

# Physical disabilities and sensory impairments

## solutions for independent living

key information for health and social care professionals and carers



All the reassurance you need

**Tunstall**

# Contents

Introduction	3
The true impact of physical disabilities and sensory impairments	4
Summary of conditions	5
What is telecare?	6
Suggested solutions	7-10
Telecare in action	11-13
Telehealth solutions	14
Where to go for help	15

## Foreword

Millions of people in the UK live with ill-health, injury or disability, and technology can play a significant role in providing them with practical help in providing them with practical help to make completing everyday tasks easier. Telehealthcare supports independent living and provides reassurance to people with disabilities and their families.

The range of telecare and telehealth products available enables individuals to create a tailored solution to meet their needs, providing them with choice, control and confidence.

This guide outlines the ways telehealthcare can have a positive impact on the lives of disabled people, and we hope you find the information of interest.

# Introduction

The Disability Discrimination Act (DDA) defines a disabled person as *“someone who has a physical impairment that has a substantial and long-term adverse effect on his or her ability to carry out normal day-to-day activities.”*

## Statistics

In the UK there are:

- Approximately 10 million disabled adults<sup>1</sup>
- Approximately 770,000 disabled children<sup>1</sup>
- 2m people with a visual impairment<sup>1</sup>
- 9m people with a hearing impairment<sup>2</sup>
- 55% of people over the age of 60 are deaf or hard of hearing<sup>2</sup>
- One in six people are blind or partially sighted by age 75<sup>2</sup>

People with physical disabilities or sensory impairments face a variety of challenges that are unique to each individual. These challenges may include loss of independence, fear of falling and the risk of social exclusion.

One of the goals of people with physical disabilities or sensory impairments is to take control of their lives, and to make a recognised contribution to their community. This guide aims to summarise the telecare and telehealth solutions available which can be used to support people to live life to the full, as independently as possible.

<sup>1</sup>Source: dfl.org.uk

<sup>2</sup>Source: RNID factsheet on Deafness and Tinnitus

<sup>3</sup>Source: actionforblindpeople.org.uk



## The true impact

Physical disabilities and sensory impairments span an incredibly diverse range of conditions, affecting people of all age groups and from all backgrounds. Living with a disability, whether it be visible to others or hidden, is different for every individual, and often people with disabilities have to struggle to be accepted as part of their communities.

Problems faced include poor muscle control, weakness and fatigue, difficulty walking, talking, seeing, speaking, sensing or grasping and difficulty reaching and accessing things. Individuals with spinal cord injuries may be unable to use their limbs.

Physical disabilities and sensory impairments often make people feel isolated and alone, with insomnia, aggression and depression being common. They can make a big impact on people's quality of life, making everyday tasks a huge

challenge, reducing independence and causing people to be more reliant on their friends, families and carers.

Although physical disabilities and sensory impairments are sometimes viewed in a negative way, it is crucial to remember that people with such conditions have the same dreams and aspirations as everyone else, whether that be enjoying a successful career, having a family or simply being in control of their lives and remaining as independent as possible.

Telehealthcare is one resource that can help support people and increase their independence by effectively managing the risks to their health and home environment.

It can play a vital role in connecting people to the outside world, providing much needed peace of mind and reassurance, 24 hours a day, 365 days a year.



# Summary of conditions

## Physical Disabilities

Physical disabilities refer to a broad range of disabilities which include orthopaedic, neuromuscular, cardiovascular and pulmonary disorders. Physical disabilities can be congenital (a condition present at birth) or as the result of an injury or condition developed later on in life. Although most physical disabilities are clear to see, some are non-visible including pulmonary disease, respiratory disorders, epilepsy and other limiting conditions.

### Some major causes of physical disability are:

**Arthritis** - defined as pain in joints, usually reducing range of motion and causing weakness.

**Cerebral Palsy (CP)** - defined as damage to the motor areas of the brain prior to brain maturity. Symptoms include stiffness and difficulty moving, a disturbed sense of balance and depth perception, and uncontrolled motion.

**Parkinson's Disease** - a progressive disease of older adults characterised by muscle rigidity, slowness of movements, and a unique type of tremor.

**Multiple Sclerosis (MS)** - a disease of the central nervous system characterised by poor muscle control, weakness and fatigue, difficulty walking and intolerance of extremes of temperature.

