



Received: 21 February 2018
Accepted: 25 May 2018
First Published: 31 May 2018

*Corresponding author: Kayo Hirooka,
2-1-6 Kamikitazawa Setagaya-ku,
Tokyo 156-8506, Japan
E-mail: hirkanr-tmd@umin.ac.jp

Reviewing editor:
Selena Gray, University of the West
of England Bristol, UK

Additional information is available at
the end of the article

PALLIATIVE CARE | RESEARCH ARTICLE

Hospital death in dementia patients and regional provision of palliative and end-of-life care: National patient data analysis

Kayo Hirooka^{1*}, Miharu Nakanishi², Hiroki Fukahori³ and Atsushi Nishida¹

Abstract: Hospital death is associated with poor-quality end-of-life care, and hospital is the most common death location for dementia patients. However, end-of-life care is inappropriate for dementia, which is not a terminal condition. In Japan, dementia patients receive long-term hospital treatment, with few opportunities to return home. Therefore, we examined the association between hospital death in dementia patients and regional provision of home-based end-of-life care. We analyzed 12,933 discharged dementia patients' data from the National Patient Survey, a nationally representative cross-sectional survey examining hospital discharges. Number of patients covered by home-based end-of-life care clinics per 1,000 population in their residential regions were calculated using regional statistics. Of the 12,933 patients, 20.6% died in hospitals (average hospitalization duration: 160 days). Regional provision of home-based end-of-life care was associated with hospital death in dementia patients. However, patients in regions with high numbers of patients covered by home-based end-of-life care clinics were likelier to die in hospital than at home. Such care clinics were unsuccessful in providing end-of-life care. Furthermore, despite regional availability of home-based end-of-life care clinics, patients were

ABOUT THE AUTHORS

Our group's research activities are focused on palliative and end-of-life care for dementia patients. This research examined the association between hospital death in dementia patients and regional provision of palliative and end-of-life care. Kayo Hirooka and Miharu Nakanishi developed the idea for this study, developed the research questions, performed the analysis, and wrote the first draft. All authors contributed to the final draft. Kayo Hirooka is a researcher working in the field of hospice and palliative care. Miharu Nakanishi is a researcher in the field of palliative care for people with dementia, and her research is dedicated to changing the circumstances of people with dementia. Hiroki Fukahori is a researcher specializing in nursing management and gerontological nursing, and his studies are focused on end-of-life care for frail older adults. Atsushi Nishida is a project leader and has extensive publications in psychiatric fields including dementia.

PUBLIC INTEREST STATEMENT

The incidence of dementia has increased markedly in accordance with the increase in the elderly population in Japan. However, dementia patients in Japan tend to be hospitalized for long durations, with few opportunities to return home. Home-based end-of-life care clinics have been established to provide home end-of-life care to patients with all diseases including dementia. Therefore, in the current study, we focused on the association between hospital death in dementia patients and regional provision of home-based end-of-life care. We used the data from National Patient Survey. The results showed that 20.6% of the 12,933 discharged dementia patients died in hospitals. The analysis revealed that patients in regions with high numbers of patients covered by home-based end-of-life care clinics were likelier to die in hospital rather than at home. We concluded that home-based end-of-life care clinics might have been less successful in providing home end-of-life care than we expected.

likelier to die in hospital than at home. Therefore, specific strategies are needed to improve home-care clinics for dementia patients who require end-of-life care.

Subjects: Palliative / End-of-Life Care; Aging; Gerontology; Dementia & Alzheimer's Disease; Dementia

Keywords: discharge outcome; dementia; place of death; palliative care; end-of-life care

1. Introduction

The incidence of dementia has increased markedly in accordance with the increase in the elderly population in Japan (Cabinet Office, Government of Japan, 2016). End-of-life care is inappropriate for dementia, as it is not a terminal disease (Marie Curie Cancer Center, 2015). However, dementia patients in Japan tend to be hospitalized for long durations, with few opportunities to return home (Ministry of Health, Labour and Welfare, 2015a). Furthermore, hospital death has been associated with poor-quality end-of-life care (Teno et al., 2004); however, hospital is the most common death location for dementia patients (Perrels et al., 2014).

