**Research on the provision of Assistive Technology in Ireland and other countries to support independent living across the life cycle**

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DISCLAIMER

The National Disability Authority contracted WRC to conduct this research. The views expressed in the report are those of the authors and do not necessarily reflect the views of the National Disability Authority.

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**Executive summary**

The field of Assistive Technology (AT) concerns the practical tools that can support functional needs of people who experience difficulties linked to disability or ageing. It encompasses a broad spectrum of low tech and high tech technologies, for example, walking frames, wheelchairs, hearing aids, vision aids and computer-based communication aids. These technologies play a crucial role in enabling independent living and access to education and employment. The value for money that public expenditure on AT may represent and its potential to contribute cost-savings through reduced demand for more expensive services is increasingly being recognised.

This study examined the approaches to provision of AT in Ireland and a number of other jurisdictions with relatively well-developed systems. The scope of the study covered provision of AT to meet the needs of people with disabilities and older people across three core settings – home/community/ everyday life, employment and education. The main countries covered were Ireland, Denmark, Norway, Netherlands, Italy and the UK, as well as a more limited coverage of Germany (employment setting only). These were selected to reflect a number of different welfare systems and ways of funding and organising AT provision. The overall objective was to provide guidance for the future development of the Irish system in ways that would reflect established or emerging good practice in the field.

The report is organised into six main Chapters. Chapter 1 provides an Introduction, outlining the scope of the AT domain and describing the methodology used in the study. Chapter 2 discusses the relevance and importance of AT in the Irish context, including new analyses of existing data from the National Physical and Sensory Disability Database and from the National Disability Survey of 2006. Chapter 3 presents a description and appraisal of the current Irish AT provision system(s) as they apply to the three core settings - home/community/everyday life, employment and education. Chapter 4 presents a description of core aspects of the AT provision systems in each of the other countries, covering the legislative/policy context and the mechanisms and procedures for AT service delivery. Chapter 5 identifies and discusses some key themes and issues arising from the system descriptions in Chapters 3 and 4 as well as in relation to a number of specific themes that were also examined in the different countries. Chapter 6 presents a synthesis and recommendations, with the main conclusions and recommendations organised in accordance with the following schema.

The main points are summarised below.

**Need for greater recognition of the importance of AT and the value for money it represents**

The importance of AT and the value for money that it can provide seems generally not as well recognised in Ireland as it is in some of the other countries covered. It is concluded that:

* Assistive technology could be given more attention and importance in policy on older people and people with disabilities, per se, as well as in policy on wider issues facing the health & social care system; it needs to be specifically identified as an important dimension in all relevant policies and programmes and this needs to be followed-up with concrete action to ensure impact.
* In the current economic climate it is important to take into account the potential for AT to deliver both substantial value for money (e.g. in terms of gains in quality-adjusted life years (QALYs) and better educational and labour market outcomes for users of AT) in itself as well as cost-savings in other areas of public expenditure that can accrue from spending on AT
* A narrow focus on reduction of expenditure on AT in health and social care services could be counter-productive in terms of additional costs that would arise in other areas, such as acute hospital, home care and residential care.
* There is a requirement to systematically document the nature and extent of unmet needs in this context, examine the implications for the clients concerned and for overall costs across the entire health and social care system, and take this into account in funding allocation decisions.

**The AT provision systems in each of the three settings need to be strengthened**

Health and social care system

* The Irish system of AT provision within health and social care is under-developed in comparison to the five other main countries covered in the study; there is a need to develop a modern and effective approach, with assistive technology services clearly defined and made visible amongst the range of services that are provided.
* The modern 'assistive technology' terminology/conceptualisation might be more appropriate than the narrower 'aids and appliances' one that is currently employed in the HSE and would be more in line with the approach in other countries with well-developed systems.
* As regards the overarching issues of eligibility and entitlement, further analysis is needed of the implications for AT provision of any major structural reforms of the Irish health and social care system; the information and discussion in Chapters 4 and 5 on systems in countries with relevant welfare models (e.g. Nordic, Dutch, UK) may provide a useful input to this.
* In the short-to-medium term, the public-private mix in access to AT is likely to remain in Ireland; this should be actively recognised in public policy and service provision, and information and other relevant supports should be provided for those who must or choose to acquire AT themselves; the approach and experiences in this aspect in the UK merit further examination in this regard.
* The issue of how best to organise and coordinate the efforts of the HSE and NGOs should be addressed as part of the more strategic positioning and strengthening of AT policy and services in Ireland; focused, national-level consultations between the HSE and main NGOs in the field would be a starting point for this.

Employment

* There appears to be very low take-up of the Workplace Equipment Adaptation Grant (WEAG) and there is a need to investigate whether there is substantial unmet need that is not being reached; as a first step, a more proactive approach could be implemented (e.g. an active awareness-raising campaign) and its impacts assessed.
* Greater AT awareness and expertise could be developed within the employment services, as well as clear arrangements for accessing AT expertise from other relevant players when needed (for example, the access to specialist assessment services that is provided in the UK system).
* The possible merits of a system (e.g. certificate) of guarantee for job-seekers in relation to public financial supports for workplace equipment/adaptations could be examined, such as the approach in Norway.

Education

* There is a need for guidelines to be easily available to primary and secondary schools and professionals, providing clear information on eligibility criteria and school responsibilities, and describing the service pathway for accessing AT, supported by case studies for clarification; there is currently no such guidance for primary schools or specifically for assessing professionals.
* Consideration should be given to putting in place a more formal approach to follow up and monitoring of AT usage and impact including an analysis of the way in which AT, which has been accumulated by schools, is being utilised to provide support for other learners with disabilities.
* An important issue to be addressed is the most effective way to ensure that learners, who require it, are given the training necessary to ensure that they get the best out of the AT they are provided with.
* A review is needed of eligibility criteria for learners with high incidence disabilities, that is, those disabilities that occur more frequently in the student population, such as mild general learning disability, who require information technology support in primary and secondary education with reference to the approach being implemented in higher education.
* Formal support for networking and knowledge sharing between educators and professionals with a specific responsibility or interest in AT could assist in raising awareness of new developments and support higher standards of assessment and applications for AT.
* An important concern is how best to make expertise available at a local or regional level to support schools and parents in understanding the potential of appropriate AT and to contribute to continuing teacher education.
* There is a need for a more consistent approach in the further education sector particularly across Vocational Education Committees (VECs), the Institutes of Technology and post-secondary education colleges which would build on the instances of good practice that already exist within the sector and best practice in the higher education sector.

**A more coordinated approach**

There is considerable scope for better coordination of the currently mainly separate systems of provision of AT in the three different settings:

* A collaborative forum (e.g. working party) of key players could be established with a focus on defining AT policy priorities and the improvements needed in the current system(s) of AT provision, as well as how better coordination and synergies could be achieved.
* This forum might include Health Service Executive (HSE), the body that is to replace Foras Áiseanna Saothair (FÁS), National Council Special Education (NCSE), Department of Education and Skills, Citizens Information Board (CIB), the key disability NGOs providing AT services, Department of Health, National Disability Authority (NDA), Health Information and Quality Authority (HIQA), Health Research Board (HRB) and any other relevant players; NDA might be an appropriate party to take the first initiative towards the establishment of such a forum.
* One issue that needs to be examined concerns ways of creating more effective and streamlined access to AT for individuals who have been deemed eligible for AT in one part of the system as they transition between settings; key transitions to be addressed include those between different levels of education as well as between education and employment; an extended version of the ‘user pass’ approach from Norway might be one option to consider in this regard.
* There are many other areas where coordination and synergies across players and settings would be useful; some examples of these are mentioned in the context of the themes raised below.

**Specific quality improvements and other measures**

In order to develop an Irish approach that is in line with existing and emerging good practice in other countries there are a number of specific areas that need to be addressed.

Standards

* Service quality standards need to be developed and applied in the AT services field in Ireland. This can be informed by the various approaches in this area from other countries, including standards for services as a whole as well as for specific aspects of services. The working group on standards in AT comprised of staff from NDA’s CEUD and NSAI and chaired by CEUD might have a contribution to make in this context; this group has reviewed a number of European and International AT Standards including wheelchairs, mobility devices, voice recognition software etc.
* For quality standards in AT provision by the health and social care services, specific issues that need priority attention include:
  + Acceptable standards for waiting times for AT assessment and for delivery after assessment need to be established and implemented consistently across the country
  + Variations across the country in how HSE 'aids and appliances' services are organized need to be addressed; a consistent, nation-wide approach needs to be put in place, underpinned by a nationally-defined service model.
* Development of service quality standards for AT provision in the educational and employment settings also needs to be considered.
* HIQA would have a key role in this in relation to standards for AT services within the health and social care field; a cross-cutting approach could also be considered as part of the work of the proposed cross-setting collaborative forum.

Monitoring and evidence-base

* The monitoring and publishing of key performance data on AT services in Ireland needs to be improved. The approach in Norway provides a good example of what could be aspired to in this area, with regular monitoring and reporting on delivery times, numbers receiving services, costs and other aspects.
* There is also a need to develop an Irish-specific evidence base on the value for money and other contributions of AT in order to provide guidance for policy and for optimal allocation of scarce resources; the approach could include in-house research by the relevant agencies as well as funding of externally-sourced applied research focusing on key issues for current policy and services.
* A first topic for attention might be a focused examination of this aspect in relation to the AT services provided and/or funded by the HSE.

Specialist AT expertise

* There is a need to develop an effective approach that would provide access to expert knowledge and advice about AT for non-specialists at all relevant levels (national to local) within the AT provision system and in each of the three settings; this should aim for sharing of resources, capitalising on existing expertise and avoidance of duplication.
* A mapping and analysis of current sources of expertise within the health/social care, employment, education, NGO and other sectors is needed as a first step; the proposed cross-setting, collaborative forum might be the most appropriate entity to take the initiative on this.

AT skills for frontline staff

* The area of AT skills for the frontline staff in education, employment, health and social care sectors involved in AT provision is recognised as being under-developed and problematic in Ireland; this would include the range of health and social care professionals working with client groups who may have needs for AT, as well as teachers, principals, employment service officers and all other relevant professionals in the educational and employment contexts. There are good examples of approaches in some of the other countries that could provide guidance for the development of this aspect in the Irish context, such as the extensive programme of short continuing professional development courses in AT that are provided within the system in Norway.
* Attention needs to be given both to the inclusion of AT in initial professional education and to AT training as part of continuing professional development, with appropriate accreditation and utilisation of effective means of reaching frontline staff including the use of eLearning.
* The cross-setting collaborative forum that is proposed might be a good vehicle for taking the first initiative to progress this aspect in Ireland.

Information and awareness about AT

* The possibility to further develop the existing online information services of AssistIreland.ie could be examined; this could include addition of user discussion forums as these have been found to be very useful aspects of the online information systems in some of the other countries.
* Given the public-private mix that prevails in the Irish system, consideration could be given to further development of information and other supports for people who must or choose to acquire AT privately.
* Alternatives to online information also need to be developed in order to reach those who are not online, including older people who comprise a large percentage of those who need AT.
* Demonstration facilities and initiatives are also an important element of the approaches in some countries and this could be further developed in the Irish context.

User choice

* The issue of greater user choice in what AT they receive and/or where they get it is currently on the agenda in many countries and needs further examination in the Irish context.
* User choice would need to be considered from an overall system perspective, taking into account the current mode(s) of functioning of the public-private mix here, as well other developments such as those in relation to personal budgets.
* The pros and cons of developing a ‘retail model’ along the lines of the approach being developed in the UK (involving 'prescriptions' for basic AT that are filled by retail outlets as an alternative to direct supply by the health and social services) warrant further examination in the Irish context.

Market functioning

* The approach to public procurement of AT in Ireland is being developed in order to achieve value for money objectives; this needs to take into account the experience from other countries that value for money concerns both price *and* quality, as well as the need to nurture an innovative and vibrant supply side.
* Possible ways to influence price and quality of AT that is purchased privately also need to be considered; the impacts of the ‘retail model’ in the UK on this aspect warrant monitoring with a view to its possible suitability in the Irish context.

**Synergies with related areas and business development opportunities**

* There is increasing convergence of standalone, special-purpose AT systems and broader, universal design approaches that embed assistive functionality in everyday products and the everyday environment; these developments offer new approaches to overcoming barriers to participation and independent living for people with disabilities and older people, as well as new business opportunities for the sectors that will produce and implement them (for example, building assistive functionality into transport systems, buildings, street furniture and so on).
* The broader industrial innovation potential in the areas of AT, telecare, telehealth and ambient assisted living have begun to be addressed in ‘welfare technology’ programmes in countries such as Finland and Denmark; these approaches might provide useful models for similar efforts in the Irish context under the auspices of Enterprise Ireland and Forfás.
* The NDA's Centre for Excellence in Universal Design (CEUD) could consider taking initiatives to foster more attention to these areas in the Irish context, including the possible cost savings as well as the new business opportunities that they may present.

# Introduction

This study addressed the provision of Assistive Technology (AT) to support independent living across the life cycle. Its scope covered delivery of AT in educational, workplace and home settings, addressing the needs of students and workers with disabilities as well as people with disabilities and older people living at home. The main focus was to examine the systems of provision of AT in Ireland and in a number of other jurisdictions with relatively well-developed systems. Based on this, the study aimed to provide guidance for the future development of the Irish system in ways that would reflect established or emerging good practice in the field.

## The scope of the AT domain

Assistive Technology (AT) is a term that has come to be generally used to refer to practical tools that can support functional needs of people who experience difficulties linked to disability or ageing. The most widely used definition of AT today is probably the definition of 'Assistive Products' used by the International Standards Organisation (ISO)[[1]](#footnote-1)

*"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."*

This definition refers to AT as being for persons with a 'disability' but in practice this can be taken to refer both to persons recognised as having disability and to older people or others (such as people with chronic conditions) who experience functional challenges even if these are not necessarily classified as or perceived as 'disability' per se.

An indication of the broad scope of the field of AT is provided by the main headings in the ISO classification system:

* Assistive products for personal medical treatment
* Assistive products for training in skills
* Orthoses and prostheses
* Assistive products for personal care and protection
* Assistive products for personal mobility
* Assistive products for housekeeping
* Furnishings and adaptations to homes and other premises
* Assistive products for communication and information
* Assistive products for handling objects and devices
* Assistive products for environmental improvement and assessment
* Assistive products for employment and vocational training
* Assistive products for recreation.

The ISO standard provides detailed sub-classifications (three levels), yielding a very large number of specific product/device types.

In recent years there has been interest within the AT domain, especially amongst service providers/practitioners, to develop more operationally useful classificatory systems. A focus has been on organising information on AT in ways that are practically useful for users and for professionals working with users to identify the AT that would best meet their needs. In addition, there has been a focus on how classificatory systems linked to the International Classification of Functioning, Disability and Health (ICF) can be developed.[[2]](#footnote-2)

In the Irish context, the term assistive technology is increasingly used although the older 'aids and appliances' terminology also continues to be used in the health and social services. A good indication of the scope of the AT domain can be gained from the National Physical and Sensory Disability Database (NPSDD). The main categories and specific technologies covered in the latest (2009) report from the database are presented in Box 1 and this shows the very broad range of items/products concerned. For purposes of the current study we have maintained a broad scope approach to AT and have not focused specifically on particular categories. Nevertheless, we have put the emphasis on AT that is more towards the independent living domain than towards medical treatment.

In addition, consideration has been given to how best to conceptualise the AT domain and its links/overlaps with other domains. The schema in Figure 1 presents the conceptualisation that has been adopted for the purposes of this study.

**Figure 1. Conceptualising the AT domain**

|  |
| --- |
| **Box 1. Technical aids and appliances (NPSDD, 2009)**  **Aids to mobility:** Powered wheelchair; scooter; manual specialised wheelchair; manual regular wheelchair; special pushchair or buggy; special bicycle or tricycle; portable ramps; fixed ramp; rollator; specialised walkers; frame/zimmer; walking sticks/canes/crutches; guidance canes; support white stick; grab rails and bars; adapted vehicles (wheelchair rack for car, gears/lifts); propulsion unit  **Orthotics & prosthetics:** Cervical/lumbar supports; upper limb orthoses; upper limb prostheses; lower limb orthoses; lower limb prostheses; orthopaedic footwear (e.g. built up shoe); other prosthetic devices; other orthotic devices  **Vision aids:** *Information technology for people with visual impairment:* Special computer equipment; print/display magnification; screen reader and voice synthesiser; scanner; Braille printer; notetaker (e.g. Braille ‘n Speak); character reading machines (e.g. Kurzweil reading machine); *Low vision aids:* Magnifiers; close circuit television; telescopes; overhead projector; *Braille equipment:* Braille Perkins machine; Braille paper; Dymogun; other braille equipment; audible/tactile devices (e.g. talking scales, clocks); writing aids (e.g. writing frame); light filters  **Aids to hearing:** Personal listening devices (e.g. loop system); fax/telephone devices; teletext equipment/caption readers; hearing aid (incl. cochlear implant device/digital hearing aid); alerting devices; videophone  **Communication aids:** High technology communication devices; low technology communication devices; talk tools; accessories for telephoning  **Incontinence aids:** Neurostimulator; catheters; bags/pads; aids for continence training; urinary prosthesis  **Special furniture and other aids to personal care:** Hoists; powered hoists (including hydraulic car hoist); manual hoists; overhead hoists  **Lifts:** Floor through ceiling lifts; stair lifts; external lifts  **Special bed or bedding:** Powered beds; manual beds; pressure relieving beds; pressure relieving mattresses; bed accessories (e.g. boards, poles and ladders); mattress raiser; bedding  **Aids to lying:** Various wedges/rolls; sleep systems (e.g. SYMMETRISleep)  **Aids to toileting:** Commode; potty chair; adapted toilet seats; toilet surrounds; bidet; urine bottle; specialised toilets (inc raised toilets)  **Aids to bathing:** Specialised bath; powered bath aids (e.g. bathlift); manual bath aids (e.g. bath seat); shower aids (e.g. chairs / trolley/shield etc.); bathroom grab rails and bars; adapted wash basin (including height adjustment, lever taps and special shape); adapted shower  **Aids to sitting:** Specialised chairs (perch stool/chair); car seats; high chairs for children; pressure relieving cushions; wedges; chair raiser; custom specialised seating insert; devices for supporting the legs and/or feet  **Aids to standing:** Parallel bars; standing frame; powered standing frame; sit-to-stand frame; other special furniture and aids to personal care  **Other special furniture and aids to personal care:** Environmental control; monitoring systems; reading aids; dressing aids; feeding aids; kitchen aids; aids for administering medicines (e.g. injection guns, injection systems); aids for housekeeping; stockings and socks; aids for dialysis therapy  **Therapy aids:** Aids for circulation; TENS (transcutaneous electrical nerve stimulators); multi-sensory (e.g. sensory room); exercise equipment (e.g. balls and mats); weights; treatment table; heated pads; muscle stimulator; therapeutic listening device; therapeutic tapes/CDs; aids for grasping, holding, reaching (e.g. pick-up/reaching aid, key/door handle opener, non-slip mats); assistive products for protecting the body; manual devices for drawing and handwriting; Variable frequency photo stimulation (light mask)  **Transfer aids:** Transfer boards; transfer slings  **Respiratory aids:** Peak-flow meter; nebulizers (including aero chamber); oxygen concentrators; inhalers; suction machines; pep mask; home ventilator; humidifier; oxygen unit & tubing; vibratory positive expiratory pressure system; air cleaners: devices for removing pollutants from the air; aids for respiratory therapy; respiration meters; tracheostomy aids; aspirators  **Other:** Adjustable table/adapted desk; specialised helmet; mobile phone; drip stand; standing stool; glucometer and associated equipment; standard computer accessories; specialised software (e.g. EZ keys software); standard computers for social/ educational purposes; specialised hardware (e.g. Joystick, mouse etc); body plaster/neofract jacket; therapeutic weighted clothing; deep brain stimulation; pump to drain lymph nodes |

As indicated in the schema the focus is on 'assistive technology', conceptualised as encompassing the spectrum of devices, equipment and other hardware and software products of the types listed in Box 1. The domain of home adaptations overlaps to a certain extent with this and will be addressed to a certain degree in Chapter 3 but is not the main focus of our study. Likewise, the domain of 'smart homes' (which includes home automation as well as a wider range of multimedia applications for entertainment purposes, energy control applications, and so on) also overlaps with the assistive technology domain. In particular, 'environmental controls' are a category of assistive technology.

Telecare and home telehealth differ from these other areas in that they are (remote) **care services**. The core logic is to monitor and transmit information from the home/person to some form of care service that will respond to needs as they arise. Assistive technology, in the sense that the term is generally used, can be considered to focus more on products/equipment that are oriented towards providing immediate functionality to support an older person or person with disabilities and/or their local carer. In most countries, in fact, the AT domain has so far been more or less separate in terms of having its own place in the logic of the health/social care system and its own provision system, with telecare/telehealth developments evolving as a separate domain.

Other related concepts are also indicated in Figure 1, namely, 'ambient assisted living (AAL)' and 'welfare technologies'. 'Ambient assisted living' has begun to be used as an umbrella term to refer to applications of new technologies to support independent living for older people and the term 'welfare technology' is used in some countries, especially the Nordic ones, to refer to the broad range of applications of technology in the health, wellbeing and public services domains.

The focus of the current study is on AT as conceptualised above. Nevertheless, some relevant developments in telecare/telehealth and in the emerging themes of 'ambient assisted living' and 'welfare technology' are presented and discussed in section 5.6.

## About the study

This section outlines the focus and scope of the study and the research approach adopted. The key objective of the study was to identify good practice from other countries that could provide guidance for the development of the Irish AT provision system. Therefore, the research and reporting was intended to provide a thematic analysis and identification of useful insights rather than a comparative analysis of the Irish and other systems.

**Specific themes of interest**

A number of specific themes were addressed in the research:

* Legislation and policy context
* Systems and structures in place to deliver AT
* Funding of AT
* Promotion of availability and knowledge about AT
* Telecare and telehealth programmes
* Public and private expenditure on AT
* Market situation – competition, regulation, pricing arrangements with suppliers
* Description and assessment of the different elements of the AT delivery system
* Factors that play an important role in terms of final outcomes for clients.

**Research approach**

The main research methods were literature/desk research and interviews/consultation with relevant experts and other stakeholders[[3]](#footnote-3). Key elements of the approach and process included:

* Preparatory work to support the selection of the jurisdictions to be covered in the work
* Information gathering and documentation of the AT provision systems in the selected jurisdictions
* Information gathering on the AT provision system(s) in Ireland
* Collation and analysis of data on AT usage and needs from key Irish sources
* Focused examination of available literature/evidence on key themes
* Synthesis and reporting.

*Selection of the other jurisdictions to be covered*

The study brief required the research to cover five other jurisdictions, these to be selected to reflect relatively well-developed AT provision systems from which lessons might be learned for the future development of the AT provision system in Ireland. This is not a straightforward task given the wide variation in AT systems across Europe and further afield as documented in cross-country studies that have been conducted by others over the years.[[4]](#footnote-4)

In part, this variation derives from differences across countries in ‘welfare regimes’ and the overarching models for provision of health and social care services. For example, some are primarily public systems (which may be tax or insurance based) and some are more mixed (public-private) economy systems. This is important because provision of AT for home/everyday life purposes is generally embedded within the health and/or social care systems and thus the nature of the overall systems in these areas generally provide the framing conditions for AT services. The role played by the non-profit, non-governmental organisation (NGO) sector is also a relevant consideration. In particular, in Ireland, NGOs are important providers of various health and social care services for people with disabilities and older people, including the AT provision system.

In reality, the current Irish welfare system is not strictly or directly comparable with any other European country, given our unique brand of public-private mix and the role played by NGOs. However, the possibility of major overhaul and re-shaping of the Irish system is now on the table. Possible directions might include a universal, social insurance based system or a competitive private insurer market (but with more regulatory oversight to ensure equality of access to core services for all, such as the system in the Netherlands). Against this background, the selection of countries aimed to cover a number of different welfare regimes.

The other key selection consideration was that the countries should reflect relatively ‘well-developed’ AT provision systems. This again is not straightforward as there are a variety of dimensions or perspectives that could be applied to gauge whether a system is well-developed. One relevant aspect is the extent to which the AT provision system gives good coverage for all three settings – home/community, employment and education – as well as whether this is provided through separate (parallel) systems or whether there is good integration/coordination of provisions across all settings. In addition, there are other more specific aspects of potential interest and relevance, such as universality of coverage, quality assurance approaches and so on.

To address these selection criteria, the research team conducted an extensive preliminary collation and examination of available information on the systems in other countries. Information sources most useful for such purposes are those that describe a number of countries in a comparable way, including those directly addressing AT services[[5]](#footnote-5) and those that include AT services within a wider scope exercise.[[6]](#footnote-6) However, because such sources generally provide quite limited and often uneven documentation on the different country systems, the preparatory scanning exercise was extended through web search and collation of relevant material from other relevant sources.[[7]](#footnote-7) In addition, it was necessary to look to other sources for information about developments in telecare/telehealth as this tends to be a separate literature to the AT literature.[[8]](#footnote-8)

Based on this, five main countries were selected for the core focus of the work - Denmark, Norway, Netherlands, Italy and the UK. In addition, Germany was included as an example of a country with a strong focus on AT in the employment setting. Table 1 presents an overview of the selected countries in terms of key features of their 'welfare regimes' of relevance for the study. The Nordic countries (Norway and Denmark) have particularly well-developed AT provision systems; the AT system in the Netherlands is also relatively well-developed and is partly based on the health insurance system which has been mooted as a model that might be relevant for Ireland; the UK system has had an emphasis and development work in some areas of interest for this study, including ‘community equipment’ and telecare/ telehealth; the Italian system is of interest as an example of a system with a detailed listing of the AT that is covered in the public provision system as well as because of the role played by NGOs. The German system has been included because of the relatively well-developed approach to AT provision in the employment setting.

**Table 1: Core countries for information gathering**

|  |  |
| --- | --- |
|  | **Welfare regime (relevant for AT)** |
| Denmark | Tax-based funding with AT services delivered by municipalities; universal system |
| Norway | Mainly national social insurance-based funding (also smaller role played through municipality services); universal system |
| Netherlands | Combination of (compulsory) private health insurance & municipality services; universal system |
| Italy | Tax-based funding of national health system; universal system for AT provided by the health services |
| UK | Tax-based funding; universal system for AT provided by health services, often income-related for AT provided under social service system |
| Germany | Social insurance funding of AT for employment; largely universal system |

In addition the web/literature work also identified interesting developments and approaches in a number of other countries, including the United States and New Zealand. These are taken up in the relevant thematic sections in Chapter 5.

*Documenting the AT provision systems in the selected jurisdictions*

A detailed profile of the AT provision system in each of the selected countries was prepared through a combination of preparatory desk research (by the research team) followed by inputs from local contacts in the selected countries. Experience in cross-country work has shown that this approach is efficient and likely to give a consistent coverage of the domains of interest across the countries. The actual process involved: preparation of a template to guide the information gathering; initial completion of as much of the template as possible by the core Irish research team; and then validation and additional inputs from local contacts in each of the other countries (with the exception of the UK, for which the information was compiled by the Irish team).

*Information gathering on the AT provision system(s) in Ireland*

The AT provision processes in Ireland are fragmented and involve a number of different players. There is generally little published documentation in this area and there have been no recent efforts to compile a good overview of the current situation. Against this background, this part of the work necessitated a considerable amount of effort on the part of the research team in order to get a good picture of how the system(s) function in the three domains of interest - home/community/everyday life, employment and education. The approach involved web/literature work to find and process existing documentation as well as fieldwork to interview/consult with the public and other organisations providing AT services and gather information and data from them.

*Collation and analysis of data on AT usage and needs from key Irish sources*

Another important component of the research in Ireland focused on extraction and analysis of quantitative data on AT usage and needs from key Irish data sources. There are two main resources in this regard - the National Physical and Sensory Disability Database (NPSDD) managed by the Health Research Board (HRB) and the data from the National Disability Survey conducted by the Central Statistics Office (CSO) in 2006. A considerable effort was spent on preparing the first ever focused analysis and effort to leverage the data that these provide in relation to AT.

*Focused examination of available literature/evidence on key themes*

The main focus of the literature work in this study was on literature relating to the AT provision systems in Ireland and in the other countries selected. This tends to be more in the practitioner and/or grey literature domains rather than in the peer-reviewed academic literature. In addition, an initial wide trawl of the more academic literature was conducted. The trawl identified a very large number of citations addressing the AT field, with a very wide scope across the different disability and/or AT areas as well as a very heterogeneous mix in terms of types of research and methodological robustness. In general, this is not a coherent body of evidence that can be easily drawn-upon for more practically-oriented purposes such as the current exercise. Nevertheless, we have selectively drawn on some parts of the wider literature in relevant places in the report, including Chapter 2 on the 'value-case' for AT and some of the thematic sections in Chapter 5.

**Scope and intended contribution of this study**

It is appropriate to discuss briefly the scope and intended contribution of the study. This is important because there are many complexities and issues that could in principle be addressed and a variety of perspectives that could have been applied in the research, analysis and recommendations.

To begin with, the study has taken a broad brush approach to the spectrum of AT addressed, without in-depth examination of particular areas of AT. This is important because, in practice, in Ireland and elsewhere, there are often separate provision systems in place to address particular types of AT (for example hearing aids, wheelchairs, orthoses and prostheses, equipment for activities of everyday living, and so on). Each would merit a dedicated study in its own right in order to adequately cater for the range of specific issues that arise for the particular domain, but this was beyond the scope of the current study. The approach adopted in the study was to give some attention to relevant aspects of the different sub-systems without attempting to be in any way exhaustive in this regard.

An important issue for the study was to strike an appropriate balance between, on the one hand, relatively detailed description and analysis of the many aspects of the AT provision system(s) in Ireland and the other countries and, on the other hand, the extraction of useful pointers from the other countries that could be taken up in the future development and improvement of the Irish system(s). Getting the right level of detail of description is a challenging aspect of this type of cross-country research and analysis. The approach adopted in the study was to aim to be sufficiently specific whilst avoiding the risk of getting overwhelmed with detail that would make generalisations and extraction of useful guidance impossible. Against this background the study should be seen as the first effort to take stock of the Irish AT provision system(s) as it compares to the situation in other countries with relatively advanced systems and, on the basis of this, to identify some aspects that warrant further development and improvement in the light of what can be learned from the system(s) in other countries.

In addition, the focus in the Irish system was on the AT provision and not on in-depth assessment of its functioning and outcomes. Thus, direct surveying/consultation of end-users was not included within the scope of the work although this is something that needs to be addressed in future research in this field.

**Structure of the report**

The report is organised into six main Chapters, including this Introduction. Chapter 2 discusses the relevance and importance of AT in the Irish context, including new analyses of existing data from the National Physical and Sensory Disability Database and the National Disability Survey of 2006. Chapter 3 presents a description and appraisal of the current Irish AT provision system(s) for the three settings - home/community, employment and education. Chapter 4 presents a description of core aspects of the AT provision systems in each of the other countries, covering the legislative/policy context and the mechanisms and procedures for AT service delivery. Chapter 5 identifies and discusses some key themes and issues arising from the system descriptions in Chapters 3 and 4 as well as in relation to a number of specific themes that were also examined in the different countries. Chapter 6 presents a synthesis and recommendations.

# Relevance and importance of AT in the Irish context

This Chapter aims to set the scene for the system descriptions and analyses in later chapters. Section 2.1 looks at the importance of the AT issue in terms of what can be gleaned from existing data sources, especially the data on AT usage and needs contained in the National Physical and Sensory Disability Database (NPSDD) and the National Disability Survey of 2006. Section 2.2 then looks at the strategic policy importance of AT in terms of its role in delivering on equality, independent living and value for money in Irish policy.

## Data from the NPSDD and National Disability Survey

In recent years some data on overall levels of usage of AT in Ireland and some indication of the extent to which needs are being met has become available, including data from the National Physical and Sensory Disability Database (NPSDD) and the 2006 National Disability Survey. These data sources throw light on the importance of AT from a number of perspectives. They show that whilst there are relatively large numbers of people using AT, there is also substantial unmet need in this area.[[9]](#footnote-9) In addition, some preliminary analyses conducted for this study suggest that these data sources could be further mined to provide insight into the contribution that AT may make to reduce the experience of participation restriction amongst people with disabilities.

**Current levels of usage and unmet need**

Tables 2 and 3 present data on current levels of usage and needs in relation to AT, based on the NPSDD and National Disability Survey, respectively.

Table 2 presents data for a selection of types of AT from the many different categories of AT that are included in the NPSDD. The focus is on those with the highest levels of usage and/or requirements within each category. From this dataset the numbers with requirements (defined in the NPSSD as those who have already assessed needs and/or who require assessment of needs) for the different types of AT are generally in the hundreds. The numerically highest levels of such requirements are for grab rails and bars, alerting devices for people with hearing impairments, standard computers for educational/social purposes, powered wheelchairs, and specialised chairs (perch stool/chair).

There are a number of important limitations to this database. These include the voluntary nature of inclusion and the fact that it does not cover the 65+ age group. However, it does serve to provide some indication of registered need amongst the age group targeted by the database.

The National Disability Survey of 2006 provides a more representative picture of the population of people with disabilities, also including those aged 65+. Given the nature of the survey, it covered a more restricted and pre-specified list of AT. As can be seen from Table 3, this survey gives estimates of levels of unmet need for AT that are typically in the thousands and, in some cases, tens of thousands.

**Table 2. Usage and requirements in relation to AT (NPSDD, 2009)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Area** | **Type of equipment/device** | | | **Currently use** | **Have requirements** | | |
| **Have been assessed and require the AT** | **Need an assess-ment for the AT** | **total** |
| Mobility | Grab rails and bars | | | 1647 | 143 | 685 | 828 |
| Powered wheelchair | | | 1508 | 138 | 464 | 602 |
| Manual specialised wheelchair | | | 1473 | 90 | 313 | 403 |
| Adapted vehicles (wheelchair rack for car, gears/lifts) | | | 983 | 46 | 315 | 361 |
| Orthotics & prosthetics | Lower limb orthoses | | | 1745 | 102 | 276 | 378 |
| Orthopaedic footwear (e.g. built up shoe) | | | 1103 | 84 | 269 | 353 |
| Upper limb orthoses | | | 683 | 35 | 104 | 139 |
| Vision | Special computer equipment | | | 787 | 124 | 319 | 443 |
| Audible tactile devices (e.g. talking scales, clocks) | | | 529 | 64 | 141 | 205 |
| Print/display magnification | | | 404 | 45 | 151 | 196 |
| Magnifiers | |  | 689 | 37 | 130 | 167 |
| Hearing | Alerting devices | | | 665 | 149 | 655 | 804 |
| Hearing aid (incl. cochlear implant/digital hearing aid) | | | 1989 | 139 | 377 | 516 |
| Fax/telephone devices | | | 485 | 66 | 253 | 319 |
| Personal listening devices (e.g. loop system) | | | 263 | 55 | 217 | 272 |
| Communication | High tech communication devices | | | 142 | 35 | 133 | 168 |
| Low tech communication devices | | | 99 | 11 | 39 | 50 |
| Home/ADL | Specialised chairs (perch stool/chair) | | | 1267 | 117 | 434 | 551 |
| Powered beds | | | 1399 | 58 | 335 | 393 |
| Kitchen aids | | | 379 | 29 | 324 | 353 |
| Aids for grasping, holding, reaching (e.g. pick-up/reaching aid, key/door handle opener, non-slip mats) | | | 535 | 36 | 259 | 295 |
| Pressure relieving mattress | | | 759 | 34 | 220 | 254 |
| Manual bath aids (e.g. bath seat) | | | 610 | 51 | 198 | 249 |
| Stair lifts |  | | 216 | 36 | 208 | 244 |
| Powered hoists (including hydraulic car hoist) | | | 726 | 47 | 182 | 229 |
| Adapted toilet seats | | | 838 | 53 | 173 | 226 |
| Computer (general) | Standard computers for social/educational purposes | | | 585 | 126 | 514 | 640 |
| Specialised software (e.g. EZ keys software) | | | 133 | 57 | 235 | 292 |
| Specialised hardware (e.g. Joystick, mouse) | | | 49 | 12 | 46 | 58 |

**Table 3. Usage and needs for AT (National Disability Survey, 2006**)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Area** | **Estimated total population** | **Type of equipment** | **Use** | | **Need** | |
| *%* | *Estimated total no.* | *%* | *Estimated total no.* |
| **Seeing** | 50,634 | Magnifier, large print or Braille reading materials | 31.8 | 16,086 | 12.2 | 6,153 |
| Audible or tactile devices | 7.7 | 3,896 | 8.4 | 4,271 |
| Recording equipment or portable note-takers | 3.6 | 1,844 | 4.4 | 2,226 |
| Computer with large print, Braille etc. | 6.9 | 3,508 | 7.3 | 3,694 |
| Screen reader | 3.7 | 1,851 | 6.0 | 3,057 |
| Scanner | 4.4 | 2,246 | 3.7 | 1,867 |
| Guidance cane | 7.2 | 3,669 | 2.7 | 1,344 |
| **Hearing** | 57,606 | Hearing aid(s) without 'T-switch' | 23.2 | 13,361 | 19.1 | 11,001 |
| Hearing aid(s) with 'T-switch' | 18.2 | 10,464 | 16.3 | 9,416 |
| Cochlear implants | 2.9 | 1,665 | 7.1 | 4,112 |
| Phone related devices | 10.1 | 5,827 | 13.0 | 7,506 |
| Mobile phone for texting | 21.6 | 12,458 | 3.8 | 2,202 |
| Fax machine | 4.2 | 2,428 | 2.9 | 1,668 |
| Speedtext | 3.2 | 1,868 | 1.9 | 1,117 |
| Computer to communicate e.g. e-mail or chat services | 9.8 | 5,618 | 5.6 | 3,215 |
| Subtitles on TV | 16.8 | 9,676 | 5.1 | 2,926 |
| Amplifiers | 6.7 | 3,833 | 3.8 | 2,172 |
| Visual or vibrating alerts/alarms | 9.9 | 5,682 | 13.2 | 7,601 |
| A loop | 2.3 | 1,349 | 2.8 | 1,633 |
| **Speech** | 35,335 | Voice amplifier | 1.1 | 382 | 3.1 | 1,100 |
| Computer or keyboard | 8.1 | 2,857 | 8.0 | 2,832 |
| Communications board | 5.4 | 1,909 | 7.8 | 2,759 |
| **Mobility and dexterity** | 184,006 | Walking aids | 45.3 | 83,319 | 5.8 | 10,723 |
| Manual or electric wheelchair or scooter | 17.1 | 31,412 | 4.8 | 8,923 |
| Portable ramps | 8.4 | 15,472 | 7.6 | 13,947 |
| Assistive devices for support or grasping | 15.4 | 28,407 | 8.7 | 16,083 |
| Grab bars or bathroom aids | 35.1 | 64,500 | 17.4 | 32,053 |
| Lift, stair lift | 5.7 | 10,433 | 10.4 | 19,066 |
| Hoist or similar device | 8.4 | 15,512 | 4.8 | 8,918 |
| **Intellectual and learning** | 71,589 | Screen reading software, learning support software | 15.9 | 11,408 | 15.3 | 10,940 |
| General products and technology for education | 18.0 | 12,878 | 15.2 | 10,917 |
| **Remembering and concentrating** | 112,986 | Products or technology for personal use in daily living (such as automated reminders or calendars) | 17.1 | 19,276 | 9.7 | 10,918 |

From the National Disability Survey data, Figure 2 shows the numbers of people with unmet needs. As can be seen, numerically the highest levels of need are indicated for grab bars (more than 32,000), hearing aids, with or without T-switch (more than 20,000), lifts or stair lifts (more than 19,000), assistive devices for mobility/dexterity (more than 16,000), portable ramps (almost 14,000), products or technology such as automated reminders or calendars (almost 11,000), general products and technology for education and walking aids (almost 11,000).

**Figure 2. Types of AT with high levels of unmet need (absolute numbers) -   
National Disability Survey (2006)**



Overall, both the National Disability Survey and NPSDD data suggest that there are high levels of unmet needs for AT across the spectrum, from low cost and relatively low tech items (e.g. grab bars, walking aids and portable ramps) to higher cost and relatively high tech items (e.g. lifts, electric wheelchairs), as well as for computer-based AT, hearing aids and other devices.

Apart from the absolute levels of need it is also relevant to look at relative need in terms of the proportions of those who could benefit from a given type of device but don't currently have one. Figures 3 and 4 show these patterns from the two datasets. From the NPSDD (Figure 3), types of AT for which less than 50% of need is met include specialised software, alerting devices for people with hearing disability, specialised hardware, high tech communication devices, stair lifts, standard computers for social/educational purposes and personal listening devices. From the National Disability Survey (Figure 4), types of AT for which less that 50% of need is met include voice amplifiers for people with speech disability, cochlear implants, lifts or stair lifts, communications boards, loops, screen readers for visual disability, visual/vibrating alerts for hearing disability, and phone related devices for hearing disability.

**Figure 3. Types of AT with high relative unmet need (NSPDD)**



**Figure 4. Types of AT with high relative unmet need (National Disability Survey)**



It is also of interest to examine age patterns. Figures 5 and 6 present the age profiles of those currently using and those reporting a need for the different types of AT, respectively.

Figure 5 shows the age composition of those using technical aids (National Disability Survey). As shown, the current user base is predominantly aged over 65 (and amongst this age group, predominantly aged 75 and over) for some types of AT (lifts or stair lifts, hoists or similar, hearing aids without T-switch, grab bars, phone related devices, walking aids, portable ramps, wheelchairs, and so on). Children (0-17 years) predominate for some AT (screen reading software for intellectual/learning disability, general products or technology for education, and communications boards). Adults in the 18 to 64 years age range predominate for other types of AT (especially computer-related AT for visual and hearing disabilities and mobile phone based AT for hearing disability).

Figure 6 shows the age composition of those needing technical aids (National Disability Survey). As shown, the proportion of older people is somewhat lower amongst those reporting needs for the various types of AT, although they do make up more than half of those reporting needs for quite a number of types of AT. The 18-64 years age group also comprises more than half of those reporting needs for a number of types of AT, in this case covering a fairly broad spectrum from low tech mobility aids to higher tech computer-based aids

**Figure 5. Age composition of those using technical aids (National Disability Survey 2006)**



**Figure 6. Age composition of those needing technical aids (National Disability Survey 2006)**



Figure 7 shows the percentages in each age group in the relevant disability groupings (seeing, hearing, speech, mobility and dexterity, intellectual etc) that report using and needing the different types of AT for that disability grouping (National Disability Survey). As regards current usage, it can be seen that for most types of AT there is some level of usage across all age groups. For some AT, the likelihood of usage increases significantly with age (e.g. many mobility aids, more traditional visual aids such as magnifiers and more traditional hearing aids without T-switch). For other AT, the likelihood of usage decreases with age, for example computer-based visual aids, aids for speech disability and for intellectual/learning disability, and mobile phones or computers for communication for hearing disability. As regards unmet needs, the patterns sometimes mirror those for usage but not always. In general, it seems that older people do not tend to commonly report needs for the computer-based aids, possibly because they are not aware of them or do not think of such aids as appropriate for them.

**Figure 7. Percentages of each age group (in the relevant disability grouping) using the different types of technical aids (National Disability Survey 2006)**





**Association between unmet need for AT and greater levels of participation restriction**

Finally, Figure 8 presents some preliminary and illustrative results of the type of data and insight that could be generated from the available data sources in the future. The figure shows levels of participation restriction reported amongst those who use and those who require technical aids, focusing on those aids for which the data shows a statistically significant difference on this dimension. It can be seen that those who need the various types of aid report substantially higher levels of restriction than those who have the aid. Although further and multivariate analysis would be needed to properly explore the data, these results give an indication of the importance of AT for participation.

**Figure 8. Participation restrictions for those who use and who need particular aids (NPSDD, 2009)**



## Policy relevance and importance

AT has important relevance for a number of areas of policy, including disability policy and policy on older persons as well as health and social care, employment and education policies more generally.

**Disability policy**

AT is centrally important for disability policy as it is one of the more concrete ways that the barriers to participation in society can be overcome for people with disabilities.

Access to AT is a right under the UN Convention on the Rights of Persons with Disabilities (UNCRPD). Under Article 4 of the Convention, Member States have a general obligation t*o undertake or promote research and development of, and to promote the availability and use of new technologies, including information and communications technologies, mobility aids, devices and assistive technologies, suitable for persons with disabilities, giving priority to technologies at an affordable cost*. Article 20 of the UNCRPD (Personal Mobility) requires Member States to facilitate access to quality mobility aids, devices, assistive technologies at affordable cost and encouraging those who produce mobility aids, devices and assistive technologies to take into account all aspects of mobility for persons with disabilities. From the perspective of progressive realisation (i.e. that a Member State can demonstrate it is making progress towards fulfilling its obligations), this requires that at the very least there is a coherent overall plan for the development and dissemination of AT and a strategy for achieving its goals.

AT is also recognised as a key environmental facilitator in the World Health Organisation’s International Classification of Functioning, Health and Disability (ICF, 2001). A complete chapter is devoted to products and technology in the environmental domain, and there are other relevant sections on AT (e.g. in education).

**Policy on older persons**

As the data from the National Disability Survey shows, older people are major users of many types of AT as well as making up a substantial proportion of those with unmet needs for a variety of types of AT. It has a very important role to play in maintaining independent living in one's own home, a key aspiration of the majority of older people. More generally, AT has major importance as one of the solutions that can help to address the challenges for the health and social care system posed by an ageing population.

**Informal carer policy**

AT also has importance for policy on informal carers. It can enable people to do more things for themselves and thus reduce the pressures on informal carers. There are also many types of AT available to help carers with caring tasks.

**Employment policy**

Active employment policies are central to approaches to support people with disabilities and older workers today. Article 27 of the UNCPRD requires Member States to ensure that reasonable accommodation is provided to persons with disabilities in the workplace. The ICF lists a range of AT devices and specially designed equipment, products and technologies to facilitate employment such as adjustable tables, office furniture and equipment; computer hardware, software, accessories; and environmental control units. AT is commonly included within the scope of employment services for people with disabilities and is beginning to be given increased attention also in relation to extension of working age and retention of older workers.[[10]](#footnote-10)

**Education policy**

AT is acknowledged as an important element in achieving inclusive education environments. It has the potential to reduce the isolation of learners with communication difficulties. It can allow pupils with substantial physical or sensory impairments to participate in the mainstream classroom. Article 24 of the UNCRPD (on Education) places a requirement on Member States to make reasonable accommodation so that pupils can participate freely in mainstream general education at primary, post-primary, higher education and vocational training. It is very specific about arrangements to be made for people with sensory impairments. The World Health Organisation’s International Classification of Functioning, Health and Disability (ICF, 2001) specifies education as one of ten key domains where technology can act as a barrier or facilitator to participation. In each domain it distinguishes between access to general products and technology, universal design and assistive products and technologies which it defines as adapted *and specially designed equipment, products, processes, methods and technology.* In the case of education this refers to assistive technology for theacquisition of knowledge, expertise or skill e.g. specialized computer technologies.

**Health and social care policy**

The importance of AT in health and social care policy derives, in part, from the role that health and social care services play in delivering on disability and older persons policy. In addition, there is an increasing recognition of the contribution that AT can make to wider health and social care policy goals, including:

* prevention (e.g. falls amongst older people)
* delay or avoidance of need to move to long-term residential care
* support for earlier hospital discharge
* contribution to programmes to better manage chronic conditions
* partial replacement of needs for homecare services
* reduction of the burden on informal carers.

These goals are becoming of increasing importance for health and social care systems faced with the challenges of ageing populations and pressures for cost-containment. Apart from quality of life benefits for clients, there are also significant value-for-money benefits that can be achieved. There is a growing body of evidence on the contribution of AT in these areas, including the broader range of applications encompassed within the telecare/home telehealth domains.

In Wales, for example, community equipment services are beginning to be recognised for the wider strategic role that they play in supporting other care-related services:

*"Timely and appropriate provision of community equipment is key in prevention of hospital admissions, reducing care home admissions, reducing delayed transfers of care/length of stay, reducing demand for home care and has more immediate benefits such as preventing and enabling clients to remain independently mobile in their own homes or reducing the development of pressure ulcers, and enabling clients to recover more quickly following surgery". [[11]](#footnote-11)*

**Value for money**

It could be considered that some aspects of the value case for AT are self-evident in that relatively low cost items can enable people with disabilities and older people to do things that would otherwise be difficult or even impossible. More specifically, in England the Audit Commission has illustrated the value-for-money associated with AT in terms of the often very low costs of AT in comparison to the costs of homecare staff.[[12]](#footnote-12) Table 4 presents some indicative costs for a range of AT in the Irish context.

**Table 4: Indicative cost for a range of AT**

|  |  |
| --- | --- |
|  | Indicative costs (euro)[[13]](#footnote-13) |
| Grab rails, bath / shower seats, etc | 25-200 |
| Walking frame | 50-100 |
| Sensory devices for everyday life | 50-150 |
| Set of personal care / living aids | 150-250 |
| Bath lift | 500-1,000 |
| Manual wheelchair | 500-1,000 |
| Scooter | 1,000-2,000 |
| Powered wheelchair | 1,500-5,000 |

Costs for many types of AT are low in comparison to homecare[[14]](#footnote-14) and, especially, nursing home[[15]](#footnote-15) and hospital[[16]](#footnote-16) costs. In particular, even a small contribution to reduction in days spent in hospital (e.g. through support for early discharge or prevention in the first place) and days spent in nursing home care (through delay or even avoidance of need for admission in the first place) would provide impressive value for money returns. Other calculations could be prepared, for example, contributions towards reducing the total annual cost of falls and fractures amongst older people in Ireland (estimated at up to 400 million euro in total when all costs are calculated, including those of carers/quality of life).[[17]](#footnote-17)

One of the reasons why AT has not always received the policy attention it deserves may be due to the lack of visibility of the value case for AT. This is probably, at least in part, linked to the limitations of outcomes research in the AT field where, although there have been numerous studies, these typically have involved small numbers of cases and have not always been methodologically robust.

Although this can be a difficult field for research as it is often hard to isolate outcomes solely linked to AT, there have been some randomised controlled trials (RCTs) in the area. This includes the much cited study by Mann et al in 1999 which found that the (non-AT) control group required significantly more expenditures for institutional care, for nurse visits and for case manager visits.[[18]](#footnote-18) Recent efforts to prepare systematic reviews of the evidence in this field have begun to provide a more consolidated and reliable evidence base. These have found evidence of positive outcomes for a range of AT, including mobility devices, environmental control and smart home systems, and other technologies.[[19]](#footnote-19)

One useful metric that has been applied in various fields, including some aspects of AT, is the QALY (Quality Adjusted Life Year). For example, the recent HSE review of audiology services in Ireland cited UK cost-utility gain estimates of between £500 and £1,000 per QALY for hearing aids.[[20]](#footnote-20) It was concluded that adult hearing aid services show remarkable cost effectiveness when compared to other health interventions. A Swedish study also found strong cost/QALY ratios for four-wheeled walkers.[[21]](#footnote-21)

Finally, the inherent value for money that AT can represent may be further enhanced through various practical measures. Good targeting and selection of AT is one important issue as there is evidence that a lot of AT may remain unused if this aspect is not addressed. Appropriate recycling of AT equipment can also make an important contribution. Effective procurement procedures can ensure value for money in terms of quality and price when AT services purchase AT from suppliers.

# The AT provision system in Ireland

This Chapter outlines the main features of the AT provision system in Ireland. A schematic overview of the main elements of the system is presented in Figure 9.

**Figure 9. Main elements of the AT provision system in Ireland**

In practice the AT provision systems for the three settings - home/community/everyday life, education and employment – operate, to a large extent, separately and in parallel, although in some aspects there are legislative requirements relating to cooperation, for example between the HSE and NCSE. Sections 3.1, 3.2 and 3.3 outline the main features of the three 'sub-systems'. Section 3.4 then looks at the more cross-cutting provisions in the AT area, including information about AT, tax provisions and social protection benefits.

## Home/community/everyday life

### Legislation /policy

*Legislation*

The Health Act (1970) is the main piece of legislation of direct relevance for AT provision as part of the health and social care services, although the Act does not explicitly refer to assistive technology as such. It makes provisions for the (then) Health Boards (now the HSE) to supply "medical or surgical appliances" to eligible persons, as well as provisions for ophthalmic and aural appliances and for "equipment, materials or similar articles for a disabled adult person where neither the person nor the person's spouse (if any) is able to provide for his maintenance".

The provisions under the Health Act placed certain responsibilities on the (then) Health Boards in relation to aids and appliances that have since been passed on to the Health Service Executive (HSE) through the Health Act (2004). As has often been commented before, the Act is generally vague regarding what AT is expected to be made available and to whom.[[22]](#footnote-22) This has been seen as a significant limitation in the Irish context, with apparently differing interpretations and wide variations in levels of service across the country.

Apart from transferring to the HSE the obligations of the Health Boards under the 1970 Act, the Health Act of 2004 is also relevant in its provisions in relation to 'outsourcing' of health and social care services by the HSE. This Act established the new Health Services Executive as the public agency with responsibility to "...manage and.....deliver, or arrange to be delivered on its behalf, health and personal social services", including a responsibility to "integrate the delivery of health and personal social services". It also states that, in performing its functions, the Executive shall have regard to "services provided by voluntary and other bodies that are similar or ancillary to the services the Executive is authorised to provide". Sections 38 and 39 of the Act provide the basic framework for the HSE to fund external provision of services. Implementation of actual arrangements with a given external provider is through service arrangements or grant agreements, as well as more recent use of public procurement for some services.

