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# *IO4-A4. LEARNING MATERIALS – Scotland (U.K.).*

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## *1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).*

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*West College Scotland, July 2017.*

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Co-funded by the  
Erasmus+ Programme  
of the European Union

This project has been funded with support from the European Union. This publication reflects only the views of the author(s), and the National Agency and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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## **Support Notes for Assisted Living Technology for the Enhanced Home Care Worker**

Welcome! If you are reading this then it is because you are a home care worker undertaking the Enhanced Home Care Worker qualification. This pack has the support notes for the unit called Assisted Living Technology for the Enhanced Home care Worker.

### **How do you use this pack?**

This pack is designed to provide you with some underpinning knowledge for the unit, which will help you with evidence for the Knowledge and Understanding section. It doesn't cover everything you would need to know, but it will provide helpful information and will also refer you to useful websites or reading material too.

You can systematically work your way through the pack or you can 'dip in and out' of particular sections. There are exercises for you to complete; these aren't compulsory, but they will enhance your learning.

### **How will this pack help me?**

Each unit in the Enhanced Home Care qualification has a Knowledge and Understanding section. When you are fulfilling the Competences section, you will be expected to show your understanding of these Knowledge and Understanding points. This pack will help you with information you need to know and will help you develop your understanding through a series of exercises.

### **Do I work through the pack alone?**

You can work through this pack on your own or you can use it as a forum for discussion with your mentor. Some of the exercises would be useful to discuss with your mentor or the Individuals you are working with.

I hope you enjoy realising what you know already, finding out new things about the technological advances and gain a greater understanding of Assisted Living Technologies you work with.

So Let's Begin.....

## 1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).

### What is Assisted Living Technology?

Assisted Living Technology (ALT) is an umbrella term that includes assistive, adaptive, and rehabilitative devices for people with disabilities and also includes the process used in selecting, locating, and using them.

Assistive technology promotes greater independence by enabling people to perform tasks that they were formerly unable to carry out, or had great difficulty carrying out. This is done by giving the client specialised equipment to use which gives them the ability to carry out specific tasks.



#### Activity 1

*What ALT's do you use on a daily basis?*

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:** You may have listed:

- Personal Digital Assistant (PDA)
- Mobile phone,
- Pendant alarms
- Motion sensors
- Speaking devices
- Jar openers

## Why use assisted living technology?



### Activity 2

In what way do you think ALT is useful for individuals? How are individuals empowered by ALTs?

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:**

- It empowers individuals
- It promotes greater independence.
- It encourages social contact with friends and family.
- It builds confidence in individuals.
- It enables self-management of their health and well-being.
- It enables individuals to remain in their own homes.

Assistive technology promotes greater independence by enabling individuals to perform tasks that they were formerly unable to carry out, or had great difficulty carrying out. This is done by giving the client specialised equipment to use which gives them the ability to carry out specific tasks.

Later on in this pack we will explore the specialised equipment available.



## 1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).

### What is your role?

As a home care worker you should be up to date with any technology and be suitably trained in how to use this.

You will demonstrate how to use any technology within the individual's home. Therefore you should have been trained on how to show others the technology using a method they can understand and follow. You will then support the individual as he/she attempts to use the technology themselves.

With each new piece of technology you should give the individual time to get used to it before introducing any further pieces.

The individuals you are supporting will naturally be nervous and possibly afraid that they will break or damage the technology. They may also worry that this technology will take away a personal visit from the carer. You must therefore be supportive and acknowledge these fears. You will reassure the individual that these technologies are there to enhance the time between visits and to ensure that if they have any issues, they can immediately contact someone for advice, reassurance or help.

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

### What is Ambient Assisted Living (AAL), Telehealth, Telecare & Telemedicine?

AAL is an umbrella term and within this term are the following TeleHealth, TeleCare and TeleMedicine. We will now look at these in more depth.



#### Activity 3

- Go to this website [http://www.arup.com/homepage\\_ambient\\_assisted\\_living](http://www.arup.com/homepage_ambient_assisted_living)
- Download the article.
- Read pages 5, 13-19
- Describe what does the article say about Telehealth, Telcare, & Telmedicine is?

