

INNOVATION DRIVING CARE SYSTEMS CAPABILITY

Practical lessons from the CARE-IT Project



ACIITC

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PRACTICAL LESSONS FROM THE CARE-IT PROJECT

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FOREWORD

The Aged Care Industry Information Technology Council (ACIITC) was established to focus on harnessing innovation and technology to help create a sustainable and high quality aged and community care sector in Australia. Our work has concentrated on promoting sound research and analysis to provide evidence of the opportunities technology and innovation offer for better care and support of older people and their carers.

The ACIITC has completed a series of research projects which have added to this mission - including our landmark *Technology Roadmap for the Australian Aged Care Sector* in 2017 and the publication in late 2019 of an updated literature review report - *Aged and Community Care Sector Technology and Innovative Practice*. Our current research, the **CARE IT Project**, adds significantly to collective understanding of the sector, its current level of digital maturity and the significant opportunities technology and innovation can offer in providing a more sustainable and high-quality sector.

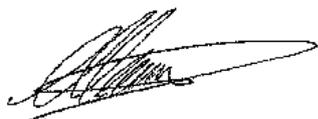
The CARE IT Research Report was prepared at a significant and critical time for the aged and community care industry. The sector is facing substantial challenges globally, nationally and in every community where services and support are provided. Improved uptake of technology and innovation is critical to assist service providers to deliver the high quality assistance older Australians want and need, now and into the future. Equally important is the role that a digitally included and digitally mature workforce will play in achieving this vision.

This research has identified many examples of services and individuals who are excelling and transforming the sector through very innovative approaches to incorporating technology and new service models into their offerings. These leaders and champions of innovative service provision should be rightly acknowledged for their contributions. Some of their work is presented here in this compilation of Case Studies, most of which were undertaken as part of the CARE IT Project, and provide practical examples of how care providers can benefit from technology, and how they can integrate technology into daily care practices and underpinning business systems.

I acknowledge the Department of Health for providing funds to undertake this important project and to the Department team who contributed to this work - Ms Catherine Burkitt, Mr George Lemon and Mr Don White.

Finally, I acknowledge the Project Team who undertook this important project - Ms Anne Livingstone, Dr Kate Barnett OAM, Mr Gavin Tomlins, Ms Lisa Capamagian and Ms Georgie Gould. This Project Team was supported by an Expert Advisory Committee and I appreciated the opportunity to chair this group and acknowledge the contributions made by Mr Rod Young, Dr Claire Mason, and Professor Greg Alexander.

I trust the detailed research undertaken and the recommendations resulting from this endeavour will be used to ensure that we achieve an innovative, sustainable, quality-focused and digitally mature aged and community care sector for older Australians and their families.



Dr George Margelis
November 2020

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INTRODUCTION

This report brings together **Case Studies of Good Practice in Technology-Enabled Care and Innovation** that were undertaken by the Aged Care Industry Information Technology Council (ACIITC) as part of two major projects:

- 1 The ***Aged and Community Care Innovation and Technology Capabilities and Readiness (CARE-IT)*** Project which involved a benchmark assessment of the digital maturity of the aged care sector (both residential and community care). This was commissioned by the Commonwealth Department of Health in March 2020 and completed in July 2020.
- 2 A ***Literature Review*** undertaken in late 2019 - ***Aged and community sector technology and innovative practice: a report on what the research and evidence is indicating***.¹This built on and updated the Literature Review undertaken by the ACIITC to inform the 2017 ***Technology Roadmap for Aged Care***.²

CARE-IT Project Team

- Ms Anne Livingstone – Project Manager and Chair of ACIITC National Home Care Committee, Project Director Global Community Resourcing
- Dr Kate Barnett OAM – Project Research Lead and Managing Director, *Stand Out Report*
- Mr Gavin Tomlins – Project Technical Lead and Chair of ACIITC National CIO Forum
- Ms Georgie Gould –Administrative Lead and Project Assistant, Global Community Resourcing
- Ms Lisa Capamagian – Project Vendor Advisor.

Case Study Contributors

The Case Studies which follow are based on structured interviews with the following people:

- Mr Dan Beeston – IT Manager, Juniper
- Ms Jenene Buckley CEO, Feros Care & Mr Glenn Payne, CIO, Feros Care
- Dr Amandeep Hansra – GP and Health Technology Specialist
- Mr Adam Jahnke - CEO, Umps Health
- Mr Warren Ortmann, General Manager Corporate Services, Life Care
- Dr Sachin Patel – Co-Founder and Director, Aged Care GP
- Ms Kristina Walsh – Case Manager, RDNS-Silver Chain.

¹ Barnett K, Livingstone A, Margelis G, Tomlins G & Young R (2019) *Aged and community sector technology and innovative practice: a report on what the research and evidence is indicating*, Aged Care Information Technology Industry Council. December 2019. DOI: 10.13140/RG.2.2.36667.77608.

