FHHS
2 Director of Patient Flow - SCGH

Care Coordination Teams

In this environment, the Care Coordination Teams are invaluable. A variety of staff undertake the role of patient discharge or care coordination. Since 2001, in all metropolitan general and tertiary hospital emergency departments, these roles have tended to coalesced into CCT. Funding for these teams are derived from the COAG Older Person initiative (50%) and the FINE program (50%). The Commonwealth component of the funding totalled $1.7million for 2011-12. The FINE component was distributed across metropolitan Perth for 2011-12 as follows: NMAHS - $711,289 and SMAHS -$1,050,803.

These interdisciplinary teams typically comprise social work, physiotherapy, occupational therapy and nursing expertise. Nevertheless, each member of staff is expected to adopt the same generic role in assessing patients and facilitating discharge. These teams aim to screen complex patients aged over 65 years (or Aboriginal[3] patients aged over 45 years) who present to ED with a view of identifying non-medical factors which impact upon discharge home, safe transition and re-presentation. CCT members select patients on the basis of age and medical diagnosis for review. Factors determining likelihood of discharge and rebound to emergency department are identified. Allied health and community support interventions are configured to enable the patient to be smoothly discharged. The CCT is therefore paramount to supporting the needs of complex patients and the contribution of these teams to smooth discharge was noted by staff.

Appendix D provides an overview of Care Coordination Teams by site.

Patients presenting after hours and who are admitted to short-stay units are reviewed the following morning. Nevertheless, the CCTs are unable to review all patients within the criteria described above.

As previously identified, there are numerous providers of care within the community and it is unlikely that medical and nursing staff engaged in patient assessment and care would otherwise be able to negotiate the numerous providers and identify the most appropriate for the patient without the CCT.

> *"They work very hard and they provide a good service for the elderly. They get the good packages for our sort of overnight ED admissions to get them out the next day, they work hard on them, so I think they're valuable service."*

Consequently, the Review recommends increasing the resources allocated to CCTs to enhance the brokerage of care to facilitate prompt discharge from emergency departments and increase the proportion of patients reviewed by CCTs.

Caring for patients with complex medical and social needs

WA's emergency departments are facing increasing numbers of patients, many of whom are complex patients with chronic disease, physical frailties and inadequate social supports. The acute needs of particular patient groups, including people with mental health issues, patients under the influence of drugs or alcohol, patients from RACFs and the homeless, were specifically discussed.

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3 Aboriginal – term includes Torres Strait Islanders

"It's because of sure there's only carers there but ... and you can't send them back in the ambulance because you can't even ... they won't even answer the phone sometimes. And that's an issue for the staff during the night. Not that you really want to be moving these elderly people around at night, but on the weekends they should be able to go home…If they lived in the community they would be sent home. We don't keep them here until Monday morning because the postman doesn't come until Monday."

While some issues (e.g. staffing and competency within residential aged care facilities) leading to the retention of these patients within the ED environment are frequently not medical and external to WA Health, they impinge upon the delivery of services by WA Health and substitute as a surrogate marker for the health of the system. Thus a wider conversation with these providers to examine opportunities to address these issues may be merited.

The management of patients under the influence of drugs and alcohol was consistently raised as an issue by all emergency departments. Observation is frequently required to differentiate between the effects of drugs and intoxication and an underlying medical or psychiatric illness. The emergency department is not a safe environment for this. Likewise, patients who are clinically stable but require psychiatric follow-up e.g. adjustment disorders are frequently admitted for observation due to a lack of safe beds in the community to which they may be discharged. Suggestions for utilising the transit lounge for such patients were echoed across a number of sites.

"Takes up so many beds and so much nursing and time, dealing with intoxicated people who literally just need somewhere to stay and have a bit of fluid and go home when they're sober."

"Psych's definitely been…a big issue. It's increased. Definitely. There's never enough beds. They seem to stay and wait for many days, in fact, to get a bed. There can be almost 30 per cent of our beds"

These are cogent arguments for expanded resourcing of CCTs to enable a larger age range/social demographic group to be targeted –specifically younger patients with complex conditions with a view to addressing both medical and social factors predisposing to multiple re-attendances and re-admissions. Social workers with experience in mental health, supporting younger people and the homeless and domestic violence were identified by CCTs as being highly desirable.

The impact of chronic disease upon emergency and inpatient environments is growing. Based upon Australian Institute of Health and Welfare (AIHW) data, the projected burden of disease and injury in Australia in 2010 was estimated to exceed 2.8 million Disability Adjusted Life Years (DALYs). Cancers are the leading contributor (19 per cent of DALYs) followed by cardiac disease (16 per cent), nervous system and sense disorders (13 per cent), mental disorders (13 per cent) and chronic respiratory diseases (7 per cent). WA Health data indicates that in 2010 there were 2,095 separations captured in the "heart failure and shock" Extended Service Related Group

(ESRG). These accounted for 12,331 bed-days. In the same period, ~15 per cent of respiratory admissions to WA public hospitals were triggered by Chronic Obstructive Pulmonary Disease (COPD).

The increasing burden of chronic diseases requires acknowledgement of the roles of hospital services, primary care providers and the patient in disease management. The chronically ill patient traverses multiple environments throughout the disease course. This notion implies:

- hospital services have limited reach in the ongoing care of the patient
- a need to coordinate between disparate providers of care and services
- a need for handover to obviate risks at transition points.

Options to address these are considered in section 5.

Diagnostic processes within the emergency department

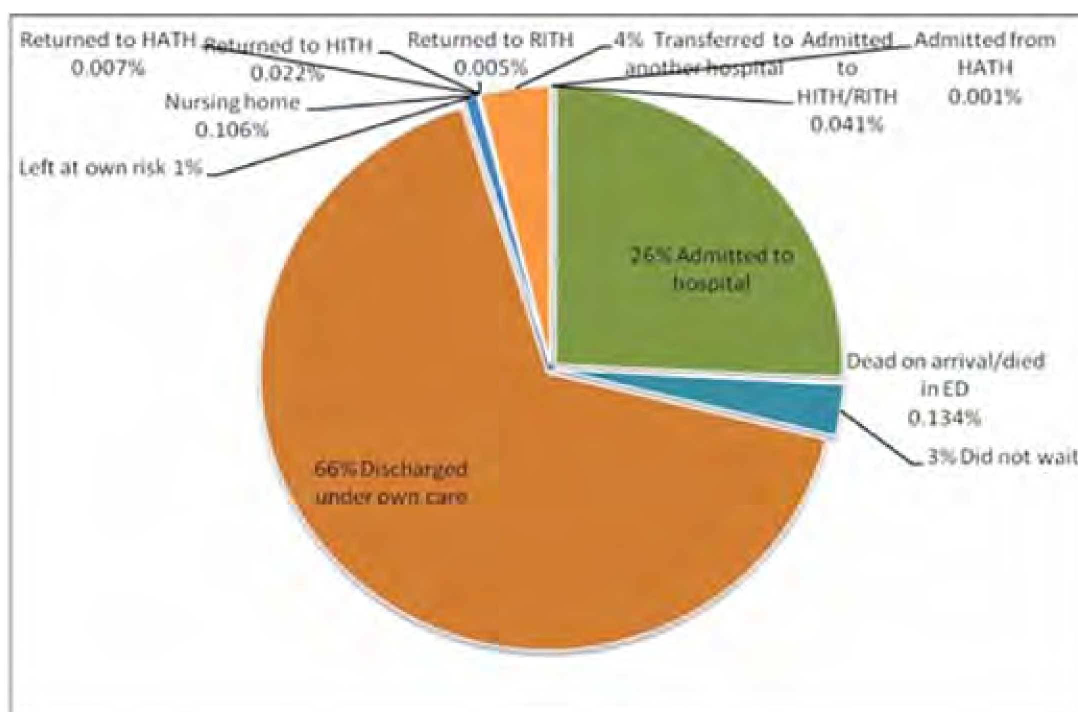
A proportion of patients are reported to be retained within the short-stay unit so as to access diagnostic interventions e.g. radiology services or to await the results of pathology tests. The scope of the Review did not allow this to be addressed to greater depth. Data should be sought to quantify the extent and appropriateness of this practice as this was not consistently reported to be an issue. Further work is required to examine whether increasing the hours of radiology services may be cost effective and permit earlier discharge of patients to their home environment. Furthermore, by extending the hours of operation of radiology services, there may be scope to increase imaging throughput of in-patients.

Discharge from emergency departments

Data from EDIS indicates that of approximately 400,000 patients presenting to ED of the hospitals captured by the Terms of Reference:

- ~ 263,000 patients were discharged home
- approximately 100,000 patients were admitted to hospital wards
- ~15,000 were transferred to another hospital for ongoing care.

Figure 3: Disposition of patients attending metropolitan public EDs in 2009-2010



A variety of options are available for discharge to community care from ED. This includes Silver Chain Home Hospital, HITH and RITH which are described in greater detail in later sections. Discharges to Silver Chain Home Hospital, HITH or RITH[4] accounted for 302 patients. The figure below provides greater detail on the disposition of these patients

To illustrate the characteristics of patients referred to HITH/RITH or Silver Chain Home Hospital, the Review was provided with a fortnight's snapshot of discharges from SMAHS EDs.

In the fortnight spanning 1-14 February 2011, 77 patients were discharged from a SMAHS emergency department to HITH/RITH or Silver Chain. The associated diagnoses are as follows:

Table 4: Diagnoses associated with cohort of patients discharged to HITH/RITH or HATH

Diagnosis	Number	Percentage of Total (n=77)
Lower limb cellulitis	8	10.4%
Uncoded cases	6	7.8%
Cutaneous abscess	6	7.8%
Case involving rehabilitation	4	5.2%
Type 2 DM w foot ulcer	4	5.2%

As suggested below, a number of factors including clinical diagnosis determine fitness for discharge. The following data from SMAHS captures the diagnoses associated with patients who were retained in ED (or its short-stay units) for 24-48 hours.

Table 5: Diagnoses associated with cohort of patients admitted to ED for 24-48 hours

Diagnosis	Number	Percentage of Total (n=426)
Fracture, any body part	26	6.1%
Drug related, mood or behaviour disorder	17	4.0%
Cellulitis, any body part	15	3.5%
Uncoded cases	15	3.5%
Acute appendicitis, other not specified	14	3.3%
Urinary tract infection, site unspecified	14	3.3%
Acute subendocardial MI	11	2.6%
Chest pain unspecified	11	2.6%
Spontaneous delivery	11	2.6%
Atrial fibrillation	7	1.6%
Unstable angina	7	1.6%
Diabetes related	6	1.4%
Thromboembolic event	2	0.5%

4 RITH – Please refer to section 3.2

These data highlight that a clinical diagnosis alone does not determine fitness for discharge. Notwithstanding a diagnosis of an ambulatory care sensitive condition, social factors, age and co-morbidities may conspire to require prolonged observation of the patient. The Review considers such practices to be appropriate.

The Review noted that there were no referrals to Silver Chain Home Hospital from a SMAHS ED in the above period. At this point, the Review observed the following:

- There are a large number of community services who may provide nursing or allied health care to the patient following discharge from ED.
- In addition, AHS provide HITH and RITH services to which patients may be admitted from ED.
- There is no consistent discharge pathway from an ED to either of the above.

In low-acuity patients, there is potential to streamline this practice and potentially introduce consistency in referral pathways across WA's public hospitals. In more complex cases, a lack of consistency may result in missed opportunities to address the sum of a patient's needs. Therefore, there is a need to refine the referral pathways from emergency departments. It is frequently the CCT who refers patients for further care. The Review recommends that the CCT across metropolitan public emergency departments are adequately resourced to enable this task across a wider breadth of patients than is currently possible. Additionally, in relation to low-acuity patients, clinical pathways and criteria for referral to a single provider should be developed.

Recommendations

It is recommended that:

1. Additional resource be allocated to Care Coordination Teams based in Emergency Departments so expansion of the nature of the cohort seen to address the needs of patients across a larger age range and socio-demographic group.
2. An assessment of the need for and costs and benefits of expanding after-hours access from ED to diagnostic services, especially imaging, as this has been cited as a reason for ED to admit patients to short stay units.
3. Criteria for referral of low acuity patients and clinical pathways for ongoing care should be developed.
4. Residential Care Line staff members, ED discharge coordinators and CCT Social Workers continue to work closely with low care Residential Aged Care Facilities to ensure they are in a position to accept patients back into their facility after hours.

3. Hospital Substitution Options

The impact of population ageing and burden of chronic disease upon the (acute) health sector has led to interest and thence acceptance of Hospital in the Home (HITH) models both within Australia and internationally. Systematic literature reviews reveals two models of HITH:

- admission avoidance HITH programs (e.g. management of infectious diseases requiring intravenous antibiotics or thromboembolic disorders requiring anticoagulant therapy)
- early discharge HITH programs (e.g. provision of after-care for patients following surgery).

Broadly speaking, one may perceive two groups of HITH patients. The first are chronically unwell, suffer multiple morbidities and have both an acute need for episodic care as well as being long-term users of (community) services as a result of difficulties in activities of daily living. The second group are patients who as a result of an acute event require short-term treatments such as post-surgical care, intravenous antibiotics or rehabilitation but have no need for long term nursing or maintenance care. These distinctions are relevant when considering parameters such as referral practices from ED to HITH, clinical inclusion and exclusion criteria, staffing profiles and governance of these programs. Within WA, the focus has tended to be early discharge HITH programs for patients identified by in-patient teams.

Currently, the key providers are HITHs which are managed by AHS and Silver Chain Home Hospital. These are described in greater detail in the following section.

Prefacing these descriptions, the Review notes there are significant opportunities for increasing clarity and efficiencies. The current situation is characterised by:

inconsistencies of the patients who are referred for care in the community from ED

inconsistencies in the providers to which patients are referred for the same condition

variability in the governance and follow-up of patients

significant duplication of services provided.

3.1 Silver Chain Home Hospital

Silver Chain Home Hospital aims to provide an integrated community based service wherein care of the patient is provided in the home. The service is available within metropolitan Perth. Patients may be referred to Silver Chain Home Hospital by their GP, a hospital specialist or another Silver Chain Home Hospital practitioner. The Home Hospital is staffed by GPs, nurse practitioners, registered nurses, allied health practitioners, enrolled nurses and care aides.

Silver Chain provides a Home Hospital model which comprises

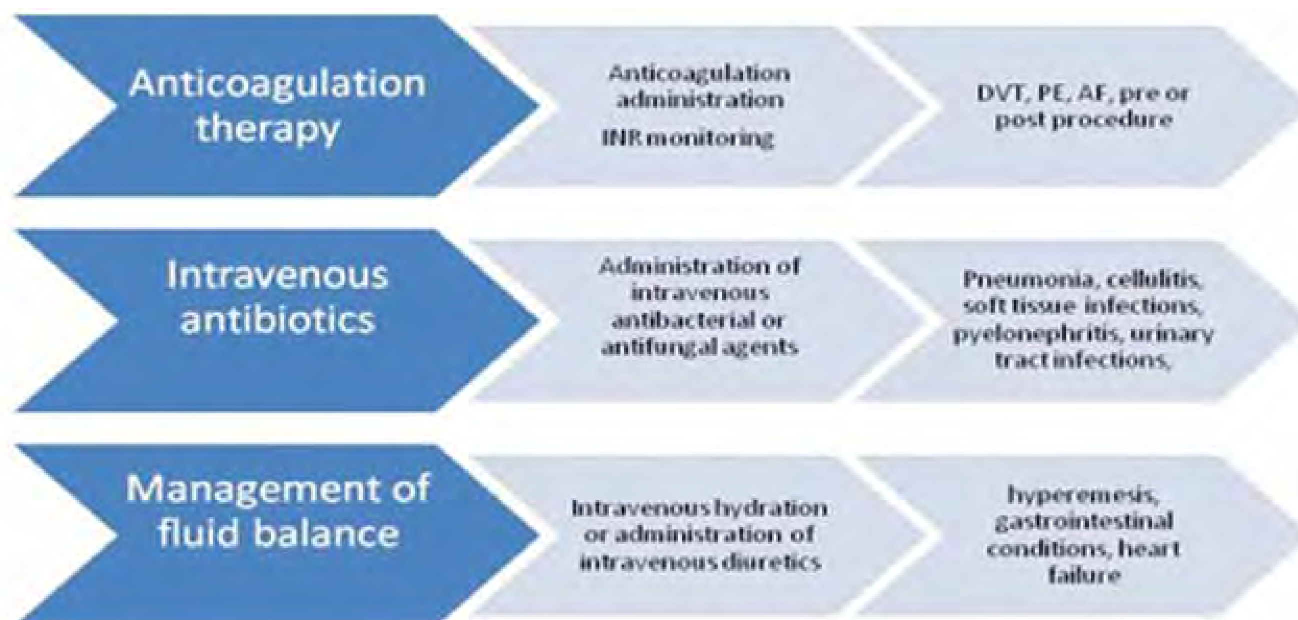
- Hospital at the Home
- Priority Response Assessment
- Post Acute Care
- Community Nursing.

Components of Silver Chain Home Hospital

Hospital at the Home

Hospital at the Home (HATH) provides care for clinically stable patients who would otherwise require hospitalisation and 24 hour medical governance. Prior discussions between the Aged Care Directorate and Silver Chain have determined the following interventions are provided by Silver Chain's hospital in the home under the FINE contract:

Figure 4: Overview of common conditions and interventions under Silver Chain HATH



Exclusion criteria for hospital in the home include unstable (medical or psychiatric) patients, current intravenous drug use, and adverse social circumstances which may render the environment unsafe for Silver Chain staff and non-consenting patients.

Priority Response Assessment

The Priority Response Assessment (PRA) service provides community based non-emergency clinical assessments of patients by registered nurses within four hours leading to the provision of short-term interventions to address an immediate need or referral or admission for ongoing care. Assessments and interventions may be provided in the patient's home (or residential aged care facility). This service is available 24 hours, seven days a week and staff have point of care testing (e.g. routine blood tests) capability. Referrals from medical staff and registered nurses only are accepted (thus allied health and enrolled nurses are unable to refer to PRA).

Figure 5: Overview of conditions and interventions under Silver Chain PRA

Post Acute Care

The Post Acute Care service provides interventions for either medical or surgical patients in the immediate post discharge period from hospital or a HITH (or HATH) program. On average, patients are enrolled in post-acute care for up to two weeks. Examples of care provided include wound dressings, care of post-surgical wound drainage, assistance with showers and other activities of daily living. Medical governance is generally provided by the patient's GP or the referring consultant.

