

# Understanding the population group:

*People with complex health and social needs who frequently attend emergency departments*

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## Introduction

The Health Alliance has been established by Metro North Hospital and Health Service (MNHHS) and Brisbane North PHN to address the complex challenges facing the North Brisbane health system. The Health Alliance is using a collective impact approach to facilitate relevant parts of the health sector to work together to address issues that transcend the mandate of any one organisation of part of the sector. Participants in the Alliance process are encouraged to develop a common agenda for change including a shared system-wide understanding of the problem and a joint approach to solving it through agreed upon actions. An essential element of this approach is the use of data and the consistent measurement of results across all the participants, aimed at improving alignment of activities and accountability. Plans emerging from this process will lead to improved purchasing decisions and agreed metrics that facilitate system-wide learning.

The Health Alliance will use collaborative processes that are informed by policy, while emphasising the engagement and agreement of local system actors to effect system change. The focus of the work will remain on outcomes that matter directly to patients, and to the system as a whole.

The Health Alliance has three initial areas of focus, representing 'problems' within the health system that no one part of the sector can understand and improve alone. These three areas of focus are:

1. The health and wellbeing of frail older people;
2. Children and families in the Caboolture region; and
3. People with complex health and social needs who frequently attend emergency departments.

This paper focuses on people with complex health and social needs who frequently present to emergency departments (ED). Within the local North Brisbane context, significant work has already been undertaken focused on a cohort of people who frequently attend the Emergency and Trauma Centre (ETC) at the Royal Brisbane and Women's Hospital (RBWH). This work comes under the title of the 'Working Together to Connect Care' (WTTCC) program.

The key actors from this program have been included in a Core Group of key stakeholders that come from different parts of the health sector including hospital services (ED, mental health services), non-government organisations (NGOs), general practice and Brisbane North PHN. The Core Group has met three times and will continue to work towards a common understanding and agreement on the nature of the system challenges for people with complex health and social needs, and in time move towards a shared and agreed understanding of potential solutions.

This document provides a baseline for consideration by the Core Group in its deliberations, and will assist in formulating a response.

**Author note:** Throughout this document, Emergency Department (ED) and Emergency and Trauma Centre (ETC) will be used interchangeably to represent the emergency department of an acute hospital facility. Similarly, the terms frequent attender and frequent presenter will be used interchangeably.

## Executive Summary

Frequent utilisation of ED is a challenging and contentious issue for clinicians, policy makers and indeed, for patients themselves (Raven, 2011). It is clear within the local, national and international context that there is a small cohort of patients who account for a disproportionate number of ED presentations. However, there is no consistent definition of the rate of presentation that would indicate a person is a frequent presenter. Despite varied definitions being used within the literature, there are a number of characteristics that are common to this population cohort, specifically:

- Frequent presenters have a high level of illness, are more likely to be admitted, are more likely to suffer from mental illness and substance use issues, and have higher mortality rates than non-frequent presenters;
- Frequent presenters use more healthcare services across hospital and non-hospital services, however there is a distinct lack of coordination between these services; and
- Frequent presenters have complex social needs including socioeconomic disadvantage, high rates of homelessness and disproportionate rates of engagement with the justice system including imprisonment.

Overall, this small cohort of patients use a disproportionate share of medical care at significant cost to them, the healthcare system, and broader society (Long et al., 2017).

From a systems perspective, the traditional view has been that frequent presentations to ED is a problem. Rather, this paper aims to demonstrate that frequent presentations to ED is better viewed as a symptom of unmet healthcare and other needs. Frequent presenters use the emergency department because of its convenience, accessibility and affordability and accordingly, for these patients, the ED represents an “affirmative choice” for care, rather than a healthcare provider of last resort (Ragin et al., 2005). In shifting away from viewing the presentation to ED as being the central issue, and focusing on unmet need being the issue, the focus becomes the delivery of high-quality, convenient, accessible and affordable health and social care to all vulnerable patients.

