

ARTICLE

Care plan use among older people with functional impairment: analysis of the English General Practice Patient Survey

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Abstract

Objectives: Care plans may improve health when patients are involved in the care planning process. They are recommended for primary care. This study aimed to identify characteristics of older patients with functional impairment (age ≥ 75 years with problems completing daily activities) who report having a care plan and who are involved in care planning.

Methods: The General Practice Patient Survey (individual-level dataset) 2015-16 in England was analysed. Logistic regression was used to estimate associations between having a care plan and being involved with care planning and age, gender, ethnicity, deprivation, multimorbidity, interpersonal relationship with general practitioner (GP) and other variables, clustered at practice level.

Results: Three point five percent of GPPS respondents and 14.4% of older people with functional impairment reported having a care plan; however, only a quarter of the latter were involved with the care planning process. Involvement with care planning was associated with seeing own GP (odds ratio (OR) 1.88, 95% confidence interval (CI) 1.48 to 2.38) and factors reflecting a positive interpersonal relationship with the GP, including having confidence in the GP (OR 5.92, CI 2.38 to 14.77). Respondents involved with care planning reported greater confidence in managing their own health.

Conclusions: Few older people with functional impairment report having a care plan and fewer report involvement in the care planning process. This may reduce the ability of care plans to deliver health benefits and person-centered care.

Keywords

Care plans, collaborative goal setting, frailty, functional impairment, long term conditions, multimorbidity, patient activation, patient engagement, person-centered healthcare, self-efficacy, self-management, shared decision-making, social care

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Introduction

Care planning is a clinical tool designed to improve patient care. It should involve a conversation between an individual and a healthcare professional, with shared decision-making and agreed goals set to manage the patient's conditions [1,2]. Although the evidence is mixed [3], care plans can improve some indicators of physical and psychological health in long-term conditions [1] and enhance self-management [4].

No studies have found that care plans improve outcomes among patients with multimorbidity, yet the

holistic approach involved is well suited to this patient group, particularly those who are older and with functional impairment (i.e., most frail patients) [5]. They are recommended in clinical guidelines for single diseases as well as multimorbidity [6] and have been a recurring theme in UK health policy for at least a decade [7]. From 2014-2017 GPs in England were given financial incentives to offer them as part of the 'Avoiding Unplanned Admissions' (AUA) Enhanced Service [8]. Globally, most countries have a growing older population with many individuals living with multiple chronic diseases [9] and care planning has been adopted for management of chronic

disease by many primary healthcare systems worldwide [10].

The GP Patient Survey (GPPS) is an independent survey run by Ipsos MORI on behalf of NHS England that collects data about patient experiences of primary care. Since 2013 it has included four questions about ‘planning your care’ [11]. Previous analyses of GPPS data have found that few patients report having a written care plan [12,13]. However, these studies did not focus on older people and, with an increasingly ageing population, this may be an important omission. Also, as it is known that the effects of care planning are greater when more stages of the care planning cycle are completed [1], the level of involvement in care planning warrants exploration.

This study analyses individual-level, 2015-16 GPPS data. We set out to determine how many older functionally impaired people report having a care plan and, of those, what proportion report involvement in the care planning process. We studied the factors associated with this population having a care plan and being involved with care planning.

Method

GPPS sample

Patients were sampled using registration records held by the Health and Social Care Information Centre. The inclusion criteria were: a valid NHS number, being registered with the general practice continuously for >6 months and ≥ 18 years. An unclustered, proportionally stratified (by age and sex) sample that took account of practice size and previous response rate was drawn from all 7778 practices in England. Around 2.15 million surveys were posted out across 2 GPPS waves, from July 2015 to September 2015 and January 2016 to March 2016, with reminders sent if no response was received. Patients had the option of completing the survey on paper, online, or by telephone and in up to 14 different languages plus British Sign Language. Full technical details are published elsewhere [14].

GPPS data

The questionnaire contained a total of 62 questions relating to a patient’s characteristics and experiences of general practice. Regarding care planning, the survey asked:

- ‘Do you have a written care plan?’
- ‘Did you help put your written care plan together? (by ‘help’ we mean setting goals for yourself or choosing how you want to manage your health)’
- ‘Do you use your written care plan to help you manage your health day-to-day?’