² ACIITC (2017) *Technology Roadmap for Aged Care*, Aged Care Industry Information Technology Council. <https://www.aciitc.com.au/roadmap/>

CASE STUDY 1: ORGANISATION WIDE TECHNOLOGY AND INNOVATION STRATEGY – JUNIPER WA

This case study is based on a structured interview undertaken in June 2020 with Mr Dan Beeston, IT Manager for Juniper. It highlights that provider commitment to access and equity will result in barriers to access being addressed, in this case, remote location and limited access to WiFi. At a broader level, this illustrates what is possible with a commitment to innovation and digital transformation.

[Juniper](#), a Western Australian provider of residential aged care, home and community care and retirement living services, has adopted a new approach to embedding technology and innovation in its service offerings and associated operational processes across its multiple sites. These span metropolitan, regional, remote and some very remote locations, yet Juniper's goal has been to overcome distance and location-based inequities by the strategic introduction of new technologies tailored to the needs of each site. Those needs included differences in technology infrastructure, such as internet access, and Juniper's experience offers lessons for other organisations facing similar challenges. Investment in infrastructure means that sites are now supported with ready access to WiFi, regardless of their location.

Care-on-the-Go (GOTG)

In July 2019, Juniper began its implementation of an organisation-wide rollout of Amazon Web Services (AWS). The purpose was to enhance the care and services provided by Juniper's 1,950 employees to clients and residents, and to connect them to family members and the wider health and care ecosystem of general practitioners and allied health professionals. This mobile technology enhancement project is called **Care-on-the-Go (GOTG)** and resulted in substantial business digital transformation for Juniper across its 26 residential care sites, improved outcomes for individuals as well as achieving measurable business efficiencies. While it contributed to significant change for the organisation, it was also part of a wider strategy of transformational change applied by Juniper, and benefitted from being an integrated part of that initiative (as opposed to an isolated 'IT' strategic plan).

The rollout provided a single communications platform in one application to effectively meet all requirements associated with mobile service provision, including the delivery of quality care and services anywhere within a Juniper residential care facility and meeting the needs of a diverse range of stakeholders. Having been piloted and embedded at several sites pre- COVID-19, the program of organisational change also allowed Juniper to pivot more effectively in addressing the pandemic's multiple challenges, without sacrificing sustainable and long-term business improvement outcomes.

Choosing the technology with a view to Return on Investment

Among the factors shaping the choice of technology, and therefore, feeding into the measurement of ROI are the following:

- ✓ A consistent and rigorous investigation into product capabilities and associated feasibility assessment prior to purchase
- ✓ 24/7 availability of vendors for support

- ✓ Suitability for mobile usage
- ✓ Identity management integration
- ✓ Single Sign-On (SSO) enabled
- ✓ Software API for cross-platform integration and reporting by third party software
- ✓ Provisions for cybersecurity testing.

Workforce training and support: the Technology Advocate role

Juniper carefully considered the need to address varying levels of workforce digital literacy and technology readiness and implemented a strategy that involved appointing two Technology Advocates to provide training and support at site level. Technology Advocates visit all sites every five weeks, and this strategy has also meant that processes for embedding the new technology associated with *Care on the Go* is co-designed with workforces at the site level, ensuring acceptance, ease of application and building technology capabilities at the same time.

For many workers, the shift to a mobile working mode has been significant. For example, Juniper has removed all fixed computers and replaced them with banks of iPads, encouraging staff to take them everywhere they go, and supporting them with a clinical data set that can be accessed from anywhere in a facility. In turn, point of care can be wherever a consumer is, and data can be collected in real-time. Training material is also being made accessible in the same way.

Workforce re-design

Workforce redesign to support the wider program of transformational change has seen the appointment of analysts in business intelligence, business analysis, systems analysis and a Cloud engineer (as well as the Technology Advocates). This Digital Team will not only support the introduction of specific technologies, including Apps, but will enhance Juniper's capacity for advanced data analytics, which in turn will provide better quality of care and more effective resource usage.

These new workforce roles have assisted in allowing Juniper to appropriately scale the introduction of new technologies and significantly improve the organisation's digital appetite. Juniper has also concentrated efforts to improve its technology procurement and ensure a better return on investment (ROI) by leveraging a managed service provider (MSP). This has enabled the IT Manager and the Digital Team to re-focus on service innovation in order to achieve better quality outcomes for staff, clients, residents and families.

In providing services across Western Australia and in some remote and very remote locations, Juniper is actively reforming services underpinned with technology and placing an innovative lens over all the critical considerations within the organisation. Included in this approach is working with vendors directly, and championing new enhancements and developments which are of direct benefit to Juniper and also to the wider industry.

Lessons learned

- ☑ **The adoption by workforces of new technologies and associated products is more likely to succeed if they are provided with the support and training required in an ongoing (rather than once-off session) process, and if workflows and operational processes for embedding the new technologies are co-designed with them.**

- ☑ **It is important that technology is tailored to the needs of individual organisations, even if they are being provided as part of a holistic change strategy. This includes addressing inequities arising from the location.**
- ☑ **The implementation of technology-specific change is more likely to be effective and sustainable if it is part of a wider organisational program of change (rather than a stand-alone strategy).**
- ☑ **Information that will assist in calculating ROI from technology requires the collection of evidence prior to purchasing and thereafter using formative evaluation.**

CASE STUDY 2: UMPS HEALTH MONITORING IN THE HOME – SUPPORTING THE ‘NEW NORMAL’

This Case Study was based on a structured interview with Mr Adam Jahnke, CEO of Umps Health, in May 2020. It illustrates the important role to be played by appropriately integrated, user-friendly and unobtrusive monitoring technology. In this case, both the technology and its application in home care services were co-designed, ensuring its ready adoption by older people and by service providers.