## Sensory Impairment

Unlike physical disabilities, sensory impairments can be hard to detect. A sensory impairment can be anything that affects the five main senses, however the most common are hearing and visual impairments.

Hearing impairments can vary by several different degrees, including deafness from birth, gradual loss of hearing through old age or sudden loss of hearing due to accident or illness. Visual impairments refer to people who are blind, or partially sighted.

Due to demographic changes and the rise in the older population, the number of people with a sensory impairment is increasing, and looks set to continue to do so. People with sensory impairments are often more vulnerable and need additional support to perform everyday tasks.

# What is telecare?

Telecare has been defined as *“the continuous, automatic and remote monitoring of real time emergencies and lifestyle changes over time in order to manage the risks associated with independent living.”*

Telecare involves the provision of a range of non-intrusive sensors, such as the fall, smoke, flood and movement detectors, bed / chair occupancy or temperatures extreme sensors, which work with Lifeline home units, triggering a call to a monitoring centre if assistance is required.

Environmental control solutions can also be integrated with telecare solutions to provide individuals with a greater level of independence, whilst facilitating reablement and giving access to 24 hour support. They help manage the risks to a person’s health and wellbeing, and can reduce the reliance on carers in performing many of the fundamental activities of daily living.

Telecare can transform the lives of people with physical disabilities or sensory impairments by increasing their confidence, reassuring them that help is on hand if they need it.



# Suggested solutions

## Lifeline Home Unit and MyAmie Pendant

The Lifeline home unit receives alerts from telecare sensors placed around the home and automatically raises an alarm with a carer or monitoring centre. The MyAmie pendant can be worn on the wrist or around the neck and allows the user to call for help simply by pressing the red button.



## VitalBase<sup>FALL</sup> Fall Detector

The VitalBase<sup>FALL</sup> is a wrist worn fall detector designed to identify a serious fall that leads to a state of unconsciousness and immobility of the user. If such a fall is detected, the detector vibrates to alert the user that it is about to send a radio alarm signal to the Lifeline home unit. In order to reduce the number of false calls, should the user continue, or start to move again within a pre-set time limit after the fall, a call to the monitoring centre will not be raised.



## Bed / Chair Occupancy Sensor

This pressure pad fits under the mattress and provides an early warning by alerting that the user has left their bed or chair and not returned within a pre-set time period, indicating a possible fall. This sensor can also be programmed to switch on lights, helping people find their way to and from bed easily. A similar device is available for use with chairs and wheelchairs.

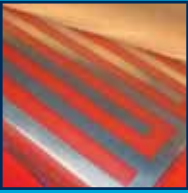


## Epilepsy Sensor

Placed under a foam mattress (or a mattress cover if using a sprung mattress), this sensor monitors an individual's vital signs, including heart rate, to alert if tonic clonic seizures occur. Upon detection of tonic clonic shakings, an alarm will be raised to the monitoring centre or carer to ensure the appropriate action can be taken.



## Suggested solutions



### Enuresis Sensor

Placed between the mattress and sheet, this sensor provides immediate warning on detection of moisture, allowing effective action to be taken. The sensor eliminates the need for carers to make physical checks during the night, promoting dignity and independence.



### Temperature Extremes Sensor

The temperature extremes sensor protects people and property by monitoring for excessively high and low temperature, and a rapid rate in rise of temperature. The sensor helps minimise the risk associated with a build up of heat from a kitchen appliance being left on, or sustained periods of cold weather.



### Tunstall ROMAD

The ROMAD is a personal mobile alarm which provides reassurance to users. Incorporating high sensitivity GPS technology and GSM communication. This innovative device allows users to communicate their location and summon immediate assistance whenever they feel in danger or need help.



### Bogus Caller Button

Fitted near the door, the discreet bogus caller button can be used to call for assistance at the 24 hour monitoring centre, when a stranger requests entry into the home. It can be particularly helpful for people with visual impairment.

## Door Entry System

The door entry system is used in conjunction with a standard television and telephone / Lifeline unit in order to provide both visual and audible identification of a caller before an external door is opened and access is granted. Once the caller has been identified, the door can be opened remotely by the user. The system can also be used to open a door remotely from the monitoring centre in order to allow carers or the emergency services access following receipt of an emergency call.



