

Review of Assistive Technology Programs in Australia

Final Report

for the Australian Government Department of Health

Australian Healthcare Associates

9 June 2020

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Abbreviations

Abbreviation	Definition
ABS	Australian Bureau of Statistics
ABS SDAC	Australian Bureau of Statistics Survey of Disability, Ageing and Carers
ACAS	Aged Care Assessment Services
ACAT	Aged Care Assessment Team
ACFI	Aged Care Funding Instrument
ADL	Activities of Daily Living
AHA	Australian Healthcare Associates
AHPRA	Australian Health Practitioner Regulation Agency
AIHW	Australian Institute of Health and Welfare
AF	Atrial fibrillation
AT	Assistive technology
AT-HM	Assistive Technology and Home Modifications
CBA	Cost-benefit analysis
CDC	Consumer directed care
CHSP	Commonwealth Home Support Program
COPD	Chronic obstructive pulmonary disease
the Department	Australian Government Department of Health
DHS	Australian Government Department of Human Services
DIY	Do-it-yourself
DVA	Department of Veterans' Affairs
ECEI	Early Childhood Early Intervention
GORD	Gastro-oesophageal reflux disease
HACC	Home and Community Care
HCP program	Home Care Packages program
HQOL	Health-related quality of life
ICF	World Health Organization International Classification of Functioning, Disability and Health
ILC	Independent Living Centre
MBS	Medicare Benefits Schedule
MCA	Middle cerebral artery
MDS	Minimum data set
MDT	Multidisciplinary Team
MOW	Meals on Wheels
NACA	National Aged Care Alliance

Abbreviation	Definition
NDIS	National Disability Insurance Scheme
NED	National Equipment Database
NIIS	National Injury Insurance Scheme
NIISQ	National Injury Insurance Agency, Queensland
OH&S	Occupational Health & Safety
OT	Occupational Therapist
P&O	Prosthetics and Orthotics
PDW	Power drive wheelchairs
PIL	Promoting Independent Living
RAS	Regional Assessment Service
RER	Rapid evidence review
RFQ	Request for quote
STRC	Short-Term Restorative Care Program
TCP	Transition Care Program
TGA	Therapeutic Goods Administration
WHO	World Health Organization

Glossary

Term	Definition
AT Products	Items of assistive technology
AT Services	Services or ‘soft technology’ used to support the use of AT
AT Products and Services	AT Products and AT Services make up an AT Products and Services Any product (including devices, equipment, instruments and software), especially produced or generally available, used by or for persons with disability for participation, to protect, support, train, measure or substitute for body functions/structures and activities, or to prevent impairments, activity limitations or participation restrictions
Core Activity Limitation	The Australian Bureau of Statistics Survey of Disability, Ageing and Carers (ABS SDAC) provides information on core activity limitations. Core activities are communication, mobility and self-care. Four levels of severity are provided: Mild limitation—People who need no help and have no difficulty, but use aids or equipment for core tasks or have one or more of the following limitations: <ul style="list-style-type: none"> • Cannot easily walk 200 metres • Cannot walk up and down stairs without a handrail • Cannot easily bend to pick up an object from the floor • Has difficulty or cannot use public transport Moderate limitation—people who need no help but have difficulty Severe limitation—people who sometimes need help and/or have difficulty Profound limitation—people with the greatest need for help or who are unable to do an activity
Disability	In the ABS SDAC, a person is considered to have disability if they have at least one of a list of limitations, restrictions or impairments, which has lasted, or is likely to last, for at least 6 months and restricts everyday activities. The severity of disability is further defined according to the degree of assistance or supervision required in core activities—self-care, mobility, and communication—and grouped for mild, moderate, severe, and profound limitation.
ISO 9999 and AS/ISO 9999	The International Organization for Standardization (ISO) is an independent, non-governmental organisation with a membership of 164 national standards bodies, whose remit is to develop and publish international standards. ISO 9999 establishes a classification of assistive products that have been produced for persons with disability. All assistive products in AS/ISO 9999 are primarily intended for use outside of health care settings. Assistive products are classified according to their function. The classification consists of three hierarchical levels, with classes, subclasses and divisions. For the purposes of this review, 12 ISO 9999 classes are used. The AS/ISO has been adopted by Australia.
Soft technology	AT services associated with providing AT products
States	Australian state and territory jurisdictions

1 Executive summary

In December 2019, the Department of Health (Department) engaged Australian Healthcare Associates (AHA) to undertake a Review of Assistive Technology (AT) programs in Australia. This is the final report for the Review.

1.1 Objective and scope

The key objective of the review was to identify options and future models for improving access to AT for older Australians. This included:

- Summarising the current AT arrangements in Australia
- Considering the benefits of AT
- Assessing the impact of AT on reducing ongoing costs for in-home aged care
- Identifying which types of AT should be subsidised by government or purchased privately.

The scope of the review was broad, and included:

- Older Australians who include non-indigenous people aged 65 years and older and Aboriginal and Torres Strait Islanders aged 50 years and older
- National, state and territory AT programs that target older Australians
- Australian Government aged care programs.

Note that within a program context, AT includes goods and equipment as well as home modifications. Residential aged care was not in scope for this review.

1.2 AT and aged care

Aged care in Australia is currently undergoing reform to achieve a more consumer-focused, equitable and sustainable system. A key aspect of these reforms is to promote older Australians' independence and autonomy (Australian Government Department of Health 2018b). AT can help consumers maintain independence and stay in their homes as long as they wish to do so. It does this by:

- Maintaining or improving a person's functional capabilities—this includes assisting with everyday tasks such as dressing, bathing and household cleaning. These everyday tasks are commonly known as Activities of Daily Living (ADLs).
- Preventing impairments and secondary health conditions—for example, reducing risk and improving safety through falls prevention.
- Reducing the burden on family carers, as well as paid formal carers, by making it easier and safer to provide assistance.

AT can be categorised in many ways. Within the aged care setting—and for the purposes of this review and related economic modelling—it is useful to use the following categories reflecting levels of complexity:

- **Low-risk AT:** Simple and relatively low-cost daily living aids such as a long-handled duster or a jar opener. Low-risk AT is usually available 'off the shelf' and needs no clinical input to use. Low-risk AT is defined as having a low potential for causing harm when used for activities in daily living environments (Therapeutic Goods Administration 2020).

- **Under-advice AT:** Products that are generally available but would benefit from written or professional advice to ensure that they are used or installed correctly. Examples include body system monitors, wheeled walking frames and personal alarms.
- **Prescribed AT:** More complex and often more costly technology that is adjusted or configured precisely to meet individual support needs. Examples include scooters, powered wheelchairs, patient hoists, and adjustable beds.

1.3 Review methodology

This review was conducted between December 2019 and June 2020 and consisted of four phases:

1. **Planning** the AT review, including developing a project plan and engaging external expert advisors including OTs (occupational therapists).
2. **Mapping** current AT programs, which included:
 - Desktop analysis of AT Programs
 - Rapid Evidence Review (RER)
 - Consultations with 30 stakeholders including the Department, state and territory AT policy and program managers, disability and AT peak organisations, Independent Living Centres, academics and experts in reablement and AT in the aged care setting.
3. **Modelling**—Building on the desktop analysis and RER, the modelling phase involved:
 - Cost benefit analysis
 - Delphi technique.
4. **Reporting**—AHA provided the Department with an Initial Report (January 2020), an Interim Report (March 2020) and this Final Report (June 2020).

For details of the review methodology, see *Supplementary Technical Report, Appendix A*.

1.4 Findings: Mapping current AT programs

Findings from Phase 2 of this review—mapping current AT programs—are summarised below to reflect a typical consumer journey: from initial information and advice, to assessment where necessary, before provision of AT products.

1.4.1 Information and advice

- Consumer understanding of AT is often poor, and many are not aware of the range of AT that can assist them. Consumers need, but do not currently have, ready access to an independent and trusted source of information. Impartial information and advice are important as AT is a broad umbrella term that encompasses an extensive and diverse range of products—from low-risk, simple relatively inexpensive daily living aids, to emerging smart technologies for use around the home, and customised, highly complex and costly products.

- Low-risk AT can be purchased ‘off the shelf’ by consumers, without assessment or prescription. High rates of abandonment, however, suggest that consumers would benefit from receiving better information and advice to select the appropriate low-level AT products.
- Consumers may frequently perceive AT to be designed primarily for people with disabilities, which can deter them from seeking advice. This stigma can be felt particularly by those early in the ageing process with relatively low-level needs.
- GPs and other health professionals also commonly have knowledge gaps in relation to AT, including what products, services and programs are available, and how consumers can access them.

1.4.2 Assessment

- While low-risk AT may only require information and advice, more complex AT does need clinical assessment pathways to ensure appropriate prescription—in addition to consumer training and support in AT usage. Stakeholders and published literature clearly indicate that this will maximise the likelihood of consumer uptake of, and benefit from, AT.
- Consumers may be unwilling or unable to pay for the appropriate clinical assessment, or they may not understand the importance of having fit-for-purpose AT. For these consumers, the full benefit of AT may not be realised.

1.4.3 Provision

Overall, the review identified at least 65 different national, state and territory programs that provide AT for older Australians. However, access to AT for older Australians is inequitable and programs are not designed to respond to the changing needs of ageing consumers. Factors contributing to this include:

- **Fragmented** state and territory programs, funding many different types of AT and providing varying levels of subsidies to consumers. Each program has different AT funding arrangements for consumers, a lack of transparency around what is available and unclear eligibility criteria.
- **Complexity** within and between national, state and territory programs, making the system difficult to navigate—for consumers, service providers, referring health professionals and even system managers such as state and territory governments.
- **Rigid** aged care programs that are not generally designed to meet the changing AT needs of consumers through their life, or as they transition from one program to another. There is a lack of guidance around what happens to AT after a consumer exits a program.

The review team examined leasing and loan arrangements, with stakeholders having mixed views. Any consideration of national leasing or loan arrangements would need to be examined separately to determine the cost effectiveness of this approach in a national context.

1.5 Findings: Cost–benefit analysis

A cost-benefit analysis was conducted that involved the following components:

- Cost analysis
- Benefits analysis
- Return on investment for AT program options.

Cost analysis

- An assessment of the prevalence and distribution of the population of older Australians who require AT assistance
- Identification and costing of AT products and services, including AT kits (groups of products) to assist older Australians not in the aged care system, as well as those in the aged care system, to improve their capacity to live independently
- Costing the provision of AT for the:
 - Total population of older Australians
 - Select ‘Archetypes’ representative of Commonwealth Home Support Program (CHSP) clients with mild, moderate, severe and profound limitations
 - Consumers in aged care programs.

Benefits analysis

A rapid evidence review (RER) was supplemented with a Delphi technique, involving a focus group of AT experts and consumer representatives, to determine the benefits associated with AT. Both the RER and the Delphi technique were consistent in terms of the direction of the benefits identified. While the quality of the evidence in the published literature was relatively weak, both the RER and the Delphi technique found that the benefits of AT outweighed its costs, supporting the increasing use of AT as an intervention for older Australians. Four distinct beneficiaries of AT were identified in the literature and in our consultations with stakeholders: consumers, carers, service providers and governments.

Return on investment for AT program options

The benefits analysis included return on investment calculations for future program options. Our cost benefit analysis has derived the estimated cost and return on investment for the framework detailed in *Section 1.6* and Chapter Four.

1.6 Future program options

This report describes a new national framework for providing AT for older Australians. It is designed to improve access to AT to enable older people to maintain or improve their independence at home. It responds to the findings from our AT program mapping above, and has a strong focus on the following core elements:

- **Providing free and easily accessible information and advice** to older consumers—including the significant proportion of consumers who are not receiving Commonwealth-funded aged care services. Trusted information and independent advice through multiple channels will increase consumer AT awareness and literacy so that they can make informed decisions at the right time.
- **Extending the reach of the national framework** to provide AT to ageing consumers currently outside of aged care (as well as those in the system)—thus delaying the need for more complex and costly aged and health care support.
- **Intervening earlier in the ageing process** to not only maximise the return on investment, but also slow functional decline and assist consumers at home. This includes providing—for the first time—funded access to low-risk AT that assists consumers in their ADLs, such as bathing, dressing, and

household cleaning. The proposed ADL kits have been deliberately designed to assist in, and supplement, relatively high-cost CHSP service types including personal care and domestic assistance.

- **Expanding the limited CHSP funded AT list** to better reflect the ISO international AT categories, including:
 - AT to enhance home safety, including rug fasteners, wall bumpers and falls prevention measures such as safety treads
 - AT for domestic activities, including cleaning and outdoor maintenance
 - AT for postural support, including chair raisers and bed transfer aids.
- **Increasing equity in state and territory CHSP funding allocations to ensure access for older Australians.**
- **Building the evidence base** for AT use in the home to inform future directions in aged care. This is particularly important given the paucity of peer-reviewed literature and AT program reviews.

1.6.1 AT program options

New pathways are consistent with the core elements listed above.

AT program options include:

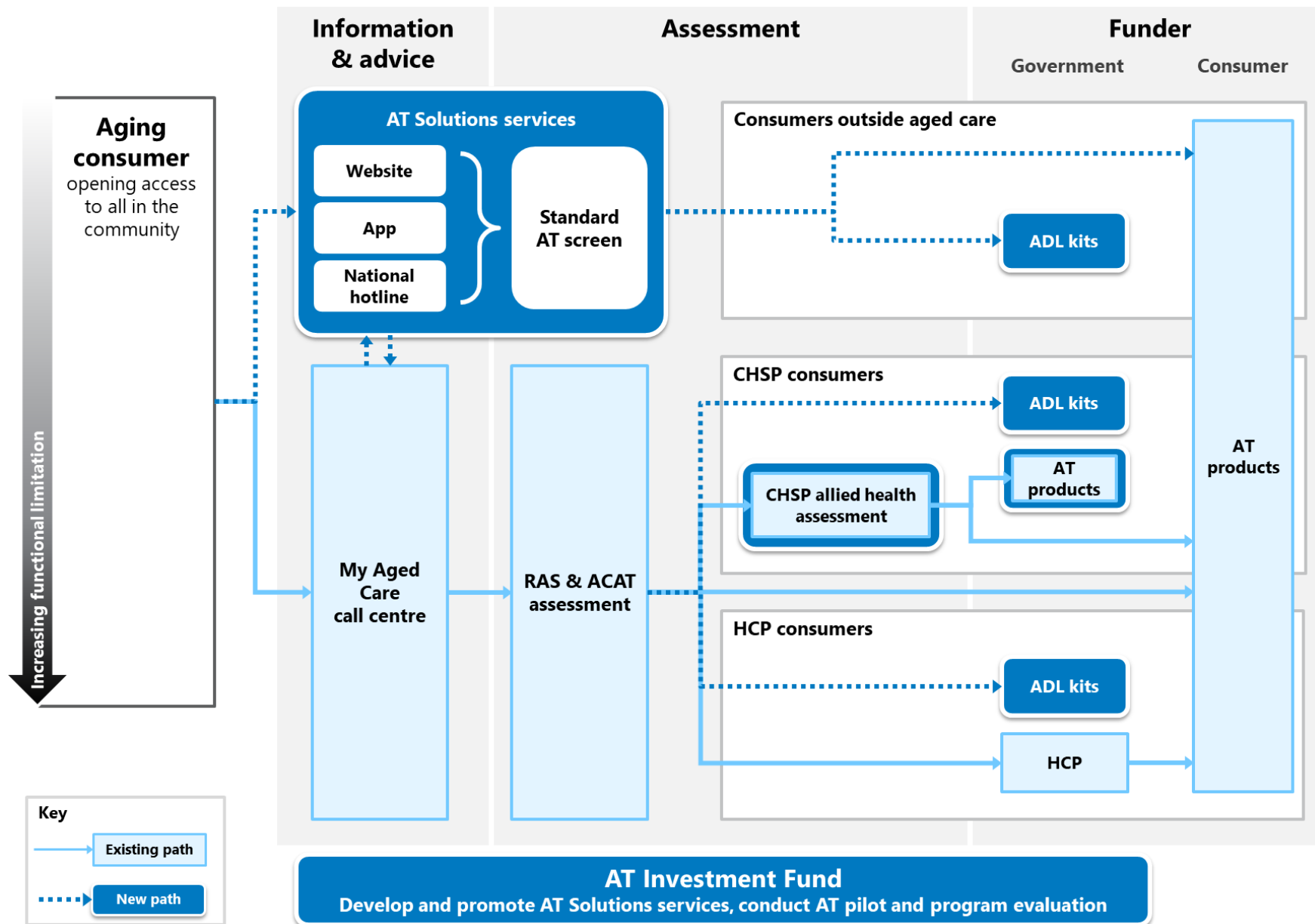
- A new AT Solutions suite of services (including a website, app and hotline) to provide a first point of contact for older consumers inside and outside of aged care, and offer independent AT information and advice. This should include a digital AT screening tool to enable consumers to identify ADLs they have difficulties with, and then assist in identifying AT that can help them maintain or improve functioning. This is seen as a foundation initiative for the program.
- ADL kit options for:
 - Consumers not in aged care
 - CHSP consumers
 - Home Care Package Level 1 and 2 consumers.
- Program funding options to boost AT, including:
 - Funding equity options for CHSP across states and territories
 - Expanding the categories of AT products available for CHSP consumers
 - Funding additional CHSP allied health assessments to support the increased provision of AT products to CHSP consumers.

