


ORIGINAL ARTICLE

Goals and outcomes of hospitalised older people: does the current hospital care match the needs of older people?

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hospital, older people, shared decision-making, patient goal, patient-centred care.

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Abstract**Background:** Due to the rising number of acutely hospitalised older people in the coming years, there is increased interest in tailoring care to the individual goals and preferences of patients in order to reach patient-centred care.**Aims:** To investigate the goals of older hospitalised patients and the extent to which these goals were reached during hospitalisation.**Methods:** A single-centre prospective cohort study was performed in The Netherlands between December 2017 and January 2018. Participants aged 70 years or older were included. In the first 3 days of hospitalisation, a semi-structured interview was conducted to assess the patient goals regarding the hospital admission. At 1–2 weeks after discharge, patients were asked to what extent the recent hospitalisation had contributed to reaching their goals.**Results:** One hundred and four patients were included and follow up was completed for 86 patients. The main goals reported at hospital admission were ‘remaining alive’ (72.1%), ‘feeling better’ (71.2%) and ‘improving condition’ (65.4%). Hospitalisation seemed to have a positive contribution to reaching the goals ‘remaining alive’, ‘knowing what is wrong’, ‘feeling better’, ‘reducing pain’ and ‘controlling disease’. Hospitalisation seemed to contribute little to reaching the goals in the categories ‘enjoying life’, ‘independency and freedom’, ‘improving daily functioning’, ‘hobbies and work’ and ‘social functioning’.**Conclusions:** It is important for healthcare professionals to know the goals of their patients. The majority of these goals were not achieved at hospital discharge. It is important to be aware of this, so sufficient aftercare can be arranged and patients can be prepared.**Introduction**

The number of people aged 65 years or over worldwide is rising.¹ Consequently, the number of older people who will be admitted to the hospital will increase in the coming years. There are indications that the current hospital admission can have detrimental effects on older people. For example, hospital admission leads to functional decline in 30% to 60% of the acutely hospitalised older people.^{2,3} Besides, current hospital care is often disease-oriented and mainly focussed on patients with

single diseases. This disease-specific approach, focussing on disease-specific guidelines and disease-specific outcomes, might not be applicable to older people because they often suffer from multimorbidity, polypharmacy and disabilities and might have other priorities than younger adults.^{4,5}

A goal-oriented approach has been propagated as part of patient-centred care, taking the goals of older people themselves as a starting point for care trajectories.^{4,5} The goals of hospitalised patients and the contribution of hospitalisation on achieving these individual goals are still unknown. Therefore, the aim of this study is to investigate the goals of individual older hospital patients and to what extent hospitalisation contributes to these goals.

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Methods

Population

The research design was a single-centre prospective cohort study in the Gelre Hospital, Apeldoorn, between December 2017 and January 2018. Acute and elective admitted patients were recruited at the wards of internal medicine, surgery and cardiology. A follow up was performed 1–2 weeks after discharge. Patients were included in the first 72 h of hospital admission. Patients were included if they were aged 70 years or older, were acutely or planned admitted to the hospital on the department's internal medicine, cardiology and surgery and were able to speak and understand Dutch. Patients were excluded if they had cognitive disorders reported by the nurse of the ward, expected death within 48 h and an expected hospital admission of less than 48 h.

During the study an additional exclusion criterion was added; patients who were admitted to receive chemotherapy were excluded, because these patients were all interested in their long-term prognosis that was beyond the goal of the specific hospital admission.

Written informed consent was obtained from all participants before the start of the study. The study was approved by the medical ethical committee.

Data collection

The following characteristics were collected: age; gender; nationality of the patient and their parents; marital status; living situation before and after hospital admission; educational level; falls in the past 6 months, malnutrition (Short Nutritional Assessment Questionnaire), functional impairment (KATZ index of independence in Activities of Daily Living (6-item)(KATZ-ADL 6 score)); sensory functions (hearing and seeing); complaints of dizziness (yes or no); department and reason for hospital admission; type of hospital admission (acute or elective); and Charlson comorbidity index. Functional impairment was defined by a KATZ-ADL 6 score of 1 point or higher.

The department of hospital admission was extracted from the electronic health record (EHR). The type and reason for hospital admission and the information for the Charlson comorbidity index were collected from the medical record of the patient. If the patient gave no permission to access the EHR, the reason for hospital admission and the Charlson comorbidity index were checked with the patient.