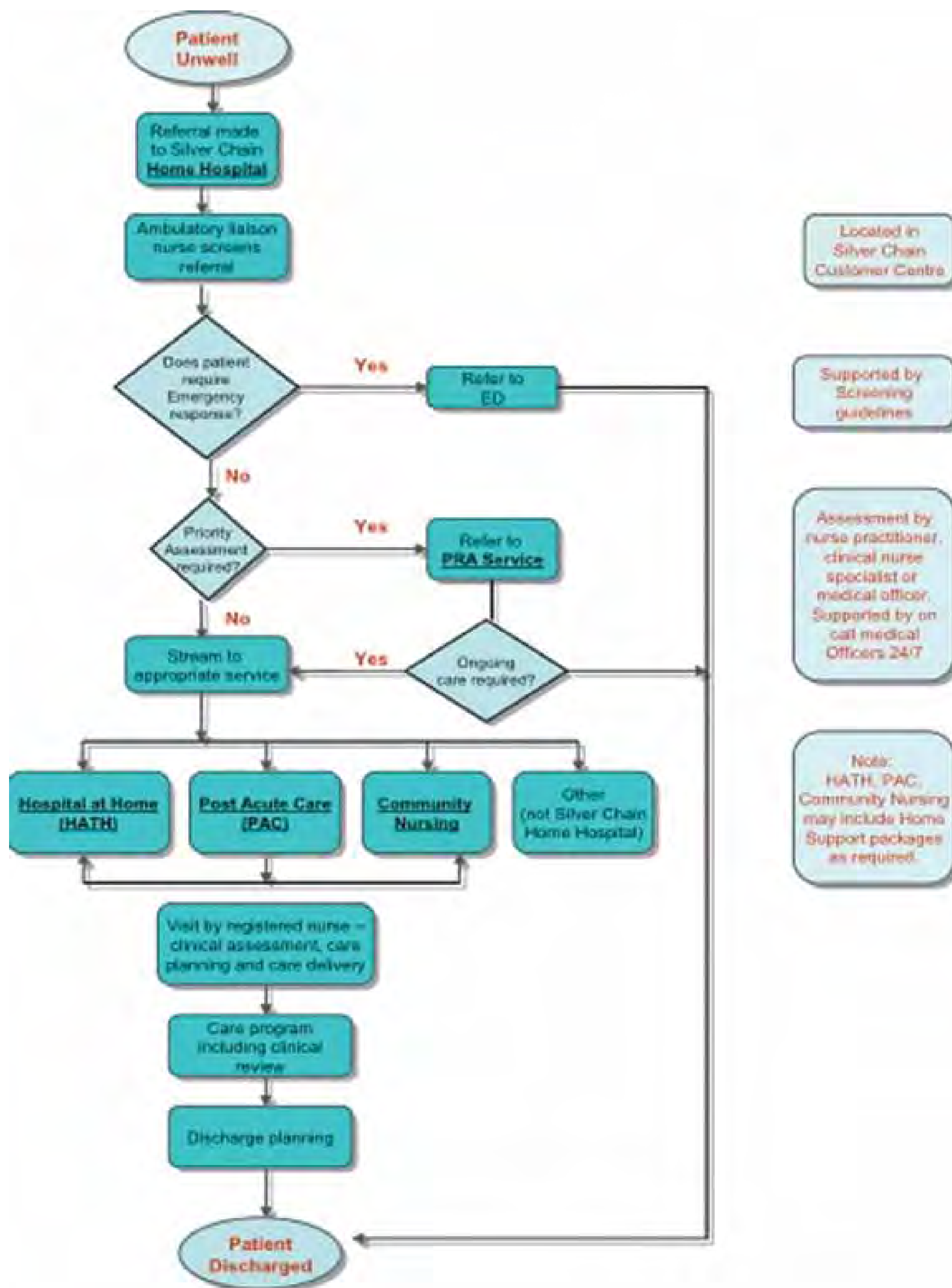
Community Nursing

Community Nursing provides episodic nursing care to patients who do not require 24 hour medical governance. As with other Home Hospital options, it is provided as a substitute to hospital admission. Patients referred to Community Nursing are expected to require short-term support comprising up to 28 occasions of nursing service.

Referral pathways to Silver Chain Home Hospital

Patients may be referred to HITH by a medical practitioner. Patients may be referred to PRA by either a medical practitioner or a registered nurse. The referral pathways to Silver Chain Home Hospital are as follows:

Figure 6: Referral pathway for Silver Chain Home Hospital programs



In addition, and of relevance to the care of elderly complex patients, Silver Chain's PRA service supports the RCL outreach service after hours. More recently, Silver Chain is partnering with NMAHS and SMAHS in the CoNeCT program to drive complex care coordination for patients with chronic conditions to facilitate long-term planning and support and liaison with the patient's GP, other healthcare professionals, carers and services. The interplay between these and hospital based care is demonstrated overleaf.

Figure 7: Map of FINE funded services in the pre-hospital, hospital and post hospital environments*

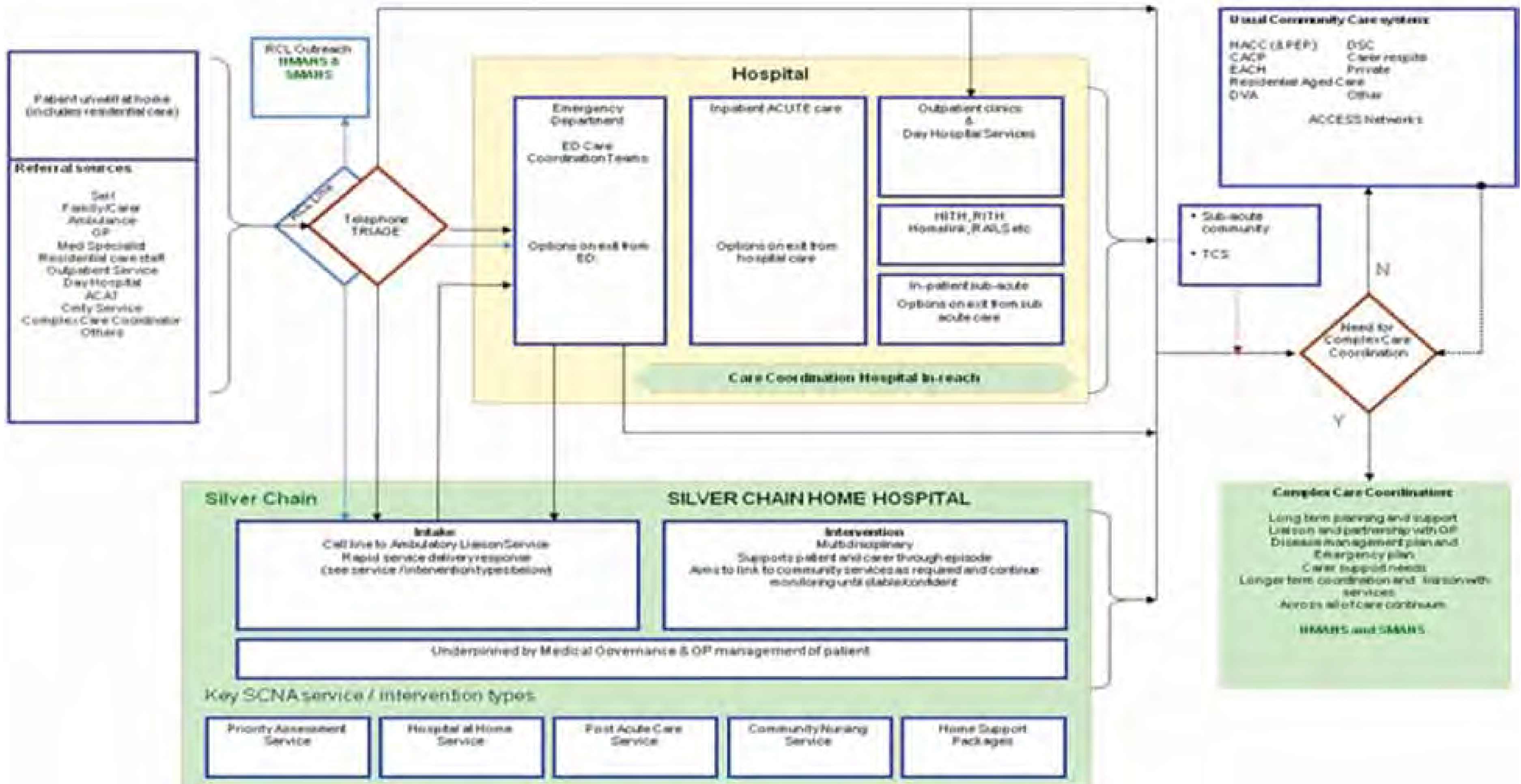


*Diagram provided by Aged and Continuing Care Directorate

Governance of Silver Chain Home Hospital

The clinical staffing profile of Silver Chain's Home Hospital program includes medical, nursing and allied health disciplines. Medical practitioners include consultant specialists and general practitioners who may be formally engaged by Silver Chain. Additionally, where a patient has been referred to Silver Chain and has a GP who wishes to remain involved in the patient's care, the GP may retain some oversight of the patient. However, many GPs find their workload precludes home visits and after hours calls. Thus, nursing staff are supported by on-call general practitioners engaged with Silver Chain and if required, specialist medical staff

Specialties which are represented within Silver Chain Home Hospital include haematology, geriatrics, infectious disease and emergency medicine. These physicians are dually engaged with Silver Chain and WA Health. Within Silver Chain, their responsibilities include the education of nursing and GP staff, development of clinical protocols and provision of medical support to nursing staff as required when attending a patient.

The medical governance of clinical activities performed by Silver Chain's Home Hospital therefore sits under the Home Hospital Director, with support from specialists and GPs. The exception to this occurs when HITHs refer a patient who lives beyond the metropolitan area to Silver Chain. In such instances, governance of the patient is retained by the HITH medical director.

In this Review, many public hospital based clinicians expressed concerns regarding the governance of Silver Chain. It is likely that this is perceived rather than real. However, these perceptions, even if false, must be addressed to facilitate better ways of working together in order to address the global health needs of Western Australians.

Use of the Hospital at the Home program by metropolitan public hospitals

In 2010, Silver Chain Home Hospital managed 9,651 separations (accounting for 8,621 patients). The most highly utilised services were Post Acute Care and Community Nursing which accounted for 35 per cent and 31 per cent of separations respectively. Referrers to Home Hospital vary with the service. In 2009, HATH referrals are derived predominantly from hospitals (82.3 per cent) and GPs (17.7 per cent). Hospitals (69 per cent) and GPs (31 per cent) were key referrals to Community Nursing. Key sources of referrers to PRA were community nursing/ health service (41.3 per cent), GPs (23.1 per cent) and residential aged care facilities (22.95 per cent). Hospitals accounted for 4.4 per cent of total referrals to PRA.

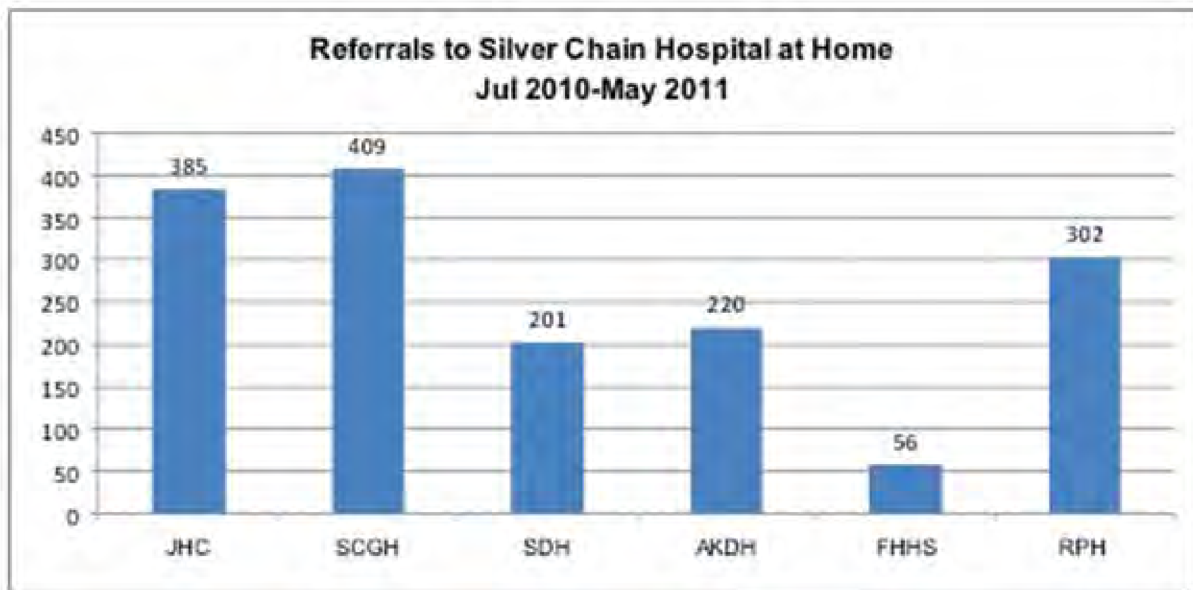
Data obtained from Silver Chain revealed the following usage patterns of its HATH service by metropolitan hospitals between July 2010 and January 2011.

Table 6: Metropolitan public hospital usage of Silver Chain HATH July 2010-January 2011

	Total for period	Average per month
Number of clients	1,589	227
Length of stay	11,225	-
Average length of stay	62	-

A breakdown of referrals by source hospital for the same interval follows:

Figure 8: Referrals to Silver Chain HATH, by hospital source July 2010- May2011



Osborne Park, Bentley and Rockingham General hospitals are not shown on the above graph. In the same period, there were three, two and three referrals from these sites respectively. In this period, there were eight referrals to Silver Chain HATH from Peel Health Campus.

Silver Chain provided further data defining the source of referrals to Hospital in the Home for SCGH and RPH specifically. These are captured below.

Figure 9: Breakdown of referrals from RPH to Silver Chain HATH, by hospital source July 2010- May 2011

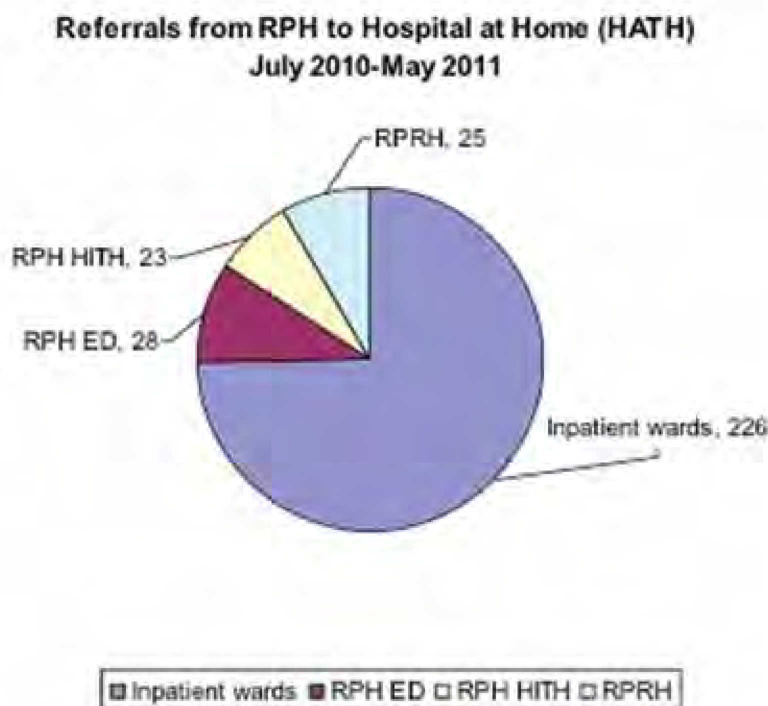
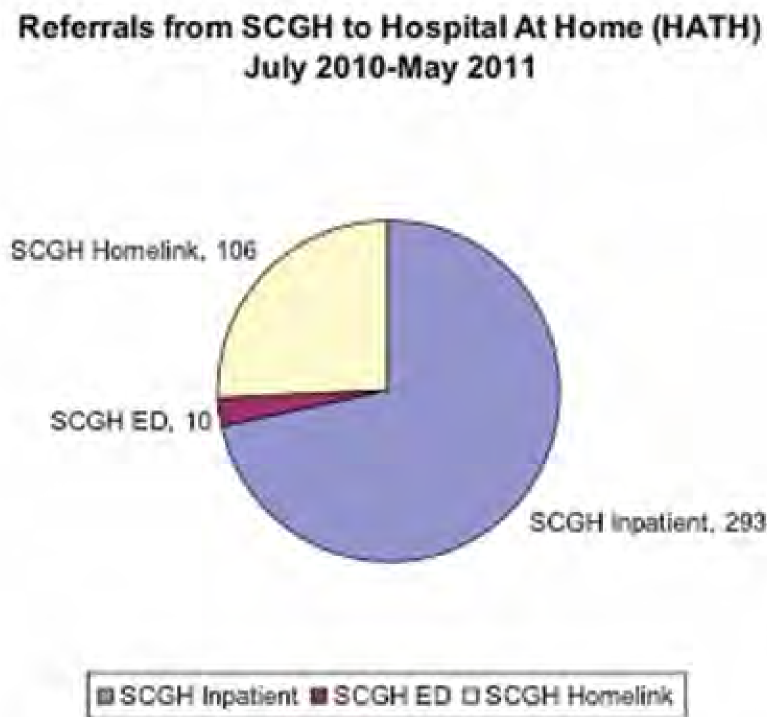


Figure 10: Breakdown of referrals from SCGH, by department, to Silver Chain HATH, by hospital source July 2010- May2011



It therefore appears that emergency departments at the two hospitals for which data are available refer few patients to Silver Chain HATH directly. Data previously provided (on page 25) indicate that the proportion of ED patients who are referred for care within the community by either HITH or HATH is low. Furthermore, the Review did not find evidence for any systematic approach determining how or which patients are allocated to HITHs versus HATH. Further research would be required to examine whether the generally low rates of referral for care in the community and the allocation of patients between HITHs or Silver Chain HATH are appropriate. This research would need to be undertaken at the patient level to better explore the impact of medical and social factors upon appropriateness for discharge.

Usage of Silver Chain's HATH by WA's public metropolitan hospitals falls within the lower boundaries of the contract between Silver Chain and WA Health. A variety of factors influence use of Silver Chain's Hospital at the Home service. These include:

- a limited awareness of the availability of programs
- perceived (rather than factual) failings in the governance of Silver Chain's HATH service
- blurred distinctions between patients meriting tertiary HITH intervention and community level HITH care
- personal familiarity with a particular service
- past positive or negative experiences with a particular service
- ease of referral process.

The above seem to be true for all departments including ED.

Barriers to referrals from hospitals to HATH

A key barrier to referral to Silver Chain's HATH is the lack of clinician confidence and trust in the governance processes of Silver Chain. In conversations with health care professionals not allied to Silver Chain, it would appear that the core issues are:

- unfamiliarity with processes within Silver Chain
- unfamiliarity with the nurse attending the patient and their competence to do so
- unfamiliarity with the doctor providing medical oversight within Silver Chain
- a previous negative experience
- lack of feedback to the referring clinician (hospital specialist or general practitioner)
- lack of opportunities for direct contact between Silver Chain and hospital staff.

There was much discussion regarding the governance of Silver Chain. This was raised by Silver Chain practitioners as well as those employed within WA Health and some primary care providers without allegiance to either organisation. These conversations were based upon personal experiences of Silver Chain as well as more philosophical positions regarding optimal patient care. As Silver Chain has recently undertaken to increase its medical workforce and staff development, it is likely that these perceptions are rooted in historical experiences. Nevertheless, the frequency with which clinical governance was raised was itself a strong marker that active measures remain to be taken to address this issue by all parties.

By dint of their environment, staff within tertiary hospitals are accustomed to high-acuity, complex patients who are distinct from low-acuity patients. These staff members are acutely aware of the potential risks and benefits of treatment interventions and the likelihood of a clinical deterioration despite best efforts. Furthermore, the Review acknowledges that there are very real differences between a handover to:

- an acknowledged peer working within one's environment with whom there is ample opportunity to discuss aspects of patient care
- an unknown healthcare professional with whom one does not share a relationship, is unlikely to speak to and who will delegate the physical aspects of the intervention to an unknown nurse.

These differences should not be dismissed as poor handover and lack of opportunity for interaction and discussion.

For its part, Silver Chain has made significant recent efforts to address this concern. Silver Chain now employs GPs who provide the medical oversight where the patient's GP is unwilling to do so. Silver Chain also engages specialist physicians in clinical areas of demand including geriatrics, emergency medicine, haematology and infectious diseases. These specialists have ties with WA Health. Significantly, few WA Health staff interviewed had any knowledge of the involvement of their peers with Silver Chain.

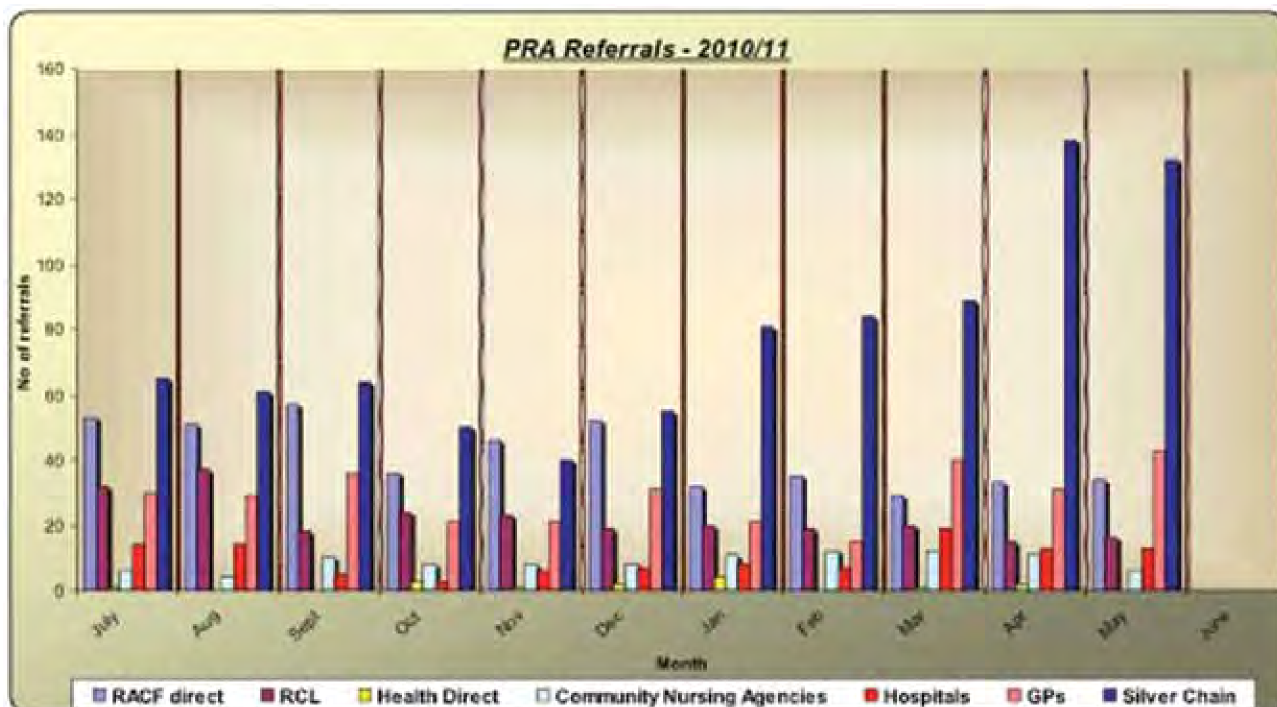
Opportunities to address these barriers include:

- Formal arrangements should be established to ensure that the medical directors of NMAHS and SMAHS HITH services are involved in the clinical governance of the Silver Chain Home Hospital service.
- When the above is established, there can then be co-development by both WA Health hospital staff and Silver Chain staff of shared referral protocols, care management pathways and conditions for referral to ensure role clarity and consistency in the nature and quality of care delivered.
- Silver Chain should participate in WA Health's sentinel event program.

Use of Silver Chain's Priority Response Assessment service

Activity levels of the PRA service are as illustrated below:

Figure 11: Activity Levels of Silver Chain PRA 2010/11



These data point to the existing relationships between RACFs, RCL and internally within other arms of Silver Chain. Various GPs interviewed in the course of the Review either had little awareness of the PRA service or were uncertain as to its value-add above the input of a doctor. Consequently, the latter group of GPs were inclined to refer patients to emergency departments for a more complete review, than to refer to PRA. Referrals from *healthdirect* Australia are low as existing *healthdirect* Australia protocols have not been updated to capture this option.

It is curious that community nursing agencies represent only a small proportion (<5 per cent) of referrals. Firstly, PRA accepts referrals from registered nurses. Secondly, these agencies may be limited in the options for patient assessment, particularly after hours. Further work should be undertaken by Silver Chain to understand this pattern.

PRA only accepts referrals from registered nurses or medical staff. Allied health care professionals are unable to refer to PRA and have indicated an interest in doing so. Patients referred to PRA are assessed within a four hour interval. Consequently, the rationale for Silver Chain's protocol is to ensure that only clinically stable patients are referred. This would seem an appropriate reasoning and the Review would refer further consideration of this to Silver Chain.

Recommendations

It is recommended that:

5. Structures are established to permit increased collaboration between hospital staff and Silver Chain to address current concerns regarding the robustness of clinical governance structures within Silver Chain. Specifically, the current medical directors of HITHs should formally be engaged in the clinical governance activities of Silver Chain's activities in these programs. In this way, shared care protocols for common patient presentations may be developed.

6. *healthdirect* Australia's protocols should be updated to include referral to Silver Chain's Priority Response Assessment service.

7. WA Health explore safety and quality mechanisms to ensure Silver Chain participates in WA Health's sentinel events reporting program.

3.2 Hospital in the Home

Components of 'hospital in the home' type programs (includes RITH and CoNeCT)

Hospital in the Home has been well established in its current structure since 2007 and is provided by NMAHS (Home Link comprising HITH and RITH for SCGH), SMAHS (RPH, FHHS and RGH) and CAHS (for PMH). Within NMAHS, HITH is aligned with RITH and CoNeCT under the Home Link umbrella. NMAHS Home Link program predominantly supports SCGH. The SMAHS HITH program is distinct from SMAHS RITH. Within SMAHS, RPH and FHHS operate independent HITHs with distinct governance structures. These tertiary HITHs support peripheral hospitals – predominantly RGH and to a lesser extent, SDH and AKDH.

Patients may be referred from one SMAHS HITH to another based upon the patient's place of residence e.g. an inpatient at RPH may be referred to the FHHS HITH if the patient's home address falls within the FHHS catchment. There is no referral of patients between NMAHS and SMAHS HITHs. WA Health has previously brokered a division of metropolitan Perth between NMAHS and SMAHS HITHs by postcode. The Review found no evidence that this was adhered to. Consequently, it has been reported that there are up to 100 suburbs shared by NMAHS and SMAHS HITHs. The Review considered this to be an inefficiency of the current system and recommends that the geographical boundaries of SMAHS and NMAHS HITHs be revised and complied with.

Irrespective of the hospital, patients may be referred to HITH via statistical discharge:

- from a hospital ward
- directly from emergency departments
- from hospital clinics
- from consultant rooms
- following consultation by a hospital consultant from the community.

Acceptance into HITHs is conditional upon agreement of the patient, responsible medical officer and the nurse manager. HITH programs seek to interface with the patient's specialist, general practitioner and where required, community based ambulatory programs.

Rehabilitation in the Home

Rehabilitation in the Home (RITH) provides short-term post or sub-acute hospital substitution for allied health therapy in the home. RITHs initially commenced as domiciliary post acute rehabilitation services in the late 1980's but evolved to the current structures in 2000 (in NMAHS) and 2006 (in SMAHS). RITH in NMAHS is delivered under the Home Link umbrella formed when several community-based rehab programs based at SCGH amalgamated in 2000. It receives referrals from SCGH and OPH. Since January 2011, JHC has had access to a RITH program. In SMAHS, RITH commenced as a pilot project in FHHS in June 2005. It amalgamated with the RPH RITH service in July 2006 to become a SMAHS-wide RITH service. While the functions of HITHs provided by NMAHS and SMAHS overlap with Silver Chain's Hospital at the Home, no corollary currently exists within Silver Chain for RITH.

Referral into RITH follows similar paths as for HITH (although the RITH coordinator substitutes for the role of the HITH nurse manager). It should be noted that as a consequence of the philosophical basis for RITH, referrals from ED are uncommon.

Complex Needs Coordination Team

More recently, the Complex Needs Coordination Team (CoNeCT) service was established. Adopting the NMAHS approach which defines CoNeCT teams as a unit within the HomeLink[5] umbrella, the Review will discuss CoNeCT in this section of the report.

This is an initiative of the WA Government's FINE scheme. It was jointly established in SMAHS and NMAHS in November 2010 with a budget of $1.13 million (NMAHS) and $1.7 million (SMAHS) for the 2011/2012 financial year. This program is designed to respond to the needs of complex patients who are frequent presenters to the acute hospital setting and often have extensive hospital admissions. Eligible patients are characterised by frequent acute care usage (> 3 ED presentations or admissions in a 12 month period); prolonged (>10 days) hospital admission and exhibiting any one or a combination of physical, cognitive, medical or other impairments. Additionally, ED CCTs may refer a patient deemed at high risk of readmission. The program provides individually tailored service linkage, advocacy and support in the community to reduce avoidable ED presentations and hospital admissions and improve continuity of care.

Intuitively, one would postulate that by coordinating care and brokering services, CoNeCT provides an invaluable support to patients, families and healthcare professionals. However, no data are yet available regarding the efficacy of CoNeCT.

Governance of Hospital in the Home

Where the key reason for HITH referral is a requirement for intravenous antibiotics, medical governance of the patient falls to the infectious disease consultant. Where a patient is referred to HITH for other reasons, medical governance sits either with the on-call medical team or the patient's referral specialty team. The significance of this cannot be underestimated. The ability of specialty teams to refer to a consultant working within their hospital and known to them provides a measure of reassurance which is not replicated in the existing relationship with Silver Chain.

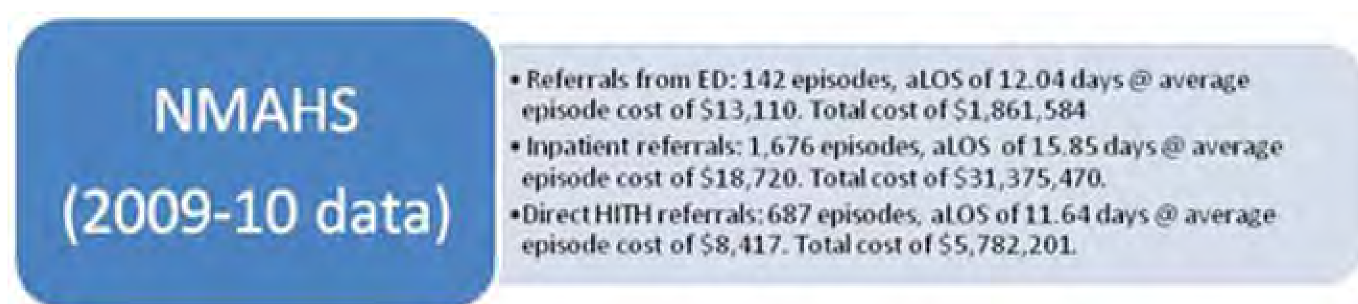
Occasionally, patients may be referred from HITH to Silver Chain's Home Hospital program or other community ambulatory care provider. This may occur when the patient progresses from requiring post-acute to sub-acute or chronic care. In such instances, the HITHs have tended to devolve responsibility for ongoing routine care to these agencies. Referral to Silver Chain's Home Hospital may also occur where a patient lives outside the catchment of a metropolitan HITH service but requires post-acute care. In such instances, the referring HITH clinician has tended to maintain governance of the patient's care.

Funding and resourcing of Hospital in the Home programs

Funding is provided entirely by the WA Health budget and distributed via NMAHS and SMAHS. By way of a snapshot, cost and activity data have been provided by NMAHS (see figure13).

5 Home Link

Figure 12: Activity Levels of NMAHS HITH 2010-11



Use of the Hospital in the Home program by metropolitan public hospitals

The number of separations and length of stay within HITH programs are captured below.

Table 7: HITH separations and length of stay, by site, Jan-Dec 2010

Hospital	Separations	Average LOS	Average HITH LOS
SCGH	2078	16.9 days	11.5 days
Swan/Kalamunda	68	30.6 days	19.6 days
Fremantle/Kaleeya	2130	17.7 days	11.7 days
RPH Wellington St	2497	16.1 days	12.2 days
Rockingham	450	10.8 days	8.8 days

Referral patterns to HITHs from the above sites are as follows.

Table 8: HITH admissions, by original location, for each site Jan-Dec 2010

Hospital	Elective waitlist	Elective not from waitlist	Emergency direct admission	Emergency ED admission	Emergency not further specified
SCGH	408	632	126	656	256
Swan/Kalamunda	-	54	8	6	-
Fremantle/Kaleeya	485	743	140	638	124
RPH Wellington St	301	1255	144	403	394
Rockingham	92	62	335	1200	616

Table notes:

1. Data obtained from Performance Activity and Quality Division.
2. Emergency direct admission is defined as referral requiring HITH admission within 24 hours without an ED admission.
3. Emergency ED admission is defined as requiring HITH admission within 24 hours via the hospital's own ED.
4. Elective waitlist is care that is necessary but admission may be delayed for at least 24 hours.
5. Elective not from waitlist may include non-urgent obstetric cases, repeat admissions for renal dialysis, chemotherapy, check cystoscopy and follow up endoscopy.

This data needs be interpreted with the following caveats in mind:

- Referrals from ED, which required admission to ward/short stay unit prior to HITH, are recorded as emergency ED admissions.
- Referrals to Silver Chain Home Hospital are not categorised in a similar manner.

Consequently, the number of referrals originating from ED may be artificially high. The lack of consistency in classification also precludes direct comparison of referrals from ED to HITH vs Silver Chain HATH.

The Review noted much variability between and within hospitals and AHS in:

- the availability of HITH services across metropolitan public hospitals,
- the use of HITH versus HATH across these sites.

Within NMAHS, Home Link appears to be predominantly a SCGH service, whereas in SMAHS the tertiary hospital HITHs support the peripheral sites. JHC is not supported by a HITH and therefore its ED tends to refer to HATH, SCGH ED and in patient wards refer to HITH and SDH ED to both HATH and NMAHS and SMAHS HITH. In SMAHS, RPH wards have high usage of HITH but not HATH whilst RPH ED has a strong preference for HATH. In FHHS and RKH, HITH is used, almost to the exclusion of other services.

These data, coupled with interviews conducted in the course of the Review indicate:

- variability between emergency departments as to referrals to HITH or HATH
- variability between departments within a single hospital as to referrals to HITH or HATH
- variability between hospitals and AHS in the use of HITH or HATH
- limited intra-HITH transfers between hospitals and AHS, leading to significant overlap in the geographical coverage of HITHs.

HITH staff were questioned as to whether these referral levels were appropriate. There is currently no mechanism to readily audit this. However, staff from the Director-General's Office in the Department of Health provided data suggesting that a significant proportion of patients admitted to hospital bearing ambulatory sensitive care conditions. Whether these are truly uncomplicated cases must be verified. If these are truly uncomplicated cases, clinicians may wish to consider whether alternatives to inpatient treatment are appropriate.

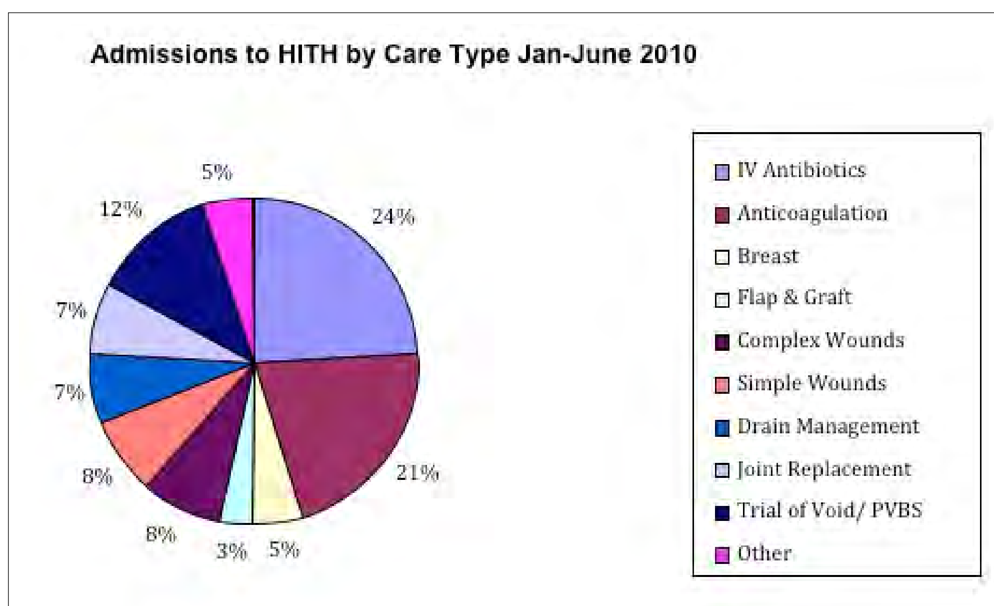
Thus opportunities to increase efficiencies include:

- Definition of ambulatory care sensitive conditions which may be managed in the patient's home environment by community providers.
- Consistent use of community based providers for such conditions across inpatient and outpatient departments of WA metropolitan hospitals.
- Identification of complex patients who would benefit from continued care within the community by hospital providers.
- Coordination between hospital based HITHs to distribute patient care along geographical rather than hospital or AHS lines.

Clinical profiles of patients cared by Hospital in the Home

The following data from Home Link (NMAHS HITH and RITH) 2010 report summarises the services provided by these programs in NMAHS.

Figure 13: Breakdown, by clinical profile, of patients cared for by NMAHS Home Link services



The clinical activities of the various HITHs are generally similar, with some variation, likely reflecting the differences in clinical services provided by specific hospitals. For example, interviews with FHHS HITH staff indicate that cellulitis represents the bulk of cases requiring intravenous antibiotics. In contrast, an audit of RPH HITH patients between 1 April 2010 and 31 March 2011 indicates that patients with skin and soft tissue infections accounted for only 14.1 per cent of intravenous antibiotic bed-days (89 patient episodes with a median admission of seven days). In contrast, orthopaedic and spinal infections and podiatric complications of diabetes accounted for approximately 60 per cent of RPH HITH patients on intravenous antibiotics. The latter cohort has a median HITH admission of 30 days. Such patients are frequently on dual or sequential infusions and often prescribed antibacterial, anti-viral and anti-fungal agents which are not used in general practice.