- ‘Does your GP, nurse or other health professional review your written care plan with you regularly?’

The responses were ‘yes’, ‘no’, or sometimes ‘don’t know’.

Additional questions asked about age, gender, ethnicity (we grouped this into white and non-white, as only 4.3% of the population were non-white), presence of a long-standing health condition, function (indicated by ability to complete usual activities and whether this is due to short- or long-term conditions), frequency of seeing a GP, confidence in managing own health, several questions relating to the experience of using GP services, and use of local services or organisations to help manage long-term health conditions. An Index of Multiple Deprivation (IMD) score (based on postcode) was available for each patient. Full text of the survey is available online [11].

Statistical analysis

Using individual-level data, we calculated the proportion of the whole sample who had a care plan. We then calculated the proportion of the whole sample who were older and had functional impairment, based on if:

1. They stated they had moderate/severe problems or were unable to do their usual activities *and*
2. This was not limited because of recently being unwell or injured *and*
3. They were ≥ 75 years old.

A second binary variable was created for being ‘involved in care planning’ if a respondent stated that they:

1. Had a care plan *and*
2. Answered ‘yes’ to all questions about care planning (listed above).

Logistic regression was used to examine the relationship between the outcome variables of (A) having a care plan and (B) being involved with care planning and explanatory variables. Explanatory variables were chosen based on theoretical links and included: (1) frequency of consultation, (2) factors related to experience with GP, (3) confidence in GP, (4) seeing GP of preference, (5) overall experience and recommendation to others, (6) presence of a long-standing health condition, (7) multimorbidity, (8) support received from local services and (9) confidence in managing own health (see Tables 3 for details of variables). Adjustment was made for: (i) age (75-84 years, 85+ years); (ii) gender; (iii) ethnicity and (iv) IMD score. To account for patient groups potentially clustering in practices that may perform generally better or worse, regression analyses were clustered at practice level. Analyses were undertaken in Stata (Version 13) [15].

Ethical approval

Ethical approval was obtained from the Yorkshire & Humber - Bradford Leeds Research Ethics Committee. (REC Ref. 16/YH/0437).

Results

A total of 2,148,791 questionnaires were mailed for the 2015-16 GPPS, of which 836,312 were returned, giving a response rate of 38.9% [13]. Among all respondents, 3.5% (n=28,983) reported that they had a written care plan. The proportion of respondents identified as older with functional impairment was 2.8% (n=23,508) (Table 1). Of these, 14.4% (n=3,377) reported having a care plan and of these 25% (n=844) were involved with the care planning process (Table 2). Key characteristics of older people with functional impairment included being white (94.7%), female (58.1%) and having a long-standing health condition (89.3%) (Table 3).

Care plans in older people with functional impairment

People in this group who were aged ≥ 85 years were more likely than those who were 75-84 years to report having a care plan (adjusted OR 2.11, 95% CI 1.96-2.27), as were

women (1.14, 1.05-1.23) and those living in more deprived postcode areas (1.16, 1.05-1.23) (Table 4). Being seen within the last 6 months (1.43, 1.28-1.61) and the presence of a long-standing health condition (2.58, 2.06-3.25) also made reporting a care plan more likely. Those who reported a care plan were less likely to feel confident in managing their own health (0.53, 0.5-0.56) and less likely to report receiving enough support from local services (0.88, 0.87-0.9). There was little difference between crude and adjusted OR, so for clarity only adjusted OR are presented.

Involvement with care planning

The variables most associated with involvement in care planning related to the respondent reporting positive interpersonal experiences with their GP, particularly having confidence in the GP (5.92, 2.38-14.77), as well as the ability to see a preferred GP (1.88, 1.48-2.38), having a positive overall experience (1.51, 1.33-1.72) and willingness to recommend the practice to others (1.43, 1.29-1.59). Unlike the relationship seen for having a care plan, being involved with care planning was associated with increased confidence in managing own health (1.31, 1.2-1.42). Being involved with care planning was also associated with the reporting of insufficient support from local services (0.85, 0.8-0.9) (Table 4).