In practice, Section 38 relates to agencies / groups providing services on behalf of the HSE. This refers to services which the HSE is legally and statutorily required to provide and enters into an arrangement with an outside agency to do so on its behalf. Section 39 relates to agencies / groups undertaking services which are similar or ancillary to those of the HSE and to whom the HSE is providing grant aid to do so. However the HSE is not legally or statutorily obligated to provide such services. Voluntary and non-statutory organisations can apply for funding for health or personal social services that they provide and may be funded for this under section 39 funding.

The Disability Act 2005 also in principle has an important relevance for assistive technology provision within health and social care services. It establishes a statutory basis for, inter alia, an independent assessment of individual health (including personal social services) needs, a related service statement and access to complaints, appeals and enforcement mechanisms, where entitlements are not delivered. At present, the statutory assessment of need extends to children who were aged less than 5 years on the 1st June 2007.

*Policy*

A number of reviews and reports in the 1990s identified a lack of sufficient funding for assistive technology (or ‘aids and appliances’) within the health and social care services as well as various other shortcomings of the existing services provided by the (then) Health Boards.[[23]](#footnote-23) Since then, the period from the late 1990s until recently, has seen an increased allocation of funding to the AT area. This was initially begun under a Ministerial initiative that for a number of years provided an additional end-of-year allocation for aids and appliances. The 2001 Health Strategy then gave commitments to provide increased funding and investment in capacity building for aids and appliances within community services for older people and in physical and sensory disability services.[[24]](#footnote-24) The increased allocation of resources to this area appears to have continued for a number of years after this.

With the economic down-turn, resources in this area may be under threat. In fact, the most visible attention to assistive technology at the moment seems to be in relation to the cost savings element of the value for money (VfM) programme. The HSE service plan for 2011 targets 5 million euro of cost savings to be achieved through aids and appliances recycling.[[25]](#footnote-25)

More generally, despite improvements in resourcing during the years that the economy was doing well, the calls for a more strategic approach that would develop a best practice AT service provision system in Ireland and put AT services on a more secure footing seem not to have been addressed.[[26]](#footnote-26) There has not been focused attention on the role and contribution of AT in relation to the achievement of key health and social care policy objectives (such as reducing preventable demand on acute hospital services, delaying or preventing the need to move to long-term residential care, better management of long-term health conditions in the home, and better targeting of homecare services).

### Services

Assistive technology provision in Ireland involves a combination of HSE and NGO services. The HSE provides ‘aids and appliances’ services as well as working closely with, and funding, NGOs that provide assistive technology services. In general, HSE ‘outsourcing’ to NGOs is funded at regional level and service arrangements are in place with the main NGOs at regional level. Funding is generally allocated as a block grant and funding for AT is not ring-fenced within this. At local level, the relationship between the HSE and NGOs in relation to AT can take a variety of forms and varies across organisations and areas. The roles of the NGOs are described in more detail in a later section.

**HSE services**

There is relatively little documentation or published data available on the HSE aids and appliances services and this makes it difficult to generate a detailed profile of these services. As part of the study, a number of HSE local areas were contacted in order to obtain information on how aids and appliances are provided at HSE local level.[[27]](#footnote-27) This approach provided a general picture of how the services tend to be organised as well as identifying some of the issues that are being experienced by staff on the ground. However, further research in this area as well as more documentation and publication of data from the HSE AT services would be useful for the future.

Within its own services, the main focus of the HSE’s activity in relation to AT is concerned with aids and appliances for independent living and mobility. The provision of hearing aids under HSE audiology services can also be considered to be part of AT services. Hospitals also provide aids and appliances for patients where required. In addition, aids and appliances are provided in the long-stay (nursing home) sector. These latter two aspects have not been addressed in any detail in the current study as the focus is more on independent living. In the community aids and appliances services the HSE officially covers all client groups, although the majority of its work concerns infants/children and older people.

Community aids and appliances services

HSE community aids and appliances services are organised mainly at local level, either through Local Health Offices (LHOs) or Service Areas, and are delivered through Occupational Therapy, Physiotherapy, Public Health Nursing, and Speech and Language therapy services.

The local services mainly provide aids and appliances necessary for

* Activities of daily living (kitchen and food preparation aids, ramps and handles, bathing and toileting aids, pressure care and manual handling)
* Seating and mobility (seating aids and wheelchairs).

In some cases, a limited range of higher-tech AT and communication aids may be provided (mainly for children and Speech and Language therapy services). However, this is on a limited basis, and generally restricted to high priority cases. Higher-tech AT is mainly provided by specialist NGOs such as the Central Remedial Clinic (CRC), Enable Ireland, the National Council for the Blind in Ireland (NCBI) and DeafHear.

The organisation and methods of delivery of aids and appliances services appears to vary significantly across LHOs or Service Areas and there does not seem to be an agreed, standardised approach that should be followed across all areas. This may be due to the lack of clarity at policy level, and in the Health Act, 2004. Some areas administer the aids and appliances service centrally, for example via a Resource Allocation Group situated in Primary, Community and Continuing Care (PCCC). Others distribute the aids and appliances budget between different services such as Occupational Therapy (OT), Physiotherapy (PT), Speech and Language therapy, and Public Health Nursing (PHN). Allocation of funds to these services is generally based on previous years’ spend. While methods for prioritisation and allocation of aids and appliances may vary, in all cases, the therapy services (OT, PT, PHN and Speech and Language Therapy) carry out the assessments and make recommendations for provision of aids and appliances for clients. Delivery and follow-up is also made by therapy services.

Referrals for aids and appliances are made by the different therapy services as well as from primary care (general practice and PHN) and hospital services (geriatrics, paediatrics and hospital OT). Self-referral is rare. Once referrals are received by a particular service, an assessment is carried out and a ‘prescription’ or recommendation for aids and appliances is made. Applications for aids and appliances are prioritised based on level of need and urgency. Allocations are made (by heads of services or by the Resource Allocation Group where one is in place) based on the budget available.

There does not appear to be a systematic approach to medium and long-term follow-up of clients using aids and appliances in the HSE, although in the north-west there is a service providing follow-up, repair and maintenance (see Box 2). In the case of wheelchairs and seating aids, clients are visited soon after receiving the equipment for adjustment and fitting, and may be revisited as needs change.

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| --- |
| **Box 2. The Assistive Technology Unit, HSE West (covering Sligo, Leitrim, West Cavan and Donegal)**  This Unit was set up within the HSE in Sligo in 2000/2001, originally with a complement of two staff, a manager and a technician, at first covering Sligo and Leitrim only. The motivation for setting up the unit was to ensure that AT provided to service users was used effectively, with concern about an apparently high rate of abandonment of AT due to lack of training and support for service users. In 2004, funding was obtained from the Dormant Accounts fund, to set up a unit in Letterkenny. The original idea was to pilot the service for 1 year, with a view to national mainstreaming by the HSE. Although this mainstreaming did not take place, the unit is still operational in the north-west.  The service is currently staffed by the service manager and 1 technician based in Sligo, and 2 technicians operating in Letterkenny. Referral is via occupational therapy or speech and language therapy. The unit manager then visits the service user and performs an initial assessment in conjunction with the therapist, and makes recommendations for dealing with any problems with the AT, including any additional equipment necessary. The OT or Speech and Language therapist purchases the necessary solution, and provides this to the client. The Assistive Technology Unit then follows-up on an ongoing basis. Service users can also ring in to the unit to report a fault, and technicians will travel to the location and solve the issue. The unit has its own budget which just about covers salaries and rent. They work closely with the Motor Neuron Disease Association and the CRC. |

Overall, it is difficult to get a clear picture of the HSE allocation processes for aids and appliances at the local level. Provision criteria in the first instance are based mainly on possession of a medical or long-term illness card, rather than age or care group. In general, the different levels of priority used at local level are:

* Priority 1: very high priority, equipment needed for basic activities of daily living or mobility (this includes palliative care)
* Priority 2: equipment that would enhance quality of life but that is not needed for basic activities of daily living or mobility
* Priority 3: low priority equipment and duplication of already existing equipment.

Priority 3 applications are not considered. According to the local reports, recent budget cuts (the research was conducted in the summer/autumn of 2011) have meant that in most (but not all) areas, priority 2 applications are not being covered. In some areas where demand is high, not all priority 1 applications can be catered for. Overall, the ability of aids and appliances services to meet current need appears to vary from area to area. Some areas struggle to meet all priority 1 applications, while others can provide for priority 1 and 2 applications.

It also seems that waiting lists for aids and appliances services can vary considerably across HSE areas. This is probably linked to funding and other variations in aspects of service provision mentioned above. Although there is no systematic information published on waiting times, indications from discussions with staff from a number of areas suggest that there can be wide variation for both assessment and provision of equipment, from a few weeks up to a year (depending on priority and available resources). Bottlenecks exist both in terms of available funding and staffing.

Overall, the HSE aids and appliances service can be described as being reactive rather than proactive and it seems that many areas may be struggling to meet identified need. There was also a concern expressed by some HSE staff that there may be a cohort of people who require aids and appliances services but who are on long waiting lists for assessment and are therefore are not currently visible to service providers.

Adults aged between 18 and 65 with an acquired disability or other reason for needing AT may also be particularly vulnerable. While children and people aged 65 and older have relatively clear care pathways, eligibility criteria and pathways for adults with acquired disability or illness are often less clear.

Hearing aids

Community audiology services provide assessment and rehabilitation for medical card holders and for children. This includes hearing aid fitting and management advice, and advice on usage of assisted listening devices.

Children and young people aged up to 18 years are entitled to free services. Hearing aid services are provided free of charge also to adults with medical cards. In addition, the entire population is in principle entitled to access public, hospital-based aural services (within Ear, Nose and Throat clinics). As discussed further in section 3.4 below, those who satisfy the necessary pay-related social insurance (PRSI) requirements can receive financial support towards the cost of purchasing hearing aids privately.

Available evidence[[28]](#footnote-28) suggests that there can be long waiting times for the community audiology services, especially for initial assessment and for hearing aid reviews after fitting. The issue of ensuring that state-of-the-art technology is provided has also been on the agenda and a recent review of services recommended that the necessary additional finance be provided to support the fitting of modern good quality digital hearing aids.[[29]](#footnote-29)

**NGO services**

The NGO sector plays a central role within the mixed economy of welfare that characterises Ireland’s health and social care systems. NGOs work in partnership with formal structures and service providers to provide AT, but they also complement these structures in terms of their own activities. The sector consists of many different organisations, each with varying roles and a varying degree of involvement in AT provision. As part of the study, many of these were contacted for further information about their AT services and issues that arise for them in this area. The focus was on the NGOs with formalised roles within the AT provision system as well as others that were identified as conducting at least some relevant activity relating to AT provision. [[30]](#footnote-30)

NGOs with formal roles

There are a number of key organisations that have particular expertise and play a substantial role in the provision of AT. These are: the Central Remedial Clinic (CRC), Enable Ireland, the National Council for the Blind of Ireland (NCBI), and DeafHear. These organisations have formal roles in the provision of AT on behalf of or in cooperation with the HSE. They are also the NGOs most frequently used for AT-related services by those registered in the National Physical and Sensory Disability Database.[[31]](#footnote-31) The CRC also has a role with regard to the provision of AT services for the Department of Education and Skills. Modes of cooperation with and funding from the HSE vary across the NGOs and in different parts of the country.

*Central Remedial Clinic (CRC)*

The Assistive Technology and Specialised Seating (ATSS) department at the Central Remedial Clinic provides assessment and recommendations in all areas of assistive technology and specialist seating to children and adults with physical disabilities throughout Ireland. This includes the design and manufacture of customised seating and mobility equipment as well as providing off-the-shelf AT equipment. The ATSS operates through four centres (Clontarf, Clondalkin, Limerick and Waterford), providing specialist AT services which are outside the expertise of the client’s local support team e.g. local HSE community services or Special Educational Needs Organiser (SENO) within the client’s local educational services.

The ATSS department assesses, reviews and makes prescriptions for the provision of specialised seating, including power mobility, and provides recommendations in all other areas of augmented and alternative communication, environmental control units, and educational and computer access. Most evaluations are for high tech equipment as more low-tech evaluations tend to be conducted by the local services, although low tech solutions may be found or could be part of the overall solution. In the area of specialised seating, the full spectrum of devices and solutions is considered. The ATSS also provides a loan facility whereby AT equipment such as educational technology and computer access solutions are loaned out for trial to other organisations. The specialised seating service has a range of chairs for demonstration in the main centres and ATSS technicians provide support in the trial of equipment. The service offers consultation and information on AT to local teams and provides tailored training and education in all aspects of AT on request.

The ATSS department receives referrals for AT from professionals in health care or education e.g. a GP, OT, physiotherapist, teacher, SENO. Self–referrals are also accepted. Adults who are entitled will mostly be referred via their GP or a hospital clinic. When referred to the CRC, assessment is provided to the client by a team of AT advisors, including OTs, speech and language therapists, physiotherapists, engineers, and technicians. CRC request that the client’s carers and local support team, where possible, attend the assessment. Clients are given an opportunity to trial the equipment for 2-3 weeks before the final recommendation is made.

*Enable Ireland*

Assistive Technology (AT) provision is an integral part of many of the services provided by Enable Ireland to people with physical and multiple disabilities. These services are provided to children and adults across Ireland through centres in fourteen counties. Enable Ireland also provides specialist support AT services through its SeatTech and National Assistive Technology Training services. The SeatTech service provides posture management and seated mobility solutions to clients referred from within Enable Ireland or from the HSE. This includes custom manufactured seating for people with complex needs. SeatTech also provides information and training on posture and mobility to other service providers. The service accommodates Enable Ireland clients from within the Eastern region (Dublin, Kildare and Wicklow) and also provides a service to Enable Ireland and St John of God services in Kerry. SeatTech has also formed a partnership with the HSE (The Wheelchair and Seat Service Partnership) which incorporates the HSE areas of Dun Laoghaire, Dublin South East and Wicklow.

The National Assistive Technology Training Service provides customised training on a range of electronic assistive technologies including augmentative and alternative communication devices, smart home technologies, and computer access to a wide range of stakeholders. These include Enable Ireland staff, expert and emerging AT service users, and professional and adult users of AT across the public and private sectors, encompassing education, employment and independent living. Training is delivered either on-site or in client locations. The service provides both face to face and remote AT assessment support to local Enable Ireland teams. Enable Ireland’s National AT Training Service also delivers a Workplace Assessment Service, targeting employers and employees. Its primary objective is to prevent the acquisition of work related injury through the provision of appropriate assistive technology, as well as the delivery of customised AT solutions to employees with disabilities. This is a fee-based service.

In Enable Ireland, clients with AT needs are identified though referral from professional therapists who are either internal or external (e.g. HSE, other NGOs) to the organisation. Clients are assessed by the SeatTech team which can include an occupational therapist, a physiotherapist, a clinical engineer and an engineering technician. SeatTech requests that the client’s primary therapist(s) is present at the assessment and there are agreed protocols with the HSE in relation to home assessments being carried out in advance of the SeatTech assessment. Information on the client’s home setting helps to enhance and maximise the assessment carried out by the SeatTech team. Because some of the AT equipment provided is manufactured or adapted to specification, clients may have a number of appointments in the assessment process. In terms of choosing a solution, wherever possible, SeatTech try to give clients a trial with equipment to see if it is suitable for their needs. Where a piece of equipment is customised and cannot be tried out, clients will have a number of fittings. This helps to ensure that the equipment is appropriate to their needs. Clients receive training on the use of their equipment when it is issued to them. Where possible, additional wheelchair mobility training is provided by the client’s primary therapist or other relevant personnel when required.

*NCBI - Working for People with Sight Loss (The National Council for the Blind of Ireland)*

The NCBI - Working for People with Sight Loss, NCBI provides a range of services to people experiencing difficulties with their vision. The services are funded by the HSE (about 75%) and by a combination of fund raising, donations, charity shops and bequests (about 25%).

With respect to Assistive Technology, NCBI offers a full range of AT for people with vision loss in Ireland and serves the needs of people of all ages and at all levels of usage, who use technology for all sorts of activities. NCBI provide an AT retail service to the public, selling equipment to assist with daily living, education and writing, communication and magnification. NCBI also provides high tech equipment such as Global Positioning Systems (GPS). Speech or magnification software is available for computers. Other options include CCTV, reading machines, mobile telephony etc. The level of IT experience that the individual has is taken into account, as well as other supports available. In addition to the direct provision of assistive technology, NCBI advocates for greater awareness around accessibility in the virtual and built environments and for the effective use of AT by other organisations. NCBI trainers also support the sharing of information and skills among people using the services through computer clubs, online discussion forums etc.

NCBI offer the Assistive Technology Acquisition Grant (ATAG), which is an initiative to help the visually impaired with the cost of assistive technology. The scheme is designed to meet up to 25% of the cost of AT which is not covered by any other grant and which would have to be borne by the individual. The scheme is funded through NCBI’S charity shops and fundraising activities.

People using the AT service either make contact directly or are referred by their ophthalmologist, family member, healthcare or education professionals. NCBI’s IT trainers carry out assessments with people to identify their need for AT and try to meet their needs and wishes. Choices are made based on a person’s level of vision and on what tasks they wish to carry out.

*DeafHear*

DeafHear provide direct services and supports to people who are deaf or hard of hearing to enable them to lead full, independent lives. The organisation also advocates for other services to become accessible to deaf and hard of hearing people and it works with other organisations to promote this. DeafHear’s services are 80% to 90% HSE funded. The remaining funding comes from a variety of sources, including a Citizens Information Board grant, FÁS grants and its own fundraising activities. DeafTech is DeafHear’s specialist Assistive Technology service. Assistive Technology is seen as one of the key solutions within DeafHear in terms of enabling people with hearing loss to lead independent lives. The organisation has a good knowledge of the solutions that are available to people. On the corporate side, companies will often seek advice and order equipment through DeafHear (e.g. loop systems).

DeafHear clients fall into two groups; those who are congenitally deaf and those who acquire a hearing loss as they get older. Those who have congenital deafness tend to be familiar with using assistive technology from a young age but AT can also eliminate barriers for those with an acquired hearing loss. Clients are often referred to DeafHearby local HSE therapists, although approximately 50% to 60% of adult clients are self-referred and 30% to 40% of child clients are self-referred. Client assessment is straightforward and mostly carried out in DeafHear centres. Occasionally a home visit will be undertaken. DeafHear provide a range of assisted living devices, including: alerting devices, adapted home safety devices, TV and radio listening devices, amplified phones, tinnitus maskers, and loop systems. Some clients who are grant-aided for AT are funded under the medical card scheme, while others are awarded grants by local authorities under the Housing Adaptation Grant or Mobility Aids Grant schemes. Sometimes, those who are not covered by a medical card may receive financial support for AT from the community welfare officer services (formerly operated by HSE, now by the Department of Social Protection).

Other disability and older person's NGOs

A number of other NGOs also have relevant activities in this field. NGOs that specifically provide AT-related services include the Dyslexia Association of Ireland, Muscular Dystrophy Ireland, the Irish Wheelchair Association, St. Michael's House and Headway Ireland. Other NGOs also engage with AT in varying ways and a selection of these are briefly mentioned below.

Dyslexia Association of Ireland (DAI) offers a Technology Advice Service for students at second and third level, and adults with dyslexia, as well as teachers, tutors, trainers and HR personnel who wish to learn more about technological aids for people with dyslexia.[[32]](#footnote-32) The intended purpose of the service is to help people to make informed choices about technological aids which suit their individual needs. The focus is on the range of assistive technology which can be beneficial to people with dyslexia in second and third level education and the workplace. There is a charge for advice sessions, with reduced rates available for people on social welfare. More generally, AT is used within DAI's Career Path Centre service. The centre runs training courses for adults with dyslexia and participants on the courses must be registered with FÁS.

Muscular Dystrophy Ireland (MDI) provides an equipment loan service (hoists, shower chairs, commodes, electric wheelchairs, manual wheelchairs, air mattresses, slings, electric beds, ramps, and computers) for members or affiliate members (i.e. members of Friedreich’s Ataxia Society Ireland). A limited quantity of such equipment is held in various parts of the country and can be transported where required.[[33]](#footnote-33) Loans are made to clients who either may be waiting for their prescribed equipment to come from the HSE or who need an AT item for a specific purpose (e.g. for going on holidays). Equipment is also loaned to HSE occupational therapists who may want to try it out with their clients before making a prescription. MDI also provides information on where members can purchase these types of equipment if they wish to do so. Clients using AT provided by MDI are referred by family support or youth workers working within the organisation who identify a need. Members also self-refer if they want to borrow a piece of equipment. Assessment is straightforward and the organisation aims that clients can borrow items with the least amount of delay.

Irish Wheelchair Association (IWA) has a Wheelchair Sales, Rental & Repair service located at headquarters in Clontarf. They offer a selection of new and second-hand wheelchairs for sale. They also have a large stock of wheelchairs available to rent for short or longer periods. [[34]](#footnote-34) They also offer a Driver and Passenger Information and Advice service which includes information and advice on car adaptations. [[35]](#footnote-35) Internally, IWA also uses AT in two main areas: their transitional independent living apartments and in their Rehab Training Unit.

St Michaels House Library has a small computer based Assistive Technology Centre and acts as a demonstration facility for accessible technology and educational software for children and adults with intellectual disability. In addition, occupational and speech and language therapists can use the technology in the centre with their clients.

Headway Ireland, in the main, refer their clients, the majority of whom have long-standing brain injuries, to HSE occupational services and sometimes to NCBI for AT. They also do some training with clients on how to use mobile phones and using mobile phones as memory aids.

RehabCare, in their transitional accommodation for people with Acquired Brain Injury, utilises AT in the form of communication aids and environmental controls that are built into the accommodation. They also operate the National Learning Network which provides training on AT. Cheeverstown use AT internally, they loan AT equipment to clients and they provide training to their staff on AT.

A number of NGOs working to support and promote the interests of older people also have an interest in Assistive Technology. Although these organisations typically do not directly provide AT they are involved in information provision and in promoting AT for enabling older people to live independent lives.

As part of its aim to promote positive aging, Age Actiondelivers training on the use of computers, the internet and mobile phones to people over the age of 55 years through its ‘Getting Started’ programme. They also run free monthly talks on various aspects of IT (e.g. internet security, on-line shopping) and a voluntary IT technician is available twice a month at a drop-in service in the Dublin centre to advise clients on computer-related queries. Another initiative is Age Action’s annual TRY IT technology event. This is attended by technology companies who provide information on how to use their products and services. With respect to the broader range of assistive technologies, Age Action’s Information Officers receive queries from older people and their families/carers on AT equipment (social alarms, communication devices, mobility and telecare equipment) and they refer clients to the appropriate service provider.

Third Age, a local community organisation, regard AT as a positive tool that enables older people to fulfil their wish to remain at home for as long as possible. In 2009, members of Third Age were involved in a project with Intel which involved the trialling of telecare equipment. Where they can, Third Age also provides financial assistance to their members to purchase AT equipment that will enable them to live independently. This assistance is needs-based and comes out of the organisation’s own fundraising activities.

Age & Opportunityarenot directly involved in projects around technological solutions for older people but, in keeping with their focus on advocacy and better representation for older people, they support and work in partnership with other organisations that have an involvement in promoting AT for older people.

Issues raised by NGOs around AT policy and funding

Discussions with respondents from the NGOs focused on a number of issues regarding their own AT services and the Irish AT provision system more generally. Issues raised around AT policy and funding are outlined below. Some further issues around the role of NGOs, quality assurance, costs and market functioning and other areas are discussed in the relevant sections of Chapter 5.

An issue raised in the interviews was a perceived lack of a national policy and strategy around AT. This was seen to have resulted in a highly complex and fragmented provision system, very difficult for service users to navigate. It was felt that, within public policy, AT is seen as desirable rather than as essential, and that this may be why AT is under-resourced, uncoordinated and lacking identification as a distinct service. A number of NGOs emphasised the importance of AT for the people that they serve and that AT should be available to everyone who needs it.

Issues around lack of funding and resourcing, both to provide AT and to raise awareness around AT, along with waiting lists for assessment and provision, were identified as key issues by most respondents. Even within NGOs, the issue of funding for AT can be problematic, particularly when it is not ring fenced and AT services are competing with other internal services for resources. It was reported that limited resources are resulting in more and more people, particularly adults, purchasing AT privately. A lack of certainty around funding means that NGOs cannot give clarity to clients on the AT that they can provide to them and they may not be able to ensure that clients' needs are met in a timely fashion. Where there is a stable funding route for specific types of AT/services (examples mentioned included specialised seating and communication devices), priority may have to be given to assessments for these within an NGO.

Overall*,* there was a view that, in addition to providing important parts of the publicly-supported AT system, the NGOs bring a number of strengths to the AT provision system in Ireland. Working directly with their clients, their professionals know the value of AT in helping them to lead independent lives. Some have developed a strong knowledge of and proficiency in Assistive Technology and have been leaders in terms of their expertise in AT engineering as well as in establishing standards of good practice for AT for particular areas of disability. Another general strength of NGOs that was mentioned is that they are person-centred and flexible. They cooperate with each other and with statutory agencies to find ways to meet the AT needs of their clients and to promote awareness and knowledge around the importance of AT for people with disabilities.

**Housing Adaptations**

The Housing Adaptation Grant for people with disabilities is payable where changes have to be made to a house to make it suitable for someone with a disability (physical, sensory or intellectual) or a mental health difficulty to live in. This scheme replaced the Disabled Persons Grant Scheme which was reviewed by the National Disability Authority in 2006.[[36]](#footnote-36) That review recommended a number of changes including clarity around entitlement and eligibility criteria, consistency in application of the grant across all local authority areas and an increase in the amount of the grant.

Applications for the Housing Adaptation Grant are made to the housing department of the relevant local authority. The grant is means tested and applications are prioritized on medical need. The highest priority (Priority *1*) relates to those who are terminally ill or fully/mainly dependent on someone else for care or those for whom adaptation to the home would facilitate hospital discharge or reduce the need for future hospitalization. Priority *2* relates to someone who is mobile but needs help with daily tasks such as washing and toileting, or to someone whose ability to function independently would be hindered without the adaptation to the home. Priority *3* level relates to someone who is independent but needs certain facilities to improve their quality of life. When an application is made, the local authority may require that an OT assessment be carried out. The grant aid awarded will range between 95% and 30% of the total cost, depending on the person’s income. The maximum grant that can be awarded is €30,000. A person may apply for a local authority loan if they are unable to borrow the portion of the cost not covered by the grant. However, local authorities meet the entire cost of the adaptations when the person is a local authority tenant. [[37]](#footnote-37)

If a person only requires minor work they can apply for the Mobility Aids Grant Scheme rather than the Housing Adaptation Grant. The Mobility Aids Grant Scheme is means-tested and only available to those whose household income is less that €30,000 a year. Although it is mainly for older people it can also be accessed by people with disabilities. The maximum amount that is available is €6,000. Again, applications are made to the relevant local authority.[[38]](#footnote-38)

## Employment

### Legislation/policy

Discrimination on grounds of disability in relation to employment and access to goods and services was prohibited on the enactment of the Employment Equality Act[[39]](#footnote-39) in 1998 and the Equal Status Act in 2000.[[40]](#footnote-40) These pieces of legislation represent key elements in the strategic development of protections and supports to enhance employment and training opportunities for people with disabilities.

The Employment Equality Act, 1998 came into effect on 18 October 1999 and, for the first time, disability discrimination became illegal in the Irish workplace. The Act was amended (but not replaced by) the Equality Act 2004 on July 19 2004. [[41]](#footnote-41) Amongst the amendments to the Employment Equality Act 1998, of relevance for current purposes, was to change the requirement on employers to provide reasonable accommodation for persons with disabilities so that , in future, this would be subject to it not imposing a disproportionate burden (rather than 'nominal cost', as required in the 1998 legislation). Assessment of this is to be based on the financial and other costs entailed, the scale and financial resources of the employer’s business and the possibility of obtaining public funding or other assistance (Section 9).

Under the Employment Equality Acts 1998 & 2004, employers are obliged to take appropriate measures – ‘reasonable accommodation’ – (unless the cost of doing so are disproportionate) to enable people with disabilities to have access to employment, to participate or advance in employment and to undergo training. Such measures may include training resources or adaptations to work premises, work equipment, patterns of work time and distribution of tasks.

An employer is not obliged to provide any facility or treatment that employees can reasonably be expected to provide for themselves. Private sector employees may qualify for a Workplace Equipment Adaptation Grant (WEAG) from Foras Áiseanna Saothair (FÁS). [[42]](#footnote-42)

The Disability Act 2005 is also relevant in that it establishes a statutory basis for, inter alia, obligations on public bodies to be proactive in employing people with disabilities and the monitoring of compliance with those obligations. [[43]](#footnote-43) Under the Act, all public bodies, in so far as is practicable, should take all reasonable measures to promote and support the employment of persons with disabilities. This includes the making of reasonable alterations to work premises and “the provision of suitable technical or organisational supports so as to reasonably facilitate the employment of persons with disabilities and to support existing employees who are persons with disabilities in the performance of their duties”.

The Safety, Health & Welfare at Work Act 2005 is also relevant. It states that employers must “ensure, as far as is reasonably practicable, the safety, health and welfare at work of all employees”.[[44]](#footnote-44) Regulation 25 of the General Application Regulations – Employees with Disabilities – states that “An employer shall ensure that places of work, where necessary, are organised to take account of persons at work with disabilities, in particular as regards doors, passageways, staircases, showers, washbasins, lavatories and workstations used or occupied directly by those persons”.

### Services

In the private employment sector, the provision system for assistive technologies for persons with disabilities has mainly been through FÁS, the training and employment authority whose employment functions have been transferred to Dept of Social Protection. Training functions, now under Dept Education and Skills, will transfer to a new agency Solas which merges FÁS training function with further education role of VECs. The role of FÁS has been to enhance the skills and competencies of individuals and enterprises in order to further develop Ireland as a competitive, inclusive, knowledge-based economy. This includes responsibility for assisting people with disabilities in preparing for employment, via training or employment programmes.

FÁS operates training and employment programmes, provides a recruitment service to jobseekers and employers, an advisory service for industry, and supports community-based enterprises. The country is divided into eight regions and services for disabled people have been mainstreamed within this context. The standard process involves a person with a disability calling into a FÁS Employment Service Office or Local Employment Service Office to meet with an Employment Services Officer or Mediator who provides them with information, advice and guidance in relation to training and employment. Those who meet the entry criteria are able to participate in the full range of FÁS programmes and services.

There is a range of funding schemes available to people with disabilities to facilitate their participation in employment. Some of these schemes provide pathways to the provision of assistive technologies as and when the need arises for their use. Schemes fall under two main headings - schemes under the Dedicated Disability Budget, and schemes under the Reasonable Accommodation Fund.

The Dedicated Disability Budget in 2010 was €77.5 million[[45]](#footnote-45), and included schemes such as:

* Specialist Training Providers (€55 million) where FÁS contracted 20 specialist organisations in 55 centres to provide vocational training to disabled people
* Wage Subsidy Scheme (€11.6 million) which provided financial incentives to private sector employers to employ people with disabilities
* Supported Employment Programme (€9 million) aimed at providing people with disabilities with supports to access the open labour market, where Job Coaches were contracted to provide supports tailored to the needs of the disabled jobseeker.

As part of its activity, the Supported Employment Programme allows funding for assistive technology. Available data suggests that for users of this scheme (about 2,000 persons) about one in eight (12%) required use of AT supports. [[46]](#footnote-46) The main forms of AT required were adapted workstations (including desks, seating, keyboards and screens), hearing and visual aids, communication software, and walking aids and wheelchairs.

The Reasonable Accommodation Fund in 2010 was €269,000 and includes four schemes: Workplace Equipment Adaptation Grant (WEAG), available to employers and employees in the private sector who need to adapt equipment or the workplace using assistive technology to accommodate a disabled employee; Job Interview/Induction Interpreter Grant, available to cover the costs of an interpreter for interview and induction purposes where an interviewee or new staff member is deaf, hard of hearing or has a speech impediment; Personal Reader Grant, available to blind or visually-impaired persons who are in employment and who need assistance with job-related reading; Employee Retention Grant Scheme, available to private sector employers when an employee develops a disability whether occupational or not.[[47]](#footnote-47) The latter is administered by FÁS Services to Business, unlike the other schemes which have been administered by FÁS Employment Services. It provides funding to identify accommodation or training for the disabled employee, and may use the WEAG should assistive technology be required.

Apart from its own mainstream services, there have been various external initiatives in receipt of FÁS funding that have included AT within their scope, for example, Willing Able Mentoring operated by AHEAD. This is a paid placement programme for graduates with disabilities who experience difficulty getting on to the employment ladder. It involves an action learning programme that supports employers to offer work placements to graduates with disabilities and advises them to put systems in place that are inclusive. This includes a competency bases needs assessment, advice and guidance in relation to reasonable accommodations, assistive technology and mentoring training. To date, 47% of participants have required accommodations and approximately 25% have required assistive technology to carry out their job. A comprehensive needs assessment is the key to ensuring that the assistive technology suits the person and the tasks to be performed and to ensure that the assistive technology is effective.

*Workplace Equipment Adaptation Grant (WEAG)*

The WEAG is the principle means for the provision of assistive technology support in the private employment sector. The adaptations allowed under WEAG include minor building modifications such as ramps and modified toilets, alarm systems with flashing lights, Braille signage, voice synthesizers for computers, amplifiers for telephones, etc. The scheme is operated via the 70 local Employment Services Offices, dispersed widely throughout the country.

The procedure for getting Assistive Technology starts with the employee or the employer contacting a local office. The process is thus essentially demand-lead. Self-employed people can also apply on their own behalf. Applicants complete the appropriate form and return this accompanied by quotations for the required adaptation.

Initial assessment of a WEAG grant application is made locally by the Employment Services Officer (ESO) dealing with the application. Employment Services Offices operate as one-stop-shops, and ESOs are generalists dealing with the range of employment services available in the office. As such, they are not specialists in assistive technology. The ESO meets with the applicant to review the application. The appraisal considers the following: does the employee’s disability affect their ability to work and if so, how; what is required to meet these needs; is the solution easily available; is the employer already required under Health & Safety legislation to provide the equipment/ adaptations as standard; what is the standard equipment for the job.

As part of their assessment process, ESOs may make a visit to the place of employment of the applicant, if this is considered necessary. Where the ESO identifies that further professional advice is needed, a suitably qualified individual or appropriate agency may be contacted to review the application and make a recommendation in relation to equipment and adaptations. The outcome of the assessment made by the ESO is a recommendation which is passed on to the regional manager for final approval.

The choice of suitable assistive technology product arises directly from the application form completed by the employee or employer making the application. The WEAG form requests the applicant to describe the equipment or adaptation requested, state the cost and submit competing quotations from suppliers for the assistive support.

Selection and decision in relation to the WEAG application is made by the regional manager. All ‘reasonable accommodation’ requests are granted as funding does not seem to be an issue at present. However, issues do sometimes arise around what is assistive technology and what is routine workplace technology. For example, laptop computers are considered routine workplace equipment and so are not automatically considered under the grant scheme. But if a laptop is required so that a particular assistive technology can be used, then the inclusion of a laptop is accepted.

The Employment Services Officer notifies the applicant of the outcome of the application in writing and of the grant that has been approved towards the cost of the equipment or adaptation. (The amount does not include VAT which must the claimed separately.) A maximum grant of 6,348 euro is available towards the cost of adaptations to premises or equipment. This grant can also be used to adapt equipment funded previously. At an estimate, the current funding per application is probably around 1,200 euro. Since budget is in excess of demand, applications are not turned down due to lack of budget. The budget for the scheme in 2010 was €198,000 of which €48,000 was actually spent. The current budget is €135,000.

In all cases, the person with a disability retains ownership of the equipment or adaptation unless it has been incorporated into the premises or standard equipment of the employer. Where the person is self-employed, the equipment/adaptation remains in their ownership. FÁS is not responsible for the insurance, repair or maintenance of the equipment/adaptation. It is anticipated that while the person is in employment, the insurance, repair or maintenance is covered by the employer.

*Public sector employment*

Responsibility for the implementation of equality of opportunity for persons with disabilities within the public sector is with the Head of each Department and Office or a person designated by the Head. Various functions have specific responsibilities in relation to employment of persons with disabilities in their Department or Office: Personnel Officers; Training Officers; Accommodation Officer; Disability Liaison Officer; Health and Safety Officer; IT Officer; Line Manager. Areas covered by the above roles as required are: recruitment and selection; initial appointment; induction; probation; training and career development; performance; retention. [[48]](#footnote-48)

When applying for a public service position, people with disabilities may complete the ‘Needs Identification Questionnaire’ to ensure a fair competition. This includes questions about supports and accommodations required. Successful candidates or employees with disabilities who require reasonable accommodations in their workplace complete or have input to the Workplace Accommodation Form and submit it to their Disability Liaison Officer. [It should be noted that Disability Liaison Officers are in Government Departments only and so work on behalf of civil servants. They are not in all public bodies. Public bodies differ and so the “Needs Identification Questionnaire” does not apply to public servants.]

In relation to the identification and provision of appropriate AT, the personnel officers consult appointees with disabilities in order to arrange a visit to the proposed new workplace and document accommodations required on the Workplace Accommodation Form. Disability Liaison Officers make contact and welcome new employees with disabilities to the Department or Office and provide reasonable accommodations within four weeks of receiving a request, where practicable. Accommodation Officers ensure that all reasonable measures are taken to minimise the physical or technical environmental barriers and organise for an accessibility audit of buildings occupied by employees with disabilities every five years. Line managers ensure employees with disabilities have the reasonable accommodations requested and that they are operational.

Disability Liaison Officers (DLOs), while not professionals in the field, are appointed within each Department to facilitate the sharing of knowledge, experience and good practice in relation to the employment of peoples with disabilities. The DLOs attend conferences and seminars on a regular basis to further their education and training. [[49]](#footnote-49)

The range of Supports or Accommodations in the Irish Civil Service varies but may include: Accessible Accommodation; Accommodation for Guide Dog; Alternative Print Format; Assistive Technology; Orientation; Car Parking; Counselling; Dyslexia Support; Examination Support; Job Coach; Learning Support; Note-taker; Personal Assistant; Sign Language Interpreter; Speed text; Wheelchair Access.

|  |
| --- |
| **Box 3. Case Study: The Department of Social Protection**[[50]](#footnote-50)  The approach in the Department of Social Protection is presented here as an example of good practice rather than being reflective of the norm in government departments.  In the Department of Social Protection, a needs assessment procedure has been put in place whereby a cross-functional team which includes representatives from Personnel, Health & Safety and Information Systems meet with the staff member and his or her line manager. On the basis of the needs assessment, the staff member may be invited to attend a professional assessment for AT with one of the various organisations that specialise in the field of their particular disability.  Information Systems staff periodically research new technologies that may benefit staff with disabilities in their working life. They liaise with organisations which deal with particular disabilities and attend equipment exhibitions. Departmental staff, who are users of particular AT, user-test each new implementation of IT systems before their rollout.  The Department’s template tender documents for both ICT and non-ICT supplies and services conform to W3C Triple A standards and National Disability Authority (NDA) guidelines. ICT systems and services supplied must be able to facilitate installation of appropriate AT as required. This measure was put in place to ensure that all new applications and systems are compatible with the range of AT already in use by staff.  Based on the assessment report received, the Department purchases the equipment necessary to enhance the staff member’s work environment. The Dept. of Social Protection allocates a budget to purchase AT equipment for staff with disabilities. In order to facilitate the deployment of AT, a structure has been established which ensures the fast tracking of requests for specialised equipment. A ring-fenced budget has been designated solely for the procurement of, and research into appropriate AT.  The AT provided is mainly in relation to visual impairments but also some people with speech impairment. Expenditure cost is not an issue since demand is small. More costly equipment, such as lifts and hoists for toilets, are dealt with by the Health & Safety and the Accommodation officers in conjunction with the OPW. |

In each Department the situation in relation to reasonable accommodation is to be monitored on a regular basis and reports on progress made. Such reports highlight good practice and identify remaining issues of concern. The process is governed by a set of objectives, actions and performance indicators specified in the Disability Sectoral Plan of the Department of Social Protection.

## Education

### Legislation/policy

The Education Act 1998, the Universities Act 1997, the Education Persons with Special Educational Needs Act 2004 (EPSEN 2004), the Equal Status Act 2000-2004 and the Disability Act 2005 are the most relevant pieces of legislation supporting actions in the provision of assistive technology in education. However, many of the provision of the EPSEN Act have not been commenced at time of compiling this report and no indicative timeframe has been proposed.

A primary objective of the Education Act is to give practical effect to the constitutional rights of children, including children who have a disability or who have other special educational needs, as they relate to education (Section 6(a)). The act empowers the Minister to make regulations in relation to access to schools and centres for education by students with disabilities or who have other special educational needs, including matters relating to reasonable accommodation and technical aid and equipment for such students (Section 33(i)). The School Plan should state the objectives of the school and the measures it intends to take to ensure equality of access to, and participation in, the school by students with disabilities or who have other special educational needs (Section 21(2)). The Act also established the National Council for Curriculum and Assessment (NCCA), which has a special interest in the education of students with disabilities or other special educational needs and achieving equality of access to, participation in and benefit from, education (Section 42(2)(f)),

According to the Act, support services include ‘*technical aid and equipment, including means of access to schools, adaptations to buildings to facilitate access and transport, for students with special needs and their families’* (Section 2).

The Equal Status Act 2000 and the Equality Act 2004, referred to as the Equal Status Acts 2000 to 2004, have relevance to services provided by the Department of Education and Skills and to educational establishments, including primary and post-primary schools. A school must provide reasonable accommodation, i.e. special treatment or facilities or adjustments to enable a person to access a service to meet the needs of a learner with a disability if it would be impossible or unduly difficult for them to participate in school without the special treatment, facilities or adjustments. This requirement is mitigated on the basis of the cost of the accommodation. If an accommodation gives rise to more than ‘nominal cost’ then there is no obligation on the service provider. According to the Equality Authority, because most schools are funded by the State through grants, the ‘nominal cost’ exemption may not have a significant impact, although the school will be required to avail of these.[[51]](#footnote-51)

According to the Equal Status Acts, schools can provide preferential treatment or take positive measures to promote equality of opportunity for students who are disadvantaged and give preferential treatment to the special needs of learners who require facilities, arrangements, services or assistance that are not required by others. The provisions of the Equal Status Acts rest on a presumption of mainstreaming for students with disabilities.

The EPSEN Act 2004 was intended to set the foundation for inclusive education in Ireland. According to the Act the principle of Inclusive Education means that a child with special educational needs shall be educated in an inclusive environment with children who do not have such needs unless the nature and degree of those needs is such that is inconsistent with the best interests of the child or the effective provision of other children (Section 2).

One of the central elements of the EPSEN Act (Section 19) was the establishment of the National Council for Special Education (NCSE). Among the functions of the NCSE (Section 20) are

* The dissemination of best practice,
* Planning and coordinating provision of support services
* Monitoring the progress of students with educational needs
* Reviewing resources in relation to educational provision
* Ensuring a continuum of educational provision
* Reviewing and making recommendations in relation to adults with disabilities including higher education, continuing education for adults, rehabilitation and training,
* Advising on best practice concerning the education of adults and conducting and commissioning research

The EPSEN Act and the Disability Act 2005 are strongly interrelated when it comes to assessing needs of children and youth. While there is no specific reference to AT in either of the Acts there are many references to support and services which are clearly taken to include technical aid and equipment under the Education Act 1998. It is important to note that while the legal basis for AT provision is clearly evident, a recent statement from the Office of the Ombudsman for Children raised concerns regarding the *fairness and adequacy* of the way in which this is currently being implemented. It particularly focuses on the use of narrow diagnostic categories in determining eligibility, the clarity of guidance on eligibility, responsibility for determining eligibility and the lack of a transparent appeals procedure.[[52]](#footnote-52)

Under Part 2 of the Disability Act, children under school-going age and adults with a substantial impairment are entitled to an independent assessment of need which covers health and education needs. For those who are considered eligible by the assessment, a report is produced which specifies the nature and extent of the disability, the health and education needs of the person and a statement of the services required to meet those needs (Section 8(7)). In the event that an education need is identified, this is forwarded in a statement to the NCSE for action, specifying the appropriate service (Section 11 (8)).

The EPSEN Act provides for an education plan developed by the school (Section 3 and Section 8) based on guidelines issued by the NCSE or by the HSE (for a child that is not a student). The assessment carried out by the NCSE or HSE must include an evaluation and statement of the nature and extent of the child’s disability and an evaluation and statement of the services which the child will need so as to be able to participate in and benefit from education and, generally, to develop his or her potential (Section 4 (6). The EPSEN Act specifies the roles of the people who might be involved in the assessment of needs. This includes a psychologist, a medical practitioner, the principal of the school or a delegate and a suitability qualified therapist (Section 5(1)).

The outline content of the educational plan is specified in the Act. This includes the special education and related support services to be provided to the child to enable the child to benefit from education and to participate in the life of the school. Where appropriate, the special education and related services are to be provided to the child to enable the child to effectively make the transition from pre-school education to primary school education or the support required to enable the child to effectively make the transition from primary school education to post-primary school education should be provided (Sections 9(e) (f) (g)).

The Act also provides for the transfer of information from one school to another in the case of transition to another school.

The legal basis for the provision of reasonable accommodations and facilitating the equal participation of students with disabilities is provided by the Universities Act 1997 and the Equal Status Act 2000 (amended 2004). Section36 of the Universities Act (1997) requires universities to prepare, approve and implement an equality statement. Among other target groups, the statement of university policies must cover access to the university by people with disabilities and comply with Ministerial orders. [[53]](#footnote-53) Section 7 of the Equal Status Act 2000 prohibits educational institutions from discriminating on the grounds of disability in terms of admission, access to a course, facility or benefit, any other term or condition of participation and expulsion. The Equality Act 2004 amended Section 7 mainly with regard to access to grants. The only ground upon which an educational institution can refuse to comply is on the basis that this would make it impossible, or seriously disrupt provision to other students.[[54]](#footnote-54) Part time and private courses are covered under the Equality Status Acts. They are legally required to provide accommodations as long as the accommodation does not impose a disproportionate burden. Private colleges are liable under the acts unless the cost of a device represents a disproportionate burden in relation to the financial resources of the college. Although AT is generally not costly and can often be provided as an integrated solution, some private colleges expect students to pay for their own supports in addition to their fees.

From a legislative perspective it would seem that the links between the Education Act 1998 in terms of defining support services to include technical aids and equipment, and the integrated approach to health and educational needs and service planning contained in the EPSEN and Disability Acts, provide a sufficient basis for an effective national system of provision of AT in Ireland. The main drawback is that key sections of both Acts have yet to be activated. In relation to the EPSEN Act, the relevant sections covering needs assessment, providing statements and developing individual plans for learners with SEN have not been commenced i.e. implemented by the relevant Minister. Part 2 of the Disability Act 2005 was commenced for children aged less than 5 years on the 1st June 2007 but the full implementation of the Act has been deferred pending an upturn in economic conditions.[[55]](#footnote-55) Given that the EPSEN act is unlikely to be commenced in the near future, and that Part 2 of the Disability Act has not been extended to 5-18 year olds, it is unlikely that a sufficiently robust statutory basis for AT in inclusive education can be expected in the foreseeable future.

In the meantime, the Equal Status Acts 2000-2004 represent the strongest basis for the use of AT to make reasonable accommodations for students with disabilities.

### Services

**Primary and Post-Primary Education**

There is no formal policy governing the provision of technical aids and equipment in primary schools. However, in its absence, the NCSE has been applying the guidelines issued by the Department of Education and Skills (DES) in relation to the revised scheme of grants towards the purchase of equipment for pupils with a disability in second level schools (Circular M14/05) to both primary and post-primary schools.[[56]](#footnote-56) According to this circular, grants can be made available to students who have been diagnosed as having ‘serious’ physical and/or communicative disabilities. The general upper limit of such grants is €3,800. Applications are made by the school management to the NCSE through the local SENO. For students with visual or hearing impairments, the Visiting Teacher Service assesses and advises the SENO.

The application must be supported by a recent, comprehensive assessment and details of the most appropriate equipment. The criteria used to judged the eligibility of an application include a recommendation that the assistive technology is necessary (beneficial or useful are not strong enough recommendations), that the equipment is needed for the entire day (occasional use should be met out of existing school resources) and that it is evident that the equipment currently in the school cannot meet the needs of the child without depriving other children.

The role of the SENO is to review the application and to make a recommendation. Once the DES receives the application and the recommendation, it advises the school on the level of the grant. On approval of the grant the school purchases the equipment and submits the receipt with its claim to the DES. The equipment is owned and maintained by the school, and normally kept on the premises, although permission can be given for the pupil to take it home. In the event that a pupil transfers to another school, the SENO may allocate the equipment to that school if the first school has no further use for it.

In addition to this circular, the DES published guidelines for post-primary schools on the inclusion of students with Special Educational Needs in 2007.[[57]](#footnote-57) The document presents the definition of AT used in the departmental circular. Amongst the resources made available to post-primary schools specified in the guidelines are special services and accommodations, such as the Visiting Teacher Service, grants for AT, special transport, and reasonable accommodations in state examinations. This document recommends that the learning support and resource teacher can provide advice on assistive and augmentative technology. The document also describes the role of the SENO in making recommendations to the DES with regard to applications for AT.

An important distinction is made in deciding on the level and types of resources that are made available to pupils in primary and post-primary education. The DES distinguishes between high incidence, those disabilities that occur more frequently in the population, and low incidence disabilities. Pupils with high incidence disabilities such as mild general learning disability are covered under a general allocation to the school based on its enrolment numbers. The types of supports that are made available include cooperative teaching, withdrawal teaching and curriculum differentiation. When it comes to additional teaching resources, students with specific learning disabilities such as dyslexia are catered for under the general allocation model, but in certain circumstances they can qualify for funding for ICT AT support.

Pupils with low incidence disabilities are catered for though an individual application for support and resources. Low incidence disabilities include physical or sensory impairment, emotional disturbance, moderate, severe or profound learning disability, autism spectrum disorders, speech and language disorders or multiple disabilities.

An indication of the level of provision of AT in primary and post primary education can be obtained from the fact that in 2008 over €900m was spent on all special education interventions in Ireland of which €3m was allocated to AT provision.[[58]](#footnote-58) Figures extracted from the NCSE Special Education Administration System (SEAS) indicate that, during the academic year 2009/2010, the NCSE received 1,989 applications for AT from primary and post primary schools. About 67% of these applications met criteria and grant aid for the purchase of this equipment was recommended by the SENO to the DES. Qualifying applications consisted primarily of recommendations for laptops, printers, scanners, software and equipment for visually and hearing impaired pupils.

In addition to the general allocation and the funds for pupils with low incidence disabilities, students partaking in state examinations are entitled to apply for a reasonable accommodation while taking the exam. Table 5 presents the types of accommodations granted to exam candidates in 2007.

In 2007, 3,459 students were granted reasonable accommodation in taking the Leaving Certificate examinations. Many of these were in the form of exemptions, spelling or grammar waivers or modified formats. The types of AT which were provided under this mechanism included tape recorders and word processors. 378 students were provided with these types of equipment. The figures for the Junior Certificate were 829 pupils receiving AT out of 8,841 who were granted reasonable accommodation. For the Applied Leaving Certificate the figures were 177 and 2,411 respectively.

The DES has provided substantial funding to schools through various ICT funding initiatives for both mainstream and SEN students which have been described above. In September 2009 the DES distributed €22.3m in ICT infrastructural grants to primary schools. In November 2010, each school received lump sum €1,700, plus €35.70 per capita and an additional €850 Delivering Equality of Opportunity in Schools (DEIS). ‘Set-up’ grants for special classes are provided to schools by DES (€3,600) and this can also be used to purchase AT.

In addition to this, the National Council for Curriculum and Assessment (NCCA) has published ICT guidelines for primary school teachers on ICT in the curriculum. This document adopts a broader definition of AT. It refers to the *range of technological devices or systems designed to improve the functional capabilities of individuals with disabilities and maximise their quality of life. Some children of primary school age will need such technology in order to lead fuller lives as children and to assist them in their learning* (p. 13). [[59]](#footnote-59)

**Table 5: Type of Accommodation in State Examinations (2007)**[[60]](#footnote-60)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Leaving Certificate** | **Junior Certificate** | **Leaving Certificate Applied (Yr1 and Yr 2)** |
| Tape Recorder (Learning) | 194 | 580 | 106 |
| Tape Recorder (Physical) | 49 | 72 | 53 |
| Word Processor | 135 | 177 | 18 |
| **Assistance Technology** | **378** | **829** | **177** |
| Reading Assistance | 967 | 3,101 | 744 |
| Scribe | 204 | 447 | 82 |
| Enlarged Question Papers | 30 | 45 | 10 |
| Braille Question Papers | 1 | 0 |  |
| Exemption from Aural Tests | 12 | 11 | 1 |
| Exemption from Oral Tests | 16 | 0 | 2 |
| Exemption from Practical Tests | 0 | 12 |  |
| Modified Papers (Visual) | 10 | 18 | 1 |
| Spelling/Grammar Waiver | 1,841 | 4,378 |  |
| Whole Subject Exemption |  |  | 1394 |
| **Other Accommodations** | **3081** | **8,012** | **2234** |
| **Total Accommodations** | **3459** | **8,841** | **2411** |

The guidelines present detailed information about the role of ICT AT in supporting children with special educational needs and the ways in which it can be used to facilitate them to access the curriculum. It recommends that ICT AT be included in the school plan in terms of funding and grants, coordination of staff and equipment, relating to parents and professionals, individual planning, fostering positive attitudes to the use of AT and maintenance and repair. It emphasises the importance of ensuring the technology is matched to the needs of the learner and describes a range of ICT AT devices which are available. The guidelines also review ICT which can be used to support the teaching and learning environment in general, access to software and access to the internet.