Thus, one needs to consider the heterogeneity of HITH patients, even those requiring similar types of care e.g. intravenous antibiotics. Patient acuity must determine the appropriate team providing care. The management and governance of complex patients should not exclude specialist teams.

The Review notes that while it is commonly held that patients with urinary tract infections requiring antibiotics are a frequent referral to HITHs, the above RPH audit indicates that urinary tract infections accounted for only 3 per cent of all bed-days in the intravenous antibiotic arm of the RPH HITH.

Opportunities for streamlining care and the needs of patients with chronic disease and complex needs

The impact of chronic diseases upon patient's quality of life and outcome measures, as well as demand on health services, requires a system response. Numerous efforts have been initiated

but few have been sustained or propagated in a systematic manner. The following section will address the interface of primary care with WA's public hospitals and seek to develop a discussion on a global response to addressing the needs to patients with chronic disease and complex needs.

A striking feature in the Review has been the diverse approaches to the management of low-acuity patients across WA's metropolitan public hospitals. Where RPH emergency would refer a patient with cellulitis to HATH, SCGH emergency would tend to refer the same patient to HITH. This suggests a redundancy in the system and no functional differentiation between these two services in relation to the care of non-complex patients. Therefore, the Review recommends that low-acuity patients with ambulatory care sensitive conditions who require defined episodic interventions are not managed by HITHs but instead referred to Silver Chain's HATH.

To achieve this, it is imperative that both hospital staff and Silver Chain work in closer collaboration to:

- address the concerns raised regarding the clinical governance of Silver Chain
- develop shared care and referral protocols which define the roles and responsibilities of hospital and Silver Chain staff and the patient's GP
- define the clinical conditions and exclusion criteria for referral of low-acuity patients to Silver Chain
- define communication pathways to "close the loop" when the patient's episode of care within Silver Chain has been completed.

By doing this, it is intended that there be:

- increased clarity in the referral mechanisms from both emergency and inpatient departments
- improved relationships between hospital and Silver Chain staff
- consistency in the clinical management of patients with ambulatory care sensitive conditions irrespective of the care provider
- increased opportunity for HITH staff to focus upon the needs of complex patients
- increased opportunity for HITH staff to address the longer term needs of patients with chronic disease.

Recommendations:

It is recommended that:

8. Emergency departments, outpatient and in-patient services refer patients with ambulatory care sensitive conditions (such as cellulitis, deep vein thromboses, pyelonephritis) to Silver Chain's HATH.
9. HITHs provide only specialist services not appropriate for referral to Silver Chain's HATH i.e. patients with complex care needs or patients with chronic diseases.
10. HITH teams should refer patients enrolled in one HITH but living within the catchment of another HITH team to the latter. To facilitate this:
    - patient care, referral and communication protocols are developed
    - the geographical boundaries of the various HITHs are re-assessed and agreed between AHS.
11. Secondary hospitals which currently do not have a HITH should use Silver Chain's HATH for low acuity patients and a tertiary HITH for complex patients.

4. The Primary Care Interface

After-hours and extended hours GP services merit consideration as alternative providers who may either reduce the demand on ED services, represent a referral option from ED or refer patients to ED themselves.

Additionally, it is now recognised internationally that integration between hospital services and healthcare delivered by community-based primary health care providers is critical to improving population health, reducing inequalities in health, and creating a seamless care pathway for health consumers. A number of reviews have now demonstrated that stronger primary care systems lead to better health outcomes. These are in keeping with the recognition that the patient journey traverses both primary care and hospital environments and addressing the patient's needs in one domain alone fails to deliver long term improvements in patient outcomes. Additionally, numerous examples show that lower rates of hospitalisation for many ambulatory care sensitive conditions (ACSCs) are associated with receiving good primary health care and not inconsistent with favourable patient outcomes. WA Health's Primary Care Strategy endeavours to influence and build the capacity of the Primary Health Care sector in order to address the issues pertinent to the care of patients and to take alleviate pressure off our secondary and tertiary services where appropriate.

In considering interventions to alleviate pressures upon ED, it is therefore necessary to understand the drivers for their use.

Why do patients use emergency departments?

Patients seeking after hours medical advice or attention have several alternatives including *healthdirect* Australia, RCL[6], an after or extended hours GP service and deputising locum services. Frequently, patients attend an emergency department due to lack of awareness or trust in the alternatives. There are however, other instances where it does not appear that patients have a preference between providers.

Indeed, the Review was informed that in some cases, patients will "queue" at both the emergency department and the GPAH. Potentially, ED staff could inform low-acuity patients of GPAH or GPEH services in their proximity at the point of triage. The extent to which emergency staff already do this is unknown. Triage staff do not record the occasions on which such information is provided to patients nor the outcome of these conversations. Thus, it is not possible to report either the frequency nor the nature nor the timing of such presentations.

The discrepancy between the cost of GP attendance and treatment at an emergency department was also raised as a factor determining patient choice between GP and ED. Notably, of the eleven GPEH practices funded by WA Health, only three fully bulk-bill. The GPAH services offer bulk-billing services to concession card holders and under 16s. The socioeconomic profile of the populations living adjacent to many metropolitan emergency departments would suggest that this may be a significant factor determining place of presentation. As access to care is key to patient outcomes, options which increase affordability of primary care should be considered. For example, in the GP after hours services located at RGH and AKDH patients referred from emergency are bulk billed.

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6 Residential Care Line may be accessed by healthcare professionals working within residential aged care facilities. There is no direct access for the general public to Residential Care Line.

Although elderly patients are not the largest cohort of presentations to emergency departments they are frequently maligned thus or considered to require short-stay admissions. Therefore, the reasons for referral to emergency by RACFs were briefly discussed by the Review team. Inadequate access to after hours GP services was a key driver for patient transfer to emergency departments. RCL provides Outreach Services in hours and is supported by Silver Chain's PRA team after hours. Usage of the latter service is currently limited by its referral criteria – only doctors and registered nurses may refer. Staffing pressures upon aged care facilities are such that a registered nurse may not always be available. Additionally, even where a referral to PRA may be made, the lack of an (after hours) aged care workforce frequently results in a transfer to emergency department. This also limits the ability of hospitals to discharge patients to residential aged care facilities. Finally, awareness of and trust in PRA is a limiting factor for referrals from some residential aged care facilities.

Interventions which may be considered thus include:

- patient education as to the availability of (bulk-billing) after hours GP services
- patient education of the availability of alternative care providers
- consideration as to the cost and benefits and mechanisms by which access to bulk-billing practices may be enhanced
- awareness raising within residential aged care facilities of services such as RCL's Outreach Service or Silver Chain's PRA team.

Why do GPs refer non-emergent patients to emergency departments?

There are several options available to GPs seeking to refer a patient for further care. These may include referral to RCL, a deputising locum service, Silver Chain's PRA service and *healthdirect* Australia. Where after hours GPs refer a patient, it is most frequently to the patient's regular general practitioner. Few general practitioners who were interviewed have used Silver Chain's PRA service. In some instances, this was due to a lack of awareness of the service. In others, there was the perception that a nursing intervention would not add further value to the general practitioner's input. In such cases, the tendency was to refer the patient to a local emergency department instead.

Reasons cited by GPs in the course of interviews for referral to emergency departments included to:

- gain hospital admission in order to address a medical need
- obtain an episodic and clinically necessary intervention
- resolve diagnostic uncertainty by accessing imaging or pathology facilities
- expedite specialist review.

At least one general practitioner noted that referral to emergency departments is often the path of least resistance, requiring neither formal referral process nor further effort on the part of the general practitioner. Although cynical, this statement is consistent with the ethos within emergency departments to accept all patients, regardless of medical need or urgency.

Options which may address the needs highlighted above include:

- Increased access of primary care providers to pathology, imaging, pharmacy services. The impact of GP super clinics will therefore be of interest.

- Reserving a small proportion of outpatient bookings for urgent appointments should the extent of this practice merit it.
- Education of GPs on the role of emergency departments.
- Development of referral pathways from primary care to hospital environments.

Programs to relieve demand for emergency department services

Presently WA Health provides financial support to numerous primary care providers in an attempt to support patient choice and act as ED diversionary measures. Such services include:

GPAH – co-located on hospital sites and open after hours in the evenings and at weekends

GPEH – with funding provided to existing General Practices to operate after hours on weeknights and at weekends.

Figure 14 illustrates both GPAH and GPEH locations across the metropolitan area.

Figure 14: After hours GP services in metropolitan Perth by geographical location

GP After Hours Program (GPAH)

Five GP After Hours clinics are contracted by the Department of Health WA to operate across the metropolitan area at SDH, JHC, RPH, FHHS and RGH. All services operate weeknights and at weekends. Opening times vary, with all sites operating to at least 10.00pm weeknights and 9.00pm on a weekend. All sites offer bulk billing services (under 16 year olds and Health Care Card holders) with bulk billing rates of patients varying from 55 per cent of all attendees at GPAH Royal Perth Hospital to 74 per cent of all those who attended GPAH at SDH[7].

Table 9: WA Health funded GPAH attendances and referral types during June 2010-May 2011.

	Total Attendances June 2010-May 2011	Referral Type				
		Self/Walk Ins	From ED	Back to ED	Walk-in to ED	health direct Australia
GPAH Swan District Hospital	**20192**	17,157	2,845	98	423	190
Joondalup Health Campus	**18183**	16,426	595			1162
Fremantle Hospital	**7331**	6,625	592	16	429	114
Royal Perth Hospital	**11313**	9,335	1,764	63	290	214
Rockingham and Kwinana	**9112**	8,032	1,024	40	280	59

Data provided by Performance and Reporting Branch June 2011

The majority of attendees at GPAH services are self referrals/walk-ins, with ED referring a minority of patients – less than 3 percent at some sites.

General Practice Extended Hours program (GPEH)

The ‘Grants to After Hours General Practice Program’ is a State Government commitment of $8.4 million over four years to encourage GPs to extend their opening hours to include weeknights and weekends. The Program provides grants to assist with the viability of those General Practice services wishing to extend their hours of operation into the after hours period (GPEH).

Now in its third year, the Program has funded eleven general practices to help give families greater flexibility about when and where they can see a GP. In addition $1.1 million has been used to boost three innovative primary care programs to help reach homeless and marginalised people. A further two programs are to commence mid 2011 to support the Primary Care sector.

Five practices offer services across the metro area, operating to at least 10.00pm on weeknights, and opening Saturday afternoons and Sunday mornings. Monthly attendances are each site varies and are captured below.

7 Bulk billing rates based on June 2010-June 2011 figures provided by WA Health Performance and Quality Division

Table 10: After hours attendances to GPEH clinics, contracted under the 'Grants to After Hours General Practice Program'

	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011
Canning Division of GP	858	982	1100	861	995	970
GP After Hours Clinic & MDS Ellenbrook	588	495	519	492	569	508
Rockingham Kwinana Division of GP	193	217	184	132	148	170
Scarborough Beach Medical Centre	372	393	506	354	446	491
Sonseeker Medical Centre*	159	130	*	*	*	*

*Funding Contract period 1 December 2009 to 31 December 2010

Additionally, the billing practices across sites vary. Some practices offer full bulk billing to all their patients, others bulk bill under 16 year olds and Health Care Card holders, whereas one practice bulk-billed only 9 per cent of patients that attended their General Practice during extended hours.

In January 2011 a media campaign was launched informing the public of the availability of those General Practices open extended hours. An iPhone application was launched, together with bus shelter and poster distributions and regular newspaper advertisements placed in the local community newspapers and *The West Australian*. An initial review of the monthly data indicates a limited increase in attendances although a full media and program evaluation is currently underway. Despite these efforts some practices who are funded under the program are of the opinion that the program has not been advertised sufficiently and consequently they are having limited impact on ED diversion.

Some GPs felt that attendance figures could be increased via referrals from other health professionals, namely from *healthdirect* Australia and EDs. One GP described how they direct patients to ED, and that these actions should be reciprocated. In contrast ED staff questioned why they would ever send a patient to a GP open extended hours - given that most practices opened extended hours are located between 4km-11km from a hospital ED, and that the patient had already made the effort to make the journey to ED, they doubted whether this would be a referral route that they'd ever employ.

Grants to General Practice After Hours Program – targeting marginalised groups

The Grants to General Practice After Hours Program also funds services to the homeless and marginalised groups. Australian Locum Medical Services (ALMS) has been funded to provide medical care throughout the after hours period for patients in their home or residential aged care facility. Perth Mobile GP and Freo Street Doctor have been funded to offer health care services to the homeless and marginalised across the inner and outer metropolitan areas on a sessional basis. Each of these services is offered to patients as an alternative to attending a hospital emergency department for non-urgent care in the metropolitan area. All service providers fully bulk bill their patients.

Table 11: Targeting marginalised groups – Home care and Mobile GP services attendance figures Nov 2010-April 2011

	Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011
ALMS	1354	1380	1235	944	1200	1457
Perth Mobile GP	285	146	209	227	334	273
Freo Street Doctor *	20	21	25	24	24	18

* The Grants to General Practice After Hours Program has funded the Freo Street Doctor for two sessions per week only – these figures do not reflect any other sessions provided by Freo Street Doctor that are funded from alternative sources.

During interviews many advocated the provision of services for marginalised and homeless groups, outlining the benefit of targeting this cohort of patients who often present to ED with complex co-morbidities. Others highlighted the benefits of home care (deputising) services, as an ED avoidance strategy, with opportunities available for future working put forward.

Relationship between emergency departments and primary care

There is a variable relationship between ED and both GPAH and GPEH services.

In some co-located GPAH services, there is a strong relationship with the emergency department. In some of these sites, a number of GP appointments are reserved for potential referrals from ED and patients seen by the co-located GP may well receive imaging and pathology tests at the hospital, results of which are then reviewed by either the after hours GP service or referred to the patient's GP for review the following day.

ED staff were aware that during certain days these services provided a valuable role by offering patient choice and in diverting patients away from ED. Many sites described how ED and GPAH staff members are in constant contact throughout the night, updating each other on the wait times for their service and of their desire to accept any more patients.

> *"We just ring them and say "What's your wait time like? How busy are you?" and they say "Oh an hour ... 45 waiting" or whatever…they tend to be quite busy though. At ten o'clock at night don't they say "We're not taking any more… because we close at 11 so they put a cap on how many patients."*

Some sites described a close working relationship with other hospital based services such as imaging. Such arrangements could potentially alleviate the need for patients to present to ED. Generally, such patient pathways had been negotiated with the hospital to enable the GPAH provider to offer an enhanced service.

> *"We have an arrangement around imaging that they are fast tracked through. So that if the patient has come to us and they need imaging we would then send them back to the ED with a slip, they're fast tracked through, the results come back to us."*

At other GPAH services there is little interaction between the two departments which effectively operate in isolation from each other. Such sites spoke of being disappointed by the relations with their GPAH service, some indicating how they had high expectations of the GPAH services' ability to take many of the ATS four and five patients, but this has failed to materialise.

> *"When it first started we envisioned that we would be able to refer all the problems of the … the patients presenting with GP problems that could be dealt with by a GP and that would have been wonderful. But that was our perception of it. Whereas the perception is that they're required to, you know, show productivity and activity and all the rest of it. So they allocated us the two slots per hour."*

The review has heard a variety of reasons for this including:

- The hospital ED does not refer patients to the GP as it tends to protect its turf.
- It is not appropriate for hospital EDs to refer patients to GPs when the patients have determined that they require hospital level care.
- The GP would only refer the patient back to ED.
- The size of the hospital and rate of staff turn-over.

Hospital staff members spoke of how there was a tendency to treat all patients who came into ED, irrespective of the triage category, as it was much easier and quicker to offer support to the patient within the ED environment rather than refer them onto an alternate provider.

> *"So we tend not to because it's actually more hassle to actually send them off to a GP than it is to just deal with them."*

Some indicated how there was an element of risk when the patient was transferred to another provider, a risk that some within management felt was too great to take and therefore preferred that their staff treat the patient within ED.

> *"Yeah, occasionally if it's a really busy day and there's a big line and it's obviously a GP thing I think some of them … although I must say as a Director I never liked that because, you know, it's presuming that you really know somebody's minor, and we've all seen minor patients who turn in to catastrophes."*

Data reported previously indicates that the notion that GPs would only refer patients back to ED may be challenged as less than the percentage of patients referred by GPAH to ED is low.

Consistency in documentation of patient disposition from triage

Discussions with ED staff members have highlighted a need to develop consistent approaches to documentation of advice provided to patients at triage and the outcome of these discussions. Currently, the processes by which each ED records the referral to (co-located) GPAH includes:

- No recording of patient details or referral within EDIS: some staff members described a process at triage whereby the triage nurse listens to the patient before recording any details within EDIS. If the triage nurse feels that the patient is appropriate for the GPAH service, she will inform them of its location and instruct them on the waiting time currently within ED, offering the patient choice of an alternate provider. Should the patient decide to utilise the GPAH services, then no patient details are recorded within EDIS.

- Triaged and entered EDIS then removed: one site described a process whereby at triage all data would be inputted into EDIS. Upon referral to the GPAH service, the patient's details would be removed from the system.
- Logged onto EDIS as a Did Not Wait: one site described how the patients are all placed onto EDIS at triage. If they were referred onto GPAH they would be left onto the system and then there would be a follow up phone call to the GPAH service after a period of time to ensure that the patient has been assessed. As there is no template within EDIS for 'attends GPAH service' the patient would be listed as a Did Not Wait and staff members would sometimes enter on the clinical comments as 'attended GPAH'.

Irrespective of this Review, it is necessary that the details of all patients presenting to any ED are recorded. The documentation needs also capture the reason for presentation, any advice provided to the patient and the person from whom this advice was received. Where the patient chooses to use a GPAH in lieu of ED, this too, needs to be recorded. This is necessary to ensure clinical governance of triage processes and would also permit better analysis of the workload of EDs.

The availability of private hospital facilities in the pre-hospital environment

Private hospitals, such as Mercy Hospital, Hollywood Hospital, and St John of God (SJOG) Murdoch and Subiaco offer GPAH services and an additional choice of health care provider for those patients willing to pay on weeknights and at weekends. In addition SJOG Murdoch also offers those patients willing to pay access to an Emergency Department 24 hours a day, seven days a week.[8] Out of pocket costs are based on the triage category assigned upon registration to the emergency department. Out of pocket fees are charged and not refundable from private health insurance or Medicare.

Table 12: St John of God Murdoch, Emergency Department Fees (Figures provided by SJOG Murdoch 30 June 2011)

Triage Category	Out of Pocket Expenses
ATS 1	Full Rebate
ATS 2	$360
ATS 3	$290
ATS 4	$230
ATS 5	$175

Data analysis and discussions with SJOG staff has indicated that the private sector ED caters for nearly 23,000 patients per annum, with approximately 20 per cent of those admitted and 80 per cent discharged home. The majority hold private health insurance. The ED caters for patients with all levels of acuity, with figures indicating that the numbers of higher acuity patients are increasing – according to SJOG staff - a factor influenced in part by capacity within the public sector environment.