## Sensory impairment solutions

### DDA Solution

Tunstall's DDA solution combines a pager, transmitter, under pillow pad and optional flashing beacon to provide visually impaired people with additional support and protection by ensuring they are immediately alerted when an alarm is raised via the Lifeline unit. The solution is very simple to set and has a 200m range. Unlike a number of similar systems, this pager doesn't require a radio licence.



### Vibrating Pager

When a telecare sensor is activated, the Lifeline sends a signal to the pager via the DDA transmitter, which alerts the wearer by vibrating and lighting an LED. This means both visually and hearing impaired users can be quickly made aware of telecare alarms.



# Sensory impairment solutions



## Wrist Pager

The wrist pager is a small, discreet paging device that is designed to be worn like a watch. Like the standard pager, the wrist pager vibrates and lights coloured LEDs when a telecare event is generated.



## DDA Pager Charger Including Pillow Alert

The DDA pager charging cradle is required to charge the DDA vibrating pager's battery at night. The cradle also links to a vibrating under pillow alert and when the pager is placed in the cradle, the pillow alert automatically vibrates when an alarm is raised.



## DDA Flashing Beacon

The DDA flashing beacon works with the pager and flashes to indicate when a telecare alarm has been activated.



## Sounder Beacon

Available in blue or red, it provides audio and visual confirmation of an alarm call, providing additional reassurance for people with hearing impairments.



## Visual Call Beacon

Provides visual confirmation when a sensor or trigger is activated.



## Big Button Phone

Ideal for those with visual or hearing impairments, and those with limited dexterity, the big button telephone features large black buttons and white numbering, a visual call indicator and earpiece volume control.

All telecare solutions must be linked to a Tunstall Lifeline home unit and monitoring centre or carer.

# Telecare in action

## Case Study 1

Mrs P has rheumatoid arthritis, as well as memory and sensory impairment problems.

### The concerns

- Mrs P began falling on a regular basis due to the worsening of her condition.
- Mrs P's husband was growing increasingly worried about his wife and was even considering moving from their home of forty years into sheltered or residential care.

### The solutions

- Mr and Mrs P already had a Lifeline home unit in place and staff at Hull Community Care Service recommended a telecare falls package be provided.
- A bed occupancy sensor has been fitted so that if Mrs P gets out of bed in the night and doesn't return within a preset time period, an alert is sent to the monitoring centre who speak to Mr and Mrs P to check everything is ok.
- Movement detectors have also been installed which will detect if Mrs P hasn't moved within a set period of time, indicating a possible fall.

### The outcome

Both Mr P and his son and daughter feel very relieved that this system is in place. It gives them immense peace of mind and allows Mr P to get a good night's sleep.

Mr P said: *"With the sensors we feel so much more restful and a lot less stressed. Someone said to us it's like Big Brother watching you, and I said it's Big Brother's friend looking after us."*



# Telecare in action

## Case Study 2

Wakefield Metropolitan District Council has been applying telecare in many different ways to support people with physical disabilities and sensory impairment. An example of the positive effect it is having is summarised below.

### The concerns

- Mrs E is the full time carer for her young son who suffers from physical disabilities.
- Her son has tuberous sclerosis and can suffer a severe epileptic seizure at any time of day or night. His condition has deteriorated slightly and he is no longer able to support his own weight, which means he has to be lifted.
- Mrs E and her son now sleep downstairs as Mr E hurt his back carrying his son and Mrs E cannot lift him.

### The solutions

- A telecare solution was installed including a Lifeline home unit and pendant so Mrs E could call for help and support at any time.
- Other sensors were installed, including an epilepsy sensor, all linked to a DDA solution to ensure a message is sent to Mrs E's pager if an alert is generated.

### The outcome

Mrs E said: *"This has given us peace of mind and reduced the anxiety and sleepless nights. We are now able to sleep in our own bed again, knowing we will be alerted when our son has an epileptic seizure during the night. It has also given me more time to spend with my other child during the day."*



# Telecare in action

## Case Study 3

Mr and Mrs O are both severely visually impaired.

### The concerns

- Mr O is often away with work and Mrs O suffers from asthma.
- Close friends experienced a burglary involving men claiming to be the police. As this couldn't be visually confirmed, Mrs O was fearful of any doorstep caller she did not know.

