



FIT FOR THE FUTURE FACT SHEET NO 5

ASSISTIVE TECHNOLOGY IN EXTRA CARE HOUSING

Introduction

In previous Fact Sheets mention has been made of the role of Assistive Technology, particularly in supporting people with dementia. Assistive Technology – commonly abbreviated to ‘AT’ – has been around in various forms for years.

This Fact Sheet is intended to describe what is meant by AT and how it can be used to support vulnerable people and keep them safe.

What is Assistive Technology?

AT is an umbrella term for alarms and sensors which might require a third party to intervene, or which can prompt or support someone to be independent. This type of AT is intended to keep people safe at home.

AT can also include various technologies and equipment which enable people to overcome problems themselves without a third party intervention. This type of technology is often referred to as ‘enabling technology’.

Irrespective of the type of technology – whether an alarm/sensor or an enabling technology – there is one intended outcome of AT: to promote independent living.

AT in extra care housing

There are four basic types of AT used within extra care housing schemes:

- buildings management technologies;
- monitoring technologies;
- ‘SMART’ technologies;
- security and communication technologies.

Buildings Management Technology

Buildings-based technologies are common in extra care housing and include:

- an emergency call system;
- an intruder alarm system;
- flood detectors located near washing machines or in bathrooms;
- carbon monoxide sensors where individual gas boilers are provided;
- smoke detectors linked to the fire alarm;



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Activation of any one of these alarms alerts on-site care and support staff. Equipment is programmed to identify the type of call – flood or emergency call – so that care and support staff can prioritise their responses.

Monitoring Technology

Lifeline Service

Perhaps the most well known form of AT is the Lifeline service. This is an alarm service which is managed from the Princess Elizabeth Hospital, and which is activated by pressing a button on a pendant worn by an individual. Once the activated alarm is picked up by the Lifeline operators, an assessment of need is conducted by the Lifeline operator and an appropriate response is organised. This appropriate response may range from contacting the individual's next of kin to alerting emergency services.

Telecare

Telecare describes electronic monitoring equipment which supports an individual in their home. As part of an appropriate care plan, this technology manages risk and assists people to live safely and independently at home, prolonging their independence and enabling them to stay in their own homes for longer.

The use of Telecare within a home environment involves the use of Passive Infrared sensors placed unobtrusively around the home which raise an alert when they sense a potentially dangerous situation, such as fire, gas leaks, floods or intruders. It can also include medication reminders, or be used to switch lights on at night.

As these sensors are 'passive' and an individual does not have to trigger the sensors overtly, they can be useful for vulnerable people, including those who have early onset dementia. The use of Telecare can delay moves into residential or nursing home care, and can enable increasing levels of dependency to be managed in the home.

Telecare alarms can also relieve informal carer anxiety for people with mid- to late-stage dementia who are being supported at home.

Examples of Telecare packages used in extra care could include:

- falls monitors alerting care staff to falls;
- movement sensors fitted to points of entry and exit, which alert carers to the fact that an occupier has left their home. Dependent on the time of day or night or the temperature outside, this could trigger an alert and prompt staff action;
- Pre-recorded messages by close family members which can be used to remind dementia sufferers of where they are and what they need to do if they are worried or confused.



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These are just a few illustrations of the uses of Telecare within an extra care housing unit.

Telehealth

Telehealth describes technology which can remotely monitor an individual's vital signs or identified health indicators as part of a community nursing service. Telehealth has been particularly effective in supporting community nursing services targeted at people with long-term health conditions.

Lifestyle Monitoring

A slightly more controversial form of AT is called Lifestyle Monitoring. This is controversial because this kind of technology needs to be governed by clear ethical guidelines as it could be interpreted as an intrusion of privacy. Some care professionals are very averse to such technology, while others are supportive because they believe such technology can keep vulnerable people safe.

In this kind of technology, there is a great reliance on computer programming which is able to 'learn' about an individual's routine and lifestyle. For instance, there is technology which can monitor how many times a refrigerator door is opened. This provides data which in turn might be used to indicate nutritional habits.

There are also technologies available which use cameras located within a dwelling and which transmit images over a computer so that activity can be monitored. These are the kinds of technology which are controversial, intrusive and which need clear ethical guidelines.

'SMART' Home Technology

Many extra care schemes use SMART technology to overcome physical disabilities linked to loss of function following a stroke or linked to dementia.

SMART equipment can be used as follows:

- to open and close curtains and windows;
- to check who is at the door and then to open the door;
- to turn on and off individual lights and pieces of domestic equipment like radios and televisions;
- to pre-programme that lights go on when an individual sits up, or gets out of bed to go to the toilet.

SMART technology can also be part of a care plan and can be added to existing buildings-based AT.



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Security and Communication Technology

In order to maximise safety and security in an extra care housing scheme, AT can also include:

- CCTV linked to a security monitoring system offering high quality video recording;
- security cameras linked to a television placed at locations around a scheme, which provide information about what is happening at various locations;
- keyless door entry or keyless locks which provide access to communal areas, and which can separate private residential spaces from public community spaces; technology which is used to manage the scheme such as controlling lights, heating, ventilation, reporting equipment failure, etc;
- home entertainment options for digital or satellite equipment;
- broadband internet technologies which can link residents to the outside world even if they are housebound. (There can be links with Telehealth through the use of the internet for remote diagnosis and health care monitoring.)

The Invisible Carer in Extra Care Housing

It is now common to include provision for AT within extra care schemes. Extra care housing lends itself to the use of AT because individual dwellings can offer tailored solutions with support staff available to respond to meet individual needs.

Case Study 1

Mrs A has dementia and was starting to forget to turn off the gas when cooking. She had a gas detector installed, with an automatic shut off valve when gas was detected in the air. This enabled Mrs A to stay in her own home, and still cook for herself.

In time, a movement detector was added. It can differentiate between her opening the door to retrieve the milk delivery and when she opens the door and leaves the flat. Carers are not, therefore, alerted every time the door opens, but can intervene if appropriate and help if she leaves the house on her own.

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¹ Case studies from 'Building Telecare in England', UK Department of Health, 2005.



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Using appropriate technological interventions can contribute: (i) to the economic operation of an extra care scheme by reducing unnecessary human interventions; and (ii) to a high quality care service which meets individual wishes for independence, privacy and dignity.

Case Study 2

Mrs B has a history of falling. Following discharge from hospital she was provided with a basic telecare package that included a bed pressure sensor that could detect when she left the bed during the night and turned on the lighting to her bathroom. It would then trigger an alarm if she did not return to bed within an agreed time.

The package was programmed to record how many times Mrs B left her bed during the night. A few weeks after it was installed it was noticed at the control centre that Mrs B's nocturnal visits to the bathroom had increased significantly over a three day period. They alerted a care professional and Mrs B was diagnosed with a urinary tract infection which was then quickly treated enabling a full and quick recovery.

Conclusion

AT is used in a wide range of ways within extra care housing to complement care plans, make buildings safer and more comfortable, and enhance peace of mind for residents. In the early stages of planning, design of extra care housing needs to take account of the wide range of technologies available.

Note: The extra care schemes proposed to replace Longue Rue House and Maison Maritaine will feature a wide range of AT, including Telecare, security and communications and buildings management technologies. However, it is not planned to include Telehealth or SMART technologies until further need for these technologies is evidenced.