What is TeleHealth?

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

What is TeleCare?

Activity 3 continued;

What is TeleMedicine?

**Answers:****Ambient Assisted Living (AAL)**

AAL is a concept where the following is understood:

- extending the time people can live in their preferred environment by increasing their autonomy, self-confidence and mobility;
- supporting the preservation of health and functional capabilities of older adults,
- promoting a better and healthier lifestyle for individuals at risk;
- enhancing security, preventing social isolation and supporting the preservation of the multifunctional network around the individual;
- supporting carers, families and care organisations;
- increasing the efficiency and productivity of familiar resources.

## 1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).

### TeleHealth

Telehealth: the delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of diseases and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interest of advancing the health of individuals and their communities. (Ambient assisted living P17)

Telehealth is a means of assisting individuals to manage and monitor their health, wellness and their own disease management. This is done using equipment with built in programs relating specifically to each individuals requirements. The care giver then assists the individual on how to use each function and connect with the Dr, Nurse or other people involved in their care. The individual can then connect their device and record the information daily, weekly, monthly as required and once taken they press the send button and this automatically sends the information to the professionals. This means that the individual can do this from the comfort of their home and be more involved in their care. It also gives them the ability to contact the professional directly should they feel unwell or afraid that something is wrong in their day to day life. Applications which can be used in this way can range from simple blood pressure monitoring to the more in-depth recording of blood in the case of diabetes. The more that the individual feels in control of their lives, the longer they will feel that they can remain in their own homes.

Another aspect of Telehealth is related to the rehabilitation process. Within the system the professionals can upload exercises for the specific individual. This will include videos of the techniques to follow to correctly complete these exercises. This is like a fitness video for their specific condition. The programme will be timed and can be reviewed regularly. It is also possible for the professional to view these activities using video technology and give immediate advice or change the exercise if it proves difficult for the individual. The programme can then be set to remind the individual to complete these exercises at regular intervals, via a message on screen or an alert on their phone. All of which returns control back to the individual but leaving them feeling well supported at the same time.

### Telecare

“Telecare consists of equipment and services that support your safety and independence in your own home. The equipment can sense risks such as smoke, floods and gas, can remind you to take pills and even call for help if you fall. A help centre can be contacted automatically if any of these problems occur in your home. If needed the help centre can arrange for someone to come to your home or can contact your family, doctor or emergency services. The system can also warn you of problems by sounding an alarm, flashing lights or vibrating a box which can be kept in your pocket or under your pillow.” ( <http://www.livingmadeeasy.org.uk/scenario.php?csid=54>)definition.

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Most telecare mitigates harm by reacting to untoward events and raising a help response quickly. Some telecare, such as safety confirmation and lifestyle monitoring have a preventive function in that deterioration in the telecare user's wellbeing can be spotted at an early stage.

Telecare is specifically different from telemedicine and telehealth. Telecare refers to the idea of enabling people to remain independent in their own homes by providing person-centred technologies to support the individual or their carers.

The meaning and usage of the term 'telecare' has not yet settled into consistent use. In the UK it is grounded in the social care framework and focuses on the meaning described above. In other countries 'telecare' may be applied to the practice of healthcare at a distance. (Wikipedia)

### **TeleMedicine**

What is Telemedicine?

Telemedicine is the remote diagnosis and treatment of patients by means of telecommunications technology?

Look at this link for a brief overview of Telemedicine:

<https://www.youtube.com/watch?v=c6AT1FLM8yk>

How does Telemedicine help the individuals you support?

Telemedicine allows the individual to link via a screen or smart TV with their own GP, Nurse etc. and discuss their needs without having to rely on assistance to take them to the surgery or hospital. This will cut down on time spent traveling and the stress that this can cause the individual.

The Telemedicine system will also alert the individual when it is time to take their medication, order a new prescription from the pharmacy, and arrange appointments with various health professionals.