Several countries have developed healthcare schemes to provide palliative care in patients' homes (Dixon, King, Matosevic, Clark, & Knapp, 2015; van der Steen et al., 2014). For example, the Japanese government promotes home-based palliative and end-of-life care and introduced home-care support clinics in 2006 (Ministry of Health, Labour and Welfare, 2007) to provide 24-hour medical and nursing care in patients' homes following hospital discharge. Home-care support clinics play a key role in the provision of home-based end-of-life care for patients with advanced illnesses including dementia.

Approximately 40% of dementia patients die in hospital in the UK (Sleeman, Ho, Verne, Gao, & Higginson, 2014) and Japan (Ministry of Health, Labour and Welfare, 2016). The increased risk of hospital death has been associated with the absence of specialized palliative care consultations (Bone et al., 2016; Miller et al., 2016). However, no studies have been conducted to examine the impact of health policies regarding home-based palliative care services on hospital deaths in Western countries or Japan. At a healthcare-system level, an enhanced understanding of the factors associated with the location of palliative care for dementia patients could improve policies and decisions regarding resource allocation. In addition, the results could enhance clinicians' understanding of the characteristics of patients' discharge outcomes. Therefore, the primary aim of the study was to examine the association between hospital deaths in dementia patients and regional provision of home-based end-of-life care in Japan. We expected that higher numbers of patients covered by home-care support clinics per population would be associated with reduced numbers of hospital deaths in dementia patients.

2. Methods

2.1. Procedures

We analyzed data from the National Patient Survey (NPS) in Japan, a nationally representative cross-sectional survey assessing hospital discharge in September triennially. Details regarding the NPS have been reported elsewhere (Ministry of Health, Labour and Welfare, 2014). In the current study, we used patient information from the 2008, 2011, and 2014 NPS data; however, data from the 2005 survey were not examined because home-care support clinics were established in 2006. Permission to access the NPS data from 2008, 2011, and 2014 was obtained from the Ministry of Health, Labour and Welfare.

2.2. Participants

Data for patients who had dementia as primary disease and were discharged from psychiatric or long-term care wards (Iryo-Ryoyo-Byosyo in Japanese) were extracted, as most dementia patients were treated at psychiatric (64.4%) or long-term care ward beds (15.7%) in the 2014 NPS. In total, 12,933 discharged dementia patients (mean age = 82.0, SD = 8.3 years) were

included in the analysis. Data regarding patients' demographic characteristics (e.g. age, sex, primary disease, comorbidities, previous care locations, distance from the hospital to the patient's residence, and duration of hospitalization) were collected and analyzed. Dementia types were identified based on the International Classification of Diseases, 10th Revision codes (Alzheimer's disease: F00, vascular dementia: F01, unspecified dementia: F03, and early-onset Alzheimer's disease: G30).

Patients' discharge outcomes were divided into four categories: discharged home, admitted to another hospital, admitted to a facility, and died in hospital. The facility category included permanent nursing homes, other intermediate geriatric care facilities, group homes, congregate housing (assisted living), and other care settings.

2.3. Availability of home-based end-of-life care

Regional data were obtained by summing municipal data scores for each of the following variables: the number of beds in specialized nursing homes and the number of patients covered by home-care support clinics per 1,000 population in the patient's health region. The prefectural government plans the allocation of healthcare resources for each health region (i.e. "secondary tier of medical care"), which usually includes multiple municipalities. The total population on March 31 each year was derived from the Basic Resident Register and Population (Ministry of Internal Affairs and Communications).

2.4. Ethical considerations

The return of the completed survey implied consent to participate; therefore, participants were not required to sign consent forms. To preserve respondents' anonymity, identification numbers were assigned to facilities and patients. Ethical approval for the study was granted by the ethics review board at the Tokyo Metropolitan Institute of Medical Science. The study was conducted in accordance with the Declaration of Helsinki, 1975.

