Ambulatory care sensitive chronic conditions: what can we learn from patients about the role of primary health care in preventing admissions?

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Abstract. Developing and targeting interventions to reduce hospital admissions for ambulatory care sensitive (ACS) chronic conditions for older people is a key focus for improvement of the health system. To do this, an understanding of any modifiable factors that may contribute to such admissions is needed. To date, the literature on ACS admissions has rarely included the patient perspective. This qualitative study involved one-to-one telephone interviews with 24 patients aged ≥45 years who had had an unplanned admission for an ACS chronic condition to one of two participating regional hospitals between February and August 2015. Data were transcribed and analysed thematically. Most participants did not perceive their admission to be preventable, yet they described a series of interlinking factors, which may have contributed to their admission and which may offer potential points of leverage. Key interlinked themes interpreted were: ‘support deficits’, ‘non-adherence to treatment’ (including medication), ‘mental health’ and ‘lack of awareness or understanding of condition’. Improving system-, clinician- and patient-level factors within a framework of appropriately resourced and supported comprehensive primary health care that is accessible, affordable, holistic, practical and evidence-based may contribute to improving patients’ quality of life and to delaying or preventing hospital admission.

Additional keywords: ambulatory care, avoidable admission, chronic disease, help-seeking behaviour, multimorbidity, preventable hospitalisation, qualitative research.

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Introduction
Admissions for ambulatory care sensitive (ACS) conditions (also known as potentially preventable or avoidable hospitalisations) are ‘...considered to be largely preventable if timely and adequate care were provided through population health services, primary care and outpatient services.’ (Australian Institute of Health and Welfare glossary, see https://www.aihw.gov.au/reports-statistics/health-welfare-overview/australias-health/glossary, accessed 26 June 2018). In 2015–16, ACS conditions accounted for 8.3% of public hospital admissions in Australia. (Australian Institute of Health and Welfare 2017). It is widely accepted that a proportion of these could have been prevented with access to effective, timely care before admission (Billings et al. 1993), and therefore, ACS admission rates have been viewed as a measure of the quality of primary care (Trachtenberg et al. 2014) and raise the issue of equity in the health system. Rates of ACS admissions are higher in rural areas (Australian Institute of Health and Welfare 2011). Approximately half of ACS admissions are for chronic conditions, with congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), any diabetes complications and angina accounting for more than two-thirds of all chronic ACS condition admissions (Australian Institute of Health and Welfare 2017).

In order to develop and target effective interventions to reduce admissions for ACS chronic conditions, their drivers need to be identified and understood, including an appropriate timeframe within which to assess this (Longman et al. 2015). To date, the literature has articulated the complex interplay of system, clinician and patient factors associated with admissions for ACS conditions. System-level factors include issues of supply and demand of (van Loenen et al. 2014), and access to (Rosano et al. 2013) primary healthcare services, and clinician factors include adherence to clinical guidelines for disease management, physician experience and preferences regarding admission (Billings et al. 1993; O’Malley et al. 2007; Pretto et al. 2012) and the utilisation of action plans (Howcroft et al. 2016; Lenferink et al. 2017). Patient factors range from sociodemographic and health characteristics (such as self-reported health, functional limitations and the number of comorbidities; Tran et al. 2014; Falster et al. 2015; Caughey et al. 2017), to social support...
What is known about the topic?
• To date, the literature on ambulatory care sensitive admissions has articulated complex system, clinician and patient factors; however, it has rarely included patients’ perspectives.

What does this paper add?
• This study found that unplanned admissions for chronic conditions are affected by: support deficits, non-adherence to treatment, mental health and patients’ lack of awareness or understanding of their condition(s).

Box 1. Definition of preventability for The Diagnosing Potentially Preventable Hospitalisations (DaPPHne) project
When an unplanned admission could have been prevented if:
1. Appropriate, adequate, accessible and good-quality support in the community had been available and accessed in the preceding 3 months, or
2. Appropriate individual health behaviours (e.g. disease self-management) had occurred in the 3 months before admission.