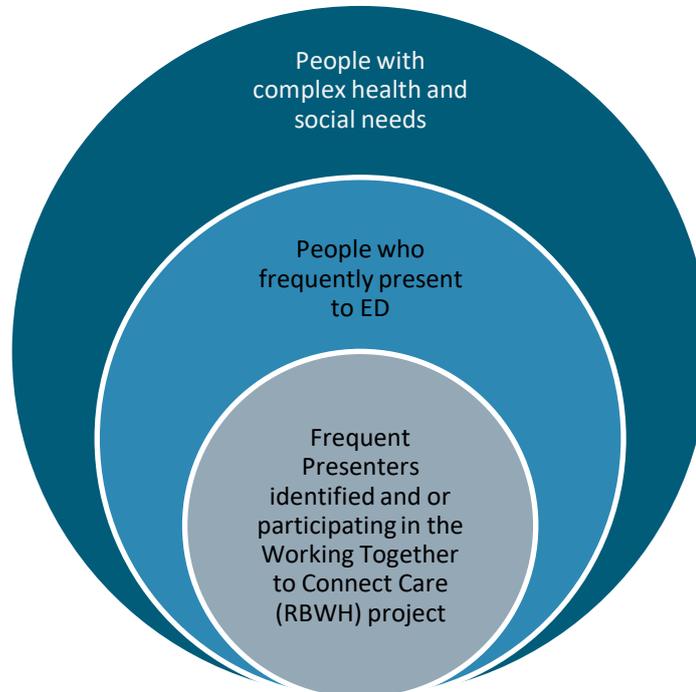
A range of interventions have been implemented in an attempt to improve care for this population group. There are clear characteristics of effective interventions and while many of these characteristics are evident in the locally-designed Working Together to Connect Care program, there are opportunities for further program development.

## The population of interest

Within the current context of the North Brisbane region, the Health Alliance’s work is interested in examining and understanding three overlapping patient cohorts (see Figure 1).

1. A patient cohort identified within a current program conducted within the Emergency and Trauma Centre (ETC) of the Royal Brisbane and Women’s Hospital (RBWH). This program is called, “Working Together to Connect Care” and has focused on identifying people who have presented to ETC four or more times in a 30 day period, and following the receipt of patient consent, referring them on to coordinated and assertive care programs within the community. Data sources utilised to examine this population cohort will include project plans, reports and publications.
2. Other people who could be considered ‘frequent presenters’ based on presentation thresholds utilised within the published literature. Although, there is no consistent definition of ‘frequent presenters’ to emergency departments, the literature has used presentation thresholds between three and 12 times in a 12 month period.
3. People with complex health and social needs who may not frequently present to an ED. These people may be disengaged from healthcare, or conversely, receive effective support within primary healthcare and community settings.

This paper will outline the current knowledge regarding presentation patterns and demographic profiles of the first two of these groups, as well as examining the evidence for alternative service provision models. The group with complex health and social needs is less well defined and described, and the Health Alliance will work through other mechanisms to examine and understand this cohort.



**Figure 1. Sub-groups of the population in Brisbane North with complex health and social needs.**

## What is a 'frequent presenter'?

Emergency departments (ED) are integral to providing rapid access to care for people with acute medical needs (Soril, Leggett, Lorenzetti, Noseworthy, & Clement, 2016). A small group of patients presenting to ED are referred to as 'frequent presenters', 'super users' or 'frequent flyers' and account for a disproportionately high number of ED visits (LaCalle & Rabin, 2010; Moe et al., 2017).

### Defining the patient cohort

There is no consistent definition of a frequent presenter in either research or practice. A minimum number of presentations to ED in a 12 month period is most commonly used to identify the cohort, however the threshold varies from three to more than 10 presentations in a 12 month period. Research has indicated that a threshold for an urban region of more than four presentations annually is appropriate (Locker, Baston, Mason, & Nicholl, 2007), and this threshold is commonly used within the literature (Fuda & Immekus, 2006; LaCalle & Rabin, 2010). There have been various rationalisations for utilising a threshold of four presentations in a year, including comparing the distribution of attenders with a normal distribution (Locker et al., 2007) and demonstrating that this post hoc cut-off identified a patient group that represented 25 per cent of all ED visits, a figure the authors believed was significant and justified expenditure on alternative interventions (Hunt, Weber, Showstack, Colby, & Callahan, 2006).

The arbitrariness of ED presentation thresholds utilised within the literature is well recognised and there is some suggestion that clinicians would prefer to use a higher threshold than that recommended by the literature (LaCalle & Rabin, 2010). There are other factors that further complicate the lack of a clear definition:

- Some analyses utilise admissions rather than ED presentations to identify frequent users (Brisbane North PHN and Metro North HHS Health Needs Assessment, 2016-17, 2017);
- some authors attempt to differentiate between different cohorts of frequent attenders such as frequent users, super-frequent users and chronic users (Cook et al., 2004); and
- people who present to only one or multiple ED facilities (Harcourt, McDonald, Cartledge-Gann, & Burke, 2017).

While it is clear that subgroups exist within the broader population of people who frequently attend emergency departments, the literature identifies no clear threshold at which striking differences in resources, demographics and other changing characteristics of clinical importance are observed (Jelinek, Jiwa, Gibson, & Lynch, 2008; LaCalle & Rabin, 2010). It is therefore unclear how to characterise discrete groups in ways that are useful for developing differing interventions or policy.

## Characteristics of ED presentation

Variation in the definition of the ED frequent presenter cohort means that there is no concise picture of the rates and patterns of presentation associated with this group. However, there have been two concerted efforts within the North Brisbane region to map and understand a cohort of frequent presenters (See Figure 1) and information from these processes will be utilised throughout this paper. Furthermore, there are two local initiatives that have focused on alternative service delivery models for ED frequent presenters and people with complex health and social needs (See Figure 2), and again, information from these programs will be utilised throughout this paper.

