Supporting Technical Education Teaching:

**Curriculum Resources**

Teaching Guide

Topic: Working within the health and science sectors

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| Route | Health & Science |
| Qualification | T Level Technical Qualification in Health (Level 3) (Delivered By NCFE) [www.ncfe.org.uk/qualification-search/qualification-detail/t-level-technical-qualification-in-health-level-3-delivered-by-ncfe-1644](http://www.ncfe.org.uk/qualification-search/qualification-detail/t-level-technical-qualification-in-health-level-3-delivered-by-ncfe-1644) |
| Topic | Working within the health and science sectors |
| Specification coverage | **A1: Working within the health and science sector**  A1.1, A1.2, A1.3, A1.4, A1.5, A1.6  **A2: The healthcare sector**  A2.4, A2.6 |

This resource is part of a series of materials to support technical education teaching. The approach to developing the materials draws from research led by Professor Kevin Orr that sets out a model for understanding of technical education pedagogy.

The curriculum development begins with the knowledge that students are working to learn and apply. Teachers draw from their subject and industry expertise, and their knowledge of their students, to make decisions about the core concepts the curriculum will focus on, how they will sequence these concepts, and the activities that are selected to support students’ learning. The decisions behind the resources suggested in this topic are the result of choices made by the curriculum development team, which will be reviewed and improved by teachers’ decision-making and ongoing reflection in their own circumstances and the needs of their students.

The materials also seek to support teachers in bringing the classroom and industry closer together, by providing assets that draw from authentic industry materials, and using opportunities to capture workplace practice that can be shared with students.

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HEALTH AND SAFETY

This topic has been safety checked but not trialled by CLEAPSS.

It is assumed that activities outlined in this Teaching Guide will be undertaken in suitable facilities or work areas and that good practices, appropriate use policies and procedures will be observed. Teachers should consult their employers’ risk assessments before use and consider whether any modification is necessary for the particular circumstances of their own class/institution.

For practical activities, the Technical Education Networks programme has tried to ensure that experiments are healthy and safe to use in colleges and schools, and that any recognised hazards have been indicated together with appropriate control measures (safety precautions). It is assumed that experiments and activities will be undertaken in suitable laboratories or work areas and that good laboratory practices will be observed. To access the CLEAPSS materials in this suite, institutions will need to be a member of CLEAPSS. Further details are available at [www.cleapss.org.uk](http://www.cleapss.org.uk) If necessary, members can obtain further advice by contacting the Helpline by email at [science@cleapss.org.uk](mailto:science@cleapss.org.uk) or on 01895 251496.

Materials for other topics are available at: [www.technicaleducationnetworks.org.uk](http://www.technicaleducationnetworks.org.uk)

Acknowledgments

We are grateful to the following organisations and individuals for their input and support with the teaching materials for this topic: Jo Locke (author); Alison Ackroyd (author); Jazmin Murray (teacher advisor); Phil Driver, East Lancashire Hospital Trust; CLEAPSS; NCFE; Professor Michael Reiss, Claire Mercer.

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Introduction

This document for teachers outlines both the topic and approach to using the suite of resources for each lesson.

# Topic purpose

This topic is an introduction to working in the health and science sectors, and a range of available careers. It builds students’ knowledge and understanding of key policies, industry codes of conduct, and ethical practice in the workplace. Students will need to be familiar with these concepts before beginning their industry placements. The topic concludes with discussion of technological developments in the workplace, and the potential future impact on roles in these sectors.

Understanding the importance and application of safeguarding is a duty for all those with relevant training who are undertaking to support practitioners in their roles. A link to the current statutory guidance for schools and colleges is available [here](https://www.gov.uk/government/publications/keeping-children-safe-in-education--2) but this should be regularly reviewed and checked for updates. Before using these materials, a sound knowledge of safeguarding and an awareness of any related concerns with students/staff using these materials should be sought and may present an opportunity to reinforce good practice and reporting mechanisms within this suite of lessons. Reference to a provider’s Equality, Diversity and Inclusion policy may also be useful for students.

There are five lessons, and each is assumed to be 1.5 hours. You may want to adapt the suggested sequencing of concepts and activities as appropriate for your students and circumstances. The lessons are broken down to provide teacher flexibility on the depth covered in the activities; lessons can also be split over multiple shorter lessons if required.

When used as a sequential series of lessons, the materials have been designed to introduce the content of A1 in lessons 1, 2 and 3, providing a firm foundation for students’ further learning. Lessons 4 and 5 then introduce how technology is being used to support the healthcare sector, and the potential impact of future developments on the provision of healthcare (A2.4 and A2.6).

Alternatively, as different topics are introduced in each lesson that (in most cases) do not require previous knowledge of another area, the lessons could be used as individual standalone sessions interspersed during the course. For example, lesson 3 could be taught during National Careers Week to fit in with other activities taking place in college/school.

There are also opportunities to build several essential skills that are developed during the course and general competencies for maths, English and digital.

The content in the lessons can be reinforced throughout the course to support students’ learning. For example, when discussing a forthcoming industry placement, one objective could be for students to look for these policies in the workplace, discuss the importance with their supervisor, and note this learning in their logbook. For example: support.tlevels.gov.uk/hc/en-gb/articles/360015345420-Industry-placement-logbook-for-students

# Industry importance

Healthcare is a responsible and often demanding environment, where decisions taken have a direct impact on patients.

To ensure that people working within this context follow best practice for patient safety and positive healthcare outcomes, and for the safety of themselves and those who work around them, clear policies and procedures are in place that should be followed at all times.

Many of these policies are statutory, such as policies under health and safety legislation, and hence have a legal duty to be followed. Others are based around the need to place patients’ health and wellbeing as paramount, and so provide a requirement to work ethically and ‘do no harm’. There are many regulatory policies for healthcare, but core policies that would be covered in mandatory training by all staff include:

* equality and diversity;
* health and safety;
* information governance (data security);
* safeguarding children;
* safeguarding adults;
* infection prevention and control;
* fire safety;
* safer handling;
* conflict resolution.

Before students undertake their placement, they should be aware of the organisation’s values.

Although the range of careers within the healthcare sector is extremely diverse, these fundamental requirements remain consistent across roles and responsibilities. For example, doctors, health visitors, care assistants for the elderly and clinical psychologists all abide by codes of ethics and follow policy to ensure the standard of care offered is consistently good across all areas of the healthcare sector.