Table 1 Characteristics of GPPS respondents (2015-16) (n=836,312)

Variable	Number	Percentage
<i>Age</i>		
Over 75 years	130,041	15.5%
Under 75 years	691,894	82.7%
Not answered	14,377	1.7%
<i>Function</i>		
Long-term significantly reduced ability to perform usual activities	67,334	8.1%
No/very minimal reduction in ability to perform usual activities, or reduction related to short term illness	726,306	86.8%
Not answered	42,672	5.1%
<i>Older people with functional impairment</i>		
Over 75 years and with functional impairment	23,508	2.8%
Under 75 years or no functional impairment	759,027	90.8%
Not answered	53,777	6.4%
<i>Care plan</i>		
Yes	28,983	3.5%
No	747,720	89.4%
Not answered	60,059	7.2%

Table 2 Care plan responses of older population with functional impairment in the GPPS 2015-16 (n=23,508)

Variable	Number	Percentage
<i>Have a written care plan (n=23,508)</i>		
Yes	3,377	14.4%
No	18,148	77.2%
Not answered	1,983	8.4%
<i>Helped to put care plan together (n=3,377)</i>		
Yes	1,984	58.8%
No	1,200	35.5%
Not answered	193	5.7%
<i>Use care plan to help manage health day-to-day (n=3,377)</i>		
Yes	1,831	54.2%
No	1,321	39.1%
Not answered	225	6.7%
<i>Care plan regularly reviewed with a healthcare professional (n=3,377)</i>		
Yes	1,731	51.3%
No	899	26.6%
Not answered	747	22.1%
<i>Involved with all aspects of care planning (n=3,377)</i>		
Yes	844	25%
No	2,122	62.8%
Not answered	411	12.2%

Table 3 Key characteristics of older population with functional impairment in the GPPS 2015-16*

Variable		Total older population with functional impairment (n = 23,508)	Presence of care plan		Engagement with care plan	
			Older people with functional impairment with care plan (n = 3,377)	Older people with functional impairment without care plan (n=18,148)	Older people with functional impairment with care plan and involved in care planning (n = 844)	Older people with functional impairment with care plan but not involved in care planning (n = 2,122)
<i>Ethnicity</i>	White	94.7%	91.1%	91.4%	92.2%	91.1%
	Non-white	4.3%	7.5%	7.8%	6.9%	7.5%
	Not answered	1%	1.4%	0.8%	1%	1.5%
<i>Gender</i>	Male	41.3%	37.5%	42.4%	35.9%	38.4%
	Female	58.1%	61.7%	57.1%	64%	60.5%
	Not answered	0.6%	0.8%	0.5%	0.1%	1.1%
<i>Age</i>	75-84 years	58.6%	48.2%	66.3%	50%	48%
	85 and over	37.1%	51.8%	33.7%	50%	52%
<i>Deprivation</i>	Most deprived	32.2%	33.7%	31.5%	34.4%	32.5%
	Moderately	34.9%	34.4%	35.1%	32.5%	35%
	Least deprived	32.8%	31.9%	33.4%	33.1%	32.5%
	Not answered	<0.1%	0.1%	<0.1%	0.1%	0.1%
<i>Long-standing health condition</i>	Yes	89.3%	93.8%	88.9%	94.4%	93.8%
	No	4.9%	2.4%	5.4%	1.7%	2.5%
	Not answered/ not relevant	5.8%	3.8%	5.7%	3.9%	3.7%
<i>Seen within last 6 months</i>	Yes	84.6%	87.4%	84.1%	88.7%	86.7%
	No	14.6%	11.7%	15.2%	10.4%	12.4%
	Not answered/ not relevant	0.8%	0.9%	0.7%	0.8%	0.9%
<i>Confidence in GP</i>	Yes, definitely/to some extent	90.1%	89.3%	90.6%	94.1%	87.5%
	No, not at all	2.3%	2.5%	2.2%	0.6%	3.4%
	Not answered/ not relevant	7.6%	8.2%	7.2%	5.3%	9.1%