An AT investment fund is also proposed to support the development, promotion and implementation of new consumer pathways and to evaluate their effectiveness.

Figure 1-1 illustrates the new national framework, including new and existing consumer pathways.

1. Executive summary

Figure 1-1: Proposed national framework of AT support, showing new and existing consumer pathways



Note: This figure also appears as Figure 4-1: Outline of the AT Framework.

1. Executive summary

Table 1-1 details the costs and return on investment for the nine AT options.

Table 1-1: AT program options, cohort costs and return on investment

Type	Program options	Cohort	Cost per year (\$ millions)	ROI (for every \$1 spent)
ADL kits	1. Consumers outside aged care system	16,521	\$2.0 m	\$6.95
	2. CHSP reablement consumers	32,457	\$3.9 m	\$18.13
	3. CHSP reablement and reassessed consumers	64,914	\$7.9 m	\$33.83
	4. New CHSP and reassessed consumers	194,780	\$23.6 m	\$23.71
	5. New HCP level 1 and 2 consumers	43,852	\$5.3 m	\$27.36
CHSP AT boost	6. State CHSP AT funding equity	60,301	\$22.9 m	\$15.41
	7. State CHSP HM funding equity	64,354	\$49.3 m	\$7.24
	8. State CHSP AT funding parity and expended AT list and \$1,500 cap	60,301	\$63.9 m	\$5.15
	9. Expanded AT list for new CHSP consumers	162,286	\$61.0 m	\$6.55
Foundation costs	<ul style="list-style-type: none">AT Solutions: website, app, hotlineInvestment fund: AT screen, AT pilot, Promotion and evaluation		\$4.9 m	

Note: This table also appears as Table 4-3.

Each AT program option has a positive return on investment, ranging from \$5.15 (Option 8) to \$33.83 (Option 3) for every \$1 spent on AT. For example:

- Option 4 included the most clients (n=194,780) and had a \$23.71 return on investment (one ADL kit per person for all new CHSP clients plus all reassessed clients).
- Option 1 included the least clients (n=16,521) and had a \$6.95 return on investment (consumers outside of aged care who use the hotline and are eligible for an ADL AT kit following a screening assessment).

Note that foundation costs include the operational costs for the digital platform, in addition to the investment fund that supports the new AT program. Foundation costs remain the same regardless of which options the Department chooses to select.

1.6.2 Program administration

Currently, AT is procured under disparate and disconnected programs, representing a lost opportunity to leverage the breadth and reach of a national approach.

If ADL kits are to be used, then a public-facing agency is suggested to package and send kits directly to consumers. There may be considerable efficiencies in establishing a national AT administrative agency to contract suppliers, procure AT equipment, and package and distribute AT products to consumers.

The AT administration agency could also manage all AT procurement and delivery for aged care programs.

The option of an AT administration agency has been included and costed on the following basis:

- If the agency administers ADL kits only (which are estimated to have an average cost of \$121.47), 50% administration costs have been included for contracting suppliers, packaging and distribution
- If the agency administers all AT products supplied under the CHSP program, then an estimated administration cost of 30% has been added for contracting suppliers, procurement, packaging and distribution. The administration costs are lower compared to the administration costs for ADL kits as there are single AT items that do not require packaging into kits.

The role of this national agency could be extended to include AT equipment leasing and loan arrangements. One option is to consider the development of short-term equipment loan or leasing arrangements with Independent Living Centres or State/Territory Aids and Equipment Programs to facilitate consumer 'try before you buy' options. Another option may be to explore no-interest loans to consumers on low incomes to purchase high-cost AT. This has proven an effective strategy to increase access and facilitate some program cost recovery, and could also be considered as part of the AT administration agency role. This would, however, need to be further examined as part of the detailed program design phase and could be included as part of a pilot.

An AT Solutions provider could be contracted to undertake AT procurement and supply, as well as operate the AT Solutions suite of services.

1.6.3 Budget options

The Department has requested that options be developed for three budget envelopes—\$30 million, \$50 million and \$100 million dollars per year. We have costed each AT option so that it is possible to pick and choose and combine options in a variety of ways.

While the selection of options will be influenced by the areas where the Department would see most value, our suggested options that approximate the budget envelope are as follows:

1. \$27.8 million option includes AT for consumers outside of aged care, CHSP and HCP consumers:

- Foundation costs (\$4.9 million)
- Option 1: ADL kits for eligible consumers outside of aged care (\$2.0 million)
- Option 3: ADL kits for new CHSP reablement and reassessed consumers (\$7.9 million)
- Option 5: ADL kits for new Home Care Package 1 and 2 consumers (\$5.3 million)
- AT Administrator: 50% of ADL product costs (\$7.6 million)

2. \$48.7 million option includes AT for consumers outside of aged care, CHSP and HCP consumers:

- Foundation costs (\$4.9 million)
- Option 1: ADL kits for eligible consumers outside of aged care (\$2.0 million)
- Option 2: ADL kits for new CHSP reablement (\$3.9 million)
- Option 5: ADL kits for new Home Care Package Level 1 and 2 consumers (\$5.3 million)
- Option 6: State CHSP AT funding (\$20.6 million)
- AT Administrator: 30% of AT product costs (\$9.6 million)
- Additional allied health assessments (\$2.4 million).

3. \$100.1 million option for consumers outside of aged care and CHSP consumers:

- Foundation costs (\$4.9 million)
- Option 1: ADL kits for eligible consumers outside of aged care (\$2.0 million)
- Option 3: ADL kits for new CHSP reablement and reassessed consumers (\$7.9 million)
- Option 8: Expanded AT list with state equity up to a cap of \$1,500 (\$61.5 million)
- AT Administrator: 30% of AT product costs (\$21.4 million)
- Additional allied health assessments (\$2.4 million).

1.7 Conclusion

The breadth and number of challenges hindering access to AT demonstrate the timeliness of this review. Issues at key stages in a typical ageing consumer's journey—from a lack of independent information and readily available advice, to clinical assessment where necessary before provision of AT products—means that consumers might not know of, or be able to obtain, the AT they need at the right time to maintain their independence.

Our economic modelling has found that the benefits of AT outweigh its costs, supporting the increasing use of AT as an intervention for older Australians. We have developed and individually costed nine program options from which the Department can design a new national AT approach. Options range from \$2 million to \$61 million, and each has a positive return on investment, ranging from \$3.90 to \$25.63 for every \$1 spent. These options provide for:

- Impartial AT information and consistent, evidence-based advice for all ageing consumers
- ADL kits that assist in everyday tasks at home, for consumers outside and inside aged care
- Boosted existing CHSP AT funding, including state funding equity and expanding the categories of AT products available.

There are benefits for the health and aged care systems, although the evidence quantifying these benefits is still emerging.

There is still much that is unknown in the use and application of AT for older Australians. At the very least, there is an opportunity to open up access to consumers not in the aged care system through the provision of information and advice. With additional funding, there may be considerable benefit in both expanding the AT product range as well as the level of funding available for AT programs. Regardless, a staged approach involving an initial trial is suggested to ensure that a national rollout of the new approach builds an evidence base to ensure that it is appropriate for consumers and cost effective.

2 Introduction

In December 2019, the Department of Health (the Department) engaged Australian Healthcare Associates (AHA) to undertake a Review of Assistive Technology Programs in Australia. This is the Final Report for the review.

2.1 Review purpose and scope

This review was established to:

- Summarise the current AT arrangements in Australia, including how aged care intersects with the health and disability system in relation to AT
- Consider the benefits of AT, including the potential to mitigate risks in providing care to frail, older people in their homes, and to support relationships between carers and consumers
- Look at the impact of AT on reducing ongoing costs for in-home and residential aged care
- Identify which types of AT should be subsidised by government or purchased privately, and how rental markets could be better used to improve access
- Advise on options and future models for improving access to AT for older Australians.

The scope of this review is broad and includes:

- Older Australians who include non-indigenous people aged 65 years and older and Aboriginal and Torres Strait Islanders aged 50 years and older
- National, state and territory AT programs that target older Australians
- Australian Government aged care programs including:
 - Commonwealth Home Support Program (CHSP)
 - Home Care Packages (HCP)
 - Transition Care Program (TCP) and Short-Term Restorative Care Program (STRC)
 - National Aboriginal and Torres Strait Islander Aged Care Program (NATSIFAC).

Residential aged care was not in scope for this review

- Within aged care programs, AT includes the following program components:
 - Goods, Equipment and AT
 - Home modifications.

2.2 Review methodology

The review was conducted between December 2019 and June 2020 and involved mapping the current AT programs, conducting a Rapid Evidence Review (RER) and cost-benefit analysis and proposing future options for a national AT program for older Australians. AHA's mixed-methods approach is outlined in *Figure 2-1*. The review comprised four phases:

- Phase 1: Planning
- Phase 2: Mapping current AT programs:
 - Desktop analysis of AT Programs
 - Rapid Evidence Review (RER)
 - Consultations with key stakeholders including Commonwealth, state and territory representatives, disability and AT peak organisations, state and territory AT program administrators, Independent Living Centres, academics and experts
- Phase 3: Modelling:
 - Cost benefit analysis
 - Rapid evidence review
 - Delphi technique
- Phase 4: Reporting – AHA provided the Department with an Initial Report (January 2020), an Interim Report (March 2020) and this Final Report (June 2020).

For more information on the review methodology, see *Supplementary Technical Report, Appendix A*.

2.3 Report structure

This report comprises four main sections:

1. Executive summary
2. Introduction, including an overview of AT in Australia and relevant findings from the desktop review, stakeholder consultations and mapping process
3. Cost-benefit analysis methods and results
4. Future program options.

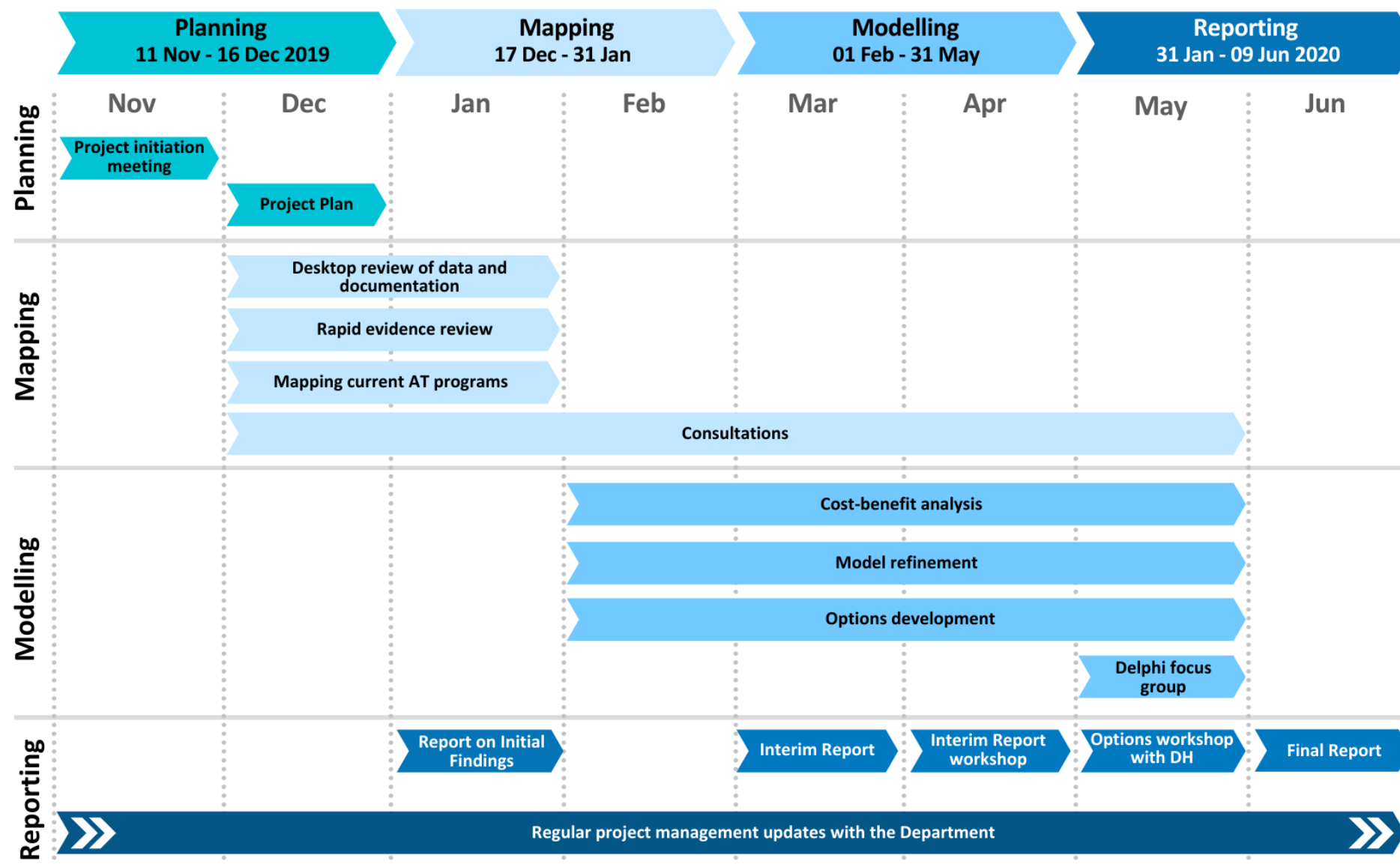
A separate *Supplementary Technical Report* contains seven appendices:

- A. Review methodology
- B. Rapid Evidence Review
- C. Delphi technique for a Consensus Statement on the Benefits of AT
- D. Archetypes
- E. Existing AT programs
- F. AT information and advice resources
- G. References.

Our *Supplementary Cost–Benefit Model Report* has been provided separately to the Department.

2. Introduction

Figure 2-1: AT Review methodology



2.4 AT in Australia

2.4.1 Introduction

Aged care in Australia is currently undergoing reform to achieve a more consumer-focused, equitable and sustainable system. A key aspect of these reforms is to promote older Australians' independence and autonomy—and thereby reduce or delay the need for more complex aged care services (Australian Government Department of Health 2018a).

As people age, they may become frailer and experience functional decline or disability. AT can help consumers maintain independence and autonomy by:

- Maintaining or improving a person's functional capabilities—this includes assisting with everyday tasks such as dressing, bathing and household cleaning. These everyday tasks are commonly known as Activities of Daily Living (ADLs).
- Preventing impairments and secondary health conditions, for example reducing risk and improving safety through falls prevention.
- Reducing the burden on family carers and paid formal care by making it easier and safer to provide assistance.

Australia's population is ageing. Australians aged 65 years and older currently make up 15% of the total population, and that proportion is expected to grow over the coming decades. By 2027, this proportion is expected to increase to 18% or 5,180,096 people, which will continue to increase demand on government services.

