

Unit 43: Technology in Health and Social Care Services

Unit code:	T/600/9002
QCF Level 3:	BTEC Nationals
Credit value:	10
Guided learning hours:	60

● Aim and purpose

This unit aims to give learners an understanding of the range of technologies used in health and social care and the subsequent implications for people using services. It will encourage the development of learners' own skills in preparation for work in the health and social care sectors.

● Unit introduction

Advances in information and other technologies have had a significant impact on work within the health and social care sectors. These technological advances have many benefits, but have also brought about controversy relating, for example, to data protection, the introduction of medical technologies and possible inequalities in the availability of assistive technology. This unit will give learners an understanding of the range of technologies, both those planning to work in the health and social care sectors, or progress to higher level study.

The unit introduces learners to the application of the range of information and communication technology used in the health and social care sectors, including the development of national databases. Learners will go on to produce their own documents which will provide an opportunity to appreciate a range of ways in which information is collected and presented, and the IT skills needed to work in the health and social care sectors.

Learners will explore types of medical technology used in health and social care contexts, for example, for diagnostic purposes, invasive procedures or life support. They will also investigate the range of assistive technology which can be used to improve the wellbeing and independence of individuals using services.

Learners will examine the benefits of information and other technologies, considering related ethical issues.

The unit links with *Unit 6: Personal and Professional Development in Health and Social Care* as the understanding and skills gained from this unit are essential for the professional development of all workers. If taught alongside *Unit 22: Research Methodology in Health and Social Care*, learners would be provided with an interesting subject to extend their studies and opportunities to develop skills in the use of IT.

● Learning outcomes

On completion of this unit a learner should:

- 1 Understand information and communication technology applications for health and social care
- 2 Be able to use computer software to produce documents
- 3 Understand the uses of medical and assistive technologies in health and social care
- 4 Understand the implications of technologies for people using health and social care services.

Unit content

1 Understand information and communication technology applications for health and social care

Basic computer hardware: PC, modem, scanner, printer, CD ROM reader

Basic computer software: word processing, spreadsheets, internet, email; diagnostic and interactive applications; advantages and limitations of package used

Documents: types, eg letters, labels, faxes, emails, reports, record cards/sheets, care plans, booklets and leaflets, CVs

Electronic record systems: patient and service user records, eg Summary Care Records, Electronic Social Care Records (ESCR), NHS Care Records Service (NHS CRS), Integrated Mental Health Electronic Record (IMHER), electronic staff records

Electronic systems: national and local: eg GP clinical IT systems; Prescription Service (EPS) e-prescribing, patient administration systems, healthspace, resource databases, Common Assessment Framework (CAF) for Adults, GP record transfers, pathology messaging

Internet safety: current data protection legislation and policy, eg virus protection; role of National Information Governance Board; role of Caldicott Guardian, safeguarding issues; assessing/sharing information; consent, access to own records

2 Be able to use computer software to produce documents

Text-based documents: layout, eg page layout, font; formatting and styling, headers and footers, bullets and numbering, automatic page numbering, spellchecker and word count facility, copy and paste, graphics, inserting tables

Spreadsheets: inputting and amending data accurately; formatting data; sorting and filtering; using simple functions; creating and displaying formulae; producing charts and graphs; headers and footers

Databases: uses of database, database objects (tables, queries, reports, forms) selection of fields, choice of data types, field properties, field names

Searching on the internet: using search engines effectively; using multiple search criteria; quoting sources and checking reliability; saving favourites or bookmarking useful sites

3 Understand the uses of medical and assistive technologies in health and social care

Diagnostic technology: uses of, eg X-rays, ultrasound scans, EEG, ECG, MRI scans, blood analysis, urine analysis, temperature and blood pressure monitors; remote monitoring systems

Operative and invasive technology: uses of, eg cryosurgery, lasers, cautery, drug administration systems

Life support systems: used for, eg kidney dialysis, respiration, artificial heart, pacemakers

Care planning: developing plans using healthcare technology

Assistive technology: mobility aids, eg powered wheelchairs, prostheses, hoists, stairlifts; communication aids, eg text phone, speech synthesiser, hearing aids, induction loops, telephone and video conferencing; aids to daily living, eg voice-activated systems to open doors, turn lights on and off, palmpilots, food preparation aids; safety and security aids

4 Understand the implications of technologies for people using health and social care services

Ethics: considerations, eg autonomy, privacy, impact on care worker/people using services interactions, confidentiality, data protection legislation

Benefits: autonomy, independence, wellbeing, health diagnosis, safety and security, mobility, communication, information available to address holistic needs

Patients/people using services: children, adults, older people, people with additional needs, eg learning disabilities, disabilities, mental health problems

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 explain the use of information and communication technology in health and social care [IE2; CT2]	M1 discuss the use of information and communication technology in health and social care	D1 analyse the skills required by health and social care workers to use and manage information and communication technology
P2 produce two types of complex documents to meet a specified need [CT1; CT5; RL5]		
P3 explain the use of medical technologies in health and social care [IE4; CT2]	M2 assess the use of medical and assistive technologies in health and social care	D2 evaluate the use of information and other technologies in health and social care.
P4 explain the use of assistive technologies in health and social care [IE4; CT2]		
P5 discuss the implications of technologies for people using health and social care services. [IE3; IE6]	M3 assess the implications of information and other technologies for patients and people using health and social care services.	

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills which are embedded in the assessment of this unit. By achieving the criteria, learners will have demonstrated effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

The first part of this unit concerns the use of information and communication technology (ICT). The health and social care sectors increasingly use ICT for administration, management, recording and sharing information. The ability to create well-designed, word processed documents will therefore be an advantage to those planning to work in these sectors.

Initially, structured delivery will be required to ensure that learners develop the basic skills and knowledge concerning information technologies and are familiar with the latest electronic systems used in the health and social care sectors. Some input on the use of software packages could be provided by specialist IT tutors but this will need to be contextualised in terms of its application in health and social care settings. Learners will need to develop skills in using a range of software, which may be achieved through the use of short exercises some of which may be specifically designed for practising ICT skills.

It will be useful for learners to develop the skills needed for producing written assignments using word processing software. Skills such as inserting headers and footers, using automatic numbering of pages and spellcheck will be useful for other units within the qualification. The first sessions should include learning how to create and organise files and folders so that work can be stored and located easily. Learners could then progress to producing special documents such as letters, databases, spreadsheets or curriculum vitae. It will be beneficial to learners if, wherever possible, these exercises can be linked to their work in other units.

Learners should be aware of the legislation and guidelines surrounding confidentiality, data protection and safeguarding that are relevant to the use of ICT, for example the collection and storage of data, the use of the internet or sending emails in health and social care settings.

Learners need to explore the value and use of technology and its functions within health and social care, including the use by patients and people using social care services of medical technologies in diagnosis, treatment, and assistive technologies. Learners should investigate the use of technology within their work placements. Visits to health and social care settings could also be used to broaden learners' experiences, particularly if these include practical demonstrations. Guest speakers could include people who use assistive technologies, or administer their use. Group activities, followed by feedback or presentations, will help to consolidate learning.

The unit also provides an opportunity for learners to examine the implications of developments in technology and the potential impact of their application, including the benefits and ethical issues. Debate could be used to stimulate discussion around the controversy of the introduction of national databases or the inequalities in the availability of new technologies for some individuals.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Unit introduction.
Learning outcome 1 Tutor input: information and communication technology (ICT) applications for health and social care. Buzz groups: information which needs to be collected/stored. Learner research: information and communication technology in health and social care settings. Work placement activity: explore the range of ICT used. Practical work: investigate software packages. Learner research: national databases for health and social care.
Assignment 1: Information and communication technology (ICT) in health and social care (P1, M1, D1)
Learning outcome 2 Tutor input: outline use of computer software to produce documents. Initial assessment: skills of learners. Using the internet: learning activities. Learner activities: word processing, spreadsheets, databases, Using the internet: learner activities. Researching/planning: subject for documents/discussion with placement managers. Planning documents. Tutor feedback and support.
Assignment 2: Use ICT to plan and produce documents (P2, M2)
Learning outcome 3 Tutor input: medical and assistive technologies. Visits. Guest speakers. Group discussion/presentations and feedback. Further independent research. Workplace observations and research.
Assignment 3: Medical and assistive technologies (P3, P4, M3)
Learning outcome 4 Tutor input: implications of technologies for people using health and social care services. Group activity/discussion. Debate. Guest speakers. Independent research.
Assignment 4: Technologies: implications for individuals (P5, D2)

Assessment

Evidence for this unit is likely to be a combination of that gained during work experience placements, and centre-based work with technology, projects and discussion.