"The importance of administering effective and evidenced-based clinical practice collaboratively with patients and service users is paramount to ensure the correct level of care is provided for individuals. Following the appropriate SOPs and upholding professional standards at all times is essential in the health care environment”  
**Claire Mercer, Registered Adult Nurse & Specialist Community Public Health Nurse**

# Industry links

* The NHS has an online guide to 350 careers within the UK National Health Service: [www.healthcareers.nhs.uk/](http://www.healthcareers.nhs.uk/)
* Information on the requirements and opportunities available within the adult healthcare sector: [www.skillsforcare.org.uk/Careers-in-care/Think-Care-Careers.aspx](http://www.skillsforcare.org.uk/Careers-in-care/Think-Care-Careers.aspx)
* The Royal College of Physicians provides information on training and continuing professional development: [www.rcplondon.ac.uk/](http://www.rcplondon.ac.uk/)
* The UK Government National Careers Service has a section focused on careers in the healthcare sector: [nationalcareers.service.gov.uk/job-categories/healthcare](http://nationalcareers.service.gov.uk/job-categories/healthcare)
* Many scientists are members of an industry body, such as:
* Royal Society of Biology: [www.rsb.org.uk](http://www.rsb.org.uk)
* Institute of Physics: [www.iop.org](http://www.iop.org)
* Royal Society of Chemistry: [www.rsc.org/](http://www.rsc.org/)
* The Nursing & Midwifery Council: [nmc.org.uk](http://www.nmc.org.uk)
* Health and Care Professions Council (HCPC) covers all Allied Health Professionals including biomedical scientists and clinical scientists: [www.hcpc-uk.org/](http://www.hcpc-uk.org/)
* Academy of Healthcare Scientists (AHCS) is the overarching body for the entire UK healthcare science: [www.ahcs.ac.uk/about/about-the-academy/](http://www.ahcs.ac.uk/about/about-the-academy/)
* The knowledge, skills and behaviours that students develop support students in working towards the standards set out in the Care Certificate: [www.skillsforhealth.org.uk/info-hub/category/the-care-certificate/](http://www.skillsforhealth.org.uk/info-hub/category/the-care-certificate/) It provides clear evidence to employers, patients and carers that Healthcare Support Workers (HCSWs) have been trained and developed to a specific set of standards and have been assessed on skills, knowledge and behaviours to ensure that they provide compassionate and high-quality care and support.
* The NHS constitution sets out rights for patients, public and staff. It outlines NHS commitments to patients and staff, and the responsibilities that the public, patients and staff owe to one another to ensure that the NHS operates fairly and effectively. All NHS bodies and private and third sector providers supplying NHS services are required by law to take account of the constitution in their decisions and actions: [www.gov.uk/government/publications/the-nhs-constitution-for-england/the-nhs-constitution-for-england](http://www.gov.uk/government/publications/the-nhs-constitution-for-england/the-nhs-constitution-for-england)
* The behavioural framework is an important document within NHS trusts which describes how colleagues alongside students should behave to patients and to each other. An example from the East Lancashire Hospital Trust can be found here: <https://elht.nhs.uk/application/files/1816/8069/3982/Our-Behavioural-Framework.pdf>

# Prior learning

Students do not require any specific prior knowledge before studying the topic. Whilst the content of this series of lessons is unlikely to have been met by students at GCSE, those who have studied technical programmes prior to beginning their course may have been introduced to some policies and procedures in workplace settings.

# Accessibility

The teaching materials have been designed to provide teachers with a flexible framework, including different approaches to activities, suggested consolidation activities to further embed knowledge, and adaptable study questions to assess learning. As with all resources, teachers will wish to consider the specific needs of their students when using the materials, including Special Educational Needs and Disabilities (SEND).

Learning outcomes and specification coverage

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| Lesson | Learning outcomes | Specification coverage | Skills and general competencies | Links to other specification content |
| 1 | Students will be able to:   * Name the key organisational policies (Equality, Diversity and inclusion policy, Safeguarding policy, Employment contracts, Performance reviews, Disciplinary policy, Grievance policy) and describe their purpose. * Summarise the features of each policy. * Justify the use of different policies in real-life scenarios. | **A1.1** The purpose of organisational policies and procedures in the health and science sector, including: • equality, diversity and inclusion policy: complying with legislation, ensuring equality, eliminating discrimination  • safeguarding policies: ensuring the protection from harm of individuals, including those working within the organisation and visitors • employment contracts: setting out employment conditions, rights, responsibilities and duties • performance reviews: evaluating work performance against standards and expectations, facilitating feedback to improve, providing opportunities to raise concerns or issues, contributing to continuing professional development (CPD) • disciplinary policy: setting and maintaining expected standards of work and conduct, ensuring consistent and fair treatment, establishing a sequence for disciplinary action • grievance policy: providing opportunities for employees to confidentially raise and address grievances, establishing a sequence for raising grievances | Skills  **CS2** Communication  **CS3** Team working  **CS5** Researching  General competencies  English:  **GEC2** Present information and ideas  **GEC3** Create texts for different purposes and audiences  **GEC4** Summarise information/ideas  **GEC5** Synthesise information  **GEC6** Take part in/lead discussions  Digital:  **GDC2** Design, create and edit documents and digital media  **GDC3** Communicate and collaborate | **A3** Health, safety and environmental regulations in the health and science sector  **A8** Providing person-centred care |
| 2 | Students will be able to:   * Describe what is meant by an audit and why they are important. * State what is meant by a professional code of conduct. * Describe some of the key factors in ethical practice. * Define the key terms; autonomy, informed consent, truthfulness, confidentiality, beneficence, nonmaleficence and justice. | **A1.2** The importance of adhering to quality standards, quality management and audit processes within the health and science sector: • ensuring consistency • maintaining health and safety • monitoring processes and procedures  • facilitating continuous improvement • facilitating objective, independent review  **A1.3** The key principles of ethical practice in the health and science sector: • autonomy and informed consent • truthfulness and confidentiality (for example, ensuring validity of outcomes) • beneficence • nonmaleficence  • justice (for example, fairness, equality and respect for all)  **A1.4** The purpose of following professional codes of conduct: • clarifies missions, values, principles and standards that everyone must adhere to by: outlining expected professional behaviours and attitudes, outlining rules and responsibilities within particular organisations, promoting confidence in the organisation | Skills  **CS1** Demonstrate person-centred care skills  **CS3** Team working  General competencies  English:  **GEC4** Summarise information/ideas  **GEC5** Synthesise information  **GEC6** Take part in/lead discussions  Digital:  **GDC1** Use digital technology and media effectively,  **GDC3** Communicate and collaborate | **A3** Health, safety and environmental regulations in the health and science sector  **A8** Providing person-centred care |
| 3 | Students will be able to:   * Describe some of the diversity of roles that exist within the science and health sector. * Classify occupations as technical, higher technical or professional. * Describe a range of career opportunities they can access after completing this course, and the next steps they need to take to get there. | **A1.5** The difference between technical, higher technical and professional occupations in health, healthcare science and science, as defined by the Institute for Apprenticeships and Technical Education occupational maps: • technical: skilled occupations that a college leaver or an apprentice would be entering, typically requiring qualifications at levels 2/3 • higher technical: require more knowledge and skills acquired through experience in the workplace or further technical education, and typically require qualifications at levels 4/5 • professional: occupations where there is a clear career progression from higher technical occupations, as well as occupations where a degree apprenticeship exists  **A1.6** Opportunities to support progression within the health and science sector: • undertaking further/higher education programmes  • undertaking apprenticeship/degree apprenticeship • undertaking continuing professional development (CPD) • joining industry bodies • undertaking an internship • undertaking a scholarship | Skills  **CS2** Communication  **CS3** Team working  **CS5** Researching  General competencies  English:  **GEC1** Convey technical information to different audiences  **GEC2** Present information and ideas  **GEC3** Create texts for different purposes and audiences  **GEC4** Summarise information/ideas  **GEC5** Synthesise information  **GEC6** Take part in/lead discussions  Digital:  **GDC1** Use digital technology and media effectively,  **GDC2** Design, create and edit documents and digital media  **GDC3** Communicate and collaborate | **A2.12** The career pathway opportunities for employment and progression within the healthcare sector |
| 4 | Students will be able to:   * List some examples of health applications. * Discuss the use of healthcare applications in supporting the healthcare sector. * Explain how developments in technology can be used to support the healthcare sector. | **A2.4** How the use of different developments in technology support the healthcare sector:  • health applications (for example, Evergreen Life, NHS app and My Diabetes My Way): promotes healthier choices by offering advice and support, supports independent management of conditions, supports healthcare workers with ongoing monitoring of conditions, supports health teams to manage appointments • assistive computer technology (for example CAD/CAM/3D printing, health implants and robotic surgery): supports the health team to treat or manage conditions more efficiently, provides solutions that may not have been previously available in order to support conditions • artificial intelligence technologies (for example, machine learning radiology): supports health teams to gain access to more expansive data across a wider geographical area, supports healthcare workers to stay informed in relation to trends in condition and response from a wider pool of individuals, supports diagnosis through use | Skills  **CS3** Teamworking  **CS6** Presenting  General competencies  English:  **GEC1** Convey technical information to different audiences  **GEC2** Present information and ideas  **GEC3** Create texts for different purposes and audiences  **GEC4** Summarise information/ideas  **GEC5** Synthesise information | **A5:** Managing information and data within the health and science sector  **B2.16** The development, impact and management of diabetes |
| 5 | Students will be able to:   * Consider the issues facing NHS provision in the UK. * Consider the potential impact of future developments in the healthcare sector for improving care provision. * Investigate how the NHS Long Term Plan will address future developments in the healthcare sector. | **A2.6** The potential impacts of future developments in the healthcare sector in relation to care provision: • artificial intelligence (AI): improved diagnostics process, improving current triaging systems in which an individual places their symptoms on an online portal and are directed to a particular service • technological infrastructure: remote access for healthcare workers, collaboration across services • regenerative medicine: restore function to damaged organs or tissues (for example, scar tissue) • biomarkers: assist in identifying early onset of cardiovascular disease, increase success rate of drug development programmes, accelerate availability of new therapeutics • remote care: online clinics/virtual consultations, mobile clinics/screening • patient self-management: personal digital health monitors • funding of services: stretched funding as more people access the services • private healthcare provision: more services available, more users • changes in patient/service user demographics: changes in life expectancy, increase in complex care needs, increase in obesity rates | Skills  **CS2** Communication  **CS3** Team working  **CS6** Presentation  General competencies  English:  **GEC1** Convey technical information to different audiences  **GEC2** Present information and ideas  **GEC3** Create texts for different purposes and audiences  **GEC4** Summarise information/ideas  **GEC5** Synthesise information | **A9.1** Changes in the approach to healthcare and how to support a person’s health, comfort and wellbeing |

Lesson guidance

# Lesson 1: Organisational policies and procedures (A1.1)

This lesson introduces students to some of the main organisational policies and procedures that must be followed when working in the health sector. It is intended to be delivered at the beginning of the course, as it introduces approaches and documentation that will be referred to subsequently. It is recommended that this topic is studied before students begin their industry placement.

## Preparation

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| Resources provided | L1 Slide deck  Activity 1 – L1 Activity 1 Worksheet  Activity 2 – Video scenarios in the slide deck  Consolidation – L1 Consolidation Worksheet |
| Equipment needed | None |
| Safety factors | None |
| CLEAPSS references | None |
| Prior learning | There is no expected prior learning for this lesson, as it does not rely on any previous science knowledge from pre-16 learning. However, students who have previously studied a technical course may have some familiarity with the concepts explored in this lesson.  Some students may be aware of some organisational policies from any part-time jobs they have had; they may also have relevant experience from friends or family. |
| Common misconceptions | None |
| Accessibility | Seek to ensure wide representation for any visiting speakers and case studies used.  Be aware that students may lack confidence in presenting at this stage of the course. Activities in this topic are an opportunity to establish principles of working in a collaborative manner, in a ‘safe space’.  For large classes, students could be split into smaller groups for feedback presentations. Alternatively, they could present their findings in different formats, such as short videos or blogs for other students. |