### **What is a Telemonitoring system?**

A Telemonitoring system involves easy-to-use equipment that helps you track your vital signs at home. Telemonitoring can help prevent a symptom from becoming a trip to the hospital. Most systems are a fast and simple way to keep an eye on your vital signs and symptoms every day. The system detects changes in blood pressure, heart rate, blood glucose level, oxygen levels, weight and health status. These details can then be sent directly to the relevant health professional at the touch of a button.

Within the Telemonitoring system, an alarm can be set up which alerts the person to take their medication at set times. This means that the pharmacist will set the medicines up in the prescribed boxes and inputs the data to the system which then alerts the person to take the prescribed medication. It details the individual tablet, and the number they should take. This in turn gives the person peace of mind and allows them to feel more in control of their life and their condition.

### **What is Telerehabilitation?**

Telerehabilitation is the delivery of rehabilitation services over telecommunication networks and the internet. Most types of services fall into two categories: clinical assessment, and clinical therapy. Some fields of rehabilitation practice that have explored telerehabilitation are: neuropsychology, speech-language pathology, audiology, occupational therapy, and physical therapy. Telerehabilitation can deliver therapy to people who cannot travel to a clinic because the patient has a disability or because of travel time. Telerehabilitation also allows experts in rehabilitation to engage in a clinical consultation at a distance.

### **ALTs and Communication:**

ALT's can be used by all the care professionals involved in the individual's day to day care. The technology is set up with individual to allow them to be able to contact any professional at the touch of a button. This equipment means that the individual can contact the professional by simply pressing a button, waiting for contact to be made directly and then they can tell that person what the problem is.

With any communication device, people skills are essential. This means that the care giver has to be patient when explaining the use of the equipment. You need to have patience to explain multiple times the same information, until the person is comfortable with using the device.

This type of device can also link via simple means to allow each care professional to access and read any notes placed on the system.

## 1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).

### What digital tools are available for information gathering, processing and analysis?

There are various tools available which can be used to collect and share information. One such tool is an application on the PDA which collects all the data uploaded by the individual, home care assistant, nurses or doctors. This information is stored in a data base within a central point, such as doctor's surgery. This information can be accessed by the care professional logging in using a secure login and password. Once logged in the care professional is able to check and add information relating to details stored. The care professional can then reply to the individual and give advice, or explain what will happen next. It also allows communication between all the care professionals as well as the individual. This means that the time between the individual first contacting the professional, to care being given is shorter.

Another tool is the use of mobile phones and applications downloaded for the individual to use on a daily basis. The individual then adds his personal information and then sends this via text, email or picture message to the relevant care professional.

The NHS has a system which links all departments within the service and allows patient information to be shared without the need for a paper file to be passed between departments.

Look at the following link: <http://www.gov.scot/Resource/0047/00472754.pdf>



### Activity 4

From this resource explain what tools could be used by home carers.

Explain one type of device that you use to communicate with the individual and other care givers.



1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:** You could have listed

- Personal Digital Assistant (PDA)
- Mobile phone
- Computer
- Smart TV
- Smart phone

ALTs can assist individuals and all care givers to communicate via different equipment which can be installed in the individual's homes and link directly to the care giver via mobile phone, PDA or computer. It can also link professionals through computer monitors or SMART TVs. This allows everyone concerned instant access and help or advice. It allows the individual to send information required at the touch of a button once they have been given the necessary training to do this.

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### TeleCare use in an emergency

Individuals can be given a personal alarm which they wear on a cord around their neck. This device allows the individual to press the button and this then contacts the co-ordinator headquarters. As soon as they receive the alarm, they can send a home carer, Doctor or ambulance to the individual.



The individual can also have a device within their house which is connected to a central point which is manned all the time. This means that the individual can choose what help they require.

This device is fitted is linked to the pendant and alerts the care giver that help is required.



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This is only an example of the type of devices available. There are lots of different types and functions available within this field.

There are also various falls prevention devices, from pressure mats, to motion detectors but they all alert the carer that the individual has fallen and needs assistance.



## Activity 5

**List the devices within your service which can assist the person in an emergency.**

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:** You could have listed any of the following:-

- Pendant alert system
- Fall prevention mat at the bed or chair
- Alert mat when the person leaves the home
- Motion sensor

These are a few, but there are many more which you could have named.

## 1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).

The following section looks at ALTs and how they can stimulate the person, by making them feel an integrated part of the society they live in. It looks at equipment and devices which will assist in this.

### **How does ALT support people in need of cognitive stimulation?**

What this means is that technology can assist the person to communicate with family and friends through the use of computers, smart phones, smart TVs. These types of technology are set up using simple icons which the person touches. This then takes them to that dedicated section.



### **Activity 6**

What type of programmes can you find that would help with cognitive stimulation?

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:**

- You could have answered – Multimedia technology can help with cognitive issues. For example, it can create reminiscences, support enjoyable experiences, and give options for success and mastery.
- You tube where you can assist the person to look at clips of things that they are interested in or used to take part in.
- Games which stimulate the brain and can assist with simple memory functions.
- These are just a few of the many answers you could have given.

### How does the use of video phones improve communication and reduce isolation?

Most individuals now have access to a mobile phone of some description, but with patience and careful instruction the Smart Phone can be used as a vital aid for the individual. This type of phone has the ability to link the individual with members of their family or friends and not only speak to that person but using video function they can fully see and interact with them. This lessens the feeling of isolation and loneliness that older individuals describe on a regular basis.

The carer or family member has to take the time to show and also support the individual to use their device. This may take a few times to get this up and running. The individual may also need regular time set aside to go over this to ensure that they are perfectly happy and know how to use the device. In some cases a printed guide to using the phone could be helpful. This would contain pictures of each step, which the individual can then follow.

There are applications (apps) which can be downloaded by the carer, which will also assist with daily living and give the individual a sense of taking back control of their lives.



#### Activity 7

What Apps can you find which would assist with daily living?

Produce a list which supports your findings.

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:**

- Here are some apps which you may have found.-
- Assisted living services
- 3 rings
- How's my mom?
- Sensara
- The Aging Boomers



### How does ALTs reduce social isolation by being part of a Virtual Community?

Look at the following link:-

[https://www.researchgate.net/publication/4321533\\_Towards\\_Building\\_Virtual\\_Community\\_for\\_Ambient\\_Assisted\\_Living](https://www.researchgate.net/publication/4321533_Towards_Building_Virtual_Community_for_Ambient_Assisted_Living)



#### Activity 8

From this paper, what do you think is important in a virtual community?

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:**

- You could have said that the community allows the person to keep in touch with other people without the need to leave the home.
- It allows the person to be actively involved and play a part in their community.
- It brings them entertainment and enjoyment of life.

### Now look at Telepresence

Telepresence is the use of virtual reality technology, especially for remote control of machinery or for apparent participation in distant events. It should give a sensation of being elsewhere, created by virtual reality technology.

As mentioned earlier people skills are equally important when dealing with ALTs. These skills have to be learned and practiced to ensure that the person is aware of the care giver at the other end of the technology.



#### Activity 9

What is the importance of the “personal touch”?



#### Activity 10

Why and how do you leave the person with a warm impression?

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

### Answers

- A personal touch is essential for the individual to feel important, valued and a worthwhile part of the care they receive. It allows the individual to take a more active part in the process even if the carer is not in the same room as them.
- You will be aware that tone of voice and body language in your day to day work with individuals is warm and supportive, but when using technology this can come across as cold and impersonal.

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

## Challenges

There are many challenges which can occur when using ALTs.

Look at this Youtube clip;

<https://www.youtube.com/watch?v=VXXY6YmjGdw>



### Activity 11

What challenges are there and what future challenges can you think of?

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).**Answers:**

Teaching can take time which may not be available in the carer's routine. The carer also has to be familiar with the equipment. It is very important that you take your time and cover each part in small steps; constantly reviewing and explaining a number of times until the person can complete the stage unassisted. When this happens, you can then move on to the next stage. It can be useful to have a sheet showing the steps in picture form that the person can use as a guide.

These guides can be prepared for any technology they have and can be laminated to ensure they last. These can then be placed on the wall beside the equipment or kept beside the person. This simple guide can make a huge difference to the person's confidence and allows them to use the equipment when you are not present.