(Dickens et al. 2011), health behaviours (Tran et al. 2014) and medication adherence (Wei et al. 2014). Although it has long been noted that understanding patients’ views may identify important leverage points and mechanisms for reducing these admissions (Billings et al. 2006), previous research has rarely included the patient perspective.

The Diagnosing Potentially Preventable Hospitalisations (DaPPHne) project aimed to generate an evidence base identifying modifiable factors driving individual admissions for ACS chronic conditions among community-dwelling older people (Passey et al. 2015). It focused on preventability in the 3 months leading up to an admission (Box 1).

One sub-study of the DaPPHne project was a qualitative study that aimed to elicit patients’ perspectives on a recent ACS admission, including their decision to go to hospital on the day of admission, the support they received in the 3 months leading up to the admission and whether patients felt there was anything that they or anyone else could have done to help prevent the admission. The aim of this paper is to report these patients’ perspectives and consider the implications for the provision of comprehensive primary healthcare.

Methods
Participants for the DaPPHne project were: aged ≥45 years, community dwelling, English-speaking, able to give informed consent and had had an unplanned admission for COPD, CHF, angina or diabetes complications to one of two participating regional hospitals between October 2014 and March 2016. In total, 281 eligible participants were recruited to the DaPPHne study. As part of the consent process, 197 participants (70%) indicated that they were willing to participate in a follow-up qualitative interview.

From this pool of potential participants, a purposive sample were approached with the aim of achieving maximum variation in age, gender, hospital admitted to and provisional diagnosis. Recruitment continued until saturation of themes was achieved. Another two interviews were conducted, which confirmed thematic saturation.

One-to-one telephone interviews were conducted after discharge from hospital (phoning the participants’ home landline or their mobile) by two members of the research team experienced in qualitative research, one of whom was a nurse and who introduced herself as such to all participants at the start of the interview. Interviews were semi-structured allowing for a flexible, comfortable and supportive process through which to elicit description of their hospital admission and to encourage participants to reflect on and express their opinions. An interview guide was used to focus the discussion and covered topics including the decision to go to the hospital that day; each participant’s health (and any changes to it) in the 3 months before the admission, the help and support they had (and any changes to it) in the 3 months before the admission; and anything that they perceived could have helped them at that time and whether that might have kept them out of hospital. Interviews took place as soon after discharge as possible, to mitigate against loss of clarity of memory of the admission. The median gap between discharge and the interview was 15 days. In two cases, participants were transferred to another hospital, prolonging the time between discharge from admitting hospital to being at home and available for interview.

Interviews were transcribed conversationally and analysed thematically following the method described by Braun and Clarke (2006), initially using two broad overarching a priori categories: factors helping to possibly prevent admissions and factors which potentially contribute to admissions. Data analysis began concurrently with data collection, with the development of an early descriptive code book using NVIVO (ver. 10, QSR International, Melbourne, Vic., Australia). Two of the authors (J. M. Longman and E. Rix) began making journal notes following interviews and used these notes and regular discussions to further develop categories as a way of labelling the data as data collection continued. These authors met fortnightly to discuss data collection and analysis. During this process, one of the more detailed interviews was coded with the developing codebook independently by J. M. Longman and E. Rix, and compared for congruence in coding. This resulted in further discussion and the next iteration of the codebook. The same process was repeated, and a more comprehensive and nuanced codebook developed as a result. All interviews were then coded using this refined version of the codebook. Review of the coding and categories facilitated synthesis across the data and the interpretation of key themes and sub-themes, which allowed for a rich description of the data.

Ethical approval for the DaPPHne project (including this qualitative sub-study) was given by the New South Wales Population and Health Services Research Ethics Committee (AU RED Reference: HREC/14/CIPHS/39).
Results
During February to September 2015, a total of 26 participants were contacted, and 24 agreed to an interview. On average, interviews lasted 24 min (range 13–38 min). Demographic information for the 24 participants are presented in Table 1. Although most participants did not perceive that their unplanned admission was preventable, some identified actions that may have contributed to preventing the admission. We interpreted four main themes and their sub-themes around factors potentially contributing to participants’ admission, which were all strongly interconnected (Fig. 1).