The guidelines refer to the resources developed by the SOLAS project which was a Schools Integration Project managed by the National Centre for Technology in Education. SOLAS operated from 1997 to 2001 and piloted an assistive technology support service to meet the educational needs of pupils with physical and sensory impairments in primary and post-primary education. The deliverables of the SOLAS project are available on the enabletech website and the website of the Special Education and Support Service (SESS).[[61]](#footnote-61)

The SOLAS project classified ICT AT tools in terms of four basic tasks:[[62]](#footnote-62)

1. Input Options

* Keyboard
* Mouse
* Switch and Scanner
* Voice Recognition
* Optical pointing devices
* Pointing aids
* Scanners and optical character recognition (OCR)
* Touch Monitor

1. Command Options

* Mouse-click
* Switch
* Touch-Monitor
* Voice

1. Target Options

* On-screen Keyboard
* Screen-scan or grids
* Touch Monitor

1. Output Options

* Braille
* E-mail
* Paper
* Monitor display
* Screen readers
* Speech Synthesisers

The SESS have published useful guidelines on their website and have made available the policy and practice recommendations generated by the SOLAS project. The website also provides lists of ICT AT suppliers and useful websites.

The NCCA Guidelines for Teachers of Students with General Learning Disabilities (2007) provide useful advice and guidance about the role that ICT AT can play in supporting the learning environment. [[63]](#footnote-63)

The National Centre for Technology in Education issued a booklet on ICT and special educational needs in 2000 which was updated by an advice sheet in 2008.[[64]](#footnote-64) The advice sheet provides advice for teachers who have responsibility for procuring ICT for students with special educational needs. It directs people to the Scoilnet website amongst other resources such as the Assistive Technology and Specialised Seating Department (ATSS) of the Central Remedial Clinic (CRC), the NCSE, the SESS and the DES.

*Individual Perspective*

In both primary and post-primary schools, pupils who could benefit from AT are generally brought to the attention of the school by a parent, or are identified by the school through screening procedures. In some cases a parent will self-refer to the Visiting teacher or access private assessments through their GP or other sources. In the case of pupils under 5 years and those under 5 years as of June 2007, a statutory Assessment of Needs may have been carried out under the Disability Act 2005.

Generally, the school organises the assessment in collaboration with the parents. Where the parents can afford it, this is generally carried out by a private psychologist. Otherwise the school can organise an assessment through National Education Psychological Service (NEPS) or the GP can refer the child to the HSE for an assessment by a Clinical Psychologist, an Occupational or Speech and Language Therapist. The Visiting Teacher service tends to provide this service to visually or hearing impaired children. External services are provided by the Vision Impaired Children’s Assessment Team at the National Council for the Blind (NCBI), the ATSS at the Central Remedial Clinic (CRC) and ICT Advisors in Education Centres. Ultimately, it is the teachers who provide the ongoing support to the pupil in using AT. The assessor produces a written report and makes a recommendation for AT. The school uses the report to accompany an application to NCSE for AT. The school also attaches three quotations for the cost of the AT. A Special Educational Needs Organiser (SENO), employed by the NCSE, makes the decision on whether or not to recommend the AT.

The SENO forwards the application for AT along with the three quotations to the DES with a recommendation. The DES approves the level of grant that will be paid to the school to cover the cost of equipment. The school then procures the equipment. AT is the property of the school and, in accordance with Circular M14/05, the school is responsible for the safe custody and careful handling of the equipment and for its maintenance, repair and insurance. Generally, a designated teacher takes responsibility for the management of the equipment and for monitoring its effective use within the school. Equipment purchased should normally be kept in the school. However, the pupil in question may, with the consent of the management authority, use the equipment at home (Cir M14/05).

If the pupil, for whom the AT was sanctioned, changes school, the school that was given sanction to purchase the AT can decide either to retain the equipment in the schools or to allow the AT to transfer with the pupil. This decision is usually made in consultation with the SENO/Visiting Teacher. Retention of AT may be considered where there is another pupil enrolling/enrolled for whom an application for the same technology would be required.

The most common types of equipment that are recommended are hardware/software devices, cause and effect/ stimulation tools, supportive word processing, voice recognition/screen reading, speech output/input, alternative communication devices for physical disability and Braille/magnification /contrast adaptations for the visually impaired. There is no formal mechanism for measuring outcomes.

Training of the teacher/student in using the AT is generally the responsibility of the school. Visiting Teachers’ assist with training on equipment for visually or hearing impaired pupils.

Based on the feedback from respondents collected during this study, there are a number of elements of the Irish system that are considered to work well. Particularly, the role played by the Visiting Teachers is considered to be very valuable because they bring expert knowledge and experience in the field. The system is considered to work relatively efficiently once the NCSE become involved. The time it takes to process applications from SENO recommendation to DES providing funding is generally very good.

The system is structured in such a way that AT is the property of the school and not the person. It is not easy to determine whether the advantages of this approach to the system outweigh the disadvantages to the individual. From a system perspective when AT is retained by the school it becomes available to other children who may need it without requiring another application to the DES. Where the AT is highly customised to the individual needs of a pupil, this may not be possible.

In theory, schools should, on this basis, build an AT resource over time. However, given the speed at which AT becomes obsolete, it is not clear how realistic an expectation this is. Feedback from the NCSE indicated that where a pupil transfers from one school to another, at either primary or secondary level, the transfer of equipment between settings is usually accommodated. When it comes to students moving from one system to another, such as from post-primary to third level, the transfer happens less often.

A recurring theme from feedback was the need, for those assessing children on behalf of the parents or the school, to understand the potential impact of AT for learners. They should be aware of DES criteria before making recommendation for AT in order to create appropriate expectations on the part of parents. In preparing the application, it is important that attention is paid to selecting the correct software for the individual pupil and checking that the user has the pre-requisite skills prior to acquiring the AT. This process could be improved if resource centres were available at local level where parents and student could drop in and sample AT ICT before pursuing an application. These centres could provide follow up and support/training for teachers and promote a more co-ordinated approach at school level to ICT usage for SEN students based on a whole-school and classroom planning approach.

A major initial barrier for parents who can’t afford to pay for a private assessment is the extended time it takes to get an assessment. A complementary fund to the existing equipment fund to subsidise AT needs assessment and the training of users in the use of the AT would be helpful in this regard.

Effective planning and monitoring are crucial to the successful deployment of AT as an effective facilitator of inclusive education. There is no systematic or regular review of how effective the AT that has been procured is actually working. Neither is there a coherent plan to ensure consistent and easy access to AT for those who need it by balancing universal access to ICT for general use with timely individual access to AT when this is required.

While there are no adequate figures, there is a general view at primary and post-primary levels, that access to AT depends on the individual approach of the principal, the knowledge and experience of the SENO, the persistence and resources of the parent and the type of impairment which the child has. While individual children with visual or hearing impairments seem to be well served by the Visiting Teacher service, the Association for Higher Education Access proposes that AT is such a critical enabler of learning for many children with visual impairments and other print disabilities, it should be available as a structured curricula.[[65]](#footnote-65)

Many learners with specific learning difficulties fall within the General Allocation Model for children with high incidence disabilities. While the NCSE has indicated that this does not necessarily mean that they will be denied access to AT, the grounds upon which this is granted is not clear. It is important to question a system where a large group of students, who are ineligible for specific AT support at earlier stages of education, become eligible when they make the breakthrough to third level. There is a case to be made that those students who have coped with primary and post-primary education without appropriate AT, become eligible at third level, while those for whom the absence of AT was a major barrier to educational achievement may never progress to third level. It is difficult to conceive how this inconsistency would be in line with the United Nations Convention on the Rights of Persons with Disabilities (UNCPRD) or Irish principles of equality more generally.

**Further and Higher Education**

*Higher Education*

Public funding for AT in further and higher education comes from two sources. The core annual recurrent grant is provided to recurrently-funded institutions. A proportion of this is earmarked for access to resource core services in the institution including costs in respect of AT support and/or development posts. The Fund for Students with Disabilities (FSD), which is co-financed by the European Social Fund (ESF), provides financial resources to institutions for the provision of support to those with additional needs arising from a disability. This can be used to meet individual needs or to develop an AT room for use by students with disabilities. The allocation process for the FSD differs for further and higher education. The allocation system in higher education has been decentralised to the higher education institutions, whereby they ensure students meet the criteria for funding as set in detailed application guidelines by HEA, and submit a claim for the funding required.

FSD funding can be provided for needs assessment in further education and the institutes of technology but not in universities. This funding is for advance planning of the supports required and provides time to apply for these supports. Where possible, institutions reuse AT previously provided through the FSD for incoming students.

The Association for Higher Education Access and Disability (AHEAD) issued good practice guidelines for providers of supports and service for students with disabilities in higher education in 2008.[[66]](#footnote-66) The definition of AT used in the guidelines refers to *any item or piece of equipment that can be used to increase a person’s independence and make the environment more accessible* (p. 74). The document emphasises that AT can be ‘lo-tech’ or ‘hi-tech’. The guidelines are illustrated with practical examples relating to a range of disabilities including specific learning disabilities and physical or sensory impairment. The guidelines describe what is involved in an AT assessment of need and the most appropriate means of delivering AT services. They highlight the importance of the role of an individual student in selecting the most suitable AT devices for him or her and in evaluating their effectiveness. There are a number of annexes to the guidelines which provide resources to those responsible for procuring AT on behalf of students. These annexes include examples of assessment reports which query the type of AT required, examples of assistive devices and a list of AT supports and suppliers.

The Higher Education Authority’s National Plan for Equity of Access to Higher Education was established in 2003 to support and promote access and opportunities for students who are under-represented in higher education. It manages funding, implements a National Action Plan, monitors progress and provides policy advice. Students with disabilities are within its remit. The National Plan for Equity of Access to Higher Education 2008-2013 sets out the objectives, targets and actions to be taken over the five year period. It notes that while there has been a significant increase in the participation rate of students with disabilities in higher education since 1999, the proportion of students is still relatively low at 3.2%. The estimate for all new entrants in 2009-10 was 6%. Current figures available in the AHEAD participation Report are at 3.9%.

The National Plan highlights the importance of the Fund for Students with Disabilities which is the main mechanism for the procurement of additional supports and services for students with disabilities. It notes that, during the period 2007-2008, 3,099 students benefited from the Fund which amounted to approximately €13.5m.[[67]](#footnote-67) The Plan regards the role of the Disability Officer who is located in each institution, as central to widening participation in higher education. The role includes support for teaching and learning and the provision of core services which include AT services.

The Plan specifies a number of actions which are relevant to the provision of AT to students in higher education. These include:

* To achieve a situation where all higher education institutions have a designated disability officer
* To ensure that reasonable accommodation is made to facilitate access to course materials and participate in course assessments
* To encourage higher education institutions to provide training in inclusive education through induction and professional development programmes
* To improve access of part-time students to supports and services,
* To review the Fund for Students with Disabilities and consider the balance between individual and institutional funding for disability supports,
* To cooperate with the DES to achieve greater coherence in assessment the provision of learning supports across different levels of education.

The Higher Education Authority’s National Access Office (HEA-NAO) also participated in an international study on pathways to tertiary education and employment. As part of this study a national report was produced which reviewed the legal and policy basis for access to tertiary education in Ireland for students with disabilities and the supports and services provided. This report provides useful information about the way in which educational supports and services are provided in the primary and post-primary sectors as well as the tertiary education sector.[[68]](#footnote-68)

In the 2009-10 academic year, a total of €7.1m was spent on disability supports from the Fund for Students with Disabilities. Further education was allocated €1.86m and €5.23m went to higher education. Spending on AT supports accounted for €985,000 of expenditure. Further education AT spending was €156,000 which represented about 8% of allocated funds. At €829,000, AT spending in the higher education sector was about 16% of total allocated finds.

Typical AT includes

* Laptops, Printers, Scanners.
* Voice Recognition software (e.g. Dragon)
* Low vision equipment (e.g. Magnifiers, Zoomtext)
* Mind mapping software (Inspiration)
* Screen reading software (e.g. Jaws, Kurzweil)
* Adaptive keyboards
* Braille equipment

Most universities have staff designated to assess disability, provide AT and support students educationally in lectures and in exams. The Disability Adviser Service has responsibility to assess students’ needs, provide technical advice about appropriate AT and to process applications to the HEA-NAO. Disability and Access offices are often involved in the provision of training for lecturers as a component of ongoing professional development. On-line supports are an increasing feature of the support to students with disabilities such as online learning support through which a student’s progress can be tracked by the disability service allowing for additional intervention and support as required.

Some students require low-level aids or adaptations, which cost very little, such as informing academic staff about student needs and assisting the student and staff member work out a solution. Others may require the full-time support of a Personal Assistant (PA) or note-takers. Other students may require computers or software to support their learning needs. In University College Dublin (UCD), a Disability Support Librarian was designated part time to provide support such as Braille books, converting written materials into other formats for accessibility.

The Central Admissions Office provides an option on the CAO form to allow students to declare their disability in advance. The AT needs of students are either identified prior to entry to college via CAO application where they tick a box and provide information of AT received in previous education and also of the impact of their disability on their life and academic work. Potential students provide additional information on a supplementary form to include specialist diagnosis of the impact on performance and a personal statement.

A small number of students will identify themselves after they start college, perhaps because they acquire a disability or because they did not disclose earlier due to concerns about stigma.

Students are required to provide specialist information about their disability and its impact. A formal assessment is then conducted by the Disability Adviser to assess what support the student previously availed of, and what support the college can provide. This is then formalised and the AT support offered to students is entered onto a database, so that lecturers when marking can see if they have a student with a disability. Students are also given a letter from the Access Office to show to lecturers if they wish to explain what their learning needs in the classroom are and any AT they are using.

Many lecturers have become familiar with AT and other supports through their students and actively support them. An AT support person is responsible for support to use the equipment. After the initial set up with the student, he or she is responsible for taking action should it need maintenance.

A number of institutions are mainstreaming AT supports by creating AT Information Centres where students with disabilities can explore and review the options available to them. In addition, institutions are increasingly using site-licences for software, allowing for ease of access to AT support for students across the campus.

The CAO procedures support the early identification of needs prior to entry into the university system. The Disability Access Route for Education network (DARE) has been established by a number of universities and colleges to raise student awareness of the facilities and wide variety of supports that can be made available. There appears to be effective networking and sharing of knowledge and experience between the Disability Liaison personnel of the universities. The majority of colleges have an explicit policy on reasonable accommodation and on the provision of supports and services to ensure full participation in the academic and social life of the institution.

It is important to draw attention to the broader range of disabilities which are deemed eligible for support in higher education compared to second level. As indicated earlier, many students with specific learning disabilities who were not eligible at primary and post-primary levels for AT support are granted it at third level. Despite the efforts by Disability Liaison and Support Services some students do not self-disclose, perhaps because of a fear of stigma, and are not identified by college services. In the Institute of Technology Blanchardstown (ITB) these students are picked up through a learning styles screening process which is made available to all first year students. This is a good practice approach that could usefully be considered for other third level colleges.

Another area for improvement which has been identified throughout all levels and sectors of the education system is the need to raise the awareness of teaching staff about the rights and entitlements of students with disabilities in general and the impact that appropriate AT can have on academic participation.

A consistent theme in the feedback from all respondents, regardless of the level or sector of the education system in which they operate, is the lack of systematic monitoring of the use of AT and its impact. It is unfortunate that while there are data available on the outputs of the system for AT provision in higher education, there has been no evaluation of the outcomes and impact of that provision.

*Further Education*

Awareness of, and a commitment to, additional supports for students with disabilities in further education is mainly a matter of commitment on the part of individual school principals or specific VEC policy. In some areas there is very little provision and in other areas sophisticated systems have developed for identifying students who may require additional support and for needs assessment. The description of procedures described below is based on good practice examples identified. To qualify for support from the Fund for Students with Disabilities (FSD), a student must be studying on a full time course at Further Education and Training Awards Council (FETAC) level 5 or above. Students who are likely to benefit from additional support either self-identify to the college or are identified by the college’s disability support or student services office. Career guidance officers are often involved and, in the case of Dublin City VEC, psychologists. Special needs teachers or education resource staff can also contribute.

Once a student has been identified a needs assessment is carried out. Arrangements for a needs assessment differ from college to college. For example, the CRC and the National Learning Network Assessment Service are two organisations that offer a comprehensive needs assessment.

Further education colleges submit individual applications to the HEA for all students and a combination of per-capita (low-moderate needs) and individual (high needs) allocations are provided. The HEA-NAO requires detailed background documentation from a specialist, a GP’s letter is not sufficient. Educational psychological reports must not be more than five years old. It can be extremely difficult for some students to obtain backup reports from specialists. The assessment of need is financed by the HEA-NAO. However, psychological assessments are usually funded by the students themselves or their families. Sometimes, psychological assessments may be carried out by the VEC Psychological services but usually only for courses that are two years or above in duration. The majority of courses in the PLC colleges are of 1 year duration. This puts an extra financial burden on the student as psychological assessments usually range from €450-700. In some cases families will purchase the AT themselves instead of having an updated assessment.

The application is sent to the HEA by the college. On approval funding is sent to relevant VEC. The HEA only fund AT that allows a student to access their course. They do not fund course specific technology or AT required for everyday living such as wheelchairs or speech synthesisers. These must be obtained through the HSE. If, after embarking on their studies, additional needs are identified, a supplementary application including backup documentation relating to the new need must be submitted to the HEA.

The normal range of AT supplied to students includes:

* Dictaphone
* Laptop
* Adapted keyboard
* Scanner
* Access to Printer
* Braille embosser
* Braille software
* Braille note taker
* Spell Checker
* Thick barrelled pens/ pencils
* Magnifier
* Radio/loop aid
* Text to speech Software
* Speech to text software
* Jaws / Zoom text
* Mind Mapping Software
* Predictive text software
* USB headset/Microphone

In those areas where AT services are available, feedback from respondents suggest that to date funding has been adequate for most student’s support needs and the FSD has allowed many students to access Further Education (FE) who would not otherwise have been able to do so. The impact of AT for those students that have been successful in their applications to the FSD is tangible in terms of better access to their courses, more positive learning experiences and improved academic outcomes. However, while good practice exists in the FE sector, it is not clear that such services and supports are available to students in all VEC areas and colleges. Even in those areas where the system is considered to be effective, there is a need for funding for the training of students in the use of AT by qualified personnel with specialist knowledge once it has been procured.

The system would work more effectively if awareness of the potential benefits of AT were addressed in initial and continuing training of academic staff so that they had a better understanding of the benefits and limitations of the technology.

There can be delays in approving applications for funding. Students who are not connected to any service may find it difficult to get a specialist’s letter. Waiting lists to see a specialist can mean approval is obtained too late for student on a Post Leaving Cert (PLC) course or the specialist may not respond to requests from the student for backup documentation. If the AT, approved by the DES at post-primary level, were to transfer with the student to further or higher education, this would eliminate significant delays in replacing AT for the individual learner and be a more efficient sharing of costs within the system between sectors.

A similar concern relates to students graduating from further or higher education that are making the transition to employment. Once again the practice is that the AT which provided them with access to the curriculum must remain with the college. The implication for the job seeker is that he or she must embark on another and possibly time consuming process of application to obtain AT through the Work Equipment Adaptation Grant scheme. This is particularly problematic for the job seeker because they must be offered a job or in employment before he or she is eligible for the grant.

Under the Strategic Innovation Fund introduced in 2006, a number of initiatives are being implemented through the further education sector. One of these, the Collaborative Network for Teaching Innovation and Inclusive Education, which is led by the Institute of Technology Tallaght in collaboration with four other institutes, includes a strand on AT which is being coordinated by the Institute of Art, Design and Technology Dun Laoghaire.

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| **Box 4. Case Study AT in Higher Education: The Institute of Technology, Blanchardstown (ITB)**  Incoming students must register with the Student Services Office which makes the application to the FSD. There are two routes to acquiring AT in ITB. In route one, the Student Support Services (ITB) refers students for Needs Assessments. AT needs are identified as part of this process which can provide opportunities to try out different types of technology. The second route involves a Learning Styles screening which is carried out with all new first year students by ITB Careers Officer and National Learning Network (NLN) Assessment Service. The National Learning Network Assessment Service was established in 2003 as a partnership between National Learning Network (Rehab Group), the Dyscovery Centre in Cardiff, and the Institute of Technology Blanchardstown. The service assessed 800 students in 2010-11. The process of learning reflection identifies students who may need a further assessment. Student Services is requested to give permission for a Needs Analysis which is carried out in a similar way to route one.  Even when a student knows exactly what he or she requires, an assessment of needs is carried out. This is organised by the National Learning Network Assessment Service. A decision on the type of support required is made in consultation with the student and college services. Supports include one to one tutorial support and study skills training.  In 2009, 39 pieces of software and equipment were purchased, this increased to 74 pieces in 2010. In 2011, 45 pieces were purchased by ITB. These figures are in addition to IT software and equipment that was purchased in previous years. Figures for students reusing AT are not available.  Funding for technology for students who need it, is provided by the HEA-NAO, the College or the family of the student. Where technology is funded by the HEA or the college, it becomes the property of the college and is given on loan to the student for the duration of their course. AT can then be reused for other students once the original student has graduated.  Follow up and support is provided by the IT Department and College Library staff in collaboration with Student Services and the NLN Assessment Service. Follow up support is provided on the request of the individual student and is generally accessed informally by dropping into the service.  Awareness raising activities are carried out by Student Services and NLN which provide input into new staff induction each year. NLN Continuing Professional Development department offers a one day Assistive technology course which is open to anyone interested in the area of AT. |

## Cross-cutting provisions

Apart from the provisions in the three settings, there are also a number of other relevant aspects of the AT provision system in Ireland, as outlined below.

**Assist Ireland**

Assist Ireland (assistireland.ie) is a website, provided by the Citizens Information Board (CIB), which provides information on aids, appliances and AT for people with disabilities, older people and professionals who are trying to choose suitable equipment or technologies for clients.[[69]](#footnote-69) The website also provides the contact details for known Irish suppliers of the AT products listed. There is no charge for suppliers to include their products in the website directory and Assist Ireland does not endorse any of the products or suppliers that they list. The website also contains 34 information leaflets which describe the devices and solutions available for a particular situation and outline the things that people should consider when choosing particular equipment, for example one Information Sheet is called ‘Choosing a Bath & Bath Accessories’. In addition, Assist Ireland provides a telephone and email query service, often responding to over 150 queries a month. All of these services are non-directional and Assist Ireland does not advise people on what choices to make. In September 2011, Assist Ireland had 31,381 unique visitors. The number of visits was 41,474, making an average of 1.32 visits per unique visitor in the month.[[70]](#footnote-70)

Assist Ireland services play an important role in addressing the AT information needs, not only of those who are eligible for AT provision by public or publicly-funded AT services but of anyone who may need AT, including those who are not eligible for public funding or who do not fall within the scope of existing HSE or NGO services. The content ranges from very basic equipment such as walking frames to very high-tech equipment such as augmentative communication devices, and covers the very broad range of equipment from the grab rails to the very specific equipment for people who are blind or have low vision, or are deaf or hard of hearing.

The roots of Assist Ireland lie in the former Disability Resource Centre run by National Rehabilitation Board (NRB) in Dublin. This was a public service where people could drop in to the centre to try out the AT equipment on display on the premises and get advice from an occupational therapist on staff. When Comhairle (now incorporated into the CIB) was established in 2000 and assigned a statutory responsibility for the provision of information, advice and advocacy services to the public on their rights and entitlements to social services, it took on the information and advice role of the former NRB. This was provided in the form of the Assist Ireland website which was launched in 2005. Thus, Assist Ireland delivers on the remit as outlined in the Comhairle Act 2000, and the subsequent Citizens Information Act 2007, 'to assist and support individuals, in particular those with disabilities, in identifying and understanding their needs and options'.

The change from a drop-in information service to an on-line information service meant that the facility for people to preview equipment and talk to a professional was no longer there. On the other hand, the previous drop-in service was limited to Dublin whereas the new on-line service allowed for wider access to information on AT. The telephone information line facilitates people who do not have access to or who are uncomfortable using the internet. The telephone and email query facilities provide the service with the best gauge of the types of queries that people have and products that they are looking for, and they act as a measuring tool in terms of how the service is able to provide people with what they are looking for.

The website’s product directory provides details on over 7,000 products. Maintaining the information repository and keeping it up-to-date can be difficult. Assist Ireland encourages suppliers to inform them when they have new or discontinued equipment as a means of helping to ensure that the service is providing current and relevant information. Some suppliers were initially reluctant to engage directly with the public, as they had no experience of doing so and were used to dealing with block orders from the HSE. However, as a result of the changes in the economy and in the level of HSE funding, suppliers have geared themselves up in terms of taking individual orders from private purchasers.

In terms of future direction, Assist Ireland aims to focus on the promotion of the service to people on the ground, looking at ways increase its public profile and how it can use other support resources that may be available within the CIB to achieve this.

**TRY-IT**

TRY-IT project[[71]](#footnote-71) was set up as a pilot project by the National Rehabilitation Hospital in partnership with the National Assistive Technology Training service (Enable Ireland), the National Council for the Blind of Ireland, Irish Motor Neurone Disease Association and the Assistive Communications Technologies Officers Network. The project provides an online electronic library of electronic assistive technology (EAT) from which registered professionals from health care, education or the voluntary sectors, who are working in the area of EAT, can borrow devices for trial with their clients. Borrowed items can be kept for 4 weeks to allow users to trial them in various settings (at home, in school or work).

The rationale for the project came from research studies that had highlighted the high rate of abandonment of Electronic Assistive Technology. This was due in part to professionals being unable to appropriately or successfully match technology to a client without being able to try it out with them in their living environment. Being able to try out equipment allows users to determine if it suits their needs and living circumstances in advance of purchasing. Funding of €490,677 was obtained for the project under the Department of Justice, Equality and Law Reform’s ‘Enhancing Disability Services Programme’, and the project was funded from January 2007 to June 2009. This was a once-off funding arrangement, the majority of which was used in technical development, establishing the on-line library and operational issues associated with this, and equipment management. The project secured additional funding from the National Medical Rehabilitation Trust in 2009 and the project has been subsequently funded by its partner organisations.

Over 10,000 visits have been made to the online library since October 2008 by more than 5,400 unique users. A total of 250 loans have been dispatched to members to trial EAT devices. The resource has a diverse user base with a broad spectrum of ages from 4 to 94 years and also has a cross-disability focus: Physical/Neurological (53%), Sensory (35%) and Intellectual (12%). It is reported that significant financial savings have been made by avoiding inappropriate purchases.[[72]](#footnote-72)

The project was evaluated in 2009. The conclusion was that the model merited on-going support.[[73]](#footnote-73) A number of priority issues were noted which related to securing funds for the sustainability of the project, expanding the amount and range of equipment, increasing membership and building links with equipment suppliers. The evaluation also noted that, in terms of sustainability, the resource would require significant state funding for its core operating costs but that, even with this, the project would need to secure resources elsewhere such as membership fees and in-kind contributions from suppliers.

However, the online library is in fact currently suspended due to an inability to secure funding for its core operation. The partner organisations are seeking to secure funding to re-commence operations and establish TRY-IT on a more secure footing but this is proving to be challenging in the current economic climate.

**Social protection benefits**

The Social Welfare (Consolidation) Act of 1981 (Section 110) provides for treatment benefits in the areas of medical and surgical appliances, optical treatment and appliances, and "any other benefits of the same character..." for eligible groupings. It therefore also provides a legislative basis for some forms of assistive technology, mostly hearing aids and spectacles or lenses for people covered by social insurance - eligible insured workers, dependent spouses and widows/widowers of insured workers.

Adults who have paid full PRSI contributions for at least two years are entitled to a grant from the Department of Social Protection towards the cost of purchasing hearing aids. A grant of up to 760 euro per aid every two years is available (average cost of private acquisition is about 1,600 euro per aid when rehabilitation support, advice and warranty costs are included).

**Value Added Tax (VAT) and tax reliefs**

Those with a physical or intellectual disability may get a refund on VAT on certain aids and appliances that they require to carry out their daily activities at home or at work. In addition, individuals who purchase aids and appliances for the exclusive use of somebody else with a disability may receive a VAT refund. Claims must be made to the Revenue Commissioners within 4 years from the end of the taxable period in which the aid or appliance was purchased. Aids and appliances eligible for a VAT refund include (www.citizensinformation.ie): domestic aids (e.g. eating and drinking aids); walk-in baths; commodes; lifting seats and specified chairs; Braille books; hoists and lifts (including stair lifts); communication aids.[[74]](#footnote-74)

Disabled drivers and passengers can avail of tax relief on the purchase and use of vehicles under the Disabled Drivers and Disabled Passengers Scheme.[[75]](#footnote-75) Vehicle Registration Tax (VRT) and VAT can be reclaimed on the purchase of a vehicle and VAT can be reclaimed for the cost of adapting a vehicle. The maximum cost of adaptation for which VAT can be reclaimed is €9,525 for a disabled driver and €15,875 for a disabled passenger and the engine size of the adapted vehicle must be less than 2,000cc in relation to the disabled driver and less than 4,000cc in relation to the disabled passenger.

There is also tax relief available for some types of AT under the medical expenses tax relief. Examples cited by the Revenue Commissioners include: hearing aid; orthopaedic bed or chair; wheelchair or wheelchair lift; computer (where medical evidence is produced that a computer is necessary to alleviate communication problems of a severely handicapped person the cost may be allowed). The current relief is at the standard rate of income tax.

There are also tax exemptions under EU regulations for AT and other goods bought through voluntary fundraising or donations, and used exclusively by persons with disabilities.

## Education and training in AT skills

Over the years there have been a number of initiatives aiming to provide education/training in AT skills for frontline practitioners (e.g. a Cert/Diploma course at UCD that ran for a number of years in the 2000s) as well as more specialist AT skills (e.g. Masters on AT and Universal design at DIT). CRC also ran an innovative programme to train and put in place local Technical Liaison Officers (TLOs) to provide pre and post assessment and follow-up of clients receiving AT.

Enable Ireland's National Assistive Technology service provides advice and training on AT products to Enable Ireland service users and staff. Training courses are also open to members of the public and the service can develop specialised programmes for businesses in relation to the role and use of AT in the workplace. The training service runs certified and customised courses. These can range from a half day to nine days in duration. The nine day AT course is certified by DIT and is run once a year in Dublin. It can also be run outside of Dublin if there is a demand. The customised training workshops are designed to meet the needs of specific groups. The service sometimes involves suppliers in the delivery of training on AT products. It runs seminars for people with disabilities, therapists, employers and educators who wish to understand the benefits of AT.

National Learning Network (Rehab Group) runs a 3 day FETAC Level 6 course on AT. The course is targeted towards anyone who has an interest in increasing their knowledge within this area, or who may be working with students using Assistive Technology. Course aims are to give the participant an understanding of the assistive technologies commonly used by people in an educational setting:

* How to conduct an assistive technology assessment
* Develop an understanding of the application of best practice in an educational setting
* Raise awareness of assistive technology information and service providers and other external agencies.

Other colleges also provide some relevant courses. For example, Tralee Community College includes AT training in Vocational Training Opportunities (VTOS) courses for people with disabilities and PLC courses for special needs / classroom assistants. Also, Athlone Institute of Technology's department of Adult Education and Continuing Development recently offered a part-time “Introduction to Assistive Technology for Education” course but this did not run due to inadequate take-up.

In general, the level of coverage of AT in initial education and continuing professional development seems to be limited in Ireland, with only a small element of AT-specific training in courses for occupational therapists and other relevant professionals.

# AT provision systems in other countries

This Chapter presents an overview of the AT provision systems in the five main countries that have been covered in the research - UK, Netherlands, Norway, Italy, and Denmark. For each country, the legislative/policy context and main features of the AT provision systems are outlined. In addition, the German system for provision of AT in the employment setting is also described. More specific thematic aspects of interest in each country are taken up in the relevant sections of Chapter 5.

## UK

**Overview**

The systems differ to varying degrees across England, Scotland, Wales and Northern Ireland. The main focus in this report is on England, although interesting aspects of the approach in the other countries are drawn-upon in various parts.

A number of government departments have roles in relation to the AT provision system in England. These include Department of Health, Department of Communities and Local Government, Department of Education, Department of Business, Innovation and Skills, and Department of Work and Pensions.

Responsibilities for AT provision for home/community/everyday life purposes fall within the scope of both the health services (National Health Service - NHS) and social services (local authorities). The NHS deals with AT such as wheelchairs and walking aids, hearing and vision aids, and communication aids. The local authority social services deal with 'community equipment’, mainly equipment to support activities of everyday living at home.

In the employment area, the Access to Work scheme is the main source of public support for AT. Local authorities also have responsibilities in relation to the schools in their area and there are other provisions for AT for students in higher or further education.

The main pieces of legislation are:

* NHS (National Health Service Act) 1977; Chronically Sick and Disabled Persons Act (1970); NHS and Community Care Act (1990); Community Care Act and regulations (2004): these establish responsibilities and/or are otherwise relevant for AT provision for home/community/everyday life purposes
* Disability Discrimination Act (1995)/Equality Act (2010): the equality legislation imposes reasonable accommodation obligations on employers; in part linked to this, the Access to Work scheme provides financial supports towards costs associated with accommodating needs of workers with disabilities, including AT where needed
* Education Act (1993, 1996) and ensuing Special Educational Needs Code of Practices; Special Educational Needs and Disability Act (2001); Disability Discrimination Act (1995 and amendments)/Equality Act (2010): impose obligations on local authorities and on educational institutions to support inclusive education, including provision of AT where needed.

The UK has a strong tradition of equality/anti-discrimination policy and legislation in relation to disability. This not only provides rights of redress but also imposes positive duties on various sectors to take active measures. Provision of AT in relation to employment and education is underpinned by these perspectives; in the employment setting, active labour market policies in relation to people with disabilities also underpin AT provision. In the case of AT for home/community/everyday life purposes the policy thrust has tended to come more from mainstream health service policy (various types of AT included within the scope of the health services) and social care policy for both people with disabilities and older people (community equipment). The role of technology and equipment in improving the life chances of disabled people has also been given emphasis.[[76]](#footnote-76) Since the beginning of the 2000s, assistive technology (both traditional AT and new developments in the areas of telecare and home telehealth) has been given an important place in health and social care policy, especially as a cost-effective way to meet increasing needs as the population ages.

**Home/community/everyday life**

*Legislation/policy*

Various pieces of legislation establish responsibilities and/or are otherwise relevant for AT provision for home/community/everyday life purposes. These include NHS (National Health Service Act) 1977; Chronically Sick and Disabled Persons Act (1970); NHS and Community Care Act (1990); Community Care Act and regulations (2004).

Since about 2000 there has been increasing policy attention given to assistive technology in the UK. In England, a report by the Audit Commission 'Fully Equipped' in 2000 and a follow-up in 2002[[77]](#footnote-77) were important milestones. There were also relevant reports produced in other parts of the UK, including Northern Ireland[[78]](#footnote-78) and Scotland.[[79]](#footnote-79) These reviews emphasised the importance of equipment services, both for users and for cost-benefit outcomes for the overall system. They identified various shortcomings of existing provisions and made recommendations for improvements.

In 2001, a circular on community equipment services for the health and social services was published by the Department of Health.[[80]](#footnote-80) It set targets to increase the number of people benefiting from community equipment services by 50% and to integrate local council and NHS equipment services. It defined community equipment as "equipment for home nursing usually provided by the NHS, such as pressure relief mattresses and commodes, and equipment for daily living such as shower chairs and raised toilet seats, usually provided by local authorities. It also includes, but is not limited to: minor adaptations, such as grab rails, lever taps and improved domestic lighting; ancillary equipment for people with sensory impairments, such as liquid level indicators, hearing loops, assistive listening devices and flashing doorbells; communication aids for people with speech impairments; wheelchairs for short term loan; telecare equipment such as fall alarms, gas escape alarms and health state monitoring for people who are vulnerable".

Developments since then have included increased allocations of funding, initiatives to integrate services[[81]](#footnote-81), efforts to develop/apply quality standards and, in particular, the recent move towards a 'retail model' of provision of lower cost community equipment as part of the 'Transforming Community Equipment Services' initiative.[[82]](#footnote-82) These aspects are addressed in more detail in later sections.

Likewise, there have been various initiatives addressing particular aspects of the AT services that are provided by the NHS (e.g. wheelchair services) and some of these are also addressed in more detail in later sections.

The Audit Commission continued its focus on this field and produced a number of reports specifically using the 'assistive technology' terminology.[[83]](#footnote-83) These broadened the perspective to include developments such as telecare and home telehealth, especially in terms of the role that they can play to support independent living of older people and to address various needs of major chronic conditions groups. This aspect is further discussed in Chapter 5.

On the telecare/telehealth side, also, there was a significant stimulus effort through provision of central pump-priming funding for the local authorities.[[84]](#footnote-84) This has encouraged a lot of attention on telecare and expansion of existing social alarm services to encompass more advanced telecare services. More recently, home telehealth has also been given a lot of attention and there are many initiatives involving telehealth services for conditions such as COPD and others. There has also been a strong policy interest in a 'whole systems' approach, bringing together health (telehealth) and social care (telecare), as evidenced in the extensive 'whole systems demonstrator' programme.[[85]](#footnote-85)

*Systems of delivery*

The main public entities responsible for provision of assistive technology are the local authorities and the NHS. The NHS is responsible for AT for mobility (wheelchairs and walking aids), hearing and vision aids and communication aids, as well as orthoses and prostheses. The local authority social services departments operate community equipment services and also generally provide some level of telecare services. NGOs also play an important role. These include the network of Disabled Living Centres (DLCs) operated by Assist UK (provide independent advice to people who may need AT) and other major NGOs like RNIB, RNID and Age UK/Concern.

Integration of services: Since 2001 there have been considerable efforts to better integrate the systems for provision of basic equipment to support everyday life and independent living and to make it easier for users to access services that may traditionally have been dispersed across the health and social care services. The *Integrated Community Equipment Services* (ICES) initiative was introduced with the aim to integrate various aspects of community equipment services including procurement, provision, maintenance, repair and recycling of AT that may be prescribed by healthcare and social care personnel.[[86]](#footnote-86) In this context, community equipment is defined as that which enables children and adults, who require assistance, to perform essential activities of daily living in order to maintain their health and autonomy and to live as full a life as possible. This equipment includes, but is not limited to:

* Home nursing equipment, such as pressure relief mattresses and commodes.
* Equipment for daily living’, such as children’s special seating, shower chairs, raised toilet seats, teapot tippers and liquid level indicators.
* Minor adaptations, such as grab rails, lever taps, improved domestic lighting, and improving the use of contrasting colours.
* Ancillary equipment for people with sensory impairments, such as flashing doorbells, low vision optical aids, textphones and assistive listening devices.
* Equipment for short term loan, including wheelchairs but not those for permanent wheelchair users, as these are prescribed and funded by different NHS services.
* Communication aids for people who are speech-impaired.
* Telecare equipment such as fall alarms, gas escape alarms, health state monitoring.

Community equipment (social services): Under the traditional system, a person seeking community equipment (i.e. products to support everyday living at home) would generally contact the local social services department of the local authority which would arrange for an assessment by a specialist social worker or occupational therapist. It is not necessary to have a referral from a doctor although having this may sometimes speed up the process. Local authorities have a duty to assess needs. If the assessed needs meet local eligibility criteria the person has a right to the service/support. There is national guidance on how eligibility should be determined (originally the Fair Access to Care Services (FACS) and, more recently, the Guidance on Eligibility for Adult Social Care). In practice, there has historically been considerable variation across local authority areas in regard to eligibility criteria. For persons who are deemed eligible, equipment is generally provided free of charge.

Occupational therapists are mainly responsible for assessing needs and prescribing AT for everyday life. Other staff, such as community nurses and social workers, play an increasing role in assessment.

There has been a progressive move towards greater personalisation of social care services, with the introduction of the option of personal budgets. In part linked to this, there has also been increased emphasis on provision of information/advice about AT for all of the population, including people who are not eligible for public provision or who choose to acquire AT privately.

Retail Model: In the last few years an important new approach has been introduced - the 'retail model' for provision of community equipment. The programme began in April 2008, but is not mandatory for local authorities and their health partners

The new approach distinguishes between simple and complex equipment. More complex equipment requiring regular servicing and maintenance, such as hoists and electric beds are still provided by the public services in the traditional manner and are on loan to the user. Bespoke, once-off equipment is also still within the existing loan arrangement.

For simple equipment, the relevant public service professional (local authority or NHS) issues a 'prescription' that can be exchanged for free equipment at an accredited retailer. In this case, the user will own the equipment. Home delivery and fitting are also funded if they are part of the identified need. Descriptions for the basic equipment list have been provided in a national catalogue containing a tariff price.[[87]](#footnote-87) If a service users wishes to get an alternative piece of equipment, not on the catalogue but that would meet the need, they can pay the cost difference.

As part of this approach, the intention is to broaden the sources of supply of community equipment and encourage a network of accredited retailers with staff trained to a minimum competency level for this purpose. It is envisaged that both private sector providers and NGOs currently involved in provision of such equipment would play important roles in this.

The model also includes creation of new independent needs assessors (appropriately qualified professionals such as occupational therapists and physiotherapists) to assess equipment needs and make recommendations. Their role would be to provide assessments for people who choose not to or are ineligible for public service provision. They would also provide other related services, such as additional therapeutic interventions and advice.

Equipment from the NHS: AT for mobility (wheelchairs and walking aids), hearing and vision aids and communication aids, as well as orthoses and prostheses are generally provided free of charge under the NHS. There are separate services for the different areas of AT. The process would typically involve referral from a GP to a specialist and/or to the relevant NHS services. For example, a GP would typically refer someone who may need a hearing aid to the local hospital for a hearing test. If required, the NHS would then issue hearing aids free of charge on a loan basis. Low vision services are generally provided in hospital eye departments and provide magnifiers and other low vision aids. Local social services departments may also sometimes provide AT services for people with hearing or vision problems. For wheelchairs, a GP, hospital consultant or social services would refer to the local NHS wheelchair centre. The centre would assess medical and lifestyle needs and, if eligible, help to select an appropriate wheelchair. Each centre has its own eligibility criteria, however. A system offering more user choice is also in place, as discussed in more detail in the section on 'user/consumer choice'.

Range of AT financed: In the UK, the approach is not a list-based one such as is found in some other countries. However, a national catalogue and tariff list has been introduced in the context of the 'retail model' for provision of community equipment.

Overall, the system provides access to a broad range of AT, including increasing provision of telecare and telehealth technologies and services. In principle, even more expensive items of AT would be covered in case of assessed need and for eligible persons. In the employment and third level educational settings, for example, the levels of funding per case can extend to relatively large amounts. In the home setting, the emphasis is especially on lower cost equipment and services, although environmental control systems may also be provided.

In terms of coverage of the state-of-the-art in AT, the UK can be considered to be relatively advanced, with attention given to provision of both low-tech (community equipment) and newer developments in the areas of telecare/home telehealth. The larger NGOs in the sensory field have also been leaders internationally in the application of AT to support their client groups.

Approaches to financing: AT provided by the NHS is generally provided directly by the relevant public services and is free of charge. Historically, the types of AT covered by the social care services were directly provided by the public services. They are provided free of charge where a person is eligible and assessed as needing them as a community care service. However, only those that meet the locally defined eligibility criteria (which generally include means testing) would receive equipment free of charge. Others would have to acquire the AT privately, with NGOs sometimes providing alternative routes to accessing financial support or reduced prices. Local authorities have four categories to which people are allocated and against which eligibility is determined. An increasing number of people are being assessed as having low or moderate levels of risk to independence and are therefore deemed ineligible for local council-financed services.

In relation to telecare, each local authority has different rules about who they will supply, how they run the services and how much they charge.

The new 'retail' model has heralded a move away from direct provision of some AT ('community equipment') to a prescription system, whereby those who are eligible can get the AT from an accredited retailer who is then reimbursed by the public services according to a standard tariff arrangement.

**Employment**

*Legislation/policy*

The Disability Discrimination Act (1995)/Equality Act (2010) impose 'reasonable adjustments' obligations on employers. Guidance documentation for employers mentions various types of AT as examples of reasonable adjustments.

The Access to Work scheme, operated by the Department of Work and Pensions, is the main statutory provision on the public policy side. This provides supports for people with disabilities and employers. It includes 'special aids and equipment' as a category of support.

In practice, the equality legislation and the Access to Work (AtW) scheme are interlinked, with the latter providing public supports to help employers meet their obligations under the former. The AtW scheme can also be positioned as a key plank of active labour market policy, focusing on supporting people with disabilities to take up and remain in employment. The programme has been favourably evaluated in terms of its contribution to supporting employers and people with disabilities, including a positive social return on the public investment (estimated at £1.48 net for the Treasury for every £1 spent on the programme).[[88]](#footnote-88) The role of the programme in general, as well as the 'special aids and equipment' part, has been given increased prominence and funding in recent years.

*Systems of delivery*

The Access to Work (AtW) scheme, operated by the employment service (Jobcentre Plus), is the main source of provision for AT in relation to employment. AtW provides financing for supports needed to take up or remain at work, including AT if required. It also provides access to assessment services where these are needed, which may include assessment of AT needs. There is a network of accredited specialist assessment services that can be used for these purposes.

'Special Aids and Equipment' are one of the categories of supports provided under AtW. The process begins with the completion of an application form to AtW. Following this, an AtW adviser contacts the person and will generally talk with the person and the employer to discuss the most appropriate supports. Often this is done by telephone but a site visit can also be made if necessary. Sometimes specialist advice may be needed, which the adviser will help to arrange. For example, they might arrange for a specialist organisation to complete an assessment and recommend appropriate support. In this case, a confidential written report is sent to the adviser who uses this to help decide on what support will be provided.

When the adviser has decided on the support that they feel is appropriate they seek formal approval from Jobcentre Plus. Confirmation of the amount of grant is then sent to the person and the employer. It is the responsibility of the employer (or the person, if they are self-employed) to arrange the agreed support and buy the necessary equipment. The employer can then claim repayment of the approved cost from AtW.

It seems that the question of who actually owns the equipment - worker or employer - may have been something of a grey area, although it is apparently intended that ownership would generally be with the employee in the sense of being able to take the equipment with them when changing jobs.

In principle, any equipment that would support work-related needs would be eligible for support. AtW may pay the full costs for job-seekers or people starting a new job, self-employed and those who have been working with an employer for less than six weeks. For those who are working for an employer and have been in the job for 6 weeks or more a certain degree of cost-sharing is normally expected. The provisions in this regard are: employers with 1-9 employees (no cost sharing expected); 10-49 employees (employer pays the first £300 and 20% of costs up to £10,000); 50-249 employees (employer pays the first £500 and 20% of costs up to £10,000); 250+ employees (employer pays the first £1,000 and 20% of costs up to £10,000).

**Education**

*Legislation/policy*

Education is one of the areas of responsibility which has been devolved throughout the UK regions. As a result, arrangements for responding to special educational needs (SEN) in Scotland, Wales, England and Northern Ireland differ in a number of ways. This report is based primarily on systems of provision in England.

*Early Years, Primary and Secondary Education*: The legal basis for SEN provision in the UK was laid down by the Education Act 1981 which defined the concept, set out the requirement that SEN should be assessed by schools and promoted the principle of integrated education.[[89]](#footnote-89) However, the responsibilities and procedures for SEN assessment and the formulation of SEN statements are regulated under the 1996 Education Act.[[90]](#footnote-90) The main procedures for the provision of services to meet SEN are specified in Part IV of the Act.

Under the Act, the concept of SEN can be applied to children as young as two years of age. It is defined as any provision which is additional to, or different from, education normally provided to children of the same age. Under Article 313 of the 1996 Act the Secretary of State is required to issue a Code of Practice which sets out the way in which SEN provision should be organised by Local Education Authorities (LEAs). It is this Code of Practice which provides the guidelines for AT assessment and provision at the level of primary and secondary education. The 1996 Education Act places a duty on health services and local authorities to assist in the assessment and statementing process.

Procedures for assessment and statementing are further specified in Schedules 26 and 27 of the Act. These set out the regulations for carrying out assessment and formulating SEN statements including the specification of which school the pupil should attend. The schedules specify that the assessment should take account of medical, psychological and educational advice as well as other advice as required.

The Special Educational Needs Code of Practice (2001) is intended for LEA’s, Head Teachers and Governors of Schools and early education practitioners.[[91]](#footnote-91) It provides an overview of the principles and polices governing the provision of SEN services and supports, defines the roles and duties of each of the actors, clarifies the way in which parents and pupils are to be involved in the process and sets out the procedures for assessment and provision.

The procedures are specified separately for early education, primary and secondary education. In each of these phases of education there are three level of provision. Early Years or School Action, Early Years or Schools Action Plus and SEN Statementing. Each of these is linked to a different level of funding. While each LEA has its own procedures for allocating these funds, in general each level of funding relates to a different level of SEN.

Specialised equipment can be procured under any of the funding options. Only in relation to a SEN statement is the AT allocated to a particular pupil. The Code of Practice consistently refers to individual support through specialised equipment throughout the guidelines. It clearly signals that schools should consult with pupils who need such support to ensure that they receive it in a timely manner to facilitate full participation in learning.

Section 9 of the Code covers the requirements for transition planning which requires schools to consider whether the needs of the pupil will require additional community support in a post school environment. The SEN statement automatically lapses once a student enters further or higher education.

The Code is explicit about the equipment needs that should be assessed under the statutory assessment of SEN. These include appropriate seating, acoustic conditioning and lighting, access to alternative or augmented forms of communication, provision of tactile and kinaesthetic materials, access to different amplification systems, access to low vision aids and access to all areas of the curriculum through specialist aids, equipment or furniture. Examples of such equipment are provided. These include references to portable word processing devices such as laptops, electronic keyboard, tape-recorders, closed circuit television or a CD-ROM device with appropriate ancillaries and software.

The regulations governing the structure and content of a SEN statement specify that it must include a specification of the facilities and equipments required. Finally, the Code requires that provision is reviewed annually and revised.

An indication of future policy directions can be gained from the Green Paper, *Support and aspiration:* *A new approach to special educational needs and disability: A consultation[[92]](#footnote-92),* launched by the Department of Education in March 2011. The paper acknowledges the importance of specific types of provision such as specialist equipment including adapted computer or software regardless of where the education of the child takes place. Another clear reference to AT recognises the importance of electronic communication aids, referred to as augmentative and alternative communication aids (AAC) for certain pupils and the difficulties that have occurred in commissioning these. The proposal is to transfer responsibility for AAC and other complex services and devices to the NHS Commissioning Service. The potential to introduce individualised budgets is also considered.

Finally, there is a proposal to move towards a national banded funding framework which would be based on different types of provision in the case of more severe or complex needs such as additional curriculum support, therapy, physical adaptations, equipment, transport, and home support. The proposal is that the framework would set out high-level descriptions allowing for flexibility on the part of local agencies and professionals to determine the level of funding to be associated with each level and type of provision.

*Further and Higher Education*: Local education authorities (LEAs) also support students in higher education. The LEAs operate a Disabled Students Allowances (DSAs) scheme for which part-time and full-time students and those partaking in distance learning or Open University studies are eligible.[[93]](#footnote-93) To qualify for DSA a student must provide evidence that he or she has an impairment or health condition which impacts on his or her capacity to participate fully in higher education. This usually requires an assessment from a relevant medical or allied health professional. A wide range of disabilities can be eligible for DSA including physical or sensory impairments, mental health difficulties and specific learning disabilities such as dyslexia.

The DSA is a grant, which is not means tested, and which covers four areas. These are

* Specialist equipment or AT such as screen reading or text-to-speech systems, speech recognition, alternative input devices
* Non-medical personal assistance allowance such as note-takers, interpreters
* A general disabled students’ allowance to meet other out of pocket expense such as insurance, access to the internet, Braille paper and photocopying costs and reasonable expenditure on extra travel
* Universities also receive financial resources to cover organisation-wide actions to create a more inclusive university environment for students with disabilities from the Higher Educational Funding Council. This relates to the development of Disability Equality Scheme (DES) which is described below.

Until April 2010, the Learning and Skills Council (LSC) was responsible for post-16 education and training and Work Based Training for Young People. The Learning and Skills Act (2000) placed specific responsibilities on the LSC for people with learning difficulties and/or disabilities (Sections 13).[[94]](#footnote-94) The Act distinguishes between 16 to 19 year old learners and older learners. There was a requirement on the LSC to meet learning needs identified through an assessment. This is specified in Section 140 which applies to any student identified as having a SEN statement or who is under 25 years and considered to have a learning difficulty and is leaving compulsory education in the coming year. The assessment report should document educational and learning needs and the provisions required to meet them, including accommodations where relevant. Section 14 requires the LSC to promote equality of opportunity *between persons who are disabled and persons who are not*.

Under the new arrangements put in place by the Coalition Government, the Department for Education (formerly the Department for Children, Skills and Families) sets the policy and priorities for 16-19 year olds learning and the national funding allocation. It also sets national targets and reviews the performance of the recently established Young People's Learning Agency (YPLA). Responsibility for 16-19 funding and commissioning has been transferred to local authorities. The Skills Funding Agency, operating under the Department of Business, Innovation and Skills, is the contractor for post-19 education, training and apprenticeship provision which is not part of the higher education system. It funds and regulates adult further education and skills training in England.