In terms of rate of presentation to ED, both the RBWH and Redcliffe Hospital cohorts were identified using the threshold of four or more presentations in a month. Of interest, further analysis of those RBWH patients who then moved in to the Working Together to Connect Care program identified high rates of ED presentation over the previous six months (Rayner, Westoby, & O'Connor, 2017) and presentation at a number of ED facilities within and outside of the Metro North HHS region (Rayner et al., 2017; von Berky, Fenton, & Brazel, 2017). The trend of frequent presenters attending more than one ED facility is consistent with the literature (e.g., Kne, Young, & Spillane, 1998) and identifies an inherent need for future work in the North Brisbane region to be supported by information systems that provide patient presentation information within and across facilities and HHS regions.

A different, but related analysis of relevant activity across Metro North HHS focused on people who had five overnight admissions in 2015-16. This cohort is relevant for this discussion given that frequent ED presenters are more likely to be admitted than non-frequent ED presenters (Jelinek et al., 2008; LaCalle & Rabin, 2010; Mandelberg, Kuhn, & Kohn, 2000). Table 1 details patterns of hospital usage for this patient cohort. Of note is the exclusion of some patient cohorts from this analysis, including those admitted as same-day patients, patient occupying beds for particular purposes

### “The RBWH Cohort”

RBWH identified patients who presented 4 or more times in a month in either 2014 or 2015.

2014: 172 unique patients  
Average of 12 presentations/patient in the year

2015: 153 patients presented 4+ times  
Average of 12 presentations/patient in the year

### “The Redcliffe Hospital Cohort”

Redcliffe Hospital identified patients who presented 4 or more times in a month in a 16 month period across 2016 and 2017.

2016-17: 150 unique patients  
Average of 15 presentations in a 16 month period

**Figure 1. Two identified cohorts of frequent presenters in the North Brisbane region (Harcourt et al., 2017; Unpublished data, 2017).**

### “Working Together to Connect Care”

- Commenced in April 2016 with the aim of improving the healthcare response to frequent attenders at RBWH (4 or more presentations in a month)
- Micah Projects and Footprints deliver assertive and flexible follow up case management.
- The program design also includes case conferencing focused on specific patients and the development of an acute management plan.
- To date, 162 patients have been enrolled in the program.

### “Pathways” Admission and Discharge Pilot Project

- Commenced in December 2014
- Micah Projects provide person centred admission and discharge planning, care coordination, direct nursing care and housing assistance to people being discharged from hospital who are homeless or vulnerably housed with multiple morbidities and complex social needs. More recently, the Institute for Urban Indigenous Health (IUIH) and other NGOs have joined the program.
- Linked with RBWH and the Princess Alexandra Hospital (South Brisbane).
- Not directly focused on frequent ED attenders, however does direct the intervention towards a cohort of people with complex health and social needs.
- In 2014-2016, 240 referrals were made to the program, with 150 becoming longer-term participants.

**Figure 2. Two intervention programs within the North Brisbane region (Harcourt et al., 2017; Rayner & Westoby, 2017; Rayner et al., 2017)**

(rehabilitation, geriatric evaluation and management, maintenance, boarding, organ procurement, palliative care or psychogeriatric care) and patients who are admitted for mental health treatment (*Brisbane North PHN and Metro North HHS Health Needs Assessment, 2016-17, 2017*). The last group is of most significance for this discussion given the strong indication within local practice and the literature of the prevalence of mental health conditions among ED frequent presenters.

Hospital	Total Separations of Frequent Visitors	Total Bed Days of Frequent Visitors	Average Length of Stay of Frequent Visitors
TPCH	987	3897	3.95 Days
RBWH	1097	4667	4.25 Days
Redcliffe	2563	15,463	6.03 Days
Caboolture	1562	10,783	6.90 Days

**Table 1. Patients who had five or more overnight admissions to facilities within MNHHS, 2015-16**

Overall, the total activity represented on Table 1 makes up 6.27 per cent of total separations and 8.2 per cent of bed days. The average length of stay of this cohort (5.64 days) is much higher than the average length of stay for all patients (3.22 days) (*Brisbane North PHN and Metro North HHS Health Needs Assessment, 2016-17, 2017*). As the work of the Health Alliance continues, information systems will be used to gain a clearer understanding of presentation patterns across the four ED facilities within the Brisbane North region.