## Activity guide

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| Introduction  SUGGESTED TIME:  10 minutes  RESOURCES:  L1 Slide deck – slides 2–3 | Start by introducing the lesson objectives using the slide deck.  Students then name three policies that affect their study programme (in pairs or as a whole group). You may wish to follow-up the discussion by asking what other college/school policies relate to them and where they would find these policies in their institution. (Codes of conduct are considered in more detail in lesson 2.) |
| Activity 1: Policies and procedural research  SUGGESTED TIME:  20 minutes research, 30 minutes presentation  RESOURCES:  L1 Slide deck – slide 4  L1 Activity 1 Worksheet | This activity supports teaching of students’ research into, and understanding of, workplace policies and procedures.  In pairs or small groups, students research six key organisational policies/procedures: Equality, diversity and inclusion policy, Safeguarding policy, Employment contracts, Performance reviews, Disciplinary policy and Grievance policy. The key information to be drawn on each policy/procedure is detailed on the associated worksheet, along with some example websites to which you could direct students (you may also wish to show students the relevant policies/procedures for your organisation or any additional documents that will be covered in induction to placements).  Students feed their findings back to the group to produce an overall class table which summarises the key features of each policy/procedure. They can record their research into the summary table on their worksheet. If time allows, students may wish to present their findings in the form of a digital presentation.  Teachers may choose to initiate a discussion about why these policies are in place and what would happen if they were not. |
| Activity 2: Policy scenario films  SUGGESTED TIME:  20–30 minutes  (Allow 5–10 minutes per case study chosen)  RESOURCES:  Video scenarios in the slide deck – slides 5–7 | This activity tests students’ understanding of the key policies researched in Activity 1.  Students view a series of scenarios with individuals in health and science contexts, introduced via five short video clips. For each scenario, students should justify the appropriate policy to be followed. Depending on the time you have available, you may wish to choose some or all of the video clips to show. At the end of each clip there are questions for discussion. Potential discussion points are outlined below.  Scenario 1: Safeguarding policy should be followed. The patient has unexplained injuries and appears unduly agitated. This information should be shared with other healthcare practitioners so a full picture of the patient can be put together. Additional questions for discussion: Outline the potential legal, reputational, and ethical consequences for organisations that fail to protect individuals in their care; What essential skills do you think the healthcare practitioner used when communicating with the service user? What are the potential consequences of not communicating effectively with service users?  Scenario 2: Note that in slide 5, there is a video which includes a sharps injury. Teachers should check this is suitable to use with their students before playing.  If a healthcare practitioner is found to have not followed the correct health and safety policy, this could escalate to the disciplinary policy being followed to address this. Helen may also wish to follow the grievance policy to raise a concern / complaint against the workplace. (This could link to a discussion about the Health and Safety at Work Act 1974 which is introduced in Topic 4 lesson 7, so you may wish to relook at this scenario again then.)  The video shows the main steps for the procedure (injury is immediately reported to supervisor, ensures Helen is safe, goes to occupational health, reports on internal system and then conducts an investigation). You may wish to discuss further the role of Occupational Health (e.g. bleeding of the injury, leaving uncovered, a follow-up to screen for infectious disease such as hepatitis B).  The needle should have been disposed of in a sharps bin. Following the investigation, a member of staff was found to not be adhering to the local waste policy, which is also a health and safety issue, so further training of staff was found to be required. Risk assessment could also be discussed as well as central reporting of incident and risk score. Students could also discuss the relevance of the colour of the waste bags and the differences between these.  Further information on suitable procedures following a sharps injury can be found in Appendix B on page 15 of this document: [www.solent.nhs.uk/media/1256/prevention-and-management-of-needlestick-sharps-injuries-and-contamination-incidents-policy.pdf](http://www.solent.nhs.uk/media/1256/prevention-and-management-of-needlestick-sharps-injuries-and-contamination-incidents-policy.pdf)  Additional questions for discussion: Consider how employee fatigue could play a role in the incident of accidents at work and discuss how this could be mitigated; Explain what support services are available to employees who suffer trauma at work.  Scenario 3: Equality policy should be followed. When the employee tells their employer they are pregnant, the employer must assess the risks to the employee and their baby (such as heavy lifting/carrying, standing or sitting for long periods without adequate breaks, exposure to toxic substances and long working hours). The employer must then take reasonable steps to remove the risks. For example, offering the employee different work or changing their hours. Additional questions for discussion: Consider what strategies organisations can employ to ensure that parental policies do not lead to indirect discrimination; Consider the long-term effects of supportive parental policies on employee retention and job satisfaction.  Scenario 4: Grievance policy should be followed. Everybody has the right to be treated respectfully in the workplace. If Amir did not follow the correct procedure, the issue should be explained and further training provided if required. Additional questions for discussion: Consider what types of evidence would need to be collected if a complaint was made; Consider the potential consequences of unchecked bullying on the team dynamics. Outline the strategies organisations can implement to create an inclusive environment where employees feel comfortable reporting bullying incidents without fear of retaliation.  Scenario 5: Safeguarding policy. It is essential that a risk assessment is carried out before an industry placement to ensure the safety of children, young people and adults including employees, customers and other personnel they come into contact with including visitors. Additional questions for discussion: Explain who would have the main responsibility under law for the health and safety of the student; If there was a safeguarding incident during your industry placement, describe what process you would follow; How would this process differ (if at all) if the safeguarding concern was reported outside normal working hours? |
| Plenary  SUGGESTED TIME:  5 minutes  RESOURCES:  L1 Slide deck – slides 8–11 | Students answer two multiple-choice questions in the slide deck with teacher support. (Answers are given in the slides.) |
| Follow-up/consolidation  SUGGESTED TIME:  30–45 minutes  RESOURCES:  L1 Slide deck –  slides 12–13 | As a follow-up, students revisit scenario 2 to explore what may happen after the incident. The injured employee has submitted a written grievance about the incident, which the employer must address. The employee is concerned that this accident could happen again but have more serious consequences.  Students use information from the Health and Safety Executive to identify mistakes that have been made: [www.hse.gov.uk/biosafety/blood-borne-viruses/avoiding-sharps-injuries.htm](http://www.hse.gov.uk/biosafety/blood-borne-viruses/avoiding-sharps-injuries.htm)  If there is time, students could roleplay the meeting between the line manager and employee to resolve the situation in the following lesson.  Alternative consolidation activity:  Students should create a poster to summarise the purpose of the policies/procedures identified in this lesson. |

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# Lesson 2: Audits, ethical practices, and professional codes of conduct (A1.2, A1.3, A1.4)

This lesson provides students with an introduction to the importance of adhering to quality standards, quality management and audit processes, following professional codes of conduct, the key principles of ethical practice and the use of inclusion policies.

## Preparation

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| Resources provided | L2 Slide deck  Plenary – L2 Plenary Worksheet 1, L2 Plenary Worksheet 2 |
| Equipment needed | College/school code of conduct  Sticky tape/plasters  Handwashing equipment  Access to sink |
| Safety factors | None |
| CLEAPSS references | None |
| Prior learning | Names and functions of organisational policies from lesson 1. |
| Common misconceptions | Ethical beliefs are the same as religious beliefs.  Policies and quality standards are the same thing. |
| Accessibility | Seek to ensure wide representation for any visiting speakers and case studies used. |

