



## Higher National Unit specification: general information

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

**Unit code:** FX9J 33

**Superclass:** PA

**Publication date:** October 2011

**Source:** Scottish Qualifications Authority

**Version:** 01

### Unit purpose

This Unit has been developed to support Scotland's National Telehealthcare Education and Training Strategy and workplace competencies. The Unit reflects the areas of equipment assessment, installation, maintenance and repair competencies outlined in the Telehealthcare Support Staff Competency Framework. It is designed to enable the candidate to apply their knowledge in the context of equipment assessment, installation, maintenance and repair of telecare and telehealth based assistive technology.

On completion of the Unit the candidate should be able to:

- 1 Provide, install and test proposed telecare and telehealth equipment.
- 2 Identify and understand environmental and technological factors which impact on telecare and telehealth installations.
- 3 Identify the processes and procedures for maintenance, fault reporting, repair and storage of telecare and telehealth equipment.

### Recommended prior knowledge and skills

It is recommended that candidates should have completed the Working in Telehealthcare Unit (FX9F 33) prior to undertaking this Unit. Candidates should have good communication skills, both written and oral; this could be evidenced by the achievement of a communication Unit at SCQF level 4, or equivalent. Alternatively, this could be evidenced by an employer's reference or the process of application and/or pre-course interview. Candidates should also be in a work situation that allows them to demonstrate the Evidence Requirements for this Unit through real work activities.

## **General information (cont)**

### **Credit points and level**

1 Higher National Unit credit at SCQF level 6: (8 SCQF credit points at SCQF level 6\*)

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

### **Core Skills**

There are opportunities to develop the Core Skill of *Communication* at SCQF level 5, and the Core Skills component of *Planning and Organising* at SCQF level 6 SCQF this Unit, although there is no automatic certification of Core Skills or Core Skills components.

### **Context for delivery**

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

## Higher National Unit specification: statement of standards

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

**Unit code:** FX9J 33

The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

### Outcome 1

Provide, install and test proposed telecare and telehealth equipment.

#### Knowledge and/or Skills

- ◆ Role and responsibility of the installer
- ◆ Ordering, delivery, storage and issuing of telecare and telehealth equipment
- ◆ First, second and third generation Telecare and Telehealth
- ◆ Health, safety and welfare regulations for the workplace
- ◆ Electrical equipment regulations and guidance
- ◆ Local Policy and Procedures regarding equipment
- ◆ Installation of Telecare and Telehealth equipment
- ◆ Telecare Services Association Code of Practice Technology Management and Installation
- ◆ Vehicle checks in accordance with local policies

#### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ Explain how telecare and telehealth equipment is ordered delivered, stored and issued.
- ◆ Describe the procedure for ensuring that vehicles are stocked, maintained and utilised in accordance with local policy.
- ◆ Identify and test telecare equipment to ensure the equipment is fit for purpose including interoperability prior to installation.
- ◆ Describe the installation of telecare and telehealth equipment, identifying the use of correct protocols, programming, testing and resolution of any faults.

## Higher National Unit specification: statement of standards (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

### Outcome 2

Identify and understand environmental and technological factors which can impact on telecare and telehealth installations.

#### Knowledge and/or Skills

- ◆ Moving and Handling Legislation and guidance
- ◆ Adults with Incapacity Legislation and guidance
- ◆ Local and Policy and Procedures.
- ◆ Telecare Services Association Code of Practice — Access to Service User's Home
- ◆ Key Holding Code of Practice
- ◆ Communication skills
- ◆ Record keeping
- ◆ Installation risk assessment
- ◆ Environmental and technological factors

#### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ Outline the skills required to identify the appropriate telecare and telehealth equipment prior to installation.
- ◆ Identify correct procedures to access and secure the service user's home.
- ◆ Describe the value of risk assessment before, during and after the installation.
- ◆ Communicate with and update all records and reports for the service user.

### Outcome 3

Identify the processes and procedures for maintenance, fault reporting, repair and storage of telecare and telehealth equipment.

