

The benefits and limitations of assistive technology

Assistive technology can help to support and enable people with dementia to live more independently. It may also help to support and reassure their carers. However assistive technology may not be the answer for everybody. This page provides case study examples to demonstrate the benefits and limitations of assistive technology and the importance of assessment and evaluation.

What are the benefits of assistive technology?

Assistive technology can help to support and enable people with memory problems including [Alzheimer's disease](#) and other forms of [dementia](#) to live more independently. For example, assistive technology and telecare can help to:

- remind the person to take their tablets at the right time
- help locate a lost item
- orientate the person that it is day time or night time
- assist the person to phone a relative or friend using preprogrammed numbers or pictures
- switch on the lights automatically if the person gets up at night time
- switch off the gas automatically if it has been left unlit
- alert a carer or monitoring centre that the person needs assistance.

Assistive technology may also help to support and reassure carers. For example, it may free carers to spend better quality time with the person. Or it may enable a carer to get a good nights rest, knowing that if the person gets up at night they will be alerted.

What are the limitations of assistive technology?

Assistive technology may not be the answer for everybody. People have different needs, abilities and preferences and 'one size does not fit all'. Some people may benefit from additional carer support or services rather than using technology at all.

If assistive technology does not meet the individual needs and preferences of the person it may be ineffective or may even cause additional confusion or distress. For example, assistive technology and telecare may not be the answer if:

- the person switches off or unplugs the equipment
- the person is confused or distressed by any alarm sounds or recorded messages
- there are insufficient carers or care workers to respond to an alert.

Assistive technology on its own cannot provide human contact and personal care. Many older people experience loneliness and social isolation. Technology should only be provided as an addition to contact and care, not as a replacement.

Case study examples

The following case studies provide real life examples of some of the benefits and challenges that occur with the implementation of assistive technology and telecare. They highlight the need for comprehensive assessment and evaluation. Individuals' names have been altered to ensure confidentiality.

[The Safe at Home scheme, Northampton](#)

[The Jack Dawe specialist homecare team, Nottingham](#)

[North Lanarkshire Council](#)

For further case studies and examples of telecare in action please see the factsheet section of the [Telecare Implementation Guide](#).

The Safe at Home scheme

The Safe at Home scheme, Northamptonshire, uses a range of technologies to help people with dementia overcome problems in their homes by reducing levels of risk, helping people feel safer and supporting relatives and carers. These case studies were provided by Dick Beeby, a Project Worker with the Safe at Home scheme.

Safe at Home scheme: case study 1

Background

Mrs X lived in her own home in Northamptonshire. She had been widowed for 5 years and lived alone in the house. Her son and daughter lived locally and visited her every day. She was becoming increasingly forgetful and disorientated and sometimes had difficulty finding her way home when she had been out locally. This was causing her some distress.

Mrs X was referred to the Safe at Home scheme to see if assistive technology could be of benefit to her. Her son and daughter visited the demonstration house to look at the range of equipment available and discuss its possible use both for now and in the future. They were interested in using assistive technology to help enable and support their mother in her wish to remain living at home. Mrs X had some awareness of her memory difficulties and was willing to accept the technology, although she was anxious about change.

Assistive technology installed

Following an ongoing assessment of Mrs X's needs, a detailed action plan was completed. It was agreed to install a gas sensor and cut off valve, radio smoke detector, door alert for the back door and a lifeline telecare alarm unit that would be linked to the local community alarm service. A calendar clock, picture telephone and automatic pill dispenser were also installed. The technology was installed in stages as problems arose and were discussed at regular reviews.

Installation of the telecare equipment involved a number of people and took around 3 hours to complete. In recognition of the likely anxiety that Mrs X would feel on the day the equipment was installed, it was agreed that she would be taken out for the day by her daughter-in-law.

Outcomes

The assistive technology installed helped Mrs X to remain living in her own home. The technology also helped to identify areas in which Mrs X needed more help. For example, as the smoke detector was being set off when Mrs X was cooking it was decided to arrange outside help from carers at lunchtimes.

Safe at Home scheme: case study 2

Background

Mrs Y was living on her own in a maisonette near to the centre of town. Her daughter lived locally and saw her mother regularly. Carers visited on weekdays to help remind Mrs Y to take her medication. Mrs Y also had a pendant call system to call the community alarm centre if she needed help. However, she sometimes turned off the plug to electrical appliances including the unit which put through the pendant calls.

