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Caring for Older Patients: Quality and Efficiency of Australia's Healthcare System

Jongsay Yong* and Ou Yang

Abstract

With population ageing and increased longevity, Australia faces pressing policy issues on caring for older people. As Medicare turns 40, it is timely to assess how the system has been performing, and what changes are needed to modernise Medicare. This article examines the quality and efficiency of care using hospital administrative data. We find that the current system provides good quality and efficient care for older patients, except for those living in residential aged care homes. These patients receive lower quality care yet stay longer in hospitals. We suggest alternative approaches designed around bundled payments and a single budget holder to provide incentives for integrated team-based care.

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1. Introduction

Older people typically have more complex care needs, and are more frequent users of healthcare, social care and other care services than younger people. Common services accessed by older patients include primary care, dental care, specialist care, hospital care, aged care and so on. Older patients living in residential aged care homes tend to require even more care than patients in the same age group but not living in aged care homes, that is, living in community. Medicare plays a key role in funding healthcare, especially for older patients who access multiple healthcare services.

According to the Australian Government's 2023 *Intergenerational Report* (Commonwealth of Australia 2023), the number of people aged 65 and over will more than double and the number aged 85 and over will more than triple within 40 years. With population ageing and increased longevity, policymaking surrounding funding and providing the right care for older patients in an effective and efficient manner will become increasingly urgent. As projected in the *Intergenerational Report*, the top three fastest-growing spending areas for the Australian Government in the next 40 years will be health, aged care and the National Disability Insurance Scheme. As a result, the country's aged-care economy is projected to almost double by the 2060s, accounting for 15 per cent of gross domestic product.

As Medicare turns 40, it is timely to assess how the system has been performing in caring for older patients, and to consider policy

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options that will modernise Medicare to better serve Australia in the coming decades. These changes will be especially relevant for the increasing number of older people who will be accessing health and other care services such as aged care and disability care. Currently the funding and provision of these services are highly fragmented. Public hospital care is funded by a combination of state and federal sources but administered by state governments, while aged care and disability care are largely funded and administered by the federal government, although states and the private for-profit and not-for-profit sectors play a major role in the provision of care. Thrown into the mix is the role of the private sector in both financing and provision of care. The private sector plays a key role in financing healthcare through private health insurance and the provision of private hospital care. In aged care, the role of the private sector will increase as self-funding of partially and non-subsidised care become increasingly common due to wealthy baby boomers entering aged care stages, and similarly in other care services such as dental and ophthalmology care.

With funding and service provision involving different agencies, navigating the system is a complex and challenging undertaking for many older people. The involvement of multiple agencies also increases the difficulty of care coordination and ensuring the continuation of care, which are critical for patient wellbeing. Against this backdrop, we measure the quality and efficiency of care using the usual metrics; for quality of care, we measure mortality, readmission and hospital-acquired complications, and for efficiency, the average length of stay is used. All measures are risk adjusted to take into account case-mix differences of patient admissions (Iezzoni 2009). Data from Victoria will be used to illustrate the issues. Data were extracted from the Victoria Admitted Episodes Data (VAED), the hospital administrative data collected and managed by the state of Victoria. The data include all in-patient admission episodes in public and private hospitals in Victoria, and cover a 10-year period from 2008–09 to 2018–19.

2. Volume of Older Patients in Hospitals

Figure 1 shows the volume of admitted episodes by patients aged 75 or older in Victoria for a 10-year period, 2008–09 to 2017–18. The volume of hospital admitted episodes rose steadily in Victoria during the period, from 315,700 episodes in 2008–09 to 438,400 episodes in 2017–18, an increase of 122,700 episodes, or almost 3.9 per cent a year on average over the 10-year period. This increase is substantially higher than the corresponding growth rate of 2.9 per cent for patients younger than 75 years.

As a proportion of the total volume of admitted episodes in Victoria, patients over 75 years of age account for about 20–21 per cent. It is worth noting that people older than 75 years make up about 7–8 per cent of the population in Victoria, indicating the higher tendency of older patients accessing hospital care.