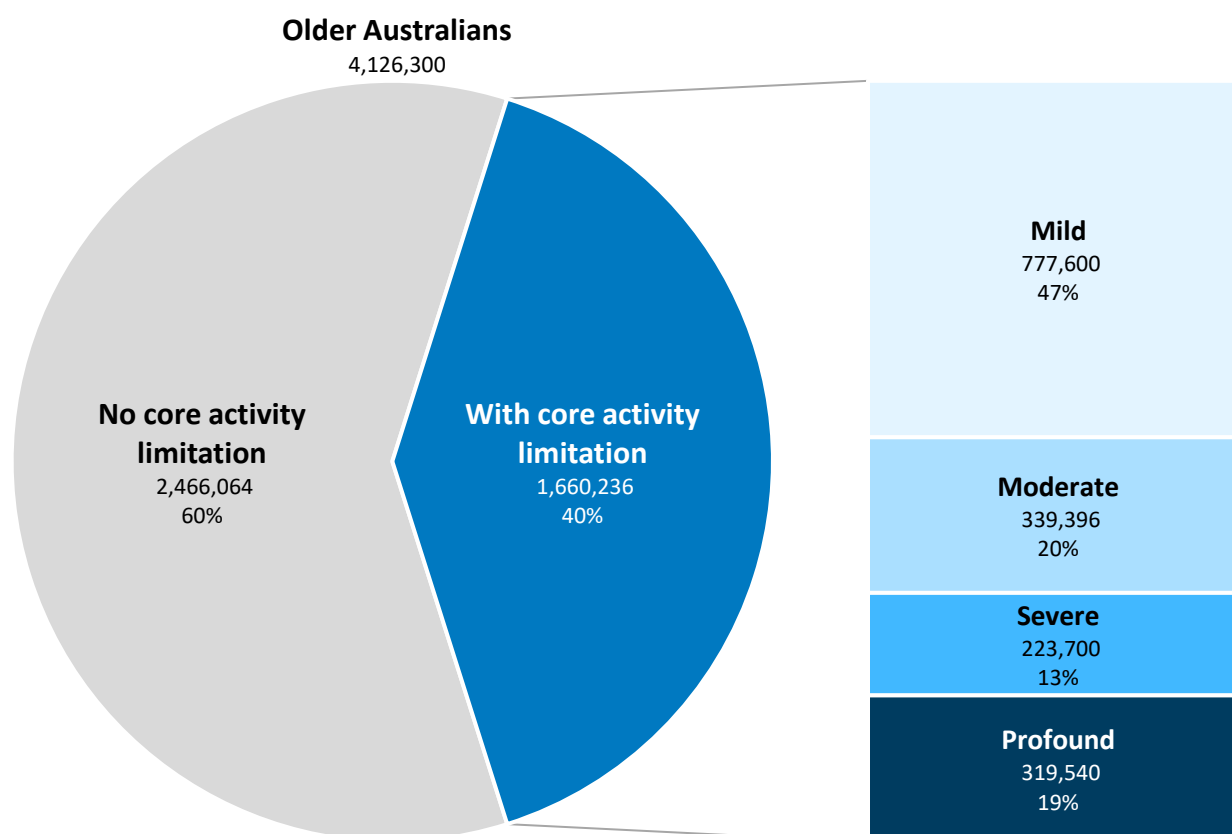
In 2018-19, there were 4.126 million older Australians¹ living at home. Figure 2-2 shows the level of disability, restrictions and impairments of the older population. This shows that 60% of older Australians in 2018 did not have any core activity limitations with 40% having core activity limitation ranging from mild to profound (ABS SDAC) (Australian Bureau of Statistics 2012).

In this context, the ABS defines assistance as *'help that is being received, or needed, but not being received, in common activities of daily life such as showering or dressing, moving around, housework and gardening, or using transport'*.

Targeting AT support for the maximum benefit of consumers, families, carers, and government is challenging but crucial.

¹ Non-Indigenous people aged 65 years and older and Aboriginal and Torres Strait Islanders aged 50 years and over. This is a derived total based with 1,066,800 non-Indigenous Australians aged (65+) (ABS SDAC, 2018) and 76,836 Aboriginal and Torres Strait Islanders (50+) (ABS 2016).

Figure 2-2: SDAC levels of impairment and those needing assistance



2.4.2 What is AT?

This review has used the World Health Organization (WHO) definition of AT:

‘Assistive devices and technologies are those whose primary purpose is to maintain or improve an individual’s functioning and independence to facilitate participation and to enhance overall well-being.’ (World Health Organization n.d.).

Approximately one in every 10 Australians uses AT to support their functioning and participation in important areas of their life (Australian Bureau of Statistics 2004, as cited in ATSA 2014). However, there is considerable complexity in the definitions, categorisation, standards and regulation of AT.

2.4.3 AT categories

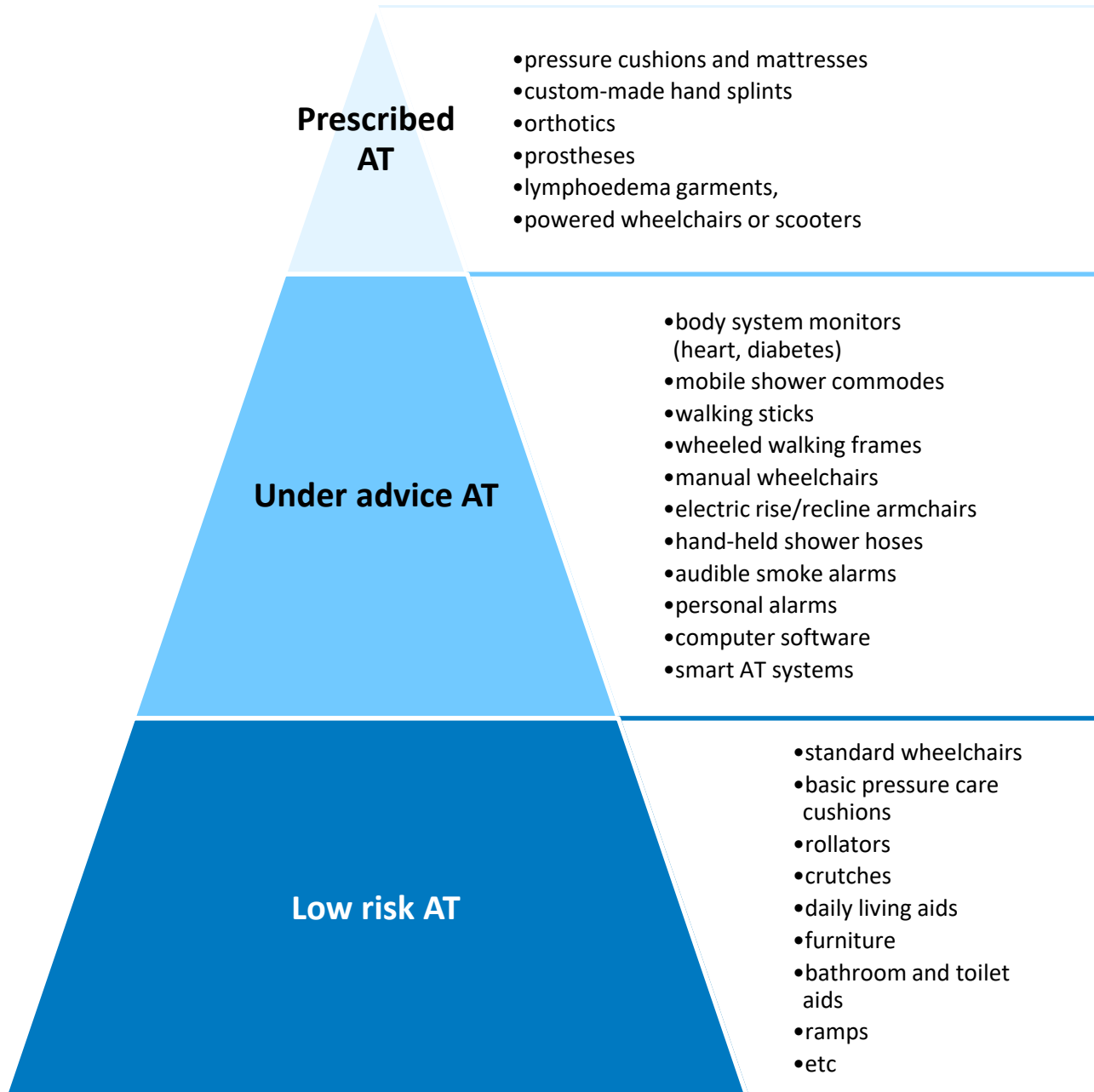
AT can be categorised in many ways. It can be categorised according to complexity, product type or intended purpose. Within the aged care setting—and for the purposes of this review and our economic modelling—it is useful to use the following categories reflecting levels of complexity:

- **Low-risk AT:** Simple and relatively low-cost and low-risk daily living aids such as a long-handled duster or a jar opener. Low-level AT is usually available ‘off the shelf’ and needs no clinical input to use. Low-risk AT is defined as having a low potential for causing harm when used for activities in daily living environments (Therapeutic Goods Administration 2020).

- **Under-advice AT:** low-risk products that are generally available but would benefit from written or professional advice to ensure that the product is used or installed correctly. Products include body system monitors, wheeled walking frames and personal alarms.
- **Prescribed AT:** More complex and often more costly technology that is adjusted or configured precisely to meet individual support needs. Examples include scooters, powered wheelchairs, patient hoists, and adjustable beds.

Figure 2-3 illustrates these three different levels of AT.

Figure 2-3: The AT complexity pyramid



Source: ATSA 2014, Assistive Technology in Australia, Assistive Technology Suppliers Australasia, Paramatta.

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A total of 19 broad AT categories of relevance for this older people have been included in this review, as presented in Figure 2-4.

Figure 2-4: Categories of AT



2.4.4 Standards and regulation

The International Organization for Standardization (ISO) provides international classification and standards for AT in the *Assistive products for persons with disability—Classification and terminology*. These standards are oriented to manufacturers, suppliers and service providers rather than consumers (International Organization for Standardization 2016).

A global move towards the language of health and functioning, rather than disability and limitation, is underway. The agreed approach is found within WHO's International Classification of Functioning, Disability and Health (ICF) and is consistent with the Department's focus on consumer independence and autonomy (International Organization for Standardization 2016, Smith et al. 2018).

The Australian Therapeutic Goods Administration (TGA) regulates therapeutic goods defined as medical devices. Some AT items are TGA regulated while others are not.

The TGA is currently reviewing its approach to AT and developing a determination on assistive technology. This determination uses the ISO 9999 categories of AT and provides greater clarity in defining low-risk AT products (which can be obtained without the need for an allied health assessment) and AT products described as medical devices that will be subject to TGA regulation, requiring prescription by an allied health professional.

The determination defines **low-risk AT products** as products that:

- Have a low potential for causing harm when used for activities in daily living environments
- Are generally available
- Do not require professional advice, set-up or training for effective use.

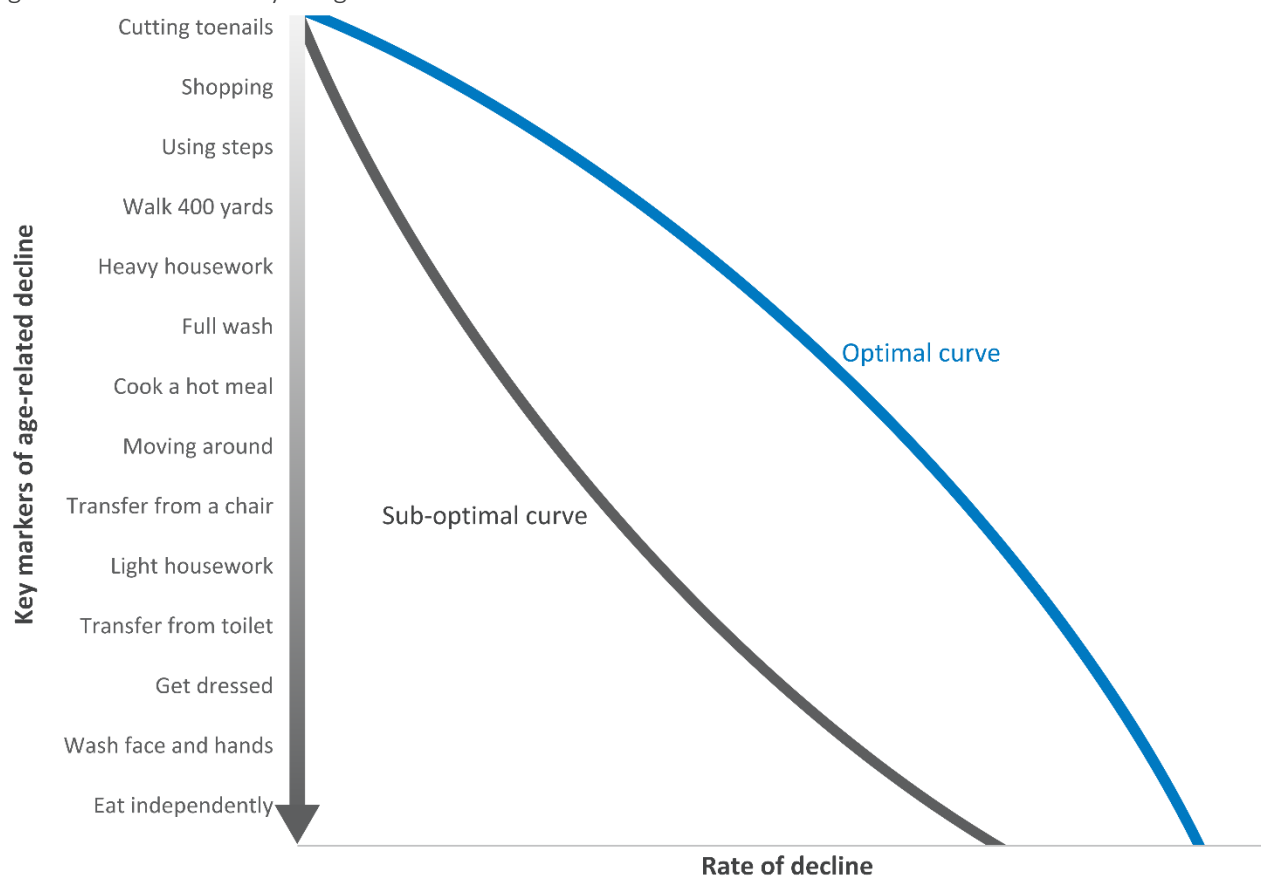
2.4.5 AT in aged care

AT is widely recognised as a key factor in improving outcomes for older people, increasing independence and reducing or delaying the need for more complex aged care services. Two recent reports have identified a need to reform access to AT:

- The 2017 *Legislated Review of Aged Care* recommended that 'the Australian, state and territory governments work together to resolve current issues with the provision of aids and equipment for older people' (Department of Health 2017, p. 168).
- The 2019 *Royal Commission into Aged Care Quality and Safety Interim Report* has recommended a proposed model for the aged care system that includes an Investment Stream that will provide restorative and respite care, AT and home modifications for home care programs (Royal Commission into Aged Care Quality and Safety 2019)

In the UK, Gore et al. have pioneered research which aims to 'understand how age-related functional ability declines at an individual and a population level, and when and where to intervene' noting the importance of his research for older people and policy makers to plan for future care needs. This research has demonstrated that the provision of appropriate, tailored advice and services (including AT) to individuals, can lead to a reduction in formal care hours (Gore et al. 2018). *Figure 2-5* depicts the hierarchy of age-related decline, which shows that chronological ageing is a poor metric for age-related decline. The activities indicated are key markers of progressive decline.

Figure 2-5: The hierarchy of age-related decline



Source: ADL Smartcare

Subject to the ability and willingness of the individual, the best order for interventions is to maintain or recover the ability through targeted exercise or strengthening programs, the use of properly matched AT, then care (Gore et al. 2018).