Table 1. Demographic information – qualitative sub-study participants

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<th>Category</th>
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<tr>
<td>Gender</td>
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<tr>
<td>Male</td>
<td>14</td>
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<tr>
<td>Female</td>
<td>10</td>
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<td>Age (range 52–88 years)</td>
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<td>&lt;70</td>
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<td>70+</td>
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<td>Angina</td>
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<td>CHF</td>
<td>5</td>
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<td>COPD</td>
<td>7</td>
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<td>Diabetes</td>
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Support deficits
Many participants described a lack of access to health or other services relating to their unplanned admissions. These included: waiting for specialist cardiac appointments; perceptions of misdiagnosis or premature discharge from hospital; and lack of home, health or social services supports. Participants also commonly described a lack of family and social support and several were highly dependent on just one person for all their care and social needs. Some participants were juggling caring responsibilities for others, which reduced prioritisation of their own chronic conditions.

Non-adherence to treatment
We broadly defined treatment to include: medications; health regimens (e.g. fluid and salt restrictions) and health behaviours such as exercising or smoking cessation. Participants described complex interlinked factors contributing to treatment non-adherence. Some directly linked their non-adherence to medications or health regimens to their unplanned hospital admission. Participants reported non-adherence to medication because of side-effects; for example, not taking a diuretic to avoid frequenting the toilet (which made socialising very difficult). Others struggled to comply with complex and potentially confusing medication regimens, often exacerbated by medication changes during their hospitalisation.

Fig. 1. Factors that potentially contribute to unplanned admissions for ambulatory care sensitive chronic conditions.
Two participants described forgetting their medication before their admission.

That’s one of the reasons why I ended up in hospital, because I’ve been – my memory – I was forgetting to take medication [TIV011, man, 70, diabetes complication].

Participants also described not controlling lifestyle risk factors for chronic conditions; for example, COPD patients continuing to smoke. Others expressed their awareness of needing to exercise or lose weight and pay more attention to their overall health, although many seemed vague about the practical details around this. In nine interviews, participants spontaneously reported the negative effect of sore legs on their mobility, which reduced their quality of life and compromised their capacity to exercise.

A: I’m about what, oh, 14, 15 stone.

Q: Okay, so you struggle a bit with your weight?

A: Yes. Well, see, they want me to walk and of course, my legs are no good at the moment. . . . Trying to walk but I do go a little way, you know, walk around the house and go down to the letterbox, so [TIV027 – woman 69, diabetes complication].

Several participants held fatalistic attitudes to their health, with a ’when it’s your time to go, it’s out of your hands’ approach. These participants also displayed a tendency to not control wider risk factors and the majority were also coded under not seeking help.

Participants often described their reluctance to or not seeking help, with this coded more often in interviews with men. There were several instances where services were cited as unaffordable; for example, visits to cardiologists or dentists. Others did not seek help because of a dislike of hospitals. Pride and also shame or embarrassment (e.g. with not being able to quit smoking ’. . . .if I went to the doctors then they would be horrified with me.’; TIV019, woman, 59, COPD) were factors in not seeking help, as was stoicism. Some participants thought they could either manage their symptoms or just ’tough it out’, in one case motivated by a concern for not leaving a pet alone at home:

So I should have rang the ambulance, but I didn’t. . . .I made that decision myself and it’s hard for me to bloody, see I put up – I’m an idiot, I should go sooner, but I put up with a lot of pain. That pain was just too bloody much. But silly me – I’ve got a little puppy dog and he’s a little sook, and I’m worried about leaving him by himself[TIV013 – man, 59, angina].

Mental health

Participants described mental health issues directly linked to their condition(s) and contributing to unplanned admission. For instance, COPD and CHF patients reported experiencing anxiety when an episode of shortness of breath preceded an unplanned admission, and that for some, being unable to calm down led to having to go to hospital. Participants reported depression and anxiety worsening their quality of life. Fear was a strong sub-theme of mental health, with participants expressing fear relating to their chronic condition, treatment or hospitalisation. Some of these participants concurrently reported little family or social support. As depicted in Figure 1, there were links between: ‘not seeking help, dislike of hospitals’ and ’stress, anxiety worsening health status’ and ’mental health’ and a connection between ’lack of awareness or understanding’ and ’mental health’.

