

Cristina Thompson

Pam Grootemaat

Darcy Morris

Alan Owen

Kathy Eagar

Suggested citation:

Thompson, C. et al. (2011) ***Ambulance Service of NSW: Responding to Mental Health Frequent Callers Final Report***. Centre for Health Service Development, Australian Health Services Research Institute, University of Wollongong.

Table of Contents

1	KEY MESSAGES	5
2	EXECUTIVE SUMMARY	6
2.1	Our brief-----	6
2.2	Findings and evidence-----	6
2.3	Implications for the Ambulance Service NSW -----	9
3	INTRODUCTION AND OVERVIEW	10
3.1	Introduction-----	10
3.2	Background and context -----	10
3.3	Patient Journey-----	10
4	RESEARCH METHODS	13
4.1	Strength of evidence -----	13
4.2	Development of the literature review framework -----	14
4.3	Search strategies -----	14
4.3.1	General approach	14
5	FINDINGS	16
5.1	Frequent callers -----	16
5.1.1	Definitions of frequent callers	16
5.1.2	Characteristics of frequent callers and frequent users	18
5.2	Interventions: responding to mental health frequent callers-----	22
5.2.1	Health care interventions	23
5.2.2	Costs and benefits of mental health frequent caller interventions.....	29
5.3	Other factors influencing interventions for mental health frequent callers -----	31
5.3.1	Consumer engagement	31
5.3.2	Interagency response	31
5.3.3	Access to community based health services.....	33
5.4	Working within the context of the NSW health system -----	33
5.4.1	Mental health service delivery in NSW	33
5.4.2	Area planning and population health	34
6	APPLYING THE FINDINGS FROM THE LITERATURE	36
6.1	Revisiting the project aims-----	36
6.2	Implications for ASNSW-----	36
6.2.1	SAFTE Care Program.....	37
6.2.2	Referring to avoid an ED presentation – Gold Coast Hospital Avoidance Program	37
6.2.3	Informing business case development	39
6.3	Conclusions: the advantages of wider systemic solutions -----	42
7	REFERENCES.....	44
Appendix 1	Literature Review Search Strategy.....	51
Appendix 2	Summary of Interventions/Models of Care for Frequent Callers	57

List of Tables

Table 1	ASNSW response grid (2008)	12
Table 2	Summary of supported interventions for mental health frequent callers and users of ED services.....	29
Table 3	Number of frequent callers and potential savings in English pounds	30
Table 4	Summary of search terms.....	51
Table 5	Selection of Journal Titles.....	52
Table 6	Selection of Practice Literature Sites	53

List of Figures

Figure 1	Patient journey for a caller to the ASNSW	11
Figure 2	Schema for summarising the strength of the evidence.....	13
Figure 3	Patient pathway for prehospital interventions	41

1 Key Messages

Our brief

The Ambulance Service of NSW (ASNSW or the Service) like all public health services is faced with the challenge of managing increasing service demands. Mental health frequent callers are a sub-set of a wider group of frequent callers to emergency services that contribute to increased service demands. Currently there is no systematic approach to managing mental health frequent callers within the ASNSW.

Findings and evidence

Very few studies targeted specifically at reducing demand for emergency medical services were identified. There is not a body of literature that deals specifically with mental health frequent callers.

The definition of a frequent caller is not standardised in the literature and no studies were found that gave a definition for a mental health frequent caller. Studies more commonly described the characteristics of frequent callers and frequent users of Emergency Department (ED) services.

A number of studies have shown that frequent callers often have mental health disorders that affect the frequency of contact that they have with emergency services.

Interventions in the prehospital setting for mental health frequent callers use a combination of strategies including: pre-emptive identification of frequent callers; designated frequent caller units to support individual case management; streaming of frequent callers to alternative care pathways; referral to community nursing services; enrolment in integrated programs that provided intensive case management, referral and patient education; mobile crisis management and the use of mental health protocols to evaluate patients who may be suitable for non-transport.

Comprehensive, coordinated systems of care are required to address the needs of frequent users and the development of successful partnerships (between professional groups and agencies), are factors in effective programs for frequent ED users.

Improved access to primary care, mental health services and case management are likely to have the greatest impact on reducing frequent ED use as will addressing enabling factors such as safe housing and social and/or family support.

Limited information was identified in the literature on the costs and/or economic value of mental health hospital avoidance interventions and/or models of care for mental health frequent callers.

An inter-agency focus is essential in responding to mental health frequent callers, as the majority of mental health problems are treated in the primary health sector with support from a variety of other agencies, including mental health professionals, other allied health professionals, community health services and a wide range of community organisations.

Implications for the Ambulance Service NSW

Any intervention will need to be based in evidence, collaboratively planned and rigorously evaluated. It may be possible to conduct a prospective study evaluating non-transport policies and patient outcomes; this may help further elucidate the safety of protocols that address mental health frequent callers. Patient satisfaction data in regard to non-transport policies may give insight into the feasibility of using non-transport protocols.

The implications of these findings and evidence will be the subject of further discussion with representatives of ASNSW.

2 Executive Summary

2.1 Our brief

The Ambulance Service of NSW (ASNSW or the Service) is seeking to enhance its response to mental health frequent callers. To this end, the Service commissioned a targeted literature review that would identify and compare a number of current models of care in settings similar to that of the ASNSW. Where available, information was to be included as to the costs and benefits of evidence based practice. This information may be used to inform the development of a business case for the introduction of a new model of care.

ASNSW (and indeed ambulance services in other Australian jurisdictions and countries) are continuously investigating new interventions and models of care that will allow improved management of the increasing demands placed upon emergency services. Mental health frequent callers are a sub-set of a wider group of frequent callers to emergency services. In addition there are also 'frequent users' of emergency services. Currently there is no systematic approach to managing mental health frequent callers within the ASNSW.

2.2 Findings and evidence

We have assessed the strength of evidence of interventions that were identified within the scope of this targeted literature review. This review does not in anyway purport to have the depth and breadth of a systematic review. It has been completed in the style of a rapid literature review that concentrates on interventions and models of care, within a short timeframe and clear limits. Its purpose is to inform practice and support policy development.

Overview

- Very few studies targeted specifically at reducing demand for emergency medical services were identified. There is not a body of literature that deals specifically with mental health frequent callers; evidence has been drawn from related fields: frequent callers to emergency services, frequent users of Emergency Department (ED) services and frequent users of hospital and community based mental health services (Pickering, Mason et al. 2009).
- The experience of ASNSW suggests that the predominant response code assigned to mental health frequent callers is 1C, with a smaller proportion of patients with a response code of 1B, 2A and 2H. The majority of these patients were transported (Ambulance Service of New South Wales 2011).

Definitions and characteristics of frequent callers and frequent users

- The definition of a frequent caller is not standardised in the literature. There were few consistent definitions used across the different service systems and settings that were identified in this review and no studies were found that gave a definition for a mental health frequent caller.
- There were a number of studies that identified frequent users, including frequent users of emergency services and mental health emergency services. It appears that most frequent callers are transported to hospital therefore becoming frequent users of emergency services.
- Descriptions of frequent callers varied considerably between countries: from persons making ten calls per year in Australia; to persons making ten calls per month or 15 calls in six months in the UK.
- Frequent users were defined most commonly as persons making four to six, or more attendances at an ED per year.
- Mental health frequent callers and frequent ED users are not a homogeneous group and there may be value in developing a classification system that distinguishes between acute and chronic high utilisers (Pasic, Russo et al. 2005; LaCalle and Rabin 2010).
- There is a strong association between frequent callers and frequent users of emergency services and mental health issues. Psychiatric or psychosocial factors are frequently part of a

constellation of characteristics associated with frequent users (Byrne, Murphy et al. 2003; Bernstein 2006; Locker, Baston et al. 2007; Washington State Health Care Authority 2007; Burgess, Christensen et al. 2008; Ambulance Service of New South Wales 2011; Munjal, Silverman et al. 2011; Rinke, Dietrich et al. 2011).

- Several studies have identified particular social, clinical, and demographic characteristics which serve as predictors of repeat psychiatric emergency use. In the US younger, non-White, unemployed, and unmarried males have the highest rates of repeat use, with homelessness serving as a strong indicator of high utilisation. These individuals typically have a history of psychotic disorder or schizophrenia, substance abuse, prior hospitalisation and a need for medication (Lay, Lauber et al. 2006; Bender, Pande et al. 2008).
- Because individuals 65 years or older are significantly more likely than younger individuals to use emergency medical services, problems of frequent use will increase as the population ages (Pickering, Mason et al. 2009; Shah 2010; Rinke, Dietrich et al. 2011).

Interventions responding to frequent callers; frequent users of emergency and/or mental health services

- Shaban (2006) notes the paucity of published research that examines paramedic clinical judgement and decision-making practices relevant to mental illness in the emergency primary health context. The dearth of research exists internationally. The interpretation and applicability of many studies to Australian jurisdictions are limited largely due to study design and geographic and cultural contextual differences.
- Interventions in the prehospital setting for mental health frequent callers use a combination of strategies including: pre-emptive identification of frequent callers; designated frequent caller units to support individual case management; streaming of frequent callers to alternative care pathways; referral to community nursing services; enrolment in integrated programs that provided intensive case management, referral and patient education; mobile crisis management and the use of mental health protocols to evaluate patients who may be suitable for non-transport (Schmidt, Atcheson et al. 2001; Schmidt, Handel et al. 2006; Shaban 2006; Yorkshire Ambulance Service 2009; Yorkshire Ambulance Service 2010; London Ambulance Service 2011; Rinke, Dietrich et al. 2011).
- Interventions in the hospital ED setting for frequent users of ED services include: the development of patient management plans to reduce unscheduled re-presentations; improved referral practices; improved mental health assessment practices including adequate education and training programs, clinical standards, policy, and legislation; case management supported by liaison with other community agencies and extensive, persistent outreach (home visits, “tracking” and finding patients, accompanying patients to medical appointments, and so on); appropriate primary care and social support services (particularly housing); use of an ED nurse to act as a patient advocate to help patients establish a medical home in the community by linking them to private physicians, free clinics, and community health centres for care; patient education and improved access to mobile crisis teams (Okin, Boccellari et al. 2000; National Institute of Clinical Studies 2003; National Institute of Clinical Studies 2004; Young, Mintz et al. 2005; National Institute of Clinical Studies 2006; Shaban 2006; Bender, Pande et al. 2008; Linkins, Brya et al. 2008; South Carolina Public Health Institute 2011).
- Comprehensive, coordinated systems of care are required to address the needs of frequent users and the development of successful partnerships (between professional groups and agencies), are factors in effective programs for frequent ED users (Mental Health Council of Australia 2006; Linkins, Brya et al. 2008).
- Appropriate interventions recognise the mental health consumer as the central focus of care coordination strategies and incorporate a consumer perspective (Viney, Oades et al. 2004; Transform Australia's Mental Health Service Systems 2010).
- Improved access to primary care, mental health services and case management are likely to have the greatest impact on reducing frequent ED use as will addressing enabling factors such as safe housing and social and/or family support (Young, Mintz et al. 2005; Bernstein 2006).

Evidence based interventions

- The system used to evaluate and summarise the evidence for interventions was designed at the Centre for Health Service Development and is based on hierarchies originally developed by other organisations.
- Levels 1 - 5 are hierarchical and relate to the strength of the evidence for interventions. Levels 6 - 10 have been used to assess evidence on relevant implementation aspects of interventions for paramedic response to mental health frequent callers and frequent users of ED services.
- Interventions demonstrating evidence of well-supported practice (Level 1) include collaborative care models incorporating a case management approach; these however focus on the primary care setting generally as opposed to emergency management specifically.
- No models were identified in the targeted literature review for supported practice (Level 2) and promising practice (Level 3).
- Interventions demonstrating evidence of acceptable practice (Level 4) include: mental health emergency services communities of practice; prehospital case management intervention with more intensive case management; interagency collaboration and case conferencing. A rural service model based on virtual consultation-liaison, telemedicine, interagency collaboration, training and clinical governance processes for mental health services was also identified as acceptable practice.
- Interventions demonstrating evidence of emerging practice (Level 5) include: frequent caller units, care coordination incorporating case management; help for patients to establish a medical home in the community by linking them to primary care providers, nurse advocates and improved access to primary health care; and intensive case management. A police mental health intervention team with enhanced training to front line police officers in management of mental health crises and development of interagency partnerships was also identified as an example of emerging practice.
- No interventions were included for Levels 6 – 10. In the course of reviewing the literature, particularly the practice literature, additional models/interventions were identified that were not supported by good quality research evidence. This was not because research had been undertaken with inconclusive or adverse findings; it was that the research had not been done.

Costs and benefits

- Whilst general references to 'system-wide' cost savings were identified in some articles these applied predominantly to interventions occurring within ED services (Okin, Boccellari et al. 2000; Rinke, Dietrich et al. 2011).
- Limited information was identified in the literature on the costs and/or economic value of mental health hospital avoidance interventions and/or models of care for mental health frequent callers.
- In the experience of the Yorkshire Ambulance Service (2010), whilst there are some costs associated with implementing interventions to manage frequent callers (such as case management) these are not high. The cost benefits are accrued through reduced ambulance journeys, reduced ED attendances and reduced hospital admissions.
- This Service has estimated that in the Yorkshire and the Humber region that frequent callers (mental health frequent callers are a sub-set of this group), cost the National Health Service over £11m per annum (or approximately \$AUS16.85 m).
- Estimated cost benefits are as follows: reduced ambulance journeys (averaging £249/\$AUS382 per journey), A+E attendances (£59/\$AUS90 - £117/\$AUS180 tariff per visit) and hospital admissions (estimated minimum cost approximately £400/\$AUS613 per 24 hours), (Yorkshire Ambulance Service 2010).

Other factors

- More effective mechanisms are necessary to allow consumer and carer participation and feedback to shape programs and service delivery.
- An inter-agency focus is essential, as the majority of mental health problems are treated in the primary health sector with support from a variety of other agencies, including mental health professionals, other allied health professionals, community health services and a wide range of community organisations.
- There are increasing needs to improve mental health skills of all health-care professionals and to improve coordination of services provided to consumers of mental health services and their carers. There is a need to foster greater community interest and involvement in mental health issues (Schmidt, Atcheson et al. 2001).
- The Mental Health and Drug & Alcohol Office (MHDAO) is responsible for developing, managing and coordinating NSW Department of Health policy, strategy and program funding relating to mental health and the prevention and management of alcohol and drug related harm e.g. such as the development of Psychiatric Emergency Care Centres adjacent to larger EDs in acute public hospitals.
- ASNSW has a track record of cooperatively engaging with NSW Health and NSW Police, it will need to maintain this engagement throughout the development and implementation of interventions for mental health frequent callers (NSW Health -Ambulance Service of New South Wales -NSW Police Force 2007).

2.3 Implications for the Ambulance Service NSW

- ASNSW like all public health services is faced with the challenge of managing increasing service demands (New South Wales Audit Office 2005; New South Wales Audit Office 2007).
- Through its Health Areas (and now Districts), NSW has valuable experience in linking generalists and specialists in the community so as to reduce the reliance on acute hospital care for 'avoidable admissions' and is well positioned to contribute to the ways that Medicare Locals will operate. This should be formalised in a model 'engagement protocol' between the two local structures and other relevant bodies such as the Ambulance Service of NSW.
- The ASNSW 'Mental Health Strategic Plan (Ambulance Service of New South Wales 2011) includes the strategic objective to: 'improve the process for managing frequent callers with mental health issues to Ambulance NSW.' The key strategies to support this objective include developing and implementing a system of responding to frequent callers with mental health issues to ASNSW, including:
 - Development of referral pathways
 - Introduction of care plans
 - Address issues related to privacy and information sharing
 - Document roles and responsibilities of key agencies
 - Develop protocols for interagency liaison (Ambulance Service of New South Wales 2011).
- Any intervention will need to be based in evidence, collaboratively planned and rigorously evaluated. It may be possible to conduct a prospective study evaluating non-transport policies and patient outcomes; this may help further elucidate the safety of protocols that address mental health frequent callers. Patient satisfaction data in regard to non-transport policies may give insight into the feasibility of using non-transport protocols.
- The implications of these findings and evidence will be the subject of further discussion with representatives of ASNSW.

3 Introduction and Overview

3.1 Introduction

This is the final report for the project, '**Advice on the development of a business case and a service model for responding to mental health frequent callers to the Ambulance Service of NSW**', being undertaken by the Centre for Health Service Development (CHSD) on behalf of the Ambulance Service of NSW (ASNSW).

The ASNSW (or the Service) is seeking to enhance its response to mental health frequent callers. To this end, the Service commissioned a targeted literature review that would identify and compare a number of current models of care in settings similar to that of the ASNSW including a cost benefit review of each, covering both ambulance and health system costs where available. As noted in preliminary discussions with the Manager, Mental Health ASNSW our capacity to provide information on the costs and benefits of various models of care has been dependent on the availability of robust published information within the academic literature. This document addresses the key deliverables for the project:

- Delivery of a comparative report identifying a number of current models of care for the management of frequent callers in settings similar to that of the Ambulance Service of NSW, (this will include the model of care recommended in the Ambulance Frequent Caller Management Report, February 2011);
- Inclusion of any published information on the costs and benefits of each model of care (including both ambulance and health system costs) where available;
- Specific reference to findings from both the academic and practice or 'grey' literature on aspects of models that provide best care for mental health frequent callers;
- Advice on the application of these findings to the preparation of a business case for the introduction of a new model of care.

3.2 Background and context

The Performance Review of Ambulance (2008) identified that there has been an increase in demand for Emergency Department (ED) attendances throughout NSW. Demographic changes account for about 3.4% per annum of this growth since 2002/03. However, in the past three years, transport to Emergency Departments by ambulance has increased by about 8% per annum.

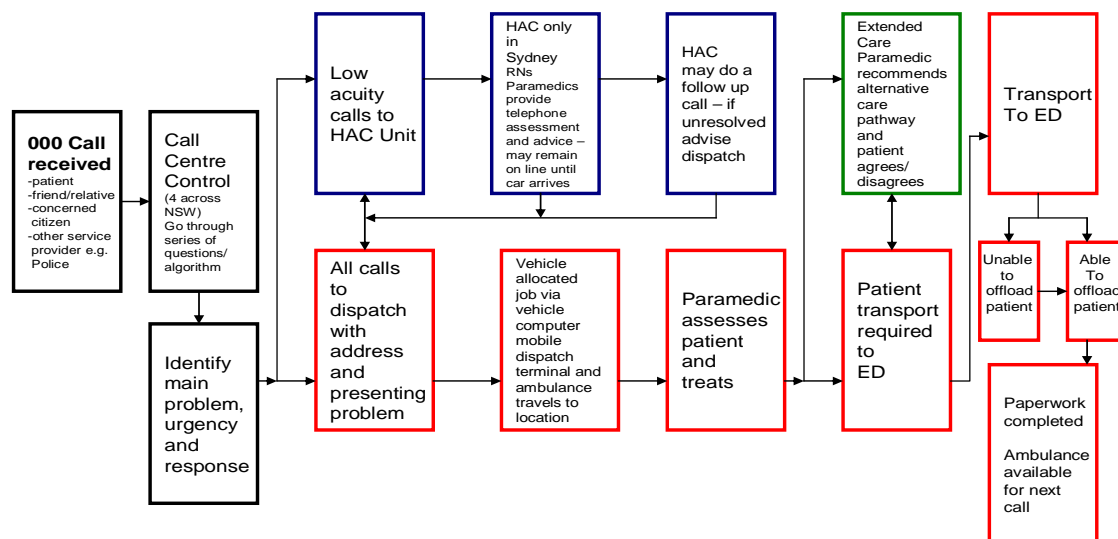
This review notes that the drivers of this demand increase are not well understood and that structural impediments within the allied health and even the social welfare and mental health sectors influence the clinical nature of the work of ambulance paramedics. The review concludes however, that there appear to be a number of opportunities to respond to demand by using existing resources differently (New South Wales Audit Office 2007). A particular issue of concern for ASNSW (and indeed ambulance services in other Australian jurisdictions and countries) include the demands placed upon emergency services by mental health frequent callers. This issue is broader than persons with a mental illness; they are a sub-set of a wider group of frequent callers to emergency services. In addition there are also 'frequent users' of emergency services. Currently there is no systematic approach to managing mental health frequent callers within the Service.