The following *Table 2-1* maps the stages of the hierarchy of age-related decline against relevant CHSP services, to demonstrate the kinds of formal care consumers could be expected to require, based on their level of functional decline. Reablement and AT interventions that address key activity of daily living markers can have a downstream impact by slowing the need for care, thereby reducing demand on services.

Table 2-1: Mapping the hierarchy of age-related decline steps to the CHSP services

Hierarchy of age-related decline	CHSP Community and Home Support service types
Cutting toenails	Personal care, allied health
Shopping	Transport, Social support individual
Using steps	Allied health, Transport, AT, Home Modifications
Walk 400 yards	Allied health, Transport, AT, Home Modifications
Heavy housework	Allied health, Domestic assistance
Full wash	Personal care
Cook a hot meal	Meals, Other food services, Domestic assistance, Social support individual
Moving around	Home maintenance, Allied health, AT, Home Modifications
Transfer from a chair	Allied health, AT, Home Modifications
Light housework	Domestic assistance
Transfer from toilet	Allied health, AT, Home Modifications
Get dressed	Personal care
Transfer from bed	Personal care, Allied health, AT, Home Modifications
Eat independently	Personal care
Wash face and hands	Personal care

2.5 Current programs in Australia

The desktop analysis and consultations with stakeholders revealed that:

- There are over 75 different national, state and territory programs that support older people to access AT; at least 24 categories of AT; and over 11,000 AT items on the NED. Note: this review has considered 19 categories from the NED that are relevant to older people.
- There is unnecessary complexity within and between national, state and territory programs; a lack of transparency around what is available; and unclear eligibility criteria; making the system difficult to navigate—for both consumers and service providers.
- AT programs delivered by states and territories fund different types of AT and provide varying levels of subsidies to consumers, creating inequities in access across Australia.

2.5.1 National AT programs

Eleven national programs were identified that provide AT to older consumers. Snapshots of these programs, and the AT or subsidies available for each, are provided in Table 2-2 (Australian Government Aged Care Programs), Table 2-3 (Other Australian Government schemes), and Table 2-4 (condition-specific national programs). Eligibility requirements and inclusion and exclusion criteria vary across programs. For further details on these programs, including key eligibility criteria and funding arrangements, see *Supplementary Technical Report, Appendix E*.

Table 2-2: AT and subsidies available under national programs – Australian Government Aged Care Programs

Program	AT and subsidy available to consumers
Commonwealth Home Support Programme (CHSP)	<p>Consumers can access up to \$500 per year to access AT, or up to \$1,000 at provider discretion. No list currently exists of all items included under the CHSP goods, equipment and AT category. The following broad categories are used:</p> <ul style="list-style-type: none"> • Self-care Aids • Support and Mobility Aids • Medical Care Aids • Communication Aids • Other Goods and Equipment • Reading Aids • Car Modifications. • Home modifications (including minor installation of safety aids such as alarms, ramps and support rails in the consumer's home) <p>Services provided by OTs or physiotherapists in prescribing AT are costed as an Allied Health and Therapy Service.</p>
Home Care Packages (HCP) Program	Home modifications (related to care needs), remote monitoring technology and AT including devices that assist mobility, communication and personal safety
Transition Care Program (TCP)	Services include physiotherapy, OT and AT provided on a short-term loan basis.
Short Term Restorative Care (STRC) Program	Services may include OT, physiotherapy, provision of AT to assist with ADLs, and minor home modifications
National Aboriginal and Torres Strait Islander Flexible Aged Care (NATSIFAC) Program	Assistance with personal care, and furnishings, furniture and equipment for the provision of that care

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Table 2-3: AT and subsidies available under national programs –
Other Australian Government schemes (not solely for people aged 65 years or older)

Program	AT/subsidy available to consumers
National Disability Insurance Scheme (NDIS)	<p>People with disabilities are significant consumers of AT products. The NDIS use four levels to describe the complexity of AT needs:</p> <ul style="list-style-type: none">• Simple, low-risk AT• Standard AT• Specialised AT solutions• Complex AT solutions. <p>NDIS participants can choose how they want to manage the funded supports in their plan, and can choose the providers they want to deliver AT supports. Funds can generally be used to:</p> <ul style="list-style-type: none">• Buy the AT outright; or• Access the AT through rental, loan or other arrangements
Department of Veterans' Affairs (DVA) Rehabilitation Appliances Program (RAP)	<p>Aids and appliances available under RAP include continence, diabetes, oxygen and positive airways pressure, mobility and functional support, cognitive, dementia and memory assistive technology, personal response systems, falls prevention, low vision, prosthesis and footwear, hearing appliances and speech pathology.</p>

Table 2-4: AT and subsidies available under national programs –
Condition-specific national programs for particular categories of AT

Program	AT/subsidy available to consumers
Continence Aids Payment Scheme (CAPS)	<p>Provides a yearly non-taxable payment to cover some of the cost of products that help people manage incontinence</p>
Australian Government Hearing Services Program	<p>Provides access to fully subsidised hearing aid devices and advice on how to achieve maximum benefits from hearing aids</p>
Stoma Appliance Scheme	<p>Provides stoma-related products free of charge to people with stomas</p>
Essential Medical Equipment Payment	<p>Provides a yearly payment to help with energy costs to run medical equipment or medically required heating or cooling.</p>

2.5.2 State and territory AT programs

States and territories provide a large range of AT programs. There are at least 65 different jurisdictional programs through which consumers can access AT. Each state and territory has a government-run program and there are at least 57 other programs which exist at the state and territory level, such as transport accident commissions, artificial limb schemes, condition-specific programs and injury schemes.

An analysis of the state-run program rules indicated that access to AT is uneven and complex across jurisdictions. A lack of transparency around what is available and unclear eligibility criteria make the system difficult to navigate—for both consumers and service providers. The analysis found that state-run program eligibility is subject to a range of factors, including:

- Person's characteristics (age, residency status)
- Location (state of residence, rurality)
- Income
- Availability of other funding (eligibility for other government schemes, private insurance)
- AT requirements (condition type, length of time AT required, complexity of required AT).

Table 2-5 provides an overview of AT products (using 19 NED categories that are applicable to older people) funded by each state and territory program (based on publicly available information, where possible).

While most state and territories provide AT for activities like bathing, toileting and sleeping, there is considerable variation in provision of other categories of AT. In some states and territories, needs may be partially or fully met through additional specific-purpose schemes although these schemes also have varying eligibility and service provision arrangements.

Overall, there is little consistency and considerable complexity in relation to what AT is funded, who is eligible and how consumers access funding. State and territories may also ration access to programs on a year-to-year basis depending on available funds.

For details of the national, state and territory programs, see *Supplementary Technical Report, Appendix E*.

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Table 2-5: Available AT by jurisdiction aids and equipment programs

Category	Vic SWEP	ACT ACTES	NT TEP	NSW Enable NSW	Qld MASS	Tas* Tas Equip	SA DES	WA* CAEP
Aids for vision and hearing	Yes	Yes		Yes	Yes			
Bathing, showering and toileting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Communication speak, read and listen	Yes		Yes	Yes	Yes		Yes	
Computer access			Yes				Yes	
Continence products	Yes		Yes	Yes	Yes		Yes	
Design and building for access and safety	Yes		Yes	Yes			Yes	
Driving	Yes							
Eating and drinking			Yes	Yes			Yes	
Kitchen and household tasks	Yes		Yes	Yes			Yes	
Lifting and transferring people	Yes		Yes	Yes	Yes	Yes	Yes	
Personal care and dressing				Yes			Yes	
Scooters, wheelchairs and wheeled mobility	Yes	Yes	Yes	Yes	Yes		Yes	
Seating, sleeping and body support	Yes	Yes	Yes	Yes	Yes		Yes	
Standing aids	Yes	Yes	Yes				Yes	
Switches and remote controls	Yes		Yes	Yes			Yes	
Telephones, intercoms and call systems			Yes	Yes				
Vehicles	Yes			Yes		Yes		
Walking aids	Yes	Yes	Yes	Yes	Yes		Yes	
Prosthesis and/or Orthosis	Yes	Yes		Yes	Yes		Yes	

*No publicly available list of AT products funded by that program.

2.5.3 Aged care programs

Table 2-6 summarises AT expenditure in 2018-19 under the CHSP program, indicating that:

- \$40.623 million (2.7% of CHSP expenditure) was spent by service providers on behalf of 63,932 (7.7%) of all CHSP consumers. This included:
 - \$5.147 million for 15,097 consumers on Goods, Equipment and AT
 - \$35.475 million for 48,835 consumers on Home Modifications.

Table 2-6: CHSP number of consumers and expenditure, 2018-19

CHSP ¹	Consumers	Percent	Expenditure	Percent
CHSP Total	826,335	100%	\$2,448,126,067	100%
Goods, Equipment and AT	15,097	1.8%	\$5,147,474	0.30%
Home Modifications	48,835	5.9%	\$35,475,833	2.40%
Total AT/HM	63,932	7.7%	\$40,623,307	2.70%

¹ DEX data

Table 2-7 summarises AT expenditure in 2018-19 under the HCP program, indicating that:

- \$65.312 million (2.5% of HCP expenditure) was estimated to be spent on AT by consumers from their packages in 2018-19 with:
 - \$37.039 million on Goods and equipment and AT
 - \$24.693 million on Home modifications.

Table 2-7: HCP number of consumers and expenditure, 2018-19

HCP	Packages	Percent	Expenditure	Percent
HCP Total	133,439	100%	\$2,469,261,212	100%
Goods and Equipment (est) ¹	n/a	n/a	\$37,039,000	1.50%
Home Modifications (est) ²	n/a	n/a	\$24,693,000	1.00%
Total AT/HM	n/a	n/a	\$65,316,307	2.5%

¹ Based on HCP survey data, Goods and Equipment are estimated to be 50% of capital costs which are 3% of overall HCP costs (HCP survey extract)

² Based on HCP survey data, Home Modifications are estimated to be 1% of overall HCP costs (HCP survey extract)

CHSP AT sub-category funding

Table 2-8 details the subcategories and number of consumers receiving AT under the CHSP Goods, Equipment and AT service item in 2018-19. This shows that:

- The largest category of AT expenditure was on 'Other' (30.4%), followed by Support and Mobility Aids (26.2%) and Medical Care Aids (21.5%)
- Only 0.1% of expenditure was on Car modifications and 0.5% on Reading aids.

These groupings do not currently correspond with the ISO standard groupings and with 30.4% of goods and equipment identified as 'other' this would suggest that these categories may require review to capture more accurate information on AT use. An option for re-categorisation is discussed in *Chapter 4*.

Table 2-8: CHSP Goods and Equipment allocation by category 2018-19

CHSP ¹	Number of consumers	Percent
Car modification	18	0.1%
Communication aids	592	3.4%
Medical care aids	3,789	21.5%
Other goods and equipment	5,343	30.4%
Reading aids	85	0.5%
Self-care aids	3,153	17.9%
Support and mobility aids	4,605	26.2%
Total ²	17,585	100%

¹ The data in this table is sourced from the 2018-19 DEX data provided to AHA by the Department.

² The total differs from the total shown in *Table 2-6* because one consumer may receive items from different subcategories of the CHSP Goods, Equipment and AT service item.

CHSP funding across states and territories

There is significant disparity in CHSP funding allocations and expenditure across the states, as shown in Table 2-9 (goods, equipment and assistive technologies), Table 2-10 (home modifications) and Table 2-11 (AT and HM).

The distribution of funding is uneven between and within states and territories. Funding is allocated on a regional basis and not all regions receive a budget allocation for Goods, Equipment and AT. It is the responsibility of the CHSP service providers to manage allocation of funding as well as providing the AT.

Table 2-9 shows that:

- Almost half of consumers (47%) that received AT under the CHSP Goods, Equipment and AT service type in 2018-19 were from South Australia. Victoria had the smallest number of consumers (1.7%) to receive AT under the CHSP Goods, Equipment and AT service item.
- South Australia also had the greatest proportion of expenditure (45%) across the states and territories for the CHSP Goods, Equipment and AT service item in 2018-19, while New South Wales had the lowest (2.1%).
- Queensland had the highest proportion CHSP Home modification consumers (34%) across the states and territories with New South Wales receiving the bulk of the expenditure (50%).

An option for creating equity in CHSP AT funding discussed in *Chapter 4*.

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Table 2-9: States and territories CHSP consumers and expenditure, 2018-19 – Goods, Equipment and Assistive Technology

CHSP	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Consumers	386	261	3,910	1,659	7,136	570	367	808	15,097
	2.6%	1.7%	25.9%	11.0%	47.3%	3.8%	2.4%	5.4%	100.0%
Expenditure	\$107,424	\$217,755	\$1,231,995	\$714,571	\$2,294,655	\$151,990	\$147,022	\$282,062	\$5,147,474
	2.1%	4.2%	23.9%	13.9%	44.6%	3.0%	2.9%	5.5%	100.0%
Total \$ per consumer	\$278.30	\$834.31	\$315.09	\$430.72	\$321.56	\$266.65	\$400.60	\$349.09	\$340.96

Table 2-10: States and territories CHSP consumers and expenditure, 2018-19 – Home Modifications

CHSP	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Consumers	13,405	10,876	16,470	1,702	5,767	37	275	303	48,835
	27.4%	22.3%	33.7%	3.5%	11.8%	0.1%	0.6%	0.6%	100.0%
Expenditure	\$17,610,189	\$2,788,929	\$9,687,175	\$1,368,076	\$2,931,331	\$278,398	\$581,347	\$230,388	\$35,475,833
	49.6%	7.9%	27.3%	3.9%	8.3%	0.8%	1.6%	0.6%	100.0%
Total \$ per consumer	\$1,313.70	\$256.43	\$588.17	\$803.80	\$508.29	\$7,524.27	\$2,113.99	\$760.36	\$726.44

Table 2-11: States and territories CHSP consumers and expenditure, 2018-19 – AT and HM

CHSP	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Consumers	13,791	11,137	20,380	3,361	12,903	607	642	1,111	63,932
	21.6%	17.4%	31.9%	5.3%	20.2%	0.9%	1.0%	1.7%	100.0%
Expenditure	\$17,717,613	\$3,006,684	\$10,919,170	\$2,082,647	\$5,225,986	\$430,388	\$728,369	\$512,450	\$40,623,307
	43.6%	7.4%	26.9%	5.1%	12.9%	1.1%	1.8%	1.3%	100.0%
Total \$ per consumer	\$1,284.72	\$269.97	\$535.78	\$619.65	\$405.02	\$709.04	\$1,134.53	\$461.25	\$635.34

Levels and distribution of funds across Aged Care Programs

Stakeholders reported that the current levels and distribution of funding within national aged care programs are sub-optimal. There is a lack of consistency across aged care programs.

Within CHSP, Stakeholders reported that:

- The \$500 AT funding cap is considered too low
- Consumers often have long waits for assessment and provision of AT, which reduces the benefits.

Within HCP:

- Consumers determine what to spend within their Home Care Packages. The lack of access to dedicated AT funding means consumers sometimes need to make difficult choices between paying care costs and buying AT. It has also been reported that people may be unwilling to pay for the required AT assessment out of their package, in order to save funds for services.

Across aged care programs, stakeholders considered that national aged care programs are not generally designed to meet the changing AT needs of consumers through their life and as they transition from one program to another.

Each program has different funding arrangements and guidelines in the delivery of AT for consumers. Rules for what happens to AT varies across programs. For example, TCP does not provide AT on an ongoing basis, but those who purchase AT through their HCP or through the CHSP own the equipment outright.

An option for adjusting capping on funding within the CHSP is discussed in *Chapter 4*.

Procurement within AT programs

There is no uniform approach to the procurement of AT. Existing programs have differing program rules:

- Under CHSP, it is the responsibility of service providers to procure and provide AT. Stakeholders expressed concern in some cases that AT may be provided at higher prices than could be obtained by other means.
- Under HCP, package recipients receive funds to purchase AT, but HCP consumers can determine can purchase AT directly or with the assistance of their service provider
- Stakeholders reported that for some AT categories, the individual buying power of NDIS participants has driven up the cost of AT products, however this could not be verified. Some state schemes utilised their State health purchasing contracts to procure AT and reported cost savings compared to schemes such as the NDIS where consumers often paid retail prices.