Lack of awareness or understanding of condition

Although a small number of participants demonstrated a sophisticated understanding of their condition(s) and its or their management, lack of awareness or understanding was common, and was a prominent potential contributing factor to unplanned admission in 22 of the 24 interviews. For some, their limited understanding was confounded by the complexities of having multiple co-morbidities.

Participants commonly described not recognising, or heeding as warning signals, symptoms such as pain, shortness of breath or fatigue. Symptom recognition appeared to be compromised by lack of awareness and understanding of their condition, and warning signs that were subtle, gradual or only identifiable in hindsight.

Q: Did you notice any change in your ability to exercise, shortness of breath?

A: I started noticing. . . . in the weekends with my partner, we’d go for a walk . . . that’s when I started to notice I was starting to get chest pain again, getting a bit – bit harder to walk in and that and then – and even if we just go for a walk around the block and started to go up hills – not hills, hills but just slight inclines I’d be thinking, I’m getting a bit of chest pain here. So . . .

Q: And did you notice you were more short of breath or . . .

A: Yeah. I did, but I just thought – because I had the AF [atrial fibrillation] I just thought it was all part and parcel until they explained it was two different problems. I didn’t realise otherwise I might have done – gone to the doctor and said something about the chest pain earlier but that was all [TIV016, man 59, angina].

Participants’ descriptions of what had caused the worsening of their condition before admission illustrated they had not clearly understood this or were unable to describe it accurately. Some participants lacked understanding (from, for example, an action plan) on what to do or how and when to seek treatment, particularly ‘inexperienced’ patients; for example, those having their first cardiac event.

Others had little insight into how unwell they really were until being urged to seek help by either a family member or a clinician. Some participants had what we interpreted to be an approach that was not proactive in participating in the management of their condition, and on occasion, this appeared to contribute to a lack of awareness or understanding of their condition.

I thought I was getting well, but when I went in there [to the hospital], they told me that just as well I got in in the time I did, because my whole body was closing down because
of the infection. . . and I said to [daughter], ‘I didn’t know
I was that sick.’ . . . I had to go in and get these toes off
and we knew they were bad; they had gangrene. . . Well,
like, I couldn’t do anything about this. It got into this
stage where even now, there’s not much more they can
do except take my leg off [TIV015 – woman 71, diabetes
complication].

Discussion
This study confirms that the circumstances of an unplanned
admission are complex and individual. Although the majority of
participants did not perceive their admission to be preventable,
they described a series of interlinking factors that may have
contributed to their admission and that may offer potential points
of leverage. Older people with chronic conditions have several
important potential resources that might realise this leverage
including: knowledge of their condition and its management;
plans of action; social and service support; evidence-based
clinical support together with effective medication; and mental
and emotional health and wellbeing (Rogers et al. 2011).
Unplanned hospital admission in this group of patients seems
to be affected by: deficits in systems support both in terms
of services and social support; and (at the patient level and
potentially linked to interactions with clinicians), limited
knowledge, awareness and understanding of their condition(s);
non-adherence to treatment and not controlling wider risk
factors.

For many participants, there were numerous barriers
throughout the process of help-seeking. Help-seeking involves
observing a change in health and recognising there is a problem
that cannot be addressed without a third party (involving
symptom identification, perception and interpretation); problem
definition (symptom cause, severity, duration); having the ability
and motivation to decide to act; and the selection of a source
of help and contacting or visiting that source of help (Cornally
and McCarthy 2011). Some of our participants described not
recognising symptoms such as fatigue, pain or shortness of breath
until in hindsight, or recognising symptoms but not perceiving
them as warning signals that required help. For many conditions,
symptoms can be ambiguous (Scott and Walter 2010) and the
process of perceiving symptoms can be affected by multiple
contextual, social, psychological and emotional factors, not just
physiological factors. The difficulty for patients accurately
monitoring symptoms for self-management of their chronic
condition has been reported elsewhere (Scott and Walter 2010),
and includes skills and confidence and the self-efficacy to
self-manage, not just technical knowledge (Bodenheimer et al.
2002). Among our participants, lack of awareness and
understanding of their condition seemed to exacerbate this
difficulty, suggesting multiple points of potential intervention
for adequately resourced, effective and comprehensive primary
healthcare.