<i>Seeing GP of preference</i>	Always/almost always/a lot of the time	45.7%	42.5%	46.7%	50.5%	40.6%
	Some of the time/almost never/never	18.9%	18.7%	19%	13.5%	20.8%
	Not answered/ not relevant	35.4%	38.9%	34.4%	36%	38.6%
<i>Overall experience of GP surgery</i>	Very good	59.3%	58.7%	59.8%	67.3%	55.2%
	Fairly good	31.3%	29.9%	31.5%	25.8%	31.5%
	Neither good nor poor	5.8%	5.6%	5.7%	3.6%	6.6%
	Fairly poor	1.4%	1.4%	1.5%	0.6%	1.7%
	Very poor	0.5%	0.6%	0.4%	0%	0.9%
	Not answered/ not relevant	1.7%	3.9%	1.1%	2.7%	4.2%
<i>Would recommend GP surgery to others</i>	Yes, definitely	57.4%	58.4%	57.5%	67.2%	55%
	Yes, probably	24.1%	22.7%	24.4%	20.4%	23.8%
	Not sure	9.7%	8.5%	10%	6%	9.2%
	No, probably not	3.9%	3%	4%	1.4%	3.7%
	No, definitely not	1.6%	2%	1.5%	0.6%	2.6%
	Not answered/ not relevant	3.3%	5.5%	2.6%	4.4%	5.7%
<i>Enough support received from local services to manage long-term health condition/s in last 6 months</i>	Yes, definitely/ to some extent	62.5%	80.2%	59.1%	87.8%	77.2%
	No	9.3%	6.2%	10.1%	2.3%	8.2%
	Not answered/ not relevant	28.2%	13.6%	31%	10%	14.7%
<i>Confidence in managing own health</i>	Very	17.2%	13.2%	18.6%	17.3%	11.8%
	Fairly	55.7%	40.7%	58.9%	45.3%	38.9%
	Not very	16.9%	20.8%	15.7%	18.1%	20.9%
	Not at all	8.1%	22.5%	4.9%	17.2%	25.5%
	Not answered /not relevant	2.2%	2.8%	1.9%	2.1%	2.8%

*Additional characteristics are set out in Table 5

Table 4 Association between patient characteristics and outcomes of reporting a care plan and involvement with care planning, for older population with functional impairment

Variable		Reports a care plan Adjusted OR* (95% CI)	Involved with care planning Adjusted OR* (95% CI)
Age	75-84y	1 (baseline)	1 (baseline)
	85y and over	2.11 (1.96 to 2.27)	0.91 (0.77 to 1.07)
Gender	Male	1 (baseline)	1 (baseline)
	Female	1.14 (1.05 to 1.23)	1.15 (0.97 to 1.36)
Ethnicity	Non-white	1 (baseline)	1 (baseline)
	White	0.98 (0.85 to 1.14)	1.12 (0.82 to 1.53)
Deprivation	Least	1 (baseline)	1 (baseline)
	Moderate	1.03 (0.94 to 1.13)	0.93 (0.76 to 1.13)
	Most	1.16 (1.05 to 1.23)	1.05 (0.86 to 1.28)
Seen within last 6 months	No	1 (baseline)	1 (baseline)
	Yes	1.43 (1.28 to 1.61)	1.24 (0.95 to 1.6)
Experience with GP Increasing rating of:	Enough time**	1.05 (0.99 to 1.11)	1.38 (1.21 to 1.57)
	Listened to**	1.05 (0.99 to 1.11)	1.55 (1.35 to 1.78)
	Explained test/care**	1.07 (1.01 to 1.13)	1.54 (1.35 to 1.76)
	Involved in decisions**	1.09 (1.03 to 1.15)	1.62 (1.43 to 1.83)
	Treated with care**	1.14 (1.08 to 1.2)	1.62 (1.41 to 1.87)
Confidence in GP	No, not at all	1 (baseline)	1 (baseline)
	Yes, definitely/ to some extent	0.94 (0.74 to 1.2)	5.92 (2.38 to 14.77)
Usually sees preferred GP	Some of the time/almost never/never	1 (baseline)	1 (baseline)
	Always/almost always/a lot of the time	0.95 (0.85 to 1.05)	1.88 (1.48 to 2.38)
Increasing rating of overall experience**		1.02 (0.97 to 1.08)	1.51 (1.33 to 1.72)
Increasing rating of recommendation to others**		1.06 (1.01 to 1.1)	1.43 (1.29 to 1.59)
Multimorbidity (increasing numbers of conditions)		1.11 (1.08 to 1.14)	1.00 (0.95 to 1.05)
Presence of a long-standing health condition	No	1 (baseline)	1 (baseline)
	Yes	2.58 (2.06 to 3.25)	1.45 (0.8 to 2.63)
Enough support received from local	No	1 (baseline)	1 (baseline)

services to manage long-term health condition/s in last 6 months	Yes	0.88 (0.87 to 0.9)	0.85 (0.8 to 0.9)
Increasing confidence in managing own health**		0.53 (0.5 to 0.56)	1.31 (1.20 to 1.42)