*Non-discrimination and Disability Equality Duty*: In addition to legislation governing the provision of SEN supports, all schools are covered by the Special Educational Needs and Disability Act (SENDA 2001).[[95]](#footnote-95) This Act extended the 1995 Disability Discrimination Act to all educational providers including schools, colleges and universities. The Act requires that students with disabilities are not treated less favourably by education providers and that they make reasonable adjustments to ensure equal treatment. Education providers have the possibility to justify non-conformance with the reasonable adjustment requirement on a number of grounds including the effect on academic standards, health and safety, and cost.

All publicly funded schools, colleges and universities are also covered under the Disability Equality Duty (DED) which was introduced under the DDA and later incorporated into the Equality Act 2010.[[96]](#footnote-96) This places a requirement on the education provider to produce a Disability Equality Scheme (DES). More recently an Equality Scheme covering all forms of discrimination is required.

The DES should include

* A description of the involvement of people with disabilities in the development of the scheme
* Procedures for monitoring the recruitment and retention of employees with disabilities and the progress of disabled students
* The way in which this data will contribute to the review and revision of the current action plan
* How the impact of policies and practice will be evaluated
* An action plan describing how the institution intends to meet its duties under the Act

The SENDA set out the mechanisms for investigating complaints of discrimination and modified Schedule 27 of the Education Act in relation to the procedures for amending statements of SEN.

*Systems of delivery*

Broadly speaking, each education provider is allocated a standard amount in their core funding (base level) to support the costs of all teaching and learning activities including resources to support interventions and a differentiated curriculum for those with mild to moderate SEN. About 3% of this funding is allocated to direct support to SEN pupils. The costs of a school-based Special Educational Needs Coordinator (SENCO) also come out of the base level funding.

Early Years and School Action funding is provided, in addition to core funding, in order to meet the needs of SEN pupils based on ’proxy’ need indicators including the number of pupils in the schools who are achieving below a defined level and the number of students eligible for schools meals. School Action Plus funding is additional funding which takes into account the number of students deemed eligible for this support but who are not considered in need of a statement. A key difference between School Action and School Action Plus funding is that the former is intended to cover additional supports provided within the school and the latter is for pupils who are considered to need the support of an external provider. Pupils who are receiving supports or interventions under School Action or School Action Plus must have an Individual Educational Plan (IEP). The final level of funding is allocated to a specified individual on the basis of a SEN assessment and statement.

In January 2010, 11.4% (916,000) pupils were identified at School Action level, 6.2% (496,000) were accessing support through School Action Plus, and 2.7% (221,000) had a statement of SEN.[[97]](#footnote-97)

Assessments of needs are required for all pupils in primary and secondary education seeking support under either Action Plus or SEN statementing. Most LEA’s operate SEN Support and Outreach Services which provide assessments and supports to schools which are maintained by the LEA. Independent and special schools can also access these services. The normal process is for a pupil to be provided with learning support initially through base level and Early Years or School Action funding. In the event that these are deemed to be insufficient to meet the learning needs of the pupil, an application can be made for Action Plus funding and ultimately where a substantial unmet need is identified for a SEN statement.

The school’s SENCO is responsible in consultation with the teaching staff, pupil and parents to decide initially on what needs to be done to assist the pupil’s progress. The guidelines for SENCOs clearly signal that they should consider a range of appropriate equipment including information technology and that they should consider involving an external expert where this is required. The LEA’s are responsible for providing advice on appropriate strategies and staff training.

A project funded by the former Department for Children, Schools and Families has produced Quality Standards for SEN support and outreach services.[[98]](#footnote-98) The standards are voluntary but they provide an indication of the way in which AT is viewed as part of SEN support. The standards require that *there is a policy for managing technology, including the maintenance of specialist equipment and the replacement of outdated equipment where it would otherwise impact on service provision* and that reviews are carried out to identify and evaluate new and emerging technologies which may have an impact on service delivery.

Prior to 2000, support for pupils with SEN was provided almost entirely through LEA support services. However, over time many LEAs have been delegating funding for such services to schools. There is a view that the development of LEA support and outreach services has been ad hoc which has resulted in overlaps and redundancies.[[99]](#footnote-99)

A national audit of services and provision for children with low incidence disabilities in 2006 concluded that, from the perspective of AT, provision was mostly in place and well-established in most authorities in relation to specialist equipment and technology.[[100]](#footnote-100) Provisions for children with severe sensory or multisensory impairments seemed generally well established, with a suggestion of greater gaps in provision for children with autism spectrum disorder (ASD).

An identified key area for improvement concerned the establishment of regional centres of excellence to provide specialist equipment, advice to support local interventions, provide training in AT, carry out research and development and pilot and evaluate new methods. In this regard the ACE centres (in Oxford and Oldham), which were set up in the 1980s and now offer centre based assessments, support for local service delivery through training, research and loans of materials/resources, were singled out as good practice. Transition between phases of education and from school to adulthood was another area for improvement identified particularly in relation to arrangements to ensure ongoing support and access to the necessary technology and equipment.

Access to support services for students in further and higher education are generally the responsibility of individual institutions. Most universities employ a disability liaison office or student support service to provide students with the support required to participate in lectures and undertake examinations including note takers, advice and guidance and, for those who require it, training in study techniques. In many areas, there are designated DSA assessment providers. These assess the needs of students wishing to make an application for DSA.

In 2004/05, approximately 641,000 learners in the FE system self-declared a learning difficulty and/or disability which represented about 10% of total LSC funded learners. The total funding associated with learners with learning difficulties and/or disabilities was approximately £1.47bn. These costs included on-programmes costs, Additional Learning Support (ALS) costs, SEN grants to local authorities for learners in school sixth forms, the costs of specialist colleges for learners with learning difficulties and/or disabilities. ALS regulations recognise that alternative technology can replace the need for other types of learning support. While actual equipment costs cannot be claimed through ALS, a depreciation charge may be included by the college. Only the appropriate element of depreciation for equipment used by the learner for the time it was used is eligible. The proportionate cost of the lease charge for equipment is also eligible.

As a result of a number of reports, a development process was initiated in 2006 which aimed to rationalise the system of funding and provision for learners with learning difficulties and/or disabilities in post-secondary education.[[101]](#footnote-101) *Learning for Living and Work: Improving Education and Training Opportunities for People with Learning Difficulties and/or Disabilities* resulted in a review process which examined funding arrangements, quality, learning progress and working in partnership in order to create a system that was fit for purpose.[[102]](#footnote-102) In 2011, the Young People's Learning Agency (YPLA) summarised the main concerns with the current system of provision for people with learning difficulties and/or disabilities in further education.[[103]](#footnote-103) Currently, different assessment and funding systems are operated for special schools, Independent Specialist Providers, FE Colleges and school sixth forms which have diverse and separate funding streams. As a result, the level of support and funding available to a learner can depend on where they live, whether they have a SEN statement or a learning difficulty assessment, their age, the type of provider they are with and the level of support required. Young people and their parents often find this lack of transparency and complexity confusing when it comes to determining the types of supports for which they are eligible.

The YPLA is currently piloting Learning for Living and Work Framework to support young people with special educational needs and disabilities (SEND) in their transition to adult life. This framework, which provides a basis for transition planning for learners with SEN or disabilities, represents a systematic approach to transferring information from second level to further education providers and documents the current and future needs of the learner, has specific sections in which the AT used by the learner and his or future AT requirements must be recorded. This approach could represent a useful benchmark for transition planning in Ireland.

The Disabled Students Allowance Quality Assurance Group (DSA-QAG), which is a not-for-profit organisation with charitable status, provides a quality assurance for services delivering assessment of need service under the DSA scheme in England and Wales. DSA-QAG has developed an Assessment Centre: Quality Assurance Framework to cover all activities of assessment centres. Standard 1.3.4 of the QAF requires that *Relevant equipment will be available, demonstrated and trialled. The student will sign a proforma to confirm which items of equipment have been trialled* (p16)*.[[104]](#footnote-104)*

## Netherlands

**Overview**

Responsibilities for AT provision in The Netherlands are primarily organised separately in each sector: education (Ministry of Education), work and employment (Ministry of Social Affairs & Employment) and health and social services (Ministry of Health, Welfare and Sports). Private insurance companies and the municipalities have the central role in provision of AT for independent living. A third source of AT provision is the national insurance covering major medical expenses not covered by health insurance. The Employees Insurance Administration Office (UWV) has a central role in relation to AT for work/employment. In the education sector, specific sectoral provisions and entities are in place and the UWV also plays a role in aspects of AT service delivery in this sector.

The main pieces of legislation are:

* Act on Healthcare Insurance (ZVW), Act for Provision of Social Support (WMO) and Act on Extraordinary Costs related to Illness (AWBZ): main legislation covering AT for home/ independent living
* Act for Employment and Income According to Employment Capacity (WIA): relevant for AT in relation to work/employment
* Act on Equal Treatment based on Disability or Chronic Illness (WGBH-CZ) and Regulations on educational support for young people with a disability: relevant for AT in relation to education/training.

The Netherlands has signed the UN Convention on the Rights of Persons with Disabilities although has not yet ratified it.[[105]](#footnote-105) In general Dutch policy on disability is based on equal treatment. The Equal Treatment Act covers rights to non-discrimination in employment, education and housing.[[106]](#footnote-106) Policy on inclusion of disabled people is based on an Action Plan for Equal Treatment in Practice.[[107]](#footnote-107) There is also a more recent action plan on active employment[[108]](#footnote-108) that also covers people with disabilities.

**Home/community/everyday life**

*Legislation/policy*

In this context, the Act on Health Insurance (ZVW)[[109]](#footnote-109) from 2006, the Social Support Act (WMO)[[110]](#footnote-110) from 2007, and the Act on Extraordinary Costs related to Illness (AWBZ)[[111]](#footnote-111) revised in 2009 are key components of the legislation of relevance for AT. In the Netherlands, everyone is required to have healthcare insurance under the ZVW and a large number of private insurance companies compete on the market; those on low incomes receive financial support towards their premiums. Provisions under WMO and AWBZ are accessible to all.

The insurance companies are obliged to offer a standard package of cover ('pakket') to all who apply. The types of AT which are covered in the 'pakket' are defined by ministerial regulations.[[112]](#footnote-112) The Health Care Insurance Board (CVZ)[[113]](#footnote-113) is the official agency that oversees the health insurers to ensure that insured people's needs and rights are met. It advises the health minister on what should be included in the 'pakket'. As regards AT coverage, the approach to date was based on a list of the types of products that should be covered. CVZ has been working on changing this to a more functional approach based on the World Health Organisation's International Classification of Functioning, Disability and Health (ICF). The regulations governing AT in basic insurance are gradually being updated to adopt this functional approach.

The WMO legislation is also very relevant for the provision of AT for home/community/everyday life purposes. This requires the municipalities to provide home care and related services, including AT. A personal budget option is also available. There are plans to transfer responsibility for AT that supports activities of daily living and participation from the ZVW to the WMO.[[114]](#footnote-114)

The AWBZ legislation is also relevant and AT costs not covered under the main health insurance may be covered under this, for example, the temporary loan of basic AT for personal care or support. Tax deductions for special costs are also possible if these costs are not covered under any of the other systems.

*Systems of delivery*

There are two main 'systems' of provision for AT in the home and community setting - municipalities and health insurance. Provisions under the national 'exceptional costs' insurance (AWBZ) constitute a supplementary third part of the overall system.

In accordance with the WMO, the municipalities provide AT devices (such as mobility aids), as well as housing adaptations and other forms of assistance and support. Each municipality has its own regulations on what AT can be provided and its own budget. When a resident of the municipality is seeking services they must first go to the WMO “window”, which can either be virtual (on the internet) or physical in the town hall or similar public facility. The WMO department is part of the care and welfare department of the municipality but functions as a separate unit due to the size of its budget and the impact on the citizens (names and organisational form may vary from town to town). A national umbrella agreement negotiated between the Ministry of Social Affairs, disability organisations and the Association of Dutch Municipalities aims to encourage uniformity in what is provided across all municipalities.

AT provided under the WMO include mobility/walking supports such as wheelchairs, scooters, adapted bicycles (also shared taxi services when possible) and home adaptations e.g. raised toilet seats, adapted bathrooms, stair-lifts (also coverage of costs for moving to an adapted home). The AT can be procured by the municipality or the person can be allocated a personal budget. The WMO regulation does not focus on providing AT, per se, but on the requirement to solve participation problems, whether through provision of AT or other means. The appropriate solution is decided by the municipality (financer) rather than the client.

Qualified WMO personnel (e.g. OTs) make an initial intake assessment in order to identify the nature of the participatory need. Where necessary a home visit will be carried out to determine the physical and social environment, personal factors, and other background information relevant for the determination of the type of AT required. A second opinion can be requested in complex cases.

Each municipality usually has a framework contract with AT supplier(s). The price of the contract depends on the number of inhabitants and the average number of annual provisions. Most solutions fall into predefined classes of AT provision, e.g. foldable wheelchair. The supplier selects the device from the range specified in the contract and is responsible for maintenance and support.

Alternatively, the municipality can provide the person with a personal budget (PGB) which gives the client the opportunity to select the AT supplier themselves. The person can buy a device which costs more than the budget provided by adding personal resources. This is often a more expensive option for the municipality as it does not benefit from the contract discounts which can be negotiated on the basis of a large volume of provision.

The private health insurance companies are the other main providers of supports for AT in this area. They establish their own regulations on AT, based on the regulations from the Ministry.

Under ZVW a range of devices are eligible for funding including

* ADL-devices used in the home such as dressing aids, high-low beds and adapted clothing
* AAC devices used in the home to support social contact such as adapted computers, hearing devices, speech amplifiers, telephone amplifiers
* Medical devices such as syringes, gauze, glasses
* Orthoses such as cervical collars and orthopedic footwear
* Prostheses such as arm, leg, knee or breast prostheses
* Object handling aids such as those compensating for insufficient arm, hand or finger function, robot arms (newspaper standard or scissors standard)
* Mobility support such as (white) cane, guide or service dogs, elbow crutches walkers.

Provision is generally free but a financial contribution may be required in certain circumstances.

All Dutch citizens are required to have a basic health insurance with a private health insurance company, which costs around 1000 euro annually. Each health insurance company purchases the AT it provides from suppliers for which annual contracts are negotiated. The supply of AT through the health insurance is only possible on the basis of such a contract. Often the health insurer signs a contract for a cluster of AT devices to gain a greater discount.

The request for AT can be made by the insured him/herself or by a (para)medical professional treating the insured person. The professional provides a description of the medical need for an AT device and this is submitted to the insurance company. They decide on the basis of their expertise, policy and the case description whether the application for AT is eligible. The accepted AT device is then ordered from a supplier including the negotiated support, training and service maintenance. The supplier also takes care of any customisation required as part of the contract (e.g. orthopaedic footwear). Payment is made on the basis of delivery of the AT to the client and in accordance with the contract. After sales care is the responsibility of the contracted supplier.

The degree of involvement of the supplier and the extent of personal contact varies enormously depending on the type of AT involved. Walkers are distributed without any personal contact other than the truck driver delivering the device to the home. In contrast, fitting of hearing aids may require many re-assessments/adjustments before the optimal result is achieved.

Finally, AT provided under AWBZ includes the temporary loan of basic AT for personal care or for support of care such as bed facilities, personal care equipment, walking aids, wheelchairs, seating cushion etc, and wheelchairs used by persons being treated in a residential setting. The provision or loan sometimes requires the user to make a financial contribution.

In general, the systems operate to avoid overlap or duplication, apart from potential issues around the distinction between short term use (AWBZ) versus long term use (ZVW and WMO). People can make use of both regulations simultaneously but not for the same type of AT. A power wheelchair will be provided by the municipality but a robot arm attached to the wheelchair would be provided by the health insurance (until 2012). As mentioned earlier, the system is in transition and greater responsibility for provision of ADL-related AT is being allocated to municipalities (WMO) rather than the insurers (AWBZ & VWZ), with the exception of bodily-worn and/or medical devices.

Range of AT financed: In implementing the WMO, each municipality defines the types of AT it provides. The selection of specific AT products on offer is mainly determined by what is covered in the procurement contracts with suppliers. There is a possibility for users to override this default choice but this requires a substantial motivation and effort.

AT covered by the health insurance has until recently been based on a list of the types of products that should be covered in the 'pakket'. The rules are set by ministerial regulations[[115]](#footnote-115) based on the guidance and advice of the Health Care Insurance Board (CVZ).[[116]](#footnote-116)

CVZ has been working on changing the list-based approach to a functional approach. This new approach is based on the World Health Organisation's ICF and the Dutch Cliq system for classifying AT.[[117]](#footnote-117) The Cliq system classifies AT based on the ICF and ISO 9999, and aims to support assessment, prescription and information from the user point of view. The new system will not use a list of covered items but instead an open description of the functional needs that are to be met. This may include a list of what is excluded from the scope of what is covered. The regulations governing AT in the basic insurance are gradually being updated to adopt this functional approach.

In general, whether a particular type of AT is funded, will depend on its acceptance within the system and this is seen as a barrier to innovation. Effective AT solutions not fitting into the regulations (i.e. that cannot be categorised under one of the established headings) are unlikely to get funded. Typically, high tech solutions will be new to the system and there can be a high threshold for their entry and replacement of more traditional AT solutions. For example FES (devices making use of Functional ElectroStimulation) has been recognised as having proven cost effectiveness but so far has been kept out of the provision system because of concerns about lack of control of resulting costs for the system. Improvements in the available solutions in already accepted areas (e.g. Braille reading rulers, modern hearing aids etc) tend to be more likely to be incorporated into the system than new innovations such as Global Positioning Systems (GPS) for visually impaired people. Evidence of cost effectiveness of AT is difficult to generate but is required for acceptance into the system. For AT services already accepted in the system there is no such obligation.

Approaches to financing: Municipalities do not provide AT themselves, only through contracted suppliers*.* If an application to the municipality for AT is approved there are two main funding options. One option is to get the AT through a supplier contracted to the municipality; the other is to use a personal budget as described above. For the first option, if the user needs AT that is not provided by a contracted supplier then a non-contracted supplier can be used. The principle is to ensure that the cheapest AT is acquired as long as it is suitable. If the user wants something more expensive then they have to pay the extra costs themselves. For devices funded in this way, either the municipality or supplier continues to own the devices (i.e. they are only on loan to the user), depending on the contract with the supplier. Recycling devices after refurbishment is advocated and allowing suppliers to retain ownership of equipment is considered to be an incentive for them to recycle. When a convincing case can be made, the municipality must provide an individualised solution, even if it is not included in the current supply contracts. However, this is the exception rather than the rule.

Where the request for financial support is to the insurer, the most common situation is that the user gets the AT from one of a list of contracted suppliers and receives the product on loan ('natura' or in-kind approach). If they use a different supplier or get a product of their own choice, different to what is prescribed, and then only 80% of the costs of the device are reimbursed. Some insurance policies (higher premium) allow the user a free choice of supplier ('restitutie' or reimbursement approach). In this case the user gets reimbursed after purchasing the product and has ownership of the product.

**Employment**

*Legislation/policy*

The Act for Employment and Income According to Employment Capacity (WIA) is the main sectoral legislation relevant for AT needed in relation to work/employment.[[118]](#footnote-118) AT provision under the WIA is administered by the Employees Insurance Administration Office (UWV). The legislation provides for subsidies to the employer for adjustment to the work environment ('non-portable' services) or to the employee for AT for their own uses ('portable' services). This distinction has an implication for ownership: non-portable devices are owned by the employer whereas portable devices are retained by the worker, for example when changing jobs.

The UWV approach is a functional one. There is no list to limit what may be provided. Nevertheless, it has produced guidelines on the type of AT that is eligible for funding in a work setting and the amount of financial support that can be provided. In practice, any AT device that can contribute to participation in employment, as long as it is not covered by some other funding source, will be considered. In this regard, UWV takes note of evidence of the usability and effectiveness of AT. In the employment setting the introduction of new types of AT solution is easier than in the education setting as customised solutions are more easily accepted.

UWV provides support if the requirement is due to a disability which has impacted for more than one year, the support is necessary for carrying out the job role and the support costs are more than €120. The UWV has also recently piloted a personal ('participation') budget in collaboration with some private insurance companies.

*System of delivery*

The UWV operates local offices in each of the municipalities. Support for people with disabilities in relation to employment may be provided by employment services professionals from UWV or through the specialist reintegration companies that play a role in reintegration of people who have been out of work for a long time because of disability.

**Education**

*Legislation/policy*

Policy on AT for education falls within the responsibility of the Ministry of Education. There are two main statutory provisions governing the provision of AT for educational purposes - the Regulation on Educational Support for Young People with a Disability and the Student-related Subsidy.

AT that can be used both at school, and for non-educational purposes outside school, is provided by private insurance, governed by the rules for AT in this area.

The Regulation on Educational Support for Young People with a Disability covers AT 'for school purposes only', including adjusted furniture and special educational aids for participation in education and for homework.[[119]](#footnote-119) The Student-related Subsidy (LGF) provides financial support for eligible students who wish to follow mainstream education as opposed to education in special schools.[[120]](#footnote-120) It can be used at primary, secondary and further education ('mid-professional') levels.

*System of delivery*

Although the Ministry of Education has overall responsibility for AT for school purposes, the system is administered by the Employees Insurance Administration Office (UWV) based on the types of AT devices that are specified as eligible for funding within education under Article 11 of the regulation of educational supports.

The 'student-related subsidies' (leerlinggebonden financiering) are available to young people aged 4 to 14 years in primary (LGF-PO) and secondary (LGF-VO) education. It provides a budget for parents (the rugzak or 'backpack') to support participation in mainstream schools. An Independent Commission for Indication (CVI) in the region decides on eligibility for the LGF. The parents can co-decide on how the subsidy is to be spent. Subsidies are also available to schools. Regional Expertise Centres play an important role in providing advice. There are centres for the main types of impairments including vision, hearing and/or communication, physical and intellectual, and serious behavioural or psychiatric problems. They provide personal assistance type support services, to which a certain amount of the budget must be allocated. Some of the budget can also be used for AT and the Regional Expertise Centres sometimes provide this as well.

## Denmark

**Overview**

Responsibilities for AT provision in Denmark are mainly organised separately according to the fields of education and training (Ministry of Education), work and employment (Ministry of Employment) and general social services supporting independent living (Ministry of Social Affairs). The health system also has a role in relation to AT provided in the context of treatment, but this is not the main focus of this study. Municipalities have a central role in the provision of AT for independent living as part of social services but also have a major role in relation to work/employment through the municipal job centres and in relation to parts of the educational system (primary and lower secondary). A number of centres provide specialist support in relation to AT, including the Danish Centre for Assistive Technology (knowledge centre dealing with the subject on an overall theoretical basis) as well as other centres providing hands-on support in the assessment and choice of AT. Other organisations and structures are also involved in aspects of AT provision in relation to work and employment (for example a specialist knowledge centre at Vejle) and education (Danish State Education Grant and Loan Scheme Authority).

The main pieces of legislation are:

* Social Service Act: covers AT for home/independent living
* Compensation for Disabled People in Employment Act and Active Employment and Active Social Policy Acts: relevant for AT in relation to work/employment
* Various Education Acts and Special Education for Adults Act: relevant for AT in relation to education/training.

The following core principles of Danish disability policy govern services and supports for assistive technology:

* Compensation: society is responsible for providing services and supports that can reduce the consequences of disability; in general, people with disabilities should pay the part of the costs for goods and services equivalent to the costs that they would have had to pay if they were not disabled, but they should not have to cover additional expenses arising from their disabilities
* Sector responsibility: the public sector is responsible for ensuring that the activities, services and products they offer are accessible to people with disabilities; responsibility for providing/financing assistive technology falls on the authorities where the need arises
* Solidarity: everyone is responsible for ensuring that people with disabilities receive the necessary services, as and when they are required; this is reflected in the services largely being funded by the public sector through taxes
* Non-discrimination: this is a central component of disability policy; the UN standard regulations were ratified by parliament in 1993 and more recently Denmark has signed and ratified the UN Convention on the Rights of Persons with Disabilities.

**Home/community/everyday life**

*Legislation/policy*

Responsibilities and rights in relation to assistive technology for this setting are regulated in the Social Service Act.[[121]](#footnote-121) This places the responsibility on the municipalities to provide AT and AT-related support services. Assistive technology is to be provided without regard to age, income or property-owning status. It is not permitted to reject an application for an assistive device because the municipality budget has been exceeded.

The Act stipulates that municipalities are to provide assistive technology and consumer goods for persons with long-term mental or physical disability, if the assistive technology or consumer good can substantially relieve the long-term effects of the disability, substantially facilitate day-to-day home life or is necessary to allow the person in question to do a job.

Assistive devices are generally provided free of charge and financial support is also to be provided for the purchase of consumer goods if they meet these needs-related eligibility conditions. The citizen finances 50% of the cost of a standard product, the municipality finances the rest, plus any extra cost if the product is more expensive because it is different to what people normally have. For example, a bicycle is considered ordinary for any child, disabled or not. A tricycle, however, is more expensive than a bicycle, so the family can be economically compensated through chapter 9 in the Social Services Act (Economic support et cetera) and can get a refund for the difference between the two.

The Act on Legal Protection and Administration of Social Affairs is also relevant.[[122]](#footnote-122) It covers regulations for the administration of cases by municipalities. A municipality must process applications and queries on assistance as quickly as possible and establish a deadline by which time a decision must have been reached. An applicant shall have an opportunity to assist in the handling of his or her own case. Each case must be documented and citizens must have access to their case file.

An amendment to the Social Services Act in 2010 has given users more freedom of choice in relation to AT.[[123]](#footnote-123) The original Act gave the municipality the power to designate specific suppliers that clients must use, but also stipulated that the municipality must involve user representatives in the preparation of the requirement specifications for the procurement before buying the AT. Even then, the Act gave users of some AT ('specific personal assistive devices') a right to use a different supplier and get reimbursed up to the prices that have been agreed between the designated supplier(s) and the municipality. The revised Act extends this choice possibility to all AT. For AT where there are supplier agreements in place, the same rules as before apply in relation to reimbursement if bought from an alternative supplier. In cases of AT where the municipality does not have an agreement with any suppliers, the reimbursement cannot exceed the amount for the 'best and cheapest product'.

Any AT so provided is the property of the municipality and is delivered back when no longer in use (due to e.g. change in functional ability or death). As a consequence, any AT provided may be second-hand. The municipality has the duty to repair and replace a provided AT when needed. In the case of a consumer product (with divided financing) the citizen owns the product and it is his own duty to repair and replace it.

As well as financial support, the municipality must provide advice on technology, free of charge, to persons with disabilities. This also applies to instruction in the use of the assistive technology. This means that financial support provided to purchase AT should also include any additional consultancy costs that may be involved. Also, the municipality’s administrators in the AT sector are obliged to provide advice and guidance to users, even in cases where users ask for advice but must or can buy their own devices themselves.

The cooperation between hospitals (organized in the five regions) and the municipalities with regard to AT is regulated through”Cirkulære om afgrænsning af behandlingsredskaber, hvortil udgiften afholdes af sygehusvæsenet” (Circular on the demarcation of products for treatment where the hospital defray the expenses).[[124]](#footnote-124) The hospitals are obliged to provide products for treatment. However, in some cases these products could also function as technical aids to compensate for a disability, depending on whether the condition is temporary or chronic. The law describes what are considered products for treatment and what are for compensation. It also stipulates that the regions (on behalf of the hospitals) and municipalities are obliged to formulate and enter into an agreement on “sundhedsaftaler” (health agreements) to protect the citizen in this area.

*Systems of delivery*

Municipalities have primary responsibility for provision of AT and AT-related services to meet needs in the home/community/everyday life setting. The responsibility is carried out by the local Department of Assistive Technology (This may have different titles in the different municipalities).

Application to the local Department of Assistive Technology to initiate a case may be by the citizen themselves, a relative, or a home carer. Determining need and the public support to be provided is the responsibility of the Department. An occupational therapist (or in some cases a physical therapist) is assigned to the case and retains the responsibility throughout the process. To assess the problem, he or she pays a home visit to conduct the appropriate analysis of the situation and makes a ruling. When specialist insight is required, the OT may seek advice from specialist centres for e.g. vision, hearing, or seating, in the assessment.

The municipality holds in stock a variety of AT products that meet about 80% of the needs. In a typical case, the AT will therefore be delivered from the municipality AT warehouse, and may be either a new device or a second-hand device in good condition. In cases where a specialised AT is required, the OT will acquire it directly from the supplier. In any case the AT will be delivered from and owned by the municipality.

In cases where the ruling is that the product needed is a consumer good, two scenarios are possible. Either the municipality buys the product, delivers it to the citizen and charges him/her 50% of the price of a standard product or the municipality instructs the citizen on what product to buy and gives a refund of any amount over 50% of the price of a standard product.

If the person wishes to choose a different product than the municipality offers, the municipality instructs the citizen on the minimal specifications of the granted product in order to make sure that they buy an appropriate product. The citizen will then be granted an amount of money to cover the value of the granted product.

On delivering the product, the municipality is obliged to make sure that the product is assembled correctly and/or ready to use and to give instructions, and perhaps training, in the use of the product. This obligation may be transferred to the supplier, but the municipality still holds the responsibility.

Ideally, a follow-up visit will be conducted after a period of time. In complicated cases this will take place on a planned schedule, but in many straightforward cases the follow-up is not conducted. Outcomes monitoring is mostly only conducted at the individual case level although in some areas the municipality collects information from all the relevant cases. There is no communal registration system across the country and this makes it very difficult to perform national outcome studies.

In addition to the municipality services there are also regional and national support structures. According to legislation, the region is to assist in providing appropriate and safe devices. This means that they can continue running the former county assistive technology centres (some of these regional centres are now run by one or more municipalities in cooperation). One of the functions of these is to advise the municipalities on technical aids and provide guidance, demonstrations and adaptation of assistive technology. The regional centres have no formal authority to decide which AT the citizen should be provided with; this authority lies with the municipalities. The regional centres have to charge the municipality a fee for their advice. In times of economic constraint the municipalities are reluctant to seek this advice, and so the future for the regional centres is uncertain. Municipalities or the regions also run low vision centres and hearing institutes (for optical aids and hearing aids, respectively).

The Danish Centre for Assistive Technology (www.hmi.dk) is part of the national knowledge and special advisory organisation VISO. This organisation provides specialist support to the municipalities in social care, special education and other areas. It contributes a part of the advisory role that the municipalities have to provide in relation to AT. The Centre coordinates and takes part in testing, research and information activity in order to secure appropriate and safe devices. It assesses the sphere of use and functionality of AT and maintains an overview of the devices on the market. The Centre publishes two periodicals with up-to-date information on AT and holds a large number of courses and conferences on devices and the expert methods connected with their provision. It manages five online networks for professionals working in the area of AT and maintains a database of assistive technology, with information on devices, also available in English.

The National Board of Social Services is a board under the Ministry of Social Affairs. Under this board 16 knowledge centres on specific disability groups have been consolidated into one: ViHS.[[125]](#footnote-125) The Danish Centre for Assistive Technology has of January 2012 been merged with ViHS. The personnel from the former knowledge centres have been transferred to ViHS, and, to an extent, they will be able to provide specific expertise on AT.[[126]](#footnote-126) Parallel to the national ViHS body, several NGOs provide expertise on a wide range of different disabilities.

Range of AT financed: In Denmark, in principle, there are no guidelines or restrictions on what AT may be provided. For eligibility, the product must compensate for the disability and allow the citizen to take part in daily activity. The focus is not on the product but on compensation and there is a wide spectrum of AT in use. In addition to the standard procurements, the municipality is allowed to buy other products if none of the products from the procurement fulfil the need in the individual case. However, if a certain product at a lower price can compensate for the disability, a more expensive one will not be approved. If a product has additional features (and therefore is more expensive), the product that just meets the assessed needs is approved; over-compensation is not allowed. Being high-tech is not in itself a problem, if it is the right product to compensate in the situation. There is, in principle, no limitation on the provision of new types of AT solution.

OTs in the municipality have opportunities to be kept updated on developments in AT, and new products of high quality and with features in high demand, quickly find their way to the local warehouses and to the citizen. For conventional AT products, there is a bi-annual fair of 3 days. The Danish Centre for Assistive Technology also holds a popular annual fair of 2 days for Information and Communication Technology, and the national database of AT, Assistive Technology Data Denmark, highlights new products in panels on each page of the website.

Approaches to finance: Municipalities provide full or partial funding for the costs of AT. It is not permitted to reject an application for an assistive device because the budget has been exceeded.

The prescription process is preceded by a needs assessment. Together with the user, the prescriber assesses whether there is a need for an assistive device or consumable. Having decided on the assistive device, a decision also has to be taken on the quality required to meet the user’s needs.

There is no complete list of assistive technology/consumer goods that can be provided. Items are grouped into four categories - common furnishings, consumer goods, standard assistive technology and special personal assistive technology - and different funding arrangements apply to each:

* *Common furnishings* No funding for these (things normally found in the home, including TVs, VCRs, standard computers, digital cameras etc.)
* *Consumer goods* - in cases where these are deemed to provide a compensation of a kind needed by disabled persons, a grant, as a rule, is given for anything over 50% of the price of a general standard product of the type in question; the user has right of ownership of the product; in the case of need for goods of special quality or design, funding is also provided; consumer goods which solely serve as an assistive aid can be provided for free
* *Special personal assistive technology* - these are generally fully funded; they include items such as wheelchairs requiring adaptation to the user and which must necessarily be used for the majority of the day and visual devices worn on the body for people with long-term impaired vision or medically defined long-term ophthalmic diseases; the municipality generally continues to own the device, but it is rarely recycled.
* *Standard assistive technology* - these are generally fully funded; they cover devices not covered under the 'special personal' category; municipality generally continues to own the device; these products are usually recycled.

According to the Act, the citizen cannot get a refund for products he has bought prior to applying to the municipality.

For some areas of AT, each municipality buys assistive devices and runs its own assistive technology depots with recycled assistive devices. There has also been a growing tendency for municipalities to choose to lease assistive devices from a private supplier with depot functions. However, after the municipality reform of 2007, when several municipalities were merged, some of them decided to run their own depots and purchase their own assistive devices.

In case the citizen wishes to use his right to choose a different product than the municipality will deliver, he will be granted an amount of money to cover the value of the approved product, and he will pay the excess price himself. The right to choose a different product than the municipality will deliver is very complicated to administer. In practice, very few persons use their right to choose.

**Employment**

*Legislation/policy*

The 'Compensation for Disabled People in Employment Act'[[127]](#footnote-127), 'Active Social Policy Act'[[128]](#footnote-128)and 'Active Employment Act'[[129]](#footnote-129) are the main pieces of sectoral legislation relevant for AT in relation to employment. These place obligations on the municipalities to provide supports (including assistive technology), where needed, to persons who are in the labour market and those who are looking for work. The legislation covers both open and supported employment, as well as people in training, work experience and other such labour market related activities. Supports are to be provided to compensate for limitations in working capacity and must be necessary for the person to be able to perform a specific work process. Persons with limited working capacity may be provided with support for aids in the form of educational materials, tools and workplace adaptation.

*System of delivery*

The job centres administer grants for AT, paid for either by the state or the municipality, depending on the person's social protection situation amongst other things. There is a special job centre in Vejle which performs a nationwide specialist function in relation to training/retraining and integration of disabled into workplace.

**Education**

*Legislation/policy*

Various pieces of educational legislation cover the different levels of education. The Folkeskole Acts cover primary and lower secondary education, which is mainly provided by the municipalities.[[130]](#footnote-130) This Act is supported by the departmental order of Special Education in The Folkeskole.[[131]](#footnote-131) This states that special education and other special education assistance must be provided for school-children who need it. It also requires the municipality to provide such support for children who have not yet started school. Assistive technology falls within the scope of these provisions, and this also includes AT for homework purposes. AT is to be provided to students by the schools free of charge, and is generally owned by the school.

For primary and lower secondary education which is not offered by the municipality, AT is granted according to the departmental order for “free and private primary schools” for children up to the age of 15. [[132]](#footnote-132)

For students who have left primary school, the relevant legislation depends on the type of school. Assistive technology is granted according to the departmental order for Special supplement for special needs for youth education.[[133]](#footnote-133) The Act on Folk High Schools, Continuation Schools, Home Economics Schools and Handicraft Schools[[134]](#footnote-134) provides for grants to be made to these schools to cover the extra costs for special education needs, including AT, if these have been approved by the Ministry of Education. This is specified in the departmental order for Special Supplement for Act on Folk High Schools, Continuation Schools, Home Economics Schools and Handicrafts Schools.[[135]](#footnote-135)

Legislation also covers grants for special educational assistance, including AT, for adults.[[136]](#footnote-136) The Act on Special Education Assistance for Higher Education addresses needs of higher education students. [[137]](#footnote-137) Under this legislation, the State Educational Grant and Loan Scheme is required to provide grants needed to ensure that students with disabilities can receive higher education on an equal basis with other students. Where a student is not covered by educational legislation the Social Service Act can apply to provide the AT required.

*System of delivery*

In each municipality there is an office called “Pedagogical, psychological counselling” (PPR Office), which plays a central role. Usually the teacher closest to the pupil contacts PPR for an evaluation of a pupil with special needs. The PPR-consultant then tests and evaluates the pupil, and decides which sort of special needs education and which sort of AT a student then should be granted. Delivery of AT, set-up and training depends on the kind of school that the pupil attends. There are various possibilities, but, as a general rule, special needs teachers set-up the AT and train the pupil in association with the PPR-consultant.

Pupils under the Act of Folkeskole that attend private schools not operated by the municipality get their AT from the central state service at the Ministry of Education.[[138]](#footnote-138) For young and adult students in education approved by the Ministry of Education, AT is granted by this Ministry at the office for “Special pedagogical support” (SPS-office).

For younger students this includes both secondary schools, high schools, and schools for education for professions. For adults this includes Folk High Schools, Continuation Schools, Home Economics Schools and Handicrafts Schools, also students in higher education.

The process when the SPS-office is involved is that the closest teacher or a special student adviser contacts the SPS-office. Documentation on the disability is needed by the SPS-office if it is to grant AT. A specialist or therapist evaluates the student and makes a recommendation for relevant AT to the SPS office. When the AT is delivered a special teacher or therapist customises the set-up and trains the student.

## Norway

**Overview**

Responsibilities for AT provision in Norway mainly fall within the remit of the Ministry of Labour and Social Inclusion, and the Norwegian Labour and Welfare Service (NAV). AT is funded by the state under the national social insurance scheme. NAV supports AT provision for any of the three settings or purposes of use through Assistive Technology Centres (ATC) in each County (19). Other ministries also play a role in some aspects, including Ministry of Transport and Communications, Ministry of Health and Care Services and Ministry of Education and Research. The local communities (the municipalities), under the Ministry of Local Government and Regional Development, play a crucial role in assessing user needs, coordinating services, and follow-up in the assessment of AT in the user’s daily life.

The main pieces of legislation are:

* Social Security Act: main legislation covering AT for home/independent living, employment and education purposes (part 10 regulates financial support for AT); based on this, the Work and Welfare Administration (NAV) has a key role in provision of AT in all three settings
* Employment equality legislation imposes reasonable accommodation obligations on employers: has some relevance for AT in relation to work/employment
* Education legislation gives rights to equal access to education for students with disabilities and the supports needed for this, and imposes obligations on the educational institutions: has some relevance for AT in relation to education*.*

The Social Security Act address AT as an individual right under social security to all citizens and AT devices are provided to persons whose functional capacity are permanently (more than 2-3 years) impaired due to illness or injury. In addition, the AT must be both necessary and appropriate with regard to improving the user’s ability to solve everyday practical problems.

The core values underpinning policy on disability are to ensure that people with disabilities are full citizens in Norwegian society and have the opportunity to perceive themselves as such. The aim is to place the individual at the centre when formulating policy, based on key values including:

* Non-discrimination: adaptation of the public sphere so that everyone, based on their own abilities, has an equal opportunity to acquire the same living conditions and enjoy and discharge their rights and responsibilities as members of civil society
* Self-determination: freedom of the individual and equal opportunities to determine one's own life direction and be respected for one's choices
* Active participation: work towards a society in which everyone has the opportunity to participate actively based on their abilities
* Personal and social responsibility: responsibility for one's own life and joint social responsibility are important.

Disability arises because of gaps between the capabilities of the individual and the functional requirements of their surroundings. AT and personal assistance can be employed to lessen the gap. The more accessible the environment the less need there is for special solutions.

An official 2001 Norwegian report marked a shift in focus from individual problems to social barriers in society, and was followed by anti-discrimination legislation.[[139]](#footnote-139) There is an increasing emphasis on anti-discrimination legislation as well as a continuance of the relatively strong individual rights in the social service legislation.

More generally, as in other countries, there are concerns about how to meet the increasing needs for local services for the elderly population. Increased use of technology (called “welfare technology”) is seen to be one of the solutions. In this regard, an official Norwegian report (NOU 2011:11)[[140]](#footnote-140) has recently addressed issues about how to increase innovations and competence in using technology in the care services.[[141]](#footnote-141) There are ongoing discussions about how to develop the AT services into a broader approach concerning welfare technology, although welfare technology covers a broader aspect than AT (or “hjelpemidler” in Norwegian). Welfare technology includes technology used for providing care and other services, to communicate with and between the services, as well as AT.

**Home/community/everyday life**

*Legislation/policy*

The Act on Social Security covers the provision of AT.[[142]](#footnote-142) The approach is based on individual rights, so that a person eligible for a benefit is entitled to that benefit and financial support for access to AT in accordance with the legislation is a right. This is in contrast to social care services, which are regulated under the Act on Social Services and are rationed. The Work and Welfare Administration (NAV) has the main responsibility for provision of AT and, to a certain degree, for AT-related support services. The Assistive Technology Centres (ATC) are responsible for services such as advice, repairs, and technical service and maintenance of the AT devices in cooperation with the local communities. The main responsibility for identifying needs and follow up lies within the local communities/ municipalities.

People with a long-term disability, or significantly impaired abilities due to illness or injury, can receive AT (or financial support for AT) under the national health insurance scheme. The municipalities are responsible for provision of AT for those who temporarily need it. The AT must be necessary and appropriate for enhancing disabled people's abilities to solve practical problems in their day-to-day-lives, or for ensuring their care at home. In principle, support is provided for any reasonable type of AT that meets the needs of the user, although generally the AT that is provided is chosen from lists of products for which pricing agreements with suppliers have been established. Grants are not provided for items used by everyone (such as white goods/major appliances e.g. fridges, washing machines and brown goods/small appliances e.g. cameras, clocks and DVD players) but support is provided for extra equipment used to adapt these where needed. The regulations on assistive equipment also apply to certain types of adaptations at home or work.

*Systems of delivery*

The municipalities are responsible for the health and social care of their inhabitants, including AT provision. The first-line municipality services are supported by a network of county Assistive Technology Centres (hjelpemiddelsentraler - HMS) operated by NAV, one in each of the 19 counties in Norway. These centres have the overall and coordinating responsibility for AT provision in the 'fylke' (county council). They play a key role in the actual supply of AT as well as expertise and other support functions. In addition, there are regional centres for provision of vehicles and a specialist Centre for adaptation and participation. There are also various nationwide and regional competence centres that operate outside of NAV. The county Assistive Technology Centres provide AT for longer-term needs whereas the municipalities are responsible for providing AT for temporary needs (less than 6 months).

When people apply for assistive equipment, the prescription process is preceded by a needs assessment. Assistive devices are mainly prescribed by occupational therapists, physiotherapists, educational professionals and nurses, also GPs, but there is no formal approval procedure. After checking and evaluating the different options, one or more assistive device is chosen. The application (requirement specification) is then completed and sent to the assistive technology centre for evaluation and approval. The ATCs might be contacted for advice and support in the assessment process as well (before the application is made), especially in the case of rare and complex solutions.

When the ATC has approved the application, the assistive device is delivered to the user. The equipment is usually borrowed from the service and returned if it is of no further use. The ATCs buy and store the devices at the centres and devices are then transported to the local authorities, usually once a week. The local authorities then deliver the devices to the user. The local authorities usually train the person in the use of the device. Sometimes devices are delivered by a supplier directly to the user. This takes place mostly when the assistive devices need extensive adaptations e.g. powered wheelchairs. Sometimes the ATC staff support the local professionals in the training/instruction in the use of device, e.g. for communication aids.

If the assistive device requires adaptation and adjustment, this is carried out by the assistive technology centre. The party prescribing the assistive device is responsible for guidance, instruction and training in use of the assistive device, and carries out follow-up services. Users must also receive both oral and written information on where, and whom, they should approach for servicing and repair, if required. In addition, the process must be evaluated in order to check that the user has received useful assistance and the right assistive device within an expected timeframe.

Users are allocated or choose assistive devices for which a price has been negotiated and approved by NAV. A list is available for users to consult. It is possible to seek dispensation from NAV for other AT if medical documentation indicates that such a product is necessary.

Users requiring AT, who have an individual plan, can opt to use this instead of the normal application procedures for AT when the need can be specified in the plan. Users who need long-term, complex services from the public sector are entitled to such plans. Throughout the planning period, users can receive loans of AT covered by the plan without having to apply for it in the usual way. All they have to do is inform the relevant contact within the municipality that they need a new device and the insurance scheme will lend it to them. This has significantly simplified the process for such users.

Relatively cheap, standard devices (“Bestillingsordningen”) are delivered by simplified procedures, whereby local professionals may prescribe AT provided they have been through approval courses.

In 2006 an arrangement called “brukerpass” (user pass) was introduced following piloting in four counties in 2004. The user pass is intended to give experienced users of AT a simplified procedure. To use it, the person should already have access to the type of equipment in question and can then use a simplified procedure with regard to replacement, repairs, etc. In practice it means that people do not need to contact the local rehabilitation system, but can go directly to the county Assistive Technology Centre (HMS) and also to the supplier of the equipment. Evaluations show that people using the user pass experience shorter waiting times, having less contact with municipality services and more with suppliers.[[143]](#footnote-143)

Since 2006, all the county AT centres provide a specific contact for children/young people with disabilities and their parents/guardians in order to help ensure that they receive optimal coordination of services to meet their needs.

Range of AT financed: In Norway, the scope of AT provided under the public system is wide, including amongst other things communication aids, visual aids, mobility aids, housing adaptations, hearing aids and cognitive aids. AT needed for games or sports are also provided, such as switches for games, skis for the disabled. Reference groups (involving NAV central, specialists from the assistive technology centres, and users) have been set up for various AT product areas to recommend relevant products for which price negotiations (and hence inclusion in the public system's lists) would be useful.

It is reported that under the NAV system, in principle, any product can be provided - the focus is on solving the practical problems of the users and it is recognised that users have different types of disabilities and live different lives. Some of their practical problems can be solved by assistive devices of different kinds. It does not matter whether it takes expensive high tech products to solve the practical problems or not. The users are provided with whatever products are needed to solve the problems (white/brown products are not provided), as long as the user fulfils the criteria to be eligible for provision of assistive devices. The national standard of products (in framework agreements with the dealers) covers 90-95% of the products provided by the AT centres today.

Approaches to financing: Most assistive devices are free to the user. An exception is in relation to car-related adaptations, where the car is means tested but the equipment for adaptation of the car is free of charge. Subsidies are provided in respect of the allocation of standard computers. Charges are made for some assistive devices, e.g. hearing aids.

AT is generally provided on loan to the user and remains the property of NAV. Most of the assistive devices are bought and stored at the AT centres, and distributed from the AT centres to the local authorities. In practice, the AT centres pay for almost all the assistive devices and there are only a few exceptions where the user must pay and gets reimbursed from the AT centre. For example, assistive devices for adaptation of the workplace are bought by the user or by his/her employer and the costs are then reimbursed by the AT centre. For some types of AT, such as powered wheelchairs needing adaptations, the devices are often delivered by the supplier directly to the user. The invoice is then sent to the AT centre. In some cases framework agreements with the suppliers (for the whole country) are agreed which mean fair prices and conditions.

**Employment**

*Legislation/policy*

The provisions for AT under the Social Security Act and the national health insurance scheme also cover AT required for purposes of finding or keeping a job. There are obligations on employers, under employment equality provisions similar to those in the EU directive 2000/78, which has been enacted through the Working Environment Act, to provide reasonable accommodations to meet the needs of employees with disabilities, provided this is not an undue burden. In practice, however, the provisions under the national health insurance are expected to cover most of the costs, and provision of AT for employment-related purposes falls within the remit of the Work and Welfare Administration (NAV). A certificate of guarantee ('green card') is available for jobseekers that have requirements in relation to workplace adaptation. It documents that the jobseeker has a right to have the workplace adapted with support from NAV under the national insurance scheme, provided that the requirements of the Working Environment Act are met. The aim is to support rapid assistance from the public support system and inform employers of the available opportunities.

The new Planning and Building code introduced in 2009 will enable regulations on universal design of workplaces to be introduced (previously workplaces were not included within the provision of Norway's universal design legislation).

An agreement between the partners in working life (employer’s organizations and workers unions, and the government) - the “*Agreement of Inclusive Working life*” - is aimed at ensuring the recruitment of disabled people in the employment market and to prevent sick leave and expulsion from work. NAV has the responsibility to support the partners, among other things through the Inclusive Working life Centres.[[144]](#footnote-144) These centres were established under an agreement in 2003 to strengthen the support between NAV and the working life partners. The focus is on inclusion, facilitation and adaptation in a broader sense, which can include AT.

*System of delivery*

The employer has the responsibility for adapting the workplace under the Working Environment Act. NAV has the responsibility to cover AT under the Social Security Act, if it is not covered by other laws and regulations. There are some “grey areas” concerning responsibilities between the employers and NAV, and there has been some effort to clarify this in cooperation with the social partners. The green card is intended to protect people seeking work and to avoid discrimination due to extra costs for the employers. Employers who have joined the partner agreement on inclusive working life are entitled to apply for public grants (tilretteleggingstilskudd) from NAV in order to carry out adaptations seen as an”undue burden”.

People already in employment and in need of adaptation and AT, do not have as clear a support system as job seekers. They may have to identify their own needs and to advocate for and research the need for AT. If the workplace has an occupational health service, there might be some knowledge of AT. Alternatively, if the employee is in contact with a health, rehabilitation or other service, the workplace adaptation might be a part of that service. User organisations also might be an important source of information.

Job seekers are usually in contact with NAV at the local level. (Job and welfare centres in each municipality). These centres should have some knowledge about AT services within the NAV ATC. Most job-seekers contact NAV Local in relation to social and/or unemployment problems. There are some specialist centres on a regional level (ARK) that are more specialized in questions concerning disability, and there is a national specialist centre (NAV Centre for adaptation and participation) in this area. AT is integrated in the services from these centres in cooperation with the ATCs. Some private Work Rehabilitation Services and public rehabilitation services do job training on the basis of public contracts, and are specialized for different user groups.

**Education**

*Legislation/policy*

For primary and lower secondary level education, the Education Act (1998) provides for rights to education and necessary supports for children with disabilities. This includes the right to technical aids at home and at school which are necessary for school work, for which the Work and Welfare Administration (NAV) is responsible. In the case where there is a need for standard computer equipment the regulations changed in 2003 from a loan scheme to a grants scheme, whereby a fixed subsidy is provided to the student and the equipment becomes their property. If more advanced computer equipment is needed, this is provided on loan under the national insurance scheme, which then also covers necessary servicing and repairs. Standard computer equipment cannot be provided free of charge any more (from summer 2010) as it is seen as brown ware/white ware. Software which is a part of the adaptation are covered as AT, but software as an educational resource should be covered by the school or the learning institution. It is not always easy to clearly distinguish these types of usage.

For higher education, the relevant sectoral legislation requires the institutions to make the necessary accommodations in order to ensure that disabled candidates have equal access to education, but it is up to the individual institutions to define what services they offer in this regard.[[145]](#footnote-145) In general, NAV have the main responsibility for provision of AT to students at all levels of education (students apply for this themselves), although universities and colleges also have some equipment of their own.

Norway signed the UN convention on equal rights for persons with disabilities in 2007, but this has not yet been ratified. The ratification is supposed to have implications for the Education Act, especially concerning the right to education for persons with the need for alternative and augmentative communication, sign language etc. where AT might be a crucial part of the adaptation for learning.

*System of delivery*

Pupils with special needs in education are referred to pedagogical and psychological services in the local communities. These services are supported by national centres for special education, that specialise in different disabilities like hearing or visual impairments, cognitive and learning difficulties, behavioural problems or communication impairments. Pupils with motor impairments are covered traditionally by the health sector, if they don’t have learning difficulties. The identification of needs for AT depends on the kinds of services that are involved.

Students are provided with support at their institutions, as they usually have disability advisers. There is a network of disability advisers in higher education at a national level. More generally, the role of the educational institutions is to identify needs, to be informed about the provision process, and to integrate the use of AT in teaching.

A visually or hearing impaired child is generally assessed for AT with support from special education centres. This is usually the case for children with cognitive and communication problems as well, depending on the severity of the impairment. The application is sent to NAV, and the follow-up is the responsibility of the school. Children with motor impairments are assessed by OTs or physiotherapists in the health sector. The use of mobility or hearing devices might result in a need for further adaptations of the school environment. Personal adaptations like stair lifts, hearing loops or automatic door opening might be covered by the national insurance scheme if this is the only solution, but the aim is to build schools with inclusive environments.

Students in higher education to a large extent have to initiate the process of acquiring AT themselves if they do not have the support from health or educational services from a previous time. Some are known at the AT centres as a result of earlier needs. Some may be in contact with NAV Local as the education might be a part of a vocational rehabilitation plan, and some may be in contact with some of the specialized centres in NAV.

## Italy

**Overview**

Responsibilities for AT provision in Italy reside mainly with the National Health System (NHS). There are also some sector-specific provisions covering the employment and educational settings. The regional governance structure in Italy results in a complex set of legislative and administrative arrangements which affect the AT provision system just as they do other public services in Italy. The regional health authorities (and the Aziende Sanitarie Locali, ASLs, within each region) are the main players in the public system of supports for AT for independent living purposes, although disability organisations and other independent organisations also play an important role. In some regions, formalised arrangements in relation to AT services have been established between the public and NGO providers. ASLs and the national system for insurance for labour accidents both play a role in relation to AT for work/employment. In the educational setting, schools in collaboration with the local health services have the main responsibility. Tax breaks for AT costs for users are also a relevant feature of the Italian situation.

The main pieces of legislation are:

* Framework Law 104/92 – Law for the assistance, social inclusion and rights of disabled people
* Ministerial Decree 332/99 that established the rules for provision of assistance and AT under this Law: this is the main legislation covering AT for home/independent living
* Law 13/89 – Law on accessibility of private buildings: this includes regulations on reimbursements for home adaptations equipment and provides for contributions for accessibility works (stair-climbers, lifts..) and states that new private buildings must comply with the requirements of visitability (accessibility of common spaces) and adaptability (accessibility without major investments)
* Law 68/99 – Law for rights of disabled people in employment (obligation for companies to employ a certain number of disabled people and provision of support for employment)
* Law 4/2004 – “Stanca Law” - Regulation for e-accessibility (includes obligations in relation to work/employment/education)
* Law 626/94- Law about safety at work: though it is not specifically aimed at disability, it has significant consequences for this field.

Most of the equipment for independent living is provided by the NHS. As a consequence, access to AT listed in the Nomenclatore Tariffario (NT) is granted as a right and provided directly by the state. In this context, the main gatekeeper is the physician responsible for the prescription, and this is the key phase of the AT provision process. In contrast, the social welfare system is not based on direct rights but provides the possibility to ask for a contribution. In this context, the social services under the responsibility of the municipalities are the gatekeepers.

Some examples of laws or other initiatives at Regional level that provide for contributions for devices in order to enhance autonomy include:

* Law 23/99, Section 4 (Lombardy Region) - Contribution to the family with disabled members in need of assistive technologies (aimed at education/employment)
* Law 29/97 (Emilia Romagna Region) - Contribution for equipment aimed at independent living
* Pacchetto Domotico Trentino 2004 (Autonomous Region of Trento) - Pilot initiative for the provision of high tech environmental control and telecare home adaptations.

**Home/community/everyday life**

*Legislation/policy*

The legislation in Italy is complex. Law 13/89 grants contributions for the removal of architectural barriers in already existing buildings where the person with disability lives. Law 104/92 (Law for the assistance, social inclusion and rights of disabled people), and subsequent modifications of this within Law 162/98, address support measures for people with disabilities in order to enable them to live independently. For example, section 27 of this law provides for contributions of up to 20% of the total expenses for car adaptations.

The Ministerial Decree 332/99 established the rules for provision of assistance and AT under the NHS.[[146]](#footnote-146) This decree contains a description of the technical aids that can be provided by the health services, along with reimbursement rates for these. AT is classified under a classification similar to the ISO system and allocated to different lists in the Nomenclatore Tariffario (NT) in terms of what is covered, and how, by the public system. The decree also includes rules on renewal times, delivery processes and other aspects of service provision. The new release of the Nomenclatore Tariffario dates back to 2008 but hasn’t been enacted into law yet.

*System of delivery*

In Italy, the health system plays the main public role in the delivery of AT. Services are organised at regional level and delivered locally via local health agencies (ASLs). AT provision is based on the NT, which sets out three lists of products that are covered by the national health system. In practice, disability NGOs and independent foundations also play an important role in AT service provision.

For eligible persons, reimbursement of AT costs may be under the National Insurance for Labour Accidents (INAIL), in which case, levels of reimbursement for devices for work-related use may be higher than for more general usage.

In order to get an assistive device through the NHS, a prescription must be issued by a certified medical doctor with an appropriate specialty. For instance, devices related to motor impairment are mainly prescribed by specialists in physical medicine and rehabilitation. In good practice, the prescription should be based on a sound assessment of the client’s need and carried out by the rehabilitation team. Then the prescription must be approved by the Local Health Authority (ASL), which may refuse it or ask for further evidence in case of doubts as to its appropriateness. After approval, users are free to choose the suppliers they wish, unless the ASL has made public procurement contracts with specific companies. Users who wish to purchase more expensive models than those available through the NHS are free to do that by paying the price difference.

In order to be reimbursed the prescription must contain a diagnosis, specification of the required device (including ISO code etc.) and any required adaptations/customisation, as well as a therapeutic programme in relation to usage of the device. The process of selection of the appropriate device, in principle, involves the user, although it tends to fall to the prescriber, in most cases, because of little knowledge of AT amongst users.

If the device is authorised, the delivery process varies, depending on which of the NT lists the device falls under. For items that require customisation or adaptation of some form, the user can choose one of the authorised suppliers and they will be reimbursed up to the level established in the NT (although the national maximum rates can be topped-up by the regions). In this case the AT is generally owned by the user. Items on other lists are procured by the ASLs under central contracts (gare d'appalto) or other established pricing arrangements with suppliers in the area. In these cases, the AT is directly delivered by the ASL and is on loan to the user.

When a device has been delivered it should be tested/checked by the specialist practitioner or other appropriate personnel before reimbursement of the supplier. There are established procedures covering set-up/adaptation/testing, servicing and repair, and replacement with a new device after an appropriate period. These vary depending on which list is involved.

Range of AT financed: In Italy, the categories of assistive devices eligible for provision through the National Health Service (NHS) are established by the Ministry of Health. They are listed in the Nomenclatore Tariffario delle Protesi e degli ausili (Nomenclature and Tariffs of prosthetic and assistive equipment) and organised into sub-lists depending on whether a fixed reimbursement price is established (List 1 – mainly custom-made or highly personalised equipment), or the price negotiation is left to each Local Health Authority (List 2 – mainly off-the-shelf products), or the equipment is due to be purchased by the Local Health Authority and loaned to the user (List 3 – mainly products with critical maintenance needs, such as nutrition or respiratory devices).

The Nomenclatore Tariffario (NT) includes almost all prosthetic, orthotic, orthopaedic and hearing equipment, and most ‘traditional’ assistive devices, such as wheelchairs, walkers, beds, hearing aids, incontinence aids, etc. However, there are areas insufficiently covered or even missing, such as communication devices and ICT equipment. The current List was published in 1999 and a new release with improved coverage (compiled in 2008) has not been enacted into Law yet. In general, mobility devices and hearing and vision ATs are well covered but communication, learning and cognitive needs are left to the initiative of the user.

Financing of solutions which are not listed in the NT and are not eligible within the social care provisional system is sometimes provided by regional/local rules. For example in the Lombardy Region, the already mentioned Law 23/99, Section 4, grants some funding (70% of the total, up to a maximum of 15,000 euro for devices supporting education or employment). In the Autonomous Region of Trento, the already mentioned Pacchetto Domotico Trentino provides funding for experimental high tech devices at home. Provinces in the Lombardy region can give an individual contribution, called “Job Grant”, for devices encouraging social integration. The provision of devices for blind students under the age of 18 (for example Braille bars) is still under the responsibility of the provinces.

Approaches to financing**:** AT included in the NT lists is directly supplied without charge or is reimbursed up to the levels stipulated in the NT. Users who wish to purchase more expensive models than those available through the NHS are free to do that by paying the price difference.

Users who need assistive equipment not listed in the NT or who need other kinds of technical intervention (such as home adaptations or car adaptations) have to buy them out-of-pocket. In this case, users freely choose/purchase the solutions and then apply, wherever possible, for partial reimbursement through various national or regional schemes (national fund for removing architectural barriers; regional funds for reducing dependence or supporting independent living; regional funds for family support; etc.). The amount of funding is decided case-by-case by the funding Body (Region, Municipality, ASL), often depending on the available budget.

Fiscal benefits (reduced VAT 4% instead of 21% or deduction from the annual tax declaration) are also possible for some types of equipment, if a medical declaration states that they are related to a disability.

People with disabilities resulting from a certified work accident or occupational illness can rely on higher coverage and reimbursement thresholds, through the National Insurance for Labour Accidents (INAIL).

As far as the employment and education sectors are concerned, the actors in charge of providing AT are the employer/the school institution, which directly supply the device and officially own it.

In relation to traditional assistive devices (prosthetics, orthotics, foot wear, hearing aids and most mobility equipment), the provision system works well. In contrast, the system for more recent or innovative technologies, ICT equipment for communication and environmental control devices could be enhanced.

**Employment**

*Legislation/policy*

Law 68/99 (Law for rights of disabled people in employment) introduces the requirement for employers to make adjustments (reasonable accommodations) to meet the needs of disabled employees and also provides that people with disabilities can request supports from the local municipality. Law 4/2004 “Stanca Law” is mainly aimed at public agencies, and recommends that they purchase/ acquire accessible IT products and services to meet the needs of disabled employees. Law 626/94 states that the employer is in charge of safety and security at work. The employer must bear all the expenses concerning workplace adaptations, as case judgements have confirmed.

*System of delivery*

For the most part, AT for employment purposes (but not limited to the workplace, also for personal use) is delivered by the ASLs in a manner similar to the services for home/community/everyday life purposes. Workplace adaptation is under responsibility of the employer and, according to law 626/94, the employer is in charge of providing devices aimed at adapting the place of work.

In general the processes connected to the provision of ATs are the same as in the case of AT for home/community/everyday life usage and the procedure may involve Local Health Units, Social Services or National Insurance for Workplace Accidents (INAIL). In cases involving INAIL (for people with occupational disabilities) the assistive devices are provided by INAIL doctors with appropriate skills and the installation/follow-up process may involve INAIL technicians in more complex cases.

**Education**

*Legislation/policy*

Law 104/92 (Law for the assistance, social inclusion and rights of disabled people) addresses provision of AT in educational settings, establishing the joint responsibility of schools and ASLs in this regard. Law 4/2004 “Stanca Law”, Section 5, addresses accessibility of educational tools; in particular it states that schoolbooks must be available also in digital format. Law 170/2010 addresses measures to assure the right to education for students with learning disabilities.

*System of delivery*

The Italian school system is inclusive. There are no special schools and mainstream education is provided to all students, according to law 517/77. In fact, Italy guarantees the right to education for all students, including those with disabilities, supported by special social and psycho-pedagogical support services. Schools and the ASLs are both involved in this area, with the schools expected to take the lead in identifying AT needs and ensuring provision. In practice this seems to vary widely and depends on the budgets available to the schools.

As soon as a student with a disability starts school (within 2 months from the start) an Individualised Educational Programme (PEI) is developed by a team composed of teachers, health and social professionals and the child’s family as well. It deals with educational objectives, work planning and technologies to be used.

If the AT is necessary for the student’s adaptation and ease within the school structure (for example a stair lift, or a video magnifier/educational software), the device will be provided by the school, which then keeps it. If the student with disability needs a device aimed at personal use, it will be provided by the National Health System.

## Germany

[Note: Germany was added as an additional country, with the main focus being on AT provision in the employment setting.]

In Germany, the structure of the Social Security Code does not address AT in a uniform manner. Depending on who is in charge of funding different types of AT, the results in terms of what is included or excluded in the provision to individuals with disabilities can differ widely. In general, most stakeholders agree that conditions for supporting take-up of AT in the employment context are favourable in Germany. This is in contrast to the provision of AT outside of the work context, where the use of the Directory of Appliances (*Hilfsmittelverzeichnis*), and recent trends to reduce the costs for appliances listed in the Directory, appear to have a negative effect on the availability of financial support for take-up of AT, especially where innovative and more advanced solutions are concerned.

### Employment

**Legislation and policy**

German regulations refer explicitly to technical aids (*technische Hilfsmittel*) and technical work aids (*technische Arbeitshilfen*). These are generally accepted as synonyms for AT and as a result the funding for AT and provision for people with disabilities in the workplace is well developed. AT is considered to be important for enabling people with disabilities to obtain training and employment in the open labour market. It is supported by a variety of information platforms and guidelines that are published by stakeholders to provide advice to employees and employers who are actively seeking information about the issue.

In general, all the legal provisions for supporting inclusion of people with disabilities are based on the current version of Article 3 of the German Constitution (*Grundgesetz*), which expressly prohibits discrimination against people because of a disability.

The German Social Security Code (*Sozialgesetzbuch, SGB*) distinguishes between three levels of disability: people at risk of developing a disability, people with an impairment of less than 50% and severely disabled people who are assessed as being over 50% disabled or who have a lesser impairment but, because of the nature of their disability, are less likely to gain employment.

The German system is based on the concepts of prevention and rehabilitation. Prevention is conceived as having three levels: primary prevention which applies to the whole workforce; secondary prevention which focuses on people at risk of developing impairments; and tertiary prevention which aims at job retention for workers who have developed a health condition that impacts on occupational capacity. Those who exit employment as a result of illness or injury are required to undergo rehabilitation prior to being considered eligible for a disability pension.

All statutory social insurance schemes are regulated by the German Social Security Code. SGB IX, which deals with the inclusion and rehabilitation of people with disabilities, entered into force in 2001. Central to SGB IX is the concept that, rather than concentrating on the welfare and care for people with disabilities, the emphasis should be on their intrinsic inclusion in society by tackling obstacles that might compromise disabled people’s chances of equal treatment. SGB IX distinguishes between different activity types including medical rehabilitation, support for participation in working life and supports and services for participation in society.

Part 2 of the SGB IX, which is referred to as the Severely Disabled Persons Act, specifies the support and protection to which people with disabilities are entitled. These include making the workplace, including machinery and equipment, accessible; adapting the working environment, work organisation and working times to the needs of the worker; and equipping the workplace with assistive technology (*technische Arbeitshilfen*) to help employees with disabilities to fulfil their employment responsibilities. The employer has responsibility only for assistive technology which is specific to the work tasks of the job role and does not include aids such as prostheses which directly compensate for a bodily impairment; such aids are financed by the agencies responsible for rehabilitation. The employer’s obligation is limited by the principle of proportionality. Limiting factors can include health and safety regulations and unreasonable economic and technical conditions (e.g. danger to other employees or jobs).

Employers of 20 employees or more are required to employ at least 5% of their workforce as people with disabilities. Those companies who do not meet this quota must pay a compensation levy ranging from €105 per month for each unfilled place if the employment rate is between 3% and 5%, rising to €260 if the employment rate is 2% or less.

The Act for Promotion of Training and Employment of People with Disabilities in April 2004 introduced the ‘Corporate Integration Management’ (*Betriebliches Eingliederungsmanagement*) which places a responsibility on employers to provide support to retain people with disabilities at work and to involve other actors if this is not feasible, including the person with the health problem, the Works Council and the company doctor. The process can be supported by external partners such as the Integration Agency, the Integration Special Service and rehabilitation centres.

The Disability Discrimination Act (BGG) came into force in 2002. It introduced a requirement that employers make the workplace accessible.The Act specifies that accessibility should be addressed through voluntary agreements between recognized representative organisations of people with disabilities and employers or business associations. For public authorities, the BGG lays down provisions which are binding without any further explicit agreements. At the level of the regional states (*Länder*), all states had enacted their own legislation on equality of people with disabilities and accessibility by the end of November 2007.

The Act on the Introduction of Supported Employment entered into force in late 2008. The Act explicitly states that support services, targeting persons with disabilities, must include, not only vocational training and sheltered employment, but also jobs which are fully integrated in the open labour market.

The German government has issued a National Plan of Action to Implement the UN Convention on the Rights of Persons with Disabilities (September 2011).[[147]](#footnote-147) One of the cornerstones of the plan is the “Initiative Inklusion", through which the federal government will provide an additional €100 million to promote training and employment to disabled people. The initiative is a joint effort of the federal government together with the *Länder* (provinces), the business community and service providers. Targets include job creation, a smooth transition from school to work, additional vocational training places and advice for businesses and their associations.

There are very few policy initiatives which directly deal with fostering development or take-up of AT, per se, and none of these are explicitly targeting the employment context. One example of such a project is the Federal Government’s commissioned feasibility study on the development and applications of avatars in sign language.

**Systems of provision**

The Federal Ministry of Labour and Social Affairs (*BMAS*) manages and coordinates policy-making related to funding of support measures for people with disability. The Federal Employment Agency (BA), which is directly subordinate to the Ministry, and the Integration Agencies are assigned specific tasks. Their funding measures are financed to a large extent from the compensation levy.

The German system is characterised by a system of social insurance. There are many insurance funds and most have a role in supporting or rehabilitating people with disabilities. These include the Health Insurance Funds, the Workers Compensation Funds, the Pension Funds, the Federal Employment Agency, Public Assistance for Young People, Social Welfare and Integration Agencies. Most of these operate in isolation although an extensive system of structures and procedures is in place to ensure coordination between the many stakeholders.

Technology for rehabilitation and social participation is the responsibility of the Health Insurance Funds, Social Accident Insurance Funds and Social Welfare system. The collected compensation levies provide the main source of funding for employment-related AT in Germany. Integration Agencies (*Integrationsämter*) are responsible for collecting the levies and distributing funds for AT.

The Joint Service Points (*Gemeinsame Servicestellen*), which the Social Security Code requires statutory service providers to set up nationwide and to operate jointly, are important for coordination. The Joint Service Points are considered as single points of contact for individuals with disabilities, people at risk of becoming disabled, and their relatives/confidants. Their role is to provide information, practical support and hands-on advice in the most effective manner.

The supports to be provided to workers must, as a matter of principle, be aligned to the reduction of the negative effects of disability, regardless of its cause. Providers are required to explore – during the medical rehabilitation phase – whether an individual’s capacity to participate in working life can be restored, maintained or improved through additional measures which go beyond purely medical rehabilitation. In practice, this means that AT-related needs are assessed by medical rehabilitation providers, and funding for devices and related training can be coordinated by them, e.g. by the health insurance funds.

Other measures for coordination and collaboration between statutory service providers include regionalworking groups made up of representatives from the different stakeholders and the Instrument of Joint Recommendations (§ 13 SGB IX). These provide common guidelines for good practice in how to provide effective and efficient support to the target group.

The two actors which are of most relevance for funding of AT and related training in the employment context are the Integration Agencies (supported by the Technical Integration Services) and the Federal Employment Agency. The Integration Agencies allocate funds from the compensation levy. They have a key role in providing AT and related services to both employees and employers. Each Office has a department dedicated to specialist technical consultancy services, with staff specialised in specific groups of people with disabilities (e.g. employment related services for deaf, blind, mobility-impaired and those with intellectual disability) or with responsibility for a certain area of concern regardless of type of disability. The consulting engineer is required to be knowledgeable about the latest developments in AT and how to create barrier-free employment opportunities.

Funding for AT can be provided by the Federal Employment Agency if considered necessary for job placement / protection. If AT devices are considered work tools which the employer has to provide, funding is available to employers within the context of the workplace subsidy (*Ausrüstungsbeihilfe*). If AT is considered a learning material, it can be funded as part of subsidies for vocational training.

Employers have an important role in the promotion of AT in the work context, not only by contributing directly (by investing in accessible workplaces) or indirectly (by paying a compensation levy from which subsidised AT is being funded), but also through their responsibilities for providing extensive support to existing employees with disabilities.

The German rehabilitation system defines AT (technical working aids, a sub-group of technical aids) as tools that promote existing capabilities, support remaining and (partly) replace lost abilities of persons with disabilities. While ‘technical working aids’ are listed as separate measures for workplace design, they usually are part of a comprehensive concept for adapting the workplace and its environment to the needs of the disabled person. The practical instrument to be used for exploring the need for AT is the Profile Method(*Profilmethode*).

Many job-related assistive technologies are provided by the Statutory Health Insurance, since they count as technical aids in the meaning of the Social Security Code (SGB V). This means that individuals can apply for them to their statutory Health Insurer. For this, they need a prescription from a general practitioner or another recognised socio-medical expert. Technical aids can be prescribed by the GPs without their care budget being impacted (i.e. they are not subject to the service rationing which applies to various other health services provided by GPs).

The basic principle is that all people, insured by a Statutory Health Fund, are eligible for receiving the technical aids they need, such as visual aids, hearing aids, prostheses, orthopaedics, in order to alleviate a situation of disability. Devices and services are usually provided for free, apart from some modest co-payment.

A prerequisite for receiving AT as a form of rehabilitation support is a proof of an existing or emerging disability(of a certain minimum degree). The degree of disability is evaluated by means of a medical opinion following medical-social criteria. The method for assessment by a medical expert is described in detail in a number of legally binding guidelines.

Whether or not a certain piece of AT is funded by the Statutory Health Insurance is regulated by the Directory of Appliances (*Hilfsmittelverzeichnis*) published by the Health Insurance Funds. The Directory provides a systematic listing of medical and therapeutic appliances which are funded by the Statutory Health Insurance. It provides price and product information for insured persons, service providers, contract physicians and health insurers. The Directory lists all the appliances which can be prescribed for medical treatment and rehabilitation. Although the Directory of Appliances is not legally binding, it has a strong effect on the types of AT which are prescribed and funded within the rehabilitation system. Recent years have seen extensive efforts at reducing the costs for appliances which are listed in the Directory. This can have negative effects on the ability of AT providers to further develop their products and services. Most experts also claim that the process for listing a new AT device or service in the Directory is very complex and resource consuming, resulting in considerable barriers to AT manufacturers and service providers.

The Social Security Code states that devices cannot be provided by the rehabilitation system if they are considered to be for general use, such as household appliances. For AT which is required within the work context, a condition for obtaining funding is a contract of employment, a vocational training contract or the recognition of self-employment or professional activity. Moreover, the device to be funded must be necessary for carrying out the job and offset the consequences of a disability solely for the performance of specific work tasks or for engaging in other activities related to participation in working life. It is therefore not sufficient if the technology eliminates or reduces the effects of disability merely in a medical sense.

The grant application for any type of AT product or service can be made by the worker or the employer. It must always be approved before it is procured otherwise no financial support will be provided. If the conditions for receiving support are met, the funding agency makes a proposal for a device or service that meets the workers needs, including the level of finance allocated. In general worker participation in the selection of AT devices is rare. Many funding agencies have supply contracts with specific providers, as this allows them to better control costs. This can limit the choice of products. There is also a policy of re-use of products returned from previous users.

The rehabilitation funding entities cover the costs for providing the AT although sometimes a contribution from the employer may be required. This also applies to customisation or repairs. The person can choose a more expensive AT device if he or she is willing to pay the additional costs. In every case, the AT device remains the property of the funding agency so that it can maintain or repair the device. If the need for an AT device is temporary, it may be possible to borrow the equipment for the required duration.

The suppliers of the AT solution are responsible for actually delivering and, if necessary, adapting the product to the needs of the person with a disability. Basic training in how to use the device is typically provided at the same time. As the training is often limited, it appears not uncommon for beneficiaries to experience problems in optimally using the product. There is no structured follow-up after delivery. It is up to the person with a disability to contact either the Funding Entity or the supplier.

Recently a measure has been put in place to allow the person themselves to take responsibility for selecting and purchasing an AT solution by using a Personal Budget (*persönliches Budget*). Since 2008 a person with a disability can choose to receive a personal budget rather than to receive services. The content and procedures relating to the allocation of personal budgets are highly regulated. The size of a personal budget is established on the basis of individual and concrete needs, and agreed upon by the participating funding entities. Importantly, the personal budget is to be spent for a specific purpose. All costs related to rehabilitation including costs associated with AT solutions, such as leasing, hire, maintenance, training and adaptation, are eligible.

Range of AT financed: In Germany, funding of AT within the context of primary rehabilitation is constrained by the use of the Directory of Appliances(*Hilfsmittelverzeichnis*) published by the Statutory Health Insurance. Support which is provided within the context of “Complementary supports for participation in work life” (and funded from the revenue generated by the Compensation Levy) are not bound by similarly restrictive provisions. Therefore it seems that higher-cost AT may be more likely to be funded in the work context than for other purposes.

The (vocational) rehabilitation system defines assistive technology (technical working aids, a sub-group of technical aids) as tools that promote and support existing capabilities and (partly) replace the lost abilities of persons with disabilities. Simultaneously, these tools have to protect users. In the work context, this implies that the objective of using AT is to make employment possible for individuals who could not carry out certain work tasks without support tools at all; facilitate the execution of work tasks, i.e. to reduce work stress; and ensure safe working conditions.

While ‘technical working aids’ are listed as separate measures for workplace design, they usually are part of a comprehensive concept for adapting the workplace and its environment to the needs of the person with a disability. The practical instrument used to explore the need for AT is the Profile Method *(Profilmethode)*. The employee also will not receive financial support for personal technical aids if the employer is obliged (according to other applicable legislation such as health & safety at work regulations) to provide them anyway, e.g. within the context of meeting legal requirements concerning computer workplaces.

According to current case law, AT devices which can be considered common appliances of everyday use (*“allgemeine Gebrauchsgegenstände des täglichen Lebens“*) and used also by ‘healthy people’ cannot be funded by the rehabilitation system, including the Integration Agencies. In practice, this causes problems because of the spread of new technologies which combine a variety of functions. Examples include the personal computer and the mobile phone. Only those expenses which are directly related to specific functional impairments are covered, such as software applications or peripherals for people with vision impairment. Because of the spread of Universal Design approaches, it is likely that more and more devices and applications used by people to overcome restrictions caused by a disability will be considered ‘common appliances of everyday use’ in the future, and therefore might be excluded from funding.

More generally, the AT market is complex and requires that advisors have a considerable degree of expertise in the area and that this expertise is frequently updated. This is not always the case. The current system is characterised by a large number of stakeholders who should in principle be able to provide practical advice in relation AT but, in practice, may not always have the necessary specialist knowledge.

Issues: The legislative and regulatory basis for funding AT services and supports are generally considered very well-developed by stakeholders in Germany. Nevertheless, representatives of people with disabilities and social service providers have voiced criticism about the degree of success of the system in enabling more disabled persons to find adequate employment.

A survey of AT use within the employment context in Germany has suggested that AT works best in companies with an interest in meeting their employment quota and who approach the employment of people with disabilities within the wider context of their corporate social responsibility. Public sector employers have a legal duty to provide good-quality jobs to people with disabilities, and thus are often cited as examples of good practice.

Despite recent efforts to rationalise it, a particular feature of the German system is the number of stakeholders and funding agencies involved in providing support to people with disabilities in the workplace. Rehabilitation funding entities are legally obliged to coordinate their activities in order to offer beneficiaries high-quality and seamless support services. In practice, it appears questionable whether the coordinating rules are working well with regard to the provision of AT to persons with disabilities. The wide range of actors responsible for consulting and supporting people with disabilities is perceived by beneficiaries as confusing and there can be duplication of effort. For example, the roles of Integration Agencies and Technical Integration Services and the Joint Service Centres overlap in relation to providing information about and access to AT within the work context.

Finally, another issue concerns the extent to which people are pro-active in the provision of AT to address the employment-related needs of people with disabilities. Traditionally, the approach taken by the rehabilitation system has arguably been largely reactive rather than proactive when it comes to AT, especially in regard to more advanced products and services. This is in spite of the provisions laid down in the Social Security Code according to which prevention is one of the cornerstones of the German rehabilitation system. A recent study on the subsidised implementation of AT within the employment context in Germany found that the rehabilitation funding entities (such as Health Insurance Funds and Public Employment Agencies) consider it the responsibility of employers to create favourable conditions for workers with disabilities. Their own role is perceived to be limited to an advisory position and this would not seem to optimally support the proactive and preventive use of AT.

# Key issues and themes

This Chapter picks up and discusses some key issues and themes that may be especially relevant for any efforts to further develop and improve the systems that support provision and utilisation of AT in Ireland. The analysis draws in part on the descriptions of the AT provision systems in Ireland (Chapter 3) and the other countries (Chapter 4). It also presents additional, thematically-organised material that has been collated on various aspects of good practice in the other jurisdictions as well as from the wider literature.

The Chapter is organised into six main sections:

* policy importance given to AT
* coverage across settings and the lifecycle
* role of NGOs
* quality aspects of AT systems and services
* market functioning
* developments in telecare, telehealth and other related fields.

## Policy importance given to AT

AT has an important relevance for a number of areas of policy. These include health/social care policy, general disability policy (including the emphasis on independent living and inclusion, and the moves towards rights-based and anti-discrimination approaches) and sector specific policies in the fields of employment and education. The current situation in these regards in Ireland has been described in Chapter 3. This section looks at this from a more comparative perspective, drawing on the insights that have been gained in other countries covered in this study.

One point to note is that, as in other areas of public policy and service provision, AT policy and AT systems are not static but subject to transition or change. Whether as a result of the economic downturn, structural changes in responsibilities in the wider system or other factors, aspects of the AT provision systems in all countries are in transition. In the Netherlands, for example, there is an ongoing shift of aspects of AT provision from the medical insurance based system to the local authorities. In Denmark, the major reorganisation of local administration has had an impact on how AT expertise is organised. In Norway, possible changes to the unified system are being discussed, with the possibility of more responsibility for financing and providing AT being transferred to local authorities. More generally, the implications of increased emphasis on universal design for systems that have traditionally focused on AT as specialist devices is beginning to come onto the agenda in some countries, such as Norway.

The legislative/regulatory approaches underpinning AT provision are quite diverse across the countries covered. This includes the extent to which AT is explicitly referred to in primary legislation and/or the extent to which it is specifically taken up in secondary legislation/regulations. There is particular diversity in the legislative/regulatory basis for AT for independent living in the home/community. Nevertheless, in most of the countries covered, this seems to be stronger and clearer than in Ireland. There seems to be less diversity in approaches in the educational and employment settings, with a combination of anti-discrimination and active inclusion approaches often operating in combination as they do in the Irish context.

**Health and social care policy**

Levels of public funding for AT and AT-related services, and the degree of generosity of the public support systems in a country, are one indication of the extent of policy importance attached to the area. In practice, it is difficult to get comparable data across countries because of different ways of gathering and reporting data. Also, published data on public expenditure on AT in Ireland could not be sourced for purposes of this research. However, from what evidence could be compiled, it would seem that levels of expenditure on AT in the countries with the more developed systems (NO, DK and NL) may be considerably higher than in Ireland. Spending on AT, per se, is just one component of the necessary system. Provision of sufficient and high quality assessment, follow-up and other AT-related support services is also critical. In the Irish case it seems that lack of resources in these aspects may be a particular issue for attention.

The overall impression is that AT has been given less attention and importance in health and social care policy in Ireland than in the other countries covered in the study.

In the **UK**, for example, there has been strong recognition and attention since the beginning of the 2000s. A report by the Audit Commission 'Fully Equipped' in 2000 and a follow-up in 2002[[148]](#footnote-148) were important milestones and there were also relevant reports produced in other parts of the UK, including Northern Ireland[[149]](#footnote-149) and Scotland.[[150]](#footnote-150) These reviews emphasised the importance of equipment services, both for users and for cost-benefit outcomes for the overall system, but identified various shortcomings of existing provisions and made recommendations for improvements. Developments since then have included increased allocations of funding, initiatives to integrate services[[151]](#footnote-151), efforts to develop/apply quality standards and, in particular, the recent move towards a 'retail model' of provision of lower cost community equipment as part of the 'Transforming Community Equipment Services' initiative.[[152]](#footnote-152)

The Audit Commission continued its focus on this field and produced a number of reports specifically using the 'assistive technology' terminology.[[153]](#footnote-153) These broadened the perspective to include developments such as telecare and home telehealth, especially in terms of the role that they can play to support independent living of older people and to address various needs of major chronic conditions groups. On the telecare/telehealth side, also, there was a significant stimulus effort through provision of central funding to kick-start initiatives by the local authorities.[[154]](#footnote-154) This has encouraged a lot of attention on telecare and expansion of existing social alarm services to encompass more advanced telecare services. More recently, home telehealth has also been given a lot of attention and there are many initiatives involving telehealth services for conditions such as COPD and others.[[155]](#footnote-155) There has also been a strong policy interest in a 'whole systems' approach, bringing together health (telehealth) and social care (telecare), as evidenced in the extensive 'whole systems demonstrator' programme.[[156]](#footnote-156)

In the **Nordic** countries and the **Netherlands**, AT seems to have been more or less taken for granted as an important component of health and social care for a long time now. Services have been well-developed and commensurately resourced. In **Italy**, some forms of AT have been given strong visibility within the provision system of the national health system.

**Disability policy**

One of the key themes in the disability field over the past number of years has been the shift from a medical model to a social model, with a major impetus towards rights-based approaches, emphasis on independent living and promotion of self-determination in terms of how needs are met (e.g. personal budgets). In Ireland, this is evident in many aspects of disability services as well as in health and social care and in approaches and supports for people with disabilities in education and employment.

In this context, there are some indications of increased attention to AT in the Irish context. This is perhaps most visible in the data on AT contained in the NPSDD and the National Disability Survey of 2006. Nevertheless, there has not been any strong policy focus on AT provision, as such, or on the strategic importance of AT as a support both for independent living and cost-effective services.

In the **UK**, there has been more explicit attention to AT and the role of technology and equipment in improving the life chances of disabled people has been given emphasis.[[157]](#footnote-157) In **Norway**, AT policy and provision straddles both the social welfare and equality fields in a way that provides a strong basis for a well-developed approach. AT is seen as an important aspect of rehabilitation, independent living and participation in society and there are ongoing discussions about the best way to organize and cover the field.

## Coverage across settings and the lifecycle

The scope of this study covers three main settings or contexts of use for AT - independent living at home and in the community, employment and education. In the Irish context there are mainly three separate AT provision systems operating in parallel for these three settings. This is also the situation to a large extent in the other countries covered, although some countries have more integration and coordination than others. **Norway**, in particular, stands out in having a single agency covering AT provision for all three settings. There the responsibility of the NAV for AT in all sectors, in partnership with local authorities, has resulted in a balanced development and to a great extent the same level of service is available in all sectors in all local areas. The county AT centres play an important role in supporting this development.

To a certain extent the allocation of specific sectoral responsibilities may be seen to be an appropriate approach, allowing for focused attention to the types of needs that arise in each setting and provision of specialist services to address these. However, this does not necessarily ensure that AT for all settings gets equal attention. Problems may also arise because of uncertainties about responsibilities in some situations as well as in the important issue of transition between settings.

### Systems for AT for independent living at home / in the community

**Welfare models and types of health/social care system**

A first issue to consider, especially in relation to AT for home/community/everyday life, is that AT provision systems are embedded within the overall health and social care (or 'welfare') system of a country. The overall system to a large extent shapes and defines how AT is provided and who has access and how. This should be borne in mind when seeking to identify good practice in other jurisdictions.

The current approach to AT provision for home/community/everyday life purposes in Ireland reflects the mixed-economy of welfare that prevails in the wider health and social care system. Two characteristics of the Irish system are of particular relevance. First, access to the publicly-provided/publicly-funded AT system is mainly for people with medical or long-term illness cards. As a result, many aspects of the AT provision system mirror the core public-private mix that is at the heart of health services access more generally in Ireland. Second, NGOs in receipt of public funding provide substantial parts of the service. None of the other countries have overarching systems that incorporate both of these features, although some systems (such as the UK and Italy) do have aspects from which useful parallels can be drawn.

Another issue of relevance in Ireland is the consideration that is currently being given to a radical overhaul of the Irish health and social care system. Against this background, it is instructive to give some attention to how AT provision systems tend to be organised and the types of issues that arise across different types of welfare system. For example, the insurance-based system of healthcare financing in **The** **Netherlands** has been mooted as a possible model for Ireland going forward, and the possible attractions of universal social insurance based systems have also been under discussion.

Finally, a third issue of relevance concerns the way that disability policy/practice intersects with other aspects of health and social care policy/practice. In Ireland, for example, the Disability Act has impacted on the attention and approach to disability service provision.

**Insurance-based approaches**

As mentioned above, there has been a lot of interest in a possible move towards a major reform of the overall financing approach to health care in Ireland. At the moment the main financing involves a mix of public services and private health insurance. There are a few private health insurers sharing the market and these are not really regulated in terms of the content of the packages of care that they offer. In practice, some private insurance plans may provide some reimbursement of costs for particular types of AT but this aspect seems not very visible or well-developed.

As mentioned already above, one approach that has been mooted is the Dutch insurance-based approach, involving a combination of public and private insurance. In the field of AT, the Dutch model includes a mix of (health) insurance-based and municipality social service based provision.

In **The Netherlands** there are three sources of funding/provision - private health insurance for everyday healthcare costs (ZVW), public health insurance for exceptional costs of illness (AWBZ), and municipality social services (WMO). The insurance companies are obliged to offer a standard package of cover ('pakket') to all who apply. Rules on the assistive technology that is to be covered in the 'pakket' are defined by ministerial regulations. The Health Care Insurance Board (CVZ) is an official agency that oversees the health insurers to ensure that insured people's needs and rights are met. It advises the health minister on what should be included in the 'pakket'. As regards assistive technology coverage, historically the approach was based on a list of the types of products that should be covered. CVZ has been working on changing this to a functional approach based on the World Health Organisation's ICF. The regulations governing AT in basic insurance have been undergoing a process of gradually being updated to adopt this functional approach. However, the current plans are to migrate AT supporting activities of daily living (ADL) and participation that is currently covered by the insurance companies, to the municipality social services.

The Dutch approach to date seems to have led to quite a generous AT provision system. However, there have been some criticisms that privatisation of healthcare insurance tends to lead to policy development aiming for economic optimisation rather than improvement in quality of care. More generally, there seem to be trends towards reducing the generosity of the system. One aspect is an ongoing shift from a focus on medical necessity (covered by the insurance system) to a participation focus (covered by municipalities). This coincides with a shift from a right of citizens to be provided with a specific AT solution to a right of citizens to a suitable solution to their participation problem, which in practice can result in rationalizing the level of AT provision as well as leading to variation at the local level.

Another possible approach that has been mooted would be one based on universal social insurance. In this regard, the AT service provision in **Norway** is of interest. This involves provision of AT under the national social insurance for people with long-standing disability (more than two years) and by the municipality social services for shorter-term needs. In Norway, AT is funded by the state and provided as a right under the national social insurance scheme. The system is managed and implemented by the Norwegian Labour and Welfare Service (NAV). It is a holistic system covering AT for all three settings and can be considered to be perhaps the most coherent and well-developed overall system (as detailed in section 4.4 and in the various thematic sections below).

**Universality and the public-private mix**

*Universality*

In the main, the publicly-supported AT provision process in Ireland can be considered to be one where the focus of public provision is mostly oriented towards those with lower incomes and/or older people (i.e. medical card holders). This means that others are expected to acquire and pay for AT themselves, although, in principle, they may be able to get an assessment of their needs under the public system (the Disability Act introduced a right to such assessment). For those that are covered by the medical card, there is eligibility for AT (as covered under 'aids and appliances') but this does not necessarily confer entitlement as such.

There are also some variations to this general rule, for example people with long term conditions may sometimes be covered (long term illness card holders). In addition, for some AT (especially hearing aids) there is a dual system, whereby there is both public provision for eligible people (medical card holders) by HSE audiology services and social insurance (PRSI) based coverage for those with the required contributions.

In a comparative perspective, the Irish system is generally less universal than in the other countries covered. The systems in Norway, Denmark and Netherlands appear to be particularly strong on this aspect, and the national health system approaches in the UK and Italyalso provide universal access to the AT that is covered by these parts of the systems. The system that seems most comparable to the Irish one is probably the community equipment services provided at local authority level in the **UK**, and this is discussed further below.

In the **UK**, access to AT varies depending on whether it is covered under the NHS or provided by the local authority social services. The NHS is a universal health service so, in principle, access to the AT and related services is universal, based on need and does not depend on income. The situation in relation to AT provided by the social services is less clear as the local authorities establish their own eligibility criteria based on the overall needs profile of their area, available budgets, local/national priorities and so on.[[158]](#footnote-158) However, the community equipment services are intended to provide information/advice on AT to everyone, even if some will ultimately be expected to purchase the AT themselves because they are not deemed eligible for public funding or who choose not to use the public services.

In **The** **Netherlands**, the situation as regards access to the different parts of the system is as follows. Under the ZVW regulations everyone has health insurance so, in principle, everyone has access to the AT products that are included in the basic package. A well balanced range of AT for independent living and medical support is provided on this basis. About 80% of the population have a basic insurance. Those who pay an increased premium can have more user/consumer choice in relation to what AT they get and who they get it from. However, most needs are already covered under the basis package and, from a European perspective, the basic level is more than adequate. All citizens of the Netherlands also have access to the provision of AT for temporary needs on the basis of the AWBZ regulation. Those with a primary income, pay for this national insurance directly with their income taxes. Under the WMO regulations, a municipality has the obligation to support all inhabitants of a community with regard to their participation in the community. On the basis of the problem indicated by the individual, the municipality seeks a suitable solution (the cheapest adequate solution).

For these three regulations there are no restrictions regarding income or age. All have access but must meet criteria based on impairment-based need in order to be eligible. The regulations establish frameworks but insurance companies are free to decide which selection of AT is made within the specified typology. This will depend on their policy and the contracts they have with suppliers. For municipalities, a similar situation exists. For them, (the limits of) the annual WMO budget also impose constraints on what can be provided and this may be guided by the calendar and insensitive to individual needs. A national umbrella agreement negotiated between the Ministry of Social Affairs, disability organisations and the Association of Dutch Municipalities aims to encourage uniformity in what is provided across all municipalities. Overall the system appears effective in providing equal access to AT services, The minor differences that exist between health insurers can be dealt with by individuals through the right of citizens to change insurer every year without consequences (although premiums may vary somewhat).

In **Denmark**, the Social Services Act stipulates that assistive technology is to be provided without regard to age, income or property-owning status. The National Social Appeals Board (Ankestyrelsen) regularly performs studies of the provision practice in the municipalities and issues reports on the matter. The aim of this is to ensure that there is a homogenous approach to assessing and ruling.

Overall, the Danish system is considered to be fair in terms of providing access to AT for all. A main weakness is that each municipality sets its own standard for provision. AT is, in this respect, in competition with other elements of the municipality budget.

In **Norway**, access to AT is a right under the national health insurance scheme and AT is generally provided free of charge without regard to income, age or other such factors. However, there are some exceptions (e.g. charges are made for hearing aids). Support for a car is mean-tested, but the equipment necessary for adaptation of the car is free of charge for the user.

There are guidelines on what kind of devices can be provided throughout the system. Four national standards have been produced with the objective to ensure that users receive the same services wherever they live in the country. In general, the majority of users get what they need and what they are entitled to according to the laws and regulations. There are established goals for delivery times, service/repair times, re-use of assistive devices etc.

In **Italy**, the National Health System in principle offers universal access to the AT that is covered under the national list of items that are provided, without consideration of income, age or other such factors.[[159]](#footnote-159) For people with occupational diseases and injuries, AT provision is covered by the National Insurance for Labour Accidents (INAIL) instead of the National Health Service. The procedures are very similar, although there are higher reimbursement thresholds and broader AT coverage. Furthermore, social services give contributions for devices not included in the NT and for environment adaptations. Overall, the system is considered fair and quite effective. The same access in all parts of the country is assured by law although in practice the AT services that are provided can vary in quality across the regions. However, a weakness to be mentioned is that the list of AT that is covered does not include technologies developed during the last 10 years.

*Public-private mix*

Linked to the different degrees of universality of AT provision, the extent of public-private mix in expenditure on AT appears to vary considerably across the countries covered although hard data are not generally available. In Ireland, there are no data available on the actual public-private mix in terms of expenditure on AT. For health/social care more generally, the population distribution in terms of healthcare coverage includes those with medical card only (30%), private health insurance only (41%), both (6%) and neither (22%). It can therefore be expected that quite a substantial proportion of expenditure on AT is private, although the fact that the majority of older people (the largest users of AT) have medical card coverage has implications for this.

In **The Netherlands**, it seems that currently the vast majority of expenditure on AT is through the public/insurance system. There is an impression, however, that the numbers paying privately may be increasing because of limited choice and sometimes long waiting periods. In addition, the personal budget (PGB) system opens up more possibilities for combining private and public money. In 2013 the government intends to make the public funding dependent on level of income and this may lead to increased private contributions. Overall, the current public-private mix seems to be acceptable to the stakeholders, but given the demographic changes it will be difficult to maintain. It is likely the relative private financial contribution will increase over time.

In **Denmark**, levels of private expenditure on AT are very low compared to the public expenditure, as every citizen is covered by the system. For AT in the 'consumer goods' category the citizen contributes 50% of the price of the standard product; if users choose an alternative product to the ones offered by the system they must pay any excess costs above the granted amount. There are tendencies to redefine more AT as consumer goods and in this way increase the private expenditure. If a case is ruled in this direction the applicant has the possibility of appealing. If the social appeal board (SAB) takes on the case as one of principle they can make a ruling on it and in this way verify the redefinition. This was recently the case with electric scooters – in 2010 they were redefined and applicants now have to pay approximately DKR 6,000 – 10,000 (€810 to €1350) to acquire one, where previously they were free.

In **Norway**, all users get what they need in terms of assistive technology as long as they meet the criteria. Therefore, there is very little private (out of the pocket) expenditure.

In the **UK**, private expenditure for the categories of AT not covered under the NHS (e.g. community equipment provided by the local authority social services) is likely to be a substantial proportion of overall expenditure although there appears to be no data on this.

In **Italy**, a broad range of AT is provided under the national health system and there is no data on the extent of private expenditure. However, users often tend to purchase AT devices autonomously, if they have the financial means, in order to avoid long waiting times.

*Access for the groups that are eligible*

There is a lack of data that would allow a real assessment of how well the publicly-provided and/or publicly-supported AT services in Ireland currently function in terms of access for the eligible target groups. However, the available evidence would suggest that there are some significant shortcomings in various aspects of the current arrangements, including:

* substantial rationing of services, with a focus mainly on highest priority groups
* often long waiting times
* wide variability across the country.

More generally, the data presented in Chapter 2 suggests that there are currently relatively large numbers of people with disabilities and older people with unmet needs for AT.

A historical perspective is also useful in relation to this. At the risk of over-simplification, it would seem that AT services were under-developed and resourced before the mid-1990s. Quite substantial increases in budget allocations began to become available for a number of years, starting in the late 1990s, and now we are seeing cutbacks in budgets to this area with the possibility of more cutbacks over the next few years. This was a matter of concern for the frontline public and NGO service providers consulted in the study. In addition, whilst the increased budget allocations were welcomed, it was noted that the historical approach to increased allocation was quite ad hoc and without sufficient overall coordination or focus.

Therefore, it would seem that there is a dual need - to ensure sufficient budget allocations for AT and to develop a coordinated and focused approach in this field. Developments in relation to community equipment services in the **UK** may provide some pointers for this, as they, in many respects, parallel the 'aids and appliances' services of the HSE in Ireland. Of particular interest is the way that the UK services have been upgraded and given higher priority following review. Shortcomings of the existing community equipment services (e.g. waiting times and lack of coordination) were documented in reviews by the Audit Commission in the early 2000's.[[160]](#footnote-160) In response, major policy initiatives were introduced to increase the funding of community equipment services, reach more people, and better integrate/coordinate the roles of the health and social care services.[[161]](#footnote-161)

*Support for those not eligible for public funding or otherwise not served by public system*

Many people in Ireland are not eligible for public funding for AT because they do not have a medical card (in 2010, 36% of the population in Ireland were covered by a medical card). Amongst those aged 70 or older, 90% were covered (this represented a decline of about 5% in comparison to 2007, following the introduction of an income ceiling for this age group in 2009). However, even if the majority of older people are, in principle, eligible for public funding for AT, in reality the rationing of access through prioritisation and the long waiting times mean that many people must look for and pay for AT privately.

NGOs in the sensory areas provide services that can meet some of these needs, including information/advice and the sale of some AT products. In addition, the AssistIreland website provides information on where people can go if they are looking for AT. However, there has not been much evidence of a proactive approach in public policy to actively address the reality that many people currently need to source AT privately. This is an important gap as it leaves things mainly to the marketplace, without any public governance or efforts to encourage more/better uptake of AT to support the achievement of policy goals in relation to independent living, health system cost containment, and so on.

Again, this is an aspect where pointers can be found from the way that these issues have been addressed in other countries. For example, in **Denmark**, where the public system is more universal than in Ireland, there is nevertheless a formally stated statutory obligation on the municipality’s administrators in the assistive technology sector, to provide advice and guidance to users, even in cases where users ask for advice but must or can buy their own assistive devices themselves.

More specifically, the recent re-modelling of the approach to community equipment supply in the **UK** may be of considerable interest for the development of the Irish approach in the future. The new 'retail model' for community equipment aims to support both those who are publicly-funded for the equipment and those who are self-funders (either because they are not eligible for public support or they choose to purchase privately). As stated in the documentation about the new approach: *"It is intended that a market will be created for people who pay for their own equipment and support (self funders) to enable them to have access to assessment and therapeutic services for which they will be charged a fee. Independent needs assessors are likely to be occupational therapists or other suitably competent individuals. The practitioner will undertake an independent, professional, proportionate and appropriate assessment of needs. The assessment will be full equipment needs assessment and, if requested by the user/carer, an assessment of ongoing therapeutic support to re-able or rehabilitate. Self funders will not receive prescriptions but will be issued with a list of recommended products they can purchase themselves.”* [[162]](#footnote-162)

This issue of support for self-purchase is taken up again later in the section dealing with user/consumer choice, where issues around self-determined spending of grants, personal budgets and so on are discussed.

### AT in employment

The level of development of AT provision systems for employment purposes seems to vary across the countries covered although it is not always possible to get a detailed perspective based on the available information. Commonly, the approach involves a combination of reasonable accommodation obligations on the employer under anti-discrimination legislation and public financing/provision systems. The extent to which there are public financial supports available to help employers with the cost of such accommodation and, in particular, the extent to which public services promote and support utilisation of AT in this context, are important factors influencing the level of development of this sector.

In the Irish situation, as in other countries, a linkage is made between the equality legislation and the provision of public supports for workers and employers in relation to workplace needs of people with disabilities. As described in Chapter 3, FÁS operates the Workplace Equipment Adaptation Grant (WEAG) in this context. There seems to be an under-spend on the allocated budget for this service. Spending levels are also now considerably lower than they were fifteen to twenty years ago when the service was operated by the National Rehabilitation Board (NRB). In addition, levels of expenditure under the WEAG seem to be orders of magnitude smaller than under the somewhat similar AtW programme in the UK.

Given the similarities between the AtW and WEAG, the AtW is of interest as a possible source of pointers for further development of the Irish approach. The approach in Germany is well-developed, although organised in a different way, and may also provide insight into ways that the Irish approach could be further developed. The approach by NAV in Norway is also a useful example of a well-developed system in this area.

**Access to Work (United Kingdom)**

As already described in Chapter 4, the Access to Work (AtW) scheme is operated by the Department of Work and Pensions and implemented by the mainstream employment service (Jobcentre Plus). It provides a range of supports for people with disabilities and employers. It includes 'special aids and equipment' as a specific category of support.

In practice, the equality legislation and the Access to Work (AtW) scheme are interlinked, with the latter seen as providing public supports to help employers meet their obligations under the former. Importantly, the AtW scheme is also positioned as a key plank of active labour market policy. It focuses on supporting people with disabilities to take up and remain in employment. In addition to funding AT, per se, the approach provides funding for assessments by accredited independent centres/experts when this is deemed necessary by the advisors in Jobcentre Plus. This aspect appears to be extensively used. The programme has been favourably evaluated in terms of its contribution to supporting employers and people with disabilities, including a positive social return on the public investment (estimated at £1.48 net for the Treasury for every £1 spent on the programme).[[163]](#footnote-163) The role of the programme in general, as well as the 'special aids and equipment' part, has been given increased prominence and funding in recent years.

Statistics on the AtW programme are compiled and published every year, including the numbers benefiting from 'special aids and equipment'. In the most recent year (2010/2011) a total of 7,430 grants were provided for special aids and equipment, with a total expenditure of £13 million sterling on this aspect (includes grant and costs of external assessments where required).[[164]](#footnote-164) In Irish terms this would equate roughly to an equivalent of something of the order of 600 or so grants and more than one million euro.

**Technical Integration Services (Germany)**

The approach to provision of expertise on AT in the employment context is one relevant aspect of the German system. *Integration Agencies* have responsibility for providing information, consultancy and hands-on advice for the promotion of full participation of disabled people in working life. Every Integration Agency has a Technical Advice Service, staffed by specialists (usually engineers) for certain types of disability or types of implementation contexts. The Integration Agencies are supported by the (more numerous) *Technical Integration Services*, agencies operated by third parties that are involved in the implementation of measures, aimed at participation of disabled people in working life. They provide AT and other expertise and support on behalf of the Integration Agencies. One of their typical duties is to provide information and consultancy to employers, to advise them and to provide assistance, including about AT. Service provision by Technical Integration Services is funded from the revenues generated from the Compensation Levy (paid by employers who do not meet the quotas for employment of people with disabilities).

The *Federal Employment Agency* has also set up counselling services for both employees and employers on adaptation of workplaces to the needs of employees with disabilities. These services are located within the local employment agencies (*Arbeitsagenturen*). In 2007 there were about 80 engineers in this service, providing specialist advice on technical aspects of workplace adaptation, including AT, across Germany.

Despite the strong emphasis on technical supports, there have been criticisms of the current system by stakeholders in Germany, mainly because of the fragmented structure of the consulting system. There is a diverse landscape of different consulting services and structures at federal, provincial and local level, which has its roots in the history of the complex German rehabilitation system. Joint Service Points established to support better integration have been criticised by stakeholders for not providing the intended one-stop-shop service.