3.3 Patient Journey

The initial consultation meeting provided an opportunity to clarify the patient journey for a caller to the ASNSW. Mapping this journey was an important step prior to developing the literature search strategy as it ensured our focus was at the appropriate stage of the patient journey. The purpose

of documenting this is to identify at which points in this journey there may be opportunity for intervention with mental health frequent callers. This is summarised diagrammatically below¹.

Figure 1 Patient journey for a caller to the ASNSW



Call Centre Control assesses the situation and chooses a chief complaint protocol which takes the caller through a series of questions relating to the condition. The system allocates codes which generate one of six priorities: 1A, 1B, 1C, 2A, 2B or 2C (refer to Table 1 below).

Priorities 2B and 2C reflect lower acuity cases. Anecdotal reports suggest that approximately 75% of these cases are referred to the Health Access Coordination (HAC) Unit. The HAC operates from 7am to 10pm and the ASNSW is currently trialling an after hours project from 10pm to 7am.

At the same time that the HAC receives the call so does dispatch. The HAC personnel work through algorithms to determine if an ambulance is required and this stage thus provides a key intervention point to re-route certain callers. It is possible that the ambulance may arrive at the scene whilst the HAC team are still working through their algorithm, at this point the patient may decide that they no longer require transport to an Emergency Department.

The points of intervention may occur:

- At Call Centre Control – if there is some mechanism to identify that the incoming call is from a mental health frequent caller (currently the ASNSW can only ‘flag’ an address not an individual; the reason for the ‘flag’ is predominantly to manage risk to ambulance staff e.g. in the case of a person at this address known to be aggressive and/or there are access issues with the dwelling).
- At the HAC Unit – if Call Centre Control refers the mental health frequent caller to this service at the same time that dispatch is notified.
- When the paramedic assesses the patient and identifies that they do not require transport to hospital and could be managed through an alternative care pathway.

¹ HAC is the acronym for the Health Access Coordination Unit – this is a secondary triage system used by the ASNSW. The aim of the HAC Unit is to assist in the management of ASNSW resources, by redirecting non-urgent and non-serious “000” calls away from ambulance response and subsequent ED presentation.

In terms of the cost impacts of the patient journey, there are cost differentials between:

- urgent and non-urgent patient transports and
- patients requiring transport and those that can be managed through another pathway.

The experience of ASNSW suggests that the predominant response code assigned to mental health frequent callers is 1C, with a smaller proportion of patients with a response code of 1B, 2A and 2H. The majority of these patients were transported (Ambulance Service of New South Wales 2011).

Table 1 *ASNSW response grid (2008)²*

Priority Code	Response Code	Response Category	Response Mode	Response Guidelines
P1	1A	Emergency Immediate Response	Hot	<ul style="list-style-type: none"> ▪ Closest and most timely approved ambulance resource. ▪ Minimum of three (3) officers. ▪ Highest clinical skill should form part of the response.
P1	1B	Emergency Immediate Response	Hot	<ul style="list-style-type: none"> ▪ Most timely ambulance response ▪ Highest clinical skill where available.
P1	1C	Emergency Immediate Response	Hot	<ul style="list-style-type: none"> ▪ Most timely ambulance response
P2	2A	Emergency 30 Minute Response	Cold	<ul style="list-style-type: none"> ▪ Ambulance to be at patient location within thirty (30) minutes of call. ▪ Consider ECP.
P2	2B	Emergency 60 Minute Response	Cold	<ul style="list-style-type: none"> ▪ Ambulance to be at patient location within sixty (60) minutes of call. ▪ Consider ECP.
P2	2C	Emergency 90 Minute Response	Cold	<ul style="list-style-type: none"> ▪ Ambulance to be at patient location within ninety (90) minutes of call. ▪ Consider ECP.
P2	2Ah 2Bh 2Ch	Emergency HAC Eligible	Cold	<ul style="list-style-type: none"> ▪ Incident eligible and may be referred to HAC for secondary triage. ▪ Unless advised otherwise by HAC ambulance must arrive in accordance with the 2A, 2B or 2C grid above. ▪ Consider ECP.

² Information provided by the ASNSW, personal communication 12 June 2011. Note the priority codes P3 – P9 have deliberately been excluded.

4 Research Methods

4.1 Strength of evidence

It is our practice with literature reviews to clarify at the outset of the project the definition of what constitutes 'evidence'. When undertaking targeted literature reviews, the level of evidence in academic literature is generally derived from the study design, based on the assumption that certain study designs are more effective than others in eliminating bias (that is, alternative explanations for an observed effect). The Cochrane Collaboration provides a hierarchy of levels of evidence which emphasises the value of systematic reviews of randomised controlled trials (RCTs). The Cochrane methodology was developed for assessing the effectiveness of interventions in medical research. However well designed studies, particularly for complex interventions that involve changing systems of health service delivery, often generate equivocal results that are difficult to interpret. When this occurs, although a study might meet the criteria for a certain level of evidence the results need to be interpreted with some caution to determine the extent to which the intervention can be said to be supported by evidence.

Whilst systematic reviews of RCTs may provide a useful starting point for identifying clinical outcomes for mental health patients accessing emergency services, in reality, RCTs relevant specifically to interventions for mental health frequent callers and appropriate to the NSW context, are unlikely to be available. This project requires a broader evidence base and more detail about the content and implementation of relevant interventions than RCTs generally provide. It is also important to bear in mind that what works in one context might not work in another (Dopson, FitzGerald et al. 2002); that implementation might be more context-dependent for some interventions than for others (Øvretveit 2004); or that some contexts might be more receptive to change than others (Pettigrew, Ferlie et al. 1992; Greenhalgh, Robert et al. 2004).

To ensure the focus remains on including the best available evidence, the strength of the evidence has been assessed through the use of the classification system shown in Figure 2. This system of evaluating and summarising the evidence for interventions was designed at the Centre for Health Service Development and is based on hierarchies originally developed by other organisations. In its document on developing clinical practice guidelines, the National Health and Medical Research Council of Australia (National Health and Medical Research Council 1999) states that:

'...recommendations ... should be based on the best possible evidence of the link between the intervention and the clinical outcomes of interest.'

In the schema below, the first five levels are hierarchical and relate to the strength of the evidence on interventions. The last five have been used to assess evidence on relevant implementation aspects of interventions for paramedic response to mental health frequent callers.

Figure 2 *Schema for summarising the strength of the evidence*

- | |
|--|
| <ol style="list-style-type: none"> 1. Well-supported practice – evaluated with a prospective randomised controlled trial 2. Supported practice – evaluated with a control group and reported in a peer-reviewed publication 3. Promising practice – evaluated with a comparison group 4. Acceptable practice – evaluated with an independent assessment of outcomes, but no comparison group (e.g., pre- and post-testing, post-testing only, or qualitative methods) or historical comparison group (e.g., normative data) 5. Emerging practice – evaluated without an independent assessment of outcomes (e.g., formative evaluation, service evaluation conducted by host organisation) 6. Profiles of treatment population (e.g., routine data) 7. Service planning parameters (e.g., legislation, policy) 8. Patients' views (e.g., surveys, interviews) 9. Expert opinion (e.g., peak bodies, government policy) 10. Economic evaluation (including service utilisation studies) |
|--|

4.2 Development of the literature review framework

A start-up meeting with representatives of the ASNSW was held on Thursday 9 June 2011. This provided a valuable opportunity to confirm the scope, timeframes and project deliverables, as well as the context within which this project sits.

Prior to and since this meeting a range of relevant documentation has been forwarded to the project team. During the start-up meeting no particular issues were flagged as contentious at this point in time. The audience for the final report was clarified as the Executive Management of ASNSW in the first instance. The report may subsequently be used in all or part to inform discussions with the Mental Health and Drug and Alcohol Office of NSW Health.

Discussions confirmed that the range of frequent callers is broader than persons with a mental illness; however it is this sub-group that is the focus of this project, particularly models of care that might be implemented to better manage demand from this group of patients/clients. An interagency response (including Police, Community Mental Health Services and Emergency Department personnel) is likely to be useful. The ASNSW has a Memorandum of Understanding between the NSW Police, ASNSW and NSW Department of Health (NSW Health - Ambulance Service of New South Wales - NSW Police Force 2007). There are 36 local protocol committees currently in operation. It was also noted that many mental health frequent callers are likely to already have a case manager.

During our initial consultation meeting with the ASNSW we discussed several threads that might be explored through the literature review framework. These include but are not limited to:

- Definitions of mental health frequent callers (including any classification systems)
- Policies implemented in other jurisdictions or countries for mental health frequent callers
- How services identify or 'flag' mental health frequent callers
- Alternative care pathways/models of care to improve demand management for mental health frequent callers
- Use of case plans and care coordination for mental health frequent callers (including involving the mental health consumer in case management)
- Interagency responses to mental health frequent callers
- Costs to ambulance and/or health services in managing mental health frequent callers

4.3 Search strategies

4.3.1 General approach

Using the information provided, including relevant reports, we identified the relevant medical subject headings (MeSH) terms to guide the literature search. MeSH is the US National Library of Medicine's controlled vocabulary thesaurus, and consists of sets of terms and naming descriptors in a hierarchical structure that permits searching at various levels of specificity. Once suitable references were identified we checked the key terms used in these items and tested various combinations of these key terms in both Google Scholar and health specific databases looking for consistency between the results of the previous searches using the MeSH terms.

This allowed us to refine the search terms which we entered into several databases. Initially searching focused on core clinical journals with the aim of identifying systematic reviews. Known sources of systematic reviews such as the Cochrane Library, Database of Abstracts of Reviews of Effects (DARE) and the Turning Research into Practice (TRIP) database for Evidence Based Medicine were individually searched with variable results. We then completed further searches of the academic literature, utilising a range of databases accessed through the Summon technology available at the University of Wollongong library and/or direct database searches. Outputs were ranked according to relevance to the key words or terms.

In recognition of the fact that many service innovations are often not recorded in the academic literature, we undertook a search of the 'grey' or practice literature, looking particularly at government and health related practice sites for service evaluations, policies and/or evidence based guidelines related to the management of mental health frequent callers. Specific details of our search strategy and an overview of our results are provided in Appendix 1.

5 Findings

In summary, the ASNSW is interested in exploring:

- How are frequent callers, mental health frequent callers and frequent users of emergency services defined or classified and what are their characteristics?
- What interventions and/or models of care are documented in the literature to assist with managing the demands generated for emergency services by mental health frequent callers? (For example, how do other jurisdictions and countries respond to mental health frequent callers)?
- What other factors influence demand management strategies for mental health frequent callers?

Very few studies targeted specifically at reducing demand for emergency medical services were identified. There is not a body of literature that deals specifically with mental health frequent callers; evidence has been drawn from related fields: frequent callers to emergency services, frequent users of Emergency Department (ED) services and frequent users of hospital and community based mental health services (Pickering, Mason et al. 2009).

5.1 Frequent callers

This section of our report provides definitions and characteristics of frequent callers to ambulance services and describes how mental health frequent callers are understood in relation to other frequent callers and frequent users of emergency services.

5.1.1 Definitions of frequent callers

The definition of a frequent caller is not standardised in the literature. There were few consistent definitions used across the different service systems and settings that were identified in this review and no studies were found that gave a definition for a mental health frequent caller. There were a number of studies that identified frequent users, including frequent users of mental health services, emergency services and mental health emergency services. These groups will be discussed below to inform thinking about the group of individuals who may frequently contact and use emergency services.

Australia

The ASNSW (2011) has defined a frequent caller as anyone that makes ten or more calls in a one year period. Using this definition and ambulance data, the ASNSW Frequent Caller Management Project identified 938 frequent callers within NSW who made 14,578 calls, resulting in 11,428 transports to EDs. This included 154 people who called 20 or more times in the one year period 2009/10. These frequent callers were assessed as to whether they were also frequent users of EDs or whether they frequently refused ambulance transport. This analysis grouped frequent callers by Area Health Service by number of patients, calls and presentations. It appears that most frequent callers are transported to hospital therefore becoming frequent users of emergency services. The proportion of frequent callers for each Area Health Service (AHS) that were subsequently transported to hospital by ambulance ranged from a low of 62.8% in Greater Southern AHS to a high of 85.7% in Sydney South West AHS. The report notes:

'For each call, a Computer Assisted Dispatch (CAD) problem description was recorded at the time of call. This is an initial description of the caller's problem or complaint that is made by the person that called triple zero... The three most common conditions were breathing problems, mental health issues and chest pain' (Ambulance Service of New South Wales 2011 p.15).

Mental health issues included overdose and attempted suicide in addition to psychiatric disturbances, (specific mention was not made of deliberate self harm). Patients from this group

were predominantly allocated an ambulance response code of 1C, with a smaller proportion of patients with a response code of 1B, 2A and 2H. The majority of these patients were transported.

United Kingdom and Europe

The Yorkshire Ambulance Service (2010) model for working with frequent callers began with recognising individuals who made calls to 999 more than 15 times in six months. A distinction is not made by definition (or service response) between frequent callers and mental health frequent callers.

The London Ambulance Service (LAS) currently defines a frequent caller as a patient who has placed at least 10 emergency calls in a month. The LAS web-sites states:

'...that an analysis of case examples, along with data from other studies, suggests that patients may regularly place calls to us for a wide variety of reasons, including... 'mental ill-health, personality disorder or dependency conditions promoting chaotic lifestyle' (London Ambulance Service 2011).

The LAS also appears to have an integrated approach to frequent callers and does not define mental health frequent callers as a particular sub-set. The LAS recognises that these persons often have complex conditions and social circumstances as illustrated by the following case example:

'An extreme example is a patient who had called 999 over 700 times over a two-year period. She had also called the GP co-operative over 120 times, been seen 18 times in the co-op base, and had six home visits within four months. The patient was obese, suffered with anxiety and behavioural problems as well as a range of clinical problems. The estimated costs of providing a 999 service to her over a 12-month period was £110,880.'(London Ambulance Service No Date)

Locker et al (2007) in the UK proposed that frequent users be defined as any patient who makes more than four attendances per year. Hansagi et al (2008) used a definition for frequent users in a European setting as being patients who make four or more visits in a year. They quoted other studies by Hansagi et al (2001) and Byrne et al (Byrne, Murphy et al. 2003) who also used this same definition of frequent users.

United States and Canada

The South Carolina Public Health Institute (2011) produced a report on frequent users of hospital emergency departments. Their definition of a frequent user was a person who visited an ED in the state five or more times in a calendar year.

A study of the impact of case management for frequent ED users in the San Francisco area (Okin, Boccillari et al. 2000) included patients who had used the ED five times or more in twelve months which defined them as frequent users. There was no justification given as to why this measure of frequent use was used.

Chan and Ovens (2002) in Canada used the definition of 12 or more visits to an ED in a year.

Mental Health Frequent Callers

A number of studies have shown that frequent callers often have mental health disorders that affect the frequency of contact that they have with emergency services (Locker, Baston et al. 2007; Burgess, Christensen et al. 2008). This has already been identified by ASNSW in their recently completed study of 'Frequent Callers'(Ambulance Service of New South Wales 2011 p.15). In the US, calls to emergency services are identified as increasingly related to psychiatric and drug related causes (Munjal, Silverman et al. 2011).

The literature identified callers to help lines with psychiatric disorders more time-consuming and challenging (Morris, Tedeschi et al. 2009). Morris et al (2009) studied persons with mental illness contacting a tobacco 'quit line' and noted that cessation calls may need to be shorter and more frequent for clients with psychiatric health issues, especially for lower functioning clients.

Pasic et al (2005) focussed on high frequency users of psychiatric emergency services. They used three definitions of frequent users, including patients with visits at least two standard deviations above the mean number of visits (a statistical justification meaning at least seven visits in a four year period) who were classified as chronic high utilisers, patients with six or more visits in a single year (an indicator from the literature), and patients with four or more visits in one quarter (the current definition used by the local county hospital) who were classified as acute high utilisers).

5.1.2 Characteristics of frequent callers and frequent users

Frequent callers in general often do have distinct characteristics. The literature identified frequent callers to emergency services, frequent callers to physicians and frequent callers to help or crisis lines. A group related to frequent callers are frequent users of emergency services, including frequent users of mental health emergency services. As noted previously no studies were found that gave a clear definition for a mental health frequent caller, and most often the studies published in journals will note psychiatric or psychosocial factors as part of a constellation of characteristics associated with frequent users.

Frequent callers

A study by Munjal et al (2011) looked at trends in emergency calls in New York City in the period between 1999 and 2007. They found that the most substantial increases were in "psychiatric/drug related" calls, "general illness" and "environmental related" calls. The largest decrease was in respiratory calls, particularly asthma. There was also a decrease in trauma related calls and in particular violence related calls. They found that overall there was a rise in the use of emergency medical services but the rise was uneven across call types.

Kirkby and Roberts (2011) conducted an online survey to determine the proportion of people who would correctly identify situations in which they should call for an ambulance. They found that the majority of participants would appropriately call for an ambulance when a real emergency occurred but that there were also high levels of inappropriate calls when there wasn't an emergency. No participant characteristics were predictive of calling an ambulance inappropriately. (It should be noted that a purposive sample of 133 friends, family and colleagues of the researcher, was selected for this study and no information was provided on the respondents health status e.g. whether they had a pre-existing chronic or mental health condition).

Rinke et al (2011) studied high users of pre-hospital emergency medical services in Baltimore. They studied transport data from the Baltimore City Fire Department (BCFD) and identified the 25 most frequent users. Of the most frequent callers identified they found that the average patient age was 60 years, 40% were male, 90% were enrolled in health insurance, 70% had a mental health and/or substance abuse disorder and all patients had two or more chronic diseases.

An Australian study by Baldry et al (2011) aimed to identify and describe the cohort of frequent presenters across multiple emergency and health services who are dealt with due to a mental health related condition more than three times in a given year. Limitations of the NSW Health data systems, including a non systematic approach to the identification of duplicate individuals in the ASNSW information systems inhibited the accurate identification of frequent presenters across NSW. The authors found unlike many other datasets there is less clarity around the definition of a mental health contact for ASNSW, as there are multiple flags that could indicate a mental health episode. For ASNSW the chosen reference year was 2007 as recording practices had been significantly improved to that year allowing a more accurate picture of mental health frequent presenting to be captured. Data was also captured over fewer years for this dataset due to these data quality concerns, with data collected for contacts between 2005 and 2009.

This research identified some important characteristics of frequent presenters that were common across all agencies: males were more often frequent presenters however females were over-represented as frequency of presentation increased. Age is an important variable for mental health frequent presenting with younger people associated with mental health frequent presenting. Indigenous Australians are over-represented to varying extents across all agencies in spite of limited recording practices. NSW Police Force referrals to health facilities are associated with increased contacts and prolonged duration of contact (Baldry, Dowse et al. 2011 p.8).