During the first 3 days of hospital admission, patients were interviewed in order to assess their goals. During a semi-structured interview, goals were elicited from a predefined list of 30 goals on 10 predefined categories

(Supporting Information Appendix S1). This predefined list was derived from previous structured interviews in the hospital setting aiming to elicit the goals of a diverse group of older hospitalised patients.⁶ For all the individual goals, patients were asked whether they experienced a problem with it at any moment during their hospital stay or expected a problem with it as a result of their illness or hospitalisation. If the answer to one of these questions was affirmative, the patients were asked to rate the importance of this goal on a four-point scale (not at all important, somewhat important, quite important or very important). The patients also had the opportunity to add a personal goal. Interviews were conducted by a student that was not involved by any means in the medical care.

Follow up was performed by telephone 1–2 weeks after discharge to determine to what extent the hospitalisation had contributed to the achievement of their goals. Goal achievement was rated on a four-point scale (not at all, somewhat, quite and completely). For patients who stated that a certain goal was not related to the hospitalisation, the option 'did not apply to me' was available.

Statistical analysis

Descriptive statistics were used for data analysis.

Results

Inclusions

During the 8-week inclusion period, 458 patients aged 70 years or older were admitted to the participating departments of the Gelre Hospital, Apeldoorn. Two hundred and nineteen patients were eligible to participate based on the inclusion and exclusion criteria, and 113 consented to participate. Nine patients were excluded; seven patients based on the exclusion criteria and two patients withdrew their permission for participation because the interview was too burdensome for them. The number of included patients was 104. Eighteen patients were lost to follow up because of a variety of reasons (Fig. 1).

Baseline characteristics

The mean age of the study population was 79 years (standard deviation 6.15); the majority were men (60.6%) and lived independently before hospital admission (88.5%). Most patients were acutely admitted (80.8%). Almost half of the patients were admitted to a surgical ward (47.1%) and the majority of patients had infectious disease (21.2%), malignancy (14.4%) and trauma (11.5%) (Table 1).

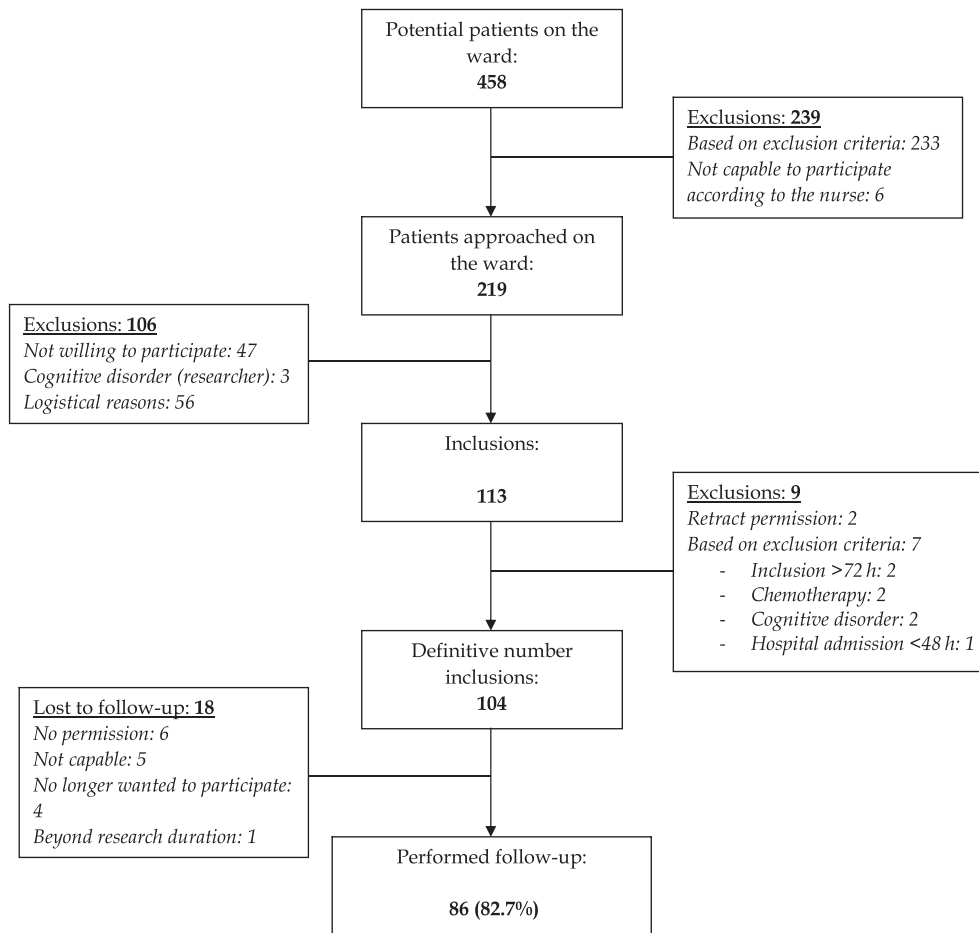


Figure 1 Flowchart inclusion and follow-up.