### Time of presentation

Local data indicates late afternoon and early evening may represent a peak presentation time for frequent presenters, with RBWH identifying 6pm to 11pm as the peak period (Harcourt et al., 2017) and Redcliffe Hospital identified a peak between 4pm and 7pm (Redcliffe Hospital, unpublished data). It is expected that further analysis of patient characteristics may provide some explanation of differences in presentation times, however the literature suggests that poor access to other after-hours healthcare services is likely to be a contributing factor (Bernstein, 2006).

### Mode of arrival to the emergency department

Both local data (see Table 2) and the literature (Markham & Graudins, 2011) indicate that frequent presenters have a preference for utilising ambulance services to get to the ED (see Table 2). Ambulance is identified as the preferred option within the literature as it is free and enables a quick and easy route to care (Parkman, Neale, Day, & Drummond, 2017). Local data also demonstrates that a small proportion of ED frequent presenters arrive via the police (see Table 2).

MNHHS Facility	Details of cohort	Arrival by ambulance	Arrival by walk in	Arrived via the police
Royal Brisbane and Women's Hospital	4+ presentations in one month in either 2014 or 2015 (n = 325)	58.4%	36.4%	4.4%
Redcliffe Hospital	4+ presentations in one month in a 16 month period across 2016 and 2017 (n = 150)	50%	42%	1%

**Table 2. Mode of arrival for frequent presenters identified in two ED facilities within MNHHS**

## Outcome of ED attendance

Locally, frequent presenters are most likely to be discharged following an ED presentation, or admitted (Harcourt et al., 2017; Redcliffe Hospital, unpublished data). There is also a significant proportion of presentations by ED frequent presenters where the patient did not wait for treatment. One in five presentations by the RBWH cohort involved the patient not waiting for treatment (Harcourt et al., 2017) while the most common 'diagnosis' for the Redcliffe Hospital cohort was 'Did Not Wait' (23 per cent) (unpublished data, Redcliffe Hospital). This pattern is supported by other research within the Australian context. An analysis of presentations to Perth hospitals over a six year period showed that the proportion of people who did not wait for treatment increased steadily with increasing presentations, from 4.2 per cent of non-frequent attenders to 17.5 per cent of those who attended most frequently (40 or more visits per year). The rate at which patients discharged themselves at their own risk after initial assessment also increased steadily, from 0.4 per cent to 3.5 per cent respectively (Jelinek et al., 2008). An analysis of frequent presenters to three EDs in metropolitan Melbourne also demonstrated that frequent presenters were more likely to self-discharge while waiting for care in ED compared with non-frequent attenders (Markham & Graudins, 2011).

The high proportion of presentations by people considered frequent presenters to ED that result in the patient leaving without completing treatment is an important consideration in terms of the effective use of healthcare resources. Whilst these patients did not end up completing treatment for their presenting issue, their presentation itself utilised triage and other ED resources. Furthermore, their presence in ED may have contributed to overcrowding, affecting other patients' experience. Finally, given the clear evidence that people who frequently present have complex health needs, the non-completion of treatment is likely to contribute to ongoing presentations and poorer health.

## ED attendance over time

Whilst many studies have identified frequent presenters within a 12 month period and used this to describe the characteristics of this cohort and/or to direct an intervention to particular patients, there has been less focus on examining and understanding attendance patterns over a number of years. Medical Expenditure Panel Survey (MEPS) data from the United States that examined individuals with high expenditure in the health system showed that only 42 per cent of individuals who accounted for the top 10 per cent of medical expenditures had persistently high spending over a two-year period (Long et al., 2017). The few studies that have explored attendance patterns over a number of years without alternative intervention for frequent presenters show that attendance shows a natural decay over time (see Table 3).

Identified Cohort	Period of Observation	Attrition Rate	Reference
Frequent presenters to a metropolitan hospital (10+ presentations/year)	Four years	54% remained frequent presenters in the second year. 17% made 10+ ED visits in all four years.	Kne et al., 1998
Frequent users of a public ED in San Francisco (5+ times/year)	Five years	38% of frequent users in one year remained frequent users in the second year.	Mandelberg, Kuhn, & Kohn, 2000
Frequent users of EDs across Massachusetts (5+ visits/year)	Two years	28% remained frequent users in the second year.	Fuda & Immekus, 2006
Frequent attenders at Christchurch Hospital ED (10+ times/year)	Four years	13% remained frequent presenters in year 4.	Peddie, Richardson, Salt, & Ardagh, 2011b

**Table 3. Attendance over time by ED frequent presenters**



The reason for this attrition rate is not well described. The episodic nature of many illnesses, in particular substance abuse and psychiatric problems, is likely to contribute (Kne et al., 1998). There is description of the extent death of the frequent presenters may have contributed to this attrition rate. However, the evidence is clear that people who frequently present to ED have higher mortality rates than people who do not frequently present to ED in general (LaCalle & Rabin, 2010; Lucas & Sanford, 1998; Peddie, Richardson, Salt, & Ardagh, 2011a) (Peddie et al., 2011b), and are more than twice as likely to die at an ED visit compared to non-frequent attenders (Fuda & Immekus, 2006).