Chapter 4 details an option for the establishment of a national procurement process to leverage the buying power of the Commonwealth Government.

2.5.4 AT information

Consumer understanding of AT is often poor and many reportedly do not even know of the existence of AT that may assist them. The results from the mapping phase indicates that:

- Consumers need an independent and trusted source of information. This is particularly important as AT is a broad umbrella term that encompasses a wide range of products from low-cost, simple daily living aids, to smart technologies for use around the home, and even highly complex and customised products. The term ‘assistive technology’ is often used interchangeably with ‘aids and equipment’ and is not widely understood by consumers.
- When they do look, consumers often find it difficult to locate information about AT and its suitability to their circumstances.
- Consumers may perceive AT to be designed primarily for people with disabilities, which can deter consumers from seeking advice—this stigma can be felt particularly by those with low-level needs.
- Much AT can be purchased ‘off the shelf’ by consumers, without assessment or prescription. High rates of abandonment, however, suggest that consumers would benefit from receiving the appropriate information and advice to make an informed choice.
- Consumers find out about AT from many different channels including family, friends, pharmacies and major retail stores, online resources and clinicians such as GPs and allied health professionals.
- Important information such as the eligibility for AT programs and out-of-pocket costs is often difficult for consumers to find.
- GPs and other health professionals also have knowledge gaps in relation to AT, including what products, services and programs are available, and how consumers can access them.

For examples of a range of information and advice resources, see *Supplementary Technical Report, Appendix F*.

A suite of new information and advice resources are proposed in *Chapter 4*.

2.5.5 AT assessment

As detailed in *Section 0*, AT can range broadly in complexity including:

- Low risk AT for ADLs that is generally available and does not require prescription or advice by an allied health professional
- Under advice AT that is generally available but would benefit from written or professional advice to ensure it is used appropriately
- Prescribed AT that requires a comprehensive assessment by an allied health professional.

A comprehensive AT assessment undertaken by an allied health professional is a multifaceted activity that involves consideration of the consumer’s health condition (including anticipating the course of the health condition), wellbeing, personal factors, home and other environmental factors as part of the process of selecting the most appropriate AT solution(s).

However, it is not always clear to the consumer, especially a consumer outside of the aged care system, what the pathway to accessing an appropriate AT assessment may be, or when AT is or is not required.

Stakeholders reported that:

- There is a range of low level, low-risk AT that can be purchased directly without requiring a professional assessment. While stakeholders identified that there is some risk in the use of any AT, these risks can be minimised with clear information and guidance. However, stakeholders reported that there is no common agreement on what AT products should be categorised as low-risk. The new TGA determination may assist in more clearly defining low-risk AT.
- Much AT can be purchased 'off the shelf' by consumers, without assessment or prescription. Consumers can access common low-cost AT for everyday living from a wide range of retail and online suppliers. However, studies consistently show that 30% to 50% of AT is discarded (Scherer, 1998). High rates of abandonment suggest that consumers would benefit from receiving the appropriate information and advice to make an informed choice.
- Where an assessment may be required, consumers may be unwilling or unable to pay for the appropriate AT assessment, or they may not understand the importance of having fit-for-purpose AT.
- Stakeholders highlighted the need for clear assessment pathways to be considered and funded as part of AT program to ensure appropriate prescribing/referral, consumer training and support in AT usage, and to maximise the likelihood of consumer uptake and ongoing use of the AT.
- Stakeholders also stated that GPs, who are often the initial contact for consumers, may be unaware of referral pathways for AT or may refer consumers inappropriately, resulting in expensive and unnecessary assessments.
- Within the aged care system, RAS and ACAT assessors are the gatekeepers to AT, which poses a number of issues, including:
 - Assessors may lack the confidence and knowledge to effectively prescribe AT
 - The scope of practice of assessors is contested in relation to what types of AT they can prescribe and to which consumers
 - While it is recognised that allied health input is necessary for complex AT, workforce issues create delays, especially in rural and remote areas
 - For allied health workers who see few AT consumers each year, it may be challenging to keep their AT skills current.
- Most stakeholders felt that non-clinically trained assessors, including RAS assessors, could, with the appropriate training and support, assess and prescribe low-risk AT, especially with access to allied health professionals for advice. For more complex AT, allied health workers are generally considered the most appropriate professionals to prescribe, assess and install AT and train consumers.
- Stakeholders noted that delays in providing AT following can have negative consequences for consumers. Stakeholders suggested that recommended AT and home modifications may no longer be fit for purpose if there is a delay of more than six weeks between assessment for, and provision of AT.

These findings suggest that greater clarity and timeliness on what type of AT can be prescribed and by whom, will support more appropriate referrals and assessments, and potentially reduce unnecessary allied health assessments.

The CHSP options proposed in *Chapter 4* seek to increase information and advice, and support existing RAS assessors to refer consumers to resources for low-risk AT. Continued education and training for RAS assessors will also support appropriate referrals. Clear program guidelines are suggested, including

guidelines in relation to AT assessment, the transferability of AT between programs and clarity on product ownership.

2.5.6 AT market and evolving technology

The AT market is rapidly expanding. Estimates of national expenditure on AT fall between \$3.6 and \$4.5 billion annually across all sectors (ATSA 2014). The NDIA advises it expects to spend \$1.06 billion per annum on AT in 2019-20, with the aim of creating Australia as a hub of AT innovation (NDIS 2015)

Rapidly changing technology creates both challenges and opportunities for governments, service providers and consumers. The review identified emerging technologies in several areas, including:

- Access to and control of technologies (e.g. eye gaze trackers, speech recognition software)
- Software/device technology (e.g. apps that support daily activities)
- Mobility (e.g. high-tech wheelchairs)
- Support for independent living (e.g. activity monitoring systems, telecare)
- Artificial intelligence and automation
- Continued evolution of sensor technologies
- Virtual and augmented reality
- Voice-activated technology
- Haptic technology—which involves application of touch sensations to the user.

Mainstream technologies—notably smart phone and tablet apps—are increasingly showing potential for older people (McDonald et al. 2013) and people living with disabilities (NDIS 2015). New horizons for AT include smart homes and the internet of things (a system of interrelated computing devices, mechanical and digital machines)—both of which involve the use of internet-connected devices—have the capacity to assist older people to control their environment and everyday activities.

Any future AT program solution must keep abreast of evolving technologies to ensure that consumers can access the most appropriate products at affordable prices.

2.5.7 Rental markets

Stakeholders suggested that rental markets can be effective in the supply of equipment needed for short-term requirements, such as when someone is discharged from hospital. Leasing arrangements are generally relatively low-cost for consumers and have the added benefit of enabling consumers to ‘try before they buy’.

Hospitals use loan pools for short-term AT for transition care and some ILCs/state aids and equipment schemes also use loan pools or leasing arrangements. Other state and territory programs have ceased leasing or refurbishing equipment because it was not cost-effective.

The review team was advised that some private AT suppliers prefer to sell new equipment, rather than hire equipment because of the administrative costs associated with leasing such as following up customers, managing returns and maintenance of leasing items.

Services and suppliers report wastage of loan pool items if they are not returned or if there is no effective system for return. Others found it difficult to determine how a rental market could be maximised but because there are so many providers of equipment and user needs vary. Any consideration of national leasing or loan arrangements would need to be costed separately to determine whether this is a cost-effective approach.

2.5.8 Intersection between aged care, health and disability sectors

Stakeholders frequently cited inequities between the aged care, health and disability sectors as a major challenge within the AT landscape, with age seen as a major cause of inequity.

For example, a consumer aged 65 years or older is ineligible for NDIS support if they were not an NDIS recipient before the age of 65. This consumer is less likely to have their AT needs met than a consumer with the same condition who is aged 64 and is eligible for NDIS funding for the rest of their lives. This was seen as creating a two-tiered system, with older people who must rely on the aged care system for AT often missing out.

A clear national framework for AT will support greater definition on what AT is provided and funded by the aged care, health and disability sectors.

3 Cost-benefit analysis

3.1 Introduction

AHA undertook a cost-benefit analysis to determine whether *'there is a cost benefit for the provision of AT to older Australians, and if so, what model of AT support provides the greatest cost benefits?'*.

This section outlines:

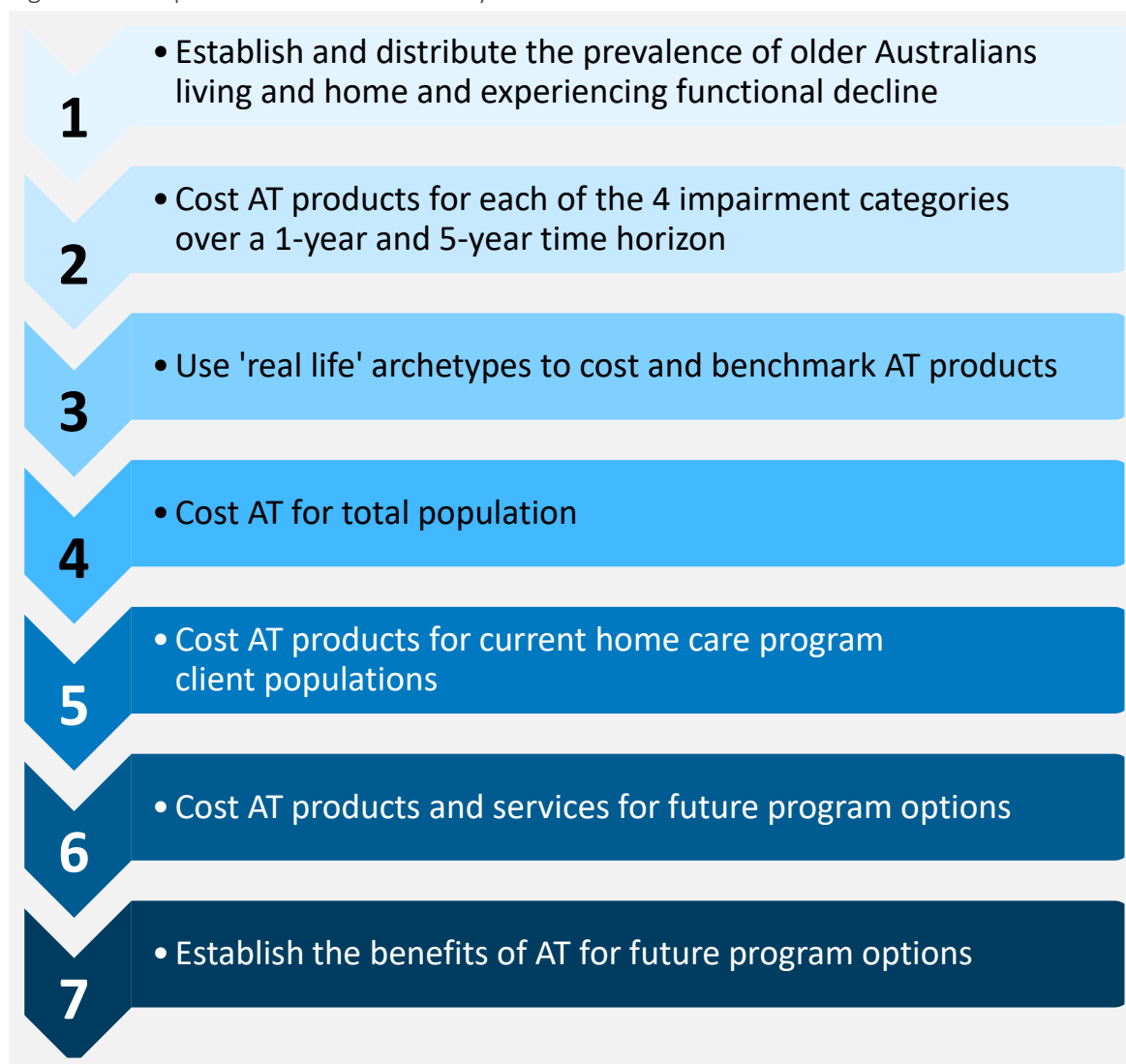
- Cost analysis results
- Benefit analysis results
- Cost-benefit analysis results.

Chapter 4 applies cost-benefit results to future program options.

3.1.1 Seven steps of the cost-benefit analysis

The 7 key steps of this cost-benefit analysis are summarised in *Figure 3-1*.

Figure 3-1: Steps of the cost-benefit analysis



For a detailed description of the approach to the cost-benefit analysis, see *Supplementary Technical Report, Appendix A*.

3.1.2 Prevalence and distribution

A core concept in this cost-benefit analysis is the concept of impairment and functional decline. The *ABS Survey of Disability, Ageing and Carers* (ABS SDAC) measures of impairment was used to reflect population impairment levels as an indicator of a consumers need for AT (Australian Bureau of Statistics 2012).

The ABS SDAC levels of core activity limitation classify functional decline into four categories: Mild, Moderate, Severe and Profound. The limitation categories are based on whether a person needs help, has difficulty, or uses aids or equipment with any of the core mobility, self-care and communication activities of daily living.

Table 3-1 details the number of people participating in aged care programs across the four impairment categories. The model was based on:

- 688,394 consumers outside the aged care system
- 971,842 consumers in the aged care system (excluding residential aged care facilities).

Table 3-1: Consumers outside of aged care and in aged care programs

Program	Mild	Moderate	Severe	Profound	Total
Consumers outside of the aged care system	506,616	137,060	41,355	3,364	688,394
CHSP target cohort	270,984	200,000	90,444	250,000	811,428
HCP 1 & 2 target cohort		2,336	52,003		54,339
HCP 3 & 4 target cohort			26,411	52,689	79,100
Transition Care Program and STRC			13,488	13,488	26,975
Total	777,600	339,396	223,700	319,540	1,660,236

3.1.3 Costing AT Products and kits

Evidence from the Rapid Evidence Review (RER) and from additional published literature, combined with expert opinion, was used to develop a list of AT Products to reflect the AT requirements for older Australians who are living at home with functional decline.

From these products, seventeen AT kits were developed that group together AT Products that are recommended or prescribed together. (Table 3-2). The kits were developed in consultation with four expert allied health professionals who prescribe AT in their day-to-day practice and were therefore able to advise on common items prescribed for older Australians.

These kits were used to estimate costs for common groups of items used to address an activity of daily living. Each kit was costed based on the sum of individual product costs. Costing is based on product costs only; AT services are not included. Items that are currently subsidised by other national programs, such as continence products, were not included in the kits.

3. Cost-benefit analysis

Table 3-2: AT kits

AT kit	Purpose	AT Products included in kit
Bathing	Bathing	<ul style="list-style-type: none"> • Toe washer • Toe dryer • Long-handled sponge
Bathroom	Access to bathing and showering	<ul style="list-style-type: none"> • Handheld shower hose • Switchcock or adjustable hand shower on rail • Non-slip bathmat • Two handrails • Thermostatic mixer or tempering valve
Bed	Getting in and out of bed	<ul style="list-style-type: none"> • Bed ladder • Bed support
Car driving	Driving a car	<ul style="list-style-type: none"> • Hand controls • Wheelchair trailer
Car transfer	Getting into and out of a car	<ul style="list-style-type: none"> • Swivel mat • Transfer handle • Boot winch for manual wheelchair storage
Cleaning	Cleaning the house	<ul style="list-style-type: none"> • Long-handled dustpan • Long-handled duster • Lightweight power sweeper • Ergonomic mop
Communication and information	Communicating; accessing information	<ul style="list-style-type: none"> • Large-button and GPS-enabled mobile phone (monitoring and safety) • Magnification for newsprint • Smart AT from mainstream stores (e.g. Google Play)
Dressing	Dressing and undressing	<ul style="list-style-type: none"> • Sock donner • Button hook • Dressing stick • Long-handled shoehorn • Long-handled reacher
Eating and drinking	Eating and drinking	<ul style="list-style-type: none"> • Two-handed and/or insulated shatterproof cups • Built-up handle cutlery
Home access	Entering and exiting the home; access throughout the home	<ul style="list-style-type: none"> • Handrails at entrances/exits • Partial room adaptations • Doorway adjustment • Ramp • Accessible doorbell • Adapted key • Step platform

3. Cost-benefit analysis

AT kit	Purpose	AT Products included in kit
Home safety	Maintaining a home free from risk and harm	<ul style="list-style-type: none"> • Audible smoke alarms • Rug fasteners • Lighting • Wall bumpers • Doorway lip ramps • Mix of other falls prevention measures (e.g. safety treads, colour contrast strips) • Double-hinged toilet door
Food preparation	Food preparation in the kitchen	<ul style="list-style-type: none"> • Powered can opener • Large-grip peeler • Buttering board • Jar opener • Kettle tipper • Tap turner • Kitchen trolley
Kitchen modification	Modifying the kitchen environment for kitchen access	<ul style="list-style-type: none"> • Microwave and stealth shelf • Under-sink clearance • Accessible cupboards
Laundry	Modifying the laundry environment for laundry access; completing laundry tasks	<ul style="list-style-type: none"> • Drying rack • Laundry trolley • Easy grip pegs • Side opening appliances or stealth shelf
Outdoor	Gardening and lawn care	<ul style="list-style-type: none"> • Lightweight mower • Long handled pruner • Wheelie bin trolley • Level access paving • Heavy duty reacher
Memory support	Products for alarming, indicating, reminding and signalling	<ul style="list-style-type: none"> • Automated reminder watch • GPS tracker • Large print calendar
Sensory	Products that record, play and display audio and visual information	<ul style="list-style-type: none"> • TV/FM receivers • Lighting • Computer software • CCTV • Large print • ORCAM • Vibrating or light alarms for doorbell, phone, smoke detectors; hearing products

3.1.4 Costing ADL kits

Of the 17 AT Kits, six were selected to represent low-cost AT to support common activities of daily living (ADL) that could be provided to any consumer who requires them (*Table 3-3*). These ADL kits correspond to common service types provided under the CHSP Community and Home care program.

Table 3-3: ADL kits

AT kit	Purpose	AT items
Bathing	Bathing	<ul style="list-style-type: none"> • Toe washing • Toe drying • Long-handled sponge
Cleaning	Cleaning the house	<ul style="list-style-type: none"> • Long-handled dustpan • Long-handled duster • Lightweight power sweeper • Ergonomic mop
Dressing	Dressing and undressing	<ul style="list-style-type: none"> • Sock donner • Button hook • Dressing stick • Long-handled shoehorn • Long-handled reacher
Eating and drinking	Eating and drinking	<ul style="list-style-type: none"> • Two-handed and/or insulated shatterproof cups • Built-up handle cutlery
Food preparation	Food preparation in the kitchen	<ul style="list-style-type: none"> • Powered can opener • Large-grip peeler • Buttering board • Jar opener • Kettle tipper • Tap turner
Laundry	Modifying the laundry environment for laundry access; completing laundry tasks	<ul style="list-style-type: none"> • Drying rack • Laundry trolley • Easy grip pegs • Side opening appliances or stealth shelf

3.1.5 Costing AT Services

This review proposes new program options for consumers outside of the aged care system. Services that relate to these new program options include information, advice and a new Digital AT Screen. These are discussed and costed in *Section 4*. These services are designed to support the appropriate provision of AT and aid in minimising abandonment.

The program options proposed in *Section 4* will boost the availability of AT. Additional CHSP allied health assessments needed to provide AT assessments have been costed in the model and use the average costs of a CHSP allied health assessment based on 2018-19 CHSP program data. A total cost of \$133.38 per assessment is based on the actual unit price derived from the draft 2019 Deloitte CHSP Data Study report (Deloitte Access Economics 2019).

3.1.6 AT cost results

The cost-benefit approach involved calculating total costs for the total population of older Australians and for aged care program cohorts. Real life CHSP case studies, known as ‘archetypes’ were also used to test costing results.

The Supplementary Technical Report, Appendix A provides the AT cost results from these phases, with the costs and the benefits for future model options outlined in *Section 4.4*.

3.2 Benefits of AT

3.2.1 Introduction

The benefits of AT for people with disability and older people are widely acknowledged and are increasingly supported by the literature as well as consistently reported in consultations. AT has four distinct beneficiaries: consumers, carers, service providers (aged care, disability and health care) and governments.

The benefits of AT for different beneficiaries can be summarised as follows:

Consumer benefits include:

- Increased independence and autonomy
- Maintenance of personal care
- Reduced personal pain or injury
- Slower functional decline
- Reduced risk and improved safety (e.g. falls prevention)
- Increased productivity
- Improvements in aspects of wellbeing including confidence, satisfaction, quality of life, social inclusion, community participation and a sense of security (Williamson et al. 2017, Layton & Irlam 2018, McDonald et al. 2013, Barnett et al. 2019).

Consumers may also benefit from AT in a residential aged care setting (Khosravi & Ghapanchi 2016), including managing:

- Chronic disease
- Dementia
- Mental health issues
- Medication.

Carer benefits include:

- Improved relationships
- Burden relief.

Service provider benefits include:

- Supporting care-planning, care management, and medication management
- Alleviating consumer frustration
- Providing more choice
- Conserving consumer energy
- Enabling more function and activity
- Increasing safety in the home for support workers.

3.2.2 Costing benefits

The benefits of access to, and use of, AT are well documented (Alshabeb & Abdulrahman 2019) (Clay & Alston 2016); however, they are rarely costed through a robust economic evaluation. Given that the available literature is limited in both quality and quantity, the benefits analysis used a two-pronged approach:

- Rapid Evidence Review
- Delphi Technique.

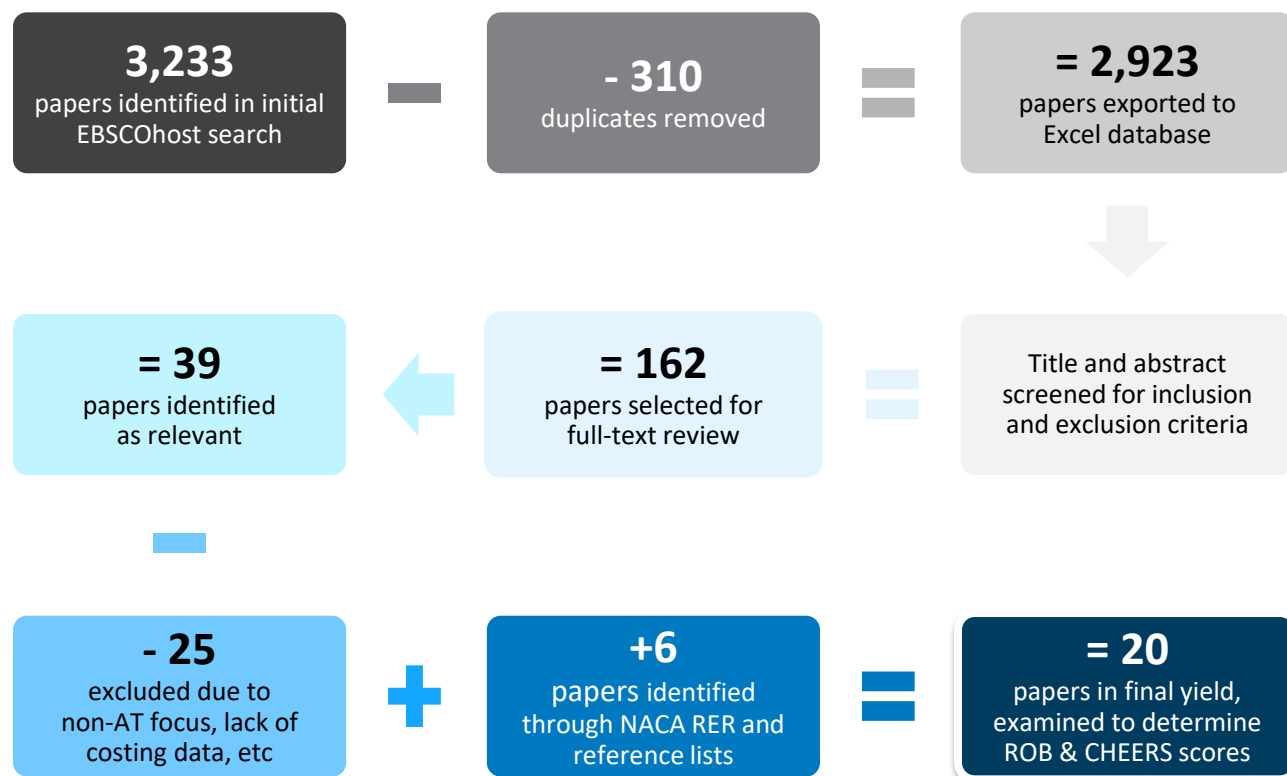
3.2.3 Rapid Evidence Review

Methods

AHA undertook a Rapid Evidence Review (RER) to examine the available evidence on whether AT effectively improves independence, autonomy, safety and participation for the target population through the identification of literature highlighting the economic outcomes of AT.

Figure 3-2 summarises the results of the RER search.

Figure 3-2: RER search results



This indicates that:

- Of the initial 2,923 unique papers identified, 162 papers had a full text review.
- 39 of these papers were identified and reviewed, with 25 papers excluded. Papers were excluded for multiple reasons (see *Supplementary Technical Report Appendix B*) but most commonly because the paper was not specific to AT or the paper reported the prevalence of AT but not the cost.
- An additional six papers were identified through the *National Aged Care Alliance Position paper: Assistive technology for older Australians study* (National Aged Care Alliance 2018) RER and reference lists and were subsequently included
- This resulted in a final yield of 20 papers. The 20 included papers were examined to determine the quality of the papers and to calculate risk of bias (ROB) and quality (consolidated health economic evaluation reporting standards (CHEERS)) scores for each.

Overall, there was significant variation in quality among the included studies. Notably, the level of evidence and the quality of the included studies was generally low, and the risk of bias for the included studies was generally high. This compromises the robustness and generalisability of the findings from the RER.

Eighty percent (n=16) of the selected studies demonstrated that AT was more effective than the comparison group who did not receive AT. A total of 35 percent demonstrated a cost savings while 60 percent reported either no cost difference or provided insufficient cost data. While it was determined that these findings were insufficient to represent robust cost savings to calculate benefits, these studies did indicate a positive direction for AT cost and effectiveness outcomes. For this reason, AHA undertook a Delphi technique to supplement the results of the RER.

3.2.4 Delphi technique

Methods

The second approach to costing benefits used the Delphi technique to develop a consensus statement from a group of experts on the economic benefits of AT. The Delphi technique is used to examine complex problems through an iterative process guided by expert opinions (Strasser 2017). For details of the method and results of the Delphi technique, see *Supplementary Technical Report, Appendix C*.

AHA convened a panel of nine people with a broad range of AT, reablement, government, and health economics expertise and lived experience of AT.

The Delphi technique used in this review involved a three-stage iterative process conducted over three consecutive days (5 May 2020 to 7 May 2020):

- Iteration 1 began with an anonymous **pre-survey** on 5 May 2020 to the group to gather individual opinions without any influences on a series of survey questions.
- Iteration 2 involved a two-hour online **focus group**² on 6 May 2020, which began with a presentation of the RER and pre-survey results, followed by a group discussion to elicit individual and group opinions and gain consensus
- Iteration 3 consisted of a **post-survey** on 7 May 2020, which included a summary of the focus group results and duplicated the questions detailed in the pre-survey, to gather individual opinions which may have been influenced by the focus group discussion.

The survey questions were designed to draw out the qualitative and quantitative benefits of AT for older Australians and included four archetype cases were presented to represent people with a mild, moderate, severe or profound activity limitation.

Results

Benefits of AT

Over the three iterations a moderate or strong consensus developed for agreement on a number of items in particular for:

- Benefits for the health and aged care system
- Benefits for the families and carers

² Due to the national COVID-19 restrictions in place at the time, the focus group was held via an on-line platform (<https://zoom.us/>).

Both the RER and the Delphi technique supported increasing investment in AT, reporting a consistent direction for the results and reporting a cost-benefit for AT. The Delphi technique reported more conservative results than the RER and these results have been used in calculating the AT benefits and return on investment.

Table 3-4 summarises the results from the Delphi technique for each archetype representing an impairment category.

This indicated that there was a combined benefit of:

- **\$17 for mild impairment**

Benefits for a mild impairment were attributed to reduced GP visits (100%). Future cost offsets were noted by panellists but these were not costed due to the significant degree of variation in panellists' views on the following:

- Delays in the need to increase unpaid formal care, paid carer support and paid formal care, estimated between 2 and 12 years.
- Delays in the need for residential aged care admission (not in the foreseeable future).

The panel considered that for a person with a mild impairment (largely independent and not using aged care services), there was little immediate cost savings, reporting a savings of \$17 per year. However, the panel considered that the mild group has a significant long-term cost-savings through delays in accessing services which is not included in the return on investment calculation. These potential cost offsets were reinforced by the Gore et.al research which emphasised the need to slow the progression of functional decline (Gore et al. 2018).

- **\$2,835 for moderate impairment**

Benefits for a moderate impairment were attributed to reduced hospitalisation (98.9%), reduced falls (20.3%), and reduced GP visits (0.7%), however there was an increase in paid formal care despite the provision of AT (20.0%). Future cost offsets were noted by panellists but these were not costed due to the significant degree of variation in panellists' views on the following:

- Delays in the need to increase unpaid formal care, paid carer support and paid formal care—estimated between **1 and 10 years**.
- Delays in the need for residential aged care admission—estimated between **6 months and 10 years**

- **\$3,345 for severe impairment**

Benefits for a severe impairment were attributed to reduced hospitalisations (100.6%), reduced unpaid informal care (6.7%), and reduced GP visits (1.1%), however there was an increase in paid formal care despite the provision of AT (8.5%). Delays in the need to increase unpaid formal care, paid carer support and paid formal care were estimated at between 1 and 10 years.

- **\$13,555 for profound impairments**

Benefits for a profound impairment were attributed to reduced hospitalisations (70.3%), reduced unpaid informal care (13.3%), reduced GP visits (1.6%), reduced paid carer support (10.8%), reduced paid formal care (2.1%) and reduced days in a Residential aged care (0.3%).

For every dollar spent on AT products and kits, as well as AT services, the quantified benefits were almost 6-fold (Table 3-4), although these do vary according to the level of impairment, with the most benefits procured for the archetype with moderate impairment.

3. Cost-benefit analysis

Quantifying the cost-benefit is difficult due to reliance on an RER with a low yield and generally low-quality included papers, as well as the subjective nature of the Delphi technique. However, due to the high level of consistency between the findings from the two processes, we are confident that the provision of AT results in a strong cost-benefit to our society and we have presented the conservative Delphi cost benefits (*Table 3-9*) as a return on investment for every \$1 spent on combined AT products, kits and services.

Table 3-4: Cost-benefit based on the cost of AT products as well as the cost of AT services

Cost/benefit	Mild impairment	Moderate impairment	Severe impairment	Profound impairment	Total
Cost of AT products	\$287	\$40	\$773	\$1,174	\$2,274
Cost of AT services	\$144	\$20	\$387	\$587	\$1,138
Combined AT costs	\$431	\$60	\$1,160	\$1,761	\$3,412
Benefit of AT	\$17	\$2,835	\$3,345	\$13,555	\$19,752
Return on investment	\$0.04*	\$47.25	\$2.88	\$7.70	\$57.87

*This figure is likely to be an underestimate as it does not include likely longer-term cost offsets arising from delays in accessing more costly aged care services.

The Delphi technique results were used to cost the benefits for the different program options (*Chapter 4*).

For details of the benefits and the methodology for costing the modelled cost data, see *Supplementary Technical Report, Appendix C*.

4 Future options

4.1 Introduction

This section outlines the proposed:

- Vision and principles for a new national framework for AT
- Consumer pathways and a description of the components of the pathways
- Future program options, including costs and benefits of options.

Sections 4.2 and 4.3 identify a range of issues that could be addressed moving forward.