#### Knowledge and/or Skills

- ◆ Local policy and procedures for maintenance, fault reporting, repair and storage
- ◆ Manufactures/suppliers of telecare equipment guidance
- ◆ Infection control — decontamination and disposal of equipment
- ◆ Equipment recording systems
- ◆ Critical and non-critical faults
- ◆ Stock control/asset management
- ◆ Routine testing of equipment in the home

## Higher National Unit specification: statement of standards (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ Describe how to manage, handle, and provide routine check visit for telecare and telehealth equipment.
- ◆ Explain the advantages of using an equipment recording system for tracing, tracking, uplifting, decontamination and disposal of equipment.
- ◆ Explain the procedure for the uplift/withdrawal, repair and replacement of telecare and telehealth equipment.
- ◆ Identify the appropriate response to critical and non-critical faults of telecare and telehealth equipment.

## Higher National Unit specification: support notes

### Unit title: Telehealthcare: Installation, Maintenance and Repair

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

### Guidance on the content and context for this Unit

Telehealthcare is the convergence of Telecare and Telehealth to provide a technology-enabled and integrated approach to the delivery of care and health services. Telecare is 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 placing of discreet sensors around a service users home to monitor environmental risks such as smoke, flood and gas and personal risks such as falls, dementia, confusion and learning disabilities. The sensors work in conjunction with a telecare base Unit linked to an alarm receiving centre, to offer a comprehensive way of managing risks to a service users health and home environment 24 hours a day seven days a week.

Telehealth refers to the use of monitoring and measuring devices which collect information about vital signs (temperature, blood pressure, blood sugar level, etc), symptoms or health conditions in the patient's home, and is then sent on from or collected directly from a special device in the home. Clinicians can then be alerted to significant changes in a patient's condition, and the patient advised, or reassured, appropriately. (Joint Improvement Team, 2008)

Telehealth is the provision of health services at a distance using a range of technologies. It offers the potential to deliver a range of care options remotely via telephone, mobile phone and broadband, eg involving videoconferencing. (Joint Improvement Team, 2011)

This Unit forms part of the optional section of the PDA in Telehealthcare at SCQF level 6. This Unit is suitable for candidates who are currently working in the field of Telehealthcare, who seek to consolidate their work/learning experience.

This Unit is not intended to standardise the work of individuals employed as installer. It acknowledges that there will be geographical differences and similarities in terms of service delivery and meeting the needs of individuals. This should be taken into account when tutors and approved centres are assessing and working alongside candidates.

## Higher National Unit specification: support notes (cont)

### Unit title: Telehealthcare: Installation, Maintenance and Repair

This Unit provides opportunities to develop underpinning knowledge for the following Units in SVQ 2 Health and Social Care. This does not provide automatic certification of skills and is dependent on the information produced by the candidate:

- ◆ **HSC370** — Support Individuals to Communicate Using Technology
- ◆ **HSC229** — Gain Access To, and Ensure Individuals' Homes are Secure
- ◆ **HSC32** — Promote, Monitor and Maintain Health, Safety and Security in the Working Environment
- ◆ **HSC343** — Support Individuals to Live at Home
- ◆ **HSC344** — Support Individuals to Retain, Regain and Develop the Skills to Manage their Lives and Environment.

The role of installer of Telecare and Telehealth equipment is to ensure they test, programme and install equipment adhering to the suppliers/manufacturers guidance and local policies and procedures. Their knowledge of available equipment should be current and appropriate. They should obtain relevant information from the individual, carers and others to inform the Telecare assessment. At the installation the installer may be required to use both hand and power tools and may involve the use of stepladders. Equipment should be tested and any faults rectified at installation. The installer would provide instruction and guidance to the service user or carer on the use of the Telecare and Telehealth equipment. In accordance with local policies and procedure new service user installation documentation is completed.

It is recommended that the candidate explores the types of equipment outlined under the first, second and third generation Telecare and Telehealth categorisation. First generation Telecare refers to equipment and devices that are activated by the user, eg push button, pendant or pull cord to signify an emergency. Activation of these devices triggers an alarm call to a Control centre where an appropriate response is implemented.

Second generation Telecare involves the use of sensors such as smoke alarms and flood detectors. These devices can monitor the home environment, vital signs, physiological measures, and lifestyle. They can collect and transmit information continuously about door opening, bathwater running, the use of electrical appliances, and movement both in and out of the home. This information is gathered within the user's home and transferred remotely to provide care professionals and carers with detailed information around behaviour patterns of individuals. This is a more sophisticated approach to support managing risk and promoting independence.