**Work and Welfare Administration (NAV) AT services in Norway**

In Norway, provision of AT for employment-related purposes falls within the remit of the Work and Welfare Administration (NAV). This makes the well-developed AT service provision system available across all settings, including employment. In addition, a certificate of guarantee ('green card') is available for jobseekers with requirements in relation to workplace adaptation. It documents that the jobseeker has a right to have the workplace adapted with support from NAV under the national insurance scheme provided that the requirements of the Working Environment Act are met. The aim is to support rapid assistance from the public support system and inform employers of the available opportunities.

### AT in education

It is challenging to single out good models of organisation in the provision of AT within the education sector because, in most jurisdictions, AT is treated as a subsidiary element of the system alongside a differentiated curriculum, additional learning support, personal assistance and adapted environments. As a result a system profile rarely reveals the way in which AT is specifically deployed or the extent to which it is monitored in term of outcomes or impact. Equally, the guidelines and standards for assessing special education needs (SEN) tend to be specified at a general level which requires that AT needs be assessed without providing details on how this should be done.

Nevertheless, it was possible to identify some approaches that can be classified as good practice specifically in relation to the provision of AT, at the system, school and family and individual learner level. Not surprisingly these are not always to be found in the same jurisdictions and have not necessarily been adopted system wide.

Although the focus of this study has been mainly on Europe, some attention was also given to interesting approaches to AT provision from further afield. Two examples in the educational context were identified, one from the US and one from New Zealand, and these are described in the following sections.

**Operating an Effective System of AT Provision (United States)**

At federal level in the United States, the contribution that AT can make to the achievement of free and appropriate education has been recognised for many years. Under the Technology-Related Assistance for Individuals with Disabilities Act (1988) funds are made available for information and training on AT for all age groups. The Assistive Technology Act of 1998 allocated funding for setting up a range of AT facilities. These included demonstration and information centres, equipment loan facilities and referral services. It also provided for advocacy services to help people access the services for which they are eligible and low interest loans and alternative financing to assist people to purchase the AT they required.

The importance of AT in education and the role of schools in meeting the needs of an individual pupil is underpinned by the Individuals with Disabilities Education Act (1997) and the Individuals with Disabilities Education Improvement Act (2004) which introduced a requirement to consider the need for AT for each pupil with an individual education plan (IEP). The 2004 Act clearly acknowledged that AT and AT services can increase the effectiveness of education for learners with disabilities. As a result, primary and secondary education providers have been in engaged in the process of providing appropriate AT to their students for many years.

Each state in the US adopts its own policies and procedures to achieve the intended impact of Federal legislation. A particularly interesting approach was adopted in Ohio (population of 1.9m aged between 5 and 18 years) in 2001 when it acquired $9.3m to allocate AT to its schools.[[165]](#footnote-165) It established the Assistive Technology Infusion Project (ATIP), intended to distribute grants for AT to schools in Ohio and to measure the educational impact of that technology. The project adopted the Assistive Technology Outcomes Measurement System (ATOMS) model for measuring AT outcomes, previously been developed at the University of Wisconsin.[[166]](#footnote-166) The ATOMS approach takes a clearly biopsychosocial perspective on AT[[167]](#footnote-167) and AT is regarded as one of many interventions that can be implemented to enhance educational participation, quality of life and academic performance.

ATIP developed web-based tools to make known that funds were available and to manage grant applications, reviews and awards. The system was set up so that both pre and post data were collected from participating pupils. It gathered information on the student and the school district in which the student was attending school. The application required the specification of the nature of the problem to be addressed by AT, current level of performance, a statement of critical need, previous and existing accommodations and modifications, potential solutions, evaluation of potential options, the solution eventually selected and AT requested. Applications which did not demonstrate that other options had been tried and that the AT request was the result of a systematic problem solving process were not funded. In addition, the system collected information on goal setting, implementation and evaluation plans and the expected impact on the student and the district.

A major focus of the outcome monitoring system was the added value of AT in facilitating access to the general curriculum and supporting academic achievement. AT and AT services were considered as two of 10 factors that could facilitate better achievements on the part of the student. The other factors were natural development, compensation for impairment, adaptations of curricular tasks, redesign of the instructional environment, change performance expectations, participation in general instruction, educational support services and personal assistance. Six performance areas were monitored in the pre and post student profiles: academic content, accessing and manipulating instructional materials/tools, work habits/study skills, communication, mobility and personal care. In the post student profile, teams were required to rate each of the 10 factors in terms of their contribution in each of the six performance areas. This provided an estimate of the unique contribution that AT and AT services made to the learner’s progress.

Although there was general acknowledgement that the on-line application and management system required significant effort on the part of schools, nevertheless 91% of respondents to a survey strongly agreed it was worth the effort.[[168]](#footnote-168)

**Effective AT Dissemination and Support (New Zealand)**

The facilities and services offered in the area of AT by the New Zealand Ministry of Education illustrate the attention to detail and the acknowledgement of all interested parties in the AT dissemination process. Within the Ministry of Education, the Special Education section is responsible for facilitating AT services. As part of its role, it provides support and guidance to frontline staff and specialists, promotes enabling access to learning environments and allocates AT equipment to pupils, supported by a comprehensive toolkit for the dissemination and support of the AT process. [[169]](#footnote-169)

The Special Education section has produced guidelines to support schools and specialists in providing AT services. These are supported by exemplars to act as models for different elements of an AT service. For schools and parents a wide range of factsheets have been developed which address the main questions that are often asked about AT. At sector level, a set of operational protocols to support joint action by the Ministries of Education and Health for the provision of therapy and assistive technology/equipment to pupils at local level have been produced. A set of templates and forms are available on the Ministry’s website to assist in the AT provision process. The Ministry has also established a Centre for Assistive Technology (CAT). The centre provides support and advice on AT to staff of the Special Education section of the Ministry, teachers and parents, early childhood education personnel and anyone else responsible for helping pupils to overcome learning challenges.

The guidelines provide clear information on eligibility criteria and school responsibilities, and describe the service pathway for accessing AT as illustrated in the figure below.



The guidelines are very specific about the elements that should be included in the AT assessment framework. The framework represents a bio-psychosocial approach in that it focuses on the learner in terms of his or her history, interests, abilities, learning, attitude and academic and physical skills. The environment is considered in terms of the physical context at school and home and social factors such as the role and attitudes of peers, teachers and family. The guidelines also describe the tasks, goals and tools for assessment.

The Special Education section hosts a range of factsheets which cover the whole process from getting started and making an application to training, community support, school transfer and leaving school. It also provides operational protocols to govern joint action between the education and health sectors, including the memorandum of understanding which has been jointly signed by senior officials from both Ministries, a national operational guideline, which outlines occupational therapy and physiotherapy services, and assistive technology/equipment services, and a template for a local level agreement.

All forms and templates required for the AT process including an application form and help document, and forms to cover loans, transfers, variations, replacement, repair and review are available on the website. There is also an AT management plan template and a form to apply for joint funding from education and health.

All these resources are backed up by the Centre for Assistive Technology which offersadvice, support and information on AT products, assessment of individuals' needs, appropriate AT resources and their relevance to the curriculum, resources available for trial, and contact details of suppliers and AT experts and training.

### Transition between settings and across life stages

In most of the systems reviewed the issue of maintaining consistency during lifespan transitions is a challenge. Discontinuity can arise as a result of the transfer of responsibility from one agency to another, issues of ownership of the AT (the person or the institution) and lack of clarity in the system about which agency should intervene in which circumstances. Coordination tends to be more effective in those jurisdictions in which the same entity maintains responsibility for all life stages. This is the case in **Norway** where the joint action of NAV and local authorities covers all life stages.

One effective method of ensuring coordination and continuity across life stages can be the Personal Budget (PB) which provides the individual with the resources to procure the necessary services and equipment required for independence and participation. Variations on the personal budget approach operate in a number of countries although in some cases have come under political pressure. This is the case in the **Netherlands**, for example, where some evidence has suggested that personal budgets may be more expensive than traditional approaches, although there is also some evidence suggesting that the impact of personal budgets may be more sustainable in the long term, at least in the employment sector.

In general, across the majority of systems, the most challenging transition, from the perspective of AT provision, is the move from second level education to further or higher education, vocational training or employment. This is the case even in those jurisdictions where the same entity retains responsibility. For example, the entitlements specified in the SEN statement in the **UK** do not transfer to post secondary education or training. In **Norway,** even though the overall system is quite integrated, within local authorities responsibility can move from one local government department to another and this can result in discontinuities, particularly in the transition from school to work.

## Role of NGOs

As noted earlier, one of the distinguishing features of the Irish AT provision process is the important role played by NGOs as an integral part of the publicly-funded system. In this regard, the situation in Ireland is quite unique, at least in comparison to the other countries covered in this study. As stated in the Health Act (2004) the Health Services Executive is established as the public agency with responsibility to "...manage and.....deliver, or arrange to be delivered on its behalf, health and personal social services", including a responsibility to "integrate the delivery of health and personal social services". It is also stated that, in performing its functions, the Executive shall have regard to "services provided by voluntary and other bodies that are similar or ancillary to the services the Executive is authorised to provide".

As already discussed in Chapter 3, there are a number of NGOs in receipt of funding from the HSE which play key roles in the provision of AT services. In some cases, they have a formalised role in relation to AT service provision and funding mechanisms linked to AT service provision are in place. In other cases, their roles in relation to AT provision are not formalised and funding is not specifically linked to AT services, per se. In fact, a given organisation may sometimes have quite different relationships with the HSE in different parts of the country, including differing relationships with regard to their formally perceived role and funding mechanisms relating to AT. This generally ad hoc situation was reported as being less than optimal by NGOs consulted during this study.

In addition, the historical patterns of funding levels for some of the NGOs in relation to AT has paralleled the fluctuations that were mentioned above in relation to the HSE's own 'aids and appliances' services. For a number of years, they received annual, end-of-year Ministerial allocations specifically for AT supply to their client groups and, when this stopped, the increased budgetary allocations continued in some cases but now may be under threat because of the economic down-turn.

There is also a more general issue around HSE relationships with NGOs that applies to the AT field in the same ways as it does to other services provided by NGOs (such as disability services and services for older people) and aspects of this have been discussed in some detail in a report by the Comptroller General in 2005. [[170]](#footnote-170)

Given the somewhat uniqueness of the role of NGOs in the Irish case, it is difficult to find specific pointers for Ireland in this area from the main other countries covered in the study. In the Nordic countries and the Netherlands, NGOs do not have such a prominent role in direct service provision.

In **Italy**, non-profit institutions play a relevant role in the field of welfare services. They can be voluntary organizations recognized by Regions or Autonomous Provinces or social cooperatives. Generally speaking, these don’t provide specialist support on ATs, but mainly focus on promoting and advocating social rights connected to disability. Some do provide AT-related services – for example, the Italian Union of the Blind offers consultancy services and equipment.[[171]](#footnote-171)

More generally, a number of non-governmental entities have played and continue to play an important role, especially through a network of independent AT centres around the country. In general, they operate a parallel system to the public system. However, in some regions (e.g. Emilia Romagna) they have become formally linked-in to the public system. The experiences and approaches in these regions might warrant further examination in the context of any move to further develop the HSE-NGO relationships.

In fact, a number of specialist centres on AT have been set up in Italy over the years by NGOs. The GLIC Network (Gruppo di lavoro interregionale Centri di consulenza ausili informatici ed elettronici per disabili- Italian Network of consultancy centres on ICT AT) includes 26 centres across Italy (www.centriausili.it). The SIVA network (Servizio Informazione e Valutazione Ausili - Assistive Technology Information and Assessment Services) is composed of 10 Centres of the Don Carlo Gnocchi Foundation. They provide expert information and professional and customised support to persons with disability, their families and caregivers. They can be part of a rehabilitation centre or offer an autonomous service, as part of a wider information programme or specialist counselling. They often have a permanent AT exhibition.

As regards roles in relation to the public provision system, AT centres generally provide the user with a recommendation whereas the prescription is by the NHS practitioners. Their role and functioning are currently under discussion between GLIC and SIMFER-Società Italiana di Medicina Fisica e Riabilitativa (Italian Society of Physical Medicine and Rehabilitation).[[172]](#footnote-172) As mentioned earlier, there are some good examples of AT centres run by NGOs and recognized by the Region, for instance Ufficio H of Comunità Piergiorgio (www.piergiorgio.org) in Friuli Venezia Giulia, and Ausilioteca Bologna (www.ausilioteca.org) in Emilia Romagna.

In the other countries, as well, NGOs play various roles in relation to AT, even if not to the same extent as in Ireland or Italy.

In the **UK**, although the formal involvement of NGOs in the public/publicly-funded system is relatively limited, an exception is the Motability service operated by the Motability charity. This NGO provides a full spectrum of AT services for car adaptations, powered wheelchairs etc. for those who have Disability Living Allowances.

More generally, NGOs play an important role in the provision of AT and AT-related services to those who are not eligible for support under the public system. For example, RNIB, RNID and AGE UK sell a range of AT products for visual, hearing and home care needs, respectively. In the context of the new 'retail model', the NGO sector is expected to play an important role in the new marketplace for 'prescription' AT products.

In the **Netherlands**, NGOs have no formal role in the provision of AT. As mentioned in Chapter 4, independent expertise centres do have a role in taking initiative and selection and will refer clients to the provision systems, supported with their expertise. NGOs also play a role in AT provision in an advisory capacity, taking part in the discussion on inclusion of AT in the basic insurance “package”. More generally, NGOs are active in influencing (national and local) policy on AT.

In **Denmark**, the municipality is obliged to involve the disability organisations (DH, Danske Handicaporganisationer, is the umbrella organisation) when making procurement arrangements for AT. DH has developed the skills of certain expert members for purposes of this involvement. However, the timeframe for procurement can be short which can make it difficult to get the proper involvement from the disability organisations.

In **Norway**, the most important NGOs in this area are the user organizations. They play an important role in provision of information about AT through their peer support processes. Some organizations, like the Association for the Blind, have established rehabilitation services where AT assessments are one part of the service provided. The costs of the equipment are covered under the social security scheme, and the rehabilitation services are supported by public grants. One well-developed rehabilitation centre is the Hurdal centre, run by the Association for the Blind (www.blindeforbundet.no). More generally, the websites of user organizations provide important information about the AT provision system. The activities of these organizations are seen as an important supplement to the public system and not as being in competition with it. As a part of NAV’s principles of user participation, the user organizations are represented in reference groups at national and regional levels, also in the field of AT.

## Quality aspects of AT systems and services

As for any service area, quality assurance is increasingly recognised as a central element of AT service provision. There has not so far been much focused attention to this aspect of the AT system and service in Ireland.

The discussions with those involved in AT services provided by NGOs pointed to a lack of measurement tools for formal follow-up on the outcomes for clients. Although most conduct some form of informal evaluation or assessment of the AT equipment or service that they provide, formal tools for assessing outcomes are not commonly used at the moment. Informal feedback, the trial of equipment with clients, the trial of new software by staff, and complaints procedures are generally the main means by which the services evaluate AT and follow-up on outcomes for clients. Some examples of formal quality assurance were mentioned, for example, SeatTech (Enable Ireland) are audited by the Irish Medical Board on their custom-manufactured devices and are working towards a proactive review system.

Various developments and approaches can be found in the countries covered in the study as well as in the wider literature, and these can provide useful pointers for future development of this dimension in the Irish context.

The themes covered are:

* service standards, guidelines and protocols
* specialist AT expertise
* AT education and training
* information and awareness (for users and other stakeholders)
* user/consumer choice
* performance monitoring, statistics and evidence base
* complaints and appeals.

### Service standards, guidelines and protocols

In **the UK** there are a number of examples of service standards in parts of the AT provision system. These include standards for community equipment services in Wales[[173]](#footnote-173) and draft clinical standards for wheelchair and seating services in Scotland.[[174]](#footnote-174) A major review of existing standards for AT service provision has also been conducted in the UK by The Foundation for Assistive Technology (FAST) for the Assistive Technology Forum.[[175]](#footnote-175) It provides a comprehensive mapping of existing standards of relevance in a number of fields: prosthetics and orthotic services, mobility, wheelchair and specialist seating, community equipment, housing, AT to support leisure, AT to support education, AT to support employment, electronic AT services, AT services for people with sensory impairments.

Quality assurance / accreditation of independent suppliers is also an issue on the agenda and will become increasingly important in relation to the 'retail model'. This is also an issue in other areas, including the independent assessors under the AtW scheme and in relation to quality assurance of assessment centres and suppliers (DSA-QAG) for AT acquisition by higher education students under the Disabled Student's Allowance.

In **Norway**, national guidelines have been developed in a number of areas of the AT services. These include participation of professionals from Assistive Technology Centres (ATCs) in the local community service processes, ATC courses for the local community services, deaf interpreting services, the need for urgent repairs, and the assessment service. Guidelines concerning alternative and augmentative communication are under development. These are going to be evaluated in the near future.

In the **Netherlands,** ad hoc protocols and guidelines have been developed over the years, some being more successful than others. Generally, these have involved local, ad hoc protocols for specific types of AT (e.g. robot arms, therapeutic stockings) with varying underlying models and quality control for the protocols.[[176]](#footnote-176) The available quality assurance systems all function locally (e.g. quality assurance system for the loan of AT devices in AWBZ provision is implemented by each local organisation). More recently, an initiative to develop a standard for protocols was undertaken as part of the RIFA project.[[177]](#footnote-177) This is being implemented by the NGO CG-raad with financing from the national government. The structure follows a standard model for function-oriented provision. Building on this basic model, models for specific ATs are being developed. There has also been some research to develop quality assessment tools for the AT field, such as the KWAZO instrument which has been translated into the Nordic languages and English. [[178]](#footnote-178) It is noted, however, that there is not necessarily a need for ‘protocolisation’ of processes that are not complex (e.g. simple ATs and relatively straightforward needs) and that over-regulation needs to be avoided. In general, there seems to be more interest in these quality tools in the research context than in policy, where cost issues are currently gaining a higher visibility and attention.

Also relevant in the Netherlands, is the work of CVZ towards changing the traditionally used ISO 9999 system of AT classification to a functional approach based on the World Health Organisation's ICF. The new approach will not involve a list of covered items but instead an open description of the functional needs that are to be met (which may include a list of what is excluded from the scope of what is covered). The aim is to develop an approach that provides a functional description based on the ICF and the Dutch Cliq system for classifying AT. The Cliq[[179]](#footnote-179) system is an approach that classifies AT based on the ICF and ISO 9999, and aims to support assessment, prescription and information from the user point of view. The regulations governing AT in the basic insurance are (very) gradually being updated to adopt this functional approach.

In **Denmark,** there is a growing tendency to use standardized methodologies and a growing demand for documentation, both of which enhance service quality. Various protocols are widely used by OTs, such as the Canadian process model, Occupational Performance Process Model (OPPM), or the newer Canadian Practice Process Framework (CPPF). Other process models and frameworks used are ICF, PEO (Person Environment Occupation) model, and OTIPM (Occupational Therapy Intervention Process Model). For assessment, the Canadian Occupational Performance Measure (COPM) and ADL-taxonomy are often used. National tools include Common Language II and Funktionsevnemetoden (Method to assess the level of function) which the OTs are encouraged to use. These theoretical frameworks and process models help to assure quality in service provision. It was noted that, in an ideal world, the use of such methods would secure a fair and consistent provision process. However, it is time consuming to implement these methods and, in times of tight budgets, people are often forced to cut corners.

In **Italy** there are no national level protocols, as such. However, according to the guidelines provided by the Health Ministry, the AT prescription process is to be an integral part of a program of prevention, treatment and rehabilitation of injuries or their outcomes that, individually or together, determine the impairment or disability. In line with this, the first prescription must include:

* A detailed diagnosis resulting from a comprehensive clinical and instrumental evaluation of the patient
* An indication of the prosthetic/orthotic device, or prescribed equipment, together with the identification code shown in the nomenclature, and details of any adjustments necessary for its customization
* A therapeutic programme around the device including the therapeutic and rehabilitative meaning, modalities, extent and probable duration of use of the device
* Possible contraindications.

The device monitoring modalities are in relation to the therapeutic programme. The stage preceding prescription is not regulated by law, and is left to the local procedures of rehabilitation services.

Currently the technical centres have their own assessment procedures. In order to compensate for the lack of homogeneity at national level, some online tools have been developed in order to try to spread standardization. A good example is provided by the Modello Relazione di Valutazione Ausili (Model for AT Assessment Report), as a standardized prescription tool.[[180]](#footnote-180) In addition, the GLIC network (the Italian Association of Assistive Technology Assessment Centres) is currently working on quality standards that could serve as a basis for future accreditation by the NHS and reimbursement policies. [[181]](#footnote-181)

In **Germany**, the Technical Integration Services have set up a quality management system called Kassys.[[182]](#footnote-182) It presents good practice guidelines to be followed, for example when providing consultancy about suitable AT solutions.

More generally, the importance of good protocols for assessment of need and selection of AT has received increasing attention in the wider AT literature, with one motivation being the commonly observed tendency that a lot of the AT provided is not used. One well-known example is the Matching Person and Technology (MPT) approach presented in the following exhibit.

|  |
| --- |
| Matching Person & Technology (MPT) is a series of assessments for evaluating the predisposition of a person and the outcome of technology use in a wide range of settings including the workplace and education. The MPT approach has been developed over a period of 20 years and has been subjected to a number of evaluation studies. The model upon which MPT is based in illustrated in the figure below. It is based on a bio-psychosocial approach to impairment and disability and has been benchmarked against the International Classification of Functioning, Disability and Health (ICF 2001). An important characteristic of the MPT methodology is the extent to which it empowers the active participation of the person in the assessment and selection process.  The Matching of Person & Technology Model[[183]](#footnote-183) |

### Specialist AT expertise

Another key quality issue concerns the extent to which specialist AT expertise is available within the AT provision system and services. As already described in Chapter 4, specialist AT resources and centres in the Nordic countries, play an important role in the national AT provision systems. Currently, there is no such publicly-provided, system-spanning AT specialist support in the Irish context, although NGOs provide specialist expertise and supports in their areas of competence. The quite extensive development of independent AT centres in Italy is of interest in this regard.

In **Norway**, AT specialist supports are a key feature of the comprehensive system delivered by NAV. This includes central supports and a network of county Assistive Technology Centres (ATCs). NAV also provides AT specialist support for the employment and education settings. NAV Sentralt (NAV Hjelpemidler og tilrettelegging: Assistive technology and adaptations) is the higher authority of the ATCs and the other specialist centres within NAV.

The ATCs deliver various AT services directly and also work closely with the municipality services to provide specialist supports as needed. They developed during the 80s and 90s in different ways in different counties. In 1995 they were all organized under the state, and there has been ongoing development to ensure equal services throughout the country since then.

The county AT centres support the local community services with information, training courses and cooperation with difficult cases. There are also specialist centres that support the ATCs in cases which are rare or complex, car adaptations, ICT (information and communication technology) in alternative and augmentative communication aids, use of ICT for the deafblind and vocational rehabilitation assessments for persons with cognitive, visual and/or hearings impairments. In addition to support in individual cases, the NAV Center for adaptation and participation engages in development activities, for example:

* Methods for the use of ordinary computer based products (seen as brown goods) to enhance participation in society for people with impairments
* Coordination project among partners to strengthen networking
* Promotion of accessible user interfaces in design and innovations
* Methods for use of videoconferences and technical support from a distance for computer based AT.

Other specialist centres (e.g. those addressing vocational rehabilitation, ICT and car adaptation) developed in different ways, in different historic and societal settings. Recently, four of the specialist centres have been organized into a new centre in order to meet the challenges concerning participation in working life for disabled people and the challenges concerning welfare technology.

Another issue is the growing tendency to distinguish two different roles for the AT system: one is the traditional one connected to the definition of AT as it is understood in the social security system, and the other one is connected to a broader approach where the use of new technology in ordinary products will function as assistive technology although not covered by the scheme. A challenge for the system will be how to give advice and promote competence concerning the wide spectrum of new technological products. An example given of this is the use of Global Positioning Systems (GPS) for people with dementia. The families may be able to buy the product but it may be difficult to find advice on the most suitable products.

In **Denmark**, up to recently, the system involved county AT centres supporting the municipality local services. Since the reorganisation of local administration arrangements the situation is not as standardised and there is considerable variation across the country. The National Board of Social Services, under the Ministry of Social Affairs, runs a central organization for advice, VISO, which refers problematic cases to a relevant specialist centre. In the education setting, there are different sources of AT expertise involved: the municipality PPR-office for children in primary schools and the SPS-office at the Ministry of Education for students (young and adults).

In **Italy**, specialist centres on AT play an important role although they are not an officially recognized part of the overall system. They were originally created on the initiative of user organisations and other NGOs. Later some AT centres were founded through the initiative of the rehabilitation departments of some Local Health Units. The GLIC Network[[184]](#footnote-184) includes 26 centres across Italy and the SIVA network (Servizio Informazione e Valutazione Ausili - Assistive Technology Information and Assessment Services) is composed of 10 Centres of the Don Carlo Gnocchi Foundation.

To date, there has not been a standardised approach to the services and operations of AT centres and each centre has developed its own tradition. They typically provide expert information and professional and customised support to persons with disability, their families and caregivers. They can be part of a rehabilitation centre or offer an autonomous service, as part of a wider information programme or specialist counselling. They often have a permanent AT exhibition.

The role and functioning of the AT centres is currently being discussed by GLIC (Gruppo di lavoro interregionale Centri di consulenza ausili informatici ed elettronici per disabili - Italian Network of consultancy centres on ICT AT) and SIMFER-Società Italiana di Medicina Fisica e Riabilitativa (Italian Society of Physical Medicine and Rehabilitation).[[185]](#footnote-185)

In some Italian regions (Emilia Romagna, Toscana, Friuli Venezia Giulia) independent expert centers are officially recognized by regional/local authorities. AT centers generally provide the user with a recommendation, whereas the prescription is always up to the NHS practitioners.

### AT education and training

The extent of education and training in AT for frontline (non-AT specialist) staff is an important aspect of quality in AT provision systems and services. As described in Chapter 3, there has been some activity in this area in Ireland but this could be further developed. Some approaches in the other countries are outlined below. In general, it seems that this is an aspect that is also under-developed in many other countries, with Norway standing out as having the most extensive provisions.

In **Norway**, NAV provides about 400 to 500 (free-of-charge) courses on AT annually. The focus is on short, continuing professional development courses rather than long-term education. There is accreditation of courses for professionals from the municipalities who are involved in provision of the simpler devices (bestillingsordningen). There are also courses addressing the different kinds of impairments and the different kinds of solutions or the provision process. More generally, some professionals, like occupational therapists, will have assistive technology as a part of their bachelor education. There is a new initiative at Oslo University College of Applied Sciences, planning to integrate AT in some of the master programmes.

In the **UK**, a major review of this field has been prepared by FAST.[[186]](#footnote-186) Although there are various educational/training provisions in the area of AT skills, the report identifies a lack of initial qualifications in AT as well as in continuing professional development across all sectors and actor groupings involved in AT provision services. A full pathway of proposed competences is mapped in detail against existing National Workforce Competences and National Occupational Standards, and also against the health sector functional map. The framework developed is intended to be relevant across all relevant sectors - education, housing, social care etc. An initial listing of competency clusters that need development is presented:

* AT for mobility, posture and seating
* Electronic AT: telecare, environmental controls and automated homes
* AT for lifelong learning and employment (ICT focus)
* AT for social communication - augmentative alternative communication (AAC)
* Interface and integration of AT systems
* Home nursing and telemedicine
* AT for sensory impairment
* AT for housing and the built environment
* AT for daily living and social care (community equipment/domiciliary care, including moving and handling)
* Prosthetics and orthotics
* AT for cognitive support (dementia and learning disabilities)
* AT for recreation and exercise
* Robotics and virtual reality
* AT for driving, public transport and navigation in the external environment.

One key issue on the agenda is accreditation of the many players that have increasingly important roles in the mixed-economy of AT provision (including the public services, private retailers, independent assessment centres etc.). For example, the NGO Abilitynet provides AT accreditation for providers of independent assessments (e.g. for applicants to the Access to Work scheme).[[187]](#footnote-187)

In **Denmark**, most case managers in the field of AT provision in the municipalities are trained occupational therapists (OT), a few are trained physiotherapists (PT) and, for some AT, administrative personnel may be the case managers. Lately, the field of AT has been strengthened in OT and PT education and in 2010 the Danish Centre for Assistive Technology published a 450-page book on this. More generally, there are regular courses on AT in case managing, the Social Services Act, and related subjects, primarily organised by The Danish Centre. The Centre also arranges courses and conferences for teachers and other professionals. In addition, it has established on-line information portals where professionals can seek information and exchange experience.

In **Italy**, this aspect is viewed by experts and practitioners as being under-developed. However, many AT Centres promote continuing professional development and organise seminars at local level. Usually these seminars are accredited within the ECM scheme (Continuous Education in Medicine) and give credits to professionals who participate. University educational programmes have begun to give more attention to AT in courses for occupational therapists, although this aspect is still very limited. There is a new postgraduate degree course “Tecnologie per l’autonomia” offered by Fondazione Don Carlo Gnocchi, together with the Milan Catholic University, which is unique in Italy. It is centred on technologies aimed at autonomy and social inclusion of people with disability and is addressed to doctors, physiotherapists, occupational therapists, speech therapists, prosthetics/AT/accessibility technicians and education professionals.[[188]](#footnote-188)

In **Germany**, the Integration Agencies run an education and training programme that aims to provide knowledge and skills to practitioners working in the field. It is targeted primarily at representatives of people with disabilities within companies, works councils and other stakeholder organisations. The course system is organised in modules and comprises both basic courses for newly elected disability representatives as well as advanced courses and information sessions on specific topics, including the role of AT. In 2009, a total of 1385 seminars and information events were held, attended by 38,488 people, mainly people who, as part of their job, deal with employment of disabled persons. *www.integrationsaemter.de* is a portal operated by the Integration Agencies. It includes an "Online College" (since 2008) which offers interactive tutorials, including some about AT. Discussion forums offer the opportunity to share experiences and put questions to experts.

### Information and awareness (users and other stakeholders)

Provision of information about AT and raising awareness amongst users and other stakeholders is another important aspect of a quality AT system. In the Irish context, as described in Chapter 3, the AssistIreland service provides a large amount of information and a number of NGOs also provide information about AT. Approaches in other countries are outlined below, some of which may provide useful pointers for further development of this aspect of the Irish system.

In the **UK,** NGOs have traditionally provided a lot of information about AT and some provide assistive technology databases, such as the extensive *Living Made Easy* website operated by the Disabled Living Foundation (DFL).[[189]](#footnote-189) In addition, networks operated by Independent Living Centres or Disabled Living Centres have drop-in facilities for information and advice and where people can also visit to view and test devices. They often provide free access to demonstration centres where sessions can be booked to meet and discuss issues with professionals.

AGE UK also provides information on AT, including extensive guidance on how to access publicly funded services as well as selling a range of home equipment (e.g. stair lifts, personal alarms, adapted chairs etc.).[[190]](#footnote-190) RNIB and RNID provide similar services for people with visual and hearing impairments, respectively.

Ricability is an independent consumer research charity providing free, practical and unbiased reports for older and disabled people.[[191]](#footnote-191) Topics that they have covered include mobility (wheelchairs, scooters, wheeled walking frames, cars), home living (digital TV equipment, digital radio, riser recliner chairs, stair lifts, domestic appliances, telephones, text-phones, central heating controls, kitchen equipment), and personal care (medication reminders, bathing aids, etc.).

On the public sector side, there have been relevant developments in relation to the new 'retail model' for community equipment. A national catalogue of equipment and the agreed tariff prices has been produced. More generally, this new retail approach has prompted a lot of attention to the issue of information provision and Ricability has produced a number of reports on this. One report focused on the information issues arising with the increased use of individual budgets and/or the retail approach to equipment provision[[192]](#footnote-192) and another focused on guidance for local authorities in this area. [[193]](#footnote-193)

In **The Netherlands** local municipalities provide web-based information on the procedures to follow to request support through the WMO but generally provide little to no information on AT. Health insurers offer a similar level of information, mainly procedure-related information. For more detailed information on AT, there are two main databases – Vilans and handywijzer.

The *Vilans* database[[194]](#footnote-194), connected to the Eastin[[195]](#footnote-195) network of databases from a number of EU countries, is now funded by a governmental agency and provides non-commercial independent information. The database is mainly consulted by practitioners and companies, and seems to be used to a limited extent by end-users. It provides a well-structured database and a reliable source, although it has been suggested that its usability could be improved. Financing of this database with public money is essential for its existence but it has been commented that this remains uncertain even though there is a political conviction that information provision is crucial to the level of independence of citizens. Handywijzer is a well-structured database providing in-depth information.[[196]](#footnote-196) However, the information is commercially entered and therefore may be incomplete and not necessarily impartial.

The Vilans database (also Handywijzer) is structured according to the ISO 9999 as well as the Dutch Cliq extension of the ISO. Several perspectives can be taken when searching the database, including the “from problem to solution” module which guides the user from an ICF activity to an ISO 9999 typology and then the current offer of models within this type can be provided.

The national organisation MEE is an organisation of local service bureaus aimed at supporting people with disability. They provide in-depth information on all three domains - living, employment and education - but mainly only procedural information in relation to AT. For detailed information on AT, links to Handywijzer or other minor databases are provided.[[197]](#footnote-197) In addition, Kiesbeter.nl (‘choose better’) is a national portal for information on care, including more specific AT information.[[198]](#footnote-198)

In **Denmark**, the Danish Centre for Assistive Technology has a national online database (AssistData) of assistive devices containing information on products, sellers, prices, as well as various other features.[[199]](#footnote-199) As of recently, nearly all of the information on the website is also provided in English. The database is designed to provide information on assistive technology products and associated information for end-users and their relatives, case managers, healthcare professionals, manufacturers, suppliers, policy makers and researchers. It provides detailed information about:

* A large number of assistive technology products available from Danish suppliers (about 20,000 product series from over 900 suppliers)
* Contact information on suppliers and manufacturers
* News
* Literature references
* Links to other information systems in the field of assistive technology
* A forum for user-to-user information and debate
* References to principled rulings in relation to appeals about the allocation of assistive devices or home adaptations in accordance with the Social Services Act.

The product information in the database is updated online by Danish suppliers and validated by an editorial team at the Danish Centre for Assistive Technology. All products are classified according to the ISO 9999 classification plus a subdivision refining the ISO classification. This approach was developed in cooperation with The Nordic Classification Group (supported by Nordic Centre for Welfare and Social Issues) following commonly agreed principles and rules. Associated information is classified according to the same classification structures, making it possible to refer from products to related associated information and vice versa. The website offers an advanced search engine with a simple and intuitive Google-like search interface, a step by step entrance through 6 subject categories, and a facility to browse through the classification groups. All main functions at the website are explained and demonstrated in 12 short video tutorials available from the website.

Besides pictures, descriptions and contact information to the suppliers of the products, detailed technical information is provided and brochures and user manuals are available. Some products are demonstrated with a short video presentation uploaded by the suppliers.

The technical information is structured and harmonized for each of the 1,000 or so product categories in the database. This gives the user of the system the possibility to retrieve lists of products with specific technical specifications. If a user, for example, wants to filter the list of more than 2000 X-frame wheelchair models to include only X-frame wheelchairs with “a sling seat”, “adjustable balance point” and a “weight <= 15 kg”, this can be specified using a detailed search function.

From each product category, links to similar products in the EASTIN portal and the Norwegian national database are included. This gives an easy access to search for products from other European countries. From the product categories, links to related associated information are also available. For example the database includes literature references and a forum where each reference/thread is mapped to the classification making it possible to link both from and to related product groups. The database includes about 300 literature references with abstracts and a Google Scholar input-field included from each reference, making it easy to search for a full text version of the referred literature.

Besides the forum and the literature references, the database includes news written by suppliers and the Danish Centre, and references to about 160 published principled rulings in relation to appeals about the allocation of assistive devices or home adaptations in accordance with the Social Services Act. All principled rulings are related to AT product categories in the database, which makes it possible to extract all rulings on a specific assistive device.

By October 2011 the forum had more than 1200 members, each having a detailed user profile registered in the database. It is free to become a member and approximately 2 new members sign up each day. The members are suppliers, end-users and professionals. The forum opened in March 2010 and by the end of 2010 more than 100 posts were submitted.

Other efforts towards awareness by the Danish Centre include: about 40 conferences, seminars, courses and workshops each year plus the ICT-fair; 5 online-networks; and several publications on different types of AT, the latest are a report on robots for daily living and a leaflet on electric scooters.[[200]](#footnote-200)

In **Norway**, a database containing information on AT is available from NAV[[201]](#footnote-201) as well as information on AT devices covered by central agreements and on assistive technology centre services.[[202]](#footnote-202) The [www.hjelpemiddeldatabasen.no](http://www.hjelpemiddeldatabasen.no) database is still under development and does not yet contain all the products so the information about assistive devices covered by central agreements at [www.nav.no](http://www.nav.no) is the more complete source at present. Each ATC has its own website in addition to the central information about AT and AT services on [www.nav.no](http://www.nav.no). Information provision is viewed as important and good experiences are reported with 'digital storytelling', where users show how AT is a part of their daily life.

In **Italy**, the SIVA portal is part of the European EASTIN network and is the only information system specifically focusing on AT.[[203]](#footnote-203) It provides information and guidance according to the different needs of users, researchers and professionals, and it has been formally recommended by professional organisations (SIMFER). The SIVA database enables a thorough and comprehensive knowledge of the AT on offer on the Italian market, providing information on devices (listed according to different criteria), prices, dealers and retailers. In this way it enhances the free choice of users, who can get information on how to meet their needs. It also provides fact sheets, guidelines and professional advice on request. For professionals, the database can be seen as a relevant point of reference for making the appropriate prescription; in addition, the Portal allows downloading of the experimental tool Modello Relazione di Valutazione Ausili (Model for AT Assessment Report), as a standardized prescription tool.

In **Germany**, there are a number of portals on the Internet that provide extensive information on the AT issue. *REHADAT* is the world's largest information system for vocational rehabilitation. It is operated by the Institute of German Economy (*Instituts der deutschen Wirtschaft Köln*), a major employer association, with funding also from the Federal Ministry of Labour and Social Affairs (BMAS). *INCOBS* (Information portal on computer aids for the blind and visually impaired) aims to assess the range of AT for people with visual impairments and support users e.g. through market surveys and checklists for product selection. It is funded by the Federal Ministry of Labour and Social Affairs and the DIAS GmbH, supported by the German Association of the Blind and Visually Impaired (DBSV) and the German Association for the Blind and Visually Impaired Students and Professionals (DVBS). A portal, *barrierefrei-kommunizieren.de,* includes a database on AT with a focus on communication aids. Another portal, [*www.integrationsaemter.de*](http://www.integrationsaemter.de)*,* operated by the Integration Agencies provides online tutorials and discussion forums that offer the opportunity to share experiences and put questions to experts.

Information can also be obtained from manufacturers and retailers at trade fairs and exhibitions**.** An example is the major annual REHACARE trade fair and congress in Düsseldorf. REHACARE also runs a website with a large amount of information which is updated throughout the year.

### User/consumer choice

User/consumer choice is another theme receiving increased attention in the AT field. This is especially an issue in countries where there have tended to be more restrictive 'list' systems of AT provision and also in systems, like the Irish one, where there is an extensive public-private mix in how AT is acquired. Some relevant approaches to user/consumer choice in the other countries are outlined below.

In the **UK**, there has been a significant policy move towards greater personalisation of social care services (*Transforming Adult Social Care* programme), with the introduction of personal budgets as a core aspect of this. This provides the overarching context for a number of arrangements that have been introduced in relation to AT.

In the case of wheelchairs, the traditional approach (for manual or powered wheelchairs) was to offer a limited range of standard models without much in the way of choice. The NHS provides such wheelchairs free of charge and also pays for servicing and repairs so long as these are not needed because of misuse or neglect. Apart from this, some wheelchair departments operate a voucher scheme. In this case they provide three options:

* standard option: as described above
* partnership option: the person can choose an alternative model to the one they are assessed as needing; they are then given a voucher to the value of the one that was initially prescribed and pay the difference in costs; in this case the NHS provides repairs and maintenance, and the wheelchair is still technically on loan; users must use approved suppliers who meet agreed standards of service quality
* independent option: this is similar to the partnership except that the person owns the wheelchair and is responsible for repair and maintenance; the voucher includes an amount towards repair and maintenance costs.

Also relevant is the Motability Scheme which is based on the mobility component of a person's Disability Living Allowance (DLA) as payment.[[204]](#footnote-204) DLA's only apply to persons under the retirement age. The mobility component of the DLA can either cover a hire-purchase agreement (where the user eventually owns the wheelchair and assumes responsibility for its maintenance) or a 'contract hire' agreement (where the wheelchair is leased from the seller and returned after the contract period). Users do not necessarily have to have been needs-assessed or to have received advice from healthcare personnel, but may be expected to seek advice from trained Motability staff at the sales outlet.

In the case *of* community equipment, the new 'retail model' has introduced a greater possibility for choice/control in relation to the simpler items of AT that are covered under 'community equipment'. This approach is seen as empowering users as well as encouraging innovation in equipment provision to both public funded users and self-funded persons.

For simple equipment, the relevant public service professional (local authority or NHS) issues a 'prescription' that can be exchanged for free equipment at an accredited retailer. Descriptions for the basic equipment list have been provided in a national catalogue containing a tariff price.[[205]](#footnote-205) If a service users wishes to get an alternative piece of equipment, not on the catalogue but that would meet the need, they can pay the cost difference.

The model also includes creation of new independent needs assessors (appropriately qualified professionals such as occupational therapists and physiotherapists) to assess equipment needs and make recommendations. Their role would be to provide assessments for people who choose not to or are ineligible for public service provision. They would also provide other related services, such as additional therapeutic interventions and advice.

In the **Netherlands**, under the insurance system, some policies (higher premium) allow free choice of supplier and others are mainly oriented towards supply of an established list of products from a list of contracted suppliers. The insurance companies have also piloted personal budgets in this area but have so far not judged this to work very well.

Under the municipality system, a personal budget system (PGB) is in place that can be used in relation to some AT, such as wheelchairs and other AT. Under this option, users take a requirement specification to the supplier and the budget amount is based on this. The amount also includes coverage of insurance, servicing, advice, training etc. AT acquired in this way is owned by the user. So far only a small proportion of AT is acquired through personal budgets. The option was welcomed by stakeholders for its ability to tailor solutions for individuals. However, it has been commented that municipalities are not always very well-equipped to deal with the personal budget and the resulting issues. The approach is currently under discussion and facing cutback as there have been concerns that it is too expensive. Another issue that has been raised is lack of flexibility offered in terms of substitution of care by AT or vice versa, and that this lowers the potential for individualised and tailored solutions.

In the employment sector, there has been some piloting of personal budgets to support people to access mainstream employment and this can be used for AT as well as other purposes. In the education sector there is also some degree of user choice in relation to how the student-related subsidy is spent.

In **Denmark**, up to recently, the main provision was that users of specific personal assistive devices (breast prostheses, stoma products, orthopaedic shoes, specially adapted wheelchairs, etc.) could choose to use a voucher system. The voucher contains a requirement specification for the allocated assistive device, specifically developed for each applicant in order to ensure that the user gets guidance and the allocating authority is sure of the assistive device’s function and quality. Follow-up procedures vary, but may be in the form of a telephone conversation or home visit. The assistive device is generally still owned by the municipality, even if the user pays an additional sum for the assistive device.

An amendment to the Social Service Act in 2010 introduced 'Free Choice of Assistive Technology'. This makes it possible to freely select a supplier for all types of assistive device (insofar as the municipality cannot make an identical assistive device available). It is possible to buy a more expensive assistive device and pay the difference in price. Users purchase their assistive devices themselves and are then reimbursed the price, to a maximum of the sum which corresponds either to the price the municipality has agreed with its supplier, or, if the municipality has not agreed a price, that of the most suitable and cheapest assistive device.

The assistive device must be returned to the municipality if users no longer require their assistive device. This also has to apply in cases where users have purchased a more expensive assistive device and paid the extra cost themselves. If the user’s purchase results in greater usability for subsequent users, the user may receive reimbursement for the extra cost, providing the assistive device is returned within four years of the purchase date, and the extra cost exceeds DKK 2,500.

In the case of hearing aids, people can get a hearing aid test or a hearing aid from public hearing centres but can also choose to use a private hearing centre. This option was introduced because of long waiting times at public hearing centres. The private hearing centres are authorised by the Danish Institute for Health Care in accordance with nationally applicable criteria. Users receive a basic sum of DKK 5,420 per ear (2011 prices) to include servicing, and pay any extra costs themselves. The user then owns the hearing aid. A new hearing aid can be requested after four years. The proportion of private sales has increased from 25 per cent in 2005 to around 40 per cent in 2008.

In **Norway**, in most cases, users are allocated or choose AT for which a price has been negotiated and approved by NAV and there is a list of such AT available for users to consult. Nevertheless, if justified by medical documentation, it is possible to get AT for which a price has not been negotiated. In the case that the device is more expensive, the difference is covered by the public financing. In addition, there are certain other possibilities for some degree of user/consumer choice.

The user pass system, mentioned earlier, gives experienced users more direct influence/choice in relation to AT that they get from the public system (in the processes of acquiring, replacing, adjusting and repairing AT). For these users there is also a voucher option as an alternative to seeking the AT from the assistive technology centre, enabling users to directly order devices themselves from suppliers. More generally, those with the user pass have choice in regard to which cooperation party (municipality, assistive technology centre, supplier) they wish to be assisted by in the various aspects of the service provision process, from identifying the need to receiving an AT device that they are satisfied with. The approach gives users more choice and responsibility but without cutting them off from the regular system and its advice and other supports. AT centres have the same responsibilities for AT acquired through the user pass as they have when the regular system is used. Also, AT obtained via the user pass remains owned by NAV. The number of users with a “user pass” has remained fairly low.

In the educational context, a fixed subsidy was previously available for purchase of a standard computer if needed for assistive technology purposes. However, since the summer of 2010, standard computers are regarded as white/brown products and must be paid for by the users themselves. Standard computers are no longer provided by the AT centres. The user is free to choose a supplier and the equipment becomes their property.

In **Italy,** there is a certain degree of user/consumer choice within the public AT support system. For example, there is choice of supplier for items on the NT that are not acquired directly or through bulk contract by the ASLs. For ATs not included in public procurement contracts, the Individual Assistance Programmes allow the user to freely buy his/her preferred device and this will be reimbursed by the NHS up to the established threshold. Users can purchase items that are more expensive than the ones on the NT list provided that they pay the price difference.

Generally speaking, the regulations allow free choice for users: the practitioner chooses the kind of device, whereas the user can choose brand and model of the device that best fit his/her needs. However, this approach is often constrained by public procurement procedures, according to which the NHS only provides the device supplied by the company that was awarded the call for tender. Overall, there seems to be some variation across Local Health Units in the extent of free choice for users.

Some regions have begun to introduce personal budgets for costs of disability where needs are not met by the public system (e.g. Lombardy, Emilia Romagna). These can be used for purchase of AT in the same way as other services and supports. These are flexible systems allowing the money to be spent on needs in relation to work, education or other purposes.

### Performance monitoring, statistics and evidence base

Performance monitoring as well as generation of statistics and the wider evidence base are other important aspects of AT provision systems and services. They enable effectiveness and quality to be assessed and provide a basis for improvement and change if required. These aspects are not currently well-developed in the Irish context, although recently more statistics on levels of usage and unmet need for AT have become available through the National Physical and Sensory Disability Database and the National Disability Survey of 2006. This section presents some of the approaches that have been applied in the other countries.

In the **UK**, there have been a number of important once-off reviews of services, for example in England[[206]](#footnote-206) and in Northern Ireland.[[207]](#footnote-207) One interesting aspect of the Audit Commission's review in 2000 was the picture compiled in terms of expenditure versus number of users covered. This showed that the different elements of the service (orthotics, prosthetics, wheelchairs/seating, community equipment, and audiology) had quite different profiles in this regard, reflecting both the typical costs of the AT concerned and the numbers who needed such services. For example, as might be expected, prosthetics and orthotics services had relatively low numbers of users and a typically high AT expenditure per user, whereas audiology services had a relatively high number of users and a much lower AT expenditure per user.

In England there are also regular surveys of recipients of personal social services, including recipients of community equipment and minor adaptations.[[208]](#footnote-208) Issues addressed include satisfaction and quality of life, assessment and installation process, and impacts of the equipment / minor adaptation. Some key results include:

* levels of satisfaction with the equipment/adaptation received were quite high (43% extremely satisfied; 34% very satisfied; 16% quite satisfied)
* vast majority reported that the equipment/minor adaptation had made their quality of life better (68% much better; 27% a little better)
* one quarter said that they needed less help from others following receipt of the AT
* vast majority (98%) said they were very happy or fairly happy with the way they were treated by those who discussed their needs with them
* about one in five said they had experienced some problems with waiting times, mostly minor problems (15%) and less frequently serious problems (4%)
* higher levels of satisfaction were found among users who chose what AT they wanted and those who felt that the AT had been set up and demonstrated clearly and helpfully.

There are also annual statistics prepared on the numbers of clients receiving equipment and adaptations under the community equipment services.[[209]](#footnote-209) For example, a total of 519,000 people were registered as receiving these services in 2008-2009.

In the employment field, the AtW programme produces annual statistics on numbers of clients served.[[210]](#footnote-210) This includes statistics on numbers provided with 'special aids and equipment', with details on type of disability though not on type of AT provided. In 2010/2011 a total of 7,430 people were provided with special aids and equipment.

In the **Netherlands**, monitoring of the general functioning of system is well developed. Annual monitoring reports are available both on a national and local level, although there is relatively little assessment of outcomes at individual level. For example, there have been substantial evaluations of the WMO by the governmental organisation, Sociaal en Cultureel planbureau, although AT services are just a part of this.[[211]](#footnote-211) Municipalities also monitor their local WMO implementation. Evaluations of ZVW functioning are conducted by the Dutch Care authority NzA, a governmental organisation, again with a broader scope than just AT.[[212]](#footnote-212) Health insurance companies also monitor their execution of the ZVW. There are also annual evaluations of AWBZ operation (again by NzA) which provides AT for a small percentage of people.[[213]](#footnote-213) On the basis of these various evaluations the Minister for Health now proposes to reduce the AT provision regulations from three to two. The AWBZ option is to disappear and the temporary loan of AT will be distributed over the ZVW and the WMO according to the distribution of the corresponding types of ATs.[[214]](#footnote-214) This is to come into effect in 2013.

More generally, the GIP database provides data on numbers provided with AT under the insurance system and WMO reports compile data on numbers of clients. There have also been other representative studies on AT usage.[[215]](#footnote-215)

In **Denmark**, the municipality is required to give an overall estimate of the expected waiting time for the different types of cases and to publish this. If the waiting time is exceeded, the municipality has to account for it in each case. The Social Appeals Board (SAB) publishes annual statistics on casework time but there is no national monitoring of the quality of the service in terms of how well the citizen's needs are met in practice. More generally, there has also been some research on impacts and cost-effectiveness of AT.[[216]](#footnote-216)

In **Norway**, NAV registers a lot of data in its computer system and produces some standard statistics every month. This provides a good mechanism for follow up the AT centres with regard to target goals that have been set for them. There are regular video conference meetings with all the AT centres (3 times a year) where goal achievement is discussed.

NAV produces a lot of statistics on aspects such as usage of the services and average costs per user. Monthly statistics are prepared on delivery times, service and repairs (number and percentage of cases solved within 7 days), refurbishment/use of second-hand devices, number of users, expenditure on assistive devices (bought by the AT centres), value of different services bought from cooperating partners. Some examples are provided in the following Tables.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The number of users who have received one or several assistive devices from the AT centres in Norway. Average expenses per user and inhabitant (Values in NOK) | | | | |
|  | 2007 | 2008 | 2009 | 2010 |
| Number of users who have received one or several assistive devices from the AT centres | 152 416 | 152 844 | 149 766 | 146 482 |
| Average expenses per user (NOK) | 16 784 | 17 447 | 17 573 | 18 045 |
| Average expenses per inhabilitant (NOK) | 540 | 563 | 543 | 546 |

|  |  |  |  |
| --- | --- | --- | --- |
| The number of distributed assistive devices from all the AT centres in total and within 3 weeks (%) in Norway in 2008-2010. | | | |
|  | 2008 | 2009 | 2010 |
| Number of distributed assistive devices | 598 007 | 581 342 | 577 105 |
| Number of distributed assistive devices within 3 weeks | 458 700 | 463 245 | 448 720 |
| Percentage distributed within 3 weeks | 77 % | 80 % | 78 % |

Statistics on the age distribution of users are also compiled. In 2010, for example, the profile was: 0-18 years (11.1%); 18-26 years (2.2%); 26-40 years (4.0%); 40-67 years (20.1%); 67-80 years (20.8%); > 80 years (41.7%).

In the past three years, also, there have been three surveys (unpublished). In two of the surveys the end users, when they were provided with an assistive device, were asked to rate their satisfaction with the service delivery system. In the other survey, therapists in the municipalities were asked to rate their satisfaction with aspects of the cooperation with the AT centre in their county. The degree of satisfaction was found to be high in both of the surveys.

In **Italy**, there seems to be little or no monitoring of this kind, although an experimental exercise in Lombardy did address the tracking of prosthetic prescriptions.

### Complaints and appeals

Finally, possibilities for users to make complaints or to appeal against decisions are an important aspect of quality systems.

In the **UK**, in 2009, a new joint health and social care complaints procedure was introduced in England. Arrangements for handling complaints about adult social care services (including community equipment) are now covered by the *Local Authority Social Services and NHS Complaints Regulations 2009.[[217]](#footnote-217)* This makes provision for complaints about services received or about the assessment of needs process. In cases where this avenue fails, there is also the possibility to approach the Local Government Ombudsman. If the service has been received from the NHS, there is a complaints procedure through the local Independent Complaints Advisory Service (ICAS).

In the **Netherlands** there are a number of complaints/appeals avenues.

For the ZVW system, the Insurance Act stipulates that an independent and impartial body must be available to whom clients can submit problems they have with a health insurance company. As going to court is a barrier for many clients, the Foundation Health Insurance Complaints and Disputes (SKGZ) was established in 2006 by Health Insurers and the Dutch Patients and Consumers Federation (NCPF). The Board of SKGZ consists of representatives of both parties. The SKGZ may treat client problems in one of two ways: as a complaint or a dispute. A complaint can concern both the basic and supplementary insurance, whereas a dispute can only concern the basic insurance. When a client submits a complaint, the Health Insurance “Ombudsman” will mediate and seek a satisfactory solution. This body, which was established in 1999, functions since 2006 under the auspices of the SKGZ. In case of a dispute, the Disputes Committee examines the problem. The law stipulates that the CVZ has an advisory role in such cases. The outcome of a dispute is a binding advice of the Disputes Committee. Both parties must accept the advice and act accordingly.

Complaints against a decision in the context of WMO operation by a municipality can be made at the municipality in question, following a number of steps. A written objection is submitted against the decision, which the Municipality is expected to address through reconsideration of the decision. If there is still an objection, the next step is a court appeal against the decision. If that ruling still meets objection, there is a final possibility of appeal at the central court of appeal against the decision.

Complaints are generally concerned with the decision/rejection of the requested support or the provision of a solution other than anticipated, rather than in relation to a person being badly treated. In practice, it seems that relatively few people file complaints. The complaints that are received give rise to discussion on modification of the regulation. The approach is considered to be effective in the sense that decisions actually are reconsidered.

In **Denmark**, people can complain to local Social Services Council (SSC), of which there is one in every county council. The main function of the SSC is to secure that the ruling of the municipality is within the Social Services Act and the Act on Legal Protection and Administration of Social Affairs. If the SSC disagrees with the ruling of the municipality, they will make a comment on certain aspects and oblige the municipality to reconsider the case. If this reconsideration doesn’t lead to any change in the ruling, the SSC can rule against the municipality. On the other hand, the SSC can sustain the ruling of the municipality, i.e. go against the applicant.

Both the applicant and the municipality can appeal to the next level: the Social Appeals Board (SAB). The SAB takes on cases that have a principled aspect. The rulings of the SAB are published on their website as “Principled Rulings” (Principafgørelser) and hold the same legal weight as the Act, and there is no further appeal.

The rulings of the SSC are instructive. The rulings of the SAB are legal and are a means of clarifying the Act. All rulings in relation to the Social Services Act are based on estimates, “soft” facts, and interpretation.

The SSCs had, in total, 2,300 cases concerning AT in 2006. Figures for later years are not readily extracted from the published statistics, but they are probably increasing. The SAB issues about 2-5 new Principled Rulings concerning AT every month. It is felt very important that the citizen has a means of appeal and, in practice, the SSC changes the rulings of the municipality in about 25% of the tried cases.

In **Norway**, if a user feels their requests have not been fully granted they can appeal to the appeals authority within 6 weeks. If this is unsuccessful, they can submit to the National Insurance Court (of Appeal) within 6 weeks. According to available statistics, 93% of the applications are approved, 4% are rejected (refused) and, in the last 3-4 % of cases, they do not need the device any more (user has passed away or the needs have changed such as the user now needing a wheelchair instead of the rollator he/she applied for). In 2010, the AT centres received a total of 175,552 applications, of which 7,022 were rejected. Users made an appeal in 1,253 cases and the user was granted an assistive device in 125 of these cases.The same system operates for all kinds of assistive devices and in the different settings. The user can appeal the decisions of the AT centres to two separate appeal entities, one inside the NAV organisation and one outside NAV. If the case is rejected the user can bring the case to the civil court.

The appeal system is considered very important for the user as well as for the AT centres. The AT centres get feedback on their own interpretation from the law, and this helps to secure the same practice across the whole country.

In **Italy**, there are no complaints/appeal procedures specifically relating to AT provision. However, a citizen whose right has been denied can use normal procedures through legal action/appeal to the ombudsman.

## Market functioning and costs

Good functioning of the supply side of the AT market is an important factor in relation to the overall functioning of the AT provision systems in a country. One aspect of this is the influence exerted by the public system in terms of procurement arrangements. Another aspect is the extent to which retail prices for consumers are offered at reasonable and competitive rates.

In Ireland, the HSE has recently begun to address the procurement side and a large-scale framework procurement process has begun to be implemented. On the consumer side, the evidence generated in this study, suggests that prices may be quite high in Ireland in comparison to other countries such as the UK. Discussions with respondents from NGOs suggested that the need to source AT from UK or mainland European suppliers pushes up costs and leads to increased prices for users. Even if AT is sourced through Irish suppliers, they generally source their products abroad.

Some NGO respondents noted a lack of competition in the market around pricing and the potential for monopolisation amongst suppliers. One commentator felt that AT devices still tend to be considered as medical devices and that this keeps the prices high. In addition, the requirement to obtain multiple quotes for AT equipment can cause some difficulty. Where there are few suppliers in the market for particular items, it is not always possible to meet this requirement.

A number of NGOs provide AT retail services and purchase and maintain stocks of equipment. Various approaches were mentioned in the context of efforts to keep AT costs as low as possible, for example, using a company to source their AT rather than buying directly from various suppliers or trying to cut out the supplier by sourcing products directly on-line.

The opportunity to trial AT equipment was reported to be a major factor in whether it will be successful in meeting the person’s needs. Purchasing AT that turns out to be unsuccessful, for whatever reason, is a costly exercise. Difficulties in this regard can arise when people go directly to a supplier who may not understand the client’s particular needs and may supply them with something which turns out to be inappropriate and of no use to them. The Try-It.ie programme was noted as a useful way of trying out devices for suitability. NGOs also borrow equipment from each other for trial purposes, where this is possible. Software companies offer their products to organisations for short trial periods but unless the organisation is a large consumer they cannot avail of any discounts.

NGOs often depend on their suppliers’ knowledge of the AT that they may require, although it was felt that knowledge levels can vary from supplier to supplier, depending on how well-trained their staff are, and how up-to-date they are on new developments. One commentator noted that therapists from both the HSE and the NGO sectors sometimes try to get suppliers involved in client assessments. This can be useful in terms of the therapist availing of the supplier's knowledge. However, a potential downside is that where the therapists themselves do not have a good knowledge of AT they can be overly influenced by the supplier. For suppliers, there is also the potential that, having put work into a client assessment, the purchaser/funder may decide to procure the item from another supplier whose price is lower.

Some relevant aspects of the approaches in this area in the other countries are highlighted below.

In the **UK**, the new 'retail model' for community equipment provision, as described earlier, is relevant in relation to costs and prices. The national equipment catalogue includes the tariffs at which the suppliers will be reimbursed for those who have public service 'prescriptions'.[[218]](#footnote-218) As well as influencing the prices that will be paid by the public services, this approach is also likely to help ensure that those who must self-pay will be able to do so at reasonable prices.

In **The Netherlands**, the healthcare insurers under the ZVW legislation are private companies although they must offer insurance within the constraints of the legislation. This implies they have to offer a range of care determined by the government within the basic package. However, the costs of their insurance may vary within a certain bandwidth so the system is competitive in a limited way. They try to compete through price arrangements for the basic package, additional insurance combinations and collective contracts (e.g. discounts on premiums for employees of larger organisations, and so on). In reality, the main issue is cost saving for the care they buy from suppliers and they use their market influence in this regard. AT suppliers are required to offer lump sum contracts within a type of care provision, where the product not only involves the AT itself but also after sales and servicing. In order to make a profit on competitively priced contracts, suppliers will try to provide cheaper products and less service.

Under the WMO, municipalities follow a similar strategy in buying the care for their citizens from suppliers, with large contracts and fixed pricing. It has been argued that choice for the consumer, service and after sales are victims in such arrangements. The commercial system was introduced in 1996 because the previous system was becoming too expensive, even though it guaranteed consistent quality. It has been argued that quality assurance is important if a competitive system such as the current one is to work.

Overall, at present the Dutch system is considered to lead to containment of costs for the national government. For vendors it is less profitable as they have to offer their products under heavy competition and need to enhance the scale of their products. For users, it has been suggested that these efforts to achieve cost-efficiency may lead to a reduced quality of the products and services that they receive.

In **Denmark**, several municipalities often join together in public procurements to ensure large purchases and low prices through competition between the different suppliers. The procurement process is complicated and costly, especially in manpower, for both sides. For the public system, there is an advantage in that prices are kept to a minimum for the products, but for the end-users there is the risk that the range of supply may be limited. For the suppliers, the process is stressful because there may be serious consequences from losing a procurement contract (most procurement contracts last 2-4 years).

For users not funded under the public system, retail prices for most products can be found on AssistData Denmark.[[219]](#footnote-219) These prices are likely to be higher than the ones the municipalities pay through their procurement procedures.

In **Norway**, NAV sentralt is responsible for entering into agreements with suppliers of assistive devices for the major groups of AT. For the smaller assistive device groups such as ‘Activities of Daily Living' aids, the AT centres enter into direct agreements with suppliers. Framework agreements have been used by NAV sentralt to ensure that a national range of good quality devices is available at a reasonable price. Previously AT centres selected their local ranges based on the national range. Since the implementation of new EU procurement directive (2007), the national standard of assistive devices must be available at all the AT centres.

The strength of the framework agreements is that NAV gets good quality products at a fair price. NAV generally emphasises quality more than price when making such agreements with the dealers. In general, experience suggests that most of the users get assistive devices which solve their practical problems in an effective way and the quality is generally good. One benefit from this is that it allows substantial re-use of assistive devices. There is a system for refurbishment of the assistive devices. On average, 31% of the assistive devices supplied by NAV were secondhand in 2010. As a variety of products/models within each category (e.g. within the manual wheelchairs category) are provided to users it is a challenge for the AT centres to have spare parts for all the different models.

Reference groups have been set up for the various product areas, consisting of staff from NAV sentralt, specialists from the AT centres and users themselves. The role of the reference groups is to recommend relevant products for which price negotiations would be desirable.

Since the new EU rules and regulations were implemented in 2007, prices of the assistive devices have been reduced, considerably in many cases. Competition among the suppliers to get a framework agreement with NAV has become harder. The challenge is to get a variety of products within the different categories (in order to solve the users’ practical problems) and, at the same time, fulfil the EU rules and regulations (which demand a winner within each category). This is achieved by dividing the different assistive devices into sub-categories and selecting a winner for each sub-category.

In **Italy**, most AT is purchased through the National Health Service, according to the 3 sub-lists included in the Nomenclatore Tariffario. As a consequence, there is a fixed reimbursement price, depending on public provision contracts. Calls for tender (regarding products within List 2 of the NT) for ATs are not always based on quality criteria. Often, the primary standard for judgement is price. This leads to the paradox that low quality products may have higher prices in comparison to their production costs and, vice-versa, companies manufacturing high quality products tend to bring down prices just to stay in the market.

AT companies find the process to be strict and, since the procedure has remained the same for 12 years, it doesn’t allow price evolution adjusted according to the development of technologies. The system creates a market in which there are unquestionably underpaid and overpaid AT products.

Users tend to purchase AT devices autonomously, if they have the financial means, in order to avoid long waiting times. Research on prices has been conducted by Fondazione Don Carlo Gnocchi (IMECAP - Impatto Economico Assistenza protesica = Economic impact of the public Assistive Technology Service Delivery system, in relation to the new release of the NT). As a result, a Price Observatory has been implemented on the SIVA Portal and shows the range of prices within specific groups of products (which can be considerable). [[220]](#footnote-220)

The NHS provision procedure, based on the listing of devices within the Nomenclatore Tariffario, expands the market and allows economies of scale for companies with benefits for users in terms of wider and more varied possibility of choice. Some AT devices which are not included in the NT have noticeably higher prices if compared to their likely price if they were listed within the NT. Another factor to be taken into consideration is that small AT manufacturers (for example there are only eight companies in Italy producing computer-based assistive devices) cannot manage to produce and supply products in a quantity that could hold down costs. Furthermore, service costs are not considered as separated from product costs, so “service intensive” products turn out to have considerably higher retail prices.

The government is working at a registry, containing reviews of brands and models. In addition, there is a national AT registry, developed as a joint effort of the main AT companies associations (CSR - Commissione di Studio e Ricerca sugli Ausili tecnici per persone disabil). This is a voluntary industry initiative which assures that each company commits itself to providing transparent data, following a common scheme: each registered product comes with a dossier of documents, prepared in accordance with a code of conduct that assures the accuracy, comprehensiveness and transparency of the information contained therein. This registry can be considered as a quality assessment tool promoted by an industrial self-registration.

## Developments in Telecare, Telehealth and other related fields

As well as the core focus on more traditionally defined AT, the study gave some attention to developments in related fields, such as telecare and telehealth. The conceptualisation of the overall field that has been adopted in the study has already been outlined in Chapter 1. Its main features are recapitulated here in order to provide a contextualisation for the material and analysis presented in this section. The schema presented again here in Figure 10 shows how the AT domain is positioned in relation to these other domains.

**Figure 10. The assistive technology and other related domains**

The state-of-the-art in telecare and home telehealth developments has recently been presented in a major study for the European Commission. [[221]](#footnote-221) As discussed in that study, the term telecare is typically used to refer to provision of social care from a distance, supported by telecommunications. A broad spectrum of applications and service elements fall within the scope of this definition of telecare. One classification system distinguishes between three generations of telecare, based on an evolution of the traditional 'social alarm' model:

* First-generation: uses a simple telephone unit and a pendant with a button that can be triggered when help is required by the user; monitoring centre systems receive the call and identify the caller and the caller’s address; initial diagnosis of the nature and urgency of the need can be explored by voice link; nominated response personnel (informal or formal carers) are alerted as required by the situation, following an established protocol
* Second-generation: this adds a 'passive' or automatic alarm dimension (no need for the older person to actively trigger the alarm) enabled by the implementation of sensors such as smoke, fire and flood detectors, among others, in the older person's home; when activated, these trigger an alert to the call centre and initiate the necessary response
* Third-generation: these are a more advanced type of telecare service, which collect everyday activity data automatically through various sensors such as front door open/close detectors, fridge open/close detectors, pressure mats, bed/chair occupancy and electrical usage sensors; data is presented to care personnel or family carers to monitor wellbeing and assess the need for help and support.

Other relevant trends in telecare include: mobile telecare (mobile phones and GPS systems, in principle, enable the traditional home-based telecare services to be provided to older people when they are out and about) and video-based telecare (visual communication is enabled between older people and carer personnel or family carers; purpose may include social communications and/or visual monitoring of wellbeing).

In relation to telehealth, the main aspect of interest for the current study is home telehealth, especially applications that can support people with chronic health conditions to better manage these at home. There has been a lot of interest and activity in the development of telehealth systems (including home equipment and links to clinical support systems) for conditions such as COPD, CHD and diabetes.

As already noted in Chapter 1, telecare and home telehealth differ from the traditional AT domain in that they are (remote) **care services**, where the core logic is to monitor and transmit information from the home/person to some form of care service that will respond to needs as they arise. These areas offer great potential for innovation and cost-containment in service provision[[222]](#footnote-222), although a range of ethical issues that need to be considered have also been identified.[[223]](#footnote-223) First results from the major 'whole systems demonstrator' trials in the UK, for example, are reported as being very positive, including substantial reductions in A&E visits, emergency admissions, elective admissions, bed days, tariff costs and, strikingly, in mortality rates.

Assistive technology, in the sense that the term is generally used, can be considered to encompass products/equipment oriented towards providing immediate functionality to support an older person or person with disabilities and/or their local carer. In most countries, in fact, the AT domain is more or less separate in terms of having its own place in the logic of the health/social care system and its own provision system, with telecare/telehealth developments evolving as a separate domain. Only in the UK, it seems, is the term assistive technology commonly used to encompass telecare/telehealth (in fact, in the UK the term AT sometimes seems to be used mainly to refer to these more service-oriented concepts, with terms like 'community equipment' used to refer to what is more typically considered as AT in other countries).

The schema also identifies some other relevant and topical concepts in this domain, namely, 'ambient assisted living' (AAL) and 'welfare technology'. The AAL terminology has recently come to be used quite widely and there is a specific AAL funding programme at European level (involving matching national level and European funding contributions). Ambient assisted living (AAL) is using technology to improve the quality of life and maintain independence of older people and people with disabilities. Strictly, this fits most directly with the third generation telecare concept outlined above. In practice, it has come to be used in a much broader sense although the extent to which this is actually useful for supporting developments in this field has been questioned.[[224]](#footnote-224) Perhaps of more interest, in the Irish context, is the emerging concept of 'welfare technology'. This has come to be used, in the Nordic countries, as an umbrella term to describe a broad range of technologies that can support welfare objectives. The use of different types of technologies and processes make it possible to produce public services more efficiently, e.g. using less manpower, making certain tasks superfluous, or making it possible to improve the quality of public services with an unchanged use of manpower. In this context, there has been a growing focus on the 'win-win-win' opportunities for a country in terms of simultaneously meeting needs of citizens, helping to achieve better cost-effectiveness in health and social care, and developing new industries and market opportunities.

**Ireland**

In the Irish context, the current level of activity in relation to these new developments is not as advanced as in some of the other countries covered. There have been only limited experience of piloting home telehealth programmes as well as in relation to more advanced forms of telecare (for example, by the Alzheimer Society to support people with dementia and their carers).

In the area of first generation telecare (i.e. social/community alarms), however, the penetration levels in Ireland are quite high by international standards and this could provide a platform for roll-out of more advanced services.**[[225]](#footnote-225)** This seems to have been driven by the availability of funding under the Scheme of Community Support for Older People. However, even if there has been public funding for installation costs, the Irish approach is essentially a private one and this is different to the situation in most of the other countries. In Ireland, the social alarms services are mainly provided by private suppliers (mostly commercial but some non-profit also), the services are not integrated into the mainstream social care system and services, and family members are mainly responsible for providing the response in case of need. Unlike the other countries, the social care services (HSE) do not generally include social alarms within their current repertoire although this has come onto the agenda, and some pilot activities have been initiated. However, sheltered housing is one sector where there is quite a lot of provision of social alarms.[[226]](#footnote-226) This sector might be an area for more focused attention on possibilities for technological innovation in the future, and there are some interesting efforts in this regard in some of the other countries (e.g. The Netherlands).

As regards the 'welfare technology' concept, there has been some interest in the domain in Ireland even if the particular terminology does not tend to be used. Enterprise Ireland and Forfás have given this area some attention and there have been a number of public-private initiatives, such as TRIL.[[227]](#footnote-227) Overall, however, it can be argued that this is an area that warrants increased strategic attention at policy level, especially in terms of developing an understanding of the domain and identifying where it's real potential may lie to achieve the 'win-win-win' possibilities. Some of the other countries covered appear to be more advanced in this regard and first-to-market opportunities may be at risk of being lost in Ireland as a result.

**Some relevant developments in the other countries**

In the other countries, social or community alarms (first generation telecare) are also the most widely used form of telecare at present. For more advanced telecare, the technologies and service concepts are now relatively mature and there is a lot of pilot and small-scale activity across Europe. So far, however, only in the UK has there been a concerted push towards widescale, mainstream implementation of telecare to support older people to live at home. Across Europe, there is also growing activity in the field of home telehealth, although in general the level of maturity is around the same as for the more advanced forms of telecare. In the UK, again, there has been quite strong activity. As regards the 'win-win-win' possibilities from the broader 'welfare technology' approach, countries such as Denmarkand Finlandseem to be especially progressive. Some examples of a number of interesting approaches in the various areas are briefly outlined below.

In the **Netherlands,** a 'domotics' programme for mainstreaming of independent living technology in the serviced housing sector has been introduced[[228]](#footnote-228), with initial joint funding from the Ministry of Housing, Spatial Planning and the Environment and the Ministry of Health, Welfare and Sport.[[229]](#footnote-229) As a result of this, a policy of paying €2500 to €3000 extra per apartment on smart home technology was introduced if the apartment is to be occupied by a person in need of care. Only care organisations and/or housing associations developing serviced housing stock for older persons (serviced accommodation) are eligible for the allowance. A range of technology solutions are eligible for funding:

* Personal alarm systems, including systems that need to be actively triggered by the client and systems automatically triggering an alarm in case of an emergency as well as dedicated fire alarm systems
* Systems enabling teleconsultations and remote monitoring, including video-based systems requiring a broadband connection and systems enabling remote access to care records by professional staff and/or clients
* Home automation systems enabling the older person to control the immediate home environment, such as automatic door opening systems, intercoms and control systems for home appliances
* Systems enabling access to on-demand support in relation to activities of daily living such as meals on wheels and home care as well as social integration
* IT systems supporting human resource planning, logistics and general administrative functions concerning health/care related service provision
* Assistive devices such as large button panels for people with dexterity problems and large screens for people with visual restrictions.

In **Denmark**, there has especially been a focus on the 'welfare technology' concept and the government has allocated 3 billion DKK (about 400 million Euros) to a dedicated programme (2009 to 2015) directed towards developing and improving public sector services through the implementation of labour-saving technologies and more efficient working processes. [[230]](#footnote-230) In particular, the programme is intended to enable public services to meet increasing demand with fewer human resources, a challenge that is expected to increase in importance in the coming years due to ongoing demographic developments.

The programme is located in and administered by the Danish Agency for Governmental Management (under the Ministry of Finance), whose role is to support and develop efficiency and good financial management in all aspects of public administration. Its scope covers all public sector activities and a range of projects are currently supported across different thematic areas, one of which focuses on “Care Technologies”. In this area, current projects include testing/deploying age-friendly toilets, electronic bath/shower chairs, electronic tools supporting people with autism, alarm/tracking systems for people with dementia, medication reminders for people with cognitive impairments, electronic tools for self-activation, solutions for lifting/moving frail older people, electronic door locking systems and fall management.

In **Norway**, as in other countries, there are increasing concerns about how to meet the growing needs for local services for the elderly population. Possibilities to support the services with increased use of technology, called “welfare technology” in Norway, are expected to be one of the solutions. An official report on 'Innovation in care' (NOU 2011:11) addresses the question of how to increase innovation and the capacity to use technology in the care services.[[231]](#footnote-231) There are also ongoing discussions about how to develop the AT services into a broader approach concerning welfare technology, although welfare technology covers a broader aspect than AT or “hjelpemidler” in Norwegian. Welfare technology includes technology used for providing care and other services, to communicate with and between the services, as well as AT.

In **Finland**, the FinnWell technology programme (2004-2009) was implemented by the National Technology Agency of Finland, Tekes.[[232]](#footnote-232) Its objective was to improve the quality and profitability of healthcare, and to promote business activities and export in the field. Three main themes were addressed: development of technologies for diagnostics and care; development of IT products and systems that support care, follow-up or prevention of illnesses; development of the operational processes of healthcare. Independent living and home care services for older people are one area that was supported, amongst others. The overall value of the programme was more than 170 million euro, of which Tekes invested about half and the participants in the programme funded the other half.

In the **UK**, as mentioned already, the term 'assistive technology' is often used to cover both devices to directly support independent living (the traditional AT scope) and developments in the fields of telecare and home telehealth. Audit Commission reports on 'Assistive Technology' have adopted this wide scope and have given a strong emphasis on the telecare/telehealth aspect. The local authority social services traditionally operated separate community equipment and social alarm services, but the 'transforming community equipment' programme includes telecare within its scope and the national catalogue and tariff system for community equipment includes some telecare equipment.

More generally, the UK approach to promotion of telecare is probably the most comprehensive example internationally to date. A combination of central government stimulus funding (under the Preventative Technology Grant) and a range of other support measures have put more advanced telecare firmly on the agenda for local social service providers across the country. Apart from central funding, support activities include: a public procurement framework agreement for telecare and telehealth products and services; development of cost-benefit modelling tools for use by local social service providers; and an extensive programme of information and awareness-raising. In addition, a major piloting and evaluation of 'whole systems' approaches involving telecare and home telehealth is currently nearing completion.

# Synthesis and recommendations

This chapter presents a synthesis and recommendations for possible future directions for the development of key aspects of the AT provision system and related areas in Ireland. The approach is organised in terms of the elements identified in Figure 11 below. This highlights some of the main themes and issues that have been covered in Chapters 2, 3, 4 and 5 of the report.

**Figure 11. Overview of areas covered in recommendations**

## More attention and stronger strategic position for AT in policy

A number of legislative, policy and other developments of relevance for the AT provision systems have occurred in Ireland since the last major review of the situation in 1996.[[233]](#footnote-233)

On the health and social services (including disability services) side, there has been increased funding for the AT services provided by the HSE and the core NGOs operating in this area although this is being threatened with the economic down-turn. There has also been development in knowledge and capacities in the AT field amongst the stakeholders, especially some of the NGOs. However, as discussed in section 6.2.1, the approach to provision of assistive technology through the health and social care services in Ireland remains under-developed in comparison to the other main countries covered in the study.

In the employment and education areas, equality legislation has been introduced that puts increased obligations on the various stakeholders (public service providers, educational institutions and employers) to address the needs of students, workers and job-seekers, including AT-related needs where these arise. There has also been specific sectoral legislation in the education field as well as cross-cutting disability legislation that impose obligations on various players to better address the needs of people with disabilities, including AT-related needs. However, as discussed in sections 6.3.2 and 6.3.3, the implementation and leveraging of these in relation to AT provision could be considerably enhanced.

More generally, there has been an increase in the available evidence on usage and needs for AT through the National Physical and Sensory Disability Database and the 2006 National Disability Survey even if more is needed in this area.

What seems to have been missing so far, however, has been a focused policy attention on AT, per se. Quite often AT is given cursory mention as being an integral component of the policy in question without much in the way of operational elaboration or follow-up. In addition, it seems that there has not been much focus on the strategic importance of AT as a key potential contributor to a number of major policy areas and themes (including disability, older persons, equality, inclusive education, active labour market approaches, and value for money in health and social services and other areas).

The policy importance of AT seems to be better recognised in many of the other jurisdictions covered in the study. In the Nordic countries it is given a strong position in welfare and/or social care policy, with commensurate levels of funding and well-developed service delivery systems. In the UK, there has been considerable attention given to the role of community equipment services and to improving and modernising the services in this area.

A starting point in the Irish context would be to give more focused and strategic attention to AT across all the relevant areas of policy and across the three settings of health/social care, employment and education. To support this, there would be merit in developing a more Irish-specific evidence-base on the strategic and value for money possibilities offered by AT in each of the settings in the Irish context. Impacts on educational and labour market outcomes would be important aspects to address. The potentially large cost-savings in other areas of the health and long-term care systems (such as acute hospital and nursing home costs) that can accrue from often inexpensive AT would be another central aspect to examine. Importantly, this could also examine value for money from AT in terms of the cost-utility it can provide for users, where there is growing evidence of the very attractive QUALY 'return on investment' that may be achievable from expenditure on AT.

Issues of cost and funding are especially to the fore since the economic downturn that began in 2007/2008. In the context of AT services, especially those provided or supported by the HSE, the main focus at present seems to be on cost reduction, both in terms of reduced levels of funding for this area and in terms of savings that can be achieved through recycling of aids and appliances. Although published data on expenditure, numbers served, waiting lists and other indicators for the HSE aids and appliances services is very limited, it seems that in the current circumstances there may be an increasing number of people on long waiting lists or even unlikely to ever receive the AT that they need. It is important that a broader value for money perspective is adopted, one that focuses not solely on efficiencies *within* the AT services and current expenditures but also on how AT can contribute (possibly much larger) cost-savings and cost-utility across the wider health and social care system.

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| **Key conclusions and recommendations**   * Assistive technology could be given more attention and importance in policy on older people and people with disabilities, per se, as well as in policy on wider issues facing the health & social care system; it needs to be specifically identified as an important dimension in all relevant policies and programmes and this needs to be followed-up with concrete action to ensure impact. * In the current economic climate it is important to take into account the potential for AT to deliver both substantial value for money (e.g. in terms of gains in quality-adjusted life years (QALYs) and better educational and labour market outcomes for users of AT) in itself as well as cost-savings in other areas of public expenditure that can accrue from spending on AT. * A narrow focus on reduction of expenditure on AT in health and social care services could be counter-productive in terms of additional costs that would arise in other areas, such as acute hospital, home care and residential care. * There is a requirement to systematically document the nature and extent of unmet needs in this context, examine the implications for the clients concerned and for overall costs across the entire health and social care system, and take this into account in funding allocation decisions. |

## Strengthening the AT provision systems in the three settings

At an operational level, the mapping and analysis of the Irish AT systems in Chapter 3 and comparisons with the systems in other countries as described in Chapters 4 and 5 suggest that there are a number of important issues that need attention as well as various ways that the Irish systems could be strengthened.

### AT for home/community/everyday life

Overall, the HSE is the key player in this area in Ireland. It provides AT services directly itself, mainly through its 'aids and appliances' services but also through audiology and other relevant services. It also provides funding for NGOs that provide AT services for particular client groups.

At a policy level, the need for greater attention to and a more strategic positioning of AT discussed above, applies especially for the HSE. In the years prior to the current economic crisis there has apparently been increased funding allocations to the AT area, but little evidence of any overall strategic approach in this regard. There are also a range of operational aspects of the services that could be addressed, a number of which are taken up again in section 6.4.

More generally, however, the Irish system of AT provision in this setting remains under-developed in comparison to most of the other countries covered in the study. In the two Nordic countries there is more or less universal access to AT for those that need it, with well-developed provision systems that ensure people get the AT that they need in a timely manner. In the Dutch system, the insurance-based approach provides clear pathways and good access to many types of AT. In Italy, the list-based system and prescription rules under the national health system, supports a clear access and provision system. In the UK, the community equipment services have been given increased importance, with enhancements such as the new ‘retail model’ aiming to facilitate more effective access to basic AT for those who need it.

There is a need to develop a modern and effective approach to assistive technology provision within the Irish health and social system. Assistive technology services need to be clearly defined and made visible amongst the range of services that are provided. There are issues around terminology in relation to this, especially the continued usage of 'aids and appliances' as the core concept and terminology within the HSE services.[[234]](#footnote-234) This is linked to the concepts and terminology in the primary health legislation (Health Act, 1970) and warrants updating to a more modern perspective that goes beyond a narrow medical/rehabilitation perspective. 'Assistive technology' has come to be the preferred term internationally and is used in a number of other jurisdictions. It would be important to move beyond a narrow 'aids and appliances' perspective if the Irish AT provision system is to keep pace with developments in the AT field and good practice in other countries.

More generally, there are two important structural aspects of AT service provision that need further attention. One concerns the public-private mix and the other concerns HSE-NGO cooperation.

**Public-private mix**

As in other parts of the health and social care system in Ireland, there is a substantial public-private mix in terms of eligibility for services and the ways that people acquire AT (through public provision or self-funding). This aspect seems not to be sufficiently addressed in public policy in the AT field. There are two quite different approaches that could be examined.

One approach would involve examination of a possibly radical overhaul of the current system to move towards a more universal one. There are different models that could be considered in relation to this. One would be the Nordic approach, where universal public AT provision systems are in place, even if the actual underlying funding mechanisms for this can differ, including the social insurance (rights based) provision system in Norway and the tax-based, social services based provision system in Denmark. Another approach, and one that is currently topical in the discussion on possible major change in the financing of healthcare in Ireland, would be a system more akin to the Dutch model of provision by regulated but competing private insurance companies. In this case, and also in Norway in fact, the insurance based system is complemented by a municipality social service based system and, in both cases, especially in the Netherlands, there is consideration being given to moving more of the AT provision role to the municipality social services.

It is beyond the scope of this study to assess the relative merits of these, more macro, approaches in the Irish context. However, the information and discussion in Chapter 4 and 5 on the approaches in the other countries can be expected to provide a useful input to considerations about the AT provision system in the context of the wider deliberations on what type of health and social care system is to be developed in Ireland.

Whilst these wider system issues are important for the medium to longer-term, for the time being it is likely that the current public-private mix will remain in Ireland. One issue therefore concerns what role the private health insurers in Ireland could play in providing AT for those not eligible for or choosing not to use the public system. So far, this seems not to be a visible aspect of the coverage of the main insurers on the Irish market but it is an area that might warrant further policy attention.

More generally, the issue of better supporting those who are not eligible for public funding or who choose to acquire AT privately, warrants attention. At present, such persons can gain information about AT and where to get it from the AssistIreland website and from the NGOs active in the field, as well as from the community services of the HSE. This issue has been addressed more explicitly in other countries, particularly the UK. It would be worthwhile to examine more closely the various efforts to better support self-funders in the UK, for example in the context of the 'retail model' for community equipment provision.

Other relevant issues for the public-private mix arise in relation to market functioning and prices in the AT area. These are taken up later in section 6.4.

**Roles of HSE and NGOs**

In the AT area, as in other aspects of health and social care, and disability services more generally, the HSE's role encompasses both direct provision of AT services and funding of NGOs that provide services. The present arrangements involve the sensory NGOs providing much of the sensory AT services, and two other NGOs playing key roles in wheelchair/seating and other areas of AT. Whilst these arrangements appear to work well in many respects, there are issues around overall coherence of the AT services across the spectrum of ATs and across the country, as well as around the contractual arrangements and stability of funding for the NGOs. As taken up later in section 6.4, there are also issues around quality systems and services that apply to both the HSE and NGO services.

The issue of how best to organise and coordinate the efforts of the HSE and NGOs should be addressed as part of the more strategic positioning and strengthening of AT policy and services in Ireland. Focused national-level consultations between the HSE and main NGOs on the overall governance, funding, operation and further development of the AT provision system would be a starting point for this.

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| **Key conclusions and recommendations**   * The Irish system of AT provision within health and social care is under-developed in comparison to the five other main countries covered in the study; there is a need to develop a modern and effective approach, with assistive technology services clearly defined and made visible amongst the range of services that are provided. * The modern 'assistive technology' terminology/conceptualisation might be more appropriate than the narrower 'aids and appliances' one that is currently employed in the HSE and would be more in line with the approach in other countries with well-developed systems. * As regards the overarching issues of eligibility and entitlement, further analysis is needed of the implications for AT provision of any major structural reforms of the Irish health and social care system; the information and discussion in Chapters 4 and 5 on systems in countries with relevant welfare models (e.g. Nordic, Dutch, UK) may provide a useful input to this. * In the short-to-medium term, the public-private mix in access to AT is likely to remain in Ireland; this should be actively recognised in public policy and service provision, and information and other relevant supports should be provided for those who must or choose to acquire AT themselves; the approach and experiences in this aspect in the UK merit further examination in this regard. * The issue of how best to organise and coordinate the efforts of the HSE and NGOs should be addressed as part of the more strategic positioning and strengthening of AT policy and services in Ireland; focused, national-level consultations between the HSE and main NGOs in the field would be a starting point for this. |

### Employment

AT is given a certain visibility and attention in policy in relation to public and private sector employment, and there are mechanisms in place to provide AT and/or AT funding for those that need it. As mentioned already in section 6.1, there would be merit in further and focused examination of the strategic potential which more widespread and innovative usage of AT might offer for supporting labour market policy around people with disabilities and older workers.

As in many other countries, in Ireland there are more or less separate systems of AT provision for those employed in the private and public sectors. The main focus of the description of the systems in other countries in this study was on the systems supporting private sector employment. In this regard, the Irish approach (through FÁS and the Workplace Equipment and Adaptation Grant - WEAG) is typical of the approach in a number of other countries, including the UK. However, it seems that levels of expenditure and levels of uptake of the AT funding are very low in Ireland in comparison to the fairly similar Access to Work scheme in the UK. Also, current spending and take-up of the Irish service seems to be considerably lower today than it was back in the 1990s when operated by the National Rehabilitation Board.

The reasons for this are not clear and there would be merit in a deeper examination of the nature and extent of unmet need that may exist in this area. Lack of awareness of the potential of AT amongst workers, employers and occupational rehabilitation professionals might be one underlying factor. A more proactive approach in promoting the WEAG might also be needed. Development of greater AT awareness and expertise within the employment services would also be likely to be helpful, as well as clear arrangements for accessing AT expertise from other relevant players when needed. These aspects of the system are better developed in some of the other countries, including Norway and Germany, and their approaches might provide useful guidance for improvement of the Irish system.

Also of interest is the approach adopted by NAV in Norway where job seekers who have a requirement for workplace adaptations are provided with a certificate of guarantee that they are entitled to public financial support for this. Advantages of this approach include the informing of the employer that such support is available if they recruit the job-seeker and reduced time required for the implementation of adaptations once the job seeker obtains a job.

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| **Key conclusions and recommendations**   * There appears to be very low take-up of the Workplace Equipment Adaptation Grant (WEAG) and there is a need to investigate whether there is substantial unmet need that is not being reached; as a first step, a more proactive approach could be implemented (e.g. an active awareness-raising campaign) and its impacts assessed. * Greater AT awareness and expertise could be developed within the employment services, as well as clear arrangements for accessing AT expertise from other relevant players when needed (for example, the access to specialist assessment services that is provided in the UK system). * The possible merits of a system (e.g. certificate) of guarantee for job-seekers in relation to public financial supports for workplace equipment/adaptations could be examined, such as the approach in Norway. |

### Education

The provision of AT in the Irish primary and secondary education sectors differs in a number of respects from most of the European countries reviewed for this study. In particular, in other countries, the responsible entity for meeting SEN seems more typically to be located at a local rather than central level. In Norway, Denmark and the Netherlands, this role is fulfilled by the municipality while in the UK the LEAs carry out this role. In addition, many countries operate centres of expertise at a regional level to support local structures e.g. Norway. One jurisdiction that operates a national system is New Zealand, where the Department of Education has responsibility for supporting the system in all respects through its Special Education Section.

Overall, however, it is important to emphasise that the legal framework to deliver effective AT services in the primary and secondary education sectors is already in place in Ireland. The main issue is that some of the key elements of that legislation have yet to be commenced by the Ministers of Health and Education. It is not clear when this is likely to occur but the economic context may delay the full implementation of both the Disability Act and the EPSEN Act for some time. Nevertheless, it is possible to identify some elements of the system which could be enhanced in order to achieve a more effective system of provision.

The establishment of resource centres at local education centres, in cooperation with disability specific NGOs, where parents, student and teachers can access advice and sample AT before pursuing an application would provide a useful basis for better local access. These AT centres of expertise could take on a number of other responsibilities including follow up and support/training for teachers and learners.

Barriers to learners accessing timely and effective education AT are the lack of support for teachers and parents in accessing an appropriate assessment and the lack of follow-up support. Consideration should be given to subsidising AT needs assessment for those who cannot afford it and to making training available to AT users where this is needed.

A national on-line service funded by the NCSE or the DES would go a great distance towards creating the conditions for more consistency geographically and in terms of the range of disabilities which manage to gain access to AT. In this regard the Advanced Technology Information Processing Systems (ATIPS) systems from Ohio and the New Zealand approach provide useful exemplars.

A serious dilemma for the system is the inconsistency with which the needs of learners with high incidence disabilities are addressed. As pointed out by some respondents, there is a potential case of an infringement of rights where a person eligible for AT support in further and higher education is denied this support at primary and secondary level. This is not an easy issue to resolve. In some of the countries reviewed, cost containment is resulting in ICT hardware such as laptops and Dictaphones, which are often what is required by these learners, being reclassified as consumer goods and thus becoming ineligible for grant aid at all levels of the system.

There is little doubt that an urgent requirement in the education sector is for a systematic monitoring system not only of outputs but also of results in terms of better academic outcomes and impact in terms of cost effectiveness. The ATOMS model used in the Ohio AT infusion project could form a basis for the design of such a system.

In the further education system, geographical variability was the main challenge that emerged. Systems of good practice were operating in some VEC areas and nothing at all was happening in others. This could be resolved through producing national guidelines for further education along the lines of the UK’s Learning for Living and Work: Improving Education and Training Opportunities for People with Learning Difficulties and/or Disabilities approach led by the Irish Vocational Education Association (IVEA).

In both further and higher education, similar to other levels of education, the requirements for awareness raising, training and access to information need to be addressed. Although unprecedented in Ireland, allocating this responsibility in further and higher education to the centres of AT expertise proposed above for local learning centres, might be a cost effective approach that would avoid duplication of efforts.

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| **Key conclusions and recommendations**   * There is a need for guidelines to be easily available to primary and secondary schools and professionals, providing clear information on eligibility criteria and school responsibilities, and describing the service pathway for accessing AT, supported by case studies for clarification; there is currently no such guidance for primary schools or specifically for assessing professionals. * Consideration should be given to putting in place a more formal approach to follow up and monitoring of AT usage and impact including an analysis of the way in which AT, which has been accumulated by schools, is being utilised to provide support for other learners with disabilities. * An important issue to be addressed is the most effective way to ensure that learners, who require it, are given the training necessary to ensure that they get the best out of the AT they are provided with. * A review is needed of eligibility criteria for learners with high incidence disabilities, that is, those disabilities that occur more frequently in the student population, such as mild general learning disability, who require information technology support in primary and secondary education with reference to the approach being implemented in higher education. * Formal support for networking and knowledge sharing between educators and professionals with a specific responsibility or interest in AT could assist in raising awareness of new developments and support higher standards of assessment and applications for AT. * An important concern is how best to make expertise available at a local or regional level to support schools and parents in understanding the potential of appropriate AT and to contribute to continuing teacher education. * There is a need for a more consistent approach in the further education sector particularly across Vocational Education Committees (VECs), the Institutes of Technology and post-secondary education colleges which would build on the instances of good practice that already exist within the sector and best practice in the higher education sector. |

## Coordination and continuity across settings, transitions and lifecycle

This section considers issues around coordination of AT services across settings and by different players as well as around transitions between settings.

### Towards a more coordinated approach

In Ireland, as in most other countries, more-or-less separate AT provision systems operate in parallel for the three settings - home/community, employment and education. Of the countries covered in the study, Norway has the most unified system with a substantial part of AT provision for all three settings falling within the responsibility of a single agency (NAV). The presence of a national insurance-based funding system covering AT for all settings is a key facilitator of this.

In the short-term, at least, it would probably be difficult to implement a unified system of this type in Ireland because of the current legislative and administrative divisions of responsibility for services in the different settings. Nevertheless, AT is a cross-cutting issue across various lines of policy and there is considerable scope for a more integrated and coordinated approach that would bring together the key players in appropriate ways. Coordination across settings has the potential not only to create a continuity and consistency of provision for individuals as they make the transition from one life stage to another, but also to create opportunities for economies of scale within the system by creating shared resources in terms of AT expertise, training and development of staff and access to information and advice.

At present, the most directly involved parties include HSE, FÁS, NCSE, Department of Education and Skills, Citizens Information Board, and the key disability NGOs providing AT services. Other players with an important potential role include Department of Health, National Disability Authority (NDA), Health Information and Quality Authority (HIQA) and Health Research Board (HRB).

There could be considerable merit in setting up a forum for these players to come together in a focused initiative on AT. The NDA might be an appropriate agency to take the first steps in this regard. The collaboration could focus on defining AT policy priorities and the improvements needed in the current system(s) of AT provision, as well as how better coordination and synergies could be achieved. This could include consideration of relevant quality improvement themes from amongst those that are identified and discussed in section 6.4.

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| **Key conclusions and recommendations**   * A collaborative forum (e.g. working party) of key players could be established with a focus on defining AT policy priorities and the improvements needed in the current system(s) of AT provision, as well as how better coordination and synergies could be achieved. * This forum might include Health Service Executive (HSE), the body that is to replace Foras Áiseanna Saothair (FÁS), National Council Special Education (NCSE), Department of Education and Skills, Citizens Information Board (CIB), the key disability NGOs providing AT services, Department of Health, National Disability Authority (NDA), Health Information and Quality Authority (HIQA), Health Research Board (HRB) and any other relevant players; NDA might be an appropriate party to take the first initiative towards the establishment of such a forum. * One issue that needs to be examined concerns ways of creating more effective and streamlined access to AT for individuals who have been deemed eligible for AT in one part of the system as they transition between settings; key transitions to be addressed include those between different levels of education as well as between education and employment; an extended version of the ‘user pass’ approach from Norway might be one option to consider in this regard. * There are many other areas where coordination and synergies across players and settings would be useful; some examples of these are mentioned in the context of the themes raised below. |

### Better continuity of service and support for key transitions

The challenge of creating a continuity for the AT user across life and system transitions is evident in most of the jurisdictions reviewed for this study. In education, for example, many systems are structured in such a way that AT is the property of the school and not the person. From a system perspective, when AT is retained by the school, it becomes available to other children who may need it and becomes part of the school's AT resources. The problem arises when the user has to start at the beginning of the application process again, despite the fact that he or she has already been granted eligibility by another part of the system. This is an issue in the Irish context.

A number of possible resolutions were identified in other countries that could be adapted to the Irish education system. The UK YPLA pilot 'Learning for Living and Work Framework' to support young people with special educational needs and disabilities in their transition to adult life could provide a basis for transition planning for learners with SEN or disabilities.

Another approach could be the adoption of a ‘user pass’ system similar to that piloted in Norway. This provides people with ongoing AT needs, in relation to a long-term disability, with a more streamlined access to the AT they need. If such a user pass was accepted by all levels of the education system it would significantly reduce the costs of administering schemes and assessing eligibility. A more restricted version of this approach would involve the HEA-NAO accepting assessments for eligibility carried out during secondary education as proof the AT device is required by the student in third level for the purposes of a FSD grant.

An extension of this approach could involve FÁS accepting that job seekers who were entitled to AT equipment in secondary, further or higher education are automatically eligible for WEAG assistance for purposes of employment. This would reduce waiting times and streamline administration and remove the costs of re-assessment from the system. Such an approach could also be integrated with the type of job-seeker guarantee system that could be for considered for the WEAG as discussed in section 6.3.2.

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| **Key conclusions and recommendations**   * There is a need to examine ways of creating more effective and streamlined access to AT for individuals who have been deemed eligible for AT in one part of the system as they transition between settings; key transitions to be addressed include those between different levels of education as well as between education and employment * An extended version of the ‘user pass’ approach from Norway might be one option to consider in this regard |

## Some specific quality improvement and other measures

A number of relevant aspects of quality assurance for AT systems and services were addressed in Chapter 5, where examples were presented of the approaches that have been adopted in the countries covered in the study as well as examples from other countries or the wider literature in some cases. All of these are relevant for efforts to further develop the Irish system and services in line with good practice internationally. The following set of measures can be suggested as important ones for attention. They could be addressed by the relevant players in their own activities and/or in the collaborative forum of key players suggested in section 6.3.1 above.

### Standards

Implementation of health and social care service standards is an important aspect of health and social care service governance in Ireland, with HIQA having a key role in this. Although there has been work on AT product standards by the National Standards Authority of Ireland (NSAI) and the Centre for Excellence in Universal Design (CEUD), so far there seems not to have been any focused efforts to develop service standards for the AT system. This is an area that would merit attention.

**Waiting times**

In the Irish context one of the key issues for service standards appears to be waiting times for AT provided or funded by the HSE. Although the HSE does not publish data on this, available evidence suggests that both waiting times for assessment of AT needs and for delivery of AT once approved seem to vary widely and can be as long as a year or more. This is unacceptable for AT where timely access is of the essence. The Irish situation stands in contrast to Norway, where there are established guidelines for delivery times and also for repair/servicing times, and there is regular monitoring and publishing of service performance in these aspects (e.g. in terms of proportion of deliveries within 3 weeks).

**Consistent services across the country**

More generally, the variability in services and approaches provided across the country is an important issue that has been raised for many years. This aspect needs to be addressed if a fair and consistent level of AT service is to be available wherever one lives. A nationally-defined model for service provision needs to be developed and applied across the country.

**Service quality standards and protocols**

Various examples of service quality standards and 'clinical' protocols for the AT field that have been developed in other jurisdictions are identified and discussed in section 5.4.1. In the UK, for example, there are standards for community equipment services in Wales and draft clinical standards for wheelchair and seating services in Scotland. Approaches to quality assurance of independent assessors and suppliers are also beginning to be developed. In Norway, national guidelines have been developed for various aspects of the AT provision system and others are under development. Complaints and appeals mechanisms are also an important feature of the systems in some countries.

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| **Key conclusions and recommendations**   * Service quality standards need to be developed and applied in the AT services field in Ireland. This can be informed by the various approaches in this area from other countries, including standards for services as a whole as well as for specific aspects of services. The working group on standards in AT comprised of staff from NDA’s CEUD and NSAI and chaired by CEUD might have a contribution to make in this context; this group has reviewed a number of European and International AT Standards including wheelchairs, mobility devices, voice recognition software. * For quality standards in AT provision by the health and social care services, specific issues that need priority attention include:   + Acceptable standards for waiting times for AT assessment and for delivery after assessment need to be established and implemented consistently across the country   + Variations across the country in how HSE 'aids and appliances' services are organized need to be addressed; a consistent, nation-wide approach needs to be put in place, underpinned by a nationally-defined service model. * Development of service quality standards for AT provision in the educational and employment settings also needs to be considered. * HIQA would have a key role in this in relation to standards for AT services within the health and social care field; a cross-cutting approach could also be considered as part of the work of the proposed cross-setting collaborative forum. |

### Monitoring and evidence-base

Monitoring of AT system and service performance in Ireland is underdeveloped in comparison to most of the other countries covered in the study. In particular, there is currently little or no national data published on the operation and performance of the AT services provided and/or funded by the HSE, even as regards basic information about expenditure levels, numbers served, waiting times, and so on. The well-developed approach in Norway provides an example of type of approach that could be aspired to in this area.

In relation to the wider evidence base needed to inform policy and practice in this field, initiatives such as the NPSDD and National Disability Survey have provided some new data on AT usage and needs in Ireland. However, there has not so far been any focused effort to generate an Irish evidence base on aspects such as the value for money issues around AT that were discussed earlier.

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| **Key conclusions and recommendations**   * The monitoring and publishing of key performance data on AT services in Ireland needs to be improved. The approach in Norway provides a good example of what could be aspired to in this area, with regular monitoring and reporting on delivery times, numbers receiving services, costs and other aspects. * There is also a need to develop an Irish-specific evidence base on the value for money and other contributions of AT in order to provide guidance for policy and for optimal allocation of scarce resources; the approach could include in-house research by the relevant agencies as well as funding of externally-sourced applied research focusing on key issues for current policy and services. * A first topic for attention might be a focused examination of this aspect in relation to the AT services provided and/or funded by the HSE. |

### Specialist AT expertise

The provision systems in a number of the other countries covered in the study have structures or mechanisms in place to provide access to AT-specific expertise as a support for frontline staff who may not be specialists in this field. For example, in the Nordic countries there are networks of public AT centres across the country as well as centralised, specialist support services. Core functions of such centres include: providing support, advice and opportunities to test potential AT devices; specialist assessment and support services for more complex AT; raising awareness amongst professional, potential users and their families or carers; and contributing to training and development activities.

At present there is no such expert support structure for the Irish AT services in the health and social care or employment fields, as well as some aspects of the education field. This is an area for attention in the development of an AT provision system in line with good practice internationally. Issues to be considered include the level of provision of support services (national, regional, local), and how best to make available this type of expertise for the different settings and services (health and social care, employment and education). Identification and building-upon existing sources of expertise wherever possible would also be important.

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| **Key conclusions and recommendations**   * There is a need to develop an effective approach that would provide access to expert knowledge and advice about AT for non-specialists at all relevant levels (national to local) within the AT provision system and in each of the three settings; this should aim for sharing of resources, capitalising on existing expertise and avoidance of duplication. * A mapping and analysis of current sources of expertise within the health/social care, employment, education, NGO and other sectors is needed as a first step; the proposed cross-setting, collaborative forum might be the most appropriate entity to take the initiative on this. |

### AT skills for frontline staff

In part linked to the issue of AT-specific expertise, is the issue of AT skills for frontline staff. In Ireland, there have been some efforts in this area over recent years and there are some courses provided by NGOs and educational institutions. In general, however, it seems that most frontline staff have little exposure to the AT topic in either their initial professional education or their continuing professional development. This is an issue that could be taken up more strongly by the professional educational institutions and professional associations as well as in continuing professional development within the HSE.

The need for better access to knowledge and expertise on the part of providers, professionals and potential users was commonly acknowledged amongst those consulted during this study. In addition, various islands of good practice were identified. These currently only operate in one locality or in one part of the system, but, if disseminated effectively these could inform and impact on practice in other locations or domains. A particular example of this within the education setting is the approach which has developed in higher education in Ireland where networking between Disability Officers has led to the development of relatively consistent standards across the sector and which provides access to peer support for those who require it.

Various approaches to skills development in other countries are identified and described in section 5.4.3. In Norway, the man public agency (NAV) provides hundreds of short courses for frontline staff from the municipality services. The focus is on building these into continuing professional development and includes accreditation. In the UK, an extensive piece of work has been done to map the professional competencies needed in the AT field. On the agenda are not only the competencies of public sector staff but also the development of accreditation systems for the many players that now have roles in the mixed economy of AT provision. In the employment setting in Germany, the Integration Offices run training programmes (including AT modules) targeting practitioners in the field, including representatives of people with disabilities in companies, works councils and other stakeholder organisations. In addition to offline courses, an online college provides interactive tutorials.