Also shown in Figure 1 are episodes from patients residing in residential aged care homes. We deem patients as living in residential aged care homes if they were admitted or discharged to a residential aged care facility. By this criterion, about 23,000 admitted episodes in 2008–09 were attributable to aged care patients, and by 2017–18, the number had increased to 32,200, an increase of 40 per cent or on average growing about 4 per cent per year over the 10-year period.

3. Measuring Quality and Efficiency

We measure system-level quality and efficiency using the usual metrics. Although the analysis makes use of hospital administrative data, the outcomes reflect not only the performance of hospital care, but also the other care services that contribute to the outcomes of patients.

For quality, we make use of (i) risk-adjusted all-cause mortality, 30 days post discharge, (ii) risk-adjusted all-cause unplanned readmission, within 28 days of the index admission, and (iii) risk-adjusted hospital-acquired complications (HAC)

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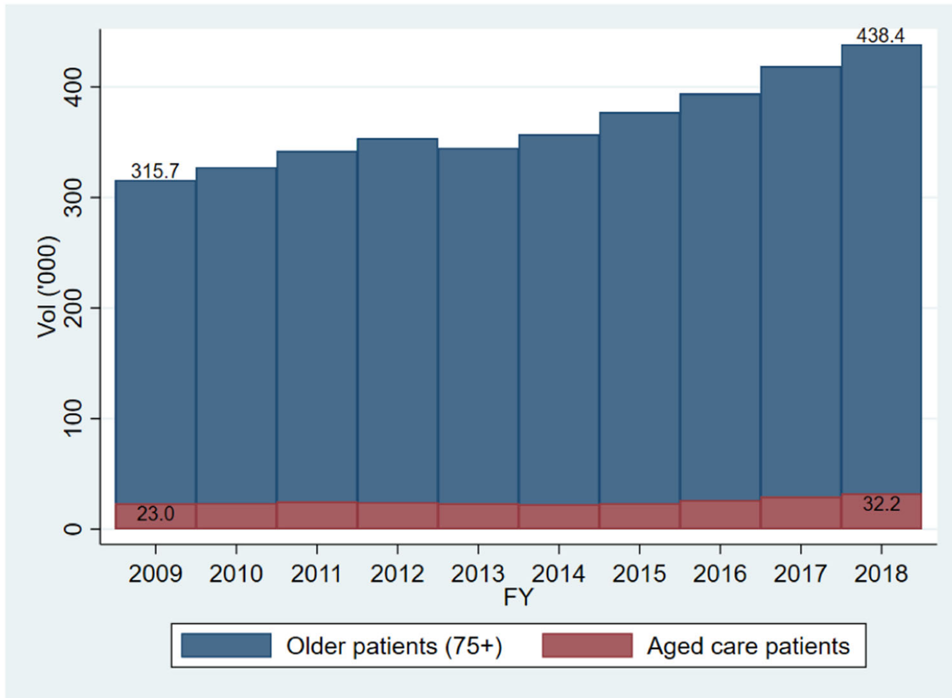
Figure 1 Volume Hospital Episodes, Older Patients (75+) and Residential Aged Care Patients, Victoria 2008–09 to 2017–18.



(Adair et al. 2006; Quentin et al. 2019). To measure efficiency, we use risk-adjusted length of stay (LOS). All measures are risk-adjusted using the patient risk factors (Iezzoni 2009): age, gender, marital status, same-day admission (except for LOS), intensive care unit stay, admitted through emergency department (except for unplanned readmission), Diagnostic Related Group code (3-digit), living in a residential aged care facility, number of admitted episodes in the previous 365 days prior to the current episode, number of diagnoses in the previous episode, number of intervention procedures in the previous episode and year and location of residence (Statistical Local Area).

4. Risk-Adjusted Outcomes

Using the estimated risk adjustment equations, we predict the outcomes (mortality, unplanned readmission, HAC and LOS) of older patients and all patients over the sample period.

Figure 2 shows the risk-adjusted outcomes of older patients in comparison to all patients over the 10-year period. It is clear that, by risk-adjusted mortality, readmission and HAC measures, older patients generally have better outcomes than all patients. However, after accounting for risk factors, older patients also tend to stay longer in hospitals.

We next compare, among older patients, the difference in outcomes between patients living in residential aged care homes and those living in the community. We do this by restricting the sample to patients older than 75 years and estimating a risk adjustment equation for each outcome, with the dummy variable 'Living in aged care home' in each equation. The parameter estimates for the dummy variable indicate the difference in outcomes between aged care and non-aged care patients. The estimates and their 95 per

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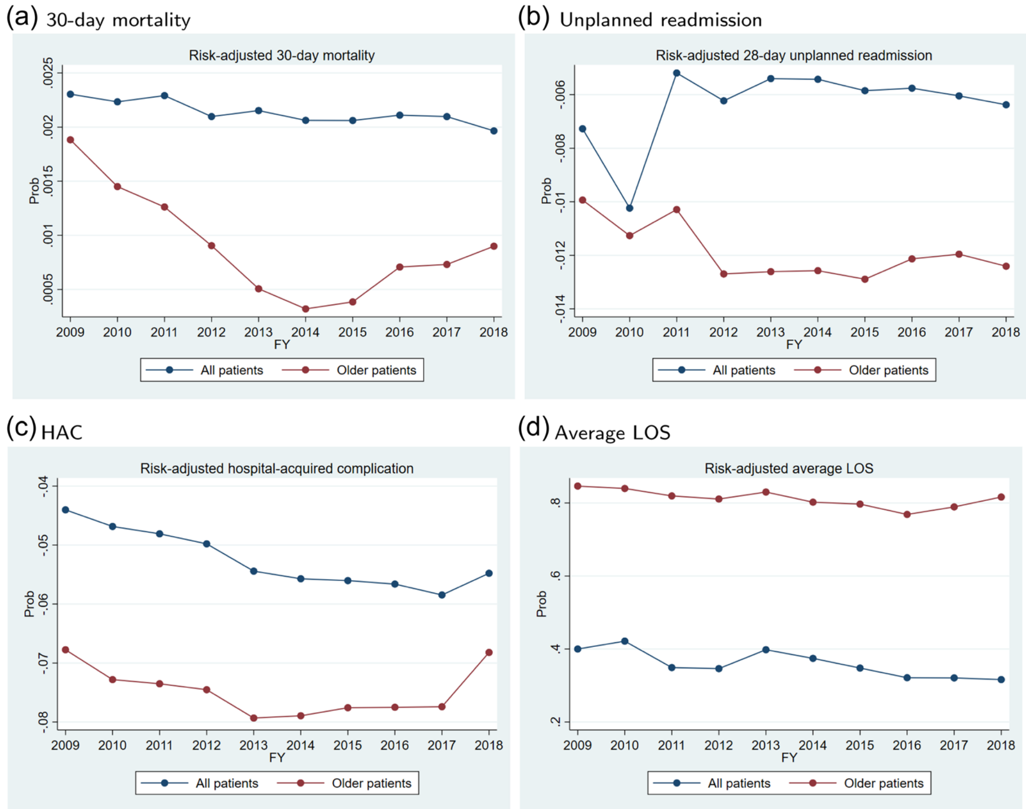
Figure 2 Risk Adjusted Outcomes, Older Patients Compared to All Patients.



cent confidence intervals are shown in Figure 3.

The results in Figure 3 show that, among older patients, those living in residential aged care homes generally have worse quality of care than patients not living in residential aged care homes. Moreover, patients living in residential aged care homes also tend to stay longer in hospitals on average.

A natural question that arises is whether the private sector can potentially provide better care to older people living in aged care homes. To assess this possibility, we examine the risk-adjusted outcomes of older patients admitted to private hospitals in comparison to those admitted to public hospitals. The rationale being that, if the private sector can provide better care, we should observe older patients receiving better care in private than in public hospitals.