8 The out-of-pocket fee is based on the triage score covers: triage assessment; nursing care; facilities and equipment access; pharmaceutical and surgical supplies used.

"I would say that the Emergency Department here has changed over the last 14 or 15 years that it's been in existence, and it's definitely seeing higher acuity patients…we're seeing much higher acuity and many more patients who are generated by Ambulance who require admission who we're admitting and treating. Some of the reasons behind that are because the public sector we're finding has a very tight ICU capacity."

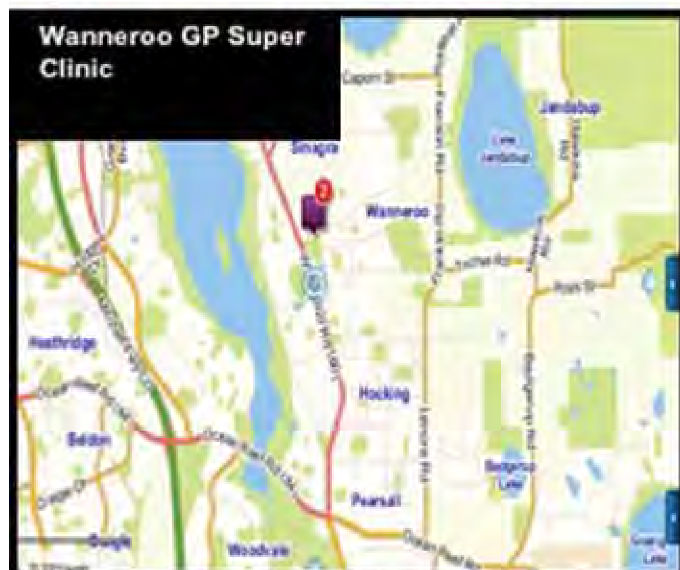
GP Super Clinics

This has been the basis for widespread debate in WA since the announcement of the Commonwealth Government election commitment in 2007. GP Super Clinics are intended to offer an array of integrated primary care services in a single location. Staffing will include multidisciplinary and allied health teams. There will also be facilities for diagnostic testing. The majority of GP Super Clinics will offer after hours services.

Three GP Super Clinics are planned within the metropolitan area: Midland, Wanneroo and Cockburn. The GP Super Clinics at Midland and Wanneroo are jointly funded by the Commonwealth and WA State Government (with a total allocation of $10 million for each).

The Cockburn GP Super Clinic will be funded in part through a direct allocation of $6.65 million from the Commonwealth. This is in addition to $15 million plus land package from Cockburn Council.

Figure 15: GP Super Clinics in metropolitan Perth



Midland GP Super Clinic

- owned and Operated by Health Integra
- located in Midland railway Workshops (opposite proposed site of new Midland Health Campus
- $12 million total funding Package ($5 million Commonwealth, $5 million WA Health, $2 million Health Integra)
- scheduled to open February 2012

Wanneroo GP Super Clinic

- owned and Operated by Edith Cowan University (ECU)
- consortium involving Independent Practitioner Network (IPN) and City of Wanneroo
- located in Wanneroo Town centre (next to Library)
- $15 million total funding package ($5 million Commonwealth, $5 million WA Health, $5 million ECU)
- scheduled to open June 2012

Cockburn GP Super Clinic

- owned and Operated by City Of Cockburn
- consortium involving Fremantle GP Network
- located in Cockburn Town Centre and part of health precinct that will incorporate Library and office accommodation
- direct Commonwealth funding allocation of $6.65 million. Land and funding allocation totalling $29 million by Cockburn.
- scheduled to open December 2012

Midland GP Super Clinic has indicated that they will fully bulk-bill all general practice patients, with Wanneroo GP Super Clinic indicating that under 16s and Health Care Card holders will be bulk-billed when accessing their services. Cockburn GP Super Clinic is currently advertising for the provider of GP Services.

Thus there is opportunity for these GP super clinics to

- undertake greater multidisciplinary support of patients following hospital discharge
- provide more diagnostic support which may alleviate some ED attendances.

It is important that these GP super clinics operate in a coordinated manner with hospitals and AHS. Further work is therefore required to define the services which each will provide and relationships with SMAHS and NMAHS. There may be scope in contracts with GP super clinics to define outcomes in relation to ED diversion, integration with local hospitals, provision of chronic disease management support to patients and collaboration in management of hospital demand.

Recommendations:

It is recommended that:

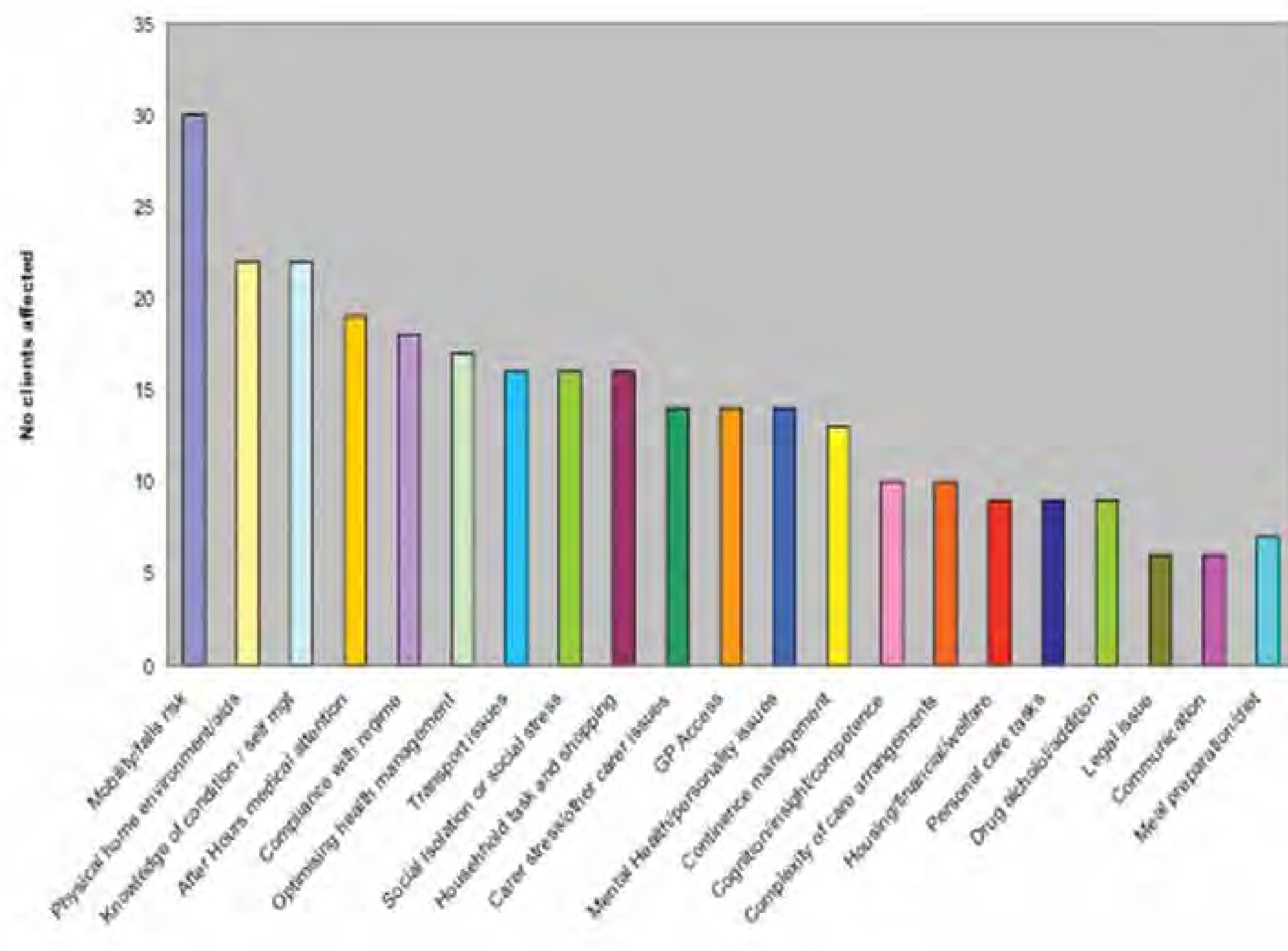
12. The location of after hours and extended hours general practices, particularly when co-located, should be readily accessible for patients awaiting care in emergency departments.
13. Where triage staff suggest to patients that they may wish to consult a GPAH or GPEH or other community provider, patient details (demographic and clinical data consistent with the detail usually obtained at triage) should be documented.
14. Information programs on the availability of alternate services are developed for both patients and healthcare professionals.
15. The feasibility and benefits of allocating reserved outpatient appointments for urgent referrals are examined.
16. The chronic disease health network, NMAHS planning teams and SMAHS clinical clusters develop protocols and clinical pathways for the referral of patients between primary care and hospital services, to avoid unnecessary emergency presentations.

5. Addressing the needs of patients with chronic complex conditions, opportunities with the Commonwealth Reforms

Life expectancy in Australia has increased throughout this and the previous century - even at age 85, males and females can expect to live a further 6 and 7.1 years respectively. These achievements carry implications for disease and disability patterns, health and aged care services. Section 4 noted that the impact of chronic disease upon emergency and in-patient environments is growing.

In addressing the needs of patients with chronic disease, one needs acknowledge the interplay of medical-environmental and psychosocial factors. The NMAHS CoNeCT data also presages reasons for hospital readmission amongst this cohort. It is noteworthy that the issues highlighted below are frequently present at the point of discharge, implying re-admission risk may be predicted and appropriate strategies instigated. Several factors below such as "knowledge of condition/self management", "compliance with regime" and "optimising health management" may represent opportunities for patient engagement.

Figure 16: NMAHS CoNeCT figures of predicted hospital readmissions, by number of affected clients and reason for readmission



Such data argue for a global approach marrying medical or surgical interventions with intermediate term programs to improve the patient's understanding of disease, adherence to treatments, access to rehabilitation and support services and monitoring; to the management of patients with chronic disease. In addition, such approaches may potentially smooth patient transitions from hospital to post-acute care and thereby reduce avoidable readmissions.

Extending hospital care to patients in the community

With growing specialisation, the practice of medicine has become fragmented and an individual clinician's input increasingly divorced from the entirety of the patient's experiences and journey. The (chronically) ill patient today has multiple care providers and environments in which care is provided. Transition points represent potential for error resulting in harm or readmissions.

Numerous international and local approaches have thus developed to address these issues. In the US, care coordination teams or transitional care teams comprising advanced practice nurses provide support to patients within the community. The practitioner-patient relationship commences in the inpatient period and persists post-discharge to ensure patients adhere to instructions for medication, treatment and self-care and establishing linkages with primary care providers. Some such programs use these opportunities to educate the patient on their condition and assist the patient to recognise symptoms signifying potential complications or deterioration and to differentiate these from those associated with recovery from an acute event.

Intermountain Healthcare's McKay-Dee Hospital Centre has been cited for the innovative nature and success of its programs targeting readmission for heart failure and pneumonia. McKay-Dee Hospital Centre in Utah has had readmission rates in the lowest three per cent of hospitals across the US for all three clinical areas reportable to the Centres for Medicare and Medicaid Services. Its heart failure and pneumonia readmission rates are within the best one per cent of reporting hospitals. Several strategies have been used to reduce cardiac readmissions. These include:

- inter-disciplinary care coordination and early discharge planning
- patient education
- early identification of at-risk patients
- targeted post-discharge outpatient follow-up of patients in a heart failure clinic.

Patients at risk of re-admission or admission are referred either at discharge or from the community. Clinic staff keep heart failure under control through early interventions, patient education and family involvement. Importantly, there is engagement with the patient's GP as the program aims to be a resource not a substitute for GPs.

Local examples include the Early Supported Discharge Model for stroke patients run from OPH and the COPD linkage program in RPH. In the stroke model, patients requiring continuation of care are identified in the inpatient period and establish a relationship with nursing or rehabilitation staff which continues following discharge where intensive rehabilitation is provided to patients in their home environment as required.

The COPD linkage program is delivered by a multidisciplinary team consisting of a physician, nurse and physiotherapist. Patients are referred by either hospital staff or a general practitioner. Attendance at the clinic permits medical review of the patient, assessment of compliance,

quality of life and medication issues, oxygen and rehabilitation requirements and development of an action plan and patient education. The program is provided by both NMAHS and SMAHS and medical governance at both sites is provided by the same respiratory physician.

Such these examples share the advantages of facilitating safe discharge home, providing care in the outpatient environment whilst maintaining the relationship and governance with the hospital based clinical team.

Expanding the role of hospital in the home to provide continuity of care

At this juncture, the Review notes that the hospital in the home concept captures both hospital substitution and hospital avoidance. In WA, we have tended to focus on the former. However, unplanned admissions represent inefficient healthcare and herald adverse outcomes for the patient. Thus, opportunities should be sought to address the latter.

The Review has previously recommended that low-acuity patients requiring non-complex interventions are referred to Silver Chain HATH. This should provide flexibility to focus upon the needs of complex patients or those with chronic disease.

Specifically, the Review recommends WA Health explore options which would allow hospital based medical and nursing teams to continue to provide care to patients with chronic disease following hospital discharge (or between admissions). These interactions should seek to better support the patient's ongoing care needs, enhance management of chronic disease and intervene early to obviate avoidable admissions. Thus, provision of continuing care to the patient should be seen as a continuation of inpatient care.

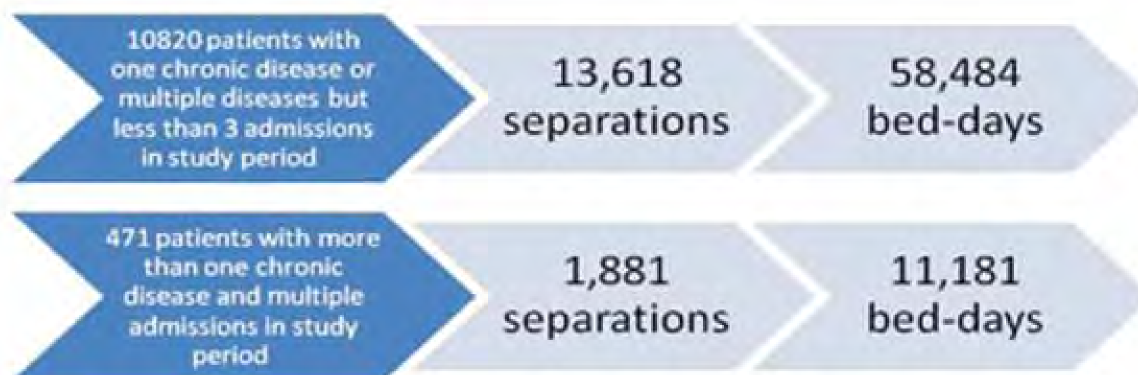
Figure 17: Continuum of patient care, as a continuum of inpatient care from a hospital setting to the community

In establishing such interventions, critical discussion points include:

- identification of target clinical conditions
- identification of appropriate patient cohorts with the above diseases
- identification of the intended endpoints
- mechanisms for engaging partners in primary, secondary and tertiary sectors.

Identification of target clinical conditions: Previous work has been performed to identify the nature and size of the chronic disease cohort. Work undertaken by Dr Jim Codde identified patients admitted to a metropolitan public hospital with a principal and possible secondary diagnosis of a specified chronic condition from the 2006-2007 hospital morbidity statistics. Approximately 11,000 patients were identified. The impact of these patients is summarised below.

Figure 18: Admissions to metropolitan public hospitals with a principal and possibly secondary diagnosis of a specified chronic condition, from 2006-2007 hospital morbidity statistics.



Of the former group (of 10,820 patients), the types of disease noted were diabetes (22.4 per cent), congestive heart disease (57.6 per cent) and COPD (11.4 per cent).

Within the latter group (consisting 471 patients), the most common chronic diseases were congestive heart disease and diabetes which were present in 95 per cent and 81 per cent of patients respectively.

Subsequent work both within WA and externally have confirmed the impact of these conditions. Target clinical conditions for enhanced outpatient management by hospital teams must therefore include heart failure, COPD and diabetes.

Identification of the appropriate patient cohort: Programs seeking to provide care coordination or hospital avoidance have tended to focus upon patients identified by numbers of hospital admissions/presentations per year, co-morbidity or frailty measures, or other social indicators predicting risk of deterioration. Patients likely to benefit from care coordination or transitional care programs need to be differentiated from those whose disease acuity or frailty is so high that these measures will not reduce their need for re-hospitalisation. Further work is required to identify tools which sensitively predict patients who are likely to benefit from such interventions.

Identification of desired endpoints: In developing and measuring such programs one needs to acknowledge that improved patient outcomes and resource utilisation may be overlapping or even dichotomous variables. This is particularly true in the short term. Health providers will need to clearly define the intended purpose which then informs the composition, methodology and assessment of these interventions.

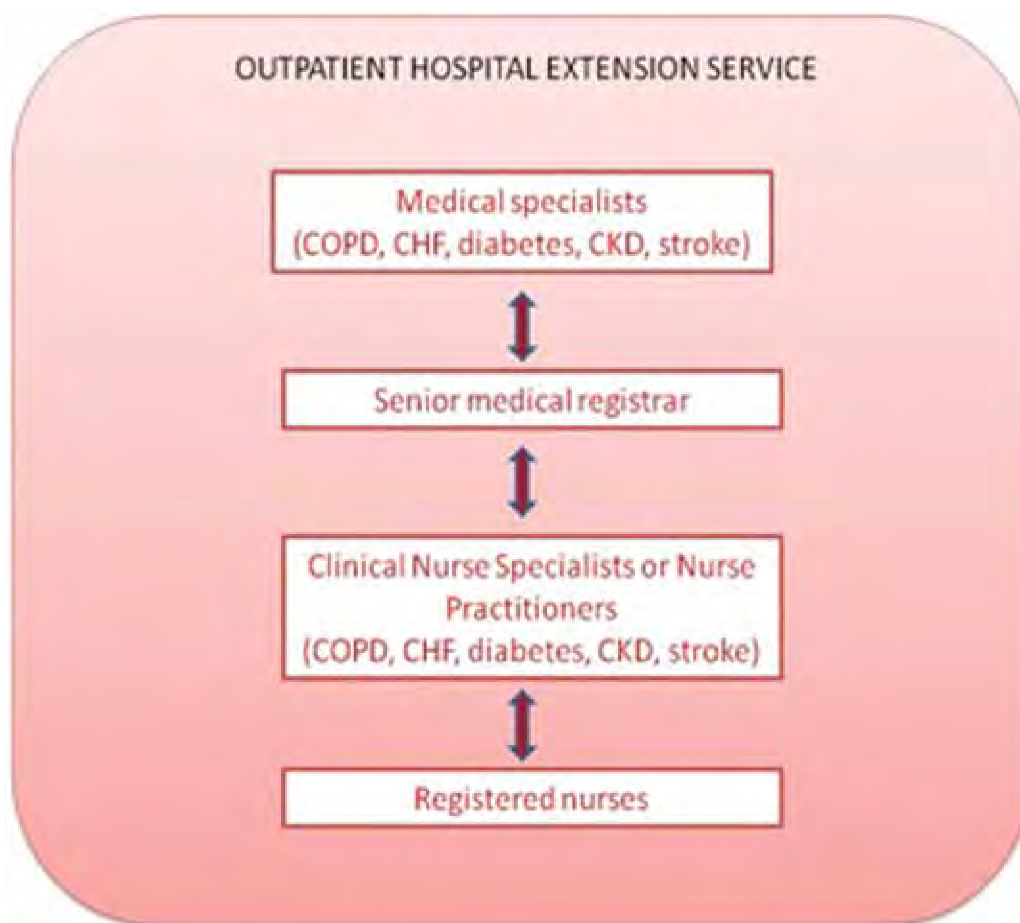
Designing form and function to meet patient needs

The Review notes that both NMAHS and SMAHS have established ambulatory care programs with similar target patients and approaches but under discrepant structures. In NMAHS, HITH, RITH and CoNeCT operate under the HomeLink umbrella. Within SMAHS, HITH, RITH and CoNeCT operate independently of each other. This appears to have arisen due to evolution

rather than design. The patient's needs (as opposed to the clinician or system's needs) should shape the development of clinical services. In relation to the care of complex patients or patients with chronic disease, a concerted multidisciplinary approach is required. This may be enhanced by the physical and organisational structure of services. Thus the Review commends the joint approach adopted by HomeLink and would recommend likewise for SMAHS.