Baldrey et al (2011 p.10-11) found that the most significant result was the influence of suicide and self harm behaviour evident amongst these frequent presenters. In 2007, there were over 3000 suicide attempts by individuals in the cohort, with over 1000 individuals attempting suicide in the year, accounting for 46% of all ASNSW presentations. The majority of ED presentations resulted in the individual being released from the ED following treatment with approximately one third of presentations resulting in an admission to a ward. Only 3% of presentations for this group resulted in the individual leaving prior to treatment. A significant finding of this study is that there is possibly a significant overlap of agency utilisation, that is, there is likely to be a group of people who are both single agency and multi-service frequent presenters.

Tangherlini et al (2010) undertook a case control study of paramedic records to observe frequent use of emergency medical services among the elderly (65 years and older). They examined three different groups of transported patients, one to three transports per year (low users); four to nine transports per year (high users), and ten or more transports per year (very high users). The authors found that male gender, black ethnicity, homelessness and a variety of different medical problems were associated with increased emergency service use in this population. Homelessness was the strongest predictor of frequent use with the number of medical problems and medications also significantly associated with frequent use of emergency services. Psychiatric disease and substance abuse were not associated with frequent emergency service use in this older population. Medical illness severity, particularly in the case of asthma where the patient had no primary care physician, was also a factor in frequent use.

Hildebrandt et al (2004) studied patients in the US who frequently called physicians after hours. They found that frequent callers to physicians were predominantly female, had three times as many office hours visits, diagnoses and medications and eight times as many hospital admissions as the control group. Their most common primary diagnoses were psychiatric disorders, pain, chronic illness, pregnancy and common childhood illnesses. They concluded that this group of frequent callers were often high utilisers of health care services and that targeted patient education and referral to support services may decrease the number of calls and health care utilisation.

Houry et al (2004) studied the characteristics of households in the US that repeatedly contact 911 to report intimate partner violence. They found that there were some ethnic differences between African American, White and Hispanic households but could not identify the reasons for this. They did not find that households who repeatedly called 911 were more likely to experience severe violence than those households that made single calls.

Ingram et al (2008) analysed 300,000 calls to a US crisis hotline over a five-year period. They found that the most sought after assistance was for parenting, youth concerns and mental illness. They also found that women were twice as likely to call the hotline as men.

Frequent users of ED services

Byrne et al (2003 p.309) found that frequent attendees at EDs are also heavy users of primary care and other hospital services. They argued that:

'Frequent attenders are a psychosocially vulnerable group, and service providers and policy makers need to take account of this vulnerable patient profile as they endeavour to meet their service needs.'

Washington State Health Care Authority (2007) reviewed a number of studies on unnecessary ED use. This included studies looking at frequent users that found that substance abuse and depressive disorders were the top diagnoses of 'behavioural health' ED frequent users.

Frequent users of emergency services have been labelled as 'inappropriate users' and as such have been blamed for adding to the burden on emergency health care services. This assumption may in fact itself be inappropriate. A systematic review of prevalence and factors associated with inappropriate ED use found that these varied widely, depending mainly on the criteria used and the study population. However the prevalence of inappropriate ED use was consistent in a large number of studies, even across countries with different health care systems (Carret, Fassa et al. 2009).

'The principal factors associated with inappropriate ED use were younger age, female gender, absence of co-morbidities, lower health spending, not being referred by a health professional, not having a regular physician or regular source of care, and difficulty in accessing primary care' (Carret, Fassa et al. 2009 p.23).

Bernstein (2006) looked at a number of studies of frequent users of emergency departments and found that frequent users are sicker than infrequent or nonusers; use more health care in general, including more non-ED ambulatory visits, suffer disproportionately from mental illness and substance use; and their insurance status, race, and ethnicity are minor determinants of ED use.

In a 12 month study by Ruger et al (2004), the team analysed different groups of ED users and found that those presenting more than 20 times were significantly more likely to present with non-urgent conditions and significantly less likely to have a higher DRG severity. They were also significantly less likely to be admitted to hospital and significantly more likely to leave without medical attention. The authors also found that virtually no patients visiting more than 20 times had health insurance and relied on traditional Medicare or Medicaid but also had fewer inpatient days and lower average costs than those visiting once.

Sanchez Medina et al (2007) conducted a study of frequent emergency department users in the Spanish health system. They found that frequent users were usually older, female and frequently visit for the same health reason that is persistent over time. They concluded that a small but significant percentage of ED users systematically access emergency services for health care that could be provided by another service.

A systematic review of the literature completed by LaCalle and Rabin (2010) relating to frequent ED users in the US found that contrary to popular myth, the most frequent ED users were white and insured, were aged between 25 and 44 or were older than 65 years. On average frequent users had higher acuity complaints and were at greater risk of hospitalisation than occasional users. However, they also found that the opposite may be true for the highest frequency users. Patients younger than 65 years and receiving Medicare (chronically disabled) were associated with significantly higher rates of mental health diagnoses than any other group. They found that frequent users were also heavy users of other parts of the health care system but only a minority of frequent users become long term frequent users. In particular they found that many frequent users present with true medical needs. They make the following observation about sub-groups in this population:

'Thus, although subgroups of the frequent-user population exist, the results of existing studies fall short of characterising the discrete groups, at least in ways that are useful in developing policy. There may be sharp differences among frequent users with and without chronic illness or with and without psychiatric or substance abuse issues, and possibly differences based on age, geography, or other demographic characteristics' (LaCalle and Rabin 2010 p.5).

UK researchers, Locker et al (2007), conducted a study to define frequent use of an urban emergency department. The authors compared differences in observed frequency distribution and

a theoretical frequency distribution. They found that 3.7% of their sample “frequent users” accounted for 12.4% of attendances. They found that frequent users were older than chance users, were more likely to arrive by ambulance, presented with psychiatric problems or alcohol intoxication and were more likely to be admitted to hospital. The authors found that there was a group of patients who presented repeatedly to the emergency department.

Frequent users of emergency mental health services

Arfken et al (2002) conducted a study of utilisation rates of a psychiatric emergency service. They concluded that frequent users were disadvantaged individuals who lacked support and alternate treatment settings and therefore use psychiatric emergency services to meet basic needs. The study did not define what was meant by ‘frequent user’.

Young et al (2005) studied characteristics of a random sample of 179 people who were high utilisers of emergency mental health services. They defined high utilisation as receiving treatment from Los Angeles County Department of Mental Health for at least three of the years between 1988 and 1993, and having an average annual treatment cost of \$30,000 or greater. The purpose of this study was to better understand individual characteristics that affect use of emergency mental health services. Greater use of emergency services was associated with male gender, minority race, severe illness, homelessness, and less family support. Efforts to reduce emergency services need to improve access to appropriate community services, particularly for people who are homeless or lack family support.

A large study that compared high frequency users of psychiatric emergency services with a control group of non-frequent utilisers found over four years that high service utilisers made up a small percentage of individuals who were evaluated in the crisis triage unit but utilised a disproportionate share of resources. They identified two distinct groups of high utilisers (who amongst other factors were differentiated by acute as opposed to chronic mental illnesses) that demonstrated similar characteristics from the control group in that they were more likely to be homeless; to have a history of developmental delay; to be enrolled in the regional mental health plan; to have a history of psychiatric hospitalisations, uncooperativeness, personality disorders, or unreliable social support; and to have a lifetime history of incarceration and detoxification (Pasic, Russo et al. 2005).

Bonyng et al (2005) profile a crisis intervention program in a rural setting serving adults who experienced crises at two levels: moderate and severe. The moderate level of intervention typically consisted of urgent care (within 72 hours) and a crisis hot line. The severe level of the crisis program addressed what was termed as a mental health emergency. Individuals experiencing a mental health emergency demonstrated three or more of the following conditions: (1) danger to self, (2) danger to others, (3) significant confusion, (4) significant depression, and (5) significant functional decline. Key findings included that young and middle age adults access mental health emergency services the most and that assumptions that crisis service utilisers are ‘frequent flyers’ were incorrect with the finding that only 7% of individuals used the severe level crisis services more than twice.

Lay et al (2006) studied the predictors of inpatient use in first admitted patients with psychosis. They found that homelessness was the strongest predictor of ‘heavy use’ (cumulative days) of psychiatric services and that frequent use of in-patient services (number of admissions) was most strongly related to younger age at admission, low level of education and living alone.

Berren et al (1999) conducted a study in the US looking at medical claims for physical health care of 220 Medicaid enrollees with severe and persistent mental illness which were compared with medical claims of a randomly selected group of 166 Medicaid patients who were not enrolled in the public mental health system. Although this group used fewer health care resources overall, their rates of treatment utilisation in an urgent care setting was higher than for patients without mental illness which appeared to be the case even for the same diagnoses. Twenty-eight percent of the health care dollar for patients with severe mental illness went to emergency rooms and ambulances, compared with only 11 percent for the patients without mental illness. Thus,

individuals with severe and persistent mental illness appear to stand out as high users of emergency services even in a high-user population.

Sullivan et al (1993) studied repeat visitors to a psychiatric emergency service to determine whether they could be identified by demographic and diagnostic characteristics. The authors found that those who visited more than once in a year constituted 5.1% of the sample but made 27.1% of the total visits. Repeat users were significantly more likely to be male, younger, unmarried, unemployed, and non-white and to have diagnoses of schizophrenia, other psychotic disorders, and personality disorders.

Several studies have identified particular social, clinical, and demographic characteristics which serve as predictors of repeat psychiatric emergency use. Younger, non-White, unemployed, and unmarried males have the highest rates of repeat use, with homelessness serving as a strong indicator of high utilisation. These individuals typically have a history of psychotic disorder or schizophrenia, substance abuse, prior hospitalisation and a need for medication. A study conducted in Washington noted that 56 percent of individuals who visited the ED 31 times or more in a year had diagnoses of both alcohol or drug disorder and mental illness. (Bender, Pande et al. 2008)

5.2 Interventions: responding to mental health frequent callers

This section of the report considers models of care and/or interventions documented in the literature to assist with managing the demands generated for emergency services by mental health frequent callers.

The term 'models of care' now appears regularly in the literature although the derivation of the term is unclear and there is no consistent definition of the concept. Queensland Health (2000) has defined a model of care as:

'a multifaceted concept, which broadly defines the way health services are delivered. It can therefore be applied to health services delivered in a unit, division or whole of District' (Queensland Health 2000).

A somewhat more detailed definition is:

'an overarching design for the provision of a particular type of health care service that is shaped by a theoretical basis, evidence based practice and defined standards. It consists of defined core elements and principles and has a framework that provides the structure for the implementation and subsequent evaluation of care' (Davidson and Halcomb. 2006 p.49)

In our assessment the term intervention provides a more accurate description of the types of activities we identified in the literature to address the demands of mental health frequent callers upon emergency services.

A standard dictionary defines the term 'intervention' as an influencing force or act that occurs in order to modify a given state of affairs.³ The term health care intervention is much broader and may include a variety of things from something as simple as providing a patient information brochure or prescribing a new drug, through to introducing a new technology, or procedure. Often interventions consist of multiple strategies to address a health problem or issue. The World Health Organization (Nutbeam 1998 p.10) 'Glossary of Health Promotion' provides the following definition:

'Interventions may include government policies and consequent programmes, laws and regulations, or health services and programmes, including health promotion programmes.'

³. Available at: <http://www.minddisorders.com/Flu-Inv/Intervention.html> accessed 22 July 2011.

5.2.1 Health care interventions

Several interventions for frequent caller management were identified from the literature as part of the ASNSW 'Frequent Caller Management' project (Ambulance Service of New South Wales 2011). Seven studies and programs were compared and we have not replicated this information but chosen to build upon this foundation and search for additional interventions. An overview of our findings from the academic and practice literature is provided below.

Interventions in the prehospital setting

The London Ambulance Service (LAS) has developed a model for caring for frequent callers involving the establishment of a Patient Centred Action Team. The LAS historically did not have any formal policy or procedures in place to manage patients defined as frequent callers to emergency services. Referrals from ambulance personnel and health and social care professionals were picked up by the Patient Advice & Liaison Service (PALS) but this had to be managed alongside other priorities in the workload. The LAS created a frequent callers unit in 2007 as a dedicated taskforce to review and manage the needs of patients who, for a variety of often complex reasons, persistently place 999 calls. Patients who make ten or more 999 calls are identified, reviewed and managed by the team. The team takes a multidisciplinary approach to providing an optimal care pathway for individuals and agencies while also reducing call volume.

The unit sits within the Patient Experiences Department and works across organisational boundaries to achieve better care arrangements and alternative care pathways in relation to the patient's individual needs. The team works with GPs, primary, acute and social care and other healthcare professionals to support frequent callers. Case studies have indicated a number of innovative approaches to helping individuals and resolving the problem of frequent calls. There are now three full time officers and one part time social worker dedicated to managing individual cases. Initially, there were some 400 patients who were referred to the unit. A review was conducted which culminated in reducing the number of cases to 140, and this is the usual workload with more cases referred on a daily basis (London Ambulance Service 2011).

The Yorkshire Ambulance Service model (2010) for working with frequent callers began with identifying individuals who made calls to 999 more than 15 times in a six month period. Ambulance data were used to identify patients who were unstable and in frequent need of emergency care and those patients who would benefit from alternative pathways to care. A management approach is taken for individual patients via their primary care provider. Shared feedback helps with the identification of pre-determined symptoms when a patient presents in an emergency setting allowing the diversion of the patient to an alternative pathway. One specific approach that has proved successful has been to refer identified frequent callers to a community nursing service (Yorkshire Ambulance Service 2009).

Closer to home are two examples of extended care paramedic (ECP) programs that are contributing to management of low acuity cases by extended care pathways. The ECP initiative and low acuity program (formerly CARE) are well known to ASNSW so details will not be repeated here. The South Australia Ambulance Service (2008) has as a key initiative of *Defining the road ahead – Service Delivery Model (2008-2015)* an ECP service. These "up skilled" intensive care paramedics are available for flexible deployment to provide out-of-hospital interventions aimed at reducing ambulance delivery into hospital EDs. The SA Ambulance Service believes that ECPs will greatly contribute to out-of hospital patient management strategies by providing improved initial diagnosis and/or complete treatment for a range of common medical issues. They may refer patients to other health providers such as GPs if needed. With this service, an ECP assesses the patient's requirements through phone consultation and dispatches an ECP single responder in an ambulance response vehicle as opposed to a traditional stretcher-carrying ambulance. By treating more patients in their home or surrounds, it is anticipated that ECPs will help manage the demand for both ambulance services and hospital ED care. The involvement of ECPs with mental health patients is not specifically discussed in the program documentation.

In an intervention study of high users of pre-hospital emergency medical services in Baltimore the 25 most frequent Emergency Medical Service (EMS) users in a major metropolitan area were identified, and ten were enrolled in the intervention. Of the enrolled patients 70% had a mental health and/or substance abuse diagnosis, and all patients had two or more chronic diseases. Each patient received an initial home-based assessment and a plan of care was developed. These patients received linkage to psychosocial and medical resources through weekly case management visits for 5 to 12 weeks over a four month period. Patients were issued with the Baltimore Health Care Access telephone number if patients had questions or problems and patient education was provided on the proper use of EMS. The case manager held weekly meetings with clinical and outreach staff to review case plans and discuss challenging patients (Rinke, Dietrich et al. 2011).

There was almost 100% compliance to case manager's referrals. Transport responses decreased by 32%, although two patients had greater than predicted transport responses during the intervention. There were no obvious differences between those patients who had increased transport responses and those who had decreased transport responses. The case management intervention also reduced costs to the health system. In particular they found that the high-frequency EMS users in the study had multiple unmet medical and psychosocial needs and required personalised interventions and referrals (Rinke, Dietrich et al. 2011).

In 2010, the Wisconsin Office of Rural Health (the Office) provided funding to Community Memorial Hospital in Oconto Falls to conduct an assessment of the impact of frequent users on the Hospital's emergency department and local EMS. "Frequent users" are defined as individuals who use EMS and emergency department services frequently and out of proportion to others in the community. Representatives from the hospital, ambulance and the Office reviewed hospital, EMS and Department records to identify the most frequent users of their services. They calculated an annual cost, in terms of non-reimbursed services, across all agencies of almost \$US260,000 (\$AUS 248,500). They formed an emergency services coalition to address this issue and communicated their findings to local government. A pilot project has been funded until November 2011 with a part-time behavioural health case manager who works with substance abuse/behavioural health patients, and an emergency room services assistant, who works with those patients using emergency services for primary care reasons. The goal is to inform patients of appropriate services and how to access them, reducing the number of patients using costly emergency services (Wisconsin Office of Rural Health 2011).

Schmidt et al (2006 p.390) evaluated an emergency services-initiated 'non-transport' system.

'This study was designed to identify the socio-demographic factors and run characteristics (time of day of call, frequency of prior EMS calls, whether the call was mutual aid or not) that influence the decision to not transport patients in an EMS system with an established nontransport policy and to crudely evaluate safety by determining 30-day mortality.'

They found that age was the only factor that determined whether an individual was transported or not, with older people more likely to be transported to hospital compared to younger people. They also found that patients with cardiac, respiratory and gastrointestinal complaints were more likely to be transported and patients with miscellaneous and minor trauma, such as abrasions and lacerations, were less likely to be transported. Mortality among non-transported patients was low with only two patients not transported dying within 30 days during the 22 month study period. It was not able to be determined if transport at the original callout would have changed the outcome but due to the sample size it was difficult to interpret this as strong evidence of safety of the nontransport policy. This study did not look at mental health aspects of non-transport.

Scott (2000) evaluated the effectiveness and efficiency of a mobile crisis program in handling 911 calls identified as psychiatric emergencies. The study does not define how these calls were identified however, it did describe the methods for determining whether a psychiatric emergency required hospitalisation. A psychiatric emergency team provides telephone or radio consultation to

the police unit attending the scene or the team attends the scene and relieves the attending officers. A psychiatric nurse evaluates the person and decides if transportation to hospital is required or on-site counselling and referral assistance can be provided. The evaluation found that over 50% of cases handled by the mobile crisis team didn't require hospitalisation compared to 28% handled by regular police officers.

Shaban (2006) reviewed literature in relation to paramedic clinical judgement and mental health assessment in the emergency context. They found that there were few studies that examined paramedic clinical judgment and decision-making practices of mental illness in the emergency primary health context. Most studies identified looked at clinical judgement and decision-making in relation to cardiac arrest and trauma. The complexity of clinical situations faced by paramedics and resulting difficulties in clinical judgement had not been examined. Paramedics are routinely required and expected to manage patients with mental illness, yet there appears to be a lack of suitable, structured, and validated tools to use in the pre-hospital and emergency context. The author recommends that paramedics acquire skills in mental health assessments that allow them to recognise and manage mental illness. Shaban (2006) also comments on the dearth of research internationally, where available the interpretation and applicability of many studies to Australian jurisdictions are limited largely due to study design and geographic and cultural contextual differences.

Schmidt et al.(2001) evaluated emergency medicine technician's ability to safely apply protocols to assign transport options. Protocols were developed that categorised patients as: (1) needs ambulance; (2) may go to the ED by alternative means; (3) contact primary care provider (e.g. family doctor); or (4) treat and release. The examination of 1,300 patients who received ambulance treatment guided by these protocols indicated that the use of protocols led to the under-triage of 9% of patients. Patients with psychiatric complaints or dementia were at the highest risk of under-triage and nearly half the patients who were under-triaged, had a psychiatric complaint or dementia. Protocols used in this study did not specifically address the identification of dementia or mental illness. Schmidt et al.(2001) recommend the redevelopment of protocols that address mental illness and behavioural disorders, and further education about assessment of this high-risk group.