To compare the outcomes of older patients in private against public hospitals, we follow the same strategy as before by restricting the sample to patients older than 75 years and estimating risk adjustment equations with a 'hospital type' dummy. The parameter estimates of this dummy variable are shown in Figure 4. The results suggest that private hospitals perform better on the risk-adjusted mortality measure, but worse on unplanned readmissions, and there is no difference between the two types of hospitals on HAC and average LOS. Overall, there is no clear indication that private hospitals provide better quality of care or are more efficient than public hospitals.

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Figure 3 Risk Adjusted Outcomes of Older Patients in Aged Care Homes vs in Community.

5. Discussion

Funding for the care of older patients comes from different sources. Hospital care is funded by a mix of state and federal funding, services such as aged care and primary care are predominantly funded by the federal government, other services such as community health and subsidised housing are primarily funded by states. Medicare plays a key role in the funding of care and services for older patients. It funds much of primary care, specialist and public hospital care.

In this article, we use risk-adjusted outcomes constructed from hospital admission data to measure the performance of the health and social care system. Although hospital data are used, the outcomes reflect the broader combined effects of care services that patients access. For older patients, the current care system generally provides good quality care, although older patients also tend to stay longer in hospitals even after adjusting for risk factors. A plausible interpretation is that there might be a trade-off between quality and efficiency—better care for older patients is achieved at lower efficiency.

However, the trade-off between quality and efficiency does not appear to apply to older patients living in residential aged care homes. When compared against patients living in the community, those living in residential aged care homes were found to have worse outcomes by risk-adjusted measures of mortality, unplanned readmission and HAC, but generally have longer stays in hospitals. That is, aged care patients have worse outcomes and cost more to care for than non-aged care patients in the same age group.

It is necessary to explore all alternative approaches to care arrangements in the search to improve the care of patients living in residential aged care homes. An obvious question is whether the private sector might

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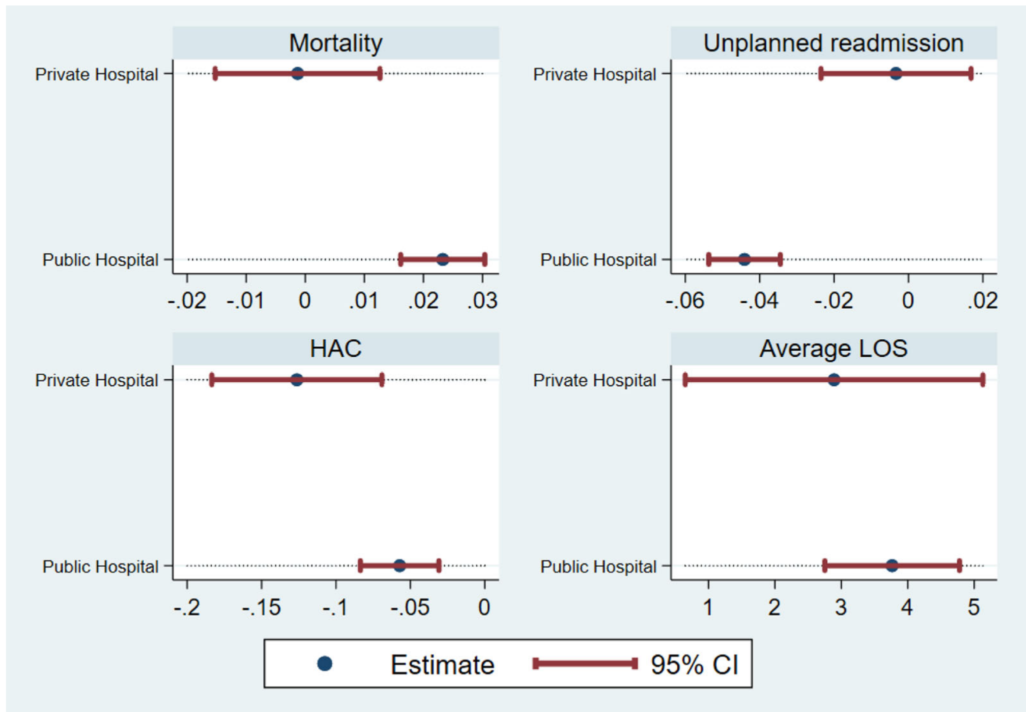
Figure 4 Risk Adjusted Outcomes of Older Patients in Private vs Public Hospitals.



