

# Whole Systems Demonstrators

## An Overview of Telecare and Telehealth



# The WSD Programme

## The WSD Programme

The Whole System Demonstrator (WSD) programme is a two year research project funded by the Department of Health to find out how technology can help people manage their own health while maintaining their independence.

## The WSD Trial

Currently there is a lack of robust evidence around the effectiveness of Telecare and Telehealth technologies but the WSD programme should help to close this evidence gap.

The WSD programme is believed to be the largest randomised control trial of Telecare and Telehealth in the world to date. Thousands of members of the public will be involved in the programme with individuals being recruited at three sites (Cornwall, Kent and Newham).



# The WSD Programme

## Telecare

This service is aimed at vulnerable people who need the support of Social Care or Health Services to keep living on their own. For example those with physical disabilities, the frail and elderly or those suffering from dementia or epilepsy.

## Telehealth

This service is aimed at helping people manage their long term health conditions in their own home. (Conditions include - diabetes, heart failure and/ or chronic obstructive pulmonary disease).



# The WSD Programme

## The Purpose of the Trial

The results of the WSD trial will help us to understand to what extent the integration between Health and Social Care when supported by these technologies can:

- promote people's long term health and independence
- improve quality of life for people and their carers
- improve the working lives of health and social care professionals
- provide an evidence base for more cost effective and clinically effective ways of managing long term conditions.



# What is Telecare?

## Telecare Technology

Telecare uses a combination of alarms, sensors and other equipment to help people live independently. This is done by monitoring activity changes over time and will raise a call for help in emergency situations, such as a fall, a fire or a flood.

Telecare is not intended to replace human contact but is designed to support carers and people living alone. For instance, a bed occupancy sensor can be used to monitor when a person gets out of bed at night and if they do not return within a certain period, an alarm would be raised as they may have fallen. The bed sensor can be combined with an automatic light sensor so that when the person gets out of bed the light turns on and allows them to immediately see where they are going.



# What is Telehealth?

## Telehealth Technology

Telehealth uses equipment to monitor people's health in their own home. So for example equipment can be used to monitor vital signs such as blood pressure, blood oxygen levels or weight. These measures are then automatically transmitted to a clinician who can observe health status without the patient leaving home. The clinician monitors daily readings to look for trends that could indicate deterioration in condition. Readings that are out of the range expected are flagged to the clinician using a traffic light system.

Telehealth solutions offer a way of delivering tailored care for patients with long term conditions, which helps improve quality of life and prevent avoidable hospital admissions.

By using Telehealth equipment individuals can take the same measurements that a nurse or GP would

take at a surgery thereby avoiding frequent visits to the surgery. Measurements are automatically sent through the telephone line and the nurse or GP will be able to read those measurements from their desk at the surgery to monitor the user's progress.



# Eligibility and Trial Design

## Trial Design

The WSD Programme is a randomised control trial. This means that participants are randomly allocated to either a control or intervention group. The unit of randomisation is the GP practice. In other words the GP practice that an individual belongs to will determine whether they are allocated to the control or intervention group and have the equipment installed now or in 12 months time.

The GP practices that are part of the trial have been randomly split by the evaluation team into 4 groups which are matched to provide a balanced mix of practice sizes, disease prevalence and demographics.

## Intervention Group

Half the people on the trial will be in the intervention group and have either the Telecare or Telehealth

equipment installed depending on their health or social care needs.

## Control Group

As with all trials there needs to be a control group for the Whole System Demonstrators. This means that some people will receive usual care for 12 months. We have made a commitment to provide appropriate Telecare and Telehealth to those in the control group after 12 months.

## Eligibility

To be eligible to take part in the trial individuals must meet the relevant Telecare or Telehealth eligibility criteria which have been agreed across all 3 sites (see pages 8 and 9 for more detail).

# Telecare Eligibility Criteria

Those individuals aged 18 and over with social care needs who meet one of the following criteria are eligible to participate in the WSD Telecare trial:

1. Currently in receipt of (or considered to have a need for) night sitting.
2. Receiving 7 or more hours per week of home care or 3.5 or more hours per week of home care plus a meals service (defined by individual not household).
3. Receiving one or more days per week of day care.
4. Have had a fall or who are considered at high risk of falling.
5. Have a live-in, or nearby informal carer, who are facing difficulties carrying their current burden of responsibilities.
6. Carer call-out.
7. Cognitive impairment/confusion.