Third generation Telecare involves the use of broadband, wireless and audio-visual technology. Lifestyle monitoring using advanced sensors and monitors is used to capture real time data and transfer this remotely to a health care professional to assess and make a decision regarding care management. Patterns and predictions can be made about an individual's behaviour and lifestyle leading to reduced incidences of falls, hospital admissions and or doctor visits. Candidates are encouraged to explore the new and emerging technologies in the field of telecare and telehealth.

## Higher National Unit specification: support notes (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

### Outcome 1

The emphasis of this Outcome is to describe the process and procedure for providing, installing and testing telecare and telehealth equipment. Candidates may benefit from broadly exploring the relevant policy and procedures relating to Technology Management, Service Tailoring, Installation, Planned Maintenance and Repair as outlined in the Telecare Services Associations Code of Practice. Candidates should be aware of their local organisational and policy requirements in relation to health and safety guidance and legislation relevant to their role and responsibilities. Candidates would benefit from a broad overview of Electrical Equipment (Safety) Regulations 1994, Gas Safety Register and the Health & Safety Act 1974.

Emphasis should be placed on the candidate checking and preparing their vehicle for the transport of installation staff, materials, telecare and telehealth equipment. Candidates are required to operate and control vehicles in accordance with local policies, procedures and Road Traffic Legislation. Consideration should be given to the management, control, storage and delivery of telecare and telehealth equipment. In preparation for the installation of telecare and/or telehealth equipment the candidate should set up equipment following the organisational policies and procedures and manufactures/suppliers guidance. It is recommended that the candidates examine the process and procedures associated with installation.

### Outcome 2

It is recommended that the candidate explores the environmental and technological factors which impact on telecare and telehealth installations. Candidates may benefit from firstly looking at their local, organisational and policy requirements in relation to risk assessment, key holding, telecare and telehealth equipment legislation and guidance relevant to their role and responsibilities.

Candidates should have working knowledge of the organisation's Health and Safety policy and procedures to enable them to carry out an environmental assessment prior to installation and a personal risk assessment, prior to, during and after the installation of telecare and/or telehealth equipment. Emphasis should be placed on the candidates knowledge and understanding of Moving and Handling techniques and ensure they adhere to correct techniques at all times.

Consideration should be given to ensuring that the correct local procedures are followed for obtaining keys/key safes, to allow access to the service user's home and securing the home when they leave. Candidates are required to carry out all administration procedures prior to, during and after the installation these should be completed in line with the organisational standards.

## Higher National Unit specification: support notes (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

### Outcome 3

The emphasis of this Outcome is to identify the processes and procedures for maintenance, fault reporting and storage of telecare and telehealth equipment. Candidates may benefit from broadly exploring the relevant policy and procedures relating to Technology Management, Installation, Planned Maintenance and Repair as outlined in the Telecare Services Association's Code of Practice. Candidates would have the opportunity to consolidate the Health and Safety guidance and legislation from the mandatory Unit and look at waste as an additional topic. Candidates may benefit from looking at the Waste Electrical and Electronic Equipment (WEEE) Regulations 2006 and Infection Control, relevant to their role and responsibilities.

Candidates should be able to manage, handle and store telecare and telehealth equipment. Consideration should be given to the storage environment, routine preventative and corrective maintenance to ensure the equipment is managed in a safe and appropriate way.

Maintenance of equipment is essential this can be accomplished by ensuring there are routine planned visits to service user's to test and repair equipment in accordance with manufacturers' guidance and local policies and procedures. When equipment is found to be faulty and the faults cannot be remedied, equipment is returned to the manufacturers, in accordance with warranty and local contract arrangements.

Emphasis should be placed on identifying emerging/changing needs and potential problems in relation to the telecare/telehealth equipment and provide the emergency response to repair or replace the equipment. Consideration should be given to correctly identifying the response in relation to critical and non-critical faults. In accordance with local infection control procedures the telecare and telehealth equipment should be sterilised, disinfected and recycled or decommissioned and disposed of to prevent contamination. The quality control measures should be used by monitoring Telecare and Telehealth equipment, using the equipment tracking systems during the decontamination process.

### Guidance on the delivery of this Unit

This Unit is part of a Professional Development Award in Telehealthcare at SCQF level 6. It is recommended that this Unit is completed following completion of the *Working in Telehealthcare* Unit (FX9F 33).

Alternatively the Unit can be undertaken as a standalone Unit for candidates to support their continued professional development.