In summary, an international review of ambulance service best practice found a number of factors linked with higher ambulance utilisation. These included mental health problems (suicide/overdose), older population, night attendances to emergency departments, payment for ambulance services, injury related visits and urgent visits requiring admission (Pickering, Mason et al. 2009).

Interventions in the ED setting

In Australia, the National Institute of Clinical Studies (NICS) has undertaken substantial work to improve emergency department performance through collaboration and continuous improvement (National Institute of Clinical Studies 2003; National Institute of Clinical Studies 2004).

The Mental Health Emergency Care Interface Project 2004 – 2006 connected emergency and mental health staff from different organisations, allowing them to work closely together with the aim of improving the care of mental health patients in EDs. The project extended across approximately 40 hospitals. The ED is often where people with a mental health problem seek access to health care, including mental health services. The project focused on improving the processes of care from the point of referral through to a plan of management for discharge from the emergency department in collaboration with community, primary care, mental health and tertiary care services. The development of patient management plans was a major strategy to reduce unscheduled re-presentations. A major outcome of the project was better referral practices and an improved capacity of participating hospitals to address mental health. Monthly monitoring data showed a varied number of sites achieving study targets in relation to discharge of mental health patients within four hours, reductions in "did not wait" rate of mental health presentations and reduction in 72 hour re-presentations of mental health patients by fifty percent. Qualitative data showed that there was an improvement in communication and understanding between EDs

and mental health services, better referral practices, improved capacity of the hospital to address mental health needs, use of local data to drive change and use of resources provided by NICS improved assessment and streamlined care (National Institute of Clinical Studies 2006).

Shaban (2006) reported on a project to improve care for people with mental health problems presenting to EDs. The project was commissioned by the Victorian Department of Human Services as part of the National Institute of Clinical Studies Emergency Care Community of Practice. The six month project involved the implementation of the Victorian Emergency Department Mental Health Triage tool across 14 metropolitan and 5 regional hospitals in Victoria. The tool used was based on the South East Sydney Area Health Service (SESAHS) triage tool developed in 1999, and is regarded as best practice for ED Mental Health Triage by both the New Zealand Guideline Group and the NHS National Institute for Clinical Excellence. This project sought to close the evidence-practice gap in mental health care in emergency departments. It is a project that has lessons for paramedics and ambulance professionals about mental health assessment in the emergency primary health care context such as the importance of improving the preparedness of all health care professionals, including paramedics, to recognise, assess, and manage mental illness in everyday practice. It recognises the importance of adequate education and training programs, clinical standards, policy, and legislation for ensuring quality and accountability of the care of the mentally ill.

A study by Okin et al (2000) based in the US examined the impact of case management on hospital service use, hospital costs, homelessness, substance abuse, and psychosocial problems in frequent users of a public urban ED. The subjects were 53 patients who used the ED five times or more in 12 months. It was a prospective study that followed high users for 12 months. The intervention centred on a comprehensive, intensive case management model delivered by a skilled psychiatric social worker. The case manager was responsible for providing and coordinating all needed services including: crisis intervention, individual and group supportive therapy, arrangement of stable housing and financial entitlements, linkages to primary care providers, harm reduction services and referral to substance abuse treatment, liaison with other community agencies and extensive, persistent outreach (home visits, “tracking” and finding patients, accompanying patients to medical appointments, and so on). Utilisation, cost, and psychosocial variables were compared 12 months before and after the intervention. The median number of ED visits decreased from 15 to 9. The median total hospital service cost decreased from \$US21, 022 in the year before case management enrolment to \$US14, 910 in the year after enrolment, and median medical emergency service costs decreased from \$US4, 124 before case management to \$US2, 195 after case management. There was no apparent change in the cost of medical outpatient, psychiatric inpatient, psychiatric emergency, or ambulance services (Okin, Boccellari et al. 2000 p.605).

Linkins et al (2008) evaluated the ‘Frequent Users of Health Services Initiative’ in California. This Initiative involved six funded programs aimed at addressing the health and social service needs of frequent users of ED services. They found that in the first year clients were accessing appropriate primary care treatment through which medical treatment needs, such as surgery, were identified and scheduled. Once clients’ health conditions were stabilised through these interventions, the need for hospitalisations was reduced. Connecting patients to stabilising services such as housing, health insurance and income benefits was an important intermediate outcome of the program. Over 60% of participants had no insurance at enrolment and 45% were homeless. In particular, connecting clients to housing was a significant factor in reducing rates of ED attendance and charges.

The California Initiative has also demonstrated significant benefits at the system level, in particular investing in and stimulating the development of a comprehensive, coordinated system of care to address the needs of frequent users. Successful programs within the initiative focussed on systems change efforts in the following areas: elevating the awareness and understanding of the needs of frequent users across the county; establishing new collaborations to increase capacity for housing homeless people; improving access to mental health and substance abuse treatment; improving communication and care coordination across hospital and primary care providers;

streamlining processes for securing social security benefits, food stamps, and medical coverage; and developing a sense of “collective accountability” within the community. The last strategy led to other initiatives such as discharge planning, respite care, pain management, and overall improvements in case management. The development of successful partnerships was integral to the success of the programs within the Initiative (Linkins, Brya et al. 2008).

The South Carolina Public Health Institute (2011) has suggested a number of solutions to inappropriate ED use. Most importantly they are trying to help patients establish a medical home with primary care providers to avoid repeated use of the ED for episodic care and management of chronic conditions with an emphasis on targeting frequent users. One South Carolina hospital has employed an ED nurse to act as a patient advocate to help patients establish a medical home in the community by linking them to private physicians, free clinics, and community health centres for care. Staff subsequently increased to two for patients with medical issues and four for patients with mental health issues. Some difficulties with this solution were the long waiting times for many health centres and clinics. On the other hand, nurses were able to provide patient education about appropriate use of the ED and the availability of other services. Other solutions included a private-public partnership that provided donated medication to the uninsured; expanded office hours for primary care and behavioural health services and providing care management services for frequent users; establishing more low-cost retail clinics; increasing the allied professional workforce; and taking advantage of new technologies to link patients with health information.

Weiss et al (2005) studied the effect of a social service intervention among non-homeless 911 repeat users. They found that an attempt to help all non-homeless frequent users was not an efficient use of social workers time. Most potential participants were either not available or not interested in the intervention, in spite of recruitment attempts. Only 12% of frequent users were interested in being helped. The authors concluded that social workers should focus on need related groups rather than all frequent users.

Frequent users often return to the ED because of a lack of community mental health services. Linking these individuals with a triage nurse on an as-needed basis and scheduled contacts with an identified staff member, coupled with a proactive community approach in identifying these individuals, has been proposed as a strategy for reducing ED use for repeat users. Further, mobile crisis teams that treat emergencies in the community have been cited as a way to reduce the number of psychiatric cases arriving at a hospital. In addition, the Maryland Health Care Commission recommends increased case management for chronically homeless individuals to avoid presentation at the ED (Bender, Pande et al. 2008 p.20).

Bernstein (2006) argued that the most likely approaches to reducing the prevalence of frequent ED use involve expanding office hours for primary care and mental health services and providing case management for frequent users.

Young (2005) argued that because individuals using emergency services appear to have worse access to outpatient treatment than others, interventions should be designed to improve their access to those services.

‘Individuals who use emergency mental health services are a particularly vulnerable population. They are likely to be severely ill, homeless, and lack support from their family. As with other chronic medical disorders, people with severe and persistent mental illness who use emergency services are also at risk for poor access to routine, effective outpatient treatments. When developing interventions to reduce the need for emergency mental health services, attention should be paid both to improved access to care and also to the importance of enabling factors such as homelessness and lack of family support.’

Interventions in mental health services

Patfield (2009) described a model developed in the Greater Western Area Health Service (GWAHS), based in Orange, that used video technology to address issues related to lack of access to mental health services in rural and remote areas. The GWAHS experienced a tripling in

use of transport services, both police and ambulance, since 1990. Video conferencing and telemedicine was used to overcome the problems presented by distance and limitations in resources in relation to access to appropriate mental health services. The model included a central team of nurses and psychiatrists, a mental health call service, structured triage, video assessment, management advice until problem resolved, liaison with police, ambulance, EDs, mental health services, GPs and families and training for local and general hospital staff. Results indicated a reduction in inappropriate transport, recommendations for admission for those who might otherwise have been missed, fewer admissions and admissions more often occurring locally rather than to distant psychiatric units.

Doughty (2006) conducted a systematic review of effective models of mental health service provision and workforce configuration in primary care settings. She found that collaborative care models, including those incorporating a case management approach and/or using the services of a care manager or primary mental health care worker were beneficial. Collaborative care was of particular benefit to older adults and collaborative care delivered by multidisciplinary teams may also improve clinical outcomes in those with persistent or recurrent difficulties.

The Mental Health Council of Australia (2006) produced a document on 'smart services' which support people with serious mental health diagnoses in their own communities. The authors describe three in depth case studies of models of care for mental health consumers and their carers, two in Victoria and one in Italy. These models are aimed at helping people living with serious mental illness while also reducing the reliance on expensive hospital-based care. In particular they describe the input of non government organisations (NGOs) in the success of effective care. The models described include the Integrated Community Supported Recovery (with Prevention and Recovery Care) Program from Victoria, St Luke's Recovery Focused Services (including the Intensive Home Based Outreach from Victoria) and the Psychiatrist-led Community Supported Recovery Trieste Mental Health Services in Italy. The two Victorian models are delivered by NGOs, funded by government, and include strong partnerships with the Area Mental Health Service and other NGOs. The Trieste model in Italy is a community psychiatry model driven and funded by government but with strong community/NGO partnerships.

Herrington et al (2009) reported on a NSW police pilot program to train frontline officers with enhanced mental health training in three local area commands. The program improved sharing of information between NSW police and NSW Health but there were still concerns about the communication of information to officers in the field. Interagency agreements were also problematic due to non-attendance at meetings of some agencies and tensions between some agencies external to the police force. There appeared to be little difference between trained and non-trained officers in relation to police attendance at schedule 1 events and handover in EDs. The study reported that there are still a high number of transports of individuals to the ED via police vehicles, even though this is meant to be an option of last resort.

Summary of interventions

A comprehensive summary of the major interventions appropriate to mental health frequent callers is included in Appendix 2. The table provides a brief description of the study, its target group, model of care or intervention, study design, available information on results, costs and benefits and an assessment of the level of evidence. Some of the models are more comprehensive than others, with some more appropriately described as interventions that fit within a broader model of care. The findings from this analysis are synthesised in Table 2. In assessing the level of evidence for each intervention we have applied the schema outlined in Figure 2 (refer to Section 4.1).

An assessment of the levels of evidence for models of care for mental health frequent callers to emergency services must take into account the nature of evidence. Some practices may not rank highly on the 'level of support' for the intervention, simply because of the quality of the evidence available.

In the course of reviewing the literature, particularly the practice literature, many models/interventions were identified that were not supported by good quality research evidence. This was not because research had been undertaken with inconclusive or adverse findings; it was that the research had not been done. For the sake of completeness some of these models/interventions are listed.

Table 2 *Summary of supported interventions for mental health frequent callers and users of ED services*

Level of support		Intervention
1	Well-supported practice ⁴	Collaborative care models incorporating a case management approach.
2	Supported practice	No models were identified with this level of evidence
3	Promising practice	No models were identified with this level of evidence
4	Acceptable practice	Mental health emergency services community of practice; prehospital case management intervention with more intensive case manager; interagency collaboration and case conferencing Rural service model based on virtual consultation-liaison, telemedicine, interagency collaboration, training and clinical governance processes
5	Emerging practice	Frequent caller units, care coordination incorporating case management; medical homes with primary care providers, nurse advocates and improved access to primary health care ; intensive case management Police mental health intervention team with enhanced training to front line police officers in management of mental health crises and development of interagency partnerships

5.2.2 Costs and benefits of mental health frequent caller interventions

Dalziel and colleagues (2008) undertook a comprehensive literature review and identified 245 health care interventions undertaken in Australia which had been subject to cost-effectiveness analyses. Of these 32 interventions related to mental health and none applied in the prehospital setting. In fact only 26 interventions (11% of the total) focused on hospital inpatients and none of these could be considered as either a 'demand management' intervention or a 'model of care' intervention. The most common interventions subjected to cost-effectiveness analysis were pharmaceuticals (21% of total), primary medical care or specialist care (27%) and community/media/education (16%). The authors noted that there was also substantial variation in the cost effectiveness of individual interventions within and across all categories. They concluded:

'For any given condition, modality or setting there are likely to be examples of interventions that are cost effective and cost ineffective. It will be important for decision makers to make decisions based on the individual merits of an intervention rather than rely on broad generalisations' (Dalziel, Segal et al. 2008 p.1).

Whilst general references to 'system-wide' cost savings were identified in some articles these applied predominantly to interventions occurring within ED services (Okin, Boccari et al. 2000; Rinke, Dietrich et al. 2011). Limited information was identified in the literature on the costs and/or economic value of mental health hospital avoidance interventions, and information relating directly to models of care for mental health frequent callers was even scarcer – the most useful example came from the Yorkshire Ambulance Service in the UK and included all frequent callers to this service.

The Yorkshire Ambulance Service (2010) data on the estimated total cost of frequent callers and the potential financial impact to the health system of a reduction in calls of 30% and 50% is included in Table 3. The cost benefits are accrued through reduced ambulance journeys, reduced

⁴: Studies generating this evidence however focus on the primary care setting generally as opposed to emergency management specifically.

ED attendances and reduced hospital admissions. Whilst there are some costs associated with implementing interventions to manage frequent callers (such as case management) these are not high.

Table 3 *Number of frequent callers and potential savings in English pounds*

Primary Care Trust	Estimated total cost of frequent callers	Financial impact of % reduction in calls	
		30%	50%
Barnsley	£1,009,052	£302,716	£504,526
Bradford	£793,358	£238,007	£396,679
Calderdale	£504,278	£151,283	£252,139
Doncaster	£866,248	£259,874	£433,124
East Riding	£1,017,482	£305,244	£508,741
Hull	£966,409	£289,923	£483,205
Kirklees	£817,655	£245,296	£408,827
Leeds	£1,365,072	£409,521	£682,536
N. Yorkshire	£596,010	£178,803	£298,005
Rotherham	£952,525	£285,758	£476,263
Sheffield	£1,320,941	£396,282	£660,471
Wakefield	£826,580	£247,974	£413,290
All PCTs	£11,035,609	£3,310,683	£5,517,805

A review by Brown (2005), concluded that at present there is insufficient evidence to assess the cost-effectiveness (as well as the clinical effectiveness) of individual models of mental health service provision, or to allow comparison between models. Similarly, another review (Harkness and Bower 2010) found that the clinical or economic impact of on-site mental health workers in primary care, delivering psychological therapy and psychosocial interventions, was unclear. In addition, it has been stated that an area of research into psychiatric emergency services that requires further development is cost-effective resource allocation (DeClercq 1999, in Brown 2005). In terms of deliberate self-harm, there are very few economic evaluations that satisfy rigorous criteria for health economic evaluation. Evaluating the cost of treatments for self-harm is difficult due to the heterogeneous nature of self-harm and the lack of evidence about treatment effectiveness (National Collaborating Centre for Mental Health and Royal College of Psychiatrists' Research Unit 2004). The Department of Families Housing Community Services and Indigenous Affairs (2011) also concurs that information on cost-effectiveness in mental health is limited.

Within the scope of this targeted literature review only a few examples were found where the cost-effectiveness of mental health interventions was stated and quantification of cost benefits was infrequently provided. For example, a report by the Mental Health Council of Australia (2006) asserts that evidence exists that NGO based services have significant cost saving potential, but qualifies this statement with a recognition of a clear need for stronger evidence to support investment, to be achieved through cost-effectiveness evaluations in addition to social and health outcomes data (sources were not provided for this evidence).

The few studies identified that reported on cost-effectiveness of specific interventions are described below. These included an evaluation of a mobile crisis program in handling 911 calls that were identified as psychiatric emergencies, which found that persons served by the mobile crisis team, as opposed to police officers, had a 23 percent less average cost per case (Scott 2000). An Australian study relating to the mental health liaison nurse model of care stated that the model was cost-effective, however no costing figures were provided in the published articles (Wand and White 2007; Wand, White et al. 2010).

Walsh, Currier et al. (2008) in a US study of psychiatric emergency services for the elderly reported on research that identified that ED visits by elderly patients typically cost more than visits by younger patients, and visits by patients with a psychiatric condition cost more than visits by patients without such a condition. Whilst this study does not relate to the prehospital context and ambulance services, what it does highlight is another factor that is likely to influence future demand for ambulance services, increasing numbers of older people with psychiatric conditions.

5.3 Other factors influencing interventions for mental health frequent callers

5.3.1 Consumer engagement

There is an emerging literature regarding consumer participation in decision-making. Consumer engagement is currently conceptualised as spanning across a continuum from information to consultation to participation/partnership; the level of engagement is determined by the overall purpose, processes and outcomes anticipated (Kodner 2003; Griffiths, Christensen et al. 2004; Viney, Oades et al. 2004; Transform Australia's Mental Health Service Systems 2010).

A lack of evidence of the role played by consumers in the identified models of care for mental health frequent callers is apparent in the literature. As minimal information was located by the literature search, the extent and nature of consumer involvement is unclear. Nonetheless, it may be expected that consumer involvement is important, as engagement of consumers has been shown to be in other areas of health, including mental health.

A Canadian case-management program for frequent ED users that utilised individualised care plans is one example from the literature where patient involvement was highlighted as a key point to success (alongside a multidisciplinary approach, including medical and social care plans, with community support) (Pope, Fernandes et al. 2000).

A report on innovative models of mental health care by the Mental Health Council of Australia (2006) states that the strongest focus on consumer driven models seems to be offered by NGO-based services, noting that a small number of these organisations are managed by consumers in peer support roles.

The National Health and Hospitals Reform Commission has recommended that more effective mechanisms are necessary to allow consumer and carer participation and feedback to shape programs and service delivery (Mental Health Council of Australia 2010).

5.3.2 Interagency response

In Australian health policy, an acceptance of inter-agency responses to mental health is evident. For example, the NSW Government's strategic approach to improve the mental health and wellbeing of the NSW community has been largely based around two plans: NSW Mental Health Plan 2005-2010 and NSW Interagency Action Plan. The plans recognise the importance of a cross-agency focus, as the majority of mental health problems are treated in the primary health sector with support from a variety of other agencies, including mental health professionals, other allied health professionals, community health services and a wide range of community organisations (NSW Government 2005). Additionally, the Mental Health Emergency Response Memorandum of Understanding between NSW Health, ASNSW and NSW Police Force acknowledges the need for collaborative inter-agency responses, with commitment from all agencies to work cooperatively being essential to successful implementation (NSW Health - Ambulance Service of New South Wales - NSW Police Force 2007).

Various other inter-agency protocols for mental health care exist in other Australian jurisdictions. For example, the Department of Health and Victoria Police Protocol for Mental Health (Mental Health Drugs & Regions Division - Victorian Government Department of Health 2010) describes how Victoria has 21 Emergency Services Liaison Committees (ESLCs), comprising senior staff

from the local police, ambulance, hospital emergency department and mental health services, as well as consumer and carer representatives. These ESLCs have various roles, including: developing and updating local protocols for inter-agency service cooperation and coordination; and arranging inter-agency training and information sessions to share knowledge and skills. Furthermore, among the key principles guiding the Victorian protocol for ambulance transport of people with a mental illness are cooperation and communication between services, health professionals and carers (Mental Health Drugs & Regions Division - Victorian Government Department of Health 2010).

Despite this apparent acceptance of inter-agency responses to mental health in Australia, a lack of clear evidence of effectiveness is evident. DeClercq identified service integration as an area of psychiatric emergency services research requiring further development (DeClercq 1999, in Brown 2005). Another review found a lack of clarity as to the most effective model of liaison for mental health services that promoted client and staff outcomes (Callaghan, Eales et al. 2003). Evidence specifically regarding inter-agency responses for mental health frequent callers was also lacking.

Indicative of the need for more evidence of effective inter-agency responses, the Mental Health Council of Australia (2006) has recommended that:

‘...comparative analyses of models from other countries which appear to be achieving high levels of integration between clinical and community care and functional (including vocational) rehabilitation would also provide further valuable knowledge’.

The Royal College of Psychiatrists and British Association for Accident and Emergency Medicine (2004) have also recognised inter-trust and inter-agency communication as a frequently neglected area, but one that is fundamental in situations where EDs must be able to work effectively with other teams. They have stipulated that the area be adequately resourced, with respect to personnel time and materials, and acknowledged that institutions may require mutual agreements regarding their resource allocation responsibilities.

Examples of projects promoting interagency responses to mental health were located in the literature. The Mental Health-Emergency Care Interface Project, run by the National Institute of Clinical Studies, is one example of a project that encouraged inter-agency responses (National Institute of Clinical Studies 2006). The Mental Health Intervention Team program, piloted by the NSW Police Force, also encouraged inter-agency responses and improved sharing of information between the Police Force and NSW Health, but found “it was difficult to agree effective inter-agency agreements when not all departments were represented” (Herrington, Clifford et al. 2009). In addition, an NHS mental health checklist gave a positive practice example of the sharing of patient information between service providers (Department of Health - UK National Health Service No Date).

A pilot by the London Ambulance Service to reduce serious incidents involving people with severe mental illness through timely information sharing was identified in the literature search. Ambulance crews, mental health staff based in EDs and community mental health professionals, amongst others, were able to request information about individuals judged to be a risk to themselves or others. The London Ambulance Service recognises: “that frequent users of their service will often have complex health and social circumstances which require us to work closely with other health and social care organisations” (London Ambulance Service 2011).

There are increasing needs to improve mental health skills of all health-care professionals, improve coordination of services provided to consumers of mental health services and their carers, and foster greater community interest and involvement in mental health issues (Schmidt, Atcheson et al. 2001).

5.3.3 Access to community based health services

Analyses of demand management pressures frequently address the issue of the appropriateness of treatment e.g. inappropriate attendances at emergency departments and inappropriate admissions to hospital. The South Carolina Public Health Institute (2011) found that frequent use of the ED is less to do with inappropriate use and more of a symptom of broader systemic problems with the health care system.

'Frequent users are often blamed for ED over-crowding because it is assumed that their use is inappropriate; however, there is evidence that these patients simply need more care and that they use the ED because of the lack of a medical home. They visit the ED because they have no place else to go for care'.

This is supported by international evidence that frequent callers often have real problems that require enhanced care solutions (Hildebrandt, Westfall et al. 2004; Bernstein 2006; LaCalle and Rabin 2010).

Richardson and Mountain (2009) argue that the overcrowding in EDs has been primarily due to access block, caused by a systemic lack of capacity throughout health systems, and not inappropriate presentations by patients who could have gone to settings other than their ED.

The rise in emergency visits by psychiatric patients is often seen as a "proxy measure" for failure of the outpatient mental health system to accommodate their needs. While research has demonstrated that community-based approaches to treatment of mental illness yield high levels of success, the presence of community-based services continues to be limited. Community-based services are often unavailable or unaffordable to many mentally ill individuals, forcing many psychiatric patients to present to the ED as their last attempt to obtain care. Given the unavailability and lack of affordability of community-based mental health services, patients may use the emergency room as a last resort (Bender, Pande et al. 2008).

Referring to the US, Bender, Pande et al. (2008) claim that the lack of coordination between the mental health system and the ED creates a "lack of shared responsibility and accountability between the mental health system and the ED." In fact, a state's mental health agency may have little or no relationship with EDs (Bender, Pande et al. 2008). A lack of comprehensive mental health services within the community forces some psychiatric patients to present to the ED, often on multiple occasions. A "revolving door" syndrome ensues, where the same psychiatric patients repeatedly return to the emergency room for care -- never obtaining the extent of the care that is needed. Health professionals have acknowledged that few efforts have been made to identify frequent users and understand the underlying causes of their repeat visits. (Bender, Pande et al. 2008)

Upon presenting to the ED, psychiatric patients often provide clinicians with extremely difficult decisions concerning admission. Having to decide whether to admit a mentally ill patient often within five minutes, ED physicians typically choose to err on the side of caution in order to avoid potential liability issues. In addition, contingent suicidality exists, where an individual reports being suicidal just to gain admission, and then rescinds the statement after being admitted. Even if staff believe there are no suicidal or homicidal tendencies, staff members perceive the need to admit patients in this instance given the potential liability (Bender, Pande et al. 2008).

5.4 Working within the context of the NSW health system

5.4.1 Mental health service delivery in NSW

Interventions for mental health frequent callers will need to be developed within the context and structure of mental health service delivery in NSW. NSW Health, the Ambulance Service of NSW and NSW Police have a history of working collaboratively to provide efficient, appropriate and effective care for people with mental health problems, underpinned by the Mental Health Act

(NSW) 2007, and the principles of the Memorandum of Understanding – Mental Health Emergency Response (NSW Health - Ambulance Service of New South Wales - NSW Police Force 2007).

The Mental Health and Drug & Alcohol Office (MHDAO) is responsible for developing, managing and coordinating NSW Department of Health policy, strategy and program funding relating to mental health and the prevention and management of alcohol and drug related harm. The office also supports the maintenance of the mental health legislative framework.

MHDAO has lead agency responsibility for coordinating Whole-of-Government policy development and implementation in the areas of mental health and drug and alcohol, particularly through actions arising from the State Plan S3 and F3 priorities, Drug and Alcohol Summits, Interagency Action Plan on Better Mental Health and New Directions in Mental Health Policy⁵

The Mental Health Act 2007 came into effect on 16 November 2007, when the Mental Health Act 1990 ceased to have effect. The objects of the 2007 Act are to make provisions with respect to the care, treatment and control of mentally ill persons and mentally disordered persons and other matters relating to mental health. The new Act resulted from a review of the legislation initiated by the Government and involved extensive consultations with consumers, carers and service providers.

Mental health services are provided by a variety of service providers: public and private, government and nongovernment, and hospital and community based service providers. However in NSW the public health system is the largest provider of comprehensive mental health services and the major provider of acute services for people with serious mental illness. The spectrum of mental health care includes: assessment, case management, crisis intervention, information, promotion and prevention, referral, rehabilitation and treatment.

Services are primarily delivered by Area Mental Health Services based within the newly created network of Local Health Districts and include inpatient, hospital-based, and community mental health services for all age groups across the spectrum of mental health care - from emergency response to less urgent mental health consultations.

There are also a number of state-wide, regional and specialist services, for example, the Early Intervention Service. Justice Health has responsibility for the state-wide Forensic Mental Health Services which provide comprehensive mental health care to offenders, young people, and forensic patients in the NSW correctional system. This can occur in ambulatory, hospital, courts and community settings. There are also three acute crisis management units for offenders in the adult system.⁶

In recent years new models of care have been implemented for chronic mental health patients including sub-acute services and housing assistance. The challenge of managing mentally disturbed patients in busy emergency departments has been recognised with the development of Psychiatric Emergency Care Centres, based within or adjacent to larger Emergency Departments in acute public hospitals. This is the service delivery context for interventions for mental health frequent callers.

5.4.2 Area planning and population health

NSW has a history of geographic area responsibility for health since the advent of the regionalised NSW Health Commission in 1972, in the Community Health Program from 1974 onwards, and through the Area Health Services Act(s) from 1986. In the wider policy framework of Justice and Human Services including Health, a Regional Governance Framework and Regional Coordination Program has matured in NSW having accumulated good evidence from locality and program-

⁵ Available at: <http://www.health.nsw.gov.au/mhdao/> accessed 4 August 2011.

⁶ Available at: <http://www.justicehealth.nsw.gov.au/our-services/mental-health-directorate.html> accessed 4 August 2011.

based experimentation and evaluations about the mix of integrated care methods and tools that have been tested for their effectiveness in practice.

Through its Health Areas (and now Districts), NSW has valuable experience in linking generalists and specialists in the community so as to reduce the reliance on acute hospital care for 'avoidable admissions' and is well positioned to contribute to the ways that Medicare Locals will operate. This should be formalised in a model 'engagement protocol' between the two local structures and other relevant bodies such as the Ambulance Service of NSW.

Under the Medicare Local proposals the expectation is that primary care (GPs along with State community health services and other relevant services) will have a growing role in reducing demand in acute care, where primary and secondary health services are expected to integrate with services in other sectors such as community aged care, youth services, housing and social support. Models for integrating care for frequent users of acute services under severe chronic disease management have begun their implementation and there is some evidence from evaluations of hospital avoidance programs in NSW and elsewhere about the impacts they may be able to achieve.

The Medical Local implementation process, in consort with the Local Health Districts, could be used to make progress towards establishing more formalised relationships between the participating organisations' strategic plans and bring the Local Hospital Network and Medical Local planning cycles into a common time line and encourage the use of shared systems for understanding and responding to health needs. This should ideally include agencies with relevant roles such as the Ambulance Service of NSW to create a jointly - auspiced 'population planning space' which would in turn function as an arena to enable the primary and secondary care sectors as well emergency services to jointly consider the best use of growth funds, by considering:

- the strategic aims of growth in particular sectors and programs
- the benefits and opportunity costs of supporting particular models of care and response protocols
- improving the balance of incentives – to avoid creating more perverse incentives and to plan ways around the existing barriers to more integrated care
- anticipating and responding to the needs of the 'non-users' and 'problem-users' of services.

6 Applying the findings from the literature

6.1 Revisiting the project aims

The aim of this project was to produce a range of options to improve the management of mental health frequent callers by the ASNSW. In addition advice was required on the application of these findings to the preparation of a business case for the introduction of a new model of care.

Interventions addressing mental health frequent callers will need to incorporate robust change methods.

‘Successful change initiatives hardly ever follow a simple pattern of ‘thinking’ followed by ‘doing’. Instead thinking informs doing and doing informs thinking throughout the process, in an iterative way’ (Iles and Sutherland 2001).

6.2 Implications for ASNSW

ASNSW like all public health services is faced with the challenge of managing increasing service demands (New South Wales Audit Office 2005; New South Wales Audit Office 2007). ASNSW has already investigated models for dealing with frequent callers generally, that involve the identification of frequent callers to prompt the development of care plans or the review of pre-existing care plans in order to improve their management (Ambulance Service of New South Wales 2011). There has also been investment in research to improve understanding of the distribution and characteristics of mental health frequent presenters specifically (Baldry, Dowse et al. 2011).

Interventions have been implemented such as the introduction of the Health Access Coordination (HAC) Unit and the development of Extended Care Paramedics as ways of providing alternative care pathways for low acuity patients. The HAC Unit began in 2003 with the purpose of managing ambulance services by redirecting non-urgent and non-serious emergency calls into alternative care pathways. If a call is defined as non-urgent/serious then it is transferred to HAC where a team of registered nurses and paramedics are on hand to provide advice and assist callers with more appropriate care pathways. While mental health frequent callers are not a focus of this model, it was noted that a number of frequent callers to the service have mental health problems that require a solution to address complex medical, mental and social needs. The Service has also introduced policy and practice around authorised paramedics identifying low acuity patients and implementing low acuity pathways for appropriately identified patients. The Extended Care Paramedic (ECP) Program currently has 58 extended care paramedics trained in selected locations. The interest of the ASNSW in low acuity pathways however is broader than just the ECP Program with a view that the management of low acuity patients is relevant to the role of all NSW paramedics. A significant proportion of low acuity patients may not require ambulance attendance or consequently transport.

The focus of ASNSW has been justifiably on strategies that can be deployed in the prehospital context.

There are many similar lessons from the literature relating to hospital demand management which focuses on four intervention points:

1. Preventing admission to hospital (hospital avoidance, or discharge to the community from the emergency department);
2. Programs aimed at shortening the length of stay in hospital by transferring aspects of care to the community;

3. Programs that manipulate the type of care provided in hospital during a usual length of stay (discharge from hospital following patient transfer from a medical/surgical ward bed to a specialised recuperative stream);
4. Usual length of stay hospital programs with post-discharge community-based supports aimed at preventing readmission to hospital (Kumar and Grimmer-Somers 2007).

There are numerous examples of relevant interventions in each of these categories; ASNSW may be able to adapt some of the lessons learned from hospital admission avoidance particularly (Masso, Robert et al. 2010). To illustrate this point two examples are provided of which we have direct experience. In our view hospital admission avoidance projects include many lessons that could inform the thinking of the ASNSW in developing interventions for mental health frequent callers.

6.2.1 SAFTE Care Program

We have previously evaluated the SAFTE Care Program which aimed to provide a rapid response to people with emerging care needs. This program aimed to identify people 'at risk' of presentation to EDs, reduce the rate of presentations to EDs against the trend and effectively manage short-term needs, plan long-term care in terms of patient preferences, and establish appropriate long-term sustainable community support. The program aimed also to improve integration and communication of service providers via a single entry point for referrers, via a referral, intake and triage contact centre to expedite a rapid response to patients in the community. It also implemented IT systems including a web based tool to facilitate communication and interagency information sharing. The underpinning strategy was access to a health based rapid response team seven days per week who could work with GPs to assist with fast track diagnosis and clinical management and access to long-term community care support. The evaluation of this intervention concluded that while many elements of the model worked well, the overall model required refinement if the program's goals were to be met. It noted that 79% of the SAFTE client group avoided the need to attend hospital due to the implementation and coordination of a range of community services. However because of the small numbers of referrals and the higher than expected costs of effectively meeting the needs of those who were referred, the cost of the program was estimated to be more than the cost of the avoided ED and inpatient services (Westera, Stevermeur et al. 2007).

6.2.2 Referring to avoid an ED presentation – Gold Coast Hospital Avoidance Program

Another example provided to illustrate the usefulness of related hospital based strategies and the lessons that can be learned from these for ASNSW, comes from the Gold Coast Health District in Queensland - Referring to avoid an ED presentation – Gold Coast Hospital Avoidance Program.

The Centre for Health Service Development (CHSD) was commissioned by Queensland Health to undertake an independent evaluation of the Hospital Avoidance Program (HAP) known as Home Health Link (HHL), which has been implemented on a pilot basis in the Gold Coast Health Service District (GCHSD). The aim of the HHL pilot was to increase the organisation's focus on patients who could safely return home earlier from an inpatient stay or could avoid being admitted into hospital altogether. The assumption was that, if extra services or a different type of service were available, additional efficiencies could be achieved.

There were a number of hospital demand management strategies (programs and projects) that were already operating on the Gold Coast. These were managed within different divisions of the GCHSD. There were also Non-Government Organisations (NGOs) that provided a range of related services. Some new programs and projects were initiated over the time of the HHL pilot. To avoid an ED presentation, patients were referred from the community by one of the following: a GP or Specialist, Community Mental Health services, Palliative Care or Aged Care Early Intervention and Management team. Patients and carers in the community were not able to refer themselves to HHL, nor were NGO services able to refer to HHL. Either group had to contact the appropriate GP who could then refer.

Although there was a community health service with a centralised intake system, the Steering Committee chose not to use this existing structure for this program, as it only operated during business hours, Monday to Friday.

HHL targeted three main referral sources by which patients could avoid an ED presentation: General Practice, Queensland Ambulance Service (QAS) and community based health services.

General Practice

From the start of the program, the GP Division Manager was a member of the HHL Steering Committee and a representative on the Implementation Committee.

In August 2008, HHL started visiting GP practices to explain the program and the referral process and distributed a resource kit that included the referral flow chart and referral forms. In addition, a HHL web link was placed on the Division of GP website.

The HHL Gold Coast Team Leader, the HAP Project Officer and the GP Liaison Officer worked together to develop an electronic referral form to make the referral process much easier for GPs. GPs were then able to refer patients to HHL using a secure electronic referral system with the first electronic referral received in February 2009.

HHL continued to communicate to GPs about the program, with articles being published in the GP Newsletter (Division of Gold Coast General Practice) and GP practice visits conducted by the HHL GP liaison team (from August 2008 until February 2009). By March 2009, the HAP Project Officer reported that all GP practices were aware of the program and had resources requesting GPs to download the electronic referral to their computers. In addition, they reported that all GPs who made direct referrals to HHL had been revisited with feedback sought from the GPs regarding the HHL referral process and program. HHL developed a database that was updated weekly to ensure timely feedback was provided to the GPs referring clients to HHL.

Queensland Ambulance Service (QAS)

Initially, HHL investigated if the Queensland Ambulance Service (QAS) could be a key referral source to avoid an ED presentation. At that time, the ambulance protocols required ambulance officers to transport all 'call outs' to ED. However, there seemed the possibility for QAS to refer to HHL those clients who had no injury, but were at risk of presenting to the ED due to social or fall related problems.

The QAS Area Manager and the QAS Quality Manager became members of the HHL Steering Committee.

The HAP Project Officer, HHL Gold Coast Team Leader and QAS worked together from August 2008 to develop a referral trial for those clients not requiring an ED presentation but who were at risk of presenting in the future due to further falls. Initially the trial was to occur across the three QAS stations with the highest rates of falls. However when the trial commenced in May 2009 it was extended to cover the whole of the Gold Coast. The first referral from QAS was accepted to HHL in April 2009 and, by the end of August 2009, a total of six referrals had been made.

The HHL Gold Coast Team Leader and the Project Officer continued to work with QAS to raise awareness and promote the program to QAS road staff on the program with regular meetings and education sessions. Weekly reports on suitable clients taken to the ED by QAS that could have been directly referred by QAS were supplied to Gold Coast QAS management staff for review.

Community based health services

There were other existing community services that also had the capacity to avoid presentation to the ED or a hospital admission. These included the Palliative Care Service and the Mental Health Service. These specialist services had an inpatient as well as a community component. HHL

could provide services until the NGO services commenced and/or they can provide additional services to “top up” care for existing patients and/or provide services “out of scope” of the current services.

HHL also consulted with other recognised organisations to develop specific referral procedures to avoid unnecessary ED presentation, including the Southport Watch House and other Community Mental Health services.

Findings of the evaluation concluded that the HHL program had ‘filled a gap’ by providing a technically efficient and responsive service, from a private provider. The HHL program had been innovative in identifying additional patient groups and services which could potentially benefit from the program, such as the Queensland Ambulance Service (QAS) and the Gold Coast Surgery Centre. The evaluation findings were complex and will not be reproduced here and noted (with a range of qualifying factors) that the overall finding was that programs such as HHL have the potential to be a cost-effective way of delivering services when compared with treating the same patients in hospital.