# Telehealth Eligibility Criteria

Those individuals aged 18 and over who meet the following criteria are eligible to participate in the WSD Telehealth trial:

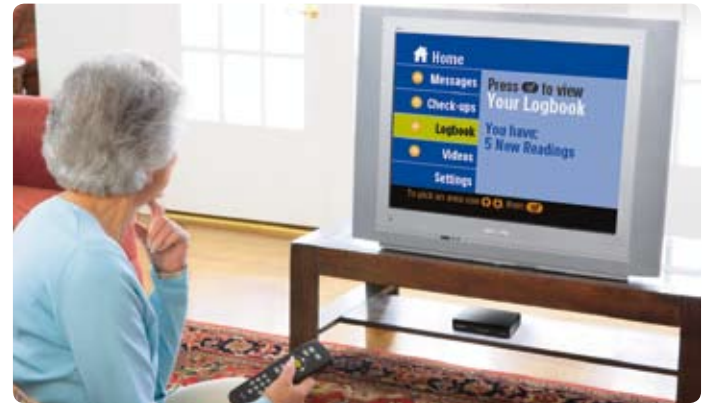
- Diagnosed with one or more of the following long term conditions:
  - a.** Heart failure - diagnosis confirmed by echocardiogram or by a specialist assessment
  - b.** Type 1 or 2 diabetes - with HbA1C of 7.5 or greater in the previous 15 months
  - c.** Chronic Obstructive Pulmonary Disease (COPD) - diagnosis confirmed by spirometry and FEV1 is less than 70% of predicted normal and FEV1/FVC ratio is less than 70%

Note: additional co morbidities may be present and these individuals will still be eligible.

- In addition, we identify people who meet the eligibility criteria above and have had least one

of the unplanned following events in the last 12 months in relation to their long term condition:

- a.** Unplanned hospital admission
- b.** Intermediate care/ Rapid response service use
- c.** Treatment following call out of Ambulance services
- d.** Accident & Emergency visit



# Telecare Products - General



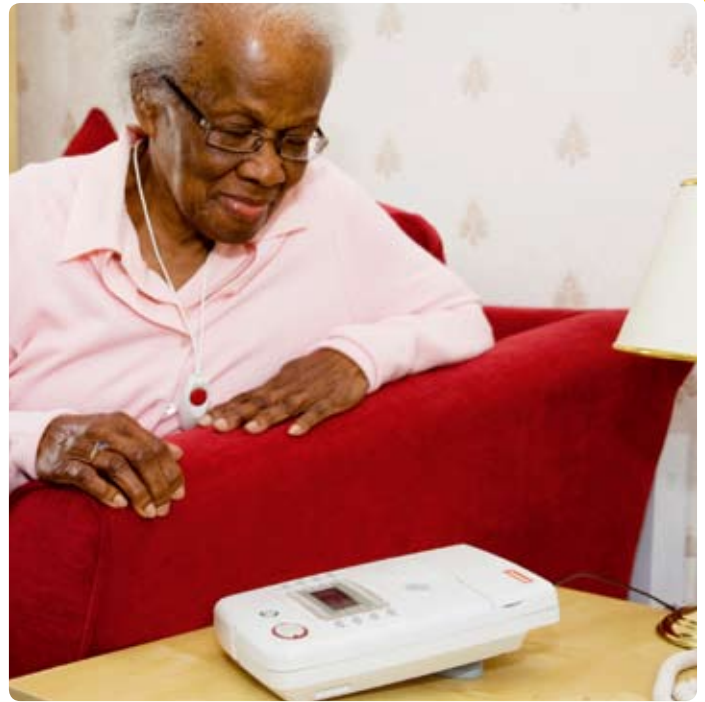
## Telecare Home Unit

- Recordable Reminders
- Speaker connected to Call Centre
- Linked to sensors



## Big Button Telephone

- Large buttons and white numbering
- Hearing aid compatibility
- Visual call indicator
- Earpiece volume control