## Higher National Unit specification: support notes (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

### Guidance on the assessment of this Unit

Assessment for this Unit should involve the use of technology to communicate with and by the student. All assessments should examine the candidate's workplace experience of working at the installation of telecare and telehealth equipment. Candidates should be assessed by undertaking reflective accounts based on real work activities for this Unit. In addition evidence could be gathered using voice recording or simulated voice recording within the workplace to demonstrate the candidate's ability to perform the role of an installer. Verification is recommended from a workplace supervisor/mentor. Centres are encouraged to develop guidance on the content of the reflective accounts and voice recordings based on the Evidence Requirements for the Unit.

Candidates will be encouraged to present their assessment using a format that suits their individual learning style, ie written or oral recording/video evidence (eg video diary). Approved centres should offer examples of course work to guide and support the candidate.

Tutors should provide feedback electronically to the candidate to encourage them to develop their ICT literacy and communication using technology. Supporting evidence for the candidate's workplace mentor/supervisor could be used to verify the activity.

All assessment submissions should adhere to the principles of safe storage, access, consent and retrieval of information. No identifiable patient/service information should be presented by the student.

### Assessment Guidelines

#### Outcome 1

Candidates should be encouraged to present their assessment using a format that suits their individual learning style, ie written or oral recording/video evidence (eg video diary).

It is recommended that a reflective account of no more than 1,000 words or equivalent could be used to gather evidence to describe the role and responsibilities of the installer. In addition evidence could be gathered using voice recording or simulated voice recording within the workplace to demonstrate the candidate's ability to perform the role of an installer. Verification is recommended from a workplace supervisor/mentor. Centres are encouraged to develop guidance on the content of the reflective account and voice recordings based on the Evidence Requirements for this Outcome.

Tutors should provide feedback electronically to the candidate to encourage them to develop their ICT literacy and communication using technology. Supporting evidence for the candidate's workplace mentor/supervisor could be used to verify the activity.

All assessment submissions should adhere to the principles of safe storage, access, consent and retrieval of information. No identifiable patient/service information should be presented by the student.

## Higher National Unit specification: support notes (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

### Outcome 2

Candidates should be encouraged to present their assessment using a format that suits their individual learning style, ie written or oral recording/video evidence (eg video diary). Candidates should provide reflective account (of no more than 1,000 words or equivalent) to describe the environmental and technological factors which can impact on telecare and telehealth installations. Examples may be provided to guide the candidate. In addition evidence could be gathered using voice recording or simulated voice recording within the workplace to demonstrate the candidate's ability to perform the role of an installer. Verification is recommended from a workplace supervisor/mentor. Centres are encouraged to develop guidance on the content of the reflective account and voice recordings based on the Evidence Requirements for this Outcome.

Tutors should provide feedback electronically to the candidate to encourage them to develop their ICT literacy and communication using technology. Supporting evidence for the candidate's workplace mentor/supervisor could be used to verify the activity.

### Outcome 3

Candidates should be encouraged to present their assessment using a format that suits their individual learning style, ie written or oral recording/video evidence (eg video diary).

It is recommended that the candidate provides evidence that they have met the Evidence Requirements by undertaking a reflective account of no more than 1,000 words or equivalent of a simulated scenario/or actual scenario where they describe the role and responsibilities in relation to the maintenance, fault reporting and repair of telecare equipment. Verification is recommended from a workplace supervisor/mentor. Guidance should be provided for the candidate, workplace verifier and tutor to meet the requirement for this assessment.

Centres should develop guidance on the content of the reflective account based on the Evidence Requirements for this Outcome.

Tutors should provide feedback electronically to the candidate to encourage them to develop their ICT literacy and communication using technology. Supporting evidence for the candidate's workplace mentor/supervisor could be used to verify the activity.

All assessment submissions should adhere to the principles of safe storage, access, consent and retrieval of information. No identifiable patient/service information should be presented by the student.

## Online and Distance Learning

The emphasis for delivery of this Unit should be on blended learning, this should include options for distance learning, delivery/support by video conferencing, e-learning and face to face contact within SQA approved centres. To meet the needs of the Telehealthcare workforce this Professional Development Award should be delivered on a part-time flexible basis.

## Higher National Unit specification: support notes (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

### Opportunities for developing Core Skills

Candidates will have the opportunity to develop the Core Skills of *Communication* and the Core Skills component of Planning and Organising, although there is no automatic certification of the Core Skills.