### The solutions

- They didn't want to take any risks so contacted their crime prevention officer who recommended the Lifeline unit with intruder functionality, bogus caller button and pendant which is ideal for anyone who feels at risk from intruders.
- Having no idea who is at the front door, the voice contact with the monitoring centre is ideal, as the identity of the person at the door can be verified.
- The involvement of the monitoring centre is often enough to deter the bogus caller and all voices are recorded for evidence purposes.

### The outcome

*"I didn't want to take any risks. I wanted to be sure that the same frightening burglary wouldn't happen to us. So now I feel so secure and safe. I can easily feel the buttons and know which one activates the alarm. I feel so confident and peaceful at night. Of course I have no idea who is at the front door so the voice contact with the monitoring centre is ideal."* Mrs O said.

Police quote: *"I would recommend this package to anyone who feels at risk of intruders. It is very well suited for the visually impaired due to its clear, easy to use design and voice contact with the monitoring centre."*



## Telehealth solutions

Tunstall's telehealth solutions offer a way of delivering tailored care for patients with long term conditions in their own homes, improving quality of life and reducing unplanned hospital admissions.

Tunstall's telehealth solutions are also of benefit to carers as they can reduce the need for hospital visits, and provide peace of mind and reassurance that the person they are caring for is being monitored daily, and any exacerbations in their condition will be picked up and responded to appropriately.

The Tunstall **icp mymedic** enables patients to measure their vital signs, such as heart rate, blood pressure, oxygen saturation and temperature,

in their own homes.

The monitor records the results and transmits the data via a secure server to the patient's clinician, who can view the data and take action if a potential problem is detected.

The equipment also helps people with long term conditions to self manage - empowering them to recognise the relationship between their activities and symptoms.

For further information on Tunstall's telehealth solutions please visit [www.tunstall.co.uk](http://www.tunstall.co.uk) or call 01977 660479.



## Where to go for help

The following websites contain lots of helpful information and advice for people with physical disabilities and sensory impairments:

The Government's directory of information - [www.direct.gov.uk/en/DisabledPeople/index.htm](http://www.direct.gov.uk/en/DisabledPeople/index.htm)

Disabled Living Foundation - [www.dlf.org.uk](http://www.dlf.org.uk)

Royal National Institute of Blind People - [www.rnib.org.uk](http://www.rnib.org.uk)

Royal National Institute of Deaf People - [www.rnid.org.uk](http://www.rnid.org.uk)

The statistics in this document are sourced from:

[www.direct.gov.uk/en/DisabledPeople/index.htm](http://www.direct.gov.uk/en/DisabledPeople/index.htm)

[www.statistics.gov.uk](http://www.statistics.gov.uk)



## Summary and next steps

People with physical disabilities and sensory impairments face a variety of challenges and it is essential that these individuals get the tailored support they need. Telecare and telehealth solutions can be applied to meet the unique, changing needs of each different person, helping to provide vital peace of mind and reassurance.

## About Tunstall

Tunstall is the world's leading provider of telecare and telehealth solutions, with over 2.5 million users globally. Tunstall's solutions support older people and those with long term needs, to live independently, by effectively managing their health and wellbeing. Tunstall provides technology, expertise and advice to millions of people enabling them to lead independent, more fulfilling lives.

For further advice or information on how telecare can support people with physical disabilities and sensory impairments, please call us on 01977 660479, email [enquiries@tunstall.co.uk](mailto:enquiries@tunstall.co.uk) or visit [www.tunstall.co.uk](http://www.tunstall.co.uk)



Our policy of continual development means that product specification and appearance may change without notice. Tunstall does not accept responsibility for any errors and omissions contained within this document.

© 2011 Tunstall Group Ltd. ® TUNSTALL and LIFELINE are registered trademarks.

Tunstall Healthcare (UK) Ltd, Whitley Lodge, Whitley Bridge, Yorkshire DN14 0HR  
Tel: 01977 661234 Fax: 01977 662450 Email: [enquiries@tunstall.co.uk](mailto:enquiries@tunstall.co.uk)

[www.tunstall.co.uk](http://www.tunstall.co.uk)

XXX/08/11