Simplicity and the importance of co-design

Initially designed with and for a family member, and then provided on a one-off basis based on word of mouth, the Umps Smart Home product was further developed through *co-design with aged care providers* Mercy Health and Villa Maria Catholic Homes (VMCH). This co-design process has achieved two important outcomes that are key to its growing use by older people themselves and by aged care providers:

1. It is very simple to use, requires no batteries to be replaced and because it connects over the mobile network using a SIM card, removes the need for the user to have a home internet connection. It does not require digital literacy and it does not require maintenance. Installation takes no more than 10 minutes, with the Umps Smart Home Hub being plugged in, followed by an accompanying set of 5 Smart Plugs that are attached to appliances used on a daily basis (eg kettles, toasters, microwaves, bedside lamps, refrigerators).
2. The product has been designed to be easily be integrated into a care provider’s home care offerings, and as a direct home care service, can be purchased with funding from these programs – Commonwealth Home Support Program, Home Care Package Program, Short Term Restorative Care Program and National Disability Insurance Scheme.

UMPS Health in the home

In order for the artificial intelligence component of the product to work effectively and to be tailored to individual need, the first seven days after installation involve Umps establishing individual user daily habits through its Learning Mode. This means that any alerts it generates are more accurate with fewer false alarms. Alerts are raised following any change in routine that could indicate the presence of a health issue, for example, appliances not being used, bedside lamps being used frequently overnight (indicating poor sleep or other issues) or less use of the refrigerator (indicating decrease in appetite or loss of mobility).

By operating unobtrusively and without needing the system to be worn on the body, Umps can support the safe and independent living of people with a range of needs, including cognitive issues, people at risk of falling, people with known health issues but also those without diagnosed conditions who may suddenly become ill or experience a medical episode. Further advantages of this technology are that it is predictive rather than reactive only and supports self-managed care and independent living.

Daily Care Summaries inform family carers as well as aged care providers for whom Umps data can be an important part of client case management and reporting. At the time of writing, Umps Health was being into integrated into the care of some 30 providers.

Challenges and Barriers faced

The co-design process identified the need to overcome multiple barriers, in particular:

-  Low *levels of digital inclusion* and *negative attitudes* to technology, including fear and not seeing any relevance in a product, generate the need to *modify* a product to ensure that it is *perceived as useful* and is *easy to use*.
-  *Diversity of need* among older people, including in functional ability, means that a product must be sufficiently *flexible* to accommodate differences and be accompanied by support to be used easily and confidently.
-  Many older people are not connected to the Internet at home, yet most technology products require this *connectivity*. For this reason, Umps has designed its product to be connected without this requirement.
-  *Operational demands* see most providers being time-poor, and typically resource-poor, and more likely to focus on present need rather than potential future requirements. Unless a technology product can address these issues and the demand for *return on investment*, it is unlikely to be adopted.
-  Related to this barrier is a widespread *culture of risk aversion* and the ideation phase of product development faces significant challenges in engaging providers.

Lessons learned

- It is important that the technology product is *designed and integrated* in such a way that the investment enables the provider to *recoup revenue from services delivered*. This is one reason for ensuring that a product is modified to suit organisational processes.**
- Already some consumers are asking for the Umps product and it is important that providers are able to *respond to requests* for technology from them.**
- The lower level of functional need for most CHSP consumers makes the Umps product very attractive but this Program has less *funding to support technology integration* into care and support. However, the CHSP is flexible about funding usage and there has been a positive response to the provision of specific funding to support technology purchases by consumers.**
- The importance of *partnerships between care providers and technology vendors* is crucial to the embedding of technology in care systems. Each partner needs the other and a co-design process is critical if the product is to add value and be integrated effectively.**

CASE STUDY 3: EFFECTIVE TELEHEALTH IN RESIDENTIAL AGED CARE

This Case Study is based on a structured interview undertaken in June 2020 with Dr Sachin Patel, Founder and Director of Aged Care GP. It yields important lessons about working across the primary health-aged care interface, the critical role of partnerships in providing seamless consumer-centred care, and the delivery of technology-enabled care. The experience of Dr Patel and his colleagues offers a unique insight into the provision of virtual care for the residential aged care sector and older people living in its facilities, and the potential this holds for increasing residential care consumers' access to physician services.

Aged Care GP – technology-enabled physician care in residential aged care

Melbourne general practice [Aged Care GP](#) was established only five and a half years ago, but in that time its reach has extended to some **70** Residential Aged Care Facilities (RACFs) or around **20%** of RACFs in Melbourne. As its name suggests, this is a general practice specialising in the care of older people, specifically those living in long term care facilities, but its second distinguishing feature is its focus on technology-enabled care. At the time of writing its staff included 22 GPs, 2 Geriatricians and 5 Practice Nurses – providing a level of scale that is able to support their mobile model of care delivery.

