T-LEVELS | Institute for Apprenticeships & Technical Education

T Level Technical Qualification in Healthcare Science

Employer set project (ESP)

Assisting with Healthcare Science

Project brief

NCFE CACHE

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Contents

Health and safety

All students must be informed and aware of any relevant health and safety considerations that need to be complied with to ensure they carry out their work in a safe manner. Students must be supervised at all times to ensure health and safety practices are observed. Where students are seen to be working in an unsafe manner, at the discretion of the tutor, the student may be removed from the assessment and the remaining time be rescheduled.

Assessment

- you are not permitted to work in groups, except during the discussion in task 3(a), and all work must be your own

- you will have 17 hours and 45 minutes to complete the employer set project (ESP) – recommended and maximum timings, where applicable, are provided for each task under the heading conditions of the assessment

Assessment objectives

The ESP is a formal assessment that accounts for 30% of the overall core component grade and therefore it is important that you produce work to the highest standard.

You will be assessed against the core knowledge and skills that you have learnt throughout your course of study, in response to a brief set in a real-world situation and validated by employers within the Assisting with Healthcare Science specialism.

The evidence generated for the ESP will be assessed holistically against 5 integrated assessment objectives. These assessment objectives and their weightings are shown in the tables below.

Assessment objective (AO)		AO weighting
AO1	Plan their approach to meeting the project brief	6.25%
AO2	Apply core knowledge and skills to meet quality management objectives	50.00%
AO3	Select relevant techniques and resources to meet the brief	11.46%
AO4	Use English, mathematics, and digital skills as appropriate	15.63%
AO5	Realise a project outcome and review how well the outcome meets the brief	16.66%

Evidence

	AO1	AO2	AO3	AO4	AO5	TOTAL
Task 1						
Research/literature review		15	5			20
English, mathematics and digital				4		4
Task 2						
Quality improvement report	6	14				20
English, mathematics and digital				9		9
Task 3						
3(b) Quality improvement report v2* *task 3(a) is not marked		2	2		5	9
Task 4						
4(b) Discussion with tutor		11			5	16
English, mathematics and digital				2		2
Task 5						
Reflection		6	4		6	16
Total marks:	**6**	**48**	**11**	**15**	**16**	**96**
Percentage (%)	**6.25%**	**50.00%**	**11.46%**	**15.63%**	**16.66%**	**100%**

Guidance for students

Student instructions:

- read the brief carefully before starting your work

- read the assessment objectives grid, as part of the marks for this assessment will be based on your ability to plan how you will meet the requirements of the brief, as well as reflecting and evaluating your work in the final task, you should therefore keep concise planning notes as you work through the tasks for this assessment

- you must work independently and make your own decisions as to how to approach the tasks within the employer set project (ESP)

- you must clearly name and date all of the work that you produce during each supervised session

- you must hand over all of your work to your tutor at the end of each supervised session

- you must not work on the assessment in between supervised sessions

Student information:

- this ESP will assess your knowledge, understanding and skills from across the core content of the qualification

- in order to achieve a grade for the core component, you must attempt both external examinations and the ESP – the combined marks from these assessments will be aggregated to form the overall core component grade (A* to E and U) – if you do not attempt one of the assessments, or fail to reach the minimum standard across all assessments, you will receive a U grade

- the maximum time you will have to complete all tasks for this ESP is 17 hours and 45 minutes:

  o your tutor will explain how this time is broken down per task and will confirm with you if individual tasks need to be completed across multiple sessions

  o in task 1 and task 2 you may use the internet to access the links provided in the tasks – use of other websites is **not** permitted, except where the link requires you to perform a search and the results take you directly to other websites – you must submit a copy of your browsing history as part of your evidence

  o at the end of each supervised session, your tutor will collect all ESP assessment materials before you leave the room – you must not take any assessment material outside of the room (for example, via a physical memory device)

  o you must not upload any work produced to any platform that will allow you or others to access materials outside of the supervised sessions (including email)