6.2.3 Informing business case development

The purpose of this targeted literature review is to contribute to thinking about the intervention points for ASNSW and where effort might best be directed. For ambulance services the intervention points include:

- Identifying mental health frequent callers and intervening before they move from ‘acute frequent callers’ to ‘chronic frequent callers’. (This can only occur through local collaborative approaches with mental health service providers, police and ED personnel to understand the characteristics of frequent callers and users of emergency services and working to identify this group).
- Flagging known frequent callers through ambulance information systems so alternative care pathways can be offered. (This currently occurs through initiatives such as the HAC unit).
- Identifying frequent users of ED services who may also be frequent callers to ambulance services.

O’Meara (2003) discusses the concept of a new service role – the prehospital practitioner who would have roles in the prevention of injury and illness, responding to emergencies, facilitating recovery, and planning future strategies for a healthy community. The application of such a role to mental health frequent callers is not explored. The author has developed a diagrammatic patient pathway for the prehospital practitioner model, which provides a useful structure for thinking about intervention opportunities for improved demand management. It is reproduced in Figure 3 below.

The ASNSW ‘Mental Health Strategic Plan (Ambulance Service of New South Wales 2011) includes the strategic objective to: ‘improve the process for managing frequent callers with mental health issues to Ambulance NSW.’ The key strategies to support this objective include developing and implementing a system of responding to frequent callers with mental health issues to ASNSW, including:

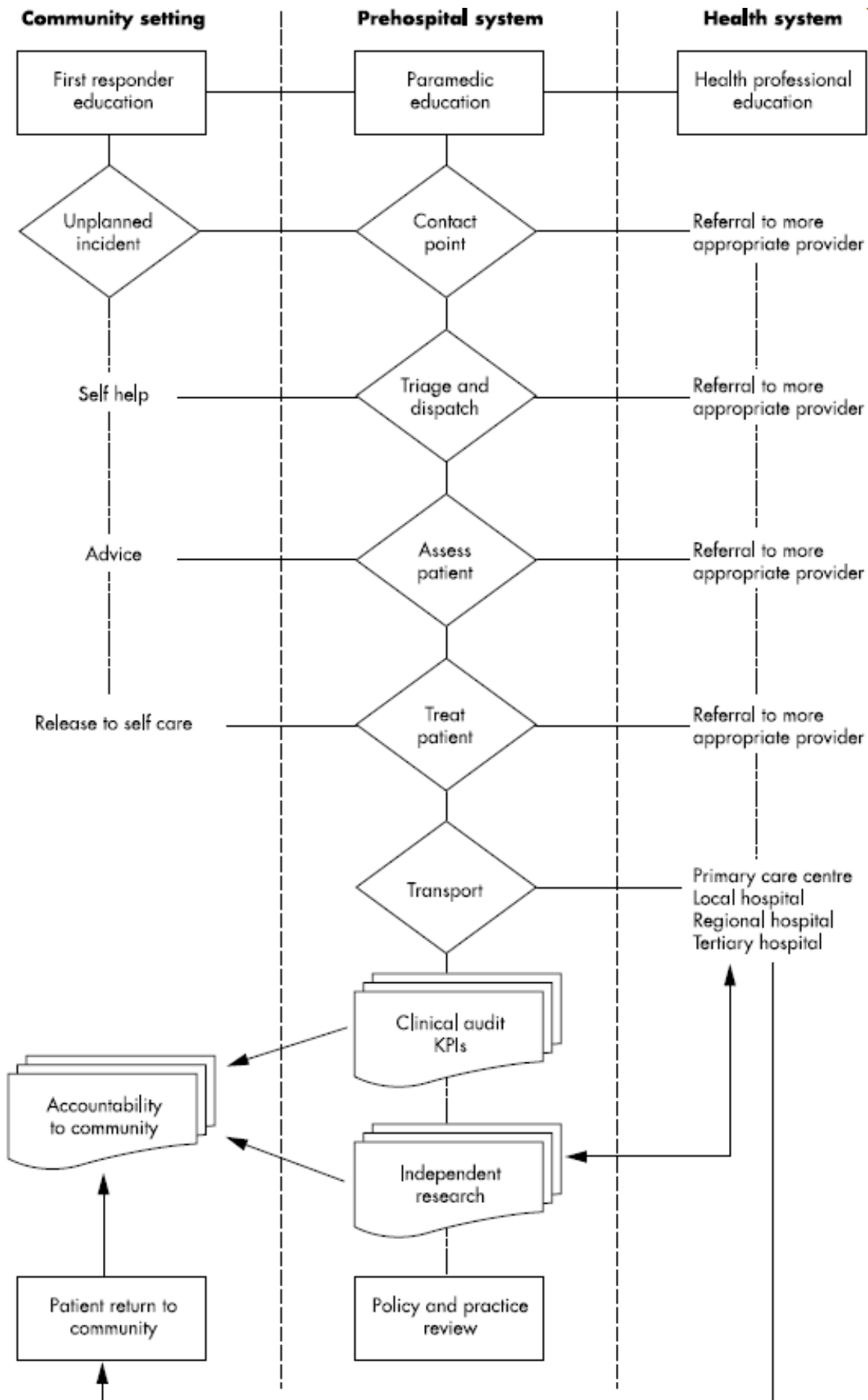
- Development of referral pathways
- Introduction of care plans
- Address issues related to privacy and information sharing
- Document roles and responsibilities of key agencies
- Develop protocols for interagency liaison (Ambulance Service of New South Wales 2011).

Any intervention will need to be collaboratively planned and rigorously evaluated. Options for further discussion include:

- Assessing the implications of intervening with all frequent callers as opposed to specific target groups e.g. mental health frequent callers, the homeless, aged frequent callers and hospital identified frequent users
- Developing a classification system for frequent callers to distinguish between the acute frequent callers and the chronic frequent callers, with the aim of intervening before acute frequent callers become chronic frequent callers (this could be developed by using the predictive characteristics of frequent callers/users identified in the literature and refined through retrospective and/or prospective data analysis)
- Defining mental health frequent callers and refining the current categorisation of ‘overdose, suicide, psychiatric’ used to date
- Investigating opportunities for information system improvements to allow flagging of individuals identified as chronic frequent callers
- Working with hospital ED personnel to pre-emptively identify known mental health frequent users of ED services
- Developing a policy and protocol to manage mental health frequent callers
- Establishing interagency collaborations to address mental health frequent callers
- Reviewing the applicability of identified evidence based strategies for the NSW context given the need for a system wide response, for example:
 - Designated frequent caller unit
 - Protocol development
 - Case finding
 - Case management
 - Streaming to other services and care pathways
 - Referral to appropriate primary care and community based services
 - Patient enrolment in integrated programs with intensive case management
 - Mobile crisis management
 - Patient and community education

It may be possible to conduct a prospective study evaluating non-transport policies and patient outcomes; this may help further elucidate the safety of protocols that address mental health frequent callers. Patient satisfaction data in regard to non-transport policies may give insight into the feasibility of using non-transport protocols.

Figure 3 Patient pathway for prehospital interventions



6.3 Conclusions: the advantages of wider systemic solutions

Mental health as a discrete characteristic of service users who frequently call emergency services is hard to differentiate from a constellation of other medical and psychosocial and factors that influence a person's acuity and/or chronicity. This is reflected in the review of evidence within the literature where mental health emergency response models are most commonly described as part of psychiatric case management and service delivery systems rather than being addressed within a body of literature generating evidence that is specifically relevant for ambulance and general emergency response services.

Mental health issues tend to exacerbate and be the result of other health and social issues as well as raising a set of service delivery problems in themselves; and this situation reflects the practical service delivery and integration issues for mental health interventions generally.

The question of who is best to respond is driven by the inevitable relationships between mental health services and other social supports, social isolation issues, the mental health statutory role in civil commitment of those who are dangerous to themselves and others, and also the periodic requirement for police service involvement. Mental health issues may be expressed in consort with issues of drug and alcohol consumption, drug overdoses, self-harm, suicide attempts and with older people, mental health issues are reflected in how cognitive difficulties can compound the problems of daily living for the frail elderly and those with dementia.

As one of the reviewed studies noted (Byrne, Murphy et al. 2003), frequent attenders are best characterised as a psychosocially vulnerable group, and service providers and policy makers need to take account of this vulnerable patient profile as they endeavour to meet their service needs. This implies the value of a generalised classification approach that includes mental health and psychosocial characteristics as part of an information system that is capable of raising 'flags' for frequent callers generally, rather than a specific protocol for mental health frequent callers more specifically.

One related conclusion that can be drawn from the disparate material covered in this review of what is known about mental health frequent callers is that 'integration' issues are more important than mental health issues per se. This is because the problems raised by mental health frequent callers reflect breakdowns in other sectors of health and human service delivery. This in turn makes a straightforward or separate emergency response protocol for mental health frequent callers an impractical exercise.

The interventions that appear to be most useful include management approaches for individual patients integrated via their primary care provider. Routine sharing of information helped with the identification of 'pre-determined symptoms' when patients request an emergency response, opening up the option of allowing the diversion of the patient to an alternative pathway. One approach that appeared to be successful in the UK has been to refer identified frequent callers to a community nursing service, or if available a mental health case manager.

In the North American context, characterised by more highly specialised medical services, the targeting of frequent users was described as trying to help patients establish a 'medical home' with primary care providers so as to avoid repeated use of the ED for episodic care and management of chronic conditions. Other successful US programs were said to focus on 'systems change' efforts in raising the awareness and understanding of the needs of frequent users. Collaborations to increase the capacity of services for homeless people and improving access to mental health and substance abuse treatments were highlighted, as was improving communication and care coordination across hospital and primary care providers.

These are systemic solutions not unlike those being promoted as part of the national health reforms, aimed at developing a sense of 'collective accountability' within more localised service delivery and planning environments. The health reforms proposed to be promoted through Medicare Locals and Local Health Districts in NSW are expected to promote initiatives such as

discharge planning, better self-management for those with severe chronic disease, more respite care, pain management, and overall improvements in case management for those less able to navigate the system on their own.

The development of successful partnerships at more local levels was highlighted in the literature as being integral to the success of the programs that have been demonstrated to be effective. The challenge for an agency such as the Ambulance Service of New South Wales is how to get a seat at the table as these wider reforms are being planned and implemented.

There is arguably a high degree of relevance for emergency response services in discussions of managing demand for acute care admissions generally, as part of a more integrated approach to severe chronic diseases, as well as in psychiatric emergencies. The knowledge base and strategies that emerge from the reviews conducted here could usefully be promoted as an integral part of wider systemic solutions that are currently (in 2011) only just beginning to be more systematically planned.

7 References

- Ambulance Service of New South Wales (2011). Frequent Caller Management. Sydney, Ambulance Service of New South Wales.
- Ambulance Service of New South Wales (2011). Mental Health Strategic Plan 2011 - 2015. NSW Department of Health. Sydney, Ambulance Service of New South Wales.
- Arfken, C. L., L. Lackman Zeman, et al. (2002). "Frequent visitors to psychiatric emergency services: staff attitudes and temporal patterns." Journal of Behavioral Health Sciences and Research **29**(4): 490-496.
- Baldry, E., L. Dowse, et al. (2011). Mental Health Frequent Presenters to Emergency and Mental Health Services in 2005 - Phase 1 Final Report. Sydney, University of New South Wales.
- Bender, D., N. Pande, et al. (2008). A literature review: psychiatric boarding, U.S. Department of Health and Human Services.
- Bernstein, S. L. (2006). "Frequent Emergency Department Visitors: The End of Inappropriateness." Annals of Emergency Medicine **48**(1): 18-20.
- Berren, M., J. Santiago, et al. (1999). "Health care utilization by persons with severe and persistent mental illness." Psychiatric Services **50**: 559-561.
- Bonyng, E. R., R. G. Lee, et al. (2005). "A Profile of Mental Health Crisis Response in a Rural Setting." Community Mental Health Journal **41**(6): 675-685.
- Broadbent, M., L. Moxham, et al. (2007). "The development and use of mental health triage scales in Australia." International Journal of Mental Health Nursing **16**(6): 413-421.
- Brown, J. F. (2005). "Psychiatric Emergency Services: A review of the literature and a proposed research agenda." Psychiatric Quarterly **76**(2): 139-165.
- Burgess, N., H. Christensen, et al. (2008). "Mental health profile of callers to a telephone counselling service." Journal of Telemedicine and Telecare **14**(1): 42-47.
- Byrne, M., A. W. Murphy, et al. (2003). "Frequent Attenders to an Emergency Department: A Study of Primary Health Care Use, Medical Profile, and Psychosocial Characteristics." Annals of Emergency Medicine **41**(3): 309-318.
- Callaghan, P., S. Eales, et al. (2003). "A review of research on the structure, process and outcome of liaison mental health services." Journal of Psychiatric and Mental Health Nursing **10**: 155-165.
- Carret, M. L. V., A. G. Fassa, et al. (2009). "Inappropriate use of emergency services: a systematic review of prevalence and associated factors." Cadernos de Saude Publica **25**(1): 7-28.
- Chan, B. T. B. and H. J. Ovens (2002). "Frequent users of emergency departments - Do they also use family physicians' services?" Canadian Family Physician **48**: 1654-1660.
- Dalziel, K., L. Segal, et al. (2008). "Review of Australian health economic evaluation -- 245 interventions: what can we say about cost effectiveness?" Cost Effectiveness and Resource Allocation **6**(9): 1-12.
- Davidson, P., E. and Halcomb. (2006). "Beyond the rhetoric: what do we mean by a 'model of care'?" Australian Journal of Advanced Nursing **23**(3): 47-55.

Department of Families Housing Community Services and Indigenous Affairs (2011). Working with Australians to promote mental health, prevent mental illness and support recovery. Evaluation of the FaHCSIA targeted community care mental health initiatives. Final Report, Australian Government.

Department of Health - UK National Health Service. (No Date). "Checklist - Improving the management of patients with mental ill health in emergency care settings." From http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4081193.pdf.

Dopson, S., L. FitzGerald, et al. (2002). "No magic targets! Changing clinical practice to become more evidence based." Health Care Management Review **27**(3): 35-47.

Doughty, C. (2006). Effective models of mental health service provision and workforce configuration in the primary care setting. New Zealand Health Technology Assessment Technical Brief. **5**: 91.

Greenhalgh, T., G. Robert, et al. (2004). "Diffusion of innovations in service organizations: systematic review and recommendations" Milbank Quarterly **82**(4): 581-629.

Greenhalgh, T., G. Robert, et al. (2004). "Diffusion of innovations in service organizations: systematic review and recommendations." Milbank Quarterly **82**(4): 581-629.

Griffiths, K. M., H. Christensen, et al. (2004). Promoting consumer participation in mental health research: A national workshop, Depression and Anxiety Consumer Research Unit, Centre for Mental Health Research, The Australian National University.

Hansagi, H., M. Olsson, et al. (2008). "Is information sharing between the emergency department and primary care useful to the care of frequent emergency department users?" European Journal of Emergency Medicine **15**(1): 34-39.

Hansagi, H., M. Olsson, et al. (2001). "Frequent Use of the Hospital Emergency Department Is Indicative of High Use of Other Health Care Services." Annals of Emergency Medicine **37**(6): 561-567.

Harkness, E. F. and P. J. Bower (2010). "On-site mental health workers delivering psychological therapy and psychosocial interventions to patients in primary care: effects on the professional practice of primary care providers (Review)." The Cochrane Library (7).

Herrington, V., K. Clifford, et al. (2009). The Impact of the NSW Police Force Mental Health Intervention Team: Final Evaluation Report, Charles Sturt University Centre for Inland Health Australian Graduate School of Policing.

Hildebrandt, D. E., J. M. Westfall, et al. (2004). "Are frequent callers to family physicians high utilizers?" Annals of Family Medicine **2**(6): 546-548.

Hjälte, L., B. O. Suserud, et al. (2007). "Why are people without medical needs transported by ambulance? A study of indications for pre-hospital care." European Journal of Emergency Medicine **14**(3): 151-156.

Houry, D., C. Parramore, et al. (2004). "Characteristics of Household Addresses That Repeatedly Contact 911 to Report Intimate Partner Violence." Academic Emergency Medicine **11**(6): 662-662.

Huang, J.-A., R.-H. Weng, et al. (2003). "Analysis of emergency department utilization by elderly patients under National Health Insurance." Kaohsiung Journal of Medical Sciences **19**(3): 113-119.

Iles, V. and K. Sutherland. (2001). "Managing change in the NHS: Organisational change - a review for all health care managers, professionals and researchers." Retrieved 14 July 2011. From <http://www.sdo.nihr.ac.uk/managingchange.html>.

Ingram, S., K. Hallstrom, et al. (2008). "Coping with Crisis Across the Lifespan: The Role of a Telephone Hotline." Journal of Child and Family Studies **17**(5): 663-674.

Kawakami, C., K. Ohshige, et al. (2007). "Influence of socioeconomic factors on medically unnecessary ambulance calls." BMC Health Services Research **7**.

Kevin, J. (2002). "An evaluation of telephone triage in mental health nursing." Australian e-Journal for the Advancement of Mental Health **1**(1): 1-12.

Kirkby, H. M. and L. M. Roberts (2011). "Inappropriate 999 calls: an online pilot survey." Emergency Medicine Journal.

Kodner, D. L. (2003). "Consumer-directed services: lessons and implications for integrated systems of care." International Journal of Integrated Care **3**(2): e12.

Kumar, S. and K. Grimmer-Somers (2007). "A synthesis of the secondary literature on effectiveness of hospital avoidance and discharge programs." Australian Health Review **31**(1): 34(16).

LaCalle, E. and E. Rabin (2010). "Frequent Users of Emergency Departments: The Myths, the Data, and the Policy Implications." Annals of Emergency Medicine **56**(1): 42-48.

Lay, B., C. Lauber, et al. (2006). "Prediction of in-patient use in first-admitted patients with psychosis." European Psychiatry **21**(6): 401-409.

Linkins, K. W., J. J. Brya, et al. (2008). Frequent Users of Health Services Initiative: Final Evaluation Report, The California Endowment and the California HealthCare Foundation.

Locker, T. E., S. Baston, et al. (2007). "Defining frequent use of an urban emergency department." Emergency Medicine Journal **24**(6): 398-401.

London Ambulance Service (2010). Feeling unwell? How to get the right NHS treatment. NHS Trust. London.

London Ambulance Service. (2011). "Caring for frequent callers." From http://www.londonambulance.nhs.uk/health_professionals/caring_for_frequent_callers.aspx.

London Ambulance Service (No Date). Case Studies of Frequent Callers. Ambulance Service of New South Wales. Sydney.

Lukens, T. W., S. J. Wolf, et al. (2006). "Clinical policy: critical issues in the diagnosis and management of the adult psychiatric patient in the emergency department." Annals of Emergency Medicine **47**(1): 79-99.

Masso, M., G. Robert, et al. (2010). "The clinical services redesign program in New South Wales: perceptions of senior health managers." Australian Health Review **34**: 352- 359.

Mental Health Council of Australia (2006). Smart services. Innovative models of mental health care in Australia and overseas, Mental Health Council of Australia (MHCOA).

Mental Health Council of Australia. (2010). "Recommendations on mental health reform in Australia 2008-2010." From <http://www.mhca.org.au/documents/MH%20Report%20&%20Inquiry%20Recommendations.pdf>.

Mental Health Drugs & Regions Division - Victorian Government Department of Health (2010). Ambulance transport of people with a mental illness protocol 2010. Melbourne, Victorian Government Department of Health, State Government of Victoria.

Mental Health Drugs & Regions Division - Victorian Government Department of Health (2010). Protocol for mental health. Victorian Government Department of Health. Melbourne, State Government of Victoria.