A driver for establishing this service was the commitment of its founders to address a system-wide gap in the provision of GP service provision in RACFs, and in the process to improve the interface between primary health care and residential aged care. Dr Patel's work as a care worker during his medical studies gave him an understanding of the needs of older people he has married this with an understanding of the potential of technology to support holistic and accessible services.

It is also clear that the approach of Aged Care GP is one of working in *partnership* with RACFs, building their capacity to engage with technology-enabled services and *co-designing processes for delivering GP services that work in harmony with organisational workflows*. A number of telehealth related resources have been developed for residential aged care providers and access to a telehealth consultation for patients and providers is facilitated by a *single button* on the Aged Care GP website. *(The importance of this simple, single-step access has been a theme in the ACIITC's findings on encouraging the use of video-based telehealth and telecare.)*

While describing their technology as '*far from perfect*', **critical factors** enabling Aged Care GP to switch quickly to a substantial telehealth program in RACFs were its:

- ✓ existing technology infrastructure and staff technology readiness and
- ✓ established partnerships of care with aged care providers.
- ✓ Medicare funding for telehealth services provided the final support.

The impact of COVID-19 on telehealth delivery of care

COVID-19 has required a specific approach to supporting RACF residents who are at greater risk from this virus than most of the wider population. As early as January 2020, Aged Care GP was preparing RACF partners for managing the pandemic, repurposing its nursing team to educate facility staff in preventing infection but also in the use of telehealth technology. In an important

value-add, the service also prepared residents' families for COVID-19 and how this could be managed, including by the use of telehealth.

Aged Care GP's switch to virtual care coincided with the implementation on March 13th 2020 of the new Medicare Telehealth items but the decision had been made prior to that date, reflecting a wish to 'pay forward' for the contributions made by older people over the course of their lives. It was also motivated by social justice goals while providing a much needed service.

Applying telehealth in residential aged care

Aged Care GP offers telehealth services seven days a week between 7 am and 10 pm, making them highly accessible. The proportion of telephone to video-based consultations is approximately 50:50, a choice based on the type of contact required. Face-to-face visits are chosen when more deep and meaningful contact is needed while virtual delivery supports the multiple contacts that involve exchange of information e.g. prescription updating.

Aged Care GP uses a cloud-based telehealth platform called *TeleConsult* which was developed for clinicians by Melbourne virtual health service provider *CollabCare*. It can integrate with a range of platforms (e.g. Zoom, Microsoft Teams, Google) and its data and operations remain within Australia. Features including high definition videoconferencing, real-time monitoring, chat messaging, and screen and file sharing.

The approach has been pragmatic, making use of easily available technology, such as the Smartphones of staff and GPs. One effective strategy involves virtual rounds with nursing staff keeping a telehealth session open while the GP participates remotely. Resident medication regimes are sent in PDF format to Aged Care GP prior to a round or consultation, in line with existing (non-digitised) record keeping practices (by the RACF).

Telehealth also supports group consultations that involve families and other service providers to assist in care coordination. This represents a further benefit of telehealth/telecare.

Challenges in providing technology-enabled GP services in residential aged care

The challenges experienced by Aged Care GP in providing technology-enabled services in residential aged care are not unique to this practice and reflect the significant variations in the aged care sector's digital maturity and acceptance of technology's potential contribution to quality care outcomes. The two most significant barriers identified involve:

-  **technology infrastructure** issues, specifically unreliable Internet connectivity and poor Wi-Fi reception in some facilities, or in parts of those facilities; and
-  barriers associated with negative **attitudes to technology** and **organisational cultures** that perpetuate a lack of innovation.

At one end of the spectrum are some RACFs where the provision of technology-related education and support has faltered in the face of negative attitudes to technology and a refusal to accept that good quality care can be achieved without face to face delivery. Those providers have rejected telehealth provision and demand visits in person by a GP. Despite the increased risk of infection during a pandemic, some of these turned to locums rather than utilise the virtual care of GPs with an established relationship of care with their residents. Technology resistance was typically expressed through objections, such as, claims that older

people do not want 'intrusions to their privacy', or through passive resistance, such as, delaying decision-making about choice of a platform to support virtual care technology. Dr Patel noted that attitudes to and acceptance of technology-enabled care reflect leadership in an organisation and the culture established in relation to innovation and technology adoption.

At the other end of the spectrum are those RACFs who embrace the opportunities offered by technology, especially when infection control is of more importance than normal. These have worked closely with Aged Care GP to ensure that telehealth is embedded in their operational processes and care provision. One RACF employed additional nursing staff so that these could be specialist telehealth nurses.

Lessons learned

- ☑ **The provision of primary health care in residential aged care is specific to that context, and very different from general practice in the community. It requires a *partnership of care with agreed goals and processes* that address primary health and aged care needs simultaneously.**
- ☑ **It is important to begin on a small scale in order to identify and trial the most appropriate approaches, processes and policies, ensuring that the delivery of primary health care (in person or virtually) *sits easily within RACF workflows*.**
- ☑ **Those processes and approaches, and the technologies deployed, need to be kept as *simple as possible*.**
- ☑ **A practice of this nature requires a certain *scale* with sufficient numbers of practitioners as well as a support team.**
- ☑ **At a sector level, there is a *need to address the significant variability in technology capabilities* (infrastructure as well as workforce expertise) and attitudes to technology-enabled care. This will involve sector level workforce awareness raising and education.**
- ☑ **The application of innovative strategies to address problems, in this case, a poor interface between primary health care and residential aged care, requires partnerships between organisations that embrace innovation, with *leadership* from the most senior levels that supports a *culture of learning*.**
- ☑ **There is a need to *quantify the costs and return on investment in technology-enabled care*, and in this case, relating to the use of telehealth services, for older people, their families, aged care staff, primary health care staff, and the wider health and aged care systems. For example, feedback from RACF partners indicates that staff value the speedy response to their questions when GPs use telehealth effectively. *Dr Patel estimates that hospital admissions for their RACF patients have decreased by approximately 20% but wants to evaluate this and other outcomes when more time is available.***
- ☑ **Together with many others in the health sector, Dr Patel is urging the Federal Government to retain the Medicare Telehealth items, arguing that telehealth enables a bigger reach (more patients can be seen) and a bigger return on the investment in health.**

CASE STUDY 4: ENABLING AND EMBEDDING TECHNOLOGY-ENHANCED CARE: A DIGITAL HEALTH LEADER'S PERSPECTIVE

This Case Study is based on a structured interview undertaken in June 2020 with general practitioner Dr Amandeep Hansra. It draws on the extensive experience of an expert who has worked with aged care as well as health service providers and technology specialists, and highlights the lessons learned in enabling and embedding technology-enhanced care.

Dr Amandeep Hansra is a recognised leader in digital health in Australia³. She founded Caligo Health which provides digital health consulting services across the health sector, drawing on her involvement with multiple health technology startups, and the design and implementation of telemedicine systems. She is a Clinical Reference Lead for the Australian Digital Health Agency, has been the CEO & Medical Director of Telstra's telemedicine business, *ReadyCare*. the Chief Medical Officer for Telstra Health and continues to work in primary health care at a General Practice in Bondi, Sydney. Dr Hansra's work with Telstra's *ReadyCare* saw her advising many aged care providers seeking to establish telehealth and telecare services.

COVID-19 and incentives to engage with telehealth

In the past five years, Dr Hansra has seen an increase in the general digital maturity of the aged care sector, particularly in relation to the willingness to engage in virtual care, with this shift involving both older people as well as service providers. Most recently, the provision of Medicare Telehealth items, and the need to avoid COVID-19 related infection, have combined to provide an important incentive to digital health adoption. Dr Hansra pointed to the number of consumers who could have benefitted from virtual care consultations but could not afford to pay for this service without a Medicare rebate, and the important contribution of the new Medicare telehealth items to addressing this issue.

Video-based telehealth from a general practitioner's perspective

Dr Hansra prefers video to phone-based telehealth, describing it as "a much richer experience", compared with telephone consultation which she has found takes longer, does not enable her to see her patient, or for them to see her – for example, if she stops talking in order to type notes into her computer.

Another advantage of video-consultation is its significant support to coordinated care, which in turn, is critical to the effective management of chronic and complex conditions (a hallmark of care for older people). Dr Hansra described beneficial virtual multi-party sessions that were able to link patients, their significant others, their GP, and medical specialist(s), and/ or their allied health professional in a single consultation that would be logistically impossible to arrange face to face. Such an approach not only makes care more accessible, more effective and more efficient for both patients and providers.

However, in order to achieve such a seamless process, it is critical to embed the technology into service operational processes as much as possible (discussed below in relation to Barriers). This begins with accessing the technology. An effective strategy is the provision of a videolink

³ <https://www.digitalhealth.gov.au/about-the-agency/clinical-reference-leads/general-practitioners>

button on an organisation's webpage that takes consumers and providers directly to the videotechnology. This approach is direct, involves a single step and supports effective time management.

There is also an adjustment needed when eliciting information from patients during a virtual consultation. Dr Hansra recommends the following strategies:

- a) Design effective emergency screening questions.
- b) Get a good history and document it in detail – she recommends typing notes into the computer while listening.
- c) Ensure that patients consulted virtually are followed up and given a plan if things change.
- d) Ensure there is remote access to clinical files, especially, a patient's past medical history, test results, and prescriptions.

In a trend being pursued by many health service providers, telehealth is supporting triage by screening those who need face to face as opposed to virtual consultations, or those needing COVID-19 or other testing.