## Activity guide

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| Introduction  SUGGESTED TIME:  5–10 minutes  RESOURCES:   * L2 Slide deck –  slides 2–4 | Start by introducing the lesson objectives using the slide deck.  Use the slide deck to review the six key organisational policies and procedures using only their starting initials, for example, EDI (representing Equality, diversity and inclusion policy), for students to identify.  Students could complete this as an individual written task or responses could be ascertained verbally. |
| Activity 1: Quality standards and professional codes of conduct  SUGGESTED TIME:  35–45 minutes  RESOURCES:  L2 Slide deck –  slides 5–11  College/school code of conduct  Access to a sink  Handwashing equipment  Plasters/sticky tape | This activity provides a general introduction to the importance of adhering to quality standards, quality management and audit processes, and following industry codes of conduct. You may wish to explain that you are only offering a general introduction to these policies and approaches at this stage, and that each will be covered in more detail in later sections of the course, and during a student’s industry placement.  Use the slide deck as a general introduction to quality standards; many students will be unaware of, for example, the British Standards Institute. Ask students to discuss at this stage why standardised measures of quality are important. These are summarised on the next slide.  Discuss the similarities and differences between quality control and quality assurance. Explain that both processes may be achieved through the use of an audit. Ask students to discuss where they may have used audits previously. For example, many students will have used a learning checklist when revising for an exam to help ensure all content has been covered and can be used to highlight areas of learning that need further time and attention.  Then, explain the importance of codes of conduct in helping to maintain quality standards. To introduce codes of conduct, in small groups, students could make a list of what they think is on their establishment’s code of conduct, for example, attendance, type of clothing worn. They should then compare this with the real code of conduct and discuss why each step is important (this has links with the section below) for ensuring that a minimum standard of behaviour and good conduct is maintained.  Film 1: Introduction to codes of conduct and ethics. Students can watch this film and answer the questions below. Teachers may choose to pause the video at the corresponding sections and ask students to provide a response or could ask the questions initially to gauge starting points before playing the film. Students may have some knowledge of codes of conduct from their industry placement or being in their provider that could be referenced and discussed here.  Questions   * What is a code of conduct? * Why are they important? * What are ethics?   Explore with students whether all industry standards, such as uniform, appearance, attitude, are equally relevant. Each standard has a link to the quality of service the organisation provides. You may wish to link these to students’ future placements (or past examples for those who have begun their industry placement or had previous work experience). This is an opportunity to ensure that students are aware of the code of conduct and expected behaviour on placement.  Explain that students will now use an example of a real workplace audit to demonstrate their use in maintaining a standard. The example chosen is the NHS hand-washing audit, used to support patient and staff safety. This can be found on the Infection Prevention Control website here: [https://www.infectionpreventioncontrol.co.uk/resources/hand-hygiene-compliance-monthly-audit-tool-for-care-homes/](https://www.infectionpreventioncontrol.co.uk/resources/hand-hygiene-compliance-monthly-audit-tool-for-care-homes/%20)  Show students the NHS video: [www.nhs.uk/live-well/best-way-to-wash-your-hands/](http://www.nhs.uk/live-well/best-way-to-wash-your-hands/) Discuss the importance of washing hands correctly both for the people being cared for and for the care giver.  Split students into groups to complete a role play activity, such as assisting a patient with personal care, preparing a meal (with a cut on a finger) or changing a bed. To save on resources, a piece of sticky tape could be used to represent a plaster. One student from each group will be asked to complete the hand hygiene audit whilst watching the actions of other members of their group, and then feed back their findings. Move the groups around the activities so each student has a chance to complete the audit and at least one role play.  Discuss the handwashing data collected – is there room for improvement in approaches? Explain the role audits have in facilitating the maintenance of high standards and, where required, an improvement in skills. There should be at least 95% compliance within NHS trusts: [www.yorkhospitals.nhs.uk/seecmsfile/?id=871](http://www.yorkhospitals.nhs.uk/seecmsfile/?id=871) (page 4) |
| Activity 2: Ethics  SUGGESTED TIME:  30–40 minutes  RESOURCES:  L2 Slide deck – slide 12–13 | This activity provides an introduction to the importance of ethics, covering the key ideas. This topic should then be revisited at appropriate points throughout the course.  Hold a class discussion on what students believe is meant by ethical practice in the health sector. (Ethics will be studied in more detail later in the course.)  Film 2: Key terminology in ethical practice. Students can watch this film and answer the questions below. Teachers may choose to pause the video at the corresponding sections and ask students to provide a response. Students may have some knowledge of key terminology from undertaking the group discussion previously or from their industry placements.  Questions   * Define autonomy, beneficence, nonmaleficence, justice, informed consent, truthfulness, confidentiality * Provide an example in the health/ science sector for each term.   To further support their understanding, ask students to explore a range of web-based materials that they identify to try to define the following key terms: beneficence; nonmaleficence; autonomy; informed consent; confidentiality; truthfulness; justice.  You may also wish to provide a selection of links, e.g.:   * + World Medical Association Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Principles: [www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects](http://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects)   + University research ethics policies (e.g. Manchester): [www.manchester.ac.uk/research/environment/governance/ethics](http://www.manchester.ac.uk/research/environment/governance/ethics) and [documents.manchester.ac.uk/display.aspx?DocID=28798](https://documents.manchester.ac.uk/display.aspx?DocID=28798)   + Universal ethical code for scientists: [www.gov.uk/government/publications/universal-ethical-code-for-scientists](http://www.gov.uk/government/publications/universal-ethical-code-for-scientists)   + BMA toolkit for medical students: [www.bma.org.uk/advice-and-support/ethics/medical-students/ethics-toolkit-for-medical-students/key-principles-of-ethics-for-medical-students](http://www.bma.org.uk/advice-and-support/ethics/medical-students/ethics-toolkit-for-medical-students/key-principles-of-ethics-for-medical-students)   + Nursing and Midwifery Council Code: [www.nmc.org.uk/standards/code](http://www.nmc.org.uk/standards/code)   + NHS values and constitution: [www.healthcareers.nhs.uk/working-health/working-nhs/nhs-constitution](http://www.healthcareers.nhs.uk/working-health/working-nhs/nhs-constitution)   As these are new key terms, you may wish to stop students at different points to discuss what they have found and to provide further clarification.  Students may also refer to short video clips with Professor Michael Reiss describing these terms (see the Resources section, [www.technicaleducationnetworks.org.uk](http://www.technicaleducationnetworks.org.uk)). |
| Plenary  SUGGESTED TIME:  10–15 minutes  RESOURCES:  L2 Slide deck – slide 14  L2 Plenary Worksheet 1  L2 Plenary  Worksheet 2 | This activity tests students’ understanding of some of the key terms used in ethical practice. It is designed so that students have a complete set of standard definitions for their notes.  There are two versions of this task depending on the time you have available. In version A, students complete a definitions matching-style activity where they match the key term to a definition, and an example of its use in ethical practice. In version B, students match the definitions to the key terms and then carry out some research to add their own example of its use in ethical practice. Time then needs to be allowed for students to share their examples to ensure they all have a complete list. |
| Follow-up/consolidation  SUGGESTED TIME:  15–20 minutes  RESOURCES:  L2 Slide deck –  slides 15–16 | Students are asked to complete a short module: <https://elearning.hqip.org.uk/introduction-to-qi/> to learn about the use of data in the continuous quality improvement cycle and role of patient and public involvement. A certificate on completion embodies the need for CPD in industry practice. You may wish to reference news stories and/or reports where data has revealed unethical practices or poor standards of care. |

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# Lesson 3: Opportunities for progression in the health and science sectors (A1.5, A1.6)

This lesson introduces students to the diverse range and classifications of occupations available in the health sector. It is intended to be delivered near the start of the course to support students’ awareness of progression pathways they may wish to pursue.