Goals during hospitalisation

The most often reported goals were ‘remaining alive’ (72.1%), ‘feeling better’ (71.2%) and ‘improving condition’ (65.4%). The goals ‘feeling better’ and ‘remaining alive’ were considered important goals; these goals were very important to 74.3% and 76% of the patients respectively and quite important to 24.3% and 10.7% of the patients respectively who reported these goals. Although not frequently mentioned (4.8%), the goal ‘family life’ was considered most important; ‘family life’ was very important to 80% of patients and quite important to 20% of the patients who reported this goal (Table 2).

Achievement of goals

Eighty-six (82.7%) patients completed the follow up and reported the contribution of the hospitalisation to achieving their goals.

The goals to which the hospital stay contributed the most were the goals ‘remaining alive’ and ‘knowing what is

wrong’. These goals were, according to the patients, completely achieved by 45.9% and 55.9% of the patients respectively. According to the interviewed patients, hospital admission contributed less to achieving the goals in the categories ‘enjoying life’, ‘independency and freedom’, ‘daily functioning’, ‘work and hobbies’ and ‘social functioning’. For example, the goals ‘walking’ and ‘enjoying life’ were not at all achieved by 43.2% and 31.8% of patients respectively and slightly achieved by 13.6% and 27.3% respectively (Table 3).

Discussion

This is one of the first studies assessing the goals of older hospitalised patients and whether the hospitalisation contributed to reaching these goals. In the present study, the goals reported most often during hospitalisation were ‘feeling better’, ‘staying alive’ and ‘condition’. The goals considered as most important were ‘family life’, ‘feeling better’ and ‘remaining alive’. In the present study, hospitalisation was found to have a positive contribution to the

Table 1 Baseline characteristics (*n* = 104)

Baseline characteristic	<i>n</i> (%) [†]
Mean age (SD)	79.16 (±6.15)
Gender, male	63 (60.6)
Median Charlson Comorbidity Index (IQR)	2 (1–4)
Educational level	
No education	3 (2.9)
Primary education	11 (10.6)
Lower vocational and secondary	32 (30.8)
Intermediate vocational	21 (20.2)
Intermediate and higher secondary	7 (6.7)
Higher vocational + university	28 (26.9)
Other	2 (1.9)
Department of hospital admission	
Internal medicine	26 (25)
Surgery	49 (47.1)
Cardiology	29 (27.9)
Type of hospital admission	
Acute	84 (80.8)
Elective	19 (18.3)
Missing	1 (1.0)
Reason for hospital admission	
Infectious diseases	22 (21.2)
Malignancy	15 (14.4)
Trauma	12 (11.5)
Abdominal diseases	10 (9.6)
Heart failure	8 (7.7)
Other	35 (33.7)
No permission to access medical record	2 (1.9)
Living situation before hospital admission	
Independent	92 (88.5)
Supportive living	10 (9.6)
Senior home	1 (1)
Temporary nursing home	1 (1)
KATZ-6 activities of daily living ≥1	32 (30.8)
Fall risk	34 (32.7)
Malnutrition	28 (26.9)

[†]All are given as *n* (%) unless otherwise stated.
IQR, interquartile range; SD, standard deviation.

achievement of the disease-related goals, such as ‘remaining alive’, ‘knowing what is wrong’ and ‘controlling disease’. We were unable to demonstrate a contribution of hospitalisation to achieving the goals related to ‘enjoying life’, ‘independence’, ‘daily functioning’ and ‘social functioning’ at 1–2 weeks after discharge.