When the Safe at Home project worker visited Mrs Y at home, she agreed that she had some difficulty with her memory. There was also some concern about her safe use of the gas cooker and the fire risk from things being left on the cooker. Although she had a smoke detector in place there were concerns that she would not respond appropriately in the event of an alarm.

Assistive technology installed

Following a detailed assessment it was agreed to install a smoke detector that was directly linked to the community alarm centre so that they could respond appropriately in the event of a fire. Within 3 days of the installation the unit for putting the calls through to the alarm centre went missing and was never found. It was therefore arranged to install a replacement unit, power and telephone points into a cupboard under the stairs. Mrs Y was also given a calendar clock and a carousel medication dispenser.

Outcomes

During the time the medication dispenser was in place there were occasions when the dosage tray was not in the right place. It was felt that Mrs Y might have caused this as she was reluctant to accept the need for its use. The calendar clock was accepted and helped initially but was subsequently removed when it was felt that Mrs Y was unable to make appropriate use of it.

The early disappearance of the unit linking calls to the community alarm centre may have been due to Mrs Y not fully understanding its purpose and having some anxiety about it. There were also some technical problems with the unit and the smoke detector. The resulting noises from the equipment caused some distress for Mrs Y and coincided with a deterioration in her mental health. These and other factors eventually resulted in Mrs Y going into residential care.

The Jack Dawe homecare team

The Jack Dawe specialist homecare team is a service that provides person-centred care packages to individuals with dementia within Nottingham City. These case studies were provided by Catherine Willetts, an Occupational Therapist working within the Jack Dawe team and involved in the assessment and implementation of low and high 'tech' assistive technology.

Jack Dawe homecare team: case study 1

Background

Jack was an elderly gentleman with a diagnosis of dementia who had recently been bereaved from his wife. There were a number of reports from the neighbours that Jack was found outside during the day and evening in his pyjamas, disorientated and in need of reassurance. His daughter, who lived outside Nottingham, was visiting for an increased number of occasions during the week and was feeling increasingly distressed.

Assistive technology installed

Initially, large print visual signs were placed on the back of the front door informing Jack not to leave the house but to call his daughter or wait for the carers to visit. However, following assessment these signs were not found to be effective in preventing Jack from leaving his home as they would go unnoticed.

Jack was happy to consent to a trial of a wander 'memo' reminder because of the concerns raised by his daughter. A message was initially recorded with his daughter's voice asking Jack to stay indoors and wait for the carers to arrive. Following assessment it was apparent this did not distress Jack who responded with a smile on each occasion this was activated.

The wander reminder was positioned at the front door and set on 'Auto' to action at all times of the day in order to prevent Jack from leaving his home. Homecare staff were able to check this on a daily basis and ensure it did not cause any detriment to Jack's health.

Outcomes

Over the following weeks there were no reports from the neighbours that Jack had been seen wandering outside and this reduced anxiety levels for Jack's daughter. The wander reminder remains in Jack's home and the message is updated every 6 weeks to ensure it does not become too familiar. This piece of technology has been effective in the short term however will need reviewing at regular intervals to ensure that it is still meeting Jack's needs.

Jack Dawe homecare team: case study 2

Background

Kate is a 62 year old lady who has early onset dementia. She is an extremely active lady who goes out on a number of occasions each day. She is disorientated to the day and time. Her family have significant concerns that Kate is leaving her home at night and reports from her neighbour confirm this. On occasions homecare arrive early in the morning and Kate is already out which means she can miss taking her medication and is skipping meals. A risk assessment highlighted an unknown prevalence of Kate leaving her home.

Assistive technology installed

A wander 'memo' reminder was trialled in an attempt to reduce Kate's night time activity. This was recorded with a familiar voice which informed Kate it was night time and not to go out. This was programmed on a timer to be active between the hours of eight in the evening and eight in the morning.

It was agreed that 'Just Checking' motion detectors would be beneficial to track the level of activity in Kate's home and evidence the frequency of her outdoor visits day and evening. Kate consented to this measure and these detectors were trialled for a month assessment period.

Outcomes

The wander reminder caused increased anxiety in Kate who continually turned off the device. Homecare workers tried to establish the reminder with Kate however she was unable to recall its purpose and threatened to throw it away. The wander reminder was removed once consent was questioned. This illustrates the need for continuous assessment and review.