4.2 Program vision and core elements

The benefits of AT for older people are widely acknowledged and are increasingly supported by the literature—in addition to being consistently reported in our consultations with all stakeholder groups. However, the findings from this review suggest that these benefits are not being realised due to a range of issues, including lack of information and awareness, and inequitable access to AT.

The findings from the RER and Delphi technique were consistent in the range and direction of benefits identified. Both reported that the benefits of AT outweighed its costs, supporting the increasing use of AT as an intervention for older Australians.

With this in mind, the proposed new national framework for AT for older Australians is designed to improve access to AT and aligns well with the Department's ongoing focus on wellness and reablement. It is underpinned by the following core elements:

- **Providing free and easily accessible information and advice** to older consumers—including the significant proportion of consumers who are not receiving Commonwealth-funded aged care services. Trusted information and independent advice through multiple channels will increase consumer AT awareness and literacy so that they can make informed decisions at the right time.
- **Extending the reach of the national framework** to provide AT to ageing consumers currently outside of aged care (as well as those in the system)—thus delaying the need for more complex and costly aged and health care support.
- **Intervening earlier in the ageing process** to not only maximise the return on investment, but also slow functional decline and assist consumers at home. This includes providing—for the first time—funded access to low-risk AT that assists consumers in their ADLs, such as bathing, dressing, and household cleaning. The proposed ADL kits have been deliberately designed to assist in, and supplement, relatively high-cost CHSP service types including personal care and domestic assistance.
- **Expanding the limited CHSP funded AT list** to better reflect the ISO international AT categories, including:
 - AT to enhance home safety, including rug fasteners, wall bumpers and falls prevention measures such as safety treads
 - AT for domestic activities, including cleaning and outdoor maintenance
 - AT for postural support, including chair raisers and bed transfer aids.

- **Increasing equity in state and territory CHSP funding allocations to ensure access for older Australians.**
- **Building the evidence base** for AT use in the home to inform future directions in aged care. This is particularly important given the paucity of peer-reviewed literature and AT program reviews.

Vision: Older people across Australia have access to AT that maintains or improves their functional capacity and independence to allow them to live at home as long as possible.

4.3 AT framework

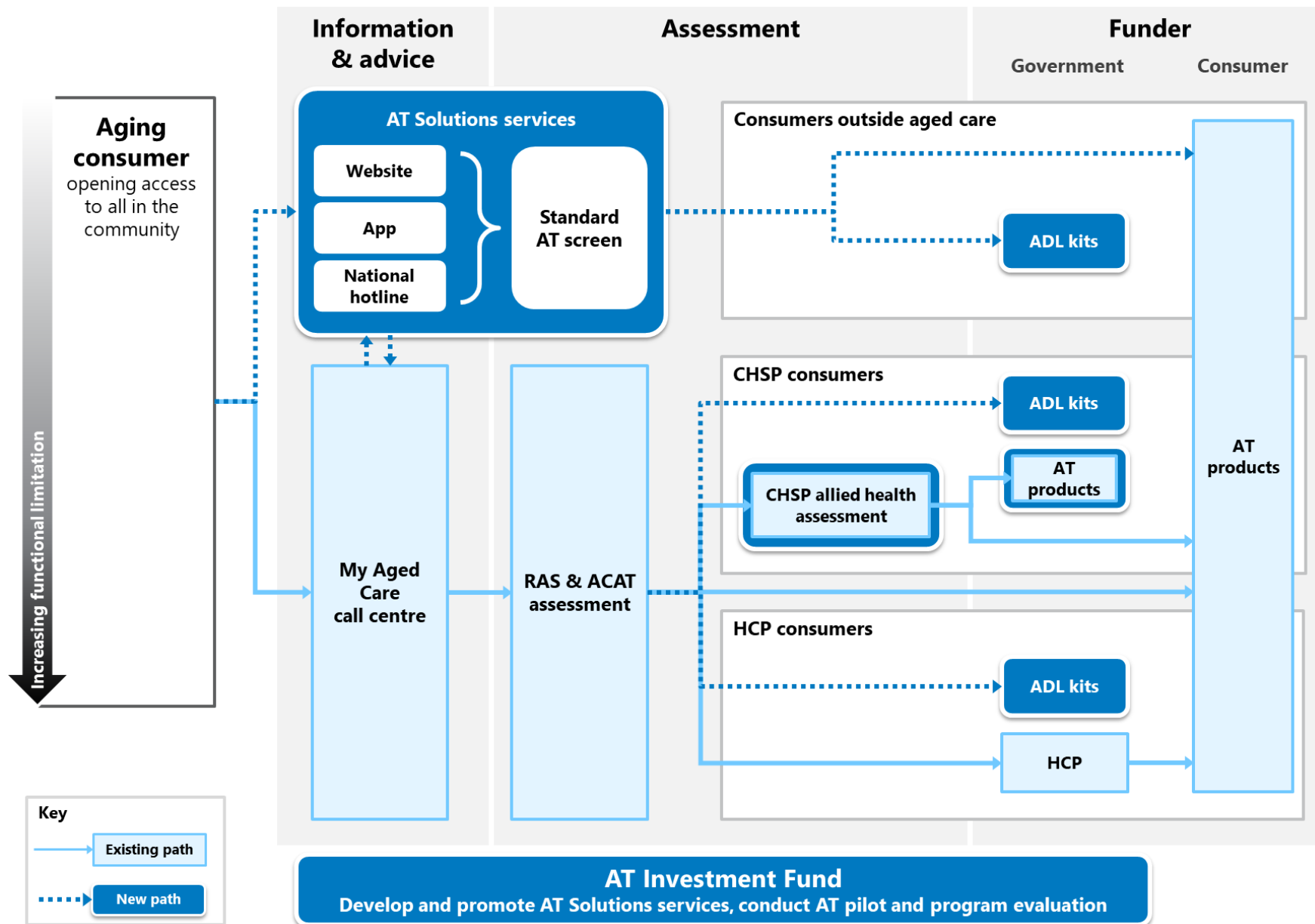
Figure 4-1 outlines a proposed AT framework which opens up access to AT through:

- New AT information and advice services
- A new digital AT screening tool
- An expanded range of AT products, including ADL kits.

These components are described in the following sections.

4. Future options

Figure 4-1: Outline of the AT Framework



Note: This figure also appears as Figure 1-1: Proposed national framework of AT support, showing new and existing consumer pathways

4.3.1 AT Solutions: information and advice

The AT Solutions suite of services comprises three information and advice initiatives—the AT Solutions website, AT Solutions app and AT Solutions hotline. It will offer multiple channels for older Australians to access impartial information and evidence-based advice about AT products and services that will meet their needs. These resources would be freely available to consumers both within and outside the aged care system.

A Digital AT Screen tool (detailed below) would drive the website and app, and would be used by hotline staff to assist consumers.

These information and advice resources are designed to complement the existing My Aged Care website, call centre and resources, so that:

- Referrals and links can be made from the AT Solutions suite of services to My Aged Care, especially for consumers with more complex needs.
- The My Aged Care website and call centre can also link to the AT Solutions suite of services so that consumers can readily source further information and advice on AT and how it can assist them.
- In addition to My Aged Care call centre staff, the AT Solutions suite of services can become a valuable resource for RAS and ACAT assessors and CHSP service providers to refer their consumers to when needing to appropriately access AT.

While each initiative in the AT Solutions suite of services is costed separately, there would be efficiencies in procuring them as an integrated suite of services. *Table 4-1* provides further detail on the AT Solutions suite of services.

4.3.2 Digital AT Screen

Underpinning the AT Solutions suite of services is a Digital AT screening tool. This tool will enable consumers to identify ADLs they have difficulties with, and then assist in identifying AT that can help them maintain or improve functioning for these ADLs. It will also identify consumers with more complex needs and refer them either to My Aged Care call centre or flag the need for the consumer to contact an allied health professional. The advice provided would be independent and evidence-based, and not tied to any equipment providers. AT screens are already in use in countries including England, New Zealand and the US and would take around 20 minutes to complete.

The Digital AT screening tool would ideally be linked to a central database to collate information—collected through the AT Solutions suite of services—on the extent and areas of consumer functional limitations, common AT requirements and the AT products and supports recommended and/or provided.

Capturing this data would enable hotline staff to follow-up with consumers, and identify outcomes from the screening process including what consumers ultimately did or did not purchase and how useful it was to their independence.

Funding for hotline staff to make a 15-minute follow-up call with consumers after an AT screen is included in the estimated costs of the AT Solutions suite of services and are recommended to be trialled in the AT pilot funded under the AT investment fund (see *Section 4.3.5*). This would, for the first time assist the Department in building an evidence base—and designing future programs—for AT use with ageing consumers. This follow-up is also proposed as a strategy for reducing abandonment.

4. Future options

Table 4-1: Indicative AT Solutions suite of services characteristics

Service	Characteristics
AT Solutions Website	<p>AT Solutions website is designed to provide AT information and advice to older Australians to assist them to remain independent and living at home. The AT Solutions website could be designed to:</p> <ul style="list-style-type: none">• Provide information on AT strategies for older Australians, especially in relation to ADLs• Provide a Digital AT Screening tool that can guide consumers, through a series of questions, to AT products and services that will meet their needs• Link consumers to information about AT product suppliers and services in their locality• Include a supplier portal that will enable suppliers to update products and prices (listing prices could be a condition of participation) to enable participants to search and compare prices. Alternatively, this could link to one or more ILC databases• Link consumers to information about other national and state AT programs and subsidies• Provide a resource for GPs and allied health professionals on AT product options and programs. <p>This could be extended to have a wellness and reablement focus, which could also include rehabilitation and exercise strategies or links to approaches for ageing well that complement AT approaches.</p>
AT Solutions App	<p>The AT solutions app would be designed as a companion application with similar features to the website with a focus on the AT Screening assessment and links to local suppliers and providers, as detailed for the AT Solutions website, to display on a smart phone interface.</p> <p>This could be extended to have a reablement focus, which could also include rehabilitation and exercise strategies or links to approaches for ageing well that complement AT approaches.</p>
AT Solutions Hotline	<p>The national hotline would provide a call centre to respond to consumers and health professionals' enquiries from the AT Solutions website, App and phone call enquiries during business hours 8am to 5pm Mon to Friday. Features could include:</p> <ul style="list-style-type: none">• Support by trained AT consultants and Allied Health professionals, who could respond to more complex calls and queries from Allied Health Professionals seeking specialised AT advice.• Links from the existing My Aged Care website and My Aged Care call centre to divert consumers who do not need My Aged Care services to the hotline.

4.3.3 Expanded range of AT products

ADL Kits

A centrepiece of the new AT framework are ADL kits—selected by an expert panel of clinicians including OTs and physiotherapists. Kits are proposed because they reflect the increasing recognition that ageing consumers usually require multiple AT products, in addition to related supports such as reablement strategies. Each ADL kit consists of a number of low-level AT products that often go hand-in-hand: for instance, a consumer with arthritis that has difficulty turning taps most probably also could benefit from a jar opener.

Six ADL kits are proposed to be funded by the program—Bathing, Cleaning, Dressing, Eating and Drinking, Food Preparation and Laundry kits (*Section 0*).

These ADL kits would be provided to consumers:

- Outside of aged care who could benefit from AT in one of the six ADLs above, following a Digital AT screen by AT Solutions hotline staff.
- Inside the aged care system who could benefit from AT in one of the six ADLs above, following a RAS or ACAT assessment.

Costed options in this model include the costs of ADL kits for:

- Consumers outside of aged care
- All CHSP reablement consumers
- All new CHSP consumers
- All new HCP Level 1 and 2 consumers.

4.3.4 Expanded categories of AT products

In addition to the low-level AT provided in the ADL kits, there is also an opportunity to expand the range of AT products that are funded under the existing CHSP Goods, Equipment and AT service type. Comparison with the international standard of AT (AS/ISO 9999 which categorises Assistive products internationally) found that while the Good, Equipment and AT service type provides funding for AT under most categories, it did not explicitly cover all categories. Missing categories of AT include:

- AT to enhance home safety, including rug fasteners, wall bumpers and falls prevention measures such as safety treads
- AT for domestic activities, including cleaning and outdoor maintenance
- AT for postural support, including chair raisers and bed transfer aids.

Table 4-2 details the difference between AT categories currently funded and the broader range AT costed in this report. This includes suggested category amendments to be consistent with ISO categories.

Table 4-2: CHSP categories and suggested changes

CHSP Sub-category	Suggestion	Rationale
Support and mobility aids	Retain and rename 'Personal mobility AT'	Retain: covered in ISO category 'Assistive products for activities and participation relating to personal mobility and transportation'
Car modification	Merge into 'Personal mobility AT'	Merge into expanded category above, to be part of ISO category, 'Assistive products for activities and participation relating to personal mobility and transportation'.
Communication aids	Communication and information management AT	Retain: covered in ISO category 'Assistive products for communication and information management'.
Reading aids	Merge into Communication and information management AT	Merge into expanded category to be part of ICT AT in ISO category, 'Assistive products for communication and information management'
Medical care aids	Body monitoring and support AT	Retain: covered in ISO category 'Assistive products for measuring, supporting, training or replacing body functions'
Self-care aids	Self-care AT	Retain: covered in ISO category 'Assistive products for self-care activities and participation in self-care'.
Other goods and equipment	Other AT	
	Furnishings and fixtures AT	Include a new ISO category not currently covered: 'Furnishings, fixtures and other assistive products for supporting activities in indoor and outdoor human-made environments'.
	Domestic activities AT	Include a new ISO category not currently covered: 'Assistive products for domestic activities and participation in domestic life'.

4.3.5 Investment fund

The proposed AT framework would be supported and strengthened by an investment fund. This fund could be used to design, develop and promote the AT program, in addition to building the evidence base for AT use in aged care. Specific uses of the investment fund include to:

- Design the model underpinning the AT program, once the Department has selected the options—outlined in this review—it wishes to pursue
- Conduct a pilot to refine the model before national roll-out. We note that the *Promoting Independent Living* reablement trial has RAS assessors at five RAS organisations trained to better understand and recommend low-level AT to consumers. Utilising these trained RAS assessors for a pilot has merit.
- Develop and test the AT screening tool
- Build and test the AT Solutions website and app
- Promote the AT Solutions suite of services, the free AT screen and the value of low-level AT in maintaining independence and reablement generally
- Collate, evaluate and report on data derived from the AT screen and collected during consumer follow-up to refine the AT program and inform Departmental policy directions in aged care.

4.3.6 AT administration agency

Currently, AT is procured under disparate and disconnected programs, representing a missed opportunity to leverage the breadth and reach of a national program. CHSP services providers are responsible for procuring and supplying AT products funded under the program, and arranging home modification services. In Home Care Packages, service providers work with consumers to determine what is funded within package limits with AT purchased directly by consumers.

A public-facing agency is suggested to package and send ADL kit orders directly to the public. There may be considerable efficiencies in establishing a national AT administrative agency to contract suppliers, procure AT equipment, and package and distribute AT products to consumers.

The AT administration agency could also manage all AT procurement and delivery for aged care programs.

The option of an AT administration agency has been included and costed on the following basis:

- If the agency administers ADL kits only (which are estimated to have an average cost of \$121.47), 50% administration costs have been included for contracting suppliers, packaging and distribution costs.
- If the agency administers all AT products supplied under the CHSP program, then an estimated administration cost of 30% has been added for contracting suppliers, procurement, packaging and distribution. The administration costs are lower compared to the administration costs for ADL kits as there are single AT items that do not require packaging into kits.

The administration of the National Epidermolysis Bullosa (EB) Dressing Scheme is a model that could be considered as an example of the type of central administration process that is required (see <https://www.ebdressings.com.au/> for further details).

National Epidermolysis Bullosa (EB) Dressing Scheme

The National Epidermolysis Bullosa (EB) Dressing Scheme is managed by an external contractor for the Australian Government Department of Health.

Under the National Epidermolysis Bullosa (EB) Dressing scheme, the contractor is responsible for providing dressings for patients with Epidermolysis Bullosa.