From a disease-oriented perspective, it is not surprising that the hospital admission contributed mostly to disease-related goals. However, goals regarding physical functioning, enjoying life and social functioning were important for older people in this study as well, which is similar to previous studies. For example, in a study investigating goals of older patients facing a treatment decision for severe aortic stenosis, important goals were: functioning, hobbies and social contacts.⁷ In another study, regarding patients who underwent an aortic

aneurysm repair, functional outcomes were considered the most important outcomes after surgery.⁸

In the present study, goals related to ADL were not achieved 2 weeks after discharge. This is in line with previous studies,^{2,3} but contradicts a study investigating patient-reported outcome measures in geriatrics.⁹ The functional improvement in this study could be due to the fact that the study was performed at a geriatric department, with a focus on preventing functional decline. A Cochrane review found that older patients are more likely in their own homes at follow up if they received a comprehensive geriatric assessment during admission to the hospital.¹⁰ It can be hypothesised that patients admitted to a geriatric ward with extra attention to rehabilitation can reach their functional goals more often during or shortly after hospitalisation compared to regular care.^{11,12} As the follow-up time in the present study was short, it would be interesting in future studies to investigate whether the goals are achieved after a longer period of time.

The present study had several limitations. First, the inclusion period of 72 h created some variation in the timing of inclusion. It is possible that some patients already achieved some goals, or changed their goals, shortly before or after the interview took place. Second, patients found it difficult to differentiate between their chronic problems and their problems related to the current reason for hospital admission. Some patients tended to report resolving their chronic problems as a goal for their current hospitalisation. For example, a patient who was not able to walk after an ischaemic cerebral stroke in the past reported ‘walking’ as a goal for the hospitalisation. Last, we excluded 106 (48%) patients, mostly due to logistic reasons; patients were either not present or available on the ward or the researcher was busy with the inclusion of other candidates. It would have been interesting to add clinical information of the excluded patients to assess any possible bias. However, due to the fact that patients did not give informed consent, we were unable to collect any additional information. Nonetheless, the present study gives an insight into the goals of older hospitalised patients.

Although goal setting is important to guide patient-centred care, there are no structured questionnaires available for this setting.^{13–15} A structured literature review on goals of care towards the end of life identified six practical, comprehensive goals: (i) be cured; (ii) live longer; (iii) improve or maintain function/quality of life/independence; (iv) be comfortable; (v) achieve life goals; and (vi) provide support for family/caregiver.¹⁶ Goals prioritised by older patients in senior centres were maintaining independence, followed by pain and/or symptom relief, and staying alive as least important.¹⁷ Because goals can differ depending on the setting and the questionnaires, it is worthwhile to repeat the goals setting conversation in

Table 2 Goals and importance of these goals at hospital admission (baseline, *n* = 104)

Goal	Goals, <i>n</i> (%)	Importance				
		Very, <i>n</i> (%)	Quite, <i>n</i> (%)	Somewhat, <i>n</i> (%)	Not at all, <i>n</i> (%)	Missing, <i>n</i> (%)
Remaining alive	75 (72.1)	57 (76.0)	8 (10.7)	8 (10.7)	1 (1.3)	1 (1.3)
Improving condition						
Feeling better	74 (71.2)	55 (74.3)	18 (24.3)	1 (1.4)	0 (0)	0 (0)
Condition	68 (65.4)	34 (50.0)	25 (36.8)	7 (10.3)	2 (2.9)	0 (0)
Energy	52 (50.0)	23 (44.2)	21 (40.4)	5 (9.6)	3 (5.8)	0 (0)
Controlling disease	30 (28.8)	18 (60.0)	7 (23.3)	5 (16.7)	0 (0)	0 (0)
Knowing what is wrong with me	40 (38.5)	26 (65.0)	12 (30.0)	1 (2.5)	1 (2.5)	0 (0)
Alleviating complaints						
Pain	46 (44.2)	34 (73.9)	11 (23.9)	1 (2.2)	0 (0)	0 (0)
Shortness of breath	39 (37.5)	29 (74.4)	7 (17.9)	2 (5.1)	1 (2.6)	0 (0)
Appetite	36 (34.6)	18 (50.0)	15 (41.7)	2 (5.6)	1 (2.8)	0 (0)
Bowel movements	30 (28.8)	17 (56.7)	11 (36.7)	1 (3.3)	1 (3.3)	0 (0)
Enjoying life	32 (30.8)	20 (62.5)	9 (28.1)	3 (9.4)	0 (0)	0 (0)
Improving daily functioning						
Walking	56 (53.8)	34 (60.7)	20 (35.7)	2 (3.6)	0 (0)	0 (0)
Moving	35 (33.7)	21 (60.0)	12 (34.3)	2 (5.7)	0 (0)	0 (0)
Wash and dress yourself	27 (26.0)	18 (66.7)	6 (22.2)	2 (7.4)	1 (3.7)	0 (0)
Social functioning						
Go on outings	28 (26.9)	11 (39.3)	11 (39.3)	4 (14.3)	2 (7.1)	0 (0)
Family life	5 (4.8)	4 (80.0)	1 (20.0)	0 (0)	0 (0)	0 (0)