offer better care or more efficient care. If the answer is in the affirmative, perhaps there is a case for the government to encourage greater private sector participation in the financing and provision of care. It may even be socially desirable for the government to restrict the access by wealthy older people to government funded care through more stringent means testing, as suggested in the recent report by the Aged Care Taskforce (Commonwealth of Australia 2024).

However, comparing patients in private and public hospitals, we find no clear evidence that the private sector offers a better solution than the public hospital system. It is important to recognise that patients who use private hospital care are different from public hospital patients—they are generally wealthier, better educated and have better access to health and social care. With these differences in mind, we would expect private hospitals to have better quality and be more efficient than public hospitals. The fact that we fail to detect any differences strongly suggests that private hospitals provide no better care than public hospitals. This result appears to be consistent with findings in other advanced countries (Sloan et al. 2001; Eggleston et al. 2008; Kruse et al. 2018). Moreover, our previous research on residential aged care homes further suggest that, comparing public and not-for-profit providers, private for-profit providers did not provide better aged care services, despite generally charging higher prices (Yong et al. 2021).

An alternative to warrant further exploration is an integrated team-based care approach, one that will integrate care services across many domains, which might include primary care, hospital care, dental services, ophthalmology services and aged care for older patients living in residential aged care homes (Lourenco, de Brito and Gomes 2023). Although a concise definition of integrated care is lacking, most models of integrated care focus on bringing together health and social

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care professionals involved in care across hospital and community settings (Briggs et al. 2018; Aronoff-Spencer et al. 2020). Evidence suggests that an integrated care approach with a person rather than disease focus improves the quality of care as perceived by patients and health professionals (Uittenbroek et al. 2017; Stoop et al. 2020; Kim et al. 2021).

There are obvious barriers to such an integrated approach, including differences in professional cultures across care disciplines and managing communication and information flow between providers (Threapleton et al. 2017). The current system also provides no incentives, financial or otherwise, to adopt an integrated care approach, given that funding for these services currently comes from diverse sources. Coordination of care across speciality domains will be impossible with numerous spending restrictions and funding constraints imposed by different funding agencies. A key policy initiative that needs to occur to facilitate integrated care is payment reforms. A system of bundled payments with a single budget holder, much like the Department of Veterans' Affairs (DVA) system, could be the key policy innovation required to begin the process of integrated care for older people living in aged care homes.

6. Conclusions

This article considers risk-adjusted measures of quality and efficiency and shows that the current health and social care system provides good quality and efficient care for older patients. This is, however, not so for a specific group of patients—older people living in residential aged care homes. These patients receive lower quality care but stay longer in hospitals than those not living in residential aged care homes. To improve the care for these patients, we suggest that considerations be given to an alternative care and funding approach that provides incentives for integrated team-based care. Funding reforms could be designed for this well-identified group of patients by modelling after the DVA system with bundled payments and a single budget holder.

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References

Adair, C. E., Simpson, E., Casebeer, A. L., Birdsell, J. M., Hayden, K. A. and Lewis, S. 2006, 'Performance measurement in health care: part II-state of the science findings by stage of the performance measurement process', *Healthcare Policy*, vol. 2, no. 1, pp. 56–78.

Aronoff-Spencer, E., Asgari, P., Finlayson, T. L., Gavin, J., Forstey, M., Norman, G. J., Pierce, I., Ochoa, C., Downey, P., Becerra, K. and Agha, Z. 2020, 'A comprehensive assessment for community-based, person-centered care for older adults', *BMC Geriatrics*, vol. 20, pp. 1–2.