Prospective consumers must first complete an application process with the contractor to confirm eligibility. When eligibility is established, the contractor contacts the consumer at least one week prior to the scheduled delivery date to confirm order details and organise payment. Orders are delivered directly to the consumer monthly. The contractor also has an EB customer support team and provides advice on the products best suited to the consumer's needs. As part of its role, the contractor also contracts suppliers and arranges product delivery to consumers.

Leasing and loan arrangements

The role of the national agency could be extended to include AT equipment leasing and loan arrangements. One option is to consider the development of short-term equipment loan or leasing arrangements with Independent Living Centres or State Aids and Equipment Programs, to facilitate consumer 'try before you buy' options. Another option may be to explore no-interest loans to consumers on low incomes to purchase high cost AT. This has proven an effective strategy to increase access, facilitate some program cost recovery and could also be considered as part of the AT administration agency role. This would however need to be further examined as part of the detailed program design phase and could be included as part of a pilot.

An AT Solutions provider could be contracted to undertake AT procurement and supply, as well as operate the AT Solutions suite of services.

4.4 Program options

Nine program options have been costed and modelled for benefits to the consumer, carers and the Department as system manager (Table 4-3). Each option could be adopted in isolation, or in combination as long as the consumers in each group do not overlap.

Table 4-3: AT program options, cohort costs and return on investment

Type	Program options	Cohort	Cost per year (\$ millions)	ROI (for every \$1 spent)
ADL kits	10. Consumers outside aged care system	16,521	\$2.0 m	\$6.95
	11. CHSP reablement consumers	32,457	\$3.9 m	\$18.13
	12. CHSP reablement and reassessed consumers	64,914	\$7.9	\$33.83
	13. New CHSP and reassessed consumers	194,780	\$23.6 m	\$23.71
	14. New HCP level 1 and 2 consumers	43,852	\$5.3 m	\$27.36
CHSP AT boost	15. State CHSP AT funding equity	60,301	\$22.9 m	\$15.41
	16. State CHSP HM funding equity	64,354	\$49.3 m	\$7.24
	17. State CHSP AT funding parity and expended AT list and \$1,500 cap	60,301	\$63.9 m	\$5.15
	18. Expanded AT list for new CHSP consumers	162,286	\$61.0 m	\$6.55
Foundation costs	<ul style="list-style-type: none"> AT Solutions: website, app, hotline Investment fund: AT screen, AT pilot, Promotion and evaluation 		\$4.9	

The selection of options will be influenced by the areas where the Department would see most value.

The Foundation costs include the costs for the AT Solutions suite of services and the investment fund—as core costs to underpin each product option.

The costs for each option include Foundation costs of \$4.9 million per annum for:

- Information and advice initiatives, including the AT Solutions suite of services and AT screen
- Investment funding.

Each option draws on one or more costed pathways, detailed in *Section 4.4.1*.

4.4.1 Budget options

The Department has requested that options be developed for three budget envelopes—\$30 million, \$50 million and \$100 million dollars per annum. We have costed each AT option so that it is possible to pick and choose and combine options in a variety of ways.

While the selection of options will be influenced by the areas where the Department would see most value, possible budget options that approximate the proposed budget envelopes include:

- **\$27.8 million option includes AT for consumers outside of aged care, CHSP and HCP consumers:**
 - Foundation costs (\$4.9 million)
 - Option 1: ADL kits for eligible consumers outside of aged care (\$2.0 million)
 - Option 3: ADL kits for new CHSP reablement and reassessed consumers (\$7.9 million)
 - Option 5: ADL kits for new Home Care Package 1 and 2 consumers (\$5.3 million)
 - AT Administrator: 50% of ADL product costs (\$7.6 million)
- **\$48.7 million option includes AT for consumers outside of aged care, CHSP and HCP consumers:**
 - Foundation costs (\$4.9 million)
 - Option 1: ADL kits for eligible consumers outside of aged care (\$2.0 million)
 - Option 2: ADL kits for new CHSP reablement (\$3.9 million)
 - Option 5: ADL kits for new Home Care Package Level 1 and 2 consumers (\$5.3 million)
 - Option 6: State CHSP AT funding (\$20.6 million)
 - AT Administrator: 30% of AT product costs (\$9.6 million)
 - Additional allied health assessments (\$2.4 million).
- **\$100.1 million option for consumers outside of aged care and CHSP consumers:**
 - Foundation costs (\$4.9 million)
 - Option 1: ADL kits for eligible consumers outside of aged care (\$2.0 million)
 - Option 3: ADL kits for new CHSP reablement and reassessed consumers (\$7.9 million)
 - Option 8: Expanded AT list with state equity up to a cap of \$1500 (\$61.5 million)
 - AT Administrator: 30% of AT product costs (\$21.4 million)
 - Additional allied health assessments (\$2.4 million).

1. ADL kits for consumers outside of aged care

Benefit: \$13,946,426 | **Cost:** \$2,006,779 | **Users:** 16,521 | **Program:** None

Description: A choice of one of six Activity of Daily Living (ADL) kits per year per consumer in the community—includes those over 65 years old, outside of aged care with mild or moderate functional limitation. Each ADL kit assists the consumer maintain independence with one of the following activities:

- Bathing
- Dressing
- Household cleaning
- Laundry
- Food preparation
- Eating and drinking.

Target cohort: There are an estimated 688,394 consumers outside the aged care system with functional limitation. There is no data available to quantify how many of this cohort have difficulty with ADLs, nor how many would benefit from low-level AT in ADL kits.

Estimated annual users: A total of 16,521 consumers. It is expected that 3% of consumers outside the aged care system will use the hotline (3% of 688,294). Of these 20,652, around 80% (n=16,521) of those who contact the AT hotline, will complete the AT screen and be eligible for an ADL kit due to identified AT needs

2. ADL kits for CHSP reablement consumers

Benefit: \$71,474,465 | **Cost:** \$3,942,418 | **Users:** 32,457 | **Program:** CHSP

Description: A choice of one of six ADL kits available for each CHSP consumer undergoing a period of reablement. These ADL kits are the same as those identified in option one above. However, these ADL kits are provided by the RAS assessor after an assessment is completed and a need for low-level AT is identified.

Target cohort: All CHSP consumers undergoing a reablement period, where assistance in one of the activities is identified during their RAS assessment. These consumers have mild or moderate functional limitations.

Estimated annual users: 32,457 CHSP consumers undergoing reablement annually (increasing each year by 7%), assuming that 20% of all new CHSP consumers undergo a reablement period and can benefit from an ADL kit.

3. ADL kits for reablement—and existing reassessed—CHSP consumer

Benefit: \$266,752,194 | **Cost:** \$7,884,819 | **Users:** 64,914 | **Program:** CHSP

Description: An extension to option two above. In addition to CHSP reablement consumers, a choice of one of six ADL kits is also available for 5% of existing CHSP consumers who undergo a reassessment and a need for low-level AT is identified. These ADL kits are the same as those identified in option one above and are provided by the RAS assessor after the reassessment is completed.

Target cohort: All CHSP consumers—undergoing a reablement period or having a reassessment—where assistance in one of the activities is identified during their RAS assessment.

Estimated annual users: 64,914 CHSP consumers, including:

- 32,457 CHSP consumers undergoing reablement
- 32,457 CHSP consumers being reassessed.

4. ADL kits for all new—and existing reassessed—CHSP consumers

Benefit: \$560,881,353 | **Cost:** \$23,658,964 | **Users:** 194,780 | **Program:** CHSP

Description: A further extension to option two above, providing an ADL kit to all CHSP consumers after a RAS assessment that identifies a need for low-level AT. ADL kits are the same as those identified in option one above and are provided by the RAS assessor after the reassessment is completed.

Target cohort: All CHSP consumers—including those not undergoing reablement—where assistance in one of the activities is identified during their RAS assessment.

Estimated annual users: 194,780 CHSP consumers, including:

- 162,286 new CHSP consumers not undergoing reablement
- 32,494 CHSP consumers being reassessed.

5. An ADL kit for new HCP Level 1 and 2 consumers

Benefit: \$145,722,084 | **Cost:** \$5,326,431 | **Users:** 43,852 | **Program:** HCP

Description: A choice of one of six Activity of Daily Living (ADL) kits for new Home Care Package (HCP) Level 1 and 2 consumers. These ADL kits are described in option one above.

Target cohort: New consumers approved for a HCP level 1 and 2 package.

Estimated annual users: 43,852 HCP consumers

6. CHSP equity in state and territory AT funding

Benefit: \$316,797,985 | **Cost:** \$20,562,641 | **Users:** 60,301 | **Program:** CHSP

Description: This option equalises AT and home modification CHSP funding for each jurisdiction nationally. This means that each state and territory would receive funding so that its CHSP consumers:

- have the same access as CHSP consumers in the jurisdiction with the greatest current access (3.8% of SA CHSP consumers for AT and 4.1% of QLD CHSP consumers for home modifications)
- each receive on average the amount of AT and home modifications funding equal to the national average consumer (\$341 for AT and \$726 for home modifications).

This option includes funding for the additional 45,204 allied health assessments needed to appropriately prescribe the AT and home modifications identified for equity.

Target cohort: All CHSP consumers prescribed AT by a RAS, ACAT or CHSP-funded allied health professional.

Estimated annual users: 60,301 CHSP consumers

7. CHSP equity in state and territory Home modification funding

Benefit: \$338,090,870 | **Cost:** \$46,721,004 | **Users:** 64,354 | **Program:** CHSP

Description: This option equalises AT and home modification CHSP funding for each jurisdiction nationally. This means that each state and territory would receive funding so that its CHSP consumers receive equity based on an average national spend of \$726 per person per year for home modifications.

This option includes funding for the additional 16,875 allied health assessments needed to appropriately prescribe the AT and home modifications identified for equity.

Target cohort: All CHSP consumers prescribed home modifications by a RAS, ACAT or CHSP-funded allied health professional.

Estimated annual users: 64,354 CHSP consumers

8. Expanded AT list with state CHSP AT funding equity up to a \$1,500 cap

Benefit: \$316,797,985 | **Cost:** \$61,507,020 | **Users:** 60,301 | **Program:** CHSP

Description: This option funds an expanded list of AT products up to a cap of \$1,500 per person. New categories include:

- AT to enhance home safety, including rug fasteners, wall bumpers and falls prevention measures such as safety treads
- AT for domestic activities, including cleaning and outdoor maintenance
- AT for postural support, including chair raisers and bed transfer aids.

This option includes funding for the additional 48,686 allied health assessments needed to deliver the additional AT.

Target cohort: All CHSP consumers prescribed under advice AT by RAS assessors, or AT or home modifications by a CHSP-funded allied health professional.

Estimated annual users: 60,301 CHSP consumers

9. Expanded CHSP AT list for all new CHSP consumers

Benefit: \$357,372,325 | **Cost:** \$54,533,714 | **Users:** 162,286 | **Program:** CHSP

Description: This option funds an expanded list of AT products for up to 162,286 new CHSP consumers

This option includes funding for the additional 18,090 allied health assessments needed to deliver the additional AT.

Target cohort: All CHSP consumers prescribed under advice AT by RAS assessors, or AT or home modifications by a CHSP-funded allied health professional.

Estimated annual users: 162,286 CHSP consumers

4.4.2 Conclusion

The breadth and number of challenges hindering access to AT demonstrate the timeliness of this review. Issues at key stages in a typical ageing consumer's journey—from a lack of independent information and readily available advice, to clinical assessment where necessary before provision of AT products—means that consumers might not know of, or be able to obtain, the AT they need at the right time to maintain their independence.

Our economic modelling found that the benefits of AT outweigh its costs, supporting the increasing use of AT as an intervention for older Australians. We have developed and individually costed nine program options from which the Department can design a new national AT approach. Options range from \$2 million to \$61 million, and each has a positive return on investment, ranging from \$3.90 to \$25.63 for every \$1 spent. These options provide for:

- Impartial AT information and consistent, evidence-based advice for all ageing consumers
- ADL kits that assist in everyday tasks at home, for consumers outside and inside aged care
- Boosting existing CHSP AT funding, including state funding equity and expanding the categories of AT products available.

There are benefits for the health and aged care systems, although the evidence quantifying these benefits is still emerging.

There is still much that is unknown in the use and application of AT for older Australians. At the very least, there is an opportunity to open up access to consumers not in the aged care system through the provision of information and advice. With additional funding, there may be considerable benefit in both expanding the AT product range as well as the level of funding available for AT programs. Regardless, a staged approach involving an initial trial is suggested to ensure that a national rollout of the new approach builds an evidence base to ensure that it is appropriate for consumers and cost effective.

Appendix A Alt text long descriptions

A.1 Figure 1-1/Figure 4-1: Outline of the AT Framework

This flow chart depicts new and existing pathways for consumers. To the left is a box labelled 'Aging consumer – opening access to all the community'. This is accompanied by an arrow moving down the page indicating increasing functional limitation.

Moving right, the chart is divided into 3 swim lanes: information and advice, assessment, and funder (which is subdivided into government and consumer).

There are two paths to for the aging consumer to get information and advice. The new path applies to consumers not in the aged care system and leads to the new AT Solutions services, comprised of a website, app and national hotline.

The old path leads to My Aged Care call centre for consumers seeking government funded AT services. There is a new path showing cross-referral between the My Aged Care call centre and AT Solutions services.

The next step on the consumer pathway is assessment. The new AT Solutions services culminate in a Standard AT screen. The Standard AT screen has two outcomes, both of which apply only to consumers outside aged care. The first is government-funded ADL kits (which is a new option under the proposed framework). The second is consumer-funded AT products.

The My Aged Care call centre leads to RAS & ACAT assessment.

The RAS & ACAT assessment has 3 potential outcomes:

1. The consumer is assessed as not eligible for CHSP or HCP and is recommended AT that is not government funded. This leads to an existing path that culminates in consumer-funded AT products.
2. The consumer is assessed as eligible for CHSP. This leads to two possible paths:
 - i. A new path directly to government-funded ADL kits
 - ii. An existing path to CHSP allied health assessments (but with new elements). This assessment could lead accessing existing government-funded AT projects, accessing new government-funded ADL Kits or accessing an expanded range of AT products not previously funded by the government.
3. The consumer is assessed as eligible for HCP. This leads to two possible paths:
 - iii. A new path directly to government-funded ADL kits
 - iv. An existing path to HCP funding package, which the consumer can use to purchase AT.

There is a separate box along the bottom of the figure (indicating that it underpins the options above). This box represents the proposed new AT investment Fund to develop and promote AT solutions services, and to conduct an AT pilot and program evaluation.

A.2 Figure 2-1: AT Review methodology

Gantt chart overview of the project activities in 4 phases: planning, mapping, modelling and reporting.

The chart is divided horizontally into 8 sections corresponding to the months of the project (from November 2019 to June 2020). The phases are shown in sequence, each covering approximately 2 months, as follows:

1. Planning (11 November 2019 to 16 December 2019)
2. Mapping (17 December 2019 to 31 January 2020)
3. Modelling (1 February 2020 to 31 May 2020)
4. Reporting (31 Jan 2020 to 9 June 2020).

The phases are also shown down the left side and divide the chart vertically into 4 sections. The tasks involved in each phase are shown under the corresponding phase and month.

The tasks involved in the planning phase are:

- Project initiation meeting (November 2019)
- Project plan (December 2019)

The tasks involved in the mapping phase are:

- Desktop review of data and documentation (December 2019 to January 2020)
- Rapid evidence review (December 2019 to January 2020)
- Mapping current AT programs (December 2019 to January 2020)
- Consultations (December 2019 to May 2020)

The tasks involved in the modelling phase are:

- Cost-benefit analysis (February 2020 to May 2020)
- Model refinement (February 2020 to May 2020)
- Options development (February 2020 to May 2020)
- Delphi focus group (May 2020)

The tasks involved in the mapping phase are:

- Report on Initial Findings (January 2020)
- Interim Report (March 2020)
- Interim Report Workshop (April 2020)
- Options workshop with the Department of Health (May 2020)
- Final Report (June 2020)
- Regular project management updates with the Department (November 2019 to June 2020)

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