The Review envisages a structure whereby the acute phase of disease is managed in an inpatient setting by ward based medical or surgical teams. During this phase, discharge planning is performed and patients deemed suitable for further transitional care programs and community based interventions are identified. As the patient nears discharge, contact is established with the transitional care team. This "outpatient" based team would comprise registered nurses, nurse practitioners and medical specialists with a background in chronic diseases of interest e.g. COPD, heart failure, stroke, diabetes and renal disease. Noting that patients frequently harbour more than one chronic condition, this expertise may be brought together by a senior medical registrar.

Figure 19: Schematic of the proposed outpatient hospital extension service team

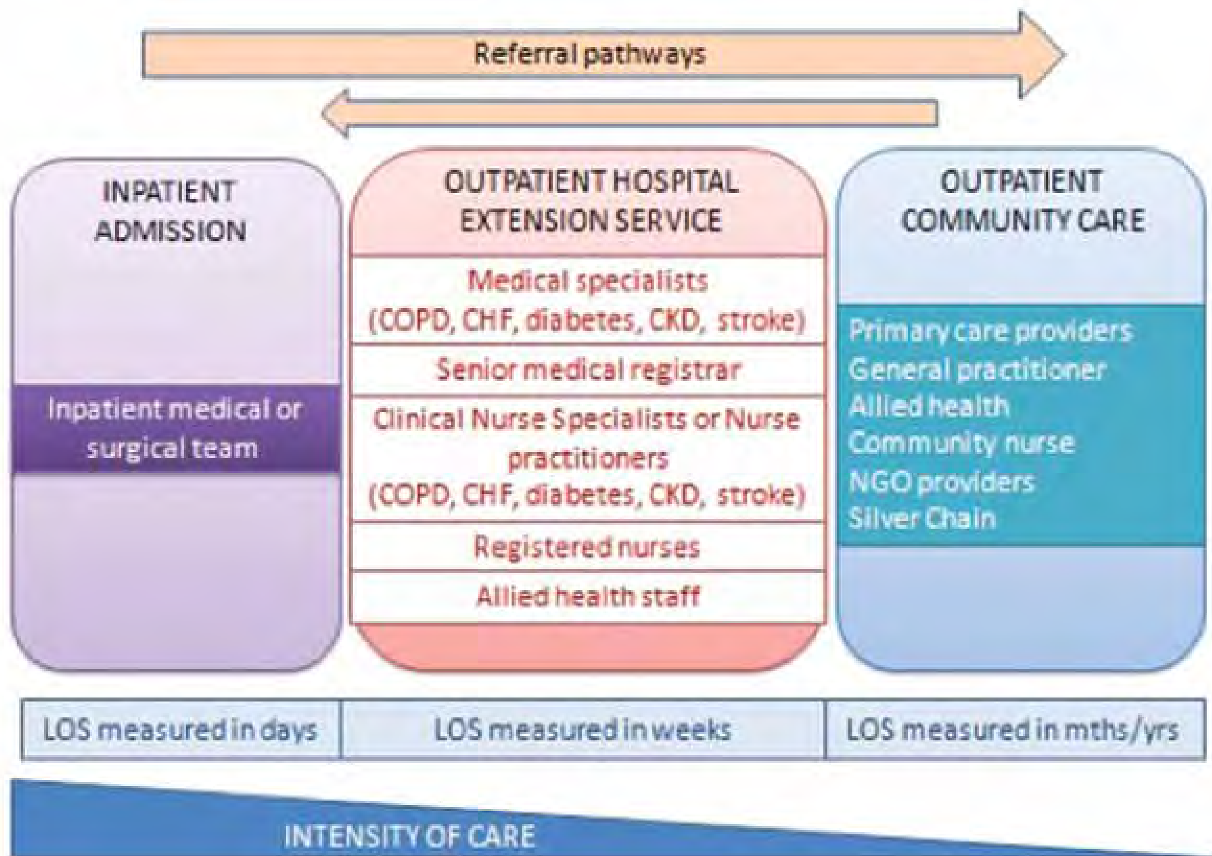


Thus inpatients meeting entry criteria would be referred for ongoing follow-up within the community by nursing staff. Referrals would be made to the senior medical registrar and subject to acceptance by the relevant medical specialist. The day to day engagement of the patient would be provided by nursing staff. These would be supported by the senior medical registrar with specialist input as required. Medical governance of the program would rest with the specialist physicians.

Engagement of primary care in patient management

The chronically ill patient traverses multiple environments throughout the disease course and management of such patients requires acknowledgement of the roles of hospital services, primary care providers and the patient in disease management. Hospital based patient care is therefore only a small element of the entirety of care required.

Figure 20: Context and referral pathways for the proposed outpatient hospital extension service



Mechanisms for engaging all stakeholders from the patient and their carer(s), the primary care and hospital sectors need to be developed. A recurrent theme throughout this Review has been the lack of communication and trust between hospitals and general practitioners and community based providers. This lack of connectivity leads to inefficiencies in care provision, often to the detriment of the patient. While improved information and communication technologies are frequently alluded to as a potential solution, they should not be regarded as sole panaceas as much opportunity remains.

At the heart of this discussion is the question – how may WA Health enable GPs and primary care providers to better partner with hospital providers in the care of patients? There are currently opportunities to enhance these collaborations. The Medical Benefits Schedule includes provision for rebates for discharge care plans involving a GP for patients with chronic conditions, terminal disease, complex care needs, mental health issues and those living in residential aged care facilities. These may be used to encourage GPs to work with specialists to map discharge pathways and future care needs of patients.

The Commonwealth reforms will see the establishment of MLs and LHNS. Each ML will be part of a national network of primary health care organisations, building upon the experiences of the Divisions of General Practice Network. Established as independent legal entities, they are intended to have strong links to local communities in order to respond effectively to local needs and assist patients and service providers to navigate the health care system to enable more coordinated care.

Other key reform activities undertaken within the National Health and Hospitals Network umbrella may include:

- transfer of funding and policy responsibility for primary health services to the Commonwealth
- establishment of local hospital networks, aged care One Stop Shops and Lead Clinician Groups
- establishment of a National Performance Authority and new health system performance arrangements
- investment in primary health care infrastructure
- implementation of initiatives aimed at improving prevention and management of disease by general practice and primary care.

Taken at face value, these reforms may signal the Commonwealth's expectation that primary care providers will assume increased responsibility for the care of patients with chronic disease and the aged. This is in keeping with the fact that the time spent by a patient within a secondary or tertiary facility represents but a small portion of the patient journey.

There are several risks to the patient and health system including those arising from the multiple funders, heterogeneity of primary care and hospital environments and providers, lack of clear articulation of the mechanisms by which MLs, LHNS and Clinician Groups will interact and the inconsistent take-up of best practice pathways for managing disease.

In this context, care provided as an extension of the in-patient journey would encompass engagement of the specialist medical, nursing and allied health teams with the general practitioner as joint partners. It is imperative therefore that there is communication and shared membership across the chronic disease health network, NMAHS planning teams and SMAHS clinical clusters, clinical lead forums in LHNs and boards of MLs. Together, care goals may be established, appropriate interventions identified, appropriate referrals and ongoing reviews performed.

Development of shared care protocols and referral pathways between primary care and hospitals

To obviate the risks noted above, there is a need to develop consistent approaches to the management of key clinical conditions. These approaches need to bridge medical, nursing and allied health requirements across tertiary and general hospital and primary care settings. WA Health has developed Models of Care for a variety of conditions with the aim of ensuring best practice care and services are provided to patients as they progress through the stages of their condition. These should, where applicable, be used as a framework defining the care required across the continuum of disease.

Additionally, the Review noted that GPs may occasionally refer patients to ED in order to expedite a specialist review. A number of suggestions were made to help streamline the system and fast track patients to enable them to access medical support. *Clinical Priority Access Criteria* have previously been developed for referral of patients by GP to specialist attention. These should be re-examined for currency and relevance with a view to greater use.

Furthermore, in relation to the acute management of known patients with a chronic disease who suffer an acute exacerbation, one suggestion was the development of a *Quick Access Chronic Disease Acute Service*. The model could involve the GP working in concert with the patient's hospital specialist (or team). The GP would undertaking a preliminary medical assessment, complete the Clinical Priority Access Criteria, and then liaise with the consultant to discuss the care plan. The care plan may include the performance of relevant diagnostic tests, initiation of treatments which may be provided by either Silver Chain Home Hospital (or in the event of a known chronic patient, the hospital HITH) and specialist review within 24-48 hours.

Such approaches may increase efficiencies by:

- reducing the need for patients to attend ED
- hastening initiation of treatment
- ensuring the required diagnostic tests are performed in readiness for specialist review
- potentially avoiding a hospital admission.

In this environment, the Silver Chain PRA service, with its access to point of care testing and GP support may also fill a gap by providing an initial assessment in the patient's home.

> *"COPD patients are a prime example of that. They turn up to ED, they get seen because they can't see a GP and of course we've taught them that they need oxygen when they're distressed….So they come to ED, they see a genuine doctor who's terrified by the low oxygen saturations and so keeps them in. Despite the fact that they always have these pure vital signs. So then you have an average length of stay of something like 11 days. During that stay all the home social supports collapse. So what potentially would have been a seven day stay ends up being 11 where you get everything else back in place again. Whereas they should never have come in the first place. They should have been seen by a Priority Response Assessment nurses. They should have been able to be started by nurse practitioners on antibiotic therapy, and they should have stayed home with their key support."*

Fostering best practice in chronic disease management

A key observation of the Review has been the myriad of programs available to patients and referrers. Similarly, the Review noted a tendency to develop local initiatives to address (perceived) unmet needs. To the Review, it would appear that many of these programs have developed in an uncoordinated manner in an attempt to address pressures within the public hospitals. It is difficult to determine how many of these programs have been actively benchmarked to comparators, either for effectiveness, efficiency or the use of evidence based practice. Nor has their long term impact on patient outcomes been assessed. Such an analysis should be undertaken and where programs are effective, they should be propagated throughout WA Health.

Recommendations:

It is recommended that:

17. Hospital based HITHs, RITHs and CoNeCT teams amalgamate their FTE and resources such that medical, allied health and other support structures to patients are delivered by a single unified team operating over the AHS. A current model exists in the NMAHS Home Link structure.
18. Health services work with local primary care providers (MLs, General Practice divisions or networks) to develop referral and discharge pathways for chronic diseases including mental health. These pathways should incorporate continuity of care models which see engagement of hospital specialist nursing services with at risk patients who frequently require hospital admission while in the community.
19. Development of these pathways may be enhanced by a common membership across chronic disease health network, NMAHS planning teams and SMAHS clinical clusters, clinical lead forums in LHNs and MLs.
20. Current paradigms for the funding of inpatient and outpatient care will need to be examined to ensure that no disincentives prevent continuity of care and that care provided to patients following the acute admission is recognised.
21. The Health Information Network continues to explore all options to improve communications between WA Health hospital sites and General Practice to ensure that exchange of clinical information is safe, timely and seamless, consistent with national e-health standards and aligned to the implementation of e-health capability by General Practice.

6. Ambulance Movement and Scope of Practice of Paramedics

The EDIS data reveals that 90,067 patients were transported to EDs captured by this Review by ambulance in 2009/10. The majority (304,786 in 2009/10) presented by private means to the above hospitals. Although not the sole ambulance provider in WA, SJA is the only provider of road emergency transport contracted by WA Health. SJA paramedics are engaged to transfer patients from a home (or other) environment to hospital. Data was obtained from St John Ambulance to examine the third Term of Reference. Data was provided for the 2010 calendar year. In its original format, the data described, for each metropolitan Perth post-code, the number of transfers to metropolitan EDs including those at PMH and KEMH. For the purposes of this Review, data from the latter have been excluded from analysis.

The source data was aggregated into clusters of post-codes based on geography. Within each cluster, the post-code associated with the greatest number of transfers was used as a reference. The distance to local hospital EDs was calculated from this reference point. This was then compared to the actual movement of ambulances from the cluster of post-codes. These data are summarised in Table 14.

The data below should also be interpreted in light of existing agreements between SJA and Department of Health WA. Firstly, in specific situations, such as major trauma, optimal care would require that unless required to stabilise the patient, peripheral/secondary hospitals be bypassed and the patient transported to a tertiary centre. Additionally, pre-existing agreements between SJA and the Department of Health do specify the distribution of ambulances across the tertiary EDs. Furthermore, it has been reported that ambulances may divert from their original course in response to ramping at a specific ED. Finally, where a patient is known to a specific health system, the tendency has been to transfer the patient to the care of their usual physicians. Such factors can influence the movement of ambulances.

Nevertheless, as can be seen in Table 14, the majority of transfers within a post-code cluster are to the closest ED. Further interrogation would be required to understand the rationale where this hasn't occurred. Such analysis was not possible with the information available at the point of this Review.

Table 13: SJA transfers tabled by geographical location, distance from hospital sites and final destinations

Postcode Area	Distance from hospitals	Ambulance Destinations
6000, 6003, 6004, 6005, 6006, 6007	Central Perth	RPH 54%, SCGH 26%, SDH 8.2%, FH 3%, JHC 1.6%, AKDH 1.1%,
6008, 6009, 6010, 6011, 6012, 6014, 6015	Floreat to: SCGH 4km RPH 7km	SCGH 63%, FH 9.5%, RPH 8%, JHC 4.8%,
6016, 6017, 6018, 6019, 6020, 6021, 6022, 6023, 6024	Churchlands to: RPH 7km, SCGH 4km, JHC 29km	SCGH 69%, JHC 13.9%, RPH 8.8%
6025, 6026, 6027, 6028, 6029, 6030, 6031, 6032, 6034, 6035	Joondalup	JHC 64.5%, SCGH23.9%, RPH 5.4%
6050, 6051, 6052, 6053, 6054	Mount Lawley to: RPH 2.2km, SCGH 6km, SDH 14km	RPH 62.8%, SDH 12.1%, SCGH 18.9%
6055, 6056, 6057, 6058	Greenmount to: RPH 18km, SDH 5km, SCGH 23km	RPH 35.4%, SDH 46.8%, SCGH 10%
6059, 6060, 6061, 6062, 6063, 6064, 6065, 6066	Darch to: SCGH 17km, RPH 16km, JHC 13km	SCGH 40.1%, RPH 25.6%, JHC 22.6%, SDH 59.8%, RPH 21.8%, SCGH 8.2% JHC 4.5%, AKDH 1.3%
6067, 6068, 6069, 6070,6071, 6072, 6073, 6074, 6076, 6077, 6078, 6079, 6081, 6082, 6083, 6084, 6090	Kalamunda to: RPH 18km, SDH 12km, SCGH 23km	SDH 59.8%, RPH 21.8%, SCGH 8.2% JHC 4.5%, AKDH 1.3%
6100, 6101, 6102, 6103, 6104, 6105, 6106	Bentley to: RPH 7km, SCGH 10.5km	RPH 74.3%, SCGH 16.1%, FH 2.2%, AKDH 53.1%, RPH 20.8%, FH 14.0%, SCGH 4.9%
6107, 6108, 6109, 6110, 6111, 6112, 6121, 6122, 6123, 6124, 6125, 6126	Armadale and environs	AKDH 53.1%, RPH 20.8%, FH 14.0%, SCGH 4.9%, FH 60.9%, RPH 16.6%, SCGH 11.6%, AKDH 3.1%
6147, 6148, 6149, 6150, 6151, 6152, 6153, 6154, 6155, 6156, 6157, 6158, 6159, 6160, 6162, 6163	Murdoch to: SCGH 11km, FH 9km, RPH 12km	FH 60.9%, RPH 16.6%, SCGH 11.6%, AKDH 3.1%
6165, 6166, 6167, 6168, 6169, 6170, 6171, 6172, 6173, 6174, 6175, 6176, 6180	Rockingham and environs RPH 38km, SCGH 35km, FH 24km, PHC 36km	RGH 57.5%, FH 29.5%, RPH 3.4%, SCGH 2.2%
6181, 6182, 6207, 6208, 6209, 6210, 6211, 6213, 6214, 6215, 6230	Mandurah and environs To RPH 72km, FH 53km To PHC 2km, RGH 30km, SCGH 64km	PHC 72.2%, FH 18.4%, RPH 2.8%, SCGH 2.6%

Do all patients seen by paramedics require transfer to ED?

In responding to the above, one needs to acknowledge that Department of Health WA has tended to favour the "swoop and scoop" approach i.e. the key role of SJA paramedics is the safe transport of the patient to a hospital. There is however, much debate within WA and nationally as to the appropriate range of services which may be delivered by paramedics in the pre-hospital environment.

Factors for consideration within this debate include:

- training requirements to ensure appropriate clinical decision making
- need for a robust governance structure within SJA to support this practice
- distribution of population and hospital services across metropolitan WA (Perth)
- paramedics are not a registered healthcare professional within Australia.

Given the complexity of unscheduled care and diversity of healthcare situations to be managed in atypical care environments; it is clear that the required skill-mix, training, professional development and support and credentialing must be clearly defined and satisfied. In conversation with SJA, it was confirmed that a shift towards expanded scope of practice for paramedics would require increased resourcing and training which are not presently available. In addition this must be supported by robust clinical governance structures which allow examination of outcomes and provision for learning from adverse (and near-miss) events.

Furthermore, one needs to question whether the distribution of population and hospital services within metropolitan Perth merits a "see and treat" approach. While this may seem appropriate, even necessary in rural WA, the justification for this model within metropolitan Perth is rendered questionable given the geographical spread of its public (and private) hospital emergency departments. However, there may be scope in the future to examine whether it would be feasible for a paramedic to transport a patient to a GP, GP Super Clinic or after hours GP.