Morris, C. D., G. J. Tedeschi, et al. (2009). "Tobacco Quitlines and Persons With Mental Illnesses: Perspective, Practice, and Direction." Journal of the American Psychiatric Nurses Association **15**(1): 32-40.

Munjal, K., R. Silverman, et al. (2011). "Utilization of emergency medical services in a large urban area: description of call types and temporal trends. ." Prehospital Emergency Care **15**(3): 371–380.

National Collaborating Centre for Mental Health and Royal College of Psychiatrists' Research Unit (2004). Self-harm: The short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care. National Clinical Practice Guideline National Institute for Clinical Excellence. **Number 16**.

National Health and Medical Research Council (1999). A guide to the development, implementation and evaluation of clinical practice guidelines. Canberra, Commonwealth of Australia.

National Institute of Clinical Studies (2003). Emergency Department Collaborative Qualitative Evaluation Report, Centre for Organisation Evaluation and Change, Monash Institute of Health Services Research, Monash University.

National Institute of Clinical Studies (2004). National Emergency Department Collaborative Report. Melbourne, National Institute of Clinical Studies.

National Institute of Clinical Studies (2006). Emergency care community of practice: mental health-emergency care interface project 2004–2006 Report. Melbourne, NICS.

New South Wales Audit Office (2005). Performance audit: emergency mental health services - NSW Department of Health. Sydney, Audit Office of New South Wales.

New South Wales Audit Office (2007). Performance audit: readiness to respond - Ambulance Service of New South Wales, follow-up of 2001 performance audit. A. O. New South Wales. Sydney, Audit Office of New South Wales: 50pp.

New South Wales Department of Premier and Cabinet (2008). Performance review - Ambulance service of NSW. Performance Review Unit, State of New South Wales through the Department of Premier and Cabinet,.

NSW Health - Ambulance Service of New South Wales - NSW Police Force (2007). Memorandum of Understanding - Mental Health Emergency Response. Sydney.

NSW Health - Ambulance Service of New South Wales - NSW Police Force (2007). Memorandum of Understanding - Mental Health Emergency Response. Sydney.

Nutbeam, D. (1998). Health Promotion Glossary A. World Health Organization Collaborating Centre for Health Promotion - Department of Public Health and Community Medicine: University of Sydney. Geneva, Division of Health Promotion, Education and Communications - Health Education and Health Promotion Unit: WHO.

- O'Meara, P. (2003). "Would a prehospital practitioner model improve patient care in rural Australia? ." Emergency Medicine Journal **20**(2): 199-203.
- Okin, R. L., A. Boccellari, et al. (2000). "The effects of clinical case management on hospital service use among ED frequent users." American Journal of Emergency Medicine **18**(5): 603-608.
- Øvretveit, J. (2004). "A framework for quality improvement translation: understanding the conditionality of interventions. ." Joint Commission on Quality and Safety Journal Global Supplement.
- Pasic, J., J. Russo, et al. (2005). "High utilizers of psychiatric emergency services." Psychiatric Services **56**(6): 678-684.
- Patfield, M. (2009). "Improving Access to Acute Mental Health Care despite great distance and limited resources." From <http://www.archi.net.au/resources/delivery/rural/mhec-rap>
- Pettigrew, A. M., E. Ferlie, et al. (1992). Shaping strategic change. London, Sage.
- Pettigrew, A. M., E. Ferlie, et al. (1992). Shaping strategic change. London, Sage.
- Pickering, A., S. Mason, et al. (2009). Emergency Services Review: A comparative review of international Ambulance Service best practice. London, National Health Service Office of the Strategic Health Authorities,.
- Pope, D., C. M. Fernandes, et al. (2000). "Frequent users of the emergency department: a program to improve care and reduce visits." Canadian Medical Association Journal **162**(7): 1017-1020.
- Queensland Health (2000). Changing models of care framework. Queensland Health. Brisbane, Queensland Government.
- Queensland Health (2000). Changing models of care framework, Queensland Health.
- Richardson, D. B. and D. Mountain (2009). "Myths versus facts in emergency department overcrowding and hospital access block." Medical Journal of Australia **190**: 369–374.
- Rinke, M. L., E. Dietrich, et al. (2011). "Operation care: a pilot case management intervention for frequent emergency medical system users." The American Journal of Emergency Medicine **In Press, Corrected Proof**.
- Roick, C., D. Heider, et al. (2004). "Factors contributing to frequent use of psychiatric inpatient services by schizophrenia patients." Social Psychiatry and Psychiatric Epidemiology **39**: 744–751.
- Royal College of Psychiatrists and British Association for Accident and Emergency Medicine (2004). Psychiatric services to accident and emergency departments. Council Report CR118. London, Royal College of Psychiatrists.
- Ruger, J. P., C. J. Richter, et al. (2004). "Analysis of costs, length of stay, and utilization of emergency department services by frequent users: implications for health policy." Academic Emergency Medicine **11**(12): 1311-1317.
- Sánchez Medina, J., D. Alarcón Rubio, et al. (2007). Analysis of health and socioeconomic factors influencing the progressive increase in frequentation of hospital emergency services. Seville, Andalusian Agency for Health Technology Assessment (AETSA): 24-28.
- SANE. (No Date). "Physical health care and mental illness." SANE research bulletin, 6. From www.sane.org.

- Schmidt, M. J., D. Handel, et al. (2006). "Evaluating an emergency medical services-initiated nontransport system." Prehospital Emergency Care **10**(3): 390-393.
- Schmidt, T. A., R. Atcheson, et al. (2001). "Hospital follow-up of patients categorized as not needing an ambulance using a set of emergency medical technician protocols " Prehospital Emergency Care **5**(4): 366-370.
- Scott, R. (2000). "Evaluation of a mobile crisis program: effectiveness, efficiency, and consumer satisfaction." Psychiatric Services **51**(9): 1153–1156.
- Shaban, R. Z. (2006). "Paramedics clinical judgment and mental health assessments in emergency contexts: research, practice, and tools of the trade." Journal of Emergency Primary Health Care **4**(2).
- Shah, M. N. (2010). "A novel emergency medical services-based program to identify and assist older adults in a rural community." Journal of the American Geriatrics Society **58**(11): 2205
- Simonet, D. (2009). "Cost reduction strategies for Emergency Services: insurance role, practice changes and patients accountability." Health Care Analysis **17**(1): 1-19.
- South Australia Health and South Australia Ambulance Service (2008). Defining the road ahead. Service delivery model (2008 - 2015) precis, Government of South Australia.
- South Carolina Public Health Institute (2011). A Report On Frequent Users Of Hospital Emergency Departments in South Carolina, South Carolina Public Health Institute.
- Sullivan, P., C. Bulik, et al. (1993). "Characteristics of repeat users of a psychiatric emergency service." Hospital & Community Psychiatry **44**: 376-380.
- Tangherlini, N., M. J. Pletcher, et al. (2010). "Frequent use of emergency medical services by the elderly: a case-control study using paramedic records." Prehospital and Disaster Medicine **25**(3): 258-264.
- Transform Australia's Mental Health Service Systems. (2010). "Transform Australia's mental health services: a better system helps the person recover from mental illness." From <http://www.transformmentalhealth.com/4.html>.
- Viney, L. L., L. G. Oades, et al. (2004). A Framework for Consumers Evaluating Mental Health Services. Wollongong, Illawarra Institute for Mental Health, Faculty Health and Behavioural Sciences, University of Wollongong, NSW.
- Walpole, B., D. Smart, et al. (1999). "Mental health triage in emergency medicine." Australian and New Zealand Journal of Psychiatry **33**(1): 57-66.
- Walsh, P. G., G. Currier, et al. (2008). "Psychiatric emergency services for the U.S. elderly: 2008 and beyond." American Journal of Geriatric Psychiatry **16**(9): 706-717.
- Wand, T. and K. White (2007). "Examining models of mental health service delivery in the emergency department." Australian and New Zealand Journal of Psychiatry **41**(10): 784-791.
- Wand, T., K. White, et al. (2008). "Refining the model for an emergency department-based mental health nurse practitioner outpatient service." Nursing Inquiry **15**(3): 231-241.
- Wand, T., K. White, et al. (2010). "Introducing a new model of emergency department-based mental health care." Nurse Researcher **18**(1): 35.
- Washington State Health Care Authority (2007). Report to the legislature: reducing unnecessary emergency department use. Lacey, Washington State Health Care Authority.

Weiss, S. J., A. A. Ernst, et al. (2005). "Effect of a social services intervention among 911 repeat users." American Journal of Emergency Medicine **23**: 492–496.

Westera, A., T. Stevermeur, et al. (2007). The NSW SAFTE Care Program – evaluation of a pilot program to prevent unnecessary hospital attendances by older people. Centre for Health Service Development, University of Wollongong. .

Williams, S. and R. Crouch (2006). "Emergency department patient classification systems: A systematic review." Accident and Emergency Nursing **14**(3): 160-170.

Wisconsin Office of Rural Health (2011). Rural EMS Frequent User Project. National Conference of State Flex Programs. Portland, ME.

Yorkshire Ambulance Service (2009). Performance Update PCT Board Meeting. Yorkshire Ambulance Service. Yorkshire.

Yorkshire Ambulance Service. (2010). "Frequent Callers to Ambulance Services." Delivering Healthy Ambitions Better for Less. From http://www.yas.nhs.uk/Media/PressReleases/2010/Frequent_Caller_Proj.html.

Young, A. S., J. Mintz, et al. (2005). "Characteristics of Individuals with severe mental illness who use emergency services." Community Mental Health Journal **41**(2): 159-168.

Appendix 1 Literature Review Search Strategy

Limits

The parameters for searching the academic literature are listed below:

- Health related databases only
- Focus on peer reviewed or core clinical journals
- Limited to articles relating to adults
- Limited to articles in English
- Restricted to 2000 – 2011 (unless a key or ‘seminal’ article has been identified relating to an earlier period)
- Excluded newspaper articles
- Excluded book reviews
- Priority given to material in full text
- Priority given to systematic reviews, meta-analyses and literature reviews

As the depth of practice literature was more restricted fewer limits were placed on our search strategy:

- Limited to articles relating to adults
- Limited to articles in English
- Restricted to 2000 – 2011
- Priority given to web based sources
- Priority given to Australian, US and UK sites.

Databases

Using Summon, we searched all databases and resources available through the University of Wollongong's library. Summon provides access to approximately 80% of the Universities extensive collection of databases, academic books, e-books, dissertations, conference proceedings and newspaper articles, as well as digital and print, audio and video, single articles to entire e-journals, and every format in between.

The PubMed/MEDLINE database was searched through Summon. A selection of databases that are not included in Summon have been searched individually including CINAHL and PsychINFO as well as two specialty databases containing health related systematic reviews.

Search terms

Following is lists of the various search terms used to date to assist the ASNSW develop a better understanding of the models of care found in the literature for mental health frequent callers.

Table 4 Summary of search terms

Source	Search Terms : Mental Health Frequent Callers to Ambulance Services
Cochrane terms	Mental health Effective practice/health systems
Medical Subject Headings (MeSH)	Emergency Services Psychiatric Mental health Mental health services Ambulances Patients Emergency Medical Services Emergency medical technician

Source	Search Terms : Mental Health Frequent Callers to Ambulance Services
	Paramedic After hours care Cost benefit Analysis Health Care costs Case management Patient care management
Key words Google and Google Scholar	Frequent callers Repeat callers Frequent users Ambulance service Patient transport Mental health service models Mental health transport Non-urgent patients Paramedics Cost and benefit emergency care models Care coordination Hospital admission Hospital avoidance Hospital diversion

Journal titles

A range of journals consistently generated relevant material. A listing of the journals contributing most relevant items to date and their corresponding impact factor is included in Table 5 below. The IF is one tool that can be used to compare journals. It is a measure of the frequency with which the 'average article' in a journal has been cited in a particular year or period. The annual Journal Citation Reports (JCR), published by Thomson Reuters, explains IF as a ratio between citations and recent citable items published. The IF of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the previous two years.

The IF is useful in clarifying the significance of absolute (or total) citation frequencies. It eliminates some of the bias of such counts which favour large journals over small ones, or frequently issued journals over less frequently issued ones, and of older journals over newer ones. Care needs to be taken in using IFs in assessing the usefulness of a journal as there are many factors that influence citation rates. The IF should be used with informed peer review. Generally speaking, the higher the IF the higher the status of the journal.⁷

Table 5 **Selection of Journal Titles**

Journals	Impact Factor⁸
Academic Emergency Medicine	2.197
American Journal of Emergency Medicine	1.994
Annals of Emergency Medicine	4.142
Australian and New Zealand Journal of Psychiatry	1.529
British Medical Journal	13.66 [#]

⁷ This information is excerpted from the Thomson-Reuters web-site available at:

http://thomsonreuters.com/products_services/science/free/essays/impact_factor/ accessed 12 July 2011

⁸ Impact factors are for 2010 unless indicated by # where the impact factor supplied is for 2009. If a current impact factor is not available this is indicated by 'N/A'.

Journals	Impact Factor ⁸
Canadian Journal of Psychiatry	1.515
Community Mental Health Journal	1.028
Emergency Medicine Australasia	1.089
Emergency Medicine Journal	1.269
Hospital and Community Psychiatry	1.300
Journal of Advanced Nursing	1.518 [#]
Journal of Emergency Primary Health Care	N/A
Prehospital Emergency Care	1.889
Psychiatric Services	2.388
Social Psychiatry and Psychiatric Epidemiology	2.147
Suicide and Life Threatening Behaviour	1.326

Practice literature sites

The practice literature resources were obtained using a combination of approaches, including applying key words to Google (which delivered an exhaustive range) and searching websites of agencies which are known to have an interest in emergency services and mental health.

Table 6 *Selection of Practice Literature Sites*

Country of Origin	Practice Literature Sites
Australia	Australian Resource Centre for Healthcare Innovations (ARCHI)
	Australian Government, Department of Families, Housing, Community Services and Indigenous Affairs www.fahcsia.gov.au
	Australian Government Department of Health and Ageing www.health.gov.au
	College of Emergency Nursing Australia (CENA) www.cena.org.au
	Health Workforce Australia Mental Health NGO Study http://www.hwa.gov.au/programs/research-and-data/mental-health-ngo-workforce-study
	Mental Health Council of Australia www.mhca.org.au
	National Institute of Clinical Studies (NICS)
	Paramedics Australasia www.paramedics.org.au
	SANE Australia www.sane.org.au
	State Ambulance Services : Qld, Victoria, SA, WA, Tasmania, ACT and NT
	Transform Mental Health http://www.transformmentalhealth.com
United Kingdom	Best Bets Website – Best Evidence Topics
	East Midlands Ambulance Service NHS Trust
	Joint Royal Colleges Ambulance Liaison Committee
	London Ambulance Service NHS
	National Electronic Library for Health (NeLH) Emergency Care
	National Institute for Clinical Excellence (NICE) (UK)
	Paramedic practitioner (NHS) www.paramedicpractitioner.com
	Royal College of Psychiatrists
	Scottish Intercollegiate Guidelines Network (SIGN)
	Yorkshire Ambulance Service

Country of Origin	Practice Literature Sites
United States & Canada	Canadian Health Services Research Foundation (CHSRF) www.chsrf.org.ca
	Community Paramedic (US) www.communityparamedic.org
	National Guideline Clearing House (US)
	Operation Care – Baltimore Health Care Access (non profit agency)
	National Institute of Mental Health
	San Francisco – Department of Public Health; intensive case management program; high utilisers of medical services (HUMS)
	Washington State Health Care Authority

Scope of the academic literature

The search of the academic literature to date has produced mixed results. The Cochrane Library database produced several systematic reviews as did the database from the Centre for Reviews and Dissemination. We could not identify any systematic review that was specific to mental health frequent callers and the prehospital context. Most systematic reviews related to wide-ranging aspects of ED services e.g. Emergency department patient classification systems (Williams and Crouch 2006).

The CINAHL database generated a range of relevant abstracts and articles. The Medline database and PsychINFO were the next most relevant databases for academic literature. Approximately 120 references relevant to mental health patients and emergency services were extracted. After discussions with officers of ASNSW, the search strategy was subsequently broadened to include literature on frequent callers generally and frequent users of emergency departments. This produced a further 32 references. The majority of articles retained from the search were published in the latter part of the decade, particularly in 2007 and 2008. Some articles published prior to 2000 were retained due to their relevance and to provide some historical context to the discussion.

Literature reviews identified in the search included a review commissioned by the US Department of Health and Human Services on psychiatric boarding (the practice in which admitted patients are held in hallways or other ED areas until inpatient beds become available), this has often been suggested as both a cause and effect of ED overcrowding (Bender, Pande et al. 2008). Lukens et al (2006) developed a clinical policy for the diagnosis and management of the adult psychiatric patient in the ED which included a review of related medical literature. Wand and White (2007) examined models of mental health service delivery in the ED and Doughty (2006) conducted a review of the structure and workforce configuration of effective models of mental health service provision or quality improvement in primary care..

Very few published articles included any relevant information on costs and economic factors related to prehospital mental health service delivery and the subsequent ED presentation, however, this was a secondary focus of our search and no specific costing studies were identified. Simonet (2009) has published on cost reduction strategies for emergency services, but the data should be used with caution as it is from the US and mostly applicable to the US private health care system.

Overall, topics covered by the literature included descriptions of frequent emergency service users, particularly those with mental health problems and the elderly. ED-based models of mental health care also figured prominently in the literature. These articles were included in the literature for their potential to inform models of care that will assist in helping frequent callers to emergency services that have mental health problems. Telephone triaging and the use of hotlines to help people with mental health problems also emerged in the literature and were retained from the search.

Countries that provided the most useful material included Australia and New Zealand and the United Kingdom. Information from the United States, Canada and other European countries such as Sweden is not as relevant to the NSW environment.

Unfortunately, the majority of literature obtained through this targeted search came from North America, particularly the United States of America. Much of the literature aimed to describe frequent callers or users of emergency medical services. There were also some articles on the elderly as frequent callers/users and one article on the characteristics of household addresses that repeatedly call 911 to report domestic violence (Houry, Parramore et al. 2004). Articles addressing the problem of ED overcrowding, triaging and diversion were also included in the search due to their relationship to overuse of services and the pressure that frequent callers put on the emergency services system. For much of this published material, the service delivery context described was very different to that of NSW. Canadian based articles were fewer and tended to focus mainly on frequent users of emergency services.

The search also resulted in a number of relevant articles from Australia related to frequent users of emergency services, particularly ED overcrowding. There were a number of articles around the development and use of the Australian mental health triage scale e.g. (Walpole, Smart et al. 1999; Broadbent, Moxham et al. 2007), the demand for emergency mental health services and models of care, in particular the delivery of mental health care in the ED (Wand and White 2007; Wand, White et al. 2008; Wand, White et al. 2010). Other articles also looked at the effect of limited community mental health services. The search also resulted in one article about an evaluation of telephone triage in mental health nursing (Kevin 2002).

Topics of research conducted in the United Kingdom included the use of out-of-hours services by mental health patients and/or frequent callers and psychiatric services within the ED. Resources were also readily available on improving access to primary care and redesigning work processes in the ED. European articles focussed on a range of topics including the management of suicide attempters, factors relating to frequent use of emergency services and the use of other services by psychiatric patients (Hansagi, Olsson et al. 2001; Roick, Heider et al. 2004). Two articles from Sweden were particularly interesting, one relating to the discrepancies in triage setting between an emergency medical dispatch centre and ambulance crews and the impact on ED overload (this was not related specifically to mental health patients/clients) and the other explored the issue of why are people without medical needs transported by ambulance (Hjälte, Suserud et al. 2007).