Evidence for P1 should include a range of national and local electronic systems used for storing and sharing information in health and social care settings. P2 can be assessed through the evidence presented for assessment of another unit, for example *Unit 22: Research Methodology for Health and Social Care*. The documents produced need to be complex, and include the use of software for word processing and spreadsheets, with examples of graphics, tables, graphs or data. Documents should relate to health or social care and their purpose/audience should be specified. This could be in relation to learners' own ideas, case studies/scenarios provided by the tutor or 'real' work related documents in negotiation with work-placement managers.

Learners should draw on their observations and research from their work placements, from guest speakers or own research to achieve P3 and P4. Examples should be included relating to work in health and social care. Evidence is likely to be in the form of a word processed document and could also provide evidence of learners skills' for one document produced for P2. To achieve P5, learners should discuss in detail the range of benefits and implications technology has for patients and people using services, including the issues relating to ethics. Information should relate to information and communication technology, medical and assistive technologies. They will refer to how each type promotes individual health, wellbeing, safety and security. Learners should demonstrate a good understanding of ethical issues and relate these to current policy, data protection legislation and the principles and values of the sectors.

For M1, learners will need to draw on their understanding of the range and use of information technologies, discussing how and why electronic systems and other software are used in different contexts across both the health and the social care sectors. Learners will consider carefully a range of technologies used in health and social care, assessing the impact and/or importance of each example in to achieve M2. Learners should draw on information generated for P5 when assessing the implications for patients and people using services for M3. They should consider both the benefits and possible problems which may arise when new technologies are used. Learners will demonstrate that they understand the principles of the sectors, including reference to ethics.

Distinction grade learners will work with autonomy to research the range of information and other technologies. They will use evidence from P1 and M1 to achieve D1, analysing the skills health and social care workers use to produce documents and to use and manage IT applications safely and effectively. In doing so, learners will reflect on their own skills and those of their peers, assessing knowledge and strengths, and recognising areas where they could improve their skills.

Learners will draw conclusions about the range of skills required by health and social care workers, demonstrating divergent and lateral thinking. They will make clear links to both sectors. Learners will synthesise their knowledge, skills and understanding from all pass and merit criteria, showing confidence in their evaluation of the uses of a range of technologies for D2. They will demonstrate understanding of these complex issues, considering a range of viewpoints about the benefits and ethics. For example, learners will consider issues relating to the collection, storing and sharing of sensitive information, or issues relating to the ethics of using technology for life support. Evidence will be closely linked to health and social care contexts.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, M1, D1	Information and communication technology (ICT) in health and social care	You have been asked to review the ICT arrangements in a health or social care organisation and the current skills of workers so that the organisation can prepare a relevant training programme.	Review of electronic systems, types of information and ways it is collected, stored and shared and the skills required by workers to produce, use and manage information.
P2, M2	Use ICT to plan and produce documents	You are a health or social care worker and have been asked to produce two documents using ICT to show your skill set ahead of a training review.	Two complex documents.
P3, P4, M3	Medical and assistive technologies	You have been asked to prepare and present a view of available medical and assistive technologies for an audience of health/social care learners or those new to the sector.	Report (part 1) for a health and social care journal relating to medical and assistive technologies.
P5, D2	Technologies: implications for individuals		Report (part 2) for a health and social care journal exploring the benefits and ethical issues relating to technologies.

Links to National Occupational Standards (NOS), other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Health and Social Care sector suite (see *Appendix A*) and has links with units from other qualifications in that suite. See *Appendix E* for NOS links and *Appendix G* for a mapping of the NHS Knowledge and Skills Framework against particular units in this qualification.

Essential resources

The following resources are essential for delivery of this unit:

- an appropriately qualified tutor
- library resources with key texts and other reference materials
- access to ICT resources
- audio and visual records, for example videos/DVDs, television interviews, documentaries, journals or newspapers
- case study materials.

Employer engagement and vocational contexts

Employers could engage with this unit through providing work experience opportunities, guest speaker and opportunities for class visits. It would also be useful for learners to access recent policy papers from The King's Fund, third sector (voluntary) organisations, professional associations and trade unions.