Barriers to provider adoption

There are a range of barriers that reflect the failure of health and aged care service systems to evolve in step with an increasingly digital world, evidenced in an under-developed digital health infrastructure and a perpetuated reliance on paper-and fax- based communication and information management. Individual providers seeking to engage with available telehealth and telecare technologies consequently struggle with challenges that include:

-  Clinical records that are not linked to virtual care provision and must be accessed separately. These need to be part of a single system with virtual care being embedded in the *workflows and operational processes* of an organisation.
-  Having a significant amount of *administrative and manual work* following a telehealth consultation. This includes organising prescriptions (which will improve following the widespread adoption of e-prescribing). At present, Dr Hansra and other GPs need to follow a telehealth consultation with generating a prescription, signing it, photographing it, and emailing/ faxing it. She described a recent situation where there it was impossible to send a prescription electronically and she physically dropped a prescription into a patient's home letter box.
-  Spending too much time trying to interface with government portals, including My Aged Care, because there is no interface between the patient record system and this and other portals. In general, there are *too many interfaces* to access because of the lack of seamless connection between service systems.
-  Having worked with multiple aged care providers, Dr Hansra observes that telehealth and telecare can be difficult for them to adopt and use at a scale when they have *multiple systems that operate in silos* from each other, and from GPs and hospitals. In essence, the basic requirements are:
 - (i) a connected platform

- (ii) good data (and data transfer) and
- (iii) reduced paper information (which can overcome issues of data privacy and security).

Dispelling myths about consumers' reluctance to engage with technology

Based on her interactions with older people, Dr Hansra has found them very willing to use video-based telehealth and telecare services, and contrary to widespread assumptions, not technology-averse. By contrast, she has found greater resistance by GPs to adopting this form of technology while their patients "love it".

Lessons learned about telehealth and telecare

- ✓ **Video-based technology must be simple to access and use.**
- ✓ **The platform(s) used offer security and protect privacy, as these are issues frequently raised by both consumers and services providers.**
- ✓ **Implementation must be supported by training that will increase the digital literacy of those care providers and consumers who need it.**
- ✓ **Training in video or phone consultation techniques would be helpful for most providers while consumers require an individualised approach based on their existing capacity to engage with technology. It cannot be assumed that all older people will have low digital literacy skills – many are very IT savvy due to virtual communication with family, especially grandchildren. If any are not technology-confident Dr Hansra recommends organising for a relative to be present to assist, and/or switching to phone consultations.**
- ✓ **Significant changes are also needed to technology infrastructure, systems and processes so that digital health and care is not held back by the barriers identified earlier. COVID-19 has accelerated the adoption of telehealth but has also highlighted infrastructure deficiencies.⁴**

"This crisis has really shown us some of the other technology infrastructure changes that we need to support remote delivery of healthcare."

⁴ Comments made by Dr Hansra as part of the Digital Health CRC Webinar *COVID-19 and digital technology: The roles, relevance and risks of using telehealth in a crisis*, 20 April 2020. <https://www.digitalhealthcrc.com/telehealth-webinar/>

CASE STUDY 5: VOICE-ACTIVATED SUPPORT BY FEROS CARE OF PEOPLE LIVING AT HOME

This Case Study was based on interviews with the CEO of Feros Care Ms Jenene Buckley and the CIO Mr Glenn Payne, during October 2019 as part of the ACIITC 2019 Literature Review report. It illustrates the potential for voice-activated digital assistant technology to support independent living for older people. This is a fast-growing market, internationally and nationally, with significant potential to enhance aged care service provision.⁵

Voice activation overcomes the challenges faced by those who did not grow up in the digital age and who lack the skills associated with digital literacy and does not require a computer or tablet to be used. Widely used across a range of sectors, this technology can compensate for challenges associated with dexterity issues, vision or memory that limit the ability to interact with computers or smartphones.

A strategic partnership

A partnership between [Feros Care](#), a leader in innovation in aged care, and Google led to the integration of the *Google Assistant* voice-command platform in home care services, enabling consumers to find information on their *MyFeros* Portal and interact with services. The partnership with Google enables Feros Care to leverage from their ongoing innovation and to access all new products.

At a cost of \$40 per Google Assistant, this can deliver basic telecare without the expense associated with video technology, with the information provided able to be studied via data analytics, and in turn, supporting proactive care. Although it requires internet access, Google Assistant can operate over low bandwidth making it accessible in most parts of Australia (Barnett, Livingstone, Margelis et al 2019, [Section 2.2.3](#)).

Feros Care intends to extend the program to become a standard offering for clients, and to incorporate Artificial Intelligence and automation technology. For example, this could allow consumers to receive medication reminders, to initiate music therapy designed for those with dementia or to provide health monitoring information to Feros Care (eg measuring their blood pressure or weight with approved, but inexpensive devices).

The foundation provided by the *MyFeros* Portal

The Portal was implemented as a pilot in March 2018 and since then its uptake by consumers has been increasing. A key advantage of the Portal is that, at its most basic level, it provides an alternative to the phone-based Contact Centre. Two months after its introduction, calls to the Contact Centre had *reduced by 85 per cent*, for those who were using the *MyFeros* Portal.

The Portal supports a wide range of technology-enhanced services and timely communication between staff, volunteers and consumers and used in combination with Google Assistant, allows consumers to find information about upcoming appointments or carer visiting times, as well as

⁵ Zion Market Research recently estimated that the speech and voice recognition market will increase from a value of USD 6.19 billion in 2017 to USD \$22.3 billion by 2024, with the addition of Artificial Intelligence augmenting its uses and impact <https://www.zionmarketresearch.com/news/speech-and-voice-recognition-technologies-market>.

information about their accounts and whether they have any messages, simply by saying 'Hey Google, ask Feros Care'. Analysis of usage shows that the most common initial commands begin with requests for the day's weather and latest news, followed by queries about which Feros care worker will be visiting that day, whether there are new messages and when the next service will be provided.