## Preparation

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| Resources provided | L3 Slide deck  Activity 3 – L3 Activity 3 Worksheet  Activity 4 – L3 Activity 4 Worksheet |
| Equipment needed | Care certificate workbook resources  (these can be downloaded from: <https://www.skillsforcare.org.uk/Developing-your-workforce/Care-Certificate/Care-Certificate-workbook.aspx> |
| Safety factors | None |
| CLEAPSS references | None |
| Prior learning | CV writing is covered in schools in Key Stage 4 but will not necessarily have been met yet during students’ study programmes. |
| Common misconceptions | All people who work in healthcare are doctors and nurses.  Health only involves the study and use of biology.  All scientists work in a laboratory.  Traditional views of jobs may be incorrect, for example, pharmacists only dispense the medicines they are told to by a doctor.  Only doctors/surgeons/nurses treat disease – a lack of understanding of multi-disciplinary approach, for example, dieticians/use of education. |
| Accessibility | Seek to ensure wide representation for any visiting speakers and case studies used.   * Support visiting speakers to provide appropriate levels of detail to prevent reinforcing the impression amongst some students that ‘healthcare is not for me’. |

## Activity guide

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| Introduction  SUGGESTED TIME:  5 minutes  RESOURCES:  L3 Slide deck –  slides 2–3 | Start by introducing the lesson objectives using the slide deck.  Give students one minute to list as many occupations as they can think of in the healthcare sector. Compile a class list from their ideas.  Discuss how many of the occupations suggested are the same – how broad is the range of occupations? How do students know about these occupations? |
| Activity 1: Occupations within healthcare  SUGGESTED TIME:  15–20 minutes  RESOURCES:  L3 Slide deck –  slides 4–7 | This activity aims to dispel some of the misconceptions around the lack of diversity of roles within health and is an opportunity to discuss the breadth of entry points to health-related careers.  Use the slide deck to show students a range of video clips of people from different roles in health and science organisations, where they describe some of the key features of their role. There are a number of options to choose from on the slides. You may wish to introduce students to the group of Allied Health Professionals (AHP) and examples of careers within this group such as a radiographer, dietician, physiotherapist: [www.hee.nhs.uk/our-work/allied-health-professions](http://www.hee.nhs.uk/our-work/allied-health-professions)  Whilst watching the clips students should make a note of the key features of each role (and, where mentioned, the variety of education and training paths they could follow to prepare for a position, including progression directly into employment via apprenticeships, higher technical education, or undergraduate study). This also provides an opportunity to cover the differences between primary, secondary and tertiary care:   * Primary care is a model of care that supports first-contact. It aims to optimise population health and reduce disparities across the population by ensuring that subgroups have equal access to services. * Secondary care is when a primary care provider (such as GP) refers a patient to a specialist who has more specific expertise in a particular health issue. * Tertiary care is a higher level of specialty care which requires highly specialised expertise.   Discuss with students if they had thought of these roles previously – are there any more examples they could now add to the class list?  If opportunities exist, and extra time is available, you may wish to expand this activity by inviting individuals working in some different roles to talk with students directly. |
| Activity 2: Types of occupation  SUGGESTED TIME:  15–20 minutes  RESOURCES:  L3 Slide deck – slides 8–10 | This activity introduces the differences between technical, higher technical and professional occupations in healthcare, and explores a number of different ways in which people can train for roles in healthcare.  Introduce the three classifications of occupations in healthcare – technical, higher technical and professional occupations and the typical level of qualifications required for entry.   * Students look at occupational route maps: [www.instituteforapprenticeships.org/occupational-maps/](http://www.instituteforapprenticeships.org/occupational-maps/) that include some of the jobs covered in the video clips. Students should be aware that there may be multiple paths to an occupation, and that the Health occupational map will not include all the occupations that they may choose to progress to. (Please note the maps only show occupations with apprenticeships and full information for occupations with apprenticeships is only available for those with a developed apprenticeship standard. This will hopefully be added to over time.) * This illustrates further the different classification of occupations and a range of next steps students may wish to follow. * Students then identify roles within the sector they may wish to pursue and create their own personalised path into these roles. Are there any barriers they may meet? (Students may find this website useful: [www.healthcareers.nhs.uk/explore-roles/explore-roles](http://www.healthcareers.nhs.uk/explore-roles/explore-roles) as it lists over 350 NHS careers, with an overview of what each role involves, the entry requirements and skills and personal qualities needed.) * You may also wish to introduce students to the four pillars of practice for advanced level nursing practice to illustrate the importance of continued professional development (CPD) throughout their career. These four pillars are: clinical/direct care, education, research, leadership and management: [www.rcn.org.uk/industry-development/publications/PUB-006896](http://www.rcn.org.uk/professional-development/publications/PUB-006896) and the new NHS Long Term Workforce Plan: [www.england.nhs.uk/publication/nhs-long-term-workforce-plan/](http://www.england.nhs.uk/publication/nhs-long-term-workforce-plan/) * Even though they are not designed for a student audience, you may wish to refer to this document:  <https://www.instituteforapprenticeships.org/media/7059/t-level-in-health-progression-profile.pdf> to gain an outline of some profession pathways, noting this is not comprehensive. |
| Activity 3: Classifying occupations  SUGGESTED TIME:  10–15 minutes  RESOURCES:  L3 Slide deck – slides 11–12  L3 Activity 3 Worksheet | This activity tests students’ understanding of the difference between technical, higher technical and professional occupations.  Students complete the card sort activity to classify a range of healthcare occupations into technical, higher technical or professional occupations. They may wish to refer to the occupational route maps mentioned above.  In their notes you may wish students to write a brief description of the differences between the three classifications of occupation and use the cards to list a few examples of each. |
| Activity 4: Career action plan  SUGGESTED TIME:  20–25 minutes  RESOURCES:  L3 Slide deck – slides 13–15  L3 Activity 4 Worksheet  Care certificate workbook resources | Using the slide deck, students explore how they could boost their preparation for employment opportunities, including volunteering, virtual work experience and additional courses they could complete alongside their studies. You may also wish to introduce the care certificate, which can be found here, along with additional resources: <https://www.skillsforcare.org.uk/Developing-your-workforce/Care-Certificate/Care-Certificate-workbook.aspx> (Please note some of the websites, such as IRIS, could be shown to assess the appetite for the college registering with the site for students to use. Some websites may also require prior registration.)  Students complete the worksheet, which is a short action plan of what they wish to work on (skills and qualifications) to progress into their potential career. |
| Plenary  SUGGESTED TIME:  10 minutes  RESOURCES:  L3 Slide deck – slides 16–17 | Students complete a short study question to test their understanding of jobs that require the application of science and health in other industries.  Then they swap their answers and mark their partner’s response using the mark scheme provided. |
| Follow-up/consolidation  SUGGESTED TIME:  30–45 minutes  RESOURCES:  L3 Slide deck – slides 18–19 | To further help dispel some of the misconceptions around the lack of diversity of roles within healthcare, students could look at the following web pages to explore a broader range of roles associated with the health sector:   * So what does a healthcare scientist do, exactly? (The Guardian): [www.theguardian.com/careers/healthcare-scientist-job-description](http://www.theguardian.com/careers/healthcare-scientist-job-description%20) * What is healthcare science? (NHS): [www.england.nhs.uk/healthcare-science/what/](http://www.england.nhs.uk/healthcare-science/what/%20) * You could also revisit: (NHS) [www.healthcareers.nhs.uk/explore-roles/explore-roles](http://www.healthcareers.nhs.uk/explore-roles/explore-roles)   Students then myth bust in a quick round Q&A session to correct a common misconception, such as all scientists work in a laboratory, or everyone that works in healthcare is a doctor or a nurse. |

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# Lesson 4: Use of technology to support the healthcare sector (A2.4)

This lesson introduces students to different forms of technology which can be used to support the healthcare sector. It starts by looking at health applications that students may be familiar with for monitoring/improving fitness and diet, before looking at more specialised apps to monitor health conditions. Other types of technology used by healthcare practitioners are then introduced.