Briggs, A. M., Valentijn, P. P., Thiyagarajan, J. A. and de Carvalho, I. A. 2018, 'Elements of integrated care approaches for older people: A review of reviews', *BMJ Open*, vol. 8, no. 4, p. e021194.

Commonwealth of Australia 2023, *Intergenerational Report 2023: Australia's future to 2063*, Commonwealth of Australia, Canberra, <https://treasury.gov.au/sites/default/files/2023-08/p2023-435150.pdf>.

Commonwealth of Australia 2024, *Final Report of the Aged Care Taskforce*, Commonwealth of Australia, Canberra, <https://www.health.gov.au/sites/default/files/2024-03/final-report-of-the-aged-care-taskforce_0.pdf>.

Eggleston, K., Shen, Y. C., Lau, J., Schmid, C. H. and Chan, J. 2008, 'Hospital ownership and quality of care: What explains the different results in the literature?' *Health Economics*, vol. 17, no. 12, pp. 1345–1362.

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Iezzoni, L. I. 2009, 'Risk adjustment for performance measurement', in *Performance Measurement for Health System Improvement*, eds P. C. Smith, E. Mossialos, I. Papanicolas and S. Leatherman, Cambridge University Press, Cambridge.

Kim, H., Jung, Y. I., Kim, G. S., Choi, H. and Park, Y. H. 2021, 'Effectiveness of a technology-enhanced integrated care model for frail older people: A stepped-wedge cluster randomized trial in nursing homes', *The Gerontologist*, vol. 61, no. 3, pp. 460–469.

Kruse, F. M., Stadhouders, N. W., Adang, E. M., Groenewoud, S. and Jeurissen, P. P. 2018, 'Do private hospitals outperform public hospitals regarding efficiency, accessibility, and quality of care in the European Union? A literature review', *International Journal of Health Planning and Management*, vol. 33, no. 2, pp. e434–e453.

Lourenco, A., de Brito, M. F. and Gomes, B. 2023, 'The future of integrated care in aged individuals', in *Aging*, eds P. J. Oliveira and J. O. Malva, Academic Press, London, pp. 649–661.

Quentin, W., Partanen, V. M., Brownwood, I. and Klazinga, N. 2019, 'Measuring healthcare quality', in *Improving Healthcare Quality in Europe Characteristics, Effectiveness and Implementation of Different Strategies*, eds R. Busse, N. Klazinga, D. Panteli and W. Quentin, OECD Publishing, Paris.

Sloan, F. A., Picone, G. A., Taylor Jr., D. H. and Chou, S. Y. 2001, 'Hospital ownership and cost and quality of care: Is there a dime's worth of difference?' *Journal of Health Economics*, vol. 20, no. 1, pp. 1–21.

Stoop, A., Lette, M., Ambugo, E. A., Gadsby, E. W., Goodwin, N., MacInnes, J., Minkman, M., Wistow, G., Zonneveld, N., Nijpels, G. and Baan, C. A. 2020, 'Improving person-centredness in integrated care for older people: experiences from thirteen integrated care sites in Europe', *International Journal of Integrated Care*, vol. 20, no. 2, pp. 1–16.

Threapleton, D. E., Chung, R. Y., Wong, S. Y., Wong, E., Chau, P., Woo, J., Chung, V. C. and Yeoh, E. K. 2017, 'Integrated care for older populations and its implementation facilitators and barriers: A rapid scoping review', *International Journal for Quality in healthcare*, vol. 29, no. 3, pp. 327–334.

Uittenbroek, R. J., Kremer, H. P., Spoorenberg, S. L., Reijneveld, S. A. and Wynia, K. 2017, 'Integrated care for older adults improves perceived quality of care: results of a randomized controlled trial of embrace', *Journal of General Internal Medicine*, vol. 32, pp. 516–523.

Yong, J., Yang, O., Zhang, Y. and Scott, A 2021, 'Ownership, quality and prices of nursing homes in Australia: Why greater private sector participation did not improve performance', *Health Policy*, vol. 125, no. 11, pp. 1475–1481. <https://doi.org/10.1016/j.healthpol.2021.09.005>.

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