Frequencies and percentages goals during hospital admission are sorted by category. The column 'Goals' shows the numbers and percentages of patients who reported that a certain goal applied to them. The goals that applied to at least 25% of the patients are shown, and the goal 'family life' is the most important goal.

Table 3 The contribution of the hospital admission to achieving individual goals (follow-up)

Goal	Goal achieved						
	Total, <i>n</i> (%)	Completely, <i>n</i> (%)	Quite, <i>n</i> (%)	Somewhat, <i>n</i> (%)	Not at all, <i>n</i> (%)	Did not apply, <i>n</i> (%)	Missing, <i>n</i> (%)
Remaining alive	61 (81.3)	28 (45.9)	20 (32.8)	2 (3.3)	4 (6.6)	5 (8.2)	2 (3.3)
Improving condition							
Feeling better	59 (79.7)	11 (18.6)	27 (45.8)	12 (20.3)	7 (11.9)	1 (1.7)	1 (1.7)
Condition	53 (77.9)	3 (5.7)	9 (17.0)	17 (32.1)	22 (41.5)	1 (1.9)	1 (1.9)
Energy	39 (75.0)	2 (5.1)	4 (10.3)	13 (33.3)	19 (48.7)	0 (0)	1 (2.6)
Controlling disease	22 (73.3)	7 (31.8)	6 (27.3)	5 (22.7)	1 (4.5)	2 (9.1)	1 (4.5)
Knowing what is wrong	34 (85.0)	19 (55.9)	6 (17.6)	3 (8.8)	6 (17.6)	0 (0)	0 (0)
Alleviating complaints							
Pain	37 (80.4)	8 (21.6)	11 (29.7)	11 (29.7)	6 (16.2)	0 (0)	1 (2.7)
Shortness of breath	27 (69.2)	2 (7.4)	9 (33.3)	5 (18.5)	10 (37.0)	1 (3.7)	0 (0)
Appetite	29 (80.6)	4 (13.8)	2 (6.9)	7 (24.1)	10 (34.5)	4 (13.8)	2 (6.9)
Bowel movements	24 (80.0)	4 (16.7)	3 (12.5)	7 (29.2)	9 (37.5)	1 (4.2)	0 (0)
Enjoying life	22 (68.8)	2 (9.1)	4 (18.2)	6 (27.3)	7 (31.8)	2 (9.1)	1 (4.5)
Daily functioning							
Walking	44 (78.6)	2 (4.5)	10 (22.7)	6 (13.6)	19 (43.2)	5 (11.4)	2 (4.5)
Moving	27 (77.1)	2 (7.4)	6 (22.2)	5 (18.5)	12 (44.4)	1 (3.7)	1 (3.7)
Wash and dress myself	19 (70.4)	1 (5.3)	7 (36.8)	0 (0)	9 (47.4)	2 (10.5)	0 (0)
Social functioning							
Go on outings	19 (67.9)	0 (0)	0 (0)	5 (26.3)	14 (73.7)	0 (0)	0 (0)

Frequencies and percentages for the contribution of the hospital admission to achieving individual goals. The column 'Goals' shows the numbers and percentages of patients who reported that a certain goal played a role to them during the baseline interview, only for the patients participating in the follow up. Percentage is calculated based on the number of patients who reported that a certain goal played a role to them during the baseline interview as a percentage of the total number of follow up. The following columns show the contribution of the hospitalisation to achieving the goals. The goals that applied to at least 25% of the patients during the baseline interview are shown.

every occasion of decision-making.¹⁸ In order to reach agreement on the treatment plan in complex care, conversations are more successful if they begin with gaining a shared understanding of the medical conditions and possible outcomes, followed by discussion of values and goals instead of focussing on specific medical interventions.¹⁹

Conclusion

In the present study of older hospitalised patients, the patients mentioned both disease-related goals as well as more personal goals related to quality of life, independence, function and social activities. The disease-related goals were often achieved 1–2 weeks after discharge, whereas other goals were not. For the more personal goals

that might not have been reached during hospitalisation, it is important to provide sufficient aftercare.