Currently, paramedics do not constitute a registered healthcare professional. It is proposed that they be considered in 2014 for (national) registration by (Australian Health Practitioner Regulation Authority) AHPRA. Support has been derived from Australian Health Minister's Conference (AHMC). National registration processes would require significant groundwork including the establishment of a paramedic board and recognition of nationally consistent training standards.

Alternate paradigms – international models

Internationally, the scope of practice for paramedics varies. For example, in the UK, paramedics may deliver care at home. The London Ambulance Service envisions a mobile healthcare unit which provides traditional patient transport, call handling and advice as well as diagnostics and long-term condition management. In this model, paramedics are able to refer patients to a range of healthcare facilities and may administer a range of medications. Such programs are currently operating in London to reduce presentations to ED and increase the availability of ambulance services to those patients who actually require transport to hospital for their care.

In Canada, paramedic scope of practice is defined by the National Occupational Competency Profile for primary care paramedics, advanced care paramedics and critical care paramedics. Driven by population demographics and geographical distribution, a variety of paramedic models have been developed in Canada. In the community paramedic models, paramedics may

work in both the traditional pre-hospital environment as well as in support roles in hospitals. In the nurse practitioner, paramedic, physician team model, the paramedic functions within a team which seeks to support patients living at home by providing interventions which promote health and prevent illness, prescription of medicines, and simple procedures e.g. suturing and telephone consultation.

Alternate paradigms – local models

Community paramedic role: It should also be noted that the community paramedic role has been proposed for Karratha and Newman, and recently commenced in Kununurra. This role was envisaged for areas characterised by high rates of volunteer ambulance staff and seeks to provide support and education and training to these volunteers. In addition, the community paramedic performs the role of paramedic, community support and may provide "cover" to assist hospital staff where gaps exist. As this role has recently commenced in Kununurra, an examination of its efficacy and value was premature at the time of this Review.

Collaboration between SJA and PRA: The introduction of the PRA service has led to the suggestion of a model incorporating Silver Chain and St John Ambulance. There is currently, an ongoing State Health Research Advisory Council (SHRAC) project grant shared by Silver Chain, St John Ambulance and Edith Cowan University which examines the feasibility of triaging and referral by paramedic staff to Silver Chain's PRA service. Patients with low risk, probable benefit from home care and who are not alone are thus referred to Silver Chain's PRA service which attends the patient within four hours. It is anticipated that this approach would reduce the need for hospital presentation and thus outcome measures include the number of referrals to ED for patients with low-acuity conditions, number of hospital and ED presentations in the subsequent seven days, and transport rates by ambulance officers. Such models raise the possibility of enhancing paramedic roles to encompass pre-hospital diagnosis and management where appropriate. This study was ongoing at the time of the Review.

Provision of pre-hospital care – Trial between *healthdirect* Australia and St John Ambulance

There has been a perception that St John Ambulance Australia (SJA) does not adequately take advantage of secondary triage options provided by *healthdirect* Australia. At least two attempts at increasing engagement between St John Ambulance and *healthdirect* Australia have occurred. The first in June 2008 consisted of a four week trial in which two *healthdirect* Australia nurses were placed in the SJA Belmont call centre and referred appropriate patients to *healthdirect* Australia via remote computer linkage. This led to a 167 per cent increase in referrals which was not sustained when *healthdirect* Australia nurses were removed from the call centre.

From July 2010 to February 2011, St John Ambulance and *healthdirect* Australia participated in a trial wherein a *healthdirect* Australia registered nurse worked one full day per week at the SJA Belmont WA call centre. The nurse's role was to liaise, coach, train and mentor SJA call handlers in order to increase the number of appropriate (low-acuity) calls transferred to *healthdirect* Australia. The monthly average of calls directed to *healthdirect* Australia by SJA from June 2009-September 2010 (pre trial) was 222. From October 2010-February 2011 (trial period) the average figure was 448.

The disposition of patients undergoing secondary triage by the *healthdirect* Australia nurse in the ambulance call centre is as follows: assuming 70 per cent compliance by callers with advice provided, secondary triage by *healthdirect* Australia would have resulted in 1,287 fewer ambulance dispatches and 778 fewer ED presentations during the period of the trial. These costs associated with this trial were $79,933 (which includes $24,623 for the nurse, $21 per call referred to *healthdirect* Australia (including a 40% Commonwealth rebate)). In contrast, an emergency call out for an ambulance is $779.

The longer-term impact of this intervention has not been reported. An assessment of its impact upon ED presentations and the appropriateness of obviating these attendances would be required in order to determine whether this approach merits consideration.

Conclusions relating to third and fourth Terms of Reference

In relation to the third Term of Reference, additional analysis and data will be required to properly map the movement of ambulances and the reasons for this. This exercise would be of value in the light of future service delivery by major centres following the establishment of the Fiona Stanley Hospital.

In relation to the fourth Term of Reference, the Review noted that there are ongoing projects which have only recently commenced, the outcomes of which may merit further analyses and consideration for implementation into routine practice. The Review also noted that the scope of practice of paramedic and ambulance staff is a subject of significant debate currently. Any expansion of the scope of practice must be accompanied with training and resourcing and supported by robust governance measures. At the time of the Review, these have yet to be fully addressed. Thus, it was the Review's position that these should be re-examined in the fullness of time when paramedics have been recognised within the framework defined for other healthcare professionals.

7. Conclusion

The Review was charged with the task of examining the use of community based providers by metropolitan public emergency departments. It uncovered a diversity of providers, both within and external to WA Health and much variation in the approaches used between emergency departments and indeed, within hospitals.

It must be recognised that the diversity of providers has arisen in order to address (local) needs. This has in some quarters, led to the accrual of significant expertise and resources. The same diversity has however, also led to much complexity, such that emergency departments now employ teams which specialise in identifying the needs of patients and coordinating their discharge accordingly. It is the Reviewer's view that the primary focus must be the patient's needs. Thus, it is the Reviewer's hope that opportunity is sought to consolidate and build upon the existing expertise while also standardising one's approach and improving coordination between providers.

As the patient is our raison d'etre, the delivery of patient care must encompass the medical and psycho-social factors driving patients to require care and must acknowledge the continuum of the patient's journey. There is much knowledge within WA Health in the management of complex and chronically ill patients. Efforts should be made to harness these skills in the management of such patients. It is hoped that these recommendations will permit a freeing of resources to address such needs.

Finally, the Review was conducted against the backdrop of the national health reforms. While much uncertainty has been engendered in the course of the reforms; there is also the need to define new relationships between primary care sectors, Medicare Locals and WA's public hospitals. Counterpoint to this uncertainty is the opportunity to establish patient pathway and care models which cross both hospital (general and tertiary) and primary care borders and which transcend traditional boundaries (which are crossed by patients on a daily basis). It is this Reviewer's intention that these recommendations will foster increased communication and coordination across providers operating within WA's metropolitan areas.

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Appendices

Appendix A: Terms of Reference

REVIEW

Admission and Discharge Referral Practices for the Metropolitan Hospital Emergency Departments

The review team, led by Professor Bryant Stokes AM, will prepare a report, to include recommendations for refinement and improvement to referral practices, for the consideration of the Director General.

The scope of the review is to examine services provided at the emergency departments (EDs) of the tertiary sites of Royal Perth Hospital (RPH), Sir Charles Gairdner Hospital (SCGH), Fremantle Hospital (FH) and the secondary sites of Armadale Kelmscott Memorial Hospital (AKMH), Rockingham General Hospital (RGH) and Swan Districts Hospital (SDH).

The reviewers will consult with key stakeholders to gather views, information and evidence sufficient to:

Investigate whether the use of alternative treatment options are being considered in the EDs.

Examine the current referral rates and patterns from the ED to the ambulatory care services of Hospital in the Home (HITH) Rehabilitation in the Home (RITH) and the Silver Chain hospital in the home program, Friend in Need (FiNE).

Examine the ambulance movement to the EDs to ensure the patients are being referred for treatment as close to home as is deemed clinically appropriate, thereby ensuring the EDs of the secondary facilities are being used to their maximum potential.

Examine whether all patients seen and initially treated by the ambulance paramedics required transfer to an ED and recommend what would be required to 'see and treat' in situ without onward referral to EDs.

Review the support systems currently in place to assist with admission and discharge referral practices and make recommendations regarding improvements needed to allow better flow of patients into and out of the ED to the community.

Provide a final report to the Director General after three months.

The key stakeholders will include:

Internal

Key staff at all Area Health Services, that is NMAHS, SMAHS, CAHS and WACHS (to ensure the needs of country patients are being met when referred to the metropolitan area for care), including, but not exclusively, the Chief Executives, the Executive Directors of the sites, the Heads of the Emergency Departments, the heads of the ambulatory care program areas within each Area Health Service.

The Chief Medical Officer, the ED Performance Activity and Quality (PAQ), the ED Health Reform and the Director and Senior Project Manager, Health System Improvement Unit (HSIU) including the Aged Care Division (Contract Manager of the Silver Chain FiNE contract).

External

Silver Chain Nursing Association (SCNA) and St John Ambulance Association (SJAA) senior executives, and others as the review team consider appropriate.

** The reviewer may examine services provided at the EDs of Joondalup Health Campus and Peel Health Campus. (Permission is being sought prior to this occurring).
This will be completed as phase 2 of the Review.

Appendix B: Study design

The study utilised various research techniques and rigorous and tested procedures in working to capture the nuance and complexity of the situation surrounding metropolitan Emergency Departments.

The Terms of Reference informed the selection of sites under review. Access and entry to each site was gained from Area CEOs and Hospital Executive Officers, and non-government CEO's, with informed consent also provided by each participant within the study.

Data collection

Quantitative approaches to data collection

A number of previous documents helped shape and inform the Review: Area Health Service and non-government organisations Annual Reports; historical EDIS and TOPAS data and Performance Reporting; previous research and evaluations of programs and projects linked to the topic area under review.

During the Review period, all sites were requested to collect quantitative data - EDs were required to log and collate referrals to HITH and HATH over a 7 day period.

Departmental staff members were called upon to provide specific data to help provide a greater understanding of the admission and discharge practices in metropolitan EDs including: current EDIS and TOPAS data from metropolitan EDs; HITH data (including referrals, seperations and LOS) and HATH data (including clients, referrals, LOS and costings).

Qualitative approaches to data collection

Group interviews – undertaken in environments selected by participants, with the role of the interviewer guiding discussions but utilising open-ended questions and permitting digressions from the topic, ensuring the widest range of meaning and interpretation of the topic.

Individual Interviews – by telephone and face to face – using open-ended questions in an attempt to understand the complex reality of ED, without imposing any a priori categorization that may limit the field of inquiry.

In total 139 people were interviewed and participated in the study over the four-month period including:

- Area Health Service Executives;
- Hospital Executives (from both public and private sectors), managers and operational staff;
- Department of Health Executives and managers;
- Non Government Organisation CEOs and managers;
- Health Consumer Council Representatives.

The Terms of Reference guided the initial sampling of interviewees, with a snowballing technique applied subsequently.

Both group and individual interviews elicited information on key topic areas including:

- Knowledge of hospital avoidance programs/initiatives within the primary, secondary & primary settings, across either public or private sectors;
- Knowledge of hospital substitution programs/initiatives within the primary, secondary & primary settings, across either public or private sectors;
- Perceptions of the areas impacting on patient and system flow within the hospital environment;
- Perceptions of appropriate and inappropriate use of ED by different population groups and/or health professionals;
- Opinions of potential ways to move forward with suggestions for structural and system change.

Data analysis

All group interviews, and the majority of individual interviews, were recorded, transcribed and imported into NVIVO 9 – a qualitative and qualitative software package that supports data analysis and theory building in a transparent and rigorous manner. Data analysis began after the first interview to enable the data to explain and direct further data gathering. All free text was coded – with themes, categories and concepts identified, memo writing undertaken to link analytical interpretation with empirical reality, coding frameworks developed and refined as the research progressed, and modelling undertaken using constant comparative analysis.

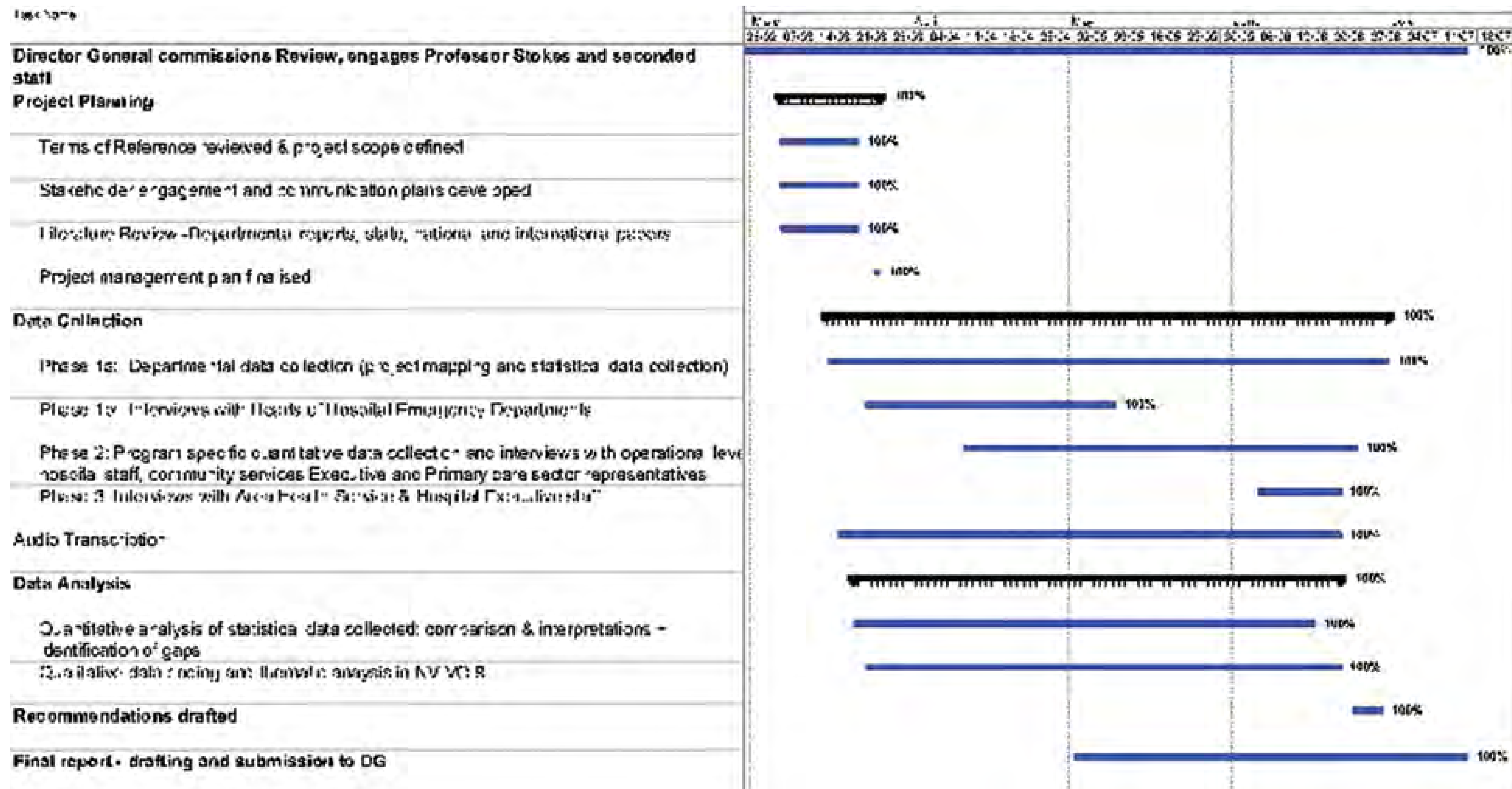
To ensure rigour and transparency within the study, triangulation methods were applied:

- *Data triangulation*: where a variety of data sources were used to identify key issues (for example EDIS and TOPAS data, coupled with contract reporting data, and inked to transcripts of individual interviews)
- *Investigator triangulation*: where several staff members were used to interpret the same data set to ensure consistency in interpretation and coding.

Data collection and data analysis continued simultaneously, enabling the testing of models and ensuring a full understanding of the issues impacting upon Emergency Departments was attained. Data collection ceased when there were no significant conceptual variations produced during interviews and 'theoretical saturation' was reached.

An overview of the study design and associated timelines is provided in the following gantt chart.

Project timeline



Appendix C: List of interviewees

Site	Name and Position
Department of Health	
Department of Health (Royal Street)	1. Dr Rowan Davidson, Chief Psychiatrist 2. Dr Hannah Seymour, Clinical Advisor, Aged Care Policy Directorate 3. Dr Simon Towler, Chief Medical Officer 4. Ms Gail Milner, Acting Executive Director, Innovation and Health System Reform (I&HSR) 5. Mr Kingsley Burton, Director, Health System Improvement Unit (HSIU) 6. Dr Dorothy Jones, Executive Director, Performance Activity and Quality (PAQ) 7. Dr Amanda Ling, Clinical Lead, PAQ 8. Ms Grace Yun, Senior Research Analyst GIS, Epidemiology 9. Ms Margo O'Neill, Principal Analyst, HSIU 10. Ms Sam Green, Manager, Information Analysis SMAHS 11. Ms Elizabeth Rohwedder, Senior Project Manager, HSIU 12. Mr Rob Willday, Acting Director, Aged & Continuing Care Directive, I&HSR 13. Mr Brian Piercy, Senior Policy Officer, Aged Care Assessment Program, I&HSR 14. Ms Marea Gent, Project Coordinator, I&HSR 15. Ms Anne Riordan, Senior Planning Officer, Aged & Continuing Care Directorate, I&HSR 16. Mr Luke Hays, Aged Care Policy, Health Policy & Clinical Reform 17. Ms Sally Skevington, Manager, Strategic System Support, I&HSR 18. Ms Francis Downey, Acting Manager, Strategic System Support, I&HSR 19. Ms Jaynie Kirkpatrick, Senior Policy Officer, Director Generals Division
North Metropolitan Area Health Service (NMAHS)	20. Dr David Russell-Weisz, Chief Executive 21. Ms Roslyn Elmes, Executive Director, Public Health and Ambulatory Care
South Metropolitan Area Health Service (SMAHS)	22. Ms Nicole Feely, Chief Executive 23. Dr Paul Mark, Area Director of Clinical Services 24. Ms Karen Banks, Acting Executive Director, South Metropolitan Public Health Unit 25. Ms Kerryn Barton, Health Services Planner, Ambulatory Care and Hospital in the Home, Health Services Planning Unit 26. Dr Jim Codde, Director Planning, Strategy & Development 27. Ms Roslyn Jones, Acting Area Manager, Rehabilitation in the Home SMAHS
WA Country Health Service (WACHS)	28. Mr Ian Smith, Chief Executive 29. Dr Tim Williams, Executive Director of Medical Services 30. Dr John Van Der Post, Accident and Emergency Specialist, Albany Regional Hospital
Child and Adolescent Area Health Service (CAHS)	31. Mr Philip Aylward, Chief Executive 32. Dr Mark Salmon, Executive Director of Medical Services, PMH