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| **Key conclusions and recommendations**   * The area of AT skills for the frontline staff in education, employment, health and social care sectors involved in AT provision is recognised as being under-developed and problematic in Ireland; this would include the range of health and social care professionals working with client groups who may have needs for AT, as well as teachers, principals, employment service officers and all other relevant professionals in the educational and employment contexts. There are good examples of approaches in some of the other countries that could provide guidance for the development of this aspect in the Irish context, such as the extensive programme of short continuing professional development courses in AT that are provided within the system in Norway. * Attention needs to be given both to the inclusion of AT in initial professional education and to AT training as part of continuing professional development, with appropriate accreditation and utilisation of effective means of reaching frontline staff including the use of eLearning. * The cross-setting collaborative forum that is proposed might be a good vehicle for taking the first initiative to progress this aspect in Ireland. |

### Information and awareness about AT

The AssistIreland website, operated by the Citizens Information Board, provides an extensive resource on AT, targeting both service providers and users, and NGOs also provide quite a lot of information on their areas of AT. Consideration could be given to further development and extension of this aspect of the system in Ireland. For example, in some of the other countries, the provision of user discussion forums has proven to be a very useful element of such services.

Online information provision also needs to be complemented by other approaches in order to reach those who are not online. This applies to many older people, and older people comprise a large proportion of those who need AT. Demonstration facilities also have an important role to play and this aspect could be linked to the development of centres of expertise at regional/local level already discussed in section 6.4.3.

More generally, enhanced online and other information services make an important contribution in the context of developing public supports for self-funders within the public-private mix in Ireland. The publication of lists of products and their approved publicly reimbursed tariffs in the UK under the 'retail model' might be one relevant approach, if linked to an overall policy approach to more actively address the needs of self-funders. This aspect is also taken up later in the discussion of market functioning issues.

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| **Key conclusions and recommendations**   * The possibility to further develop the existing online information services of AssistIreland.ie could be examined; this could include addition of user discussion forums as these have been found to be very useful aspects of the online information systems in some of the other countries. * Given the public-private mix that prevails in the Irish system, consideration could be given to further development of information and other supports for people who must or choose to acquire AT privately. * Alternatives to online information also need to be developed in order to reach those who are not online, including older people who comprise a large percentage of those who need AT. * Demonstration facilities and initiatives are also an important element of the approaches in some countries and this could be further developed in the Irish context. |

### User choice

As discussed in some detail in Chapter 5, the issue of greater user choice in what AT they receive and/or where they get it is currently on the agenda in many countries. Approaches include personal budgets, voucher systems and possibilities to top-up the amounts of funding allocated under the public system of financial support. There would be merit in further examination of the appropriateness and transferability of such approaches to the Irish context, although this would need to be considered from an overall system perspective and the current mode(s) of functioning of the public-private mix here, as well as in relation to developments in relation to personal budgets.

The approach under the ‘retail model’ in the UK is one that could be of particular interest in the Irish context. There might to two aspects of this that could be considered for possible transferability here. One aspect would be the bringing-in of the private retailers on the provision side, to fill ‘prescriptions’ from the health and social care services for the simpler types of AT for those eligible for public funding. This could be further examined in relation to the possible efficiencies and service improvements it might bring for the public system as well as the possibility of greater choice for the user of publicly funded services. Possible downsides for users and for service quality issues would also need careful attention. The other aspect would relate to the possibilities to improve the access to basic AT for those not eligible for public funding, through a better organised and functioning supply side for example.

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| **Key conclusions and recommendations**   * The issue of greater user choice in what AT they receive and/or where they get it is currently on the agenda in many countries and needs further examination in the Irish context. * User choice would need to be considered from an overall system perspective, taking into account the current mode(s) of functioning of the public-private mix here, as well other developments such as those in relation to personal budgets. * The pros and cons of developing a ‘retail model’ along the lines of the approach being developed in the UK (involving 'prescriptions' for basic AT that are filled by retail outlets as an alternative to direct supply by the health and social services) warrant further examination in the Irish context. |

### Market functioning

Market functioning in the AT area is important from a number of perspectives.

One aspect concerns value for money for the public system. Public procurement can play an important role in this and the HSE is developing its procurement approach in this area. Experience from some of the other countries suggests that one of the challenges in this is to get value for money in terms of price *and* quality, not just the lowest price. There is also the need to develop an approach that helps to nurture an innovative and vibrant supply side. The experience and expertise from these countries might provide useful insight and guidance for the further development of this aspect in Ireland.

The cost and quality of AT that is self-funded by users is another important issue here. Although it was not possible to conduct a systematic assessment of this area within this study, nevertheless the available evidence suggests that costs may be considerably higher in Ireland than for similar products in the UK. In part, this may be an inevitable consequence of the higher costs of importing AT that is mainly manufactured in other countries. In addition, however, it may also reflect a lack of public policy influence on the supply side. In this regard, it may be worthwhile to follow how the 'retail model' in the UK influences prices charged to self-funders there.

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| **Key conclusions and recommendations**   * The approach to public procurement of AT in Ireland is being developed in order to achieve value for money objectives; this needs to take into account the experience from other countries that value for money concerns both price *and* quality, as well as the need to nurture an innovative and vibrant supply side. * Possible ways to influence price and quality of AT that is purchased privately also need to be considered; the impacts of the ‘retail model’ in the UK on this aspect warrant monitoring with a view to its possible suitability in the Irish context. |

## Synergies with related areas and business development opportunities

Finally, as discussed in section 5.6 there are some potential synergies and market opportunities that arise around AT and related concepts such as telecare, telehealth, ambient assisted living and ‘welfare technology’.

In general, telecare and home telehealth are not yet very advanced in the Irish context, although the penetration of basic telecare (community alarms) is, in fact, high by international standards. In Ireland and most of the countries covered in the study, these fields are seen mainly as being separate areas from AT with a key difference being that telecare and telehealth are *services* rather than standalone supports. Nevertheless, there are overlaps and synergies between the traditional conceptualisation of AT and these fields that are being given increased emphasis in some countries. This includes the UK, where there is a lot of attention focused on telecare and home telehealth, and the Netherlands, where there have been initiatives to include these types of services along with AT within the scope of domotics programmes for the sheltered housing sector.

In the Irish context, the potential synergies need to be recognised but it may be wise to avoid too much blurring of these domains. There is a need for balanced attention to be given to the further development both of what is traditionally considered to fall within the scope of the AT domain (covering a spectrum from basic low-tech items to high-tech and computer-based systems) and the new service models encompassed within telecare and home telehealth.

One area that also warrants attention is the field of what has now come to be called 'ambient assisted living' or 'AAL' for short. This originated from an engineering perspective, with a focus on embedding intelligence into the everyday environment in order to provide assistance with everyday living for those that need it. Although more recently it has come to be sometimes used as an umbrella term to also encompass telecare, home telehealth and even electronic AT, it seems more useful to use the term more strictly as referring to embedded intelligence in the everyday environment at home, school, work, public places, transport and everywhere/everything else that people use. Considered in this way, the AAL concept is useful in bringing into focus the increasing convergence of standalone, special-purpose AT systems and broader, universal design approaches that embed assistive functionality in everyday products and the everyday environment. This aspect of AT is something that has been taken up in Ireland by the Centre for Excellence in Universal Design and is an area that warrants further exploration and development, including the possible industrial development opportunities.

Finally, and linked in part to the previous point, there would be merit in more generally putting reinforced effort into the industrial development opportunities in the AT, AAL, telecare/telehealth and other fields in Ireland. The ageing of the population across the globe will increase demand for products and services in these fields and open up large new market opportunities. There have been some initiatives in aspects of these fields, promoted by Enterprise Ireland and Forfás, as well as public-private initiative such as TRIL. However, other countries such as Finland and Denmark, have implemented more extensive programmes under the umbrella term of ‘welfare technology’ and their approaches could usefully be examined for transferability to the Irish context. A balanced approach that looks at opportunities both for larger industries and SMEs is needed. Larger industries can more easily generate the scale to reach international markets but there are also an increasing number of examples of innovations developed by SMEs (and even by micro-enterprises) breaking into large-scale national and international markets in these fields.

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| **Key conclusions and recommendations**   * There is increasing convergence of standalone, special-purpose AT systems and broader, universal design approaches that embed assistive functionality in everyday products and the everyday environment; these developments offer new approaches to overcoming barriers to participation and independent living for people with disabilities and older people, as well as new business opportunities for the sectors that will produce and implement them (for example, building assistive functionality into transport systems, buildings, street furniture and so on). * The broader industrial innovation potential in the areas of AT, telecare, telehealth and ambient assisted living have begun to be addressed in ‘welfare technology’ programmes in countries such as Finland and Denmark; these approaches might provide useful models for similar efforts in the Irish context under the auspices of Enterprise Ireland and Forfás. * The NDA's Centre for Excellence in Universal Design (CEUD) could consider taking initiatives to foster more attention to these areas in the Irish context, including the possible cost savings as well as the new business opportunities that they may present. |

# List of Acronyms and Abbreviations

**General**

|  |  |
| --- | --- |
| AAL | Ambient Assisted Living |
| ADL | Activities of Daily Living |
| AT | Assistive Technology |
| ATIPS  GPS  ICF | Advanced Technology Information Processing Systems  Global Positioning Systems  International Classification of Functioning, Disability and Health |
| ISO | International Standards Organisation |
| NGO | Non-Governmental Organisation |
| OT | Occupational Therapy |
| PHN | Public Health Nursing |
| PT | Physiotherapy |
| QUALYs | Quality-adjusted life years |
| SEN | Special Educational Needs |
| UNCRPD | UN Convention on the Rights of Persons with Disabilities |

**Ireland**

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| AHEAD | Association for Higher Education Access and Disability |
| ATAG | Assistive Technology Acquisition Grant |
| ATSS | Assistive Technology and Specialised Seating |
| CEUD | Centre for Excellence in Universal Design |
| CIB | Citizens Information Board |
| CRC | Central Remedial Clinic |
| CSO | Central Statistics Office |
| DAI | Dyslexia Association of Ireland |
| DARE | Disability Access Route for Education network |
| DEIS | Delivering Equality of Opportunity in Schools |
| DES | Department of Education and Skills |
| DLO | Disability Liaison Officer |
| EPSEN | Special Educational Needs Act |
| ESO | Employment Services Officer |
| FÁS | Foras Áiseanna Saothair |
| FE  FETAC | Further Education  Further Education and Training Awards Council |
| FSD | Fund for Students with Disabilities |
| HEA-NAO | Higher Education Authority’s National Access Office |
| HIQA | Health Information and Quality Authority |
| HSE | Health Service Executive |
| HRB | Health Research Board |
| IVEA | Irish Vocational Education Association |
| IWA | Irish Wheelchair Association |
| LHOs | Local Health Offices |
| MDI | Muscular Dystrophy Ireland |
| NCBI | National Council for the Blind in Ireland |
| NCSE | National Council for Special Education |
| NDA | National Disability Authority |
| NEPS | National Education Psychological Service |
| NLN  NPSDD | National Learning Network  National Physical and Sensory Disability Database |
| NSAI | National Standards Authority of Ireland |
| PCCC | Primary, Community and Continuing Care |
| PLC  PRSI | Post Leaving Cert  Pay-Related Social Insurance |
| SEAS | Special Education Administration System |
| SENO | Special Educational Needs Organiser |
| SESS | Special Education and Support Service |
| UCD | University College Dublin |
| VAT  VECs  VRT  WEAG | Value Added Tax  Vocational Education Committees  Vehicle Registration Tax  Workplace Equipment Adaptation Grant |

**UK**

|  |  |
| --- | --- |
| AtW | Access to Work |
| DED | Disability Equality Duty |
| DES | Disability Equality Scheme |
| DLCs | Disabled Living Centres |
| DSA | Disabled Students Allowance |
| DSA-QAG | Disabled Students Allowance Quality Assurance Group |
| FACS | Fair Access to Care Services |
| FAST | Foundation for Assistive Technology |
| ICES | Integrated Community Equipment Services |
| IEP | Individual Educational Plan |
| LEAs | Local Education Authorities |
| LSC | Learning and Skills Council |
| NHS | National Health Service |
| RNIB  RNID  SENDA | Royal National Institute for Blind People  Royal National Institute for Deaf People (now Action on Hearing Loss)  Special Educational Needs and Disability Act |
| SENCO | Special Educational Needs Coordinator |
| YPLA | Young People's Learning Agency |

**Netherlands**

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| --- | --- |
| AWBZ | Act on Extraordinary Costs related to Illness |
| CVZ | Health Care Insurance Board |
| LGF | Student-related Subsidy |
| UWV | Employees Insurance Administration Office |
| WIA | Act for Employment and Income According to Employment Capacity |
| WMO | Act for Provision of Social Support |
| ZVW | Act on Healthcare Insurance |

**Denmark**

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| --- | --- |
| PPR Office | “Pedagogical, psychological counselling” office |
| SAB | Social Appeals Board |
| SPS Office | “Special pedagogical support” office |
| SSC | Social Services Council |

**Norway**

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| --- | --- |
| ATC | Assistive Technology Centre |
| NAV | Norwegian Labour and Welfare Service |

**Italy**

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| ASLs | Aziende Sanitarie Locali |
| GLIC | Gruppo di lavoro interregionale Centri di consulenza ausili informatici ed elettronici per disabili |
| INAIL | National Insurance for Labour Accidents |
| NHS | National Health Service |
| NT | Nomenclatore Tariffario |
| SIVA | Servizio Informazione e Valutazione Ausili |

**Germany**

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| --- | --- |
| BA | Federal Employment Agency |
| BGG | Disability Discrimination Act |
| BMAS | Federal Ministry of Labour and Social Affairs |
| SGB | German Social Code |

1. ISO 9999:2011 Assistive products for persons with disability - Classification and terminology http://www.iso.org/iso/iso\_catalogue/catalogue\_tc/catalogue\_detail.htm?csnumber=50982 [↑](#footnote-ref-1)
2. for example, the Cliq system in the Netherlands [↑](#footnote-ref-2)
3. The experts from the other countries are mentioned in the acknowledgements; the interviews/consultations in Ireland covered the spectrum of relevant players across the health/social care, employment and educational sectors, including public agencies and NGOs. [↑](#footnote-ref-3)
4. Deloitte (2003) Access to Assistive Technology in the European Union. Report for the European Commission. [↑](#footnote-ref-4)
5. Deloitte (2003) Access to Assistive Technology in the European Union. Report for the European Commission; Deloitte & Abilitynet (2010) The Internal Market for assistive ICT. Draft Final report for the European Commission; Nordic Centre for Rehabilitation Technology (2007) Provision of Assistive Technology in the Nordic Countries - Second Edition [↑](#footnote-ref-5)
6. Academic Network of European Disability Networks - country reports http://www.disability-europe.net/ [↑](#footnote-ref-6)
7. For example the proceedings of the recent AAATE conference: Gelderblom et al (2011) Everyday Technology for Independence and Care. Maastricht. [↑](#footnote-ref-7)
8. For example: Kubitscke, L. and Cullen, K. (2010) ICT & Ageing: Users, markets, technologies. Report for the European Commission www.ict&ageing.eu [↑](#footnote-ref-8)
9. As will be seen from the data presented in this section, the NPSDD is picking up relatively small numbers in comparison to the wider population estimates coming for the National Disability Survey, both in terms of users of AT and those with unmet needs for AT. One factor in this is that the NPSDD only covers the under 65 age group, although even for this age group the numbers are often still considerably lower than those from the population estimates coming from the National Disability Survey [↑](#footnote-ref-9)
10. for a detailed discussion of this see: empirica and WRC (2005) The Demographic Change – Impact on new Technologies and Information Society. http://ec.europa.eu/employment\_social/social\_situation/docs/lot7\_ict\_finalreport\_en.pdf [↑](#footnote-ref-10)
11. Welsh Government (2011) Guidance Document: Community Equipment Services - The introduction of National Minimum Standards. http://www.ssiacymru.org.uk/media/pdf/2/8/community\_equipment\_-\_national\_minimum\_standards\_guidance.pdf [↑](#footnote-ref-11)
12. Audit Commission: Assistive Technology: Independence and wellbeing – 2. http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/FullATReportforweb.pdf [↑](#footnote-ref-12)
13. These indicative cost ranges are based on the typical retail prices quoted for the different types of AT by suppliers on the Irish market; costs if procured in bulk under the public system would probably be lower [↑](#footnote-ref-13)
14. Various estimates have been made of the average hourly costs of public and privately provided homecare in Ireland, with the HSE calculating an hourly rate of 17.60 euro for its basic home help services in 2009, and indicating that average costs of home care packages would be higher http://www.hse.ie/eng/services/newscentre/2010archive/feb2010/homecare.html [↑](#footnote-ref-14)
15. Recent data on costs charged for nursing home care in the public nursing homes across the country indicate an average of about 1,200 euro per week http://www.hse.ie/eng/services/Find\_a\_Service/Older\_People\_Services/nhss/costhse.pdf [↑](#footnote-ref-15)
16. Figures from the HSE for 2008 indicated an average cost of 889 euro per day across a range of hospitals and casemixes http://www.hse.ie/eng/about/PersonalPQ/PQ/2010\_PQ\_Responses/February\_2010/Feb\_4/Caoimhgh%C3%ADn\_%C3%93\_Caol%C3%A1in\_PQ\_5857-10\_.pdf [↑](#footnote-ref-16)
17. Gannon, O’Shea and Hudson (2008). The Economic Costs of falls and fractures in people aged 65 and over in Ireland. Irish Centre for Social Gerontology, National University of Ireland Galway [↑](#footnote-ref-17)
18. Mann et al (1999) Effectiveness of Assistive Technology and Environmental Interventions in Maintaining Independence and Reducing Home Care Costs for the Frail Elderly. ARCH FAM MED/VOL 8, MAY/JUNE 1999 [↑](#footnote-ref-18)
19. Papers presented at Nordic Assistive Technology Seminar: Outcomes of Assistive Technology – Supporting Practice and Development. STAKES, Helsinki, Finland 25–26 November, 2008 [↑](#footnote-ref-19)
20. HSE (2011) National Audiology Review. http://www.hse.ie/eng/services/Publications/corporate/AudiologyReview.pdf [↑](#footnote-ref-20)
21. Persson, J. (2008) Cost-effectiveness and policy making: the case of four-wheeled walkers. Nordic Assistive Technology Seminar: Outcomes of Assistive Technology – Supporting Practice and Development. STAKES, Helsinki, Finland 25–26 November, 2008 [↑](#footnote-ref-21)
22. for example, in the extensive commentary and analysis in the Report of the Working Group on Technology and Telecommunications to the Commission on the Status of People with Disabilities in 1996 (unpublished) [↑](#footnote-ref-22)
23. Report of the Working Group on Technology and Telecommunications to the Commission on the Status of People with Disabilities in 1996 (unpublished) [↑](#footnote-ref-23)
24. Department of Health and Children (2001) Quality and Fairness: A Health System for You. [↑](#footnote-ref-24)
25. HSE National Service Plan 2011. http://www.hse.ie/eng/services/Publications/corporate/nsp2011.pdf [↑](#footnote-ref-25)
26. Report of the Working Group on Technology and Telecommunications to the Commission on the Status of People with Disabilities in 1996 (unpublished) [↑](#footnote-ref-26)
27. This was a somewhat ad hoc approach as it proved difficult within the timeframe of the study to establish a more structured engagement with the HSE. The approach involved contacting relevant HSE staff from a range of locations across the country and completion of an information template through telephone interview. [↑](#footnote-ref-27)
28. for example, as indicated in some of the published HSE answers to Parliamentary Questions on this issue [↑](#footnote-ref-28)
29. HSE (2011) National Audiology Review. http://www.hse.ie/eng/services/Publications/corporate/AudiologyReview.pdf [↑](#footnote-ref-29)
30. For the NGOs most active in the AT area the approach involved completion of an information template through interview and/or self-completion, supplemented by additional documentary information where available. [↑](#footnote-ref-30)
31. based on statistics provided by HRB of the agencies that were reported to be used for 'assistive technology/client technical services' in the database in 2009 [↑](#footnote-ref-31)
32. http://www.dyslexia.ie/dai-services/assistive-technology-advice-service/ [↑](#footnote-ref-32)
33. http://www.mdi.ie/equipment.html [↑](#footnote-ref-33)
34. http://www.iwa.ie/services/wheelchairServices.aspx [↑](#footnote-ref-34)
35. http://iwa.ie/services/advice.aspx [↑](#footnote-ref-35)
36. NDA (2006) A Review of the Operation of the Disabled Persons Grant Scheme and Recommendations for Change http://www.nda.ie/cntmgmtnew.nsf/0/2B36F812DAD49EAB802571FC0036BD1A?OpenDocument [↑](#footnote-ref-36)
37. http://www.citizensinformation.ie/en/housing/housing\_grants\_and\_schemes/housing\_adaptation\_grant\_for\_people\_with\_disability.html [↑](#footnote-ref-37)
38. http://www.citizensinformation.ie/en/housing/housing\_grants\_and\_schemes/mobility\_aids\_grant\_scheme.html [↑](#footnote-ref-38)
39. http://www.irishstatutebook.ie/pdf/1998/en.act.1998.0021.pdf [↑](#footnote-ref-39)
40. http://www.oireachtas.ie/documents/bills28/acts/2000/a800.pdf [↑](#footnote-ref-40)
41. http://www.oireachtas.ie/documents/bills28/acts/2004/A2404.pdf [↑](#footnote-ref-41)
42. http://www.fas.ie/en/Allowances+and+Grants/Workplace+Equipment+Adaptation+Grant+%28WEAG%29.htm [↑](#footnote-ref-42)
43. http://www.oireachtas.ie/documents/bills28/acts/2005/a1405.pdf [↑](#footnote-ref-43)
44. http://www.oireachtas.ie/documents/bills28/acts/2005/a1005.pdf [↑](#footnote-ref-44)
45. figures here are rounded [↑](#footnote-ref-45)
46. http://www.fas.ie/NR/rdonlyres/82676D0C-DB02-49F1-838B-D70AE2111706/384/WRCFINALREPORTSEP280509.pdf [↑](#footnote-ref-46)
47. http://www.fas.ie/NR/rdonlyres/1EE2B266-BDD5-43E8-83E9-3D64FCFC9B8C/482/RAFBROCHURE.pdf [↑](#footnote-ref-47)
48. http://finance.gov.ie/documents/publications/equality/codepractdisability2007.pdf [↑](#footnote-ref-48)
49. http://per.gov.ie/wp-content/uploads/DLORep.pdf [↑](#footnote-ref-49)
50. http://www.welfare.ie/EN/Policy/CorporatePublications/HowWeWork/Disability%20Sectoral%20Plan/Documents/DSPProgressReport0609.pdf [↑](#footnote-ref-50)
51. Schools and the Equal Status Act: 2nd Edition http://www.equality.ie/index.asp?locID=106&docID=66 [↑](#footnote-ref-51)
52. Office of the Ombudsman for Children (2011) A statement based on an investigation regarding the refusal to provide an assistive technology grant to a child by the Department of Education and Skills. <http://www.oco.ie/assets/files/publications/complaints_and_investigations/OCOInvestigationofrefusalbyDEStoprovideATgrant.pdf> [↑](#footnote-ref-52)
53. Universities Act , 1997. http://www.irishstatutebook.ie/1997/en/act/pub/0024/index.html [↑](#footnote-ref-53)
54. Government of Ireland (2000) Equal Status Act, The Stationery Office, Available at: http://www.irishstatutebook.ie/2000/en/act/pub/0008/index.html [↑](#footnote-ref-54)
55. http://debates.oireachtas.ie/dail/2010/12/15/00056.asp [↑](#footnote-ref-55)
56. Revised scheme of grants towards the purchase of equipment for pupils with a disability in second level schools http://www.education.ie/home/home.jsp?maincat=&pcategory=17216&ecategory=29359&sectionpage=&language=EN&link&page=2= [↑](#footnote-ref-56)
57. Inclusion of Students with Special Educational Needs Post-Primary Guidelineshttp://www.education.ie/servlet/blobservlet/insp\_inclusion\_students\_sp\_ed\_needs\_pp\_guidelines.pdf [↑](#footnote-ref-57)
58. National Office for Equity of Access to Higher Education (2010) Pathways for Disabled Students to Tertiary Education and Employment, Country Report for Ireland, OECD Directorate for Education [↑](#footnote-ref-58)
59. Information and Communications Technology (ICT) in the Primary School Curriculum http://www.ncca.ie/en/Curriculum\_and\_Assessment/ICT/ [↑](#footnote-ref-59)
60. OECD (2010) Pathways for Disabled Students to Tertiary Education and Employment: Country Report for Ireland [↑](#footnote-ref-60)
61. http://www.sess.ie [↑](#footnote-ref-61)
62. http://www.enabletech.ie/ToolsFrameset.html [↑](#footnote-ref-62)
63. Guidelines for Teachers of Students with General Learning Disabilities http://www.ncca.ie/en/Curriculum\_and\_Assessment/Inclusion/Special\_Educational\_Needs/Download\_Special\_Educational\_Needs\_Guidelines/Guidelines\_for\_teachers\_of\_students\_with\_general\_learning\_disabilities.html [↑](#footnote-ref-63)
64. NCTE Advice Sheet – ICT and Special Education Needs Advice Sheet 28 http://www.ncte.ie/documents/advicesheets/28SpecialNeedsNov08.pdf [↑](#footnote-ref-64)
65. AHEAD (2008) SEEING AHEAD: A study of the factors affecting blind & vision impaired students going on to higher education, Available at: http://www.ahead.ie/shopdetail?id=46&qstring=cGc9Mw== [↑](#footnote-ref-65)
66. Good Practice Guidelines for Providers of Supports and Service for Students with Disabilities in Higher Education http://www.ahead.ie/shopdetail?id=14&qstring=cGc9Mg [↑](#footnote-ref-66)
67. It is important to note that the definition of disability for the purpose of data collection and funding within the third level education sector is distinct from that of the disability act and includes many people who would **not** be classified as having a disability according to the disability act, for example, students with dyslexia. The definition of disability was based on adopting the equality legislation together with the inclusion of content from the Report of the Committee on Access and Participation of Students with disabilities in Higher Education 1994 which proposed this definition: A student is disabled if he/she requires a facility which is outside of the mainstream of the college in order to participate fully in Higher Education and without which the student would be educationally disadvantaged in comparison with their peers. [↑](#footnote-ref-67)
68. OECD (2010) Transition Policies to Tertiary Education and Employment for Young Adults with Disabilities: Trends, Issues and Outlook – Revised Report, Group of National Experts on Special Needs Education, OECD Directorate for Education [↑](#footnote-ref-68)
69. http://www.citizensinformationboard.ie/services/accessibility\_services/accessibility\_assistivetechnology.html [↑](#footnote-ref-69)
70. information provided by Assist Ireland [↑](#footnote-ref-70)
71. http://www.try-it.ie/d/about-us [↑](#footnote-ref-71)
72. https://www.pobal.ie/WhatWeDo/CaseStudies/Pages/Try-It---EDS-.aspx [↑](#footnote-ref-72)
73. Try-it.ie (2009) Final Evaluation Report (prepared by Mullan Consulting) Available at: www.try-it.ie/.../Final%20Evaluation%20Try-It\_Case%20Studies.pdf [↑](#footnote-ref-73)
74. http://www.citizensinformation.ie/en/money\_and\_tax/tax/tax\_credits\_and\_reliefs\_for\_people\_with\_disabilities/ vat\_refunds\_on\_aids\_and\_appliances\_used\_by\_people\_with\_disabilities.html [↑](#footnote-ref-74)
75. http://www.citizensinformation.ie/en/travel\_and\_recreation/transport\_and\_disability/tax\_relief\_for\_disabled\_drivers\_ and\_disabled\_passengers.html [↑](#footnote-ref-75)
76. Cabinet Office (2005) Improving the Life Chances of Disabled People http://webarchive.nationalarchives.gov.uk/+/http://www.cabinetoffice.gov.uk/strategy/work\_areas/disability.aspx [↑](#footnote-ref-76)
77. Audit Commission (2000): Fully Equipped: the provision of equipment to older or disabled people by the NHS and social services in England and Wales; Audit Commission (2002) Fully Equipped 2002 [↑](#footnote-ref-77)
78. Disability Equipment Services in Northern Ireland - Regional Summary http://www.dhsspsni.gov.uk/disability\_equipment\_services\_in\_northern\_ireland\_regional\_summary.pdf [↑](#footnote-ref-78)
79. Scottish Government (2003) Equipped for Inclusion: Report of the Strategy Forum: Equipment and Adaptations http://scotland.gov.uk/consultations/social/efir-00.asp [↑](#footnote-ref-79)
80. Department of Health (2001) Health service circular / local authority circular: community equipment services http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Healthservicecirculars/DH\_4004092 [↑](#footnote-ref-80)
81. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\_4015261 [↑](#footnote-ref-81)
82. http://www.csed.dh.gov.uk/TCES/ [↑](#footnote-ref-82)
83. for example, Audit Commission (2004) Assistive technology: Independence and well-being 4. [↑](#footnote-ref-83)
84. Preventative Technology Grant http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/LocalAuthorityCirculars/AllLocalAuthority/DH\_4131935 [↑](#footnote-ref-84)
85. First results have been reported as being very positive, including substantial reductions in A&E visits, emergency admissions, elective admissions, bed days, tariff costs and, strikingly, in mortality rates. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\_131684 [↑](#footnote-ref-85)
86. http://www.dh.gov.uk/prod\_consum\_dh/groups/dh\_digitalassets/@dh/@en/documents/digitalasset/dh\_4075155.pdf [↑](#footnote-ref-86)
87. http://www.national-catalogue.org/smartassist/nationalcatalogue [↑](#footnote-ref-87)
88. DWP (2011) *Getting in, staying in and getting on: Disability employment support fit for the future*. http://www.official-documents.gov.uk/document/cm80/8081/8081.pdf [↑](#footnote-ref-88)
89. http://www.legislation.gov.uk/ukpga/1981/60/contents [↑](#footnote-ref-89)
90. http://www.legislation.gov.uk/ukpga/1996/56/contents [↑](#footnote-ref-90)
91. https://www.education.gov.uk/publications/standard/publicationDetail/Page1/DfES%200581%202001 [↑](#footnote-ref-91)
92. https://www.education.gov.uk/publications/standard/publicationDetail/Page1/CM%208027 [↑](#footnote-ref-92)
93. http://www.direct.gov.uk/en/DisabledPeople/EducationAndTraining/HigherEducation/DG\_10034898 [↑](#footnote-ref-93)
94. http://www.legislation.gov.uk/ukpga/2000/21/section/13 [↑](#footnote-ref-94)
95. http://www.legislation.gov.uk/ukpga/2001/10/contents [↑](#footnote-ref-95)
96. http://www.legislation.gov.uk/ukpga/2010/15/contents [↑](#footnote-ref-96)
97. https://www.education.gov.uk/publications/standard/publicationDetail/Page1/CM%208027 [↑](#footnote-ref-97)
98. http://media.education.gov.uk/assets/files/pdf/q/quality%20standards%20for%20sen%20support%20and%20outreach%20services.pdf [↑](#footnote-ref-98)
99. http://www.inclusive-solutions.com/pdfs/Ofstedsupportservices2005%20.pdf [↑](#footnote-ref-99)
100. https://www.education.gov.uk/publications/eOrderingDownload/RR729.pdf [↑](#footnote-ref-100)
101. Through Inclusion to Excellence (2005) http://readingroom.lsc.gov.uk/lsc/2005/research/commissioned/through-inclusion-to-excellence.pdf and Further Education: Raising skills, improving life (2006) http://www.official-documents.gov.uk/document/cm67/6768/6768.pdf [↑](#footnote-ref-101)
102. http://readingroom.lsc.gov.uk/lsc/National/learning\_for\_living\_and\_work\_complete\_2.pdf [↑](#footnote-ref-102)
103. http://readingroom.ypla.gov.uk/ypla/ypla-learning\_for\_living\_and\_work\_update\_february2011-br-feb11-v1.pdf [↑](#footnote-ref-103)
104. DSA-QAG (2010) Assessment Centre: Quality Assurance Framework Version 2. Available at: http://www.dsa-qag.org.uk/content.asp?ContentID=4 [↑](#footnote-ref-104)
105. http://www.vnverdragwaarmaken.nl/index.php/home [↑](#footnote-ref-105)
106. Wet gelijke behandeling op grond van handicap of chronische ziekte   
     http://wetten.overheid.nl/BWBR0014915/geldigheidsdatum\_11-03-2009#2a [↑](#footnote-ref-106)
107. Actieplan gelijke behandeling in the praktijk, TK 2003/2004 [↑](#footnote-ref-107)
108. ledereen doet mee http://docs.szw.nl/pdf/135/2007/135\_2007\_1\_17987.pdf [↑](#footnote-ref-108)
109. Zorgverzerkinswet http://wetten.overheid.nl/BWBR0018450/geldigheidsdatum\_22-03-2010 [↑](#footnote-ref-109)
110. http://english.minvws.nl/en/themes/social-support-act/ [↑](#footnote-ref-110)
111. Algemene Wet Bijzondere Ziektekosten http://wetten.overheid.nl/BWBR0002614/geldigheidsdatum\_22-03-2010 [↑](#footnote-ref-111)
112. Article 2.6, http://wetten.overheid.nl/BWBR0018715/Hoofdstuk2/1/14/Artikel26/geldigheidsdatum\_25-06-2010 [↑](#footnote-ref-112)
113. College voor zorgzerzekeringen [↑](#footnote-ref-113)
114. Wet maatschappelijke ondersteuning http://wetten.overheid.nl/BWBR0020031/geldigheidsdatum\_22-03-2010 [↑](#footnote-ref-114)
115. Article 2.6, http://wetten.overheid.nl/BWBR0018715/Hoofdstuk2/1/14/Artikel26/geldigheidsdatum\_25-06-2010 [↑](#footnote-ref-115)
116. CVZ, Pakket advies (deelrapport hulpmiddelen), http://www.cvz.nl/binaries/live/cvzinternet/hst\_content/nl/documenten/rapporten/2010/rpt1004+pakketadvies+2010+-+hulpmiddelenzorg.pdf [↑](#footnote-ref-116)
117. NICTIZ, GPH and CLIQ end-report, http://www.nictiz.nl/uploaded/FILES/Cliq%20website/Cliq\_GPH\_Eindrapportage.pdf [↑](#footnote-ref-117)
118. Wet werk en inkomen naar arbeidsvermogen http://wetten.overheid.nl/BWBR0019057/geldigheidsdatum\_22-03-2010 [↑](#footnote-ref-118)
119. Regeling onderwijsvoorzieningen voor jongeren met een handicap http://wetten.overheid.nl/BWBR0025261/geldigheidsdatum\_08-06-2010 [↑](#footnote-ref-119)
120. Leerlinggebonden financiering http://wetten.overheid.nl/BWBR0014753/geldigheidsdatum\_22-03-2010 [↑](#footnote-ref-120)
121. Lov om social service, https://www.retsinformation.dk/Forms/R0710.aspx?id=136390 [↑](#footnote-ref-121)
122. Lov om retssikkerhed og administration på det sociale område, LBK nr. 807 of September 26th, 2002 [↑](#footnote-ref-122)
123. Lov om ændring af lov om social service, https://www.retsinformation.dk/Forms/R0710.aspx?id=131511 [↑](#footnote-ref-123)
124. https://www.retsinformation.dk/Forms/R0710.aspx?id=11065 [↑](#footnote-ref-124)
125. http://www.servicestyrelsen.dk/kontakt/vihs-videnscenter-for-handicap-og-socialpsykiatri/vidensdelen. And http://www.servicestyrelsen.dk/om-os/organisation/vihs-videnscenter-for-handicap-og-socialpsykiatri/handicapgrupper [↑](#footnote-ref-125)
126. http://dansketidende.dk/skrifter/07/sundhed/sygdomsforeninger.html. [↑](#footnote-ref-126)
127. Lov om kompensation til handicappede i erhverv https://www.retsinformation.dk/Forms/R0710.aspx?id=125905 [↑](#footnote-ref-127)
128. Lov om aktiv socialpolitik, https://www.retsinformation.dk/Forms/R0710.aspx?id=29856 [↑](#footnote-ref-128)
129. Lov om en aktiv beskæftigelsesindsats, https://www.retsinformation.dk/Forms/R0710.aspx?id=31354#K14 [↑](#footnote-ref-129)
130. Bekendtgørelse af lov om folkeskolen https://www.retsinformation.dk/Forms/r0710.aspx?id=133039 [↑](#footnote-ref-130)
131. Bekendtgørelse om folkeskolens specialundervisning og anden specialpædagogisk bistand https://www.retsinformation.dk/Forms/R0710.aspx?id=132834 [↑](#footnote-ref-131)
132. Bekendtgørelse af lov om friskoler og private grundskoler m.v https://www.retsinformation.dk/Forms/R0710.aspx?id=132522 [↑](#footnote-ref-132)
133. Bekendtgørelse om særlige tilskud til specialpædagogisk bistand ved ungdomsuddannelser m.v. https://www.retsinformation.dk/Forms/R0710.aspx?id=121145 [↑](#footnote-ref-133)
134. Lov om folkehøjskoler, efterskoler, husholdningsskoler og håndarbejdsskoler (frie kostskoler), https://www.retsinformation.dk/Forms/R0710.aspx?id=120733 [↑](#footnote-ref-134)
135. Bekendtgørelse om tilskud m.v. til folkehøjskoler, efterskoler, husholdningsskoler og håndarbejdsskoler (frie kostskoler), https://www.retsinformation.dk/Forms/R0710.aspx?id=125698 [↑](#footnote-ref-135)
136. Lov om specialundervisning for voksne, https://www.retsinformation.dk/Forms/R0710.aspx?id=23466 [↑](#footnote-ref-136)
137. Lov om specialpædagogisk støtte ved videregående uddannelser (SPS), https://www.retsinformation.dk/Forms/R0710.aspx?id=25295 [↑](#footnote-ref-137)
138. www.spsu.dk [↑](#footnote-ref-138)
139. NOU 2001:22: Fra bruker til borger (From ”user” to ”citizen” – a strategy for reduction of disabling barriers) [↑](#footnote-ref-139)
140. http://www.regjeringen.no/nb/dep/hod/dok/nouer/2011/nou-2011-11.html?id=646812 [↑](#footnote-ref-140)
141. Innovasjon i omsorg. http://www.regjeringen.no/nb/dep/hod/dok/nouer/2011/nou-2011-11.html?id=646812 [↑](#footnote-ref-141)
142. Lov om folketrygd, 1997; and subsequent revisions [↑](#footnote-ref-142)
143. Høyen, E. & J. Tøssebro (2009). Brukerpass i hjelpemiddelformidlingen. NTNU Social Research Report, Trondheim [↑](#footnote-ref-143)
144. www.regjeringen.no – inclusive working life [↑](#footnote-ref-144)
145. Lov om universiteter og hogskoler (2005) [↑](#footnote-ref-145)
146. Ministerial Decree 332/1999: Nomenclatore Tariffario delle Protesi e degli ausili (Nomenclature and Tariffs of prosthetic and assistive equipment). Italian Ministry of Health [↑](#footnote-ref-146)
147. http://www.bmas.de/DE/Service/Publikationen/a740-aktionsplan-bundesregierung.html. [↑](#footnote-ref-147)
148. Audit Commission (2000): Fully Equipped: the provision of equipment to older or disabled people by the NHS and social services in England and Wales; Audit Commission (2002) Fully Equipped 2002 [↑](#footnote-ref-148)
149. Disability Equipment Services in Norhern Ireland - Regional Summary http://www.dhsspsni.gov.uk/disability\_equipment\_services\_in\_northern\_ireland\_regional\_summary.pdf [↑](#footnote-ref-149)
150. Scottish Government (2003) Equipped for Inclusion: Report of the Strategy Forum: Equipment and Adaptations http://scotland.gov.uk/consultations/social/efir-00.asp [↑](#footnote-ref-150)
151. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\_4015261 [↑](#footnote-ref-151)
152. http://www.csed.dh.gov.uk/TCES/ [↑](#footnote-ref-152)
153. for example, Audit Commission (2004) Assistive technology: Independence and well-being 4. [↑](#footnote-ref-153)
154. Department of Health (2005) Building Telecare in England. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\_4115303 [↑](#footnote-ref-154)
155. For example, there has been considerable activity on telehealth in Scotland. http://www.sctt.scot.nhs.uk/projects.html [↑](#footnote-ref-155)
156. Whole System Demonstrators. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\_100946 [↑](#footnote-ref-156)
157. Cabinet Office (2005) Improving the Life Chances of Disabled People http://webarchive.nationalarchives.gov.uk/+/http://www.cabinetoffice.gov.uk/strategy/work\_areas/disability.aspx [↑](#footnote-ref-157)
158. There is national guidance on how eligibility for social services (and hence for the community AT and telecare offered by the local authorities as part of their social services) should be determined, originally the Fair Access to Care Services (FACS) and, more recently, the Guidance on Eligibility for Adult Social Care. [↑](#footnote-ref-158)
159. According to the Ministerial Decree 27th August 1999, n.332, people eligible for AT provision through the National Health Service are: registered disabled persons (for civil, war, service reasons); blind and deaf-mute persons; people under 18 who need a prevention intervention, treatment and rehabilitation of a permanent disability; people affected by specific diseases. [↑](#footnote-ref-159)
160. Audit Commission (2000) Fully equipped: The provision of equipment to older or disabled people by the NHS and social services in England and Wales http://www.auditcommission.gov.uk/nationalstudies/health/socialcare/Pages/fullyequipped.aspx  
     Audit Commission (2002) Fully equipped 2002: Assisting independence   
     http://www.audit-commission.gov.uk/localgov/nationalstudies/Pages/fullyequipped2002\_copy.aspx [↑](#footnote-ref-160)
161. Department of Health (2001) Health service circular / local authority circular: community equipment services http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Healthservicecirculars/DH\_4004092;   
     Integrated Community Equipment Services ttp://www.dh.gov.uk/en/Publicationsandstatistics/Publications/  
     PublicationsPolicyAndGuidance/DH\_4015261; 'Transforming Community Equipment Services' http://www.csed.dh.gov.uk/TCES/ [↑](#footnote-ref-161)
162. The Retail Model for Users and their Carers / Personal Assistantshttp://www.csed.dh.gov.uk/\_oldCSEDAssets/retail-model.pdf [↑](#footnote-ref-162)
163. DWP (2011) *Getting in, staying in and getting on: Disability employment support fit for the future*. http://www.official-documents.gov.uk/document/cm80/8081/8081.pdf [↑](#footnote-ref-163)
164. source: DWP, 2011 [↑](#footnote-ref-164)
165. Sally Fennema-Jansen et al (2007) Developing a Statewide System for Providing and Assessing Outcomes of Assistive Technology *Journal of Special Education Technology* 22:1 37-52 [↑](#footnote-ref-165)
166. http://www.r2d2.uwm.edu/atoms/products/atomsbiblio2002.html [↑](#footnote-ref-166)
167. http://www.r2d2.uwm.edu/atoms/archive/technicalreports/tr-atip.html [↑](#footnote-ref-167)
168. Sally Fennema-Jansen et al (2007) Developing a Statewide System for Providing and Assessing Outcomes of Assistive Technology *Journal of Special Education Technology* 22:1 37-52 [↑](#footnote-ref-168)
169. http://www.minedu.govt.nz/NZEducation/EducationPolicies/SpecialEducation/ServicesAndFunding/AssistiveTechnology.aspx [↑](#footnote-ref-169)
170. Comptroller and Auditor General (2005) Provision of Disability Services by Nonprofit Organisations [↑](#footnote-ref-170)
171. www.uiciechi.it [↑](#footnote-ref-171)
172. www.simfer.it [↑](#footnote-ref-172)
173. Welsh Government (2011) Guidance Document: Community Equipment Services - The introduction of National Minimum Standards. http://www.ssiacymru.org.uk/media/pdf/2/8/community\_equipment\_-\_national\_minimum\_standards\_guidance.pdf [↑](#footnote-ref-173)
174. NHS Scotland (2011) Wheelchair Services: Draft Standards. http://www.scotland.gov.uk/Publications/2010/12/06095313/25 [↑](#footnote-ref-174)
175. Down, K. et al (2006) Assistive Technology: Standards for Service Provision. http://www.fastuk.org/fastdocuments/Standards%20Report%20Final%20Version.pdf [↑](#footnote-ref-175)
176. http://www.husselson.nl/kompas.htm [↑](#footnote-ref-176)
177. Heerkens et al (2010) RIFA final report phase 1 http://www.cg-raad.nl/docs\_en\_pdfs/hulpmiddelen/20100427\_richtlijn\_verslag\_RiFA-fase1-19.pdf [↑](#footnote-ref-177)
178. Dijcks et al (2006) KWAZO, A new instrument to assess the quality of service delivery in assistive technology provision. Disability and rehabilitation (2006) Volume: 28, Issue: 15, Publisher: IOS Press, Pages: 909-914 [↑](#footnote-ref-178)
179. NICTIZ, GPH and CLIQ end-report, http://www.nictiz.nl/uploaded/FILES/Cliq%20website/Cliq\_GPH\_Eindrapportage.pdf [↑](#footnote-ref-179)
180. http://portale.siva.it/files/Portale\_Siva\_Modulo\_Relazione%20Valutazione%20Ausili.pdf [↑](#footnote-ref-180)
181. Andrich R. (2011):“Client assessment for recommending assistive solutions: protocols and tools”. AAATE 2011 [↑](#footnote-ref-181)
182. http://www.kassys.org/ [↑](#footnote-ref-182)
183. Extracted from Scherer, M. J. (2008) *Matching Person & Assistive Technology: Beyond Access to Participation.* Presentation to the Assistive Technology & the Labour Market Conference, Prague October 2008http://www.atlm.eu/images/c/c6/Scherer\_Prague2008.pdf [↑](#footnote-ref-183)
184. www.centriausili.it [↑](#footnote-ref-184)
185. www.simfer.it [↑](#footnote-ref-185)
186. Down, K. and Stead, A. (2007) Assistive Technology Workforce Development. http://www.fastuk.org/fastdocuments/App4%20-%20Self%20Care%20in%20AT.pdf [↑](#footnote-ref-186)
187. http://www.abilitynet.org.uk/atwork\_accreditation [↑](#footnote-ref-187)
188. The provisional programme can be consulted at http://apps.unicatt.it/formazione\_permanente/milano\_scheda\_corso.asp?id=4880 [↑](#footnote-ref-188)
189. http://www.livingmadeeasy.org.uk/ [↑](#footnote-ref-189)
190. http://www.ageuk.org.uk/buy/help-at-home/ [↑](#footnote-ref-190)
191. http://www.ricability.org.uk/consumer\_reports/ [↑](#footnote-ref-191)
192. Ricability (2009) The revolution in equipment supply and what it means for information: research report. [↑](#footnote-ref-192)
193. Ricability (2009) The retail model of equipment supply - providing information for consumers: guide for local authorities [↑](#footnote-ref-193)
194. http://www.vindeenhulpmiddel.nl/ [↑](#footnote-ref-194)
195. EASTIN (European Assistive Technology Information Network) is an association of European AT Database provides and the EATIN portal provides AT product information and associated information in all European languages from 7 national assistive technology databases including the Danish AT Database. All 7 databases are using the ISO 9999 classification. [↑](#footnote-ref-195)
196. http://www.handy-wijzer.nl/ [↑](#footnote-ref-196)
197. e.g http://www.meezuidlimburg.nl/. [↑](#footnote-ref-197)
198. http://www.kiesbeter.nl/algemeen/actueel/hulpmiddelen [↑](#footnote-ref-198)
199. www.hmi-basen.dk [↑](#footnote-ref-199)
200. http://www.hmi.dk/media/-300023/files/Robotter\_til\_ældre-\_og\_handicapområdet.pdf [↑](#footnote-ref-200)
201. www.hjelpemiddeldatabasen.no [↑](#footnote-ref-201)
202. www.nav.no. [↑](#footnote-ref-202)
203. www.portale.siva.it [↑](#footnote-ref-203)
204. http://www.motability.co.uk/main.cfm [↑](#footnote-ref-204)
205. http://www.national-catalogue.org/smartassist/nationalcatalogue [↑](#footnote-ref-205)
206. Audit Commission (2000): Fully Equipped: the provision of equipment to older or disabled people by the NHS and social services in England and Wales; Audit Commission (2002) Fully Equipped 2002 [↑](#footnote-ref-206)
207. Disability Equipment Services in Northern Ireland - Regional Summary http://www.dhsspsni.gov.uk/disability\_equipment\_services\_in\_northern\_ireland\_regional\_summary.pdf [↑](#footnote-ref-207)
208. NHS Information Centre (2008) Personal Social Services Survey of Adults Receiving Community Equipment and Minor Adaptations in England, 2009-10. http://www.ic.nhs.uk/pubs/pssadultsequip0910 [↑](#footnote-ref-208)
209. Community Care Statistics 2007 - 08: Referrals, Assessments and Packages of Care for Adults, England. http://www.ic.nhs.uk/statistics-and-data-collections/social-care/adult-social-care-information/community-care-statistics-2007--08-referrals-assessments-and-packages-of-care-for-adults-england-national-report-and-cassrs [↑](#footnote-ref-209)
210. source: DWP, 2011 [↑](#footnote-ref-210)
211. http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2010/08/16/op-weg-met-de-wmo.html [↑](#footnote-ref-211)
212. http://www.nza.nl/104107/138040/Evaluatie\_Zorgverzekeringswet\_en\_Wet\_op\_de\_zorgtoeslag.pdf [↑](#footnote-ref-212)
213. http://www.nza.nl/104107/138040/Algemeen\_rapport\_uitvoering\_AWBZ\_2009.pdf [↑](#footnote-ref-213)
214. http://www.rijksoverheid.nl/documenten-en-publicaties/kamerstukken/2011/06/01/kamerbrief-aanpassing-verstrekking-hulpmiddelen.html [↑](#footnote-ref-214)
215. Lemmens L, Spreeuwenberg P, Rijken M.Kerngegevens Zorg 2007: Nationaal Panel Chronisch zieken en gehandicapten. Utrecht: NIVEL, 2008. [↑](#footnote-ref-215)
216. Available from the AAATE 2011 proceedings: Bjørnskov S & Brandt Å. Multifactorial Assistive Device Intervention to Prevent Low Back Pain Among Caregivers. I: Gelderblom GJ et al. (Eds.). Everyday Technology for Independence and Care. IOS Press, 2011; Sund T, Iwarsson S, Brandt Å. Documentation of the Service Delivery Process of Powered Wheelchairs and Scooters in Two Nordic Countries. I: Gelderblom GJ et al. (Eds.). Everyday Technology for Independence and Care. IOS Press, 2011; Mindegaard P. User Costs in the Field of Assistive Technology – Results from a Case Study. I: Gelderblom GJ et al. (Eds.). Everyday Technology for Independence and Care. IOS Press, 2011; also studies not yet published in English on: cost-effectiveness of public support to cars for people with disability showing that public support is cost-effective; rollator studies showing that rollator interventions increase ease of participation, but not participation frequency. [↑](#footnote-ref-216)
217. http://www.legislation.gov.uk/uksi/2009/309/contents/made [↑](#footnote-ref-217)
218. http://www.national-catalogue.org/smartassist/nationalcatalogue [↑](#footnote-ref-218)
219. www.hmi-basen.dk [↑](#footnote-ref-219)
220. www.portale.siva.it [↑](#footnote-ref-220)
221. Kubitschke, L. and Cullen, K. (2010) ICT & Ageing: European Study on Users, Markets and Technologies. Final report of study for European Commission. http://ec.europa.eu/information\_society/activities/einclusion/library/studies/docs/ict\_ageing\_final\_report.pdf [↑](#footnote-ref-221)
222. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\_131684 [↑](#footnote-ref-222)
223. ICT & Ageing Study: Compilation Report on Ethical Issues. http://www.ict-ageing.eu/ict-ageing-website/wp-content/uploads/2008/11/d11\_ethics\_compilation\_rep\_with\_exec\_sum.pdf [↑](#footnote-ref-223)
224. for example, the ICT & Ageing study emphasised the need for an appropriate ontology in this area and questioned the suitability of a somewhat engineering-oriented concept such as 'ambient assisted living' as an overarching terminology for this field. http://ec.europa.eu/information\_society/activities/einclusion/library/studies/docs/ict\_ageing\_final\_report.pdf [↑](#footnote-ref-224)
225. ICT & Ageing Study - Final report http://ec.europa.eu/information\_society/activities/einclusion/library/studies/docs/ict\_ageing\_final\_report.pdf [↑](#footnote-ref-225)
226. Cullen, K et al (2009) The Role and Future Development of Supportive Housing for Older People in Ireland. Dublin: National Council on Ageing and Older People. [↑](#footnote-ref-226)
227. http://www.trilcentre.org/ [↑](#footnote-ref-227)
228. http://www.ict-ageing.eu/?page\_id=1360 [↑](#footnote-ref-228)
229. http://www.bouwcollege.nl [↑](#footnote-ref-229)
230. http://www.abtfonden.dk/ [↑](#footnote-ref-230)
231. http://www.regjeringen.no/en/dep/hod/dok/nouer/2011/nou-2011-11.html?id=646812 [↑](#footnote-ref-231)
232. http://akseli.tekes.fi/opencms/opencms/OhjelmaPortaali/ohjelmat/FinnWell/en/ohjelmankuvaus.html [↑](#footnote-ref-232)
233. Working Group on Technology and Telecommunications. Commission of the Status of People with Disabilities. 1996. [↑](#footnote-ref-233)
234. e.g Craddock (2005) "Opportunity for Change" Assistive Technology: A National & European Perspective. Dublin: CRC [↑](#footnote-ref-234)