Importantly, the technology has been integrated into normal daily activities, making its usage a normal part of living. It is also a highly accessible product.

Empowering consumers: how one visit changed Pamela's life

The empowering nature of this initiative is evident at the individual consumer level. Pilot participant Pamela, aged 73, returned home from a short hospital stay and relied on the technology to do so. Her MyFeros account was connected with Google Assistant via Google Home – a smart speaker that allows users to use voice commands to seek information and interact with services. Pamela can monitor and reschedule her upcoming services and carers, access her financial account and share messages with staff – all without picking up the phone. Pamela commented -

"I couldn't get out of bed to use the computer but was able to ask Google Assistant what Feros Care services I had that day, which staff were coming to see me, and at what time. I've found it to be an excellent tool and I just hope people use it. They certainly shouldn't be daunted. I would be lost without MyFeros portal now."

Pamela and another Feros Care consumer living with multiple sclerosis discuss the positive impact on their lives made by this integration of voice-activated technology into their care at https://www.youtube.com/watch?v=9e84zw_q8TQ&t=30s

Lessons learned

- ☑ **Key to consumer engagement with care-enabling technology is the selection of user-friendly technology that consumers are trained and supported to use.**
- ☑ **The technology chosen must also be embedded seamlessly into normal daily activities, making its usage a normal part of living.**
- ☑ **Voice-activated technology can overcome digital literacy barriers, and is used to greatest effect when care providers manage its integration into their service provision and the consumer's environment and daily routine.**

CASE STUDY 6: TECHNOLOGY-ENHANCED COORDINATED CARE - RDNS-SILVER CHAIN'S INTEGRUM PROGRAM

This Case Study is based on a structured interview undertaken in June 2020 with Kristina Walsh RN. It draws on her direct experience in delivering technology-enabled care to older people living at home and highlights the value added by technology, and how this distinguishes such care from traditional coordinated care initiatives.

This example of good practice also illustrates the importance of digital literacy on the part of service providers and consumers, and of organisational learning cultures that support innovation and technology (through leadership and practice).

The *Integrum* multidisciplinary model of coordinated care

Integrum is an innovative model of health care designed for people with chronic and complex care needs who are living in their own home, have multiple chronic conditions and have had one or more unplanned hospital admissions in the previous 12 months. Designed to reduce hospital, emergency department and residential aged care admissions, it was a pilot undertaken by Silver Chain⁶ in Western Australia from March 2018 to February 2019 and introduced in South Australia later in 2019 with funding from SA Health until June 2021.

The *Integrum* multidisciplinary care team includes a medical officer, geriatrician, registered nurses, social workers, non-dispensing pharmacists, exercise physiologists and care support workers with allied health clinicians available. This model works across the primary health, acute health and aged care sectors, providing coordinated care that is case-managed by a registered nurse. Services offered by *Integrum* include a dedicated phone number that is accessible 24 hours a day, and individual and group education opportunities, such as exercise physiology classes, that are designed to help proactively manage chronic conditions and encourage self-management by clients.

Technologies applied and enablers to support its use

Technology is key to this program, adding value and distinguishing it from traditional coordinated care initiatives.

[Silver Chain](#) has an established reputation as an innovator and early adopter of telehealth and telecare. For example, in late 2015, it became the first non-government organisation to be made part of the Emergency Telehealth Service network, a WA Country Health Service initiative.

[RDNS-Silver Chain](#) has also been a pioneer in using telehealth technology as part of its virtual nursing program. This supports clients with medication-prompting via video conferencing with a nurse and using a range of remote health monitoring technologies. Eligible clients have a video conference App-enabled Samsung tablet set up in their home with a wireless broadband connection and provided as part of the program.

⁶ The Silver Chain Group includes the Royal District Nursing Service (RDNS) in South Australia, and Silver Chain in Western Australia, Queensland, Victoria and New South Wales.

Clients receive significant support and training to benefit from the technology offerings of *Integrum* and other RDNS-Silver Chain services. An initial assessment using a modified, evidence-based screening tool, assesses clients not only for their care needs but also for their technology readiness. Those who are able to engage participate actively, using mobile phones and tablets as key devices, together with selected health Apps, while RDNS-Silver Chain are exploring the use of passive monitoring technologies for those who are less technology-adept.

The impending (at the time of writing) addition in July 2020 to the *Integrum* program of remote health monitoring for clients with respiratory, cardiac or mental health conditions is the latest offering. Use of this technology will enable clients to better understand what is happening with their body and how they can respond proactively to any changes in their health or wellbeing. The remote health monitoring program will utilise the Silver Chain Portal for clients to answer daily questions and clinical observations and is based on a respiratory remote health monitoring program which has been provided successfully by Silver Chain in WA.