Two additional insights further complicate the understanding of the attrition rate of ED frequent presentations. First, the attrition rate slows over time. That is, there is a higher attrition rate in year two compared with year three and so on (Fuda & Immekus, 2006). This may be explained by 'acute' frequent presenters combined with as 'chronic' as discussed previously. Secondly, this attrition rate does not result in a reduction in the number of frequent presenters over time. Rather, the cohort size remains stable as a high volume of patients cycle in and out of a pattern of frequent attendance (Long et al., 2017; Peddie et al., 2011a).

Accordingly, Madelberg and colleagues (2000) suggest it may be worthwhile to consider separate examinations of frequent attenders and chronic frequent attenders, and subsequently, consider designing separate interventions.

## Characteristics of frequent presenters

Frequent presenters to ED are a diverse population group, however there is some consensus within the literature and local data as to demographic and other characteristics.

### Demographic characteristics

Research indicates that frequent presenters are, on average, older than non-frequent attenders (Kirby, Dennis, Jayasinghe, & Harris, 2011; Long et al., 2017; Markham & Gaudins, 2011). Locally, the frequent presenter cohort from Redcliffe Hospital had an average age of 49 years (unpublished data, Redcliffe Hospital), with a similar average age of 46 years in patients referred through the RBWH program (Rayner et al., 2017).

Local and international literature suggests that frequent attenders are more likely to be male (Chan et al., 2017; Harcourt et al., 2017; Rayner & Westoby, 2017; Rayner et al., 2017; von Berky et al., 2017), however evidence from the United States (Long et al., 2017) and local data from Redcliffe Hospital indicates that frequent attenders are more likely to be female (Redcliffe Hospital, unpublished data).

Within the Australian context, Indigenous status is important to consider given the poorer health outcomes for this population group and the need to consider culturally appropriate responses in the design of any interventions. Patients participating in the Working Together to Connect Care program were more likely to be Indigenous compared with the general population (Rayner et al., 2017; von Berky et al., 2017).

### Adverse childhood experiences

Adverse childhood experiences (ACEs) include being a victim of physical, sexual or emotional abuse or neglect, and exposure to chronic environmental stressors such as living in a household affected by domestic violence, substance misuse or mental illness (Bellis et al., 2017). Research has shown that adverse childhood experiences increase the risk of poor health-related outcomes in later life. However, there has been few examinations of health service usage of people who have experienced adverse childhood events.

A retrospective study of over 7,000 adult in Wales and England examined adverse experiences in childhood and the use of primary, emergency and inpatient care as adults. ACEs were strongly predictive of higher GP use, greater use of emergency departments and increased hospitalisation (Bellis et al., 2017). This patterns of use appears to be established by the beginning of early adulthood (Bellis et al., 2017) and experiencing more ACEs leads to higher use. One Canadian study found that each additional ACE (from a possible six) increased the risk of high use of GPs, EDs and other services (Chartier, Walker, & Naimark, 2010).

Mautner and colleagues (2013) interviewed adult patients serviced by a complex care program and a predominance of this cohort described childhood instability, including early life traumas and abusive relationships with primary caregivers. Half of those who described instability in childhood noted familial estrangement in adulthood and most participants reported having only one or two individuals that they could rely on, suggesting a lack of social support in adulthood.

### Health concerns, healthcare usage and social issues

An analysis of the literature identified several overarching themes within the health and social concerns of ED frequent presenters and their usage of the healthcare system. Each of these are outlined below.

#### **Frequent presenters are sicker than infrequent presenters and suffer disproportionately from mental illness and substance use issues**

International, national and local analysis indicates that this patient cohort have a range of complex health and social care needs and accordingly, the medical, psychological and social care of this cohort is often highly complex (Markham & Graudins, 2011). It is clear that the majority of frequent presenters to ED are sicker than other patients (Jelinek et al., 2008; LaCalle & Rabin, 2010) and that their needs span long-standing chronic illness, acute illness and lifestyle-related health problems (Parkman et al., 2017).

ED frequent presenters are more likely than non-frequent attenders to be admitted following an ED presentation (Jelinek et al., 2008; LaCalle & Rabin, 2010; Mandelberg et al., 2000) and taken in the context of a higher proportion of ED frequent presenters not completing treatment, this is of significance. As noted above, ED frequent presenters also have higher mortality rates than non-frequent presenters (LaCalle & Rabin, 2010; Lucas & Sanford, 1998).

Interestingly, within the two cohorts identified within the North Brisbane region, most frequent attenders were triaged as category three or category 4 (unpublished data, Redcliffe Hospital).

Overall, patients referred for NGO support through the RBWH Working Together to Connect Care (WTCC) program reported high levels of chronic illness and healthcare need and Table 4 provides a snapshot of diagnoses of 43 patients referred to Micah Projects through the Working Together to Connect Care program (Rayner et al., 2017).

Identified Health Condition	Prevalence in the Program Cohort
Disability	81%
Acquired brain injury	48%
Asthma	44%
Heart disease	37%
Liver disease	37%
Emphysema	17%
Kidney disease	19%
Cancer	11%
Hepatitis C	26%
Diabetes	4%

**Table 4. Prevalence of health conditions in patients referred to Micah Projects through the Working Together to Connect Care program**

The literature clearly identifies disproportionate rates of both mental illness and substance issues in populations of ED frequent presenters (Jelinek et al., 2008; Parkman et al., 2017; Ramasubbu, Donnelly, & Moughty, 2016). Locally, RBWH identified that in the main, frequent presenters attended for mental health and substance use issues (Harcourt et al., 2017) and this is reflected in the high rates of mental illness and/or substance use issues in those people referred to NGO support through the Working Together to Connect Care program (Rayner et al., 2017; von Berky et al., 2017).

### **Frequent presenters use more healthcare services in general**

It is clear that ED is not the only health service frequent presenters use at a high rate. Proportionally, frequent presenters to ED are also higher users of other hospital and non-hospital healthcare services (LaCalle & Rabin, 2010). Within the hospital setting, this includes hospital admissions, outpatient appointments, ambulance usage and laboratory testing (Harcourt et al., 2017). Outside of the hospital setting, this includes general practice visits, after-hours GP services, GP chronic disease planning and management, medical specialists, pathology services, and diagnostic imaging (National Health Performance Authority, 2015).

The level of usage of primary care services noted above reinforces LaCalle and Rabin's (2010) conclusion that for ED frequent presenters, a lack of affiliation with a primary care provider does not appear to be as much of a challenge as the ability to access timely, quality care. An analysis of high needs patients in the United States showed almost all have a usual source of care, however less than half reported they had a usual source of care meeting the definition of a medical home in providing care that is comprehensive, accessible and responsive to the patients' needs (Salzberg et al., 2016). Furthermore, this patient cohort is more likely to change GPs or see more than one GP compared with other patient cohorts (Billings & Raven, 2013; National Health Performance Authority, 2015). Within the local context, 89 per cent of patients supported by Micah Projects through the Working Together to Connect Care program reporting having a general practitioner, although many reported not being engaged with their GP at the point of entry in to the program (Rayner & Westoby, 2017).

Of most interest within the context of the Health Alliance is the combination of high rates of healthcare usage and an absence of improved health outcomes for this population cohort. Of significance is the clear picture that the volume of healthcare services utilised by this population cohort is poorly coordinated. Further, intended outcomes may be hampered by barriers to access, for example booked specialist appointments may not be attended and GP management plans may not result in allied health or other services being provided, due to transport, cost or other access issues.

### **Frequent presenters have complex social needs**

In addition to complex health needs, this patient cohort experiences a range of social needs. Of prominence is the lack of secure housing for many people identified as frequent presenters (Parkman et al., 2017; Ramasubbu et al., 2016). These people may be homeless, sleeping rough, couch surfing, or living in an insecure leasing arrangement. Locally, a significant proportion of people referred to NGO services through the Working Together to Connect Care program were currently insecurely housed (Rayner et al., 2017; von Berky et al., 2017) and had a history of homelessness, with people supported by Micah Projects being housed and homeless again an average of 6.2 times in the past three years (Rayner et al., 2017).

There is also evidence that this population cohort has poor educational attainment (Parkman et al., 2017) and high rates of unemployment (Ramasubbu et al., 2016), along with limited use of community resources and poor social support (Parkman et al., 2017) Ryan and colleagues (2016).

Taken together, these factors paint a picture of socioeconomic disadvantage (Krieg, Hudon, Chouinard, & Dufour, 2016), a significant predictor of poor health outcomes and an indicator of likely barriers to accessing health care, including affordability, transport (Birmingham, Cochran, Frey, Stiffler, & Wilber, 2016) and poor health literacy (Rayner & Westoby, 2017).

This population group also has high rates of engagement with the justice system, evidenced by the rates at which their presentation to ED is facilitated by the police (see Table 2). Of those patients referred to Micah Projects through the Working Together to Connect Care program, in the past six months 74 per cent had interacted with by the Queensland Police Service and been held in custody in a watch house, with an average of six interactions with QPS in that period. Thirty three percent had been to prison (Rayner et al., 2017), compared with 0.02 per cent of adults in Queensland (Queensland Government Statistician's Office, 2016).

A substantial literature shows that social services expenditures can have a bigger impact on health outcomes than health services expenditures (Bradley et al., 2016). As a result, addressing clinical needs alone will not result in improved outcomes or reduced costs for this population group (Long et al., 2017).

## The case for change

Frequent utilisation of ED is a challenging issue for clinicians, policy makers and indeed for patients themselves (Raven, 2011). It is important to understand the ways in which frequent presenters impact on the overall healthcare system, and the effectiveness of health care provided to them. The case for change is clear and is summarised in three key points below. However, given that many presentations by frequent presenters appear to be warranted (LaCalle & Rabin, 2010), it is important to note that any intervention that aims to reduce ED presentations must also ensure that effective and accessible care is provided elsewhere for this group.

### High healthcare use and associated cost

As described above, this cohort are high volume users of primary, secondary and tertiary healthcare services and the associated costs presents an argument for developing and implementing alternative interventions and models of care.

### Impacts on Emergency Department operations and performance

Frequent presenters have an impact on ED operations and performance, presenting a further argument for delivering alternative models of care. Frequent presenters decrease efficiency, contribute to overcrowding (Kirby et al., 2011; Krieg et al., 2016; LaCalle & Rabin, 2010) and have the potential to redirect care away from urgent cases (Trzeciak & Rivers, 2003). Furthermore, frequent presenters are more likely than other patients to leave ED before completing treatment, and in combination with their established high health needs, these factors contribute to the poor health outcomes for this population group. Accordingly, there is a case for more effective use of services.

### Impacts on patient care and experience of care

Frequently presenting to the emergency department also has an impact on the care a person receives, and their experience of care. Healthcare treatment within the ED setting tends to be episodic and poorly coordinated, and this may negatively impact on the patient as it can result in suboptimal care for chronic or recurrent conditions (Shumway, Boccellari, O'Brien, & Okin, 2008).

Furthermore, frequent presenters are often portrayed as unnecessarily using ED for health complaints that could be better treated elsewhere (LaCalle & Rabin, 2010). Labelling repeated ED use as a problem or as inappropriate can stigmatise these patients and influence the quality of care received, exacerbating existing vulnerabilities (Bieler et al., 2012). There is substantial evidence that the standard of care provided to this patient group, while costly, often does not meet their expectations (Long et al., 2017) and furthermore, there is indications that some clinicians have less empathy for this patient group and hold negative biases against them ("Survey: ED physicians report burnout, desire help for dealing with frequent users.", 2011).

The patient perspective is rarely represented in the literature, even though it would assist in generating hypotheses regarding antecedents of costly patterns of utilisation, and informing the development of more effective interventions (Mautner et al., 2013). Patients enrolled in complex care interventions describe difficult relationships with the healthcare system, including negative interactions with providers, which at times led to them withdrawing from a service (Mautner et al., 2013).

## Alternative service provision models

Given the diversity within the population cohort of people with complex health and social needs who frequently attend emergency departments, alternative models of care must strike the balance between standardised responses and tailored programs and services (Long et al., 2017). At a system level, alternative models of care should entail a multi-disciplinary effort across different parts of the health sector including funders, rather than efforts confined to emergency department settings (Bernstein, 2006). Further, in the local context it would also be important to consider those funders outside of the health sector who also have an interest in interventions to support this population group, many of whom fund complementary programs.

In assessing the success of alternative models of care, it is important to take a multidimensional approach. That is, while a successful program is likely to result in reduced costs, particularly in the acute healthcare sector, this should not be the single aim of an intervention. Rather, realignment of existing expenditure to provide more effective care should also be seen as a successful outcome and any assessment of changes in expenditure should also be considered alongside health and wellbeing outcomes for the patient and improved patient experience.

Long and colleagues (2017) have produced a National Academy of Medicine special publication on effective care for high needs patients. Their examination of the literature and engagement with key stakeholders has resulted in a framework of program attributes across three dimensions, providing both a broad and a clear overview of the components of successful alternative models of care for this patient group. This framework has informed much of this section of this document and is used to review the component parts and potential future developments of the Working Together to Connect Care (WTTCC) program.

### Service setting

Successful alternative models of care tend to fall broadly in to three non-mutually exclusive categories based on their setting, outlined below.

Successful models in primary care include those that increase the hours of usual primary health and mental health care providers (Bernstein, 2006; Pines et al., 2011; Uden et al., 2005), as well as those that implement interdisciplinary teams of health professionals, or involve team-based care with a case manager who assists with assessment, communication between providers, and care navigation (Long et al., 2017). Other models that have been deemed successful focus on facilitating efficient and effective transitions from hospital to the next place of care (Long et al., 2017). Finally, integrated care models are cross-disciplinary and focus on medical care and functional assistance alongside behavioural health services. In each of these cases, most approaches that have been evaluated have focused on the function of case management (Soril et al., 2016), and have demonstrated the association between case management and reduced ED use (Bernstein, 2006; LaCalle & Rabin, 2010; Shumway et al., 2008; Skinner, Carter, & Haxton, 2009).