Indicative reading for learners

Textbooks

Eaton M and Kennedy D – *Innovation in Medical Technology: Ethical Issues and Challenges* (The John Hopkins University Press, 2007) ISBN 9780801885266

Michie V, Baker L, Boys D and McLeavy J – *BTEC National Health and Social Care Book 2* (Nelson Thornes, 2008) ISBN 9780748781720

Morgan J – *AS GCE Applied ICT for Edexcel* (Payne Galloway, 2006) ISBN 9781904467595

Stretch B and Whitehouse M – *BTEC National Health and Social Care Book 1* (Heinemann, 2007) ISBN 9780435499150

Stretch B and Whitehouse M – *BTEC Level 3 Nationals in Health and Social Care Student Book 1* (Pearson, 2010) ISBN 9781846907663

Stretch B and Whitehouse M – *BTEC Level 3 Nationals in Health and Social Care Student Book 2* (Pearson, 2010) ISBN 9781846907470

Webster A – *New Technology in Health Care: Challenge, Change and Innovation (Health Technology and Society)* (Palgrave Macmillan, 2006) ISBN 9781403991300

Journals and magazines

Care and Health

Caring Times

Community Care

Disability Now

Nursing Times

Websites

www.bma.org.uk

www.bmj.bmjournals.com

www.dh.org.uk

www.dcsf.gov.uk/research

www.jrf.org.uk

www.disabilityalliance.org

www.dlf.org.uk

www.kingsfund.org.uk

www.nhs.uk

www.connectingforhealth.nhs.uk

www.scie.org.uk

www.statistics.gov.uk

www.skillsforcare.org.uk

www.nhib.org.uk

www.niid.org.uk

British Medical Association

British Medical Journal

Department of Health

Department for Children, Schools and Families
research resource

Joseph Rowntree Foundation

Disability Alliance

Disabled Living Foundation

The King's Fund

National Health Service

NHS Computer Services

Social Care Ethics Committee

Social Trends

Sector Skills Council for Care and Development

Royal National Institute of Blind People

Royal National Institute for Deaf People

Delivery of personal, learning and thinking skills (PLTS)

The table below identifies the personal, learning and thinking skills (PLTS) that have been included within the assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	[IE2] working independently to carry out research, appreciating the consequences of their own planning and decisions about how they select and use information [IE3] exploring a range of technologies, including the benefits and possible issues for users of health and social care services [IE4] selecting suitable examples, analysing and evaluating these in relation to their appropriateness to use as illustrations of technologies [IE6] supporting their conclusions about the benefits and possible ethical issues, using reasoned arguments to support information
Creative thinkers	[CT1] exploring a range of ideas in preparation for designing and creating documents [CT2] asking questions in a health or social care setting about the types of information stored and other technologies used [CT5] trying out ideas when designing and creating documents, making amendments and following through to completion
Reflective learners	[RL5] evaluating their skills and experiences in the use of ICT, reflecting on these to plan for improvements.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	working independently to select software to produce documents for assessment, which are appropriate for a specified audience and purpose
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	
Manage information storage to enable efficient retrieval	saving and retrieving documents for assessment
Follow and understand the need for safety and security practices	keeping information secure and using ICT safely
Troubleshoot	identifying and resolving problems when producing documents
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	researching information on technologies used in health and social care
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	using appropriate search techniques to navigate the internet and judging the validity of websites and information they contain, also ensuring that information and policies are current
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	organising information to produce complex documents and selecting appropriate text, tables, images and data which relates to health and social care contexts entering data and creating tables or graphs which are suitable for the document
Bring together information to suit content and purpose	creating a type of document to suit the identified purpose
Present information in ways that are fit for purpose and audience	ensuring accuracy and appropriateness in the layout of documents

Skill	When learners are ...
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	<p>listening and responding to complex issues</p> <p>contributing to discussions about technologies with peers, tutors and professionals in the workplace</p> <p>presenting findings clearly, from individual and group research, to others</p>
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	<p>locating and selecting a range of resources, gathering and synthesising information to use to inform assessment</p>
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	<p>producing extended writing for assessment</p> <p>presenting persuasive information</p> <p>using grammar, punctuation and spelling accurately.</p>