**Remember:**

- You may have to go over the same thing each time you visit to make sure that the person is confident in using the equipment.
- Frustration can be felt by both the carer and the individual when things don't happen quickly enough.
- Breakdown can occur at any time and cause panic and more frustration for all concerned.
- This process is very time consuming and has to incorporate time breakdown in the initial stages.

## 1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).

### What are Smart Homes and Robotic applications?

Smart homes are purpose built homes with technology already in place to support individuals with specific health and wellbeing needs. These homes have a variety of monitoring systems, programmes and equipment which makes everyday living more available to all.

Use the link below to view a video demonstrating an I-home.

<https://www.youtube.com/watch?v=VXXY6YmjGdw>

These homes have inbuilt sensors which detect movement and will alert the care giver if anything untoward is noted. The home is programmable to switch on lights, equipment, close curtains etc. The applications are discussed and tailor made for each individual. Equipment such as robot hoovers are available to maintain normal living patterns for the older individual.

As with all technology the care giver has to be patient and calm when assisting the individual on how these applications work. It may take several uses with assistance for the individual to feel confident to use them. Printed instructions showing pictures can be invaluable for the individual too.



### Activity 12

Make a list of some robotic technologies.

1. SUPPORT PACK for Assisted Living  
Technology for Home Care (Unit 1).

**Answers:** You could have listed the following:-

- automated door openers
- alarms
- computers
- smart stove-tops
- Smart Wiring™
- smart toilets
- Flood detectors
- Robotic walls
- Specialist mobility equipment
- Robotic furniture

All the above equipment will enhance the life of the person and enable them to stay in their own homes for longer.



### Robotic applications

The equipment listed above can be specially adapted to the individual person and this assists them to live as normal a life as possible. The person can be fitted with chairs which allow them to go from sitting to standing at the touch of a button. The chair is moulded to them in such a way that it almost becomes an integral part of the person. Within the home, walls can be programmed to alert the care giver of any movements and create an alarm if this movement is out of the ordinary.

Systems can be put in place which control lights, sockets etc. at the touch of a button or a voice control. This gives control back to the person and makes them feel useful again. It can allow the person to begin undertaking tasks which had become impossible, such as cooking.

## **What Legislation and frameworks are there relating to Assisted Living Technologies?**

There is one main white paper relating to eHealth. I have included the link to this paper below.

<http://www.gov.scot/Resource/0047/00472754.pdf>

This white paper sets out the aims and goals for ehealth strategy from 2014 – 2017. It states within this paper

The Scottish Government's Vision is that by 2020 everyone is able to live longer, healthier lives at home or in a homely setting. NHS Scotland is engaged in a continual process to improve healthcare services so it can be recognised by the people of Scotland, and wider afield, as one of the best healthcare systems in the world.

There are other frameworks in place which deal with technology and telecare in all forms. Below are the various documents for you to look at and find useful information.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/211647/S22\\_Report\\_2012-13\\_\\_2\\_\\_FINAL.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211647/S22_Report_2012-13__2__FINAL.pdf)

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/272238/6737.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/272238/6737.pdf) There is one main white paper relating to eHealth. I have included the link to this paper below.

<http://www.gov.scot/Resource/0047/00472754.pdf>

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/272238/6737.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/272238/6737.pdf)

**Activity 13**

Look at the policies and procedures relating to ALT's in your workplace.

Explain the main points of these.

**Answers:**

There will be varying policies and procedures in place, but you could have mentioned:-

- Safeguarding in relation to internet security.
- Health & safety in relation to GPS tracking devices
- Data Protection in relation to the data that is being recorded and how this is then used.

There will be many others which will also relate to ALTs.

## 1. SUPPORT PACK for Assisted Living Technology for Home Care (Unit 1).

I hope now that you have completed this unit that you can see the huge benefits that ALTs can provide for the person. This is an ever developing field and innovative which will be exciting to update on a regular basis.

### References

- [http://www.arup.com/homepage\\_ambient\\_assisted\\_living](http://www.arup.com/homepage_ambient_assisted_living) P17 definition
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