- when completing each task, you should take into consideration the specific assessment objectives and core skills that are being assessed, as outlined in the task instructions where permitted and stated for each task, your tutor will provide you with a copy of previously submitted evidence – this is not an opportunity to make changes to your previously submitted evidence – any notes you wish to include must be made separately as copies of previously submitted materials will be deleted or destroyed upon completion of the relevant task

- you can fail to achieve marks if you do not fully meet the requirements of the task

Plagiarism

Plagiarism may result in the external assessment task being awarded a U grade. For further guidance refer to the plagiarism guidance, and maladministration and malpractice policy located on the NCFE website.

Presentation of work:

- all of your work should be completed electronically using black font, Arial size 10 to 14, unless otherwise specified

- any work not produced electronically must be agreed with your tutor, in which case the evidence you produce should be scanned and submitted as an electronic piece of evidence

- all of your work should be clearly labelled with the relevant task number and your student details, and be legible (for example, front page and headers)

- electronic files should be given a clear filename for identification purposes; see tasks for any relevant naming conventions

- all pages of your work should be numbered in the format page X of Y, where X is the page number and Y is the total number of pages

- you must complete and sign the external assessment cover sheet (EACS) and include it at the front of your assessment task evidence

- you must submit your evidence to the supervisor at the end of each session

Brief: Assisting with Healthcare Science

The employer set project (ESP) has been designed as an opportunity for you to demonstrate how you respond to a current need or set of circumstances that has been identified in your sector and is validated by employers.

You should consider how you will approach each task and plan your time to ensure you give yourself the best opportunity to meet the needs outlined in the brief. You should keep short notes on how you approach this, as this can be used to support the completion of a reflection task required at the end of the project.

Incident: Healthcare Associated Infection Response (HCAI)

Shafigur Bhuiyan is a 62-year-old patient who has been admitted to the Minton-le-Vale NHS Hospital Urology Ward following surgical removal of the prostate gland as part of planned treatment for prostate cancer.

Two days after admission to the ward, healthcare staff record an increase in Mr Bhuiyan's temperature and his urine appears cloudy. Two other patients develop similar symptoms with one developing red skin patches where he had been lying on bed linen. A follow-up investigation by the infection control team found that 12 of the 22 patients on the ward tested positive for methicillin-resistant *Staphylococcus aureus* (MRSA) even though 9 of those who tested positive showed no symptoms. A DATIX report was filed, and the lead infection control officer recommended that the ward should be temporarily closed to new admissions to prevent spread of the infection and to allow a deep-clean protocol to be carried out.

A review panel of healthcare and infection control staff was created to identify potential sources of the infection and to recommend changes to the infection surveillance and control procedure. They were concerned about the higher incidence of infections in all surgeries at this hospital compared with others in the trust. This could suggest that the infection had been on the ward for some time but had not been detected by routine infection surveillance procedures.

As a Healthcare Science Assistant, you have been asked to work with the infection surveillance team by:

- reviewing the content of the DATIX report
- identifying ways to reduce bacterial contamination on the ward
- improving the quality of environmental screening for infectious agents

These recommendations will be used to update infection control procedures both within the hospital and for patients discharged into the community.

DATIX Report:

Date and time of incident	10:00am 24/02/22
Description	Mr Bhuiyan (date of birth 05/08/1960- NHS number 485 777 3456) was admitted to Ward 11 (Urology) following prostate surgery carried out by Mr Chenski (Consultant) on 21/02/2022. Mr Bhuiyan developed a temperature of 39.8 °C on 23/02/2022 and cloudy catheter urine. A post-operative infection was suspected, and the infection surveillance team, led by Dr Noor Al Zaberi, were asked to take urine and skin swab samples (nose, throat, groin, joint areas, and wound sites) from all patients on the ward. On further inspection, one other patient showed early signs of urinary catheter infection (Mr Alan Simpson, date of birth 12/01/1958 NHS Number 296 112 0900) and another with signs of skin infection (Mr Mark Hickman, date of birth 22/11/1954 - NHS number 450 557 7104). Swabs taken by the Infection Surveillance Team showed these 3 patients were positive for MRSA. Later investigation found 12 of 22 patients testing positive for MRSA between these dates. Mr Bhuiyan, Mr Simpson and Mr Hickman were the only patients to show symptoms, but all MRSA positive patients are receiving treatment for the infection.
What action was taken at the time of the incident?	On the recommendation of Dr Noor Al Zaberi, Ward 11 was closed to new admissions on 24/02/2022 to allow a deep-clean procedure to be carried out followed by healthcare-associated infection surveillance monitoring. Patients testing positive for MRSA were removed to a side room with barrier nursing procedures in place.
What type of incident was this?	Infection Control Incident
Type of sample(s)	Urine samples and swabs from nose, throat, groin, joint areas, and wound sites.
Date of sample collection	23/02/2022 – detection of initial infection in patient on Ward 11 24/02/2022 – follow-up healthcare-associated infection surveillance monitoring on Ward 11
Where did the incident occur?	Ward 11 – Urology
Incident reviewer	Service manager
Was anyone else involved in the incident?	Yes- see description
Is this a safeguarding adults concern?	No
Harm and severity	Barrier Nursing

Person reporting the incident	Sonia Lee, Senior Staff Nurse
Person responding to report	Jana Tengku, Health and Safety Officer
Response from reviewer	An infection surveillance review panel has been established to investigate the cause and management of the MRSA incident in Ward 11: • Dr Noor. Al Zaberi – Infection Surveillance Lead, Minton-le-Vale NHS Trust (Facilitator) • Ms S. Lee – Senior Staff Nurse, Ward 11 • Dr A Malcolm – Senior Biomedical Scientist, Microbiology Diagnostic Services, Minton-le-Vale NHS Trust • Ms M. Hassan – Community Nursing Service, Minton-le-Vale • Mr F. Longhurst – Patient Advice and Support Service, NHS England • Ms T. Edwards – Healthcare Scientist, Minton-le-Vale NHS Hospital • Dr N. Catania – Infection Surveillance Officer, Salehurst NHS Hospital (External Advisor) The review panel has been asked to provide their recommendations within 6 weeks of the date of this DATIX report.

Table 1 Monthly counts of methicillin-resistant *Staphylococcus aureus* (MRSA) hospital and community acquired infections in the year preceding the DATIX report. Total monthly patient infections for the Urology Ward are compared to the sum of all hospital and community monthly infections reported by Minton-le-Vale NHS Hospital. Patient infections reported from all NHS Trusts across England are provided for comparison.

Monthly counts of methicillin-resistant *Staphylococcus aureus* (MRSA) patient infections from January to December 2021	Month											
	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	Oct 2021	Nov 2021	Dec 2021
Minton-le-Vale NHS Hospital (Urology Ward Infections)	2	1	0	0	0	1	3	0	0	1	0	0
Minton-le-Vale NHS Hospital (Hospital + Community infections)	24	12	3	0	9	18	12	12	6	6	0	15
NHS England (All Trusts, Hospital + Community Infections)	252	216	165	105	135	198	183	165	168	120	159	243

Reference material list

Incident reporting frameworks (DATIX)

Link 1: www.england.nhs.uk/patient-safety/report-patient-safety-incident

Link 2: P_RM_01_Incident_Reporting_Policy.pdf (lincolnshirecommunityhealthservices.nhs.uk)

Healthcare-Associated Infection Reporting

Link 1: https://www.nice.org.uk/guidance/qs113/resources/healthcareassociated-infections-pdf-75545296430533

Link 2: https://www.gov.uk/government/collections/healthcare-associated-infections-hcai-guidance-data-and-analysis