# Telecare Products - Personal



## Personal Alarm

- Panic button
- Activates Telecare home unit



## Epilepsy Sensor

- Bed sensor
- Tonic Clonic seizures
- Monitors heart rate
- Monitors breathing patterns



## Enuresis Sensor

- Detects bed moisture
- Alarm prompts action to be taken
- Eliminates need for constant physical checks



## Fall Detector

- Portable
- Detects serious falls
- Ideal if wearer is unable to rise



# Telecare Products - Environmental



## Temperature Extremes Sensor

- Battery operated
- Used in kitchen
- Monitors high and low temperature extremes



## Flood Detector

- Battery operated
- Used in kitchen or bathroom
- 1st Alert – Audible
- 2nd Alert – Call Centre



## Carbon Monoxide (CO) Detector

- Battery operated
- Audible warning
- Linked to Call Centre



## Gas Detector

- Battery operated
- Can be linked to gas shut-off supply if leak detected

# Telecare Products - Additional



## Buddi System

Buddi is a discreet GPS personal tracking system which can give carers complete peace of mind. It has the ability to locate a wearer 24/7 365 days a year. It also contains an emergency panic button which can be triggered by the wearer.



## Key Safe

A very secure safe to store keys in a heavy duty, weatherproof container which uses a code for easy access by carers or emergency services.



# Telecare Carer Support

The Telecare service aims to be beneficial to the service users, but it also ultimately gives full-time and part-time carers reassurance, peace-of-mind and respite in the care of their family or clients if they have to leave them alone i.e. to go shopping, return to their own homes, or go to work.

Every time the Telecare system raises an alert carers will be notified immediately via their own mobile or land-line telephone.



# Telecare Carer Support

**There are a number of Telecare products that are suited to carers:**



## **DDA Pager**

Carers can carry this during the day time, even if they are out in the garden, and be alerted immediately should any of the Telecare units be activated.



## **Medication Dispenser**

This dispenser enables the carer to be absent when patients are due to take their medication as it automatically sends a reminder and dispenses the appropriate dosage only.



## **Fast PIR**

This movement sensor is useful to monitor activity/inactivity when the carer is absent. For instance if a service user suffers from diabetes, a PIR could alert a carer if the patient has not gone into the kitchen for something to eat when they should have.



## **Pillow Alert Solution**

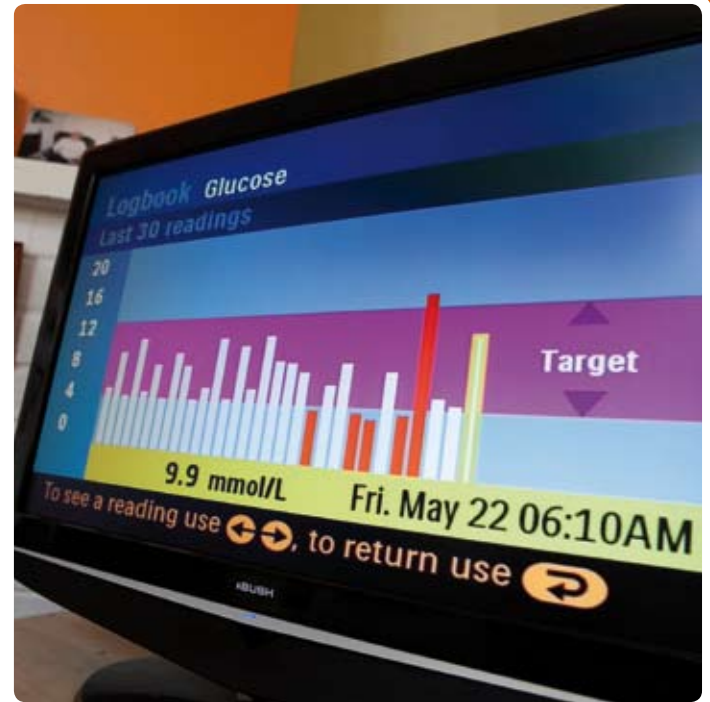
This unit can be placed under the carer's pillow so that at night, if any of the alerts are activated around the house it will vibrate to wake the carer.

# Telehealth Products - Monitors

Telehealth monitors are the equivalent of the Telecare home unit (see page 10). They store vital signs data, provide instructions and also display results in a user friendly manner. The more sophisticated also allow educational videos and questionnaires to be shared with an individual in their home. The content of these is tailored to their care package and the stage of their condition.

Telehealth needs to provide a flexible solution to meet the requirements of remote health monitoring as patients' needs change.

The monitors work with peripherals such as blood pressure monitors and scales (see page 18). Telehealth systems use a phone line and/or broadband at no additional cost to the user.





# Telehealth Products - Peripherals

There are a variety of peripherals available which are linked to the Telehealth monitor (see page 18). Some of these are wireless and can work via Bluetooth. In other instances readings may be taken remotely and then the peripheral can be connected to the monitor to allow the data to be transmitted.

Tailored packages of peripherals and associated educational content are available for different long term conditions and can vary depending on the severity of that condition. For example there are different packages for individuals with the early onset of COPD and for individuals with severe COPD. Packages are also available for people with multiple long term conditions.



# Telehealth Products - Peripherals



## Blood pressure monitor

A cuff for the arm which can be used to check blood pressure.



## Blood glucometer

Used to measure an individual's blood sugar level.



## Pulse oximeter

Clips onto the individual's finger to measure blood oxygen levels and/or heart rate.



## Spirometer

Used to measure the volume of air inhaled and exhaled by the lungs.



## Weighing scales

Used to monitor an individual's weight as rapid weight change can indicate increased risk.

# Common Myths

## Common Telecare and Telehealth Myths

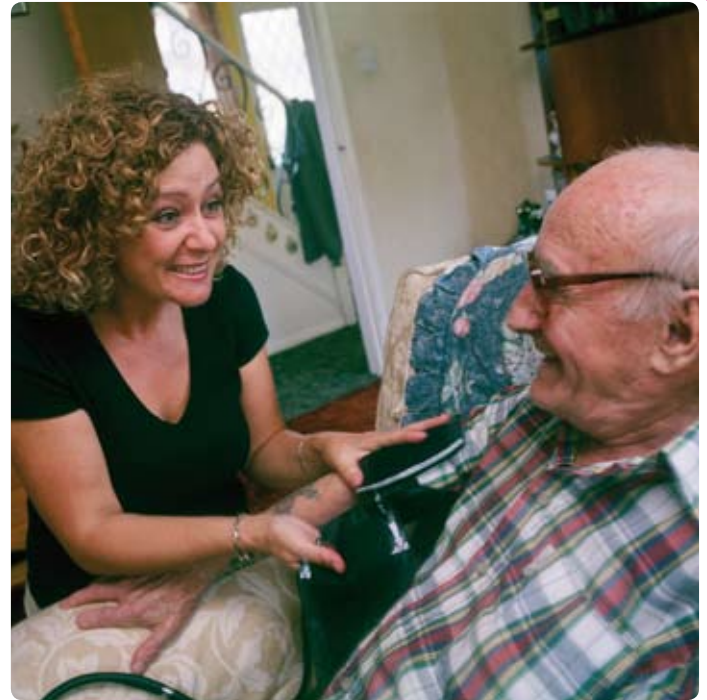
There are number of common myths about Telecare and Telehealth:

### It is an emergency service

Telecare and Telehealth products are used to support individuals with longer term and complex health and social care needs. The technology enables individuals to live more independently, however it is not a replacement for emergency services which users are advised to make use of in critical situations.

### It's like Big Brother

Service users and carers are made fully aware of what sensors are being fitted. They can also raise any concerns with their care co-ordination manager. In most



# Common Myths

cases the devices are unobtrusive and only activate when a potential adverse incident has occurred.

## **It leads to greater isolation**

Telecare and Telehealth enables individuals to live independently at home and can help improve the user and carer's quality of life. Support is still available from NHS and Social Care staff who will intervene when required. Many users and carers find that the technology reduces their anxiety and gives them the confidence to live fuller lives.

## **It creates a greater workload for staff**

Staff will need training to be able to use these technologies, however, in the long term it should enable them to better manage caseloads and work more efficiently. As a result, it is expected that the

proportion of time staff spend on planned, rather than unplanned reactive care, will increase.

## **It leads to redundancies**

Telecare and Telehealth technologies are not intended to replace care professionals. The vision for the Whole System Demonstrator Programme is principally to establish person-centred integrated health and social care, with advanced Telecare and Telehealth technologies acting as an additional mechanism to support and complement the care package within a home-setting. The demographics of an aging population will necessitate us providing our workforce with tools such as Telecare and Telehealth to help them cope with increased workloads.

# Case Studies



## Telecare Quotes

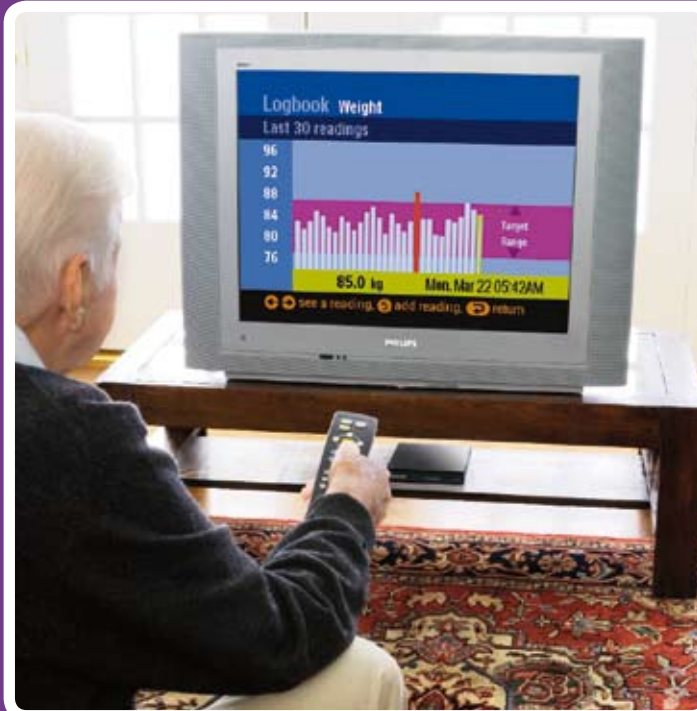
“Living on my own it's nice to know I can call for help if I feel ill during the night or fall.”

“The alarm system allows me a lot more freedom and peace of mind.”

“My family are pleased with Telecare. If I was to fall or needed help anytime they would be contacted straight away.”

“It means that I don't have to go into a care home which I don't want to do. I want to stay in my own home as long as possible.”

# Case Studies



## Telehealth Quotes

“I feel much more confident knowing that someone is keeping an eye on my health every day. I think it’s great.”

“Since I started using Telehealth I’ve been able to manage my condition better.”

“It changes the whole concept of my life. I can get on with my daily activities... and am totally independent.”

“I was worried that it would be a problem but Telehealth has actually created a routine and fits into my day really well.”

“Now if my condition changes I can speak to someone quickly and they have a record and can see what has changed - they know what to do to sort it out.”

# WSD Outputs & Further Information

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### WSD Outputs

The WSD Programme was launched in May 2008 and will run for over two years with all participants being recruited by Summer 2009 and results being published in late 2010.

The evaluation work is already underway but it is currently too early to provide any results from the trial. The results of the WSD evaluation will provide an evidence base for future care and technology models and may potentially influence future DH policies leading to wide scale investment in Telecare and Telehealth.



### Further Information

- Further information about the WSD Programme can be found on the Department of Health website: [www.dh.gov.uk/en/healthcare/longtermconditions/wholesystemdemonstrators](http://www.dh.gov.uk/en/healthcare/longtermconditions/wholesystemdemonstrators)
- The WSD Action Network (WSDAN) has been established to disseminate the lessons learned on the three sites and will become a source for the collected worldwide evidence on the effectiveness of Telehealth and Telecare. In addition, another 12 organisations and partnerships that bid to be part of the WSD Programme, but did not become one of the three sites, are involved in helping to generate best practice data for the benefit of all.
- For more information and to register with the WSDAN visit the website at: [www.wsdactionnetwork.org](http://www.wsdactionnetwork.org)