## Preparation

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| Resources provided | L4 Slide deck  Activity 1 – L4 Activity 1 Worksheet  Activity 2 – L4 Activity 2 Worksheet  Plenary – L4 Plenary Worksheet 1, L4 Plenary Worksheet 2 |
| Equipment needed | Access to apps via mobile devices or computers |
| Safety factors | None |
| CLEAPSS references | None |
| Prior learning | No specific prior learning is required for this lesson, but if followed in order, students will have an awareness of the wide range of occupations that work together in the healthcare sector. |
| Common misconceptions | Healthcare solely focuses on treating disease (rather than preventing disease). |
| Accessibility | Seek to ensure wide representation for any visiting speakers and case studies used.  Ensure students have access to IT equipment with a range of health apps/software available (or links to appropriate websites).  Ensure you are aware of any health conditions students may have in the class. Some students may be happy to share their experiences, which will aid students’ understanding. However, others may prefer that you choose not to discuss apps designed to monitor or improve these conditions. |

## Activity guide

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| Introduction  SUGGESTED TIME:  10 minutes  RESOURCES:  L4 Slide deck – slides 2–3 | Start by introducing the lesson objectives using the slide deck.  Ask students to produce a list of pieces of technology or apps they use or know about that can be used to monitor, track or improve a person’s health and fitness.  Share students’ ideas to produce a class list.  Discuss with students some general advantages of using health apps, for example, to monitor fitness (e.g. smart watches track runs, monitor heart rate and oxygen levels), promote fitness (e.g. those that contain challenges, such as 10,000 steps a day, or help for training for a marathon), diet apps (to promote healthy eating).  Discuss how all of these approaches potentially reduce the burden on healthcare services through promoting individuals’ health. |
| Activity 1: Health apps  SUGGESTED TIME:  35 minutes  (20 minutes for activity and 15 minutes for feedback and discussion)  RESOURCES:  L4 Slide deck – slides 4–5  L4 Activity 1 Worksheet | This activity introduces students to one way that developments in technology can be used to support the healthcare sector.  Introduce students to a range of both NHS and non-NHS health apps. There are 16 apps on the slides you can choose from including those listed in the specification (highlighted on slides) – NHS, Evergreen Life and My Diabetes My Way. Note that students do not need to be familiar with the remainder of the apps listed but should ideally study a range.  Split the class into small groups and give each group a copy of the worksheet, which contains a table about the apps for them to fill in.  Assign each group the three apps from the specification plus two others from the slide to research and compare. They find out the cost of each app and how it supports the healthcare sector. The apps are easily searchable from their phone/tablet store.  Following their research, each group feeds back about one app, so the class as a whole has a general understanding of the function of a range of apps.  Hold a class discussion about the pros and cons of these apps.  Potential positives which could be discussed are: promotes healthier choices by offering advice and support, supports independent management of conditions, supports health practitioners with ongoing monitoring of conditions, supports health teams to manage appointments, data is provided quickly, supports developing the health of the wider population.  Potential cons which could be discussed are: some apps are expensive (require monthly payments), apps are not a replacement for professional medical care, technology may not be as accurate as equipment used in a healthcare setting, motivation to use an app may decline over time – it can be challenging to change a habit without external support.  Students should then record some pros and cons of using this style of technology on their sheet in the evaluation section. |
| Activity 2: Use of technology in healthcare  SUGGESTED TIME:  25–30 minutes  RESOURCES:  L4 Slide deck – slides 6–18  L4 Activity 2 Worksheet | This activity introduces students to a range of further developments in technology that can be used to support the healthcare sector.  Show students the short film looking at the use of technology in the NHS and how this is changing: [www.youtube.com/watch?v=C9sPbxSmIZI](http://www.youtube.com/watch?v=C9sPbxSmIZI) (click on the image on the slide to view). This introduces the advances in robotic surgery and the benefits both to the patients and healthcare services. Note: the video includes footage from surgery and its content should be checked before showing to students.  Students could use the worksheet to make notes on the technology mentioned in the video and how this is supporting healthcare.  Further developments in technology are described on the slides for you to discuss with students and links provided if you wish to explore any in further detail. You can show these to the class or split the class into groups and ask each group to research one in more detail, before feeding back to the class.  Note that in slide 15, there is a video which includes images of burns. Teachers should check this is suitable to use with their students before playing.  Note that in slide 16 there is a reference to blockchains; a type of shared database, which stores data in linked blocks on a network of computers or devices. They enable the secure and decentralised storage of data and can be used to ensure data is unalterable.  [https://www.digitalhealth.net/2022/03/blockchain-makes-medical-data-more-secure/](https://emea01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.digitalhealth.net%2F2022%2F03%2Fblockchain-makes-medical-data-more-secure%2F&data=05%7C01%7C%7C10999e66fca14d200de008dbf276d7be%7C84df9e7fe9f640afb435aaaaaaaaaaaa%7C1%7C0%7C638370364482086810%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=1yWDDmYY7UZbjGhPkd3jAqGNfmAMCiwKbEQoGhapo2Q%3D&reserved=0)  Students add details explaining the use of each type of technology to their worksheet notes (mind maps could be copied to A3 size).  Use this to stimulate a class discussion, evaluating the use of current technology on recovery, infection control and health and safety. In the discussion, include other improvements in the NHS such as using tablets or mobile phones to document patient care digitally rather than through the use of paper documentation, and the impact digital records could have through patients having access to their own records, or all clinicians having access to a patient’s full medical history.  Share an example of an NHS digital improvement plan: [www.england.nhs.uk/five-year-forward-view/next-steps-on-the-nhs-five-year-forward-view/harnessing-technology-and-innovation/](http://www.england.nhs.uk/five-year-forward-view/next-steps-on-the-nhs-five-year-forward-view/harnessing-technology-and-innovation/) to show students examples of the technologies being brought into the NHS in recent years. |
| Plenary  SUGGESTED TIME:  15–20 minutes  RESOURCES:  L4 Slide deck – slide 19  L4 Plenary Worksheet 1  L4 Plenary  Worksheet 2 | This activity assesses students’ understanding of the role that health applications can play in supporting the healthcare sector.  Students answer a study question on Worksheet 1 based on their knowledge of health applications. Students then swap their answers and mark their partner’s answer using the mark scheme (Worksheet 2). |
| Follow-up/consolidation  SUGGESTED TIME:  30–45 minutes  RESOURCES:  L4 Slide deck – slides 20–21 | Students choose an area of technology that they were introduced to in today’s lesson to research in more detail and produce a fact sheet to explain what it does and how it benefits the healthcare sector. (Alternatively, they could find out about some more innovative examples using https://innovation.nhs.uk/case-studies/). These could be shared in a classroom display. |

# Lesson 5: Potential impacts of future developments in the healthcare sector (A2.6)

This lesson introduces students to some potential impacts of future developments in the healthcare sector. It builds on their knowledge of the previous lesson where students looked at the advantages of a range of different types of technology routinely used in the healthcare sector.

## Preparation

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| Resources provided | L5 Slide deck  Activity 1 – L5 Activity 1 Worksheet  Activity 1 – L5 Activity 1 Answer sheet  Activity 2 – L5 Activity 2 Worksheet |
| Equipment needed | None |
| Safety factors | None |
| CLEAPSS references | None |
| Prior learning | Students will be aware of a range of different technologies used in the healthcare industry and health applications, from lesson 4. |
| Common misconceptions | Healthcare practitioners may be replaced by AI and robots.  Healthcare record systems may invade privacy.  Technology is a panacea to curing illness. |
| Accessibility | Seek to ensure wide representation for any visiting speakers and case studies used.  Ensure students have access to IT equipment with a range of health apps/software available (or links to appropriate websites).  Ensure you are aware of any health conditions students may have. |

## Activity guide

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| Introduction  SUGGESTED TIME:  10 minutes  RESOURCES:  L5 Slide deck – slides 2–5 | Start by introducing the lesson objectives using the slide deck.  Use slides 3 and 4 to introduce some of the issues facing NHS provision in the UK, such as funding, private healthcare and changing demographics. These discussion points will be addressed in more depth in Activity 2. Show students the video in slide 3 to set the context (<https://www.youtube.com/watch?v=jXIpHpme3E0>). Slide 4 lists areas for discussion.  You may wish to discuss with students that an increasing number of people are accessing private healthcare provision. This can reduce waiting lists, for example, in the NHS and can sometimes provide opportunities for more advanced treatment and technology. However, as life expectancy, obesity rates and complex care needs increase, the NHS is still becoming increasingly stretched. |
| Activity 1: Potential impacts of future developments  SUGGESTED TIME:  40 minutes  RESOURCES:  L5 Slide deck – slides 6–15  L5 Activity 1 Worksheet | This activity introduces students to a range of potential impacts of future developments in the healthcare sector. There are guided discussion questions to look at the benefits and drawbacks to each topic.  Before introducing potential technologies currently under development/being used for the first time, use slide 5 as a reminder of a person having their heart rate monitored and a paper printout, compared with a digital monitor. Ask students, “what do you think this equipment is for? How have things improved through the use of technology?”  Use slide deck slides 6–15 to introduce a range of potential impacts of future developments in the healthcare sector, both for patients and staff. Possible questions for discussion are provided on the slides. There are optional videos and articles for further details linked on each slide. Teachers may choose to play the videos to set context for the topic area depending on students’ needs and the time constraints in the lesson.  Discuss with students that, increasingly, training will occur in simulators and in virtual labs, as well as practitioners learning new skills. You may wish to share with them an example of a simulator such as cancer signalling: [biomodelanalyzer.org/](https://biomodelanalyzer.org/), anatomage: [anatomage.com/table-uk/](https://anatomage.com/table-uk/), or the simulation wards and rooms for training healthcare staff, for example at [uclan.ac.uk/facilities/high-fidelity-simulation/](https://uclan.ac.uk/facilities/high-fidelity-simulation/)  After each new development is introduced, students use the class discussion to complete the table on the worksheet illustrating a range of developments and the potential advantages and disadvantages of these types of technology to both the patient and healthcare staff. The worksheet is partially completed with information from the slide deck and gaps for the discussion points. If time allows, students could carry out some further research into one of these specific areas. Please note that the videos and information provided for this activity are correct at the time of publication, but teachers should ensure the content is still relevant and current when using with students, especially around developments in artificial intelligence.  Note that CS5 Researching includes a requirement to evaluate the information for reliability of the content source and currency. You might encourage students to think about the reliability of the video resources. For example, slide 8 Private medicine includes a video produced by the Independent Healthcare Providers Network. It is clear and informative, but students might consider whether it can be a good source for discussing disadvantages. |
| Activity 2: NHS Long-Term Plan  SUGGESTED TIME:  30 minutes  RESOURCES:  L5 Slide deck – slide 16  L5 Activity 2 Worksheet | This activity focuses in detail on the NHS Long Term Plan. Introduce the Long-Term Plan and the fact that the NHS will be adapting its services to meet future developments in the healthcare sector in relation to care provision ([www.longtermplan.nhs.uk/](http://www.longtermplan.nhs.uk/)).  In small groups, students should research a different chapter/section of the report and answer the questions on the worksheet. To gain an overall understanding of the report, the students may wish to read through the summary document: <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/01/the-nhs-long-term-plan-summary.pdf>  Useful websites:  [www.longtermplan.nhs.uk/](http://www.longtermplan.nhs.uk/)  [www.youtube.com/watch?v=NCtedekBCyI](http://www.youtube.com/watch?v=NCtedekBCyI)  [www.bmj.com/content/364/bmj.l84](http://www.bmj.com/content/364/bmj.l84)  [www.kingsfund.org.uk/publications/nhs-long-term-plan-explained](http://www.kingsfund.org.uk/publications/nhs-long-term-plan-explained)  Students should then complete the table with their findings and share with the class. |
| Plenary  SUGGESTED TIME:  10 minutes  RESOURCES:  L5 Slide deck – slides 17–23 | Ask students the multiple-choice questions on the slides.  In no more than five sentences, ask students to summarise their key learning from today’s lesson. Once completed, students should share ideas with a working partner to help consolidate the learning from this lesson. |
| Follow-up/consolidation  SUGGESTED TIME:  30–45 minutes  RESOURCES:  L5 Slide deck – slides 24–25 | As a follow-up activity, students carry out research into genomics to explain what it is and the impact it might have on future developments in the healthcare sector, such as AI, improved diagnostics and funding. They should then write a leaflet that could be used as an infographic to summarise their findings.  Useful websites:  <https://www.england.nhs.uk/long-read/accelerating-genomic-medicine-in-the-nhs/>  <https://www.genomicsengland.co.uk/initiatives/100000-genomes-project>  <https://www.bbc.co.uk/news/health-63906892>  https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/920378/Genome\_UK\_-\_the\_future\_of\_healthcare.pdf  <https://www.genomicseducation.hee.nhs.uk/blog/the-nhs-new-strategy-for-genomics-five-key-takeaways/> |

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