Environmental Infection Control

Link 1: https://www.biomerieux-diagnostics.com/sites/clinic/files/environmental-infection-control-booklet.pdf

Link 2: https://www.rcn.org.uk/Professional-Development/publications/pub-005940

Link 3: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4187643/

Link 4: https://www.sciencedirect.com/science/article/pii/S0195670113600122

Environmental Screening Strategies

Link 1: https://www.gov.uk/government/collections/clostridium-difficile-guidance-data-and-analysis

Link 2: https://thebiomedicalscientist.net/science/phenotypic-methods

Link 3: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2099322/

Standard Infection Control Precautions

Link 1: https://www.england.nhs.uk/national-infection-prevention-and-control-manual-nipcm-for-england/chapter-1-standard-infection-control-precautions-sicps/

Task 1: research/literature review

AOs 2, 3 and 4

Using **only** the literature sources listed in the brief, you are required to carry out research on national guidelines for environmental infection control and screening, including examples of best practice and lessons learned from previous/similar events.

The information gathered will help identify failings in current procedure which may have caused the incident to occur.

The findings from your research should be presented in a written literature review, summarising the main points in individual sections.

The research requirements include:

- collation of appropriate information about current national guidelines, responsibilities, and best practice in relation to the control of healthcare-associated infections

- application of information on hospital acquired infection screening procedures

- data analysis and presentation of data in tables or graphs to illustrate key findings drawing conclusions and summarising key themes arising from the literature and data analysis

- clear presentation of information in a written report summary

(20 marks)
plus 4 marks for English
(Total marks: 24)

Conditions of the assessment:

- task 1 must be completed in supervised conditions

- you will have access to the internet when completing your work for this task – you must not access any other websites when completing task 1, except where the link requires you to perform a search and the results take you directly to other websites – you are required to submit a copy of your browsing history as part of your evidence for this task

- you will have a maximum of 5 hours to complete this task – in addition to this, you will be allowed a single supervised break of a maximum of 1 hour to be decided by your tutor, no earlier than 2 hours after the session has begun

Evidence requirements:

- word processed literature review

- a copy of your internet browsing history

Assessment objectives

AO2: Apply core knowledge and skills to meet quality management objectives

AO3: Select relevant techniques and resources to meet the brief

AO4: Use English, mathematics and digital skills as appropriate

Core skills

CS1: Research skills

CS4: Problem solving skills

CS5: Reporting and presentation skills

Submission

The following filename convention should be used for all materials produced:

(Provider_number)_(Student registration number)_(Surname)_(First name)_Task1_Literature_Review

Note: please request your provider and student number from your tutor.

Task 2: quality improvement report

AOs 1, 2 and 4

You have been asked to create a quality improvement report for the infection surveillance review panel. This report should outline actions that are required to implement the required quality improvements to the current process and minimise healthcare-associated infections. Your aim is to build principles of good scientific and clinical practice into workplace practices.

Use the information given in the brief, the DATIX form and Table 1 to complete your quality improvement report. The information you provide should be supported with relevant facts and figures from your literature review, your analysis of the information in Table 1 as well as your existing knowledge. You must explain how your quality improvement plan will be implemented and supported by the whole healthcare team. When writing your report, ensure that you:

- reference the information gathered as part of your research in task 1 and the content of the DATIX form and Table 1

- provide your answer using the pro-forma which has been provided

(20 marks)
plus 4 marks for English, 2 marks for mathematics and 3 marks for digital
(Total marks: 29)

Conditions of the assessment:

- task 2 must be completed in supervised conditions

- you will have access to your research and the literature sources/links you used in task 1 – you must **not** access any other websites when completing task 2, except where the link requires you to perform a search and the results take you directly to other websites – you are required to submit a copy of your browsing history as part of your evidence for this task

- you will have a maximum of 3 hours to complete this task

Evidence requirements:

- word processed quality improvement report (pro-forma)

- a copy of your internet browsing history, this will be collected by your tutor once task 2 has ended

Assessment objectives

AO1: Plan their approach to meeting the project brief

AO2: Apply core knowledge and skills to meet quality management objectives

AO4: Use English, mathematics and digital skills as appropriate

Core Skills

CS2: Communication skills

CS4: Problem solving skills

CS5: Reporting and presentation skills

Submission

The following filename convention should be used for all materials produced:

(Provider_number)_(Student registration number)_(Surname)_(First name)_Task2_Quality_Improvement_Report

Note: please request your provider and student number from your tutor.

Task 3: peer discussion

AOs 2, 3 and 5

You must discuss your research findings and your proposed quality improvement report with your peers to gather peer feedback, which will be used to further develop your report and any required actions. You will also provide feedback on your peers' reports and ask each of them one question. Pro-formas are provided to help you receive and give feedback.

Task 3(a)(i): preparing for peer discussion

Read the quality improvement reports you have been given by your tutor and complete a preparation for peer discussion form for each quality improvement report.

Hand in your completed preparation for peer discussion forms to your tutor.

Task 3(a)(ii): exchanging feedback during peer discussion

Your tutor will put you into your peer discussion groups of between 3 and 5 students.

You will have access to your own quality improvement report, and your preparation for peer discussion forms completed in task 3(a)(i). You will have 20 minutes to re-familiarise yourself with the report and your forms, before beginning the group discussion.

Each group member will take it in turn to share their quality improvement report and receive feedback from the group.

When you give feedback on other students' reports, you must use the preparation for peer discussion forms completed in task 3(a)(i).

When you receive feedback, you must complete handwritten notes of the feedback you receive from each group member on the feedback from peer discussion form.

(0 marks)

part (a)(i) and (a)(ii) of this task are not marked

Task 3(b): using peer feedback to update your quality improvement report

Use your feedback from your peer discussion form and reflect on the feedback that you have received. Use this feedback to write a summary of how you will update your quality improvement report, referencing the feedback received during the peer discussion.

Your tutor will provide you with a copy of your submitted report from task 2.

You must justify the feedback that you decided to act on, as well as the feedback that you decided not to use.

(9 marks)

(Total marks: 9)

Conditions of the assessment:

For task 3(a)(i):

- task 3(a)(i) must be completed in supervised conditions

- you will have a maximum of 2 hours to complete this task, which includes any potential further work required following a review of your materials by your tutor

- you will hand in your work to your tutor and only receive feedback if your preparations are not suitable to support a meaningful contribution in the next task

For task 3(a)(ii):

- the discussion will take place in groups to be decided by your tutor, and you will have access to all your materials from task 2 when preparing for this task

- you will have 20 minutes to prepare for this task, using the information you have developed in task 2, in supervised conditions

- you will have 5 minutes to discuss your quality improvement report

- each member in your group will have a maximum of 5 minutes each to give you feedback

- you will also give feedback to each member of your group, taking no longer than 5 minutes each

For task 3(b):

- task 3(b) must be completed in supervised conditions

- you will have access to your materials from task 2 and task 3(a)(i) – you will not have access to the internet or any other additional resource materials when completing your work for this task

- you will have a maximum of 1 hour to complete this task

Evidence requirements:

- preparation for peer discussion form (pro-forma)

- handwritten or typed up feedback notes, including your questions asked to other group members – if handwritten, this evidence must be scanned prior to submission (pro-forma)

- a written summary of any changes you plan to make to your quality improvement report

Assessment objectives

AO2: Apply core knowledge and skills to meet quality management objectives

AO3: Select relevant techniques and resources to meet the brief

AO5: Realise a project outcome and review how well the outcome meets the brief

Core skills

CS1: Research skills

CS2: Communication skills

CS3: Team working skills

CS5: Reporting and presentation skills

CS6: Reflective evaluation

Submission

The following filename convention should be used for all materials produced:

(Provider_number)_(Student registration number)_(Surname)_(First name)_Task3x_(Additional detail of document content if multiple documents are produced per task)

Note: please request your provider and student number from your tutor.

Task 4: present an overview of your quality improvement report

AOs 2, 4 and 5

Task 4(a): preparing to present your quality improvement report

You must prepare a presentation (using software such as PowerPoint) giving an overview of your quality improvement report for a discussion with your tutor in task 4(b). Your tutor will assume the role of the department manager from the setting referenced in the brief. You must include details of the updates you have incorporated as a result of the peer discussion as part of the presentation you create.

After you have presented your overview using your presentation, your tutor will ask you questions based on your quality improvement report, which may include aspects of how you decided on this course of action.

A pro-forma has been provided for you to support your planning and preparation for this discussion. Your tutor will give you copies of your report including any summary of changes you have made and a copy of your literature review from task 1.

Task 4(b): presenting and discussing your quality improvement report

You must present to your tutor the overview of your report prepared in task 4(a). The discussion will then begin with your tutor who will ask you some questions based on the information you have presented.

As part of task 4(b) you will also be assessed on your communication skills. Your tutor will record the audio from this discussion.

Your tutor will give you copies of your research from task 1, the original evidence from task 2, improved evidence from task 3(b) and materials produced in task 4 (a).

(16 marks)
plus 2 marks for digital skills
(Total marks: 18)

Conditions of the assessment:

- you will have a maximum of 2 hours for task 4(a)

- for task 4(b) you will have 5 minutes to give your presentation with the information referenced in the task and 15 minutes to answer the questions

- the discussion in task 4(b) will take place with your tutor, and you will have access to all your materials from previous tasks when preparing for this task in task 4(a), as well as the discussion itself in 4(b)

Evidence requirements:

- materials used to present overview (presentation slides and word-processed document (pro-forma)

- tutor's observation notes of the discussion

- audio recording of the tutor discussion

Assessment objectives

AO2: Apply core knowledge and skills to meet quality management objectives

AO4: Use English, mathematics and digital skills as appropriate

AO5: Realise a project outcome and review how well the outcome meets the brief

Core skills

CS1: Research skills

CS2: Communication skills

CS5: Reporting and presentation skills

Submission

The following filename convention should be used for all materials produced:

(Provider_number)_(Student registration number)_(Surname)_(First name)_Task4x_(Additional detail of document content if multiple documents are produced per task)

Note: please request your provider and student number from your tutor.

Task 5: reflective account

AOs 2, 3 and 5

You must now complete a written reflective account of your experience completing the project. You should reflect on all tasks involved and you will need to communicate how you have achieved the expected outcomes.

In your reflective account, you will need to provide evidence of your evaluation of your performance when completing the tasks. Explain how your reflections will enhance your professional development and self-awareness.

You should also reflect on how this event would impact others, for example, the patient, in a real clinical scenario, including how your recommendations will bring about improvements to the quality of care to patients.

Your tutor will give you copies of your evidence produced in tasks 1, 2, 3(a), 3(b), 4(a) and 4(b) (notes and presentation materials).

(16 marks)
(Total marks: 16)

Conditions of the assessment:

- you will have a maximum of 2 hours to complete your reflective account

Evidence requirements:

- word processed reflective account

Assessment objectives

AO2: Apply core knowledge and skills to meet quality management objectives

AO3: Select relevant techniques and resources to meet the brief

AO5: Realise a project outcome and review how well the outcome meets the brief

Core skills

CS6: Reflective evaluation

Submission

The following filename conventions should be used for all materials produced:

(Provider_number)_(Student registration number)_(Surname)_(First name)_Task5x_(Additional detail of document content if multiple documents are produced per task)

Note: please request your provider and student number from your tutor.

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