It is important for healthcare professionals to assess patients' goals in order to align care to these goals through shared decision-making. Involving patients in their healthcare using shared decision-making is promoted through policy and research, yet its implementation in routine practice remains slow.²⁰

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References

- World Population Prospects – Population Division – United Nations, (n.d.).
- Boyd CM, Ricks M, Fried LP, Guralnik JM, Xue Q-L, Xia J *et al.* Functional decline and recovery of activities of daily living in hospitalized, disabled older women: the Women's Health and Aging Study I. *J Am Geriatr Soc* 2009; **57**: 1757–66.
- Covinsky KE, Palmer RM, Fortinsky RH, Counsell SR, Stewart AL, Kresevic D *et al.* Loss of independence in activities of daily living in older adults hospitalized with medical illnesses: increased vulnerability with age. *J Am Geriatr Soc* 2003; **51**: 451–8.
- Tinetti ME, Fried T. The end of the disease era. *Am J Med* 2004; **116**: 179–85.
- Reuben DB, Tinetti ME. Goal-oriented patient care—an alternative health outcomes paradigm. *N Engl J Med* 2012; **366**: 777–9.
- van der Kluit MJ, Dijkstra GJ, de Rooij SE. Goals of older hospitalised patients: a qualitative descriptive study. *BMJ Open* 2019; **9**: e029993.
- Coylewright M, Palmer R, O'Neill ES, Robb JF, Fried TR. Patient-defined goals for the treatment of severe aortic stenosis: a qualitative analysis. *Health Expect* 2016; **19**: 1036–43.
- Dubois L, Novick TV, Power AH, DeRose G, Forbes TL. Identification of patient-derived outcomes after aortic aneurysm repair. *J Vasc Surg* 2014; **59**: 1528–34.
- Hems M, Harkes M, Moret-Hartman M, Melis RJJ, Schoon Y. Eerste ervaringen met patiënt gerapporteerde uitkomstmaten in de geriatrie. *Tijdschr Gerontol Geriatr* 2017; **48**: 287–96.
- Ellis G, Gardner M, Tsiachristas A, Langhorne P, Burke O, Harwood RH *et al.* Comprehensive geriatric assessment for older adults admitted to hospital. *Cochrane Database Syst Rev* 2017; CD006211.
- Cohen HJ, Feussner JR, Weinberger M, Carnes M, Handy RC, Hsieh F *et al.* A controlled trial of inpatient and outpatient geriatric evaluation and management. *N Engl J Med* 2002; **346**: 905–12.
- Fox MT, Persaud M, Maimets I, O'Brien K, Brooks D, Tregunno D *et al.* Effectiveness of acute geriatric unit care using acute care for elders components: a systematic review and meta-analysis. *J Am Geriatr Soc* 2012; **60**: 2237–45.
- Bomhof-Roordink H, Gärtner FR, Stiggelbout AM, Pieterse AH. Key components of shared decision making models: a systematic review. *BMJ Open* 2019; **9**: e031763.
- Fried TR. Shared decision making—finding the sweet spot. *N Engl J Med* 2016; **374**: 104–6.
- Mulley AG, Trimble C, Elwyn G. Stop the silent misdiagnosis: patients' preferences matter. *BMJ* 2012; **8**: 345.
- Kaldjian LC, Curtis AE, Shinkunas LA, Cannon KT. Goals of care toward the end of life: a structured literature review. *Am J Hosp Palliat Care* 2008–2009; **25**: 501–11.
- Fried TR, Tinetti ME, Iannone L, O'Leary JR, Towle V, Van Ness PH. Health outcome prioritization as a tool for decision making among older persons with multiple chronic conditions. *Arch Intern Med* 2011; **171**: 1854–6.
- Fried TR, Byers AL, Gallo WT, Van Ness PH, Towle VR, O'Leary JR *et al.* Prospective study of health status preferences and changes in preferences over time in older adults. *Arch Intern Med* 2006; **166**: 890–5.
- Comer A, Fettig L, Torke AM. Identifying goals of care. *Med Clin North Am* 2020; **104**: 767–75.
- Waddell A, Lennox A, Spassova G, Bragge P. Barriers and facilitators to shared decision-making in hospitals from policy to practice: a systematic review. *Implement Sci* 2021; **16**: 74.

Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web-site:

Appendix S1: List of 30 subjects of the semi-structured interview, sorted by category.