* Adjusted for age, gender, ethnicity and deprivation. **see table 3 for scales OR = odds ratio, CI = confidence interval

Table 5 Additional characteristics of frail older population in the GPPS 2015-16

Variable		Total frail older population (n = 23,508)	Presence of care plan		Engagement with care plan	
			Frail older with care plan (n= 3,377)	Frail older without care plan (n=18,148)	Frail older with care plan and engaged in care planning (n = 844)	Frail older with care plan but not engaged in care planning (n = 2,122)
Multimorbidity (no. of conditions)	No conditions	5.1%	4.3%	5%	4.3%	4.5%
	1 condition	18.3%	18.2%	18.3%	19.1%	18%
	2 conditions	26.1%	22.5%	26.8%	21.7%	22.7%
	3 conditions	23.9%	23.3%	24.2%	22.3%	23.8%
	4 conditions	15.1%	16.1%	15%	17.4%	15.4%
	5 conditions	7.2%	9.2%	6.7%	8.2%	9.2%
	6 conditions	3%	3.9%	2.8%	4.2%	4%
	7 conditions	1%	1.7%	0.8%	2.3%	1.4%
	8 conditions	0.2%	0.5%	0.2%	0.5%	0.6%
	9 conditions	0.1%	0.1%	<0.1%	0.1%	0.1%
>10 conditions	<0.5%	<0.5%	<0.5%	0.1%	<0.5%	
Rating of GP: gives you enough time	Very good	54.3%	55.1%	54.6%	62.4%	52.5%
	Good	30.6%	30.1%	31%	28.3%	30.3%
	Neither good/poor	6.6%	5.7%	6.7%	3%	6.8%
	Poor	1.2%	1.1%	1.2%	1%	1.3%
	Very poor	0.5%	0.7%	0.4%	0.2%	0.8%
	Not answered/ not relevant	6.8%	7.4%	6.6%	5.1%	8.3%
Rating of GP: listening to you	Very good	56.9%	57.7%	57.2%	67.4%	54.2%
	Good	28.5%	27.6%	28.6%	23.5%	29%
	Neither good/poor	5.7%	5.5%	5.7%	3%	6.5%
	Poor	1.2%	1.1%	1.3%	0.5%	1.4%
	Very poor	0.4%	0.6%	0.4%	0.2%	0.7%
	Not answered/ not relevant	7.2%	7.6%	6.9%	5.5%	8.3%
Rating of GP: explaining tests and treatments	Very good	50.6%	52.6%	50.6%	62.8%	48.7%
	Good	30.9%	29.1%	31.2%	26.1%	30.1%
	Neither good/poor	7.4%	7.1%	7.4%	4.3%	8.2%
	Poor	1%	1%	1%	0.6%	1.2%
	Very poor	0.4%	0.6%	0.4%	0.1%	0.9%
	Not answered/ not relevant	9.8%	9.6%	9.5%	6.2%	11%
Rating of GP: involving you in decisions about your care	Very good	42.1%	45.3%	41.9%	57.1%	40.4%
	Good	32.2%	31.8%	32.2%	28.4%	32.8%
	Neither good/poor	9.6%	8.5%	9.7%	5.7%	9.9%
	Poor	1.6%	1.5%	1.6%	0.7%	1.9%
	Very poor	0.6%	0.8%	0.6%	0.1%	1.1%
	Not answered/ not relevant	14%	12.1%	14%	7.9%	13.8%
Rating of GP: treating you with care and concern	Very good	53.8%	57.5%	53.5%	67.7%	53.6%
	Good	30.1%	28.9%	30.1%	23.8%	31%
	Neither good/poor	6.6%	5%	6.9%	2.6%	6.1%
	Poor	1.2%	1.1%	1.2%	0.6%	1.3%
	Very poor	0.5%	0.6%	0.5%	0.1%	0.8%
	Not answered/ not relevant	7.8%	6.9%	7.8%	5.2%	7.4%