Barriers and challenges

-  The main barrier to adoption is most likely to involve inadequate technology infrastructure, particularly poor connectivity issues.
-  While concerns about privacy and confidentiality are potential barriers, RDNS-Silver Chain have found that these are overcome if technology is introduced once a positive relationship is established with clients – highlighting the importance of trust in establishing technology-enhanced care services. RDNS-Silver Chain also ensure any technology utilised meets their security and privacy standards for the protection of clients and the organisation.
-  Determining ways to integrate technology into work processes and clients' lives takes a significant amount of time but is critical to adoption and ongoing use in care delivery.

Lessons learned

- ✓ **Challenging widespread assumptions about older people's acceptance of technology, RDNS-Silver Chain staff have noticed that most clients are keen to embrace technology, including video-based methods of communication. Recently a client's daughter, who was working at the time of the client's appointment with the Integrum doctor, was able to join the appointment via videoconference from her desk at work. As his primary support person, she valued highly this level of inclusion in her father's care.**
- ✓ **A range of supports and training, together with integration of technologies in the home, ensure that consumers can engage effectively with the Integrum as part of daily life.**
- ✓ **The *Integrum* program benefits from being part of an organisation with an established culture of innovation and technology adoption. It has been able to be implemented readily within this supporting structure which includes technology-focused workforce training and development as well as organisational leadership that is committed to innovation.**

CASE STUDY 7: TECHNOLOGY-ENABLED MEDICATION MANAGEMENT AT LIFE CARE

This Case Study is based on a structured interview undertaken in November 2019 with Mr Warren Ortmann, General Manager Corporate Services at [Life Care](#), an innovative not-for-profit aged care provider in South Australia. It illustrates how one aged care provider overcame silo-based boundaries between primary care, pharmacy care and aged care by creating a local ecosystem based on cross-sectoral partnerships, and shifted to technology-enabled medication management.

Issues addressed with technology-enabled medication management

In Australia medical error results in as many as 18 000 unnecessary deaths annually, and more than 50 000 patients becoming disabled each year (Kohn et al 1999).⁷ Errors resulting in preventable adverse events occurred most often during the ordering (56%) and administering of (24%) medications (Bates et al 1995).⁸ Paper-based medication brings multiple problems relating to duplicated information, conflicting information, illegible handwriting and lost faxes – all of which create the potential for errors and wastage of resources.

Keen to address these issues, Life Care explored technology-enabled medication management tools and in **2017**, became the first provider in Australia to adopt [Medi-Map](#), which is used widely in New Zealand health and aged care systems.

The Medi-Map medication management technology

[Medi-Map](#) provides a cloud-based means to chart, store and share medication records and was developed by a New Zealand pharmacist working in collaboration with technology partners. It has been found to generate quality care benefits as well as resource efficiencies (through time saving automation and reduced medication errors and wastage). Its stock control and stock-taking software also supports detailed tracking of pharmaceuticals and automated re-ordering.

The [Medi-Map](#) system overcomes the lack of interoperability and sharing of health and aged care consumers' health needs and records by creating its own GP-aged care provider-pharmacist ecosystem. This involves Life Care's five residential facilities, a well-known Adelaide pharmacy chain and clients' GPs (with the latter controlling its operation, preparing prescriptions and updating these as needed onto [Medi-Map](#).) Participating pharmacists send prescriptions to Life Care's RNs in an automated process that has significantly reduced the time involved in ordering and providing prescribed medications.

Evaluation of [Medi-Map](#) in New Zealand was undertaken with one large district health board and found a 22 per cent decrease in wastage over 12 months. Participating doctors identified improvements in the speed at which they could review records, chart medication and send or

⁷ Kohn LT, Corrigan JM, Donaldson MS (eds) (1999) *To err is human: building a safer health system*, National Academy Press, Washington, DC

⁸ Bates D, Cullen D, Laird N, Petersen L, Small S, Servi D et al. (1995) Incidence of adverse drug events and potential adverse drug events, *JAMA*, 274:29–34

receive notifications. Feedback from nurses cited the freeing up of their time to care for patients as a result of the system's efficiencies.⁹

Integration of Medi-Map in Life Care service provision

When Life Care staff do their medication rounds, they log in to the **Medi-Map** system, identify which residents need what medication and at what time(s). They cannot log out of the system until the medication has been administered. All care staff can view clients' medication requirements, but only designated staff can provide that medication.

Supported with an intense training program, a dedicated trainer was placed onsite for four weeks per facility to train and support staff in its use, with the program being rolled out progressively over Life Care sites as training was completed at each site.

Lessons learned

- ☑ **Technology-enabled medication management can achieve a range of efficiencies in resource usage and operational processes, while reducing a range of risks associated with paper-based methods.**
- ☑ **It is critical to implement this (and any technology) with a well-designed training program that is ongoing rather than once-off, accompanied by an on-site support person to ensure its application is correct and understood by staff.**
- ☑ **It is possible to overcome sector-based boundaries by creating a partnership-based ecosystem that overcomes lack of interoperability and promotes coordinated consumer record keeping and sharing.**

⁹ Case Study - <https://www.sparkdigital.co.nz/case-studies/medi-map/>

WWW.ACITC.COM.AU