2.5. Statistical analyses

Multinomial logistic regression analysis was performed with discharge outcome as the dependent variable. Home discharge was selected as the reference category, as it was the most frequent discharge destination. The independent variables included patient characteristics (e.g., age, sex, previous care location, comorbidities, distance from the hospital to the patient's residence, and duration of hospitalization), assessment year, type of care provided (i.e. psychiatric or long-term), number of beds in specialized nursing homes, and number of patients covered by home-based care support clinics per 1,000 population. All analyses were performed using SPSS version 24 (IBM Corp., Armonk, NY, USA). The significance level was set at $p < .05$ (two-tailed).

3. Results

The characteristics of discharged dementia patients are shown in Table 1. Of the 12,933 discharged patients, 3,940 (30.5%) were discharged home, approximately a quarter were admitted to another hospital or facility, and a fifth died in hospital. The mean duration of hospitalization was 160 days (SD = 204.8).

3.1. Factors associated with discharge outcomes

With home discharge as the reference category, significant differences in patients' age, patients' sex, durations of hospitalization, previous care locations, and types of care provided were observed between the other three discharge outcomes. Home discharge was significantly associated with younger age, female sex, shorter hospitalization durations, and residence at home prior to hospitalization. Dementia patients who lived in regions with higher numbers of patients covered by from home-care support clinics were less likely to be discharged home than they were to die in hospital. In addition, patients admitted to long-term care wards were less likely to be discharged home than they were to be transferred to another hospital or facility (Table 2).

Table 1. Patient characteristics (N = 12,933)

	n (%)
Sex, male	5,555 (43.0)
Age (years)	Mean (SD), 82.0 (8.3)
Length of hospital stay (days)	Mean (SD), 160.0 (204.8)
Assessment year	
2008	4,001 (30.9)
2011	4,386 (33.9)
2014	4,546 (35.2)
Dementia type	
Alzheimer's disease	7,030 (54.3)
Vascular	2,026 (15.6)
Unspecified	3,877 (30.0)
Comorbidities	
Diabetes	1,720 (13.3)
Hypertension	4,070 (31.5)
Ischemic cardiac disease	1,009 (7.8)
Stroke	991 (7.7)
Chronic renal failure	408 (3.2)
Previous care location	
Home	7,220 (55.8)
Facility	3,533 (27.3)
Hospital	2,180 (16.9)
Type of care provided	
Psychiatric	10,371 (64.1)
Long-term	2,562 (15.8)
Discharge destination	
Home	3,940 (30.5)
Hospital	3,055 (23.6)
Facility	3,279 (25.4)
Death in hospital	2,659 (20.6)
Distance from the hospital to patient's residence	
Same secondary medical area	10,010 (77.4)
Same municipality	6,703 (51.8)
Same prefecture	12,265 (94.8)
Number of beds in specialized nursing homes per 1,000 population	
<25th percentile	1,461 (11.4)
25–75th percentiles	6,540 (51.2)
>75th percentile	4,770 (37.4)
Number of patients covered by home-based care support clinics per 1,000 population	
<25th percentile	1,879 (14.7)
25–75th percentiles	6,561 (51.4)
>75th percentile	4,331 (33.9)

4. Discussion

To the best of our knowledge, this was the first study to perform a systematic examination of associations between discharge outcomes for dementia patients and the availability of home-based

Table 2. Multinomial logistic regression analysis of discharge outcomes for dementia patients