Broadly speaking, the WTTCC program is an integrated care model. This program includes hospital staff, community-based nurses and other clinicians, and support workers. Alternative care provided by community-based organisations focuses on the physical and mental health needs of the patient as well as their social needs. Whilst there is some inclusion of general practice in WTTCC, given the evidence above it would be of interest to consider how the important role of primary care can be strengthened in this program to further improve outcomes.

## Care attributes

While the details of an alternative care model should be guided by local contextual factors, there are a number of attributes shared by different successful models of care (Long et al., 2017, pg 70), listed below.

- **Assessment:** Multidimensional (medical, functional and social) assessment
- **Targeting:** Targeting of programs to those most likely to benefit
- **Planning:** Evidence-based care planning
- **Alignment:** Care match with patient goals and functional needs
- **Training:** Patient and care partner engagement, education and coaching
- **Communication:** Coordination of care and communication among and between patient and care team
- **Monitoring:** Patient monitoring
- **Linking:** Facilitating of transitions and linking.

In WTTCC, referral to a community-based service provider is an opportunity for a more thorough assessment of need that spans both health and social factors, along with the ability to monitor a patient in their home. However, one challenge is in locating and supporting those people insecurely housed or homeless. The program itself is targeted to those people who present to ED four or more times in a 30 day period, and compared to most interventions within the literature, this program is aimed at very high users. Care planning is an important feature of WTTCC and occurs both within the ED and the community provider's setting and on the whole, stakeholders report that improved communication between hospital and community partners has been one of the most successful aspects of this program.

Future work would ideally progress current care planning arrangements with the sharing of care plans between providers, or indeed one shared care plan that all agencies can view and contribute to. With regards to further improving communication, the current gains appear to be reliant on individuals rather than systemic improvement, however the promising work completed to date suggests improved communication could become more embedded within the system. Another area for consideration would be shifting some mechanisms of communication such as case conferencing to also occur outside of the ED setting to further engage community-based and primary care providers.

## Delivery features

Successful care models also share specific features of service delivery (Long et al., 2017, pg 71), listed below.

- **Teamwork:** Multidisciplinary care **teams** with a single, trained care coordinator as the communication hub and leader
- **Coordination:** Extensive outreach and interaction and **coordination** among patient, care coordinator and care team, with an emphasis on face-to-face encounters among all parties and collocation of teams.
- **Speedy provider responsiveness** to patients and 24/7 availability
- **Timely clinician feedback** and data for remote patient monitoring
- **Careful medication management** and reconciliation, particularly in the home setting
- The extension of care to provide **outreach** in the community and home
- **Linkage to and integration** with social services
- **Prompt out-patient follow up** after hospital stays and the implementation of standard discharge protocols.

WTTCC has many important features that have contributed to its success, including community partners that are able to provide extensive and assertive outreach models that include a case manager as a coordinator of care in the community. The majority of activity delivered by these providers is focused on engagement and advocacy and

there is a strong focus on linking to other services, with the majority of participants referred to six other services (Rayner et al., 2017). Many of the meetings with patients are face-to-face and the care model allows for providers to spend significant time with the patient when they meet. Some of the community partners are resourced with clinical nurses enabling medication management, and all are well integrated with social services. The WTTCC program has worked to improve communication regarding presentations and admissions of those patients enrolled in the program.

Whilst the community partners are able to be responsive, however, the program is not resourced to deliver a 24/7 response and the limited resources may mean that immediate responses are not always possible. Accordingly, future plans for this program may consider the adequate resourcing required to enhance the current response to longer hours with the capacity for immediacy. In addition, the role of clinical staff or primary healthcare providers to ensure medication management for all patients could be further explored. Finally, communication regarding presentations and admissions appears to again be reliant on individuals rather than being a systemic response, and future planning for this program should include consideration for embedding this important communication.

## Organisational culture

Long and colleagues (2017, pg. 73) also identified seven features of organisational culture that can contribute to success of care models, listed below.

- The engagement of leadership across levels
- Customisation of the model to the local context
- Strong team relationships
- Including patients and care partners
- The implementation of appropriate training
- Continuous assessment with effective metrics
- The use of multiple sources of data.

Many important features of the WTTCC program have been possible because of organisational culture. Importantly, this program was borne out of local providers identifying a program and designing an evidence-based local intervention. The program has identified leaders within ETC and community providers to both deliver and champion the work. One of the key outcomes reported by program partners has been improved relationships, and importantly, trust within these relationships. Multiple sources of data have been examined to understand the delivery and impacts of this program, and more recently, costs and savings within the hospital.

The next point of focus for this program should be on leadership within the health system engaging in a process to develop a sustainable model to continue the promising work so far. In addition, there is significant scope for improved use of data across the system, and monitoring progress according to agreed metrics.

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