*Communication* (at SCQF level 5) could be evidenced through written, oral and technological reporting on the use of effective communication with service users, carers and other professionals.

Planning and Organising (SCQF level 6) could be developed through written, oral and technological reporting on the use of effective communication with service users, carers and other professionals.

### Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)

### Indicative Reading

Brownsell, S. (2003) *Assistive Technology and Telecare: forging solutions for independent living*, Policy Press.

Kerr, B., Cunningham, C., Martin, S. (eds) (2010) *Telecare and Dementia: Using Telecare effectively in the support of people with dementia*, University of Stirling, Dementia Services development centre.

Kerr, B. and Murray, A. (eds) (2011) *Telehealthcare and falls: using telehealthcare effectively in the support of people at risk of falling*, University of Stirling, Dementia Services development centre.

Wooton, R., Dimmick, S.L., Kvedar, J.C. (eds) (2006) *Home Telehealth: connecting care with the community*, Royal Society of Medicine Press.

### Web pages

Joint Improvement Team website [www.jitscotland.org.uk](http://www.jitscotland.org.uk) provides a range of up to date resources and guidelines in relation to Telecare.

Telecare Standards Association [www.telecare.org.uk](http://www.telecare.org.uk) provides guidance to subscribed organisations and training materials to support service delivery.

Scottish Centre for Telehealth and Telecare [www.sctt.scot.nhs.uk](http://www.sctt.scot.nhs.uk) provides support and advice to NHS boards and help evaluate the potential benefits of new technologies.

## History of changes to Unit

Version	Description of change	Date

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## General information for candidates

### Unit title: Telehealthcare: Installation, Maintenance and Repair

'Telecare is the remote or enhanced delivery of care services to people in their own home or in a community setting by means of telecommunications and computerised services. Telecare usually refers to sensors and alerts which provide continuous, automatic and remote monitoring of care needs, emergencies and lifestyle changes, using information and communication technology (ICT) to trigger human responses, or shut down equipment to prevent hazards' (Joint Improvement Team 2011).

Telecare involves the placing of discreet sensors around a service users home to monitor environmental risks such as smoke, flood and gas and personal risks such as falls, dementia, confusion and learning disabilities. The sensors work in conjunction with a telecare base Unit linked to an alarm receiving centre, to offer a comprehensive way of managing risks to a service users health and home environment 24 hours a day seven days a week.

Telehealth refers to the use of monitoring and measuring devices which collect information about vital signs (temperature, blood pressure, blood sugar level, etc), symptoms or health conditions in the patient's home, and is then sent on from or collected directly from a special device in the home. Clinicians can then be alerted to significant changes in a patient's condition, and the patient advised, or reassured, appropriately. (Joint Improvement Team)

Telehealth is the provision of health services at a distance using a range of technologies. It offers the potential to deliver a range of care options remotely via telephone, mobile phone and broadband, eg involving videoconferencing. Deployed effectively, Telehealth improves access to appropriate high quality and effective care, which meets clinical and service standards and enhances the patient's experience of care. Examples of Telehealth include telephone or video consultations to support diagnosis and management, clinical networks and health professional education.

This Unit has been designed and developed to support Scotland's National Telecare Strategy and workplace competencies in relation to Telehealthcare. The Unit reflects the areas of Equipment Assessment, Installation, Maintenance and Repair Competencies outlined in the Telehealthcare Support Staff Competency Framework, it consolidates the knowledge gained from the core Units and is designed to enable the candidate to apply their knowledge in the context of equipment assessment, installation, maintenance and repair of telecare and telehealth based assistive technology.

It is recommended that you complete the Working in Telehealthcare Unit (FX9F 33) prior to undertaking this Unit. You should also have current work experience as an installer.

On completion of the Unit you should be able to:

- 1 Provide, install and test proposed telecare and telehealth equipment.
- 2 Identify and understand environmental and technological factors which impact on telecare and telehealth installations.
- 3 Identify the processes and procedures for maintenance, fault reporting, repair and storage of telecare and telehealth equipment.

## General information for candidates (cont)

**Unit title:** Telehealthcare: Installation, Maintenance and Repair

By undertaking this Unit, you will have the opportunity to develop the Core Skill of *Communication* at SCQF level 5, and the Core Skills component of Planning and Organising, at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Assessment for this Unit should involve the use of technology to communicate with and by the tutor. Assessment will examine your workplace experience of working as an installer of telecare equipment.