

## HCS14 Investigate specimens/samples at a microscopic level

### OVERVIEW

This standard relates to all forms of microscopic investigation. It covers the use of the range of microscopes to examine prepared specimens/samples. It is applicable to all healthcare professionals who use microscopy within their work practice and may be carried out in a variety of clinical settings. Individuals will be assessed against this standard for the range of microscopy investigations within their work practice and level of responsibility. Users of this standard will need to ensure that practice reflects up to date information and policies. Version No 1

### KNOWLEDGE AND UNDERSTANDING

You will need to know and understand:

1. your own level of competence, authority and specialist knowledge base related to the range of microscopes used within your speciality
2. when to refer to colleagues for advice and information when you are unable to resolve issues relating to microscopy and how, when and where to seek expert advice and assistance
3. the range of health and safety measures, infection prevention and control and relevant personal protective equipment, controls and containment applicable to the microscopic investigations within your work practice
4. the relevant underpinning principles, purpose and application for the differing types of microscopes and investigation applicable to your work practice and level of responsibility
5. the importance of how to set up and operate the microscope and its associated systems to the required operating parameters relevant to your work practice and according to approved protocols
6. the importance and principles of the interactions between magnification level, image resolution and depth of field and how to achieve this for the microscopic examinations within your work practice
7. the principles, protocols and range of methods for demonstrating microscopic detail and their significance
8. how to apply a range of methods for demonstrating microscopic detail and the expected results
9. the importance of checking for deficiencies in quality of the specimen or equipment operations and the procedures required to resolve them

10. how to examine the preparation microscopically to guarantee accurate microscopic evaluation
11. how to recognise the features, characteristics, structures, cellular components and artefacts within microscopic preparations relevant to your speciality and to be aware of the possibility of abnormal or unexpected findings
12. how to contextualise microscopic information with other types of relevant clinical information available appropriate to your work practice and level of responsibility
13. how to record microscopy results in the appropriate format
14. how to validate microscopic results by comparison to controls and know the relevant action to take when issues arise or where to seek advice
15. the importance, range and type of approved methods for the retention, storage and confidentiality requirements for microscopic preparations and reports and where appropriate, images and their associated data
16. the protocols and procedures for the safe disposal of waste materials used in microscopy
17. the importance of ensuring that the equipment and/or preparation is left in the appropriate condition and location once the investigation is complete
18. the current national legislation, guidelines, local policies and protocols which affect your work practice
19. the policies and guidance that clarify your scope of practice, accountabilities and the working relationship between yourself and others

## PERFORMANCE CRITERIA

You must be able to do the following:

1. work within your level of competence, responsibility and accountability throughout and respond in a timely manner
2. apply appropriate health and safety measures, infection prevention and control and personal protective equipment to minimise the risks associated with the microscopy investigation
3. use the appropriate microscopic investigation for the type of specimen/sample, purpose of intended analysis and urgency of the request
4. set up the microscope according to approved local protocols and the manufacturer's instructions
5. ensure the microscope is operating correctly for the preparation being viewed or imaged and quality check the operational parameters of the required equipment, resources and associated systems
6. where appropriate, apply the appropriate techniques to the preparation and check the procedure meets the required quality
7. position the prepared sample/specimen preparation correctly for examination and view for suitability and quality for further examination
8. take appropriate action if the sample/specimen preparation is not of the required quality and seek advice if this is outside your competence or area of responsibility
9. where applicable, adjust equipment to obtain an image which identifies target areas at optimum degree of resolution for interpretation
10. scan methodically to ensure full examination, recording findings in sufficient detail to

facilitate and support the investigation and where appropriate , highlight key features for clarity to support a diagnosis or for a second opinion

11. accurately record findings in the approved format according to your work practice protocol and report any unusual findings to the relevant personnel in a timely fashion
12. make sure the findings are validated with required level of interpretation in accordance with protocols and seek advice if this is outside your competence or area of responsibility
13. store the preparation in the correct location and conditions for any subsequent examinations
14. record the findings from the microscopic examination using the required documentation processes and in accordance with your work practice protocols
15. make sure that the microscope is left in a suitable condition for future use
16. retain all relevant records in the appropriate location in line with current legislation, guidelines, local policies and protocols

## **ADDITIONAL INFORMATION**

This National Occupational Standard was developed by Skills for Health. This standard links with the following dimension within the NHS Knowledge and Skills Framework (October 2004): Dimension: HWB8 Biomedical investigation and intervention