



Intelicare

2022-23 Federal Pre-Budget Submission

Enabling Older Australians Living in Regional, Rural and Remote Australia to Remain in their Own Homes Longer

28 January 2022

Recommendations

1. That the Commonwealth fund the purchase and operation of **1,000 Intelicare systems** to enhance delivery of aged and health care services to older Australians living in their own homes across regional, rural and remote Australia. These areas are thin markets for aged care without the capital resources to finance adoption of new technology despite the potential savings and improvements in care possible. The estimated cost would be **\$4.5 million over three (3) years**. The first systems could be operational immediately, with full deployment occurring over 12 months as further clients are mobilised.

Intelicare would work with the Commonwealth, States, Territories, Primary Health Networks (PHN), Multi-Purpose Services (MPS) and Home Care Package (HCP) and Community Home Support Programme (CHSP) providers to identify needs and opportunities to ensure a targeted deployment to areas of greatest impact.

2. There be an evaluation of the impact of the provision of Intelicare systems to patients living in regional, rural and remote over the next 12 months, to identify potential efficiencies which may also translate to urban home care.

Introduction

3. Health outcomes and access to care and hospital services should not be determined by location or access to capital. Equity demands that all Australian, irrespective of where they live, have access to the same standards of aged care and support. This is particularly difficult for the thin markets for aged and health care outside metropolitan Australia. Increasing technology will be required to play a part in delivering equitable, efficient, and economic outcomes and services thereby permitting limited human health resources to address critical care issues. Equally important technology will enable early interventions before situations develop into medical crises.
4. The markets for both aged care and health care outside of the metropolitan areas are thin and in crisis. Innovative solutions must be urgently funded and implemented. The federal government can no longer rely on existing models of care and service delivery.

“Intelicare demonstrated their system to meet the broadest range of capabilities and configurations. This is critical for us to give our caregivers the best technology to deliver person-centred care and our clients the greatest possible independence.”

— Lisa Evans, CEO, St John of God Accord

“Technology like Inteliliving impacts people’s lives and their care at every level; independence, control, connection, even accessibility, fairness and equity.

I think it will be seen as a fundamental component of people’s care and we will have to take this on and embrace it as a real complement to the traditional forms of care that we’ve historically provided.”

— Gary Jacobson, CEO CCNB Home Care



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5. Australian company, InteliCare Holdings Limited has commercialised a smart Internet of Things (IoT) and Artificial Intelligence (AI) predictive system that combines inhouse monitoring data with data from health metrics devices e.g. Fitbit, (the InteliCare solution) for use in the disability, aged care and the broader health sectors. It is a well-established tool.
6. The federal government supporting the implementation of the InteliCare solution by aged care and health care services providers based in rural, regional, and remote regions of the country will assist to address some of the range of pressing issues confronting the sector. These include demand for care provided to seniors in local health facilities exceeding capacity, the lack of capital to either upgrade or add capacity, inability to recruit staff or achieve acceptable staffing ratios, people living with a disability either in a residential aged care facility or living independently, and managing preventable early hospital admissions and re-admissions. The latter is of course not only an issue outside the major cities.
7. Economic modelling undertaken for InteliCare found that the greatest value for public funding of the InteliCare solution will be for persons currently in receipt of an HCP and who wish to stay in their own homes; and that the potential returns from investment in this technology are substantial¹.
8. The InteliCare solution ensures senior Australians can either remain or return to their homes safely for as long as possible, helping to restore community confidence in care provided outside metropolitan areas, manage demand, and meet seniors' expectations. Additionally, their urban-based families will have the ability to become part of the care solution.

Managing early hospital admission by instigating in-home monitoring

9. Providing inhouse intelligent monitoring and predictive solution to seniors living in rural, regional, and remote regions, before they experience a health crisis, will ensure both better individual health outcomes, and positive financial benefits for health budgets due to early care delaying need for hospital admission. Additionally, the senior person will remain within their community for longer, rather than having to leave immediately to be hospitalised at some considerable distance. This is, in turn, beneficial for the elderly, their friends and family, as well as the local community.
10. The InteliCare solution can help to reduce cases of hospital admission including from trauma such as a fall, chronic disease and mental health. Examples include:
 - Cardio-pulmonary disease: the InteliCare solution helps health practitioners detect worsening condition due to fluid on the lungs;
 - Cardio-vascular and circulation disease: detects deterioration through reduced mobility;
 - Infection: especially UTI but includes other worsening infections characterised by loss of appetite, trouble sleeping, vomiting/diarrhoea and reduced mobility; and,
 - Dementia: via monitoring of wandering, especially night-time.

¹ Evaluate (2021) Economic analysis: the "InteliCare solution" p.5



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Managing Falls to Avoid Unacceptable Results

Falls are a major risk for NSW seniors, with serious implications for their long-term health and independence. The number of falls is increasing in frequency. Each day, an average of six falls results in an injury requiring hospital admission in the Western Local Health District. A fall resulting in patient injury is likely to increase the length of stay for the patient and increase the overall treatment cost.²

A recent study found that a senior lying on the floor after a fall for in excess of an hour is strongly associated with serious injuries, admission to hospital, and subsequent moves into long-term care³ – all more expensive outcomes. The same study questioned the value of client activated pendants or alarms which were considered irrelevant and impractical.⁴ Intelicare's technology has been demonstrated to reduce this risk:

"One of the key features of the system is to identify when a resident has fallen and to provide assistance quicker. During our pilot, we had the unfortunate experience of one of our residents having a fall: however with the Intelicare system providing close details of the activity within in the house - and in this case lack of activity; one of our staff was able to carry out a welfare check and attend to the fallen resident within 30 minutes! A huge improvement over what residents previously experienced". (Swan Care)

11. Research shows that hospitalisation accelerates a senior person's functional decline, reduces their available healthcare options, and associated costs escalate.

Using technology to reduce unplanned hospital readmissions

12. Furthermore, if hospitalisation has been required, the Intelicare solution can play a key role in supporting earlier and better managed discharges of senior patients back into their home and the community by the treating hospital and medical team. This is especially important if the patient's home is a considerable distance from the treating hospital as is typical for regional, rural and remote patients.
13. All Australian governments, committed in 2017 under the National Health Reform Agreement Addendum, to undertake reforms focused on reducing the currently unacceptable level of avoidable hospital readmissions⁵.
14. Avoidable hospital readmissions are distressing and possibly harmful for patients, families, and carers as well as costly for the Australian health system⁶. Unplanned readmissions for senior patients may result in complications, higher use of hospital and community healthcare resources, and faster functional decline.⁷

² HealthStats NSW "Fall-related injury hospitalisations" accessed at http://www.healthstats.nsw.gov.au/Indicator/inj_falloldhos

³ Fleming, Jane and Braye, Carol (2008) "Inability to get up after falling, subsequent time on floor, and summoning help: prospective cohort study in people over 90" *BMJ* 2008;337:a2227 accessed at <https://www.bmj.com/content/337/bmj.a2227>

⁴ Fleming, Jane and Braye, Carol (2008) "Inability to get up after falling, subsequent time on floor, and summoning help: prospective cohort study in people over 90" *BMJ* 2008;337:a2227 accessed at <https://www.bmj.com/content/337/bmj.a2227>

⁵ Swannell, Cate (2013) "Readmission rates too high" *InSight* accessed at <https://insightplus.mja.com.au/2013/2/readmission-rates-too-high/>

⁶ Considine, Julie et al (2019) "Factors associated with unplanned readmissions in a major Australian health service" *Australian Health Review*, 2019, 43: 2

⁷ Shebeshi, Dinberu S. et al (2020) "Unplanned Readmission within 28 Days of Hospital Discharge in a Longitudinal Population-Based Cohort of Older Australian Women" *Int. J. Environ. Res. Public Health*, 17: 3136; doi:10.3390/ijerph17093136



Furthermore, unplanned readmission is a challenge for healthy ageing in place. A significant proportion of unplanned hospital readmissions are avoidable and preventable.

15. Reducing avoidable hospital readmissions can include tackling issues such as the rate of complications and other adverse events arising during the admission, as well as improving discharge planning, care coordination and the provision of health and other support services in the community after discharge. Interventions that begin in hospital and continue after discharge are the most effective.⁸
16. Social isolation, comorbidities and malnutrition have been shown in research to be risk factors for readmission. Remote monitoring and predictive solutions like Intelicare's can also help carers manage and address such risks. Indigenous status is also a strong predictor.⁹

Enhancing HCP and CHSP service delivery for regional, rural and remote located providers and patients

17. In many non-metropolitan areas, there is "market failure" in terms of service providers being unavailable to deliver HCP and CHSP services to older Australians wishing to remain in their home and community due to poor economies of scale and long travel times from regional hubs¹⁰. Providing services can be a financial struggle and this has only deteriorated in recent times. If there are services, typically there is no choice of provider. Additionally, the desired services may not be available even if there is a provider.
18. Providing the Intelicare solution would allow the more targeted and efficient use of HCP packages while providing an equitable option for care those whose more limited needs are currently not being met. For example, follow on remote monitoring of older patients in their own home, will increase the benefits of recently implemented telehealth consultation program. This will reduce reliance on in-home checks and focus the limited number of HCP packages on preventative healthcare, where either the technology identifies a need, or a need has been identified by other health care professionals. The provision of targeted care to those in immediate and greatest need will lead to a productivity increase for providers.
19. Supporting the roll out of the Intelicare solution will also extend the geographic reach of existing rural and regional based private or external HCP and CHSP providers thereby providing services and choice, by removing the need to always travel long distances to service all patients – currently uneconomic, rather than those who require personal visits for care reasons. This would allow more efficient use of the existing limited staffing resources.
20. Supporting the implementation of the Intelicare solution by MPS facilities will allow them to provide choice to the elderly in remote and regional Australia who wish to age-in-place rather than being forced to always relocate to town simply to access support services and to better utilise their limited residential aged care services.

⁸ Australian Commission on Safety and Quality in Health Care. (2019) *Avoidable Hospital Readmissions: Report on Australian and International indicators, their use and the efficacy of interventions to reduce readmissions*. (Sydney: ACSQHC)

⁹ Sharma Y, Miller M, Kaambwa B, et al (2018) Factors influencing early and late readmissions in Australian hospitalised patients and investigating role of admission nutrition status as a predictor of hospital readmissions: a cohort study. *BMJ Open*,8:e022246. doi:10.1136/bmjopen-2018-022246

¹⁰ Woods, Michael; Edwards, Karen; Naghsh Nejad, Maryam; Haywood, Phil and Wise, Sarah (2019) "Aged care in MPS: Response to the Australian Government Terms of Reference" (Sydney, CHERE): 11



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Implementation Case Study – Rural and Regional Western Australia

“My Stepmother Bessema lives in an independent living unit in the rural town of Cunderdin. If it weren’t for InteliLiving my Stepmother, who is 96 years old and blind, would have to move into an aged care home. I’m in Perth, and I know that the InteliLiving app will tell me if I have to check in on my Stepmother. It gives us both great peace of mind knowing she can live in the country town she loves, and I don’t have to worry about her.” **Julie Douglas**

21. InteliCare has partnered with the Pingelly Somerset Alliance Inc in Western Australia to demonstrate the value of the technology for patients, the community and the health system of helping people stay in their own home in their community until end of life. “The Village” project across Wandering, Wickepin, Cuballing, and Pingelly in regional WA, is supported by a grant from the Australian Government’s Senior’s Connected Program¹¹.

Enhancing the Multi-Purpose Services (MPS) Program by providing InteliCare’s technology solution

22. Older residents of rural, regional, and remote areas are significant users of hospital services either through their local hospital or MPS program facility. The MPS Program provides integrated health and aged care services to regional and remote communities in areas that cannot support both a separate aged care home and hospital. The objective is to allow older Australians to stay in their own communities as they get older, close to their families and community ties. MPS Program services are found nationwide and are almost always provided by state and territory governments.
23. The 2019 a government review found the delivering aged care services in regional and remote areas through MPS was an effective model¹². The Review did call for funding to support the “...delivery of flexible, high quality home care and home-based palliative care and to reducing avoidable residential aged care” and both the private provision and consumer choice in providing HCP services.
24. InteliCare commends the aims and objectives of the MPS Program. We believe it is an equitable and worthwhile program. The proven InteliCare solution is ideally suited to assist in meeting the primary objective of the MPS Program to provide “innovative, flexible and integrated health and aged care” to Australians living in regional, rural, and remote communities.
25. Funding the availability of InteliCare solution for targeted MPS facilities as recommended, will ensure they can deliver aged and health care services, HCP and CSHP programs and choice to patients¹³ whilst supporting the strong preference of the elderly to age in their local community, maintaining financial sustainability and the efficient use of their limited health and residential aged care facilities and services.

¹¹ <https://pingellysomersetalliance.com.au/staying-in-place/the-virtual-village/>

¹² Australian Government (2020) “Australian Government Response – MPS Review recommendations”
<https://www.health.gov.au/resources/publications/aged-care-in-mps-response-to-the-australian-government-terms-of-reference>

¹³ Australian Government (2020): 2



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About Intelicare

26. Intelicare Holdings Limited (ACN 622 484 397) is an Australian technology company that has commercialised a smart Internet of Things (IoT) and Artificial Intelligence (AI) predictive monitoring system combined with health metrics data e.g. Fitbit, for use in the aged care and health sectors.
27. The company was founded in 2016 following receipt of a \$500k “Royalty for Regions” grant through the Western Australian (WA) Government’s Department of Health, with a remit to develop remote monitoring technology to support people at risk (the elderly and disabled), to live independently. Intelicare developed the system over three years, with 25,000+ hours of development, including multiple in-residence trials.
28. It subsequently commercialised this technology and delivered systems to the WA Department of Health, WA Department of Communities, a range of aged care organisations (both home care and residential living) and independent customers.
29. The unique predictive capability based of AI learning, allows seniors to age in place as they desire, by avoiding unnecessarily early admissions to residential aged age.
30. Many seniors across Australia including in regional areas use the Intelicare technology in their homes.

How clever technology and predictive capability can be part of the solution

31. The Intelicare system is a leading and proven next generation technology and AI based predictive solution that combines data from a monitoring system with data from wearable health metrics type hardware that can help patients stay in their own home longer.
32. This advanced technology supplants user-activated nurse call services and wearables that are not well adopted by the elderly.
33. The Intelicare system identifies deviations from patterns of normal behaviour to predict negative events e.g. falls or reduced nutrition, which if unchecked would usually result in medical intervention and/or a hospital admission. This early intervention has been shown to reduce or prevent hospitalisation, or re-admission to hospital. The predictive benefits of Intelicare technology delivers better outcomes for the patient, their loved ones, and the health care system.
34. The industry leading AI uses data from non-invasive non-wearable sensors (IoT data - movement, power, door, temperature etc.) to detect changes in an individual’s behaviour patterns and provide early warning for family and carers. It also can incorporate wellness data from common wearable health metrics devices e.g. Fitbit about heart rate, blood pressure, blood oxygen levels, activity etc. This is achieved through a smart device application or online portal. The system can be self-installed easily, or installation provided as a service, and is fully transportable and can be used in a range of environments.
35. Once installed, the system monitors the individual’s domestic behaviour (e.g. sleep, normal household routine, bathroom use and regularity of meal preparation) and common health indicators over a few days. AI continuously detects behaviour trends and sends either a daily “all okay” message, or abnormal event alerts through mobile “push” and text notifications to primary care givers, care service providers and family, with real time feedback. For commercial applications it utilises a cloud-based dashboard to enable care providers to triage multiple residents according to deterioration, based on each resident’s data trends.



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36. The AI learning capability of the monitoring system is predictive allowing early intervention which delivers better health outcomes more efficiently and cost effectively. An overview can be found here: <https://www.youtube.com/watch?v=Mv1g0oAvDuk&t=14s>

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