Discussion

Many frailty measures are based on disability and comorbidity [16] and our sample is likely to have considerable overlap with those who are frail. We have shown that 14.4% of older patients with functional impairment report having a care plan, but this figure is low considering that this is likely to be a frail population who may have been eligible for care plans during the 2014-17 Enhanced Service [8]. Reports of previous analyses of

GPPS data have also found that care plans are reported by patients less often than expected [12,13]. One of these studies found that care planning discussions took place more often than patients reported having a written care plan [12]; respondents in our study may have also had care planning discussions without having a written plan.

Little has been published regarding the extent to which frail older people are involved in care planning. A recent systematic review of collaborative goal setting with older patients with chronic disease found only eight relevant articles on the subject and reported nothing about the level of participant involvement in interventions [17]. However,

patient activation (including self-efficacy) has parallels with involvement and a large prospective cohort study found that older people in the UK vary in their levels of activation, with lower levels among depressed, older, retired people with poor health literacy and those who lack social support [18]. Patients who are more 'activated' are more likely to engage in self-management, have a higher quality of life, better clinical outcomes and make informed decisions about accessing health or social care resources [19].

Some of the factors that can facilitate engagement have been identified. A systematic review found that continuity of care was key to developing the doctor-patient relationship needed to facilitate patient engagement [20] and that poor continuity leads to care planning that is often inconsistent and incomplete [21]. A Cochrane review found that the effects of care planning were greater when there were more contacts between patients and health professionals and when the patient's usual clinician was involved [1]. Additional facets of interpersonal care from the GP also matter: previous GPPS data analysis also found that strong predictors of care planning activities were continuity of care and high ratings of interpersonal care from the GP [13].

The strengths of the present study include the large sample of over 836,000 responders, with 23,508 older functionally impaired respondents. The questionnaire was available online, by telephone, or on paper in 14 different languages, thereby facilitating an increased response rate. Limitations include the potential for participation bias, due to non-inclusion of patients without a GP or who had recently moved GP practice, risking under-representation of individuals without a permanent home or with disorganised lives (this may include vulnerable older people). We do not have data comparing respondents *versus* non-respondents, but frail people (who may have been more likely to have had a care plan) may have been unable to complete the survey. We also lack detail about the care plans, for example what conditions they were issued for. Additionally, our results are based on self-reported perceptions thus patients may have had care plans but not been aware of them (although as a care plan is more effective if a person is aware of it thus using self-reporting may be appropriate). Finally, our study can report association, but not causation. If causal relationships were present these could operate in both directions, for example, being involved in care planning may make people more confident in managing their own health, or those who are more confident may be more likely to become involved in care planning.

The relatively infrequent reporting of care plans among older people, particularly at a time during which care plans were being offered to this group as part of an Enhanced Service, suggests that either care plans are not offered enough to this population or patients are unaware of their existence (in which case they lose the potential to offer health benefits). Those who were involved in the care planning process rated their GP more highly for interpersonal care.

Conclusion

We found that few GPPS respondents (3.5%) reported having a care plan. Of the older people with functional impairment, 14.4% reported having a care plan and of these only 1 in 4 were involved with the care planning process. Involvement with care planning was associated with greater confidence in managing own health and factors reflecting a positive interpersonal relationship with the GP.

Future research is required to help understand the extent to which frail older patients benefit from care plans. As care plans function better when patients are involved in the process [1], future studies should explore the factors that enhance involvement. It is important to understand if the care plan can act as a mechanism of involvement, which may reduce health service use, or if those who are involved in care planning are confident in managing their own health and hence may already utilise less healthcare resources. Finally, components of care planning such as shared decision-making and goal-setting require further exploration.

This study has shown that only a small number of older adults with functional impairment have care plans and even fewer are involved in the care planning process. If care plans are to achieve their potential in increasing the person-centeredness of care then GPs need sufficient time and resources to establish good interpersonal relationships with patients and mechanisms are needed to ensure continuity of care.

Acknowledgements and Conflicts of Interest

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