The Just Checking activity monitors did not cause any anxiety to Kate once installed as the sensors are compact and do not sound alerts or alarms. Activity data was collected for a month. This information was used to arrange more effectively timed homecare visits. It also showed that Kate did not leave her home after four in the afternoon. This provided some level of reassurance to the family and enabled Kate to remain at home for several months before her situation deteriorated.

North Lanarkshire Council

Fiona Taylor of North Lanarkshire Council has provided the following case studies to demonstrate when assistive technology has been used successfully, when other options were explored and when imaginative, simple solutions were identified that led to technology no longer being considered. These examples emphasise how an individual holistic assessment is essential to good practice.

North Lanarkshire Council: case study 1

Background

Mrs Brown was admitted to a residential home after being found in her gas-filled house. This had happened on several occasions and family and neighbours were very worried about both her and their own safety. Although Mrs Brown had been diagnosed with dementia some years earlier she was physically very fit. Mrs Brown regularly walked to the local shops or took a bus to a nearby town, but she usually returned without assistance although sometimes this was very late.

Over the next two weeks Mrs Brown's anxiety increased, and she regularly left the building and headed into the surrounding countryside. Police returned her on several occasions. Previously good relationships with staff and people using the service quickly declined. Staff felt they needed to keep a close eye on Mrs Brown and tended to follow her. They had to keep leaving other people requiring a service in order to run to the door every time the door alarm was activated in case Mrs Brown was leaving the building.

Other people using the service became quite angry with her too. Their freedom was restricted as previously open doors into the garden area were now alarmed so staff would know if she left the building. The community nurse and GP suggested medication and a move to a nursing home. Her family became so anxious that they would often shout at her when they heard she had left the building again and their previously warm relationships were steadily eroding.

Assistive technology introduced

A case conference was called and the possibility of using a 'Wanderguard bracelet' was discussed. Mrs Brown herself recognised the danger she was in but also knew that when she became upset she just needed to get out.

Following agreement with Mrs Brown, her family and key professionals from the local area team, the bracelet was purchased and the system put in place. Procedures were drawn up locally and staff encouraged to see the aim of this intervention as to assist her going out safely, not to stop her going out.

Mrs Brown's Bracelet was programmed into one staff pager. This meant that the other staff did not need to leave the people they were with. Additional resources were allocated to ensure that this staff member was not included in the core staffing levels required and was free to walk with Mrs Brown wherever she left the building.

Outcomes

For the first few days the staff member stayed a discrete distance behind Mrs Brown and only approached to offer assistance when she appeared tired, confused or in danger. This assistance was usually to call for a taxi to take them both back to the care home.

As the weeks progressed Mrs Brown would call the staff member from behind her and encourage them to walk and chat with her. Rather than rush back to the unit, the cook would often pop out with a flask of soup and two coats and arrangements were made enable them both to return later in the day. By the following month she was starting to check out who was walking with her that day and to call for them when she was ready to go.

Following a further case conference it was agreed that the crisis situation had passed and that Mrs Brown no longer required to use the bracelet. Staff now had a clear picture of when she was most likely to want to go out. How far she could walk without getting tired and where she liked to walk to. Her care plan was adjusted to coincide with these times when she liked to walk and this resulted in her going out with staff at key times every day to collect the papers, deliver the mail and feed the ducks in the local pond.

Her relationship with staff, other people using the service and her family improved significantly. Mrs Brown was now seen as someone who contributed to life in the unit and no longer a nuisance. She no longer saw staff as guards and began to build up friendships again. During the next few months Mrs Brown began to learn her way to and from the shops and latterly no longer required someone to go with her.

North Lanarkshire Council: case study 2

Background

Mrs Watson lived alone and had been subject to several bogus callers who had taken cash and valuables from her home. Mrs Watson's daughter decided to move in with her as she was worried about her mum's safety. However once she had done this she found that she could no longer go out of the house as Mrs Watson may let someone in again when she was out.

Assistive technology introduced

A door entry system was fitted and this was diverted to her landline phone. This phone in turn had a divert facility and could be sent to Mrs Watson's daughter's mobile.

Outcomes

Mrs Watson's door bell no longer rang when her daughter was not in the house therefore Mrs Watson did not open the door to strangers. Mrs Watson's daughter could answer the phone (doorbell) wherever she was and ask the caller to call back later at a more suitable time. The caller was unaware that Mrs Watson was in the house alone, as he/she had just spoken to her daughter over the intercom. Both continue to live safely and with less distress in the community.