There were few articles from Asian countries with one article from China that looked at an analysis of the use of ED services by the elderly (Huang, Weng et al. 2003) and one from Japan considering the impact of socioeconomic factors on medically unnecessary ambulance calls (Kawakami, Ohshige et al. 2007).

Scope of the practice literature

The search of the practice literature relating to mental health patients use of ambulance services identified Australia, the United Kingdom and the United States of America as the most prolific in developing and publishing reports and material related to improved management of frequent caller patients.

The main Australian resources were program evaluations, such as the National Institute for Clinical Studies (NICS) Mental Health-Emergency Care Interface project (National Institute of Clinical Studies 2006), the NSW Police Mental Health Intervention Team (Herrington, Clifford et al. 2009) and the Evaluation of FaHCSIA targeted community care mental health initiatives (Department of Families Housing Community Services and Indigenous Affairs 2011). The evaluations all highlighted the importance of a multi-disciplinary approach, individualised case management and interagency partnerships as key elements to underpin successful service models. Consumer advocacy groups such as the Mental Health Council of Australia, SANE Australia and Transform Mental Health included a number policy statements and/or initiatives that sought to highlight the need for improved service models, resources and workforce issues to improve care for people with mental illness and reduce the potential need for inappropriate use of

emergency services (Mental Health Council of Australia 2006; Mental Health Council of Australia 2010; Transform Australia's Mental Health Service Systems 2010; SANE No Date).

The Australian sites targeting health professionals were also reviewed, such as the Australian Resource Centre for Healthcare Innovations (ARCHI), Paramedics Australasia and College of Emergency Nurses Australasia (CENA). The latter two web-sites provide various articles, presentations and guidelines for members relevant to their respective professional roles. These web-sites also include links to the journals of these organisations, which included some useful material. However, there was little information specific to mental health frequent callers in the prehospital context.

The United Kingdom is perhaps more advanced in developing service models which are designed to assist 'mental health frequent callers', as evidenced by the London Ambulance Service NHS Trust, Yorkshire Ambulance Services and the Joint Royal Colleges Ambulance Liaison Committee (JRCALC) websites (London Ambulance Service 2010; Yorkshire Ambulance Service 2010). Health and paramedic care professionals have access to a range of evidence-based practice, clinical care guidelines and care protocols through the National Institute for Clinical Excellence (NICE), the National Electronic Library for Health's Mental Health and Emergency Care sites, the Paramedic Practitioner (NHS) site and the BestBETS website, which provides modified Critical Appraisal Tools (CATs) designed for emergency department contexts.

Websites of related organisations in the United States and Canada were also reviewed; in particular those that had a track record in promoting evidence based practice and applied research in health care. These include the National Guideline Clearing House and National Institute of Mental Health (NIMH) in the United States and the Canadian Health Services Research Foundation (CHSRF), with limited results.

Several items emerged during our searching that are best described as 'news-style' articles from various commercial web-sites for example, results of a survey conducted at Henry Ford Hospital in Detroit about physician opinion as to the impact of frequent ED users⁹. Whilst topical and in some cases interesting, these articles are not included. In addition the web produced many examples of interventions in progress for special groups of ED frequent users, often the homeless. These interventions were often lead by hospitals but involved other service delivery agencies. Many of these interventions do not have published evaluation findings so it is not possible to assess the strength of their evidence as an intervention.¹⁰ One example of this type of web source is the ConnectED program run by the Alfred Hospital in Melbourne. This program aims to reduce preventable use of the Alfred Hospital's emergency health services by people who are socially isolated or homeless. The intervention point is the ED; therefore we have not actively searched for practice examples that are not prehospital initiatives.

9 Available at: http://www.sciencecodex.com/emergency_department_physicians_growing_weary_of_frequent_users accessed 4 August 2011.

10 Available at: <http://www.homeground.org.au/what-we-do/individual-services/connected/> accessed 4 August 2011.

Appendix 2 Summary of Interventions/Models of Care for Frequent Callers

Location of study	Patient target group	Description of model of care	Study design	Results, costs and benefits	Level of evidence	Authors
City/County EMS Dispatch USA	The study population included all <u>non-homeless</u> men and women 18 years and older who have had at least three calls to 911 in the previous month and who could be found after two attempts.	Provision of social services to identified frequent callers. Traditional social services management including intake questionnaire, patient assessment and referral to community services.	Descriptive, prospective subject evaluation. Patients were randomised to an intervention group or an observation group. Subjects were tracked through number of EMS calls and through a QOL questionnaire. The QOL questionnaire was filled out at initial assessment and 30 days after the start of the intervention.	<p>Although 84 patients were identified who were eligible for this study only ten participated in the intervention. There were physical improvements in the intervention group. Although the transport rate before the study was comparable for both groups (3.2 per person), the 6-month transport rate for the intervention group was significantly higher (5.0 per person) than for the control group (0.8 per person).</p> <p>This was a limited pilot study; however, the authors found that a social services intervention was not an efficient use of social services time. In addition, the main reason for a low recruitment into the intervention was a lack of interest from the target population or a lack of availability. This led the authors to conclude that time would be better spent focussing on specific needs and need-related groups rather than frequent users in general.</p> <p>No cost analysis was done in this study.</p>	<p>This study was evaluated with a prospective randomised controlled trial so may be classed as:</p> <p>Level 1 - well supported practice; <u>however</u> the numbers were small (intervention group had 10 participants). Findings were also negative and so could be given as evidence against traditional social services management.</p>	(Weiss, Ernst et al. 2005)
London Ambulance Service	Patients who place at least 10 emergency calls in a month.	Set up a frequent callers unit in 2007 (now called the Patient Centred Action team) as a dedicated taskforce to review and manage the needs of frequent callers. The unit sits within the Patient Experiences Department and works across organisational boundaries to achieve better care arrangements and alternative care pathways in relation to the patient's individual needs.	Case studies of patients. Also produced a policy and procedures document for frequent and vexatious callers.	<p>Case studies include identification of an elderly frequent user who was subsequently placed in residential care, the prescription of home oxygen for a patient who frequently called about breathing difficulties, assistance for a patient with multiple respiratory conditions and anxiety to access rehabilitation and enhanced sheltered housing scheme with 24 hour staff support, attendance at a case conference with a hospital ED to assist a patient and their carer better manage the patient's diabetes and receive carer support.</p> <p>The only cost information provided was the cost to emergency services of individual</p>	<p>This model was developed using an evidence based approach. No summative evaluation has been conducted however formative improvements appear to have been made in the program since its</p>	(London Ambulance Service 2011)

Location of study	Patient target group	Description of model of care	Study design	Results, costs and benefits	Level of evidence	Authors
				patients before intervention.	inception Level 5 – emerging practice	
Yorkshire and The Humber, UK.	Frequent callers to the Yorkshire Ambulance Service. Monthly reports identify top ten individual frequent callers and care home callers.	Case management process, including establishing care plans for individuals and care homes needing support. Reports identify eligible patients or 'care homes' and whether they are unstable patients in need of frequent care or could benefit from alternative care paths. Care plans are established in conjunction with primary care providers and may include referrals to alternate care. Monthly teleconferences used to reassess patient needs.	Pilot/case study design. Brief report doesn't contain detailed information.	A cost analysis was done and it was estimated that frequent callers currently cost the health service over 11 million pounds. A 30% reduction would save the health service 3.3 million pounds and a 50% reduction would save over 5.5 million pounds. Much of this could be achieved by reducing ambulance journeys and bed days. The Kirklees case study has seen a 70% reduction in the number of A&E attendances from their target group. Results also suggest a 60% reduction in admissions among those being case managed and a 20% reduction in bed days.	No summative evaluation has been conducted however formative improvements appear to have been made in the program since its inception Level 5 – emerging practice	(Yorkshire Ambulance Service 2010)
Australian hospital EDs with more than 20,000 presentations a year.	Mental health patients in emergency departments	The Mental Health-Emergency Care (MH-EC) Interface Project connected emergency and mental health staff from different organisations through a community of practice, allowing them to work closely together with the aim of improving the care of mental health patients in emergency departments.	This study included two waves including 21 hospital EDs in 2004 and another 20 in 2005. The evaluation was based on descriptive, qualitative and quantitative data collected as part of a wider evaluation of the NICS Emergency Care Community of Practice program. Monthly data collection was used to track presentations. Individual reports were also collected	Three targets were set: <ul style="list-style-type: none"> 90% of mental health presenters discharged within four hours. In wave one, variation in discharge was reduced. In wave 2, six rural sites met the 90% target on one or more months. Reduction in "Did not wait" rate to 3% or less. Wave 1 saw a significant reduction from 7.9% to 4.4 %. Eleven sites met the target in one or more months. In wave 2, thirteen sites met the target in one or more months Reduce 72 hour re-presentations at the ED by 50%. In wave 1 six sites met their target in one month and onsite met the target consistently in 10 months. In wave 2, one site met the target consistently post-baseline and five sites met the target in five or more months post-baseline. 	This study was evaluated with an independent assessment of outcomes, but no comparison group and so could be considered as; Level 4 - acceptable practice.	(National Institute of Clinical Studies 2006)

Location of study	Patient target group	Description of model of care	Study design	Results, costs and benefits	Level of evidence	Authors
Baltimore, USA	From an identified list of the 25 individuals who most often activated emergency medical services the study was able to recruit 10 participants.	<p>Prehospital case management intervention with more intensive case manager involvement and improved recruitment with the aim of decreasing frequent use of emergency services.</p> <p>A dedicated case manager was assigned to each participant. The case manager conducted a home-based assessment and then developed a care plan for the participant, provided weekly visits, organisation of needed care, referrals and patient education. Weekly meetings were held with clinical and outreach staff to review cases and share ideas about challenging patients.</p>	<p>This study used a convenience sample and analysed routinely collected emergency service use data. A cost analysis was also done based on transport and non-transport use. The study was conducted between May 12, 2008 and August 1, 2008.</p>	<p>Transport responses decreased 32% over predicted transport responses and non-transport responses decreased 79% over predicted non-transport responses. Two patients had increased transport responses but there were no obvious differences between these patients and those with reduced transport. Net savings to the health care system were calculated to be \$14,461 and for the fire department, \$6,311 during the intervention.</p>	<p>This study was evaluated with an independent assessment of outcomes using a historical comparison group. Numbers were very small.</p> <p>Level 4 - acceptable practice.</p>	(Rinke, Dietrich et al. 2011)
Hospitals in South Carolina, USA.	Frequent users of EDs in South Carolina, defined as people who visit an ED in the state five or more times in a calendar year.	<p>A series of solutions were established in different hospitals including:</p> <ul style="list-style-type: none"> Helping patients establish medical homes with primary care providers. Employing nurse advocates in the ED to help patients establish a medical home. Public/private partnership to donate medications to uninsured patients. Expanding office hours for primary care and behavioural care services. 	<p>This study included a review of state-wide data. The report also includes data analysis and information from interviews with hospital staff around the state.</p>	<p>Overall admission from an ED in South Carolina is 12% compared to 15% for patients with a behavioural health condition. Almost one in five visits to an ED in South Carolina is preventable. The authors concluded that there are substantial numbers of Americans, particularly those with behavioural illness and substance abuse disorders, with unmet health needs who use the ED because of its convenience, accessibility, and affordability. They added that the policy goal should be to focus on accessible, convenient care for all patients in the most appropriate settings including disease prevention, injury prevention, and chronic disease case management.</p> <p>A costs analysis found that Frequent users account for 10% of all costs (and 5% of patients) in the ED. The average annual cost per patient is \$89,033 for frequent</p>	<p>This model was evaluated without an independent assessment of outcomes and could be considered:</p> <p>Level 5 - emerging practice.</p>	(South Carolina Public Health Institute 2011)

Location of study	Patient target group	Description of model of care	Study design	Results, costs and benefits	Level of evidence	Authors
				users per year compared to \$5,700 for non-frequent users.		
Area hospitals and communities in California, USA	Frequent users of emergency departments	Six demonstration projects formed the Initiative. Six models/interventions were developed to address a range of frequent users. Models included various types of intensive case management to less intensive peer and paraprofessional driven interventions.	This was a five year evaluation that included three phases, planning phase, process evaluation of start up and intervention experiences and an outcomes evaluation. Data sources included document review, site visits and interviews, grantee outreach and enrolment data, submission of uniform data sets, stability measure checklist and cost and utilisation data.	Overall the interventions succeeded in reducing ED utilisations (30%) hospital ED charges (17%) inpatient admissions (14%) and inpatient admission charges (8%). The first year was characterised by the stabilisation of patients, after which the need for hospitalisation was reduced. Connecting patients to housing, health insurance and income benefits was an important intermediate outcome. Coordinating care, improving needed service access and enhancing quality of care through the development of partnerships and collaborations was also successful. Successful system-wide changes included evaluating awareness and understanding of the needs of frequent users, collaborating to improve housing of the homeless, improving access to mental health and substance abuse treatment, improving communication and care coordination between hospital and primary care, streamlining benefits processes, developing a sense of collective accountability for the care of frequent users across sectors/communities.	This program was evaluated without an independent assessment of outcomes. Level 5 – emerging practice	(Linkins, Brya et al. 2008)
Orange and GWAHS, NSW.	People with mental health problems and mental illness	Three year process of consultation, planning and staff recruitment and service/resources development. Development of a virtual consultation-liaison team using telemedicine to expand access to mental health services. Sustained by regular training visits, meetings between health, police and ambulance and clinical governance processes.	Formal evaluation through 2008 by the Centre for Remote Health Research, University of Sydney.	There was a steady increase in utilisation. Rising levels of confidence in EDs. Reduced inappropriate transportation (but also recommended admission for those who might otherwise have been “missed”). Fewer admissions. Admissions more often locally rather than to distant psychiatry units. No costs analysis was undertaken.	Limited information available to assess level of evidence, however use of independent assessment suggests: Level 4 – acceptable practice.	(Patfield 2009)

Location of study	Patient target group	Description of model of care	Study design	Results, costs and benefits	Level of evidence	Authors
International	People with mild to moderate mental illness (primarily depression, anxiety and hazardous alcohol and/or drug use).	Collaborative care and variants of this model of care, including collaborative care interventions delivered by multidisciplinary teams, telephone care management interventions and telehealthcare	<p>Health technology assessment/systematic literature review</p> <p>Studies were included if they reported on effective models of service provision or quality improvement and workforce configuration for people with mild to moderate mental illness (primarily depression, anxiety and hazardous alcohol and/or drug use).</p> <p>Most of these studies however focus on the primary care setting generally as opposed to emergency management specifically.</p>	<p>Collaborative care may be of particular benefit to older adults. Improving depression may improve physical function associated with depression. Multidisciplinary teams may also improve clinical outcomes in those with persistent or recurrent difficulties. Telephone care management benefits people with mild to moderate mental health problems. Telehealth care may be a more effective model, especially if combined with interventions such as CBT. Overall collaborative care models, including those incorporating a case management approach and/or using the services of a care manager or primary mental health care worker have been of benefit.</p> <p>In relation to costs, the authors found that there may be increased costs for primary care providers associated with the implementation of most models of mental health care in primary care.</p>	<p>This is a systematic review of the evidence, as it incorporates multiple studies and interventions a level of evidence cannot be assigned.</p> <p>There is however Level 1 evidence comparing the effectiveness of different models of mental health care in primary care that indicates that collaborative care may be of particular benefit for older adults.</p>	(Doughty 2006)
Victoria, metropolitan,	Mental health consumers and carers	The Prevention and Recovery Care (PARC) model focuses on relapse prevention and recovery promotion. The concept is to divert vulnerable consumers from hospitalisation and provide post-discharge support to promote recovery. The model includes semi-independent living options.	A review of models was conducted and an in-depth case study was undertaken to review selected model.	The PARC model helps to keep people out of acute care, is preferred by consumers, maintains links with carers, is an important alternative to early intervention and has a lower cost per day (\$339) than hospital care (\$590).	This model was presented without evaluation information, including study design.	(Mental Health Council of Australia 2006)
Victorian regional communities	Mental health consumers and carers	The St Luke's model, Recovery Focused Services, includes intensive home-based outreach, discharge service for	A review of models was conducted and an in-depth case study was undertaken to review selected model.	The St Luke's model was found to be versatile and able to be replicated in regions and local communities but not remote areas. The model requires	This model was presented without evaluation	(Mental Health Council of Australia 2006)

Location of study	Patient target group	Description of model of care	Study design	Results, costs and benefits	Level of evidence	Authors
		those at risk of homelessness, a respite service, group programs and a Supported Accommodation Assistance Program.		leadership, an understanding of service integration, robust partnerships, high support beds and a flexible funding pool. No costing information was provided.	information, including study design.	
Trieste, Italy	Mental health consumers and carers	Trieste mental health service model. Psychiatrist-led community-supported recovery. The model has a commitment to de-institutionalisation and community-based services. Service includes four 24/7 Community Mental Health Centres with beds for overnight stay. Hospital-based emergency psychiatric service. Rehabilitation and social integration structures including accommodation service, day centres and specialised work co-operatives. This is a psychiatrist led model with little input from primary care practitioners.	A review of models was conducted and an in-depth case study was undertaken to review selected model.	This model encourages consumer integration into the community, networked services avoids fragmentation, wide range of service options, community activity however the model is not consumer driven and as such doesn't include consumers at the higher levels. In addition it was stated that the costs of providing mental health services in 2006 were half of what it was in 1971.	This model was presented without evaluation information, including study design.	(Mental Health Council of Australia 2006)
Three NSW Police Local Area Commands	NSW police officers.	NSW Police Mental Health Intervention Team. Provision of enhanced training to frontline officers. Also included development of partnerships with NSW Health, NSW Ambulance service and NGOs.	This study was a multi-phased mixed methods interactive evaluation drawing on primary and secondary qualitative and quantitative data. Data sources included semi-structured interviews, surveys, observations and routinely collected data.	Qualitative data indicated an increase in the use of de-escalation techniques. There were increases in information sharing with NSW Health and police officer confidence. The practice of transporting mental health consumers in police vehicles is still widespread with half of all Mental Health Act events in 2009 resulting in transportation to an ED by police. Police attendance at <i>Schedule 1</i> events was fewer but this occurred across the state and not just in the pilot sites. Reductions in handover times between police and the ED was attributed to increased interagency co-operation rather than police training. The training did appear to have an effect on how	This model was evaluated without an independent assessment of outcomes: Level 5 - emerging practice. Evaluated without an independent assessment of outcomes.	(Herrington, Clifford et al. 2009)

Location of study	Patient target group	Description of model of care	Study design	Results, costs and benefits	Level of evidence	Authors
				long a Mental Health event lasted for. No cost data was included in the evaluation.		
Oconto County, Wisconsin, USA	Individuals who use emergency medical services (EMS) and emergency department services frequently and out of proportion to others in the community.	Rural EMS Frequent User Project. The Office of Rural Health provided funds for this pilot project. Funds being used to hire temporary, part time staff including a behavioural health case manager who will work with substance abuse/behavioural health patients, and an emergency room services assistant, who will work with those patients using emergency services for primary care reasons. The goal is to inform patients of appropriate services and how to access them, reducing the number of patients using costly emergency services.	This model is yet to be evaluated. The Wisconsin Office of Rural Health expects to fund the program through to November 2011.	The agencies will evaluate the impact on frequent users and decide the sustainability of the program.	No evidence available at this time.	(Wisconsin Office of Rural Health 2011)