Tertiary Hospital Sites	
Royal Perth Hospital (RPH)	33. Ms Maha Rajagopal, Acting Chief Operations Officer 34. Dr James Cooper, Head of Emergency Department 35. Dr Jacqui Garton-Smith, Hospital Liaison GP 36. Ms Sarah Moyes, Acting Clinical Nurse Specialist, Emergency Department 37. Ms Caroline Hale, Nursing Operational Manager, Emergency Department 38. Ms Justine Payne, Nursing Discharge Coordinator, Emergency Department 39. Ms Hilda Tansley, Clinical Nurse Consultant, Hospital in the Home (HITH) 40. Dr Laurens Manning, Consultant, Micro and Infectious Diseases (HITH) 41. Dr Hannah Seymour, Consultant Geriatrician, Rehabilitation in the Home (RITH) 42. Dr Peter Goldswain, Consultant Geriatrician RPH and DoH Residential Care Line Supervision 43. Ms Gail King, Clinical Nurse Consultant, Residential Care Line 44. A/Professor Yuben Moodley, Respiratory Medicine/COPD Linkage Consultant
Fremantle Hospital (FH)	45. Dr Shirley Bowen, Acting Executive Director 46. Dr Mark Monaghan, Co-Director of Emergency Services 47. Dr Ian Dey, Co-Director of Emergency Services 48. Dr Monica Lacey, GP Hospital Liaison Consultant 49. Ms Sarah Leppard, Clinical Nurse Specialist, Emergency Department 50. Ms Julie Duthie, Acting Clinical Nurse Specialist (Aged Care), Emergency Department 51. Ms Jane Osborne, physiotherapist and Acting Lead Care Coordination Team 52. Ms Penelope Mogridge, Head of Department, Social Work 53. Chris Perriam, Social Work Team Leader 54. Louise Carman, Navigator Patient Flow 55. Ms Joan Micale, Clinical Nurse Manager, Hospital in the Home 56. Dr John Dyer, Director, Infectious Diseases Consultant 57. Ms Rochelle Hoggan, Acting Coordinator, Rehabilitation in the Home

Sir Charles Gairdner Hospital (SCGH)	58. Dr Robyn Lawrence, Chief Executive Officer 59. Dr Debra O'Brien, Director of Emergency Medicine 60. Dr David Oldham, GP Liaison Officer 61. Ms Lisa Gray, Coordinator of Nursing, Emergency Department 62. Ms Nicole Hoskins, Acting Clinical Nurse Specialist, Emergency Department 63. Ms Penny Richmond, Discharge Coordinator, Emergency Department 64. Ms Halena Halton, Nurse Practitioner, Emergency Department 65. Ms Annette Barton, Occupational Therapist, Lead of Care Coordination Team 66. Ms Katie Kyle, Acting Program Manager, Home Link 67. Ms Carolyne Wood, Project Lead, CoNeCT 68. Ms Helen Loveridge, Nurse Manager, Home Link Projects 69. Ms Carol Douglas, Nurse Practitioner, Residential Care Line 70. Dr James Williamson, Consultant, General Medicine
Secondary Hospital Sites	
Rockingham Kwinana Hospital (RKH)	71. Mr Alex Smith, Acting Executive Director 72. Dr Geoffrey Williamson, Director Clinical Services 73. Dr Liz Patterson, Director of Emergency Medicine 74. Ms Gaye McCulloch, Clinical Nurse Specialist -Discharge Facilitator, Emergency Department 75. Ms Kelly Cousins, Acting Clinical Nurse Manager, Emergency Department 76. Fran Goodlich, Clinical Nurse, Emergency Department 77. Michelle Lloyd, Nurse Practitioner, Emergency Department 78. Maria Anunciada, Occupational Therapist, Care Coordination Team, Emergency Department 79. Angela Ascough, Acting Clinical Nurse Manager of HITH
Peel Health Campus (PHC)	80. Dr Aled Williams, Director of Clinical Services 81. Ms Lyn Standley, HITH Coordinator 82. Ms Catherine McKinley, Director of Nursing 83. Ms Karen Jane, Nurse Unit Manager, Emergency Department 84. Ms Victoria Holmes, Director of Nurse Operations
Armadale Kelmscott District Hospital (AKDH)	85. Mr Chris Bone, Acting Executive Director 86. Dr Reg Andrews, Acting Director of Clinical Services 87. Dr Vida Wardhana, Co-Head of Emergency Services 88. Ms Jo Egerton, Acting Clinical Nurse Manager 89. Ms Karen Singleton, Care Coordination Team Leader/Senior Social Worker 90. Ms Annabelle Pearcey, Clinical Nurse Specialist, Emergency Department

Swan District Hospital (SDH)	91. Dr Peter Wynn-Owen, Chief Executive Officer 92. Dr John Keenan - Director of Clinical Services 93. Dr Amanda Stafford, Co-Head of Department, Emergency Department 94. Dr Daniel Ng, Co-Head of Department, Emergency Department 95. Dr Amanda Boudville, Head of Aged Care & Rehabilitation Services 96. Ms Rachel Resuggan, Manager Allied Health Care/ Social Work coordinator 97. Ms Kerry Sidney Coordinator of Nursing, Emergency Department 98. Ms Gretta Wallis Acting Director of Nursing 99. Dr Susanne Bellasario, GP Hospital Liaison 100. Janet Jones, Facility Co-Lead, Four Hour Rule Program/Discharge Coordinator, Emergency Department 101. Dr Helen Bell, Respiratory Physician
Joondalup Health Campus (JHC)	102. Mr Kempton Cowan, Chief Executive Officer 103. Richard Saker, Director of Medical Services 104. Dr Simon Wood, Director, Emergency Medicine 105. Ms Sue Fox, Discharge coordinator, Emergency Department 106. Ms Sarah Davis, Clinical Nurse, Emergency Department 107. Ms Tulip Jones, Registered Nurse, Triage and Emergency Department 108. Ms Rebecca Andrews, physiotherapist, Care Coordination Team, Emergency Department 109. Ms David Hennessy, physiotherapist, Care Coordination Team, Emergency Department
Primary Care Sector	
Primary Care Health Network	110. Dr Scott Blackwell, Clinical Lead
WA Division of General Practice	111. Ms Debra Salway, Chief Executive Officer 112. Dr Alistair Vickery, Chair Osborne GP Network (North Metropolitan Medicare Local)
GP After Hours, Hospital Located Providers	113. Dr Chris Carter, Chief Executive Officer, Perth Primary Care Network 114. Dr Christa Reiglar, Chief Executive Officer, Fremantle GP Network 115. Mr Peter Cook, Chief Executive Officer, Rockingham/Kwinana Division of General Practice 116. Dr Rodney Redmond, Chief Executive Officer, Canning Division of General Practice
GP After Hours Extended hours	117. Dr Jack Fagenbaum, Scarborough Beach Medical Centre 118. Dr Sam Bada, Ellenbrook Medical Centre (Deceased) 119. Mr Nic Richardson, Chief Executive Officer, Australian Locum Medical Service
GP Clinics	120. Dr Stephen Wilson, Practice Principal, Bassendean Total Health Care
Other Organisations	
Alcidion	121. Dr Malcolm Panham, Co-owner and Co-founder.

Australian Government Department of Health and Ageing	122. Ms Nicole O'Keefe, State Manager, WA State Office 123. Professor Chris Baggoley, Acting Chief Medical Officer 124. Dr Andrew Singer, Principal Medical Adviser, Acute Care and Health Workforce Divisions
Australian Medical Association	125. Dr David Mountain, President, WA Branch
Health Consumers Council	126. Ms Michele Kosky AM, Executive Director 127. Mr Gio Terni, Health Consumer Advocate 128. Mr Bill Fox, Health Consumer Advocate 129. Ms Chrissy Ryan, Health Consumer Advocate
Medibank Health Solutions (Health Direct)	130. Ms Bernadette Kenny, Relationship Director
St John Ambulance	131. Mr Tony Ahern, Chief Executive Officer 132. Professor Ian Jacobs, Clinical Services Director 133. Mr Len Fiori, Ambulance Service Director
St John of God Hospital, Murdoch	134. Dr Tony Robbins, Director of Medical Services 135. Mr Stephen Hall, Health Choices Chief Executive Officer 136. Mr Michael Stanford, Group Chief Executive Officer
Silver Chain	137. Mr Chris McGowan, Chief Executive Officer 138. Dr Roslyn Carbon, Home Hospital Director 139. Mr Stephen Carmody, General Manager Health

Appendix D: Overview of Care Coordination Teams, by site

	Nursing Staff	Occupational Therapy (OT)	Physiotherapy (PT)	Social Work	Other services and notes
SCGH	1 Discharge Coordinator (SRN 3) per shift 365 days a year 7:30am-4pm	1 OT or PT per shift 7 days per week, including public holidays 8am-9pm	1 OT or PT per shift 7 days per week, including public holidays 8am-9pm	0.5 FTE for CCT only (2.9 total FTE for ED) M-F: 8am-6pm W/ends: 9am-6pm Public holidays: 9am-5pm Sunday nights & alternate Tuesdays operate until 9pm	(OT/PT operate on a trans-disciplinary model) Pharmacist: M-F for ED & then on call access over W/ends (covers whole hospital)
SDH	Nurse works across CCT alongside other duties.	0.4 FTE	0.5 FTE	0.4 FTE	0.8 FTE CCT leader, 1.2 FTE rest of team (integrated team approach) 7 day coverage with minimum FTE (often working beyond funded hours) Funding may finish in July.
JHC	No mention	2 OT (1 per shift) M-F: 8am-8pm W/Ends: 9am-12 noon casual cover	2 PT (1 per shift) M-F: 8am-8pm W/Ends: 9am-12 noon casual cover	2 Social workers, (1 per shift) M-F 8am-4:30pm W/Ends: 9am-12 noon casual cover	1 Speech Therapist, on call, 8am-4pm 1 Dietician, on call, 8am-4pm After hours, no access. Refer to outpatients if suitable or admit overnight for assessment next day. Not funded for w/ends or public holidays

RPH	1.6 FTE Discharge nurse (SRN 3) Not funded by CCT but integral component	2.4 FTE M-F: 7:30am-9pm W/ends & public holidays: 8am-5:30pm	2.4 FTE M-F 7:30am-9pm W/ends & public holidays: 8am-5:30pm	1.4FTE M-F: 7:30am-9pm W/ends & public holidays: 8am-5:30pm	Start times staggered to reflect the need of the patients in ED. Access to general pharmacist in ED (not part of CCT) Other allied health (e.g. Speech, Dieticians) not in ED, use on a consultation basis only and not part of CCT.
FH	Aged Care CNS	7 Days M-F until 6pm	7 Days M-F until 7pm On call M-F until 1am, w/ends until 12am	1FTE, 7 days M-F until 7pm	Speech pathology M-F Dietetics M-F
RGH	1.0 Discharge Coordinator (CNS) in ED/CCT	1.0 FTE (team leader)	1.0 FTE (job shared)	1.0 FTE	7 days per week 8am-4pm or 9am-5pm Screen people from previous night.
PHC	N/A	N/A	N/A	N/A	Outside scope of contract
AKDH	No Discharge Coordinator	7 Days 8am-4:30pm	7 Days 8am-4:30pm 2 half days per week there is no PT cover	7 Day 8am-4:30pm 2 half days per week no SW cover	2.8FTE in total for whole CCT 7 Days: 8am-4:30pm After hours there is no on call. Attempt to screen/follow up next day.

CNS: Clinical Nurse Specialist; FTE: Full Time Equivalent; M-F: Monday to Friday; OT: Occupational Therapist; PT: Physiotherapist; SRN3: Senior Registered Nurse, Level 3; W/ends: Weekends

Appendix E: Sir Charles Gairdner Hospital referral service list

Community
Silver Chain PEP 0r HIP (Personal Enablement Program /Home Independence Program)
Silver Chain HaTH (Hospital at Home Service)
Silver Chain Palliative Care
Silver Chain CMAS (Continence Management Advisory Services)
Community Physiotherapy Services
HACC (Home and Community Care) Commonwealth funded longer stay
EACH (Extended Aged Care at Home)
CACP (Community Aged Care Package)
DVA (Department of Veteran Affairs)
Residential Care line Nurse
Emergency Crisis respite ie CCRC and PHC/DVA accommodation
General Residential / In home Respite
Transition Care
CCT 2 Home
Hospital
HCP (Home Care Packages)/Settling service (State funded short term)
DRAC (Department Community and Geriatric Medicine)
ACAT (Aged Care Assessment Team)
RAILS (Rapid Ax ILS)
Falls Clinic
Day Hospital general/medical
Day Hospital Parkinson
Day Hospital memory
Day Hospital Osteoporosis
Continence clinic
Allied Health out patient OT
Allied Health outpatient, PT
Allied Health outpatient, SP
Allied Health oupatient, SW
Allied Health outpatient Diet
Allied Health outpatient, Pod
Allied Health outpatient, Pharmacy.
Other hospital services outpatient- Aboriginal Liaison Ns
Other hospital services outpatient- Continence Ns
Other hospital services outpatient- Diabetes Ed.
Other hospital services outpatient- PsychGeris
Other hospital services outpatient- Psych Liaison
Other hospital services outpatient- Acute Care Ns
Other hospital services outpatient- Drug & ETOH Ns
Liaison, Acute Care Ns, Drug & ETOH Ns
Referrals to Hospital in the Home (HITH)
Referrals to Rehabilitation in the Home (RITH)
CoNeCT: Complex Needs Coordination Team

Appendix F: Summary for NMAHS and SMAHS HITH programs, by site

	Hospital Directorate	Organisational Structure (FTE)	Hours of Operation	Core Services Provided	Sites the Service Caters for	Referral Sources
SCGH	Component of Home Link	1.0 RMO 1.0 Reg 1.0 CNS 1.0 SDN 0.5 Nurse Manager ~ 27 FTE nursing (CNs and RNs)	7am-9pm 365 days per year 1300 number for patients to contact after hours, in case of a "crisis".	IV Antibiotics Anticoagulation Wound care	SCGH & Osborne Park	Few referrals direct from ED Orthopaedics/elective joint surgery Surgery: Day surgery, plastics, breast, vascular, respiratory & general Neurosurgery (surgery & medical) Cardiology & respiratory wards– anticoagulation.
FH	Infectious Diseases (ID) Department	10 FTE Nurses 1.2 ward clerks Fulltime pharmacist No dedicated HITH physician, work with ID consultant & ID department	7am-5:30pm 7 days per week 1 nurse on call to 10pm	IV antibiotics for ID Anti-coagulation for clots –DVTs, PEs Treat IV drug users (must sign contract & most very obliging, want to get better.) Rehydrationw	FH & Kaleeya	Minimal referrals direct from ED Wards Some AKMH patients
RPH	Under Directorate of Cancer & Neurosciences	15.8 FTE (nursing) PTA?? 0.5 consultant 1 Registrar, 1 RMO 1 Pharmacist + 0.4 Pharmacy assistant.	7am-7pm 7 days per week After Hours contact the clinical Specialist (CNS) for hospital (No assessment staff for admissions on weekends)	IV antibiotics – main service & provide an on call service with ID physician. Acute wound care Anticoagulation	RPH & some SDH patients	Few referrals direct from ED Wards: respiratory & podiatry Some private hospitals GPs direct admissions for ID & UTIs

RGH		6.1 FTE + 1.0 Manager	7am-5:30pm 365 days per year 1 nurse on call until 10pm >10pm, patients advised to go to ED.	Antibiotics & IV antibiotics Anticoagulation Major wounds- some acute wounds Some pack dressings	Many cross-referrals FH & RPH. 15 beds officially for RKMH patients (up to 20) Additional 13 to 14 patients on caseload from other hospitals, on average.	ED & Short Stay Unit direct to HITH account for ~50% HITH referrals. Some GPs direct admissions for ID Cross referrals between other HITHs.
Peel	Virtual ward within PHC. Medical Governance remains with the patient's admitting doctor.	2.8 FTE	8am-6:30pm. 365 days per year After hours, patients advised to go to ED at PHC.	Intra-venous antibiotics for infections Anti-coagulant therapy for blood clots Wound management for leg ulcers, infected abscess and post operative wounds Miscellaneous treatment deemed able to be administered in the home such as monitoring of a newly diagnosed diabetic	Peel.	PHC wards and ED Local GP's with admitting rights.

Appendix G: Hospital in the Home (HITH), Rehabilitation in the Home (RITH) by hospital site within SMAHS.

The monthly activity levels of SMAHS HITHs are summarised below.

Occupied Bed Days SMAHS RITH: July 2010 - April 2011

	TOTAL	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
RPH	10,700	1,259	1,012	953	942	1,101	1,181	814	996	1,395	1,047
AKH	1,040	0	0	0	0	0	0	187	280	334	239
BEN	455	15	6	56	15	19	23	97	109	38	77
FH	6,318	948	675	646	748	518	566	481	505	591	640
FH - KALEEYA	1,746	246	243	199	127	167	134	102	197	121	210
RKH	1,090	104	105	52	196	94	195	119	91	29	105
OVERALL TOTALS	21,349	2,572	2,041	1,906	2,028	1,899	2,099	1,800	2,178	2,508	2,318

Occupied Bed Days SMAHS HITH: July 2010 - April 2011

	TOTAL	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
RPH	15,635	1,624	1,721	1,753	1,493	1,343	1,460	1,489	1,312	1,693	1,747
AKH	66	0	0	0	0	0	0	25	33	8	0
FH	12,049	1,171	1,098	1,044	1,113	1,209	1,178	1,241	1,308	1,413	1,274
FH - KALEEYA	2,145	235	152	181	271	261	256	113	181	247	248
RKH	3,019	323	272	208	281	344	297	187	296	396	415
OVERALL TOTALS	32,914	3,353	3,243	3,186	3,158	3,157	3,191	3,055	3,130	3,757	3,684

Total Admissions SMAHS HITH: July 2010 - April 2011

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	TOTAL
SMAHS HITH	209	162	155	146	141	150	141	154	267	170	1,695

SMAHS Average Length of Stay - RITH**

	TOTAL	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
RPH	11.8	11.6	10.5	11.3	11.6	12.9	11.6	13.0	12.0	11.6	12.1
AKH	10.2	0.0	0.0	0.0	0.0	0.0	0.0	11.6	9.8	9.7	10.7
FH	15.1	13.5	13.2	17.2	12.3	19.0	18.4	12.8	19.4	15.0	13.8
FH - KALEEYA	13.6	15.4	11.4	15.4	10.5	16.3	13.1	14.3	14.4	14.4	11.7
RKH	16.1	14.8	17.3	9.7	16.3	20.7	14.8	15.6	15.3	16.8	16.0

SMAHS Average Length of Stay - HITH**

	TOTAL	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
RPH	12.7	13.2	12.8	11.0	15.1	12.0	12.7	13.3	12.4	11.4	13.0
AKH	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	13.0	0.0
FH	11.8	9.8	12.6	10.0	12.2	10.1	12.8	10.7	11.7	13.4	13.4
FH - KALEEYA	8.7	10.2	8.4	8.0	7.3	9.6	8.7	8.4	8.0	9.6	8.4
RKH	8.2	11.0	7.0	14.5	6.9	6.3	9.3	6.7	8.1	7.3	7.9

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