	Hospital admission		Facility admission		Death in hospital	
	Odds ratio (95% CI)	p value	Odds ratio (95% CI)	p value	Odds ratio (95% CI)	p value
Number of patients covered by home-based care support clinics per 1,000 population (>75th percentile = 0)						
<25th percentile	0.88 (0.73–1.06)	0.187	0.89 (0.74–1.08)	0.239	0.78 (0.63–0.96)	.031
25–75th percentiles	0.88 (0.77–1.00)	0.062	0.95 (0.83–1.09)	0.489	0.95 (0.82–1.11)	.522
Number of beds in specialized nursing homes per 1,000 population (>75th percentile = 0)						
<25th percentile	0.97 (0.77–1.20)	.747	1.07(0.86–1.33)	.551	0.93 (0.73–1.19)	.563
25–75th percentiles	0.95 (0.82–1.10)	.479	0.94 (0.81–1.09)	.422	0.83 (0.70–0.98)	.031
Age	1.02 (1.02–1.03)	<.001	1.03 (1.02–1.03)	<.001	1.09 (1.08–1.10)	<.001
Duration of hospitalization	1.48 (1.43–1.54)	<.001	1.73 (1.66–1.80)	<.001	2.18 (2.07–2.28)	<.001
Sex, male	0.59 (0.53–0.66)	<.001	0.87 (0.78–0.98)	.017	0.38 (0.33–0.43)	<.001
Assessment year (2008 = 0)						
2011	0.96 (0.78–1.06)	.675	0.98 (0.80–1.2)	.854	0.67 (0.53–0.84)	.001
2014	1.18 (1.03–1.36)	.017	0.91 (0.79–1.04)	.165	0.77 (0.66–0.90)	<.001
Comorbidities						
Diabetes	0.91 (0.78–1.06)	.209	0.95 (0.81–1.11)	.484	0.86 (0.72–1.03)	.103
Hypertension	1.24 (1.10–1.39)	<.001	1.07 (0.96–1.2)	.240	1.53 (1.34–1.74)	<.001
Stroke	1.04 (0.84–1.28)	.719	0.92 (0.74–1.13)	.403	0.91 (0.72–1.13)	.384
Distance of hospital to patient's residence						
Same prefecture	1.11 (0.84–1.49)	.465	0.97 (0.72–1.13)	.814	1.44 (1.05–2.0)	.023
Same secondary medical area	1.01 (0.86–1.19)	.918	0.988 (0.839–1.164)	.887	0.98 (0.82–1.18)	.850
Same municipality	1.08 (0.96–1.23)	.216	1.16 (1.02–1.32)	.021	1.10(0.96–1.27)	.181
Previous care location						
Facility	0.12 (0.11–0.14)	<.001	0.27 (0.23–0.31)	<.001	0.11 (0.09–0.13)	<.001
Hospital	0.13 (0.10–0.16)	<.001	0.04 (0.03–0.05)	<.001	0.06 (0.05–0.07)	<.001
Type of care provided (psychiatric = 0)						
Long-term	1.53 (1.30–1.79)	<.001	1.29 (1.10–1.51)	.002	0.51 (0.44–0.59)	<.001

end-of-life care, using nationwide data. In addition, the current findings could provide useful insight to inform the development of both hospital and community palliative care services.

In total, 20.6% of dementia patients died in hospital. In addition, patients who lived in regions with higher numbers of patients covered by home-care support clinics were less likely to be discharged home than they were to die in hospital. We expected that the home discharge rate would increase as the number of home-care support clinics increased; however, the results were contrary to our expectations.

We assumed that home-care support clinics referred patients to hospitals when it became difficult to treat them at home. A recent review showed that readmission risk was high for patients who were registered with a general practitioner (Sfetcu et al., 2017), and another study indicated that continuous follow-up systems were effective in reducing psychiatric readmission rates (Kikuchi, Abo, Kumakura, Kubota, & Nagano, 2011). Moreover, although the number of home-care support clinics has increased in Japan, most have limited capacity and treat between only one and nine patients (Ministry of Health, Labour and Welfare, 2015b). In addition, a recent study revealed that, of 215 home-care support clinics, 32% provided end-of-life care for between one and six patients per year, and 28% did not

provide any end-of-life care (Akiyama & Takebayashi, 2013). In a previous study, physicians were uninterested in learning about dementia care (Yaffe, Orzeck, & Barylak, 2008) and lacked knowledge and confidence in providing end-of-life care for patients with the disease (Denig, Greenish, Jones, Mandal, & Sampson, 2012). We concluded that most home-care support clinics treated patients with cancer, and only a few played a primary role in the provision of home-based end-of-life care for dementia patients.

Furthermore, the current results indicated that, contrary to the expectations of Japanese government policy, home-care support clinics were less successful than anticipated in providing home-based end-of-life care. Therefore, specific strategies should be developed to improve outcomes for dementia patients in home-care clinics.

Moreover, dementia patients who were admitted to long-term care wards were less likely to be discharged home than they were to be transferred to another hospital or facility. In addition, dementia patients have been shown to experience functional decline during hospitalization (Hoogerduijn, Grobbee, & Schuurmans, 2014), which increases the difficulty they experience in returning home. Furthermore, a review revealed that discharge management was an effective means of reducing numbers of hospital readmissions (Damery, Flanagan, & Combes, 2016). Therefore, although there are barriers to the discharge process for dementia patients (Stockwell-Smith et al., 2017), long-term care wards should implement discharge planning.

The results also showed that almost a quarter of dementia patients were admitted to another hospital or facility. However, previous research has demonstrated that altering care locations could increase the risk of adverse outcomes (Fong et al., 2012; Thomas et al., 2012). The Japanese national dementia plan aims to help people with dementia to live in their own homes for as long as possible (Nakanishi & Nakashima, 2014). However, a recent white paper indicated that it failed to address palliative care for dementia (Nakanishi et al., 2015). There is a considerable gap in end-of-life care vision between national policy and care locations; therefore, greater effort to improve home-based palliative care for people with dementia is required.

4.1. Limitations and future directions

The study was subject to several limitations. For example, the information provided by the retrospective, cross-sectional study design was restricted to that regarding discharged patients. In addition, each facility reported discharge information to the NPS for only 1 month triennially. Moreover, data regarding a number of potential determinants of discharge, such as cognitive impairment severity, social support, patient and family preference, and socioeconomic status, were unavailable. Future research should examine the associations between discharge destination and patient and regional characteristics, including patient-level information, and estimate the palliative care needs of dementia patients.

5. Conclusions

Regardless of the regional availability of home-based end-of-life care clinics, dementia patients were less likely to be discharged home than they were to die in hospital. Furthermore, home-based end-of-life care clinics failed to perform their expected functions and were less successful than anticipated in providing home-based end-of-life care. Therefore, specific strategies should be developed to improve home-based end-of-life care clinics for elderly people with dementia.

Funding

This work was supported by the JSPS KAKENHI [15K20796].

Competing interests

The authors declare no competing interest.

Data availability information

The data that support the findings of this study are available from the Ministry of Health, Labour and Welfare; however, restrictions apply to the availability of these data, which were used under license for the current study, and therefore,

are not publicly available. The data are, however, available from the authors upon reasonable request and with the permission of the Ministry of Health, Labour and Welfare.

Author details

Kayo Hirooka¹
E-mail: hirkanr-tmd@umin.ac.jp
ORCID ID: <http://orcid.org/0000-0002-2800-5271>
Miharu Nakanishi²
ORCID ID: <http://orcid.org/0000-0001-6200-9279>
Hiroki Fukahori³
E-mail: hfkahori.kanr@tmd.ac.jp
Atsushi Nishida¹
E-mail: nishida-at@igakuken.or.jp

¹ Mental Health Promotion Project, Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan.

² Mental Health and Nursing Research Team, Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan.

³ Faculty of Nursing and Medical Care, Keio University, Kanagawa, Japan.

Citation information

Cite this article as: Hospital death in dementia patients and regional provision of palliative and end-of-life care: National patient data analysis, Kayo Hirooka, Miharu Nakanishi, Hiroki Fukahori & Atsushi Nishida, *Cogent Medicine* (2018), 5: 1483097.

References

- Akiyama, M., & Takebayashi, T. (2013). Present situation of general practitioner's home medical care practice and challenges in regional medical care cooperation network for efficient home care support. *Iryo to Shakai*, 23, 3–11. doi:10.4091/iken.23.3
- Bone, A. E., Gao, W., Gomes, B., Sleeman, K. E., Maddocks, M., Wright, J., & Evans, C. J. (2016). Factors associated with transition from community settings to hospital as place of death for adults aged 75 and older: A population-based mortality follow-back survey. *Journal of American Geriatrics Society*, 64(11), 2210–2217. doi:10.1111/jgs.14442
- Cabinet Office, Government of Japan. (2016). *Annual report on the aging society*. Retrieved from http://www8.cao.go.jp/kourei/english/annualreport/2016/2016pdf_e.html
- Damery, S., Flanagan, S., & Combes, G. (2016). Does integrated care reduce hospital activity for patients with chronic disease? An umbrella review of systematic reviews. *BMJ Open*, 6(11), e011952. doi:10.1136/bmjopen-2016-011952
- Dening, K. H., Greenish, W., Jones, L., Mandal, U., & Sampson, E. L. (2012). Barriers to providing end-of-life care for people with dementia: A whole-system qualitative study. *BMJ Supportive and Palliative Care*, 2(2), 103–107. doi:10.1136/bmjspcare-2011-000178
- Dixon, J., King, D., Matosevic, T., Clark, M., & Knapp, M. (2015). *Equity in the provision of palliative care in the UK: Review of evidence*. Retrieved from <https://www.mariecurie.org.uk/globalassets/media/documents/policy/campaigns/equity-palliative-care-uk-report-full-lse.pdf>
- Fong, T. G., Jones, R. N., Marcantonio, E. R., Tommet, D., Gross, A. L., Habtemariam, D., & Inouye, S. K. (2012). Adverse outcomes after hospitalization and delirium in persons with Alzheimer disease. *Annals of Internal Medicine*, 156(12), 848–856. doi:10.7326/0003-4819-156-12-201206190-00005
- Hoogerduijn, J. G., Grobbee, D. E., & Schuurmans, M. J. (2014). Prevention of functional decline in older hospitalized patients: Nurses should play a key role in safe and adequate care. *International Journal of Nursing Practice*, 20(1), 106–113. doi:10.1111/ijn.12134
- Kikuchi, H., Abo, M., Kumakura, E., Kubota, N., & Nagano, M. (2011). Efficacy of continuous follow-up for preventing the involuntary readmission of psychiatric patients in Japan: A retrospective cohort study. *International Journal of Social Psychiatry*, 59(3), 288–295. doi:10.1177/0020764011433631
- Marie Curie Cancer Center. (2015) *Living and dying with dementia in Scotland: Barriers to care*. Retrieved from <https://www.mariecurie.org.uk/globalassets/media/documents/policy/policy-publications/february-2015/living-and-dying-with-dementia-in-scotland-report-2015.pdf>
- Miller, S. C., Lima, J. C., Intrator, O., Martin, E., Bull, J., & Hanson, L. C. (2016). Palliative Care Consultations in nursing homes and reductions in acute care use and potentially burdensome end-of-life transitions. *Journal of American Geriatrics Society*, 64(11), 2280–2287. doi:10.1111/jgs.14469
- Ministry of Health, Labour and Welfare. (2007). *Home care support clinics*. Retrieved from http://www.mhlw.go.jp/shingi/2007/03/dl/s0312-11e_02.pdf
- Ministry of Health, Labour and Welfare. (2015a). *Number of home care support clinics*. Retrieved from <http://www.mhlw.go.jp/file/05-Shingikai-12404000-Hokenkyoku-Iryouka/0000074433.pdf>
- Ministry of Health, Labour and Welfare. (2015b). *Inpatient care*. Retrieved from <http://www.mhlw.go.jp/file/05-Shingikai-12404000-Hokenkyoku-Iryouka/0000105049.pdf>
- Ministry of Health, Labour and Welfare. (2016). *Population survey report on mortality and percentage of cause of death according to place of death*. Retrieved from [http://www.e-stat.go.jp/SG1/estat/GL02020101.do?method=extendedTclass&refTarget=toukeihyo&listFormat=hierarchy&statCode=00450011&tstatCode=000001028897&tclass1=000001053058&tclass2=000001053061&tclass3=000001053065&tclass4=&tclass5="](http://www.e-stat.go.jp/SG1/estat/GL02020101.do?method=extendedTclass&refTarget=toukeihyo&listFormat=hierarchy&statCode=00450011&tstatCode=000001028897&tclass1=000001053058&tclass2=000001053061&tclass3=000001053065&tclass4=&tclass5=)
- Ministry of Health, Labour and Welfare. Patient Survey. (2014). *Summary of patient survey, 2014. Outline of surveys*. Retrieved September 26, 2017, from http://www.mhlw.go.jp/english/database/db-hss/dl/sps_2014_00.pdf
- Nakanishi, M., & Nakashima, T. (2014). Features of the Japanese national dementia strategy in comparison with international dementia policies: How should a national dementia policy interact with the public health- and social-care systems? *Alzheimer's & Dementia*, 10(4), 468–476. doi:10.1016/j.jalz.2013.06.005
- Nakanishi, M., Nakashima, T., Shindo, Y., Miyamoto, Y., Gove, D., Radbruch, L., & Van Der Steen, J. T. (2015). An evaluation of palliative care contents in national dementia strategies in reference to the European Association for Palliative Care white paper. *International Psychogeriatrics*, 27(9), 1551–1561. doi:10.1017/S1041610215000150
- Perrels, A. J., Fleming, J., Zhao, J., Barclay, S., Farquhar, M., Buiting, H. M., & Brayne, C. (2014). Place of death and end-of-life transitions experienced by very old people with differing cognitive status: Retrospective analysis of a prospective population-based cohort aged 85 and over. *Palliative Medicine*, 28(3), 220–233. doi:10.1177/0269216313510341
- Sfetcu, R., Musat, S., Haaramo, P., Ciutan, M., Scintee, G., Vladescu, C., & Katschnig, H. (2017). Overview of post-discharge predictors for psychiatric re-

- hospitalisations: A systematic review of the literature. *BMC Psychiatry*, 17(1), 227. doi:10.1186/s12888-017-1386-z
- Sleeman, K. E., Ho, Y. K., Verne, J., Gao, W., & Higginson, I. J. (2014). Reversal of English trend towards hospital death in dementia: A population-based study of place of death and associated individual and regional factors, 2001–2010. *BMC Neurology*, 14(1), 59. doi:10.1186/1471-2377-14-59
- Stockwell-Smith, G., Moyle, W., Marshall, A. P., Argo, A., Brown, L., Howe, S., & Grealish, L. (2017). Hospital discharge processes involving older adults living with dementia: An integrated literature review. *Journal of Clinical Nursing*. doi:10.1111/jocn.14144
- Teno, J. M., Clarridge, B. R., Casey, V., Welch, L. C., Wette, T., Shield, R., & Mor, V. (2004). Family perspectives on end-of-life care at the last place of care. *Jama*, 291(1), 88–93. doi:10.1001/jama.291.1.88
- Thomas, C., Kreisel, S. H., Oster, P., Driessen, M., Arolt, V., & Inouye, S. K. (2012). Diagnosing delirium in older hospitalized adults with dementia: Adapting the confusion assessment method to international classification of diseases, tenth revision, diagnostic criteria. *Journal of American Geriatrics Society*, 60(8), 1471–1477. doi:10.1111/j.1532-5415.2012.04066
- van der Steen, J. T., Radbruch, L., Hertogh, C. M., De Boer, M. E., Hughes, J. C., & Larkin, P.; European Association for Palliative Care (EAPC). (2014). White paper defining optimal palliative care in older people with dementia: A Delphi study and recommendations from the European Association for Palliative Care. *Palliative Medicine*, 28(3), 197–209.
- Yaffe, M. J., Orzeck, P., & Barylak, L. (2008). Family physicians' perspectives on care of dementia patients and family caregivers. *Canadian Family Physician*, 54(7), 1008–1015.



© 2018 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



Cogent Medicine (ISSN: 2331-205X) is published by Cogent OA, part of Taylor & Francis Group.

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