System and clinician supports for patients with daily
monitoring may improve recognition of symptoms, including
more subtle and developing symptoms; for example, the
National Heart Foundation’s Action Plan (National Heart
Foundation 2012), which includes a brief ‘every day’ list
including monitoring weight and instructions on when to call
a doctor or nurse and when to call an ambulance. Clinicians
educating and supporting patients in symptom recognition does
have the potential to improve outcomes (Damery et al. 2016).
However, it may address only one element of this complex
process of help-seeking. In addition, any short-term educational
interventions require structured longer-term follow up to ensure
any changes become systemic and embedded (Wagner 1998;
Thomas et al. 2013). In our study, ability and motivation to
act, selecting a source of help and contacting or visiting that
help were constrained by several factors. These included
participants’ socioeconomic situation (e.g. the affordability of
services (Callander et al. 2017)), pride, shame, embarrassment
or stoicism, dislike of hospitals and gender norms (Brown and
Chen 2008), where men were more likely to delay or not
seek help.

Effective self-management is a potential contributor, along
with access to services and effective clinical care, to improving
outcomes in this patient group (Ahn et al. 2013). Adherence
to treatment, including medication, is part of self-management
and involves the health system, clinicians, the patient (and their
cognitive capacity, health beliefs and self-efficacy) and their
community resources, alongside problem awareness (Herrera
Rogliani et al. 2017). In this study, it was related, in some cases,
to a lack of understanding of the condition and its management,
as reported elsewhere (Marshall et al. 2012). This again
suggests the importance of clinicians ensuring patients have
a clear understanding of their condition, its management and of
recognising and acting on early warning signs of deterioration.

Lack of social support was an important aspect of many
narratives in these data. Although our participants did not
necessarily connect this with preventability of their admission,
there is evidence of the effect of social isolation on health
outcomes (Dickens et al. 2011; Longman et al. 2013). Reliance
on one person for care and social needs can render patients
particularly vulnerable if something happens to that person, as is
articulated in the connected to (green) links in Fig. 1.

The profound effects of multi-morbidity were clear in our
data. These effects included complexity of medication
management; difficulties of understanding; living with and
managing chronic conditions; and symptom recognition. The
increasing prevalence of multi-morbidity is well-documented,
with age and socioeconomic deprivation identified as significant
associated factors (Australian Institute of Health and Welfare
2006). Lack of service coordination between acute and
primary care (including deficiencies in hospital discharge
plans) and across and within primary care providers and
strategies to engage participants in self-management, are all
known to be particular challenges for those with multi-
morbidities (Aspin et al. 2010). As yet, the evidence about
effective interventions for people with multi-morbidity remains
mixed (Smith et al. 2012).

Some participants discussed wider risk factors they felt or
knew they should be aiming to control; for example, exercising,
quitting smoking or losing weight, but it was striking that they
did not describe any support for this (such as smoking cessation
support) or any practical detail (e.g. a sense of how much
weight to lose and how, or the duration or type of exercise).
Some control of wider risk factors was related to the commonly
The authors declare that they have no conflict of interest.

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Limitations of this study include that some participants may have had recall difficulties. Telephone interviews between strangers have limitations. However, some participants were remarkably willing to share, and were cogent in recalling the circumstances of their admission and its lead-up.

Conclusion

Patients described circumstances and behaviours that may have contributed to their unplanned admission. The findings of this study suggest that improving system-, clinician- and patient-level factors within an appropriately resourced and supported framework of comprehensive primary healthcare that is accessible, affordable, holistic, practical and evidence-based, may contribute to improving patients’ quality of life, delaying or preventing hospital admission for chronic conditions and to a more equitable health system.

Conflicts of interest

The authors declare that they have no conflicts of interest.


