Higher National Unit specification: general information

Unit title: Microbiology for Podiatry Support

Unit code: H1T7 34

Superclass: RH

Publication date: July 2012

Source: Scottish Qualifications Authority

Version: 01

Unit purpose

This Unit has been designed to develop knowledge of micro-organisms and their role in disease and infection. The Unit will also develop the knowledge and skills to recognise sources of infection/contamination and will develop skills in how to reduce this in the clinical and non-clinical environment.

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

1 Describe the characteristics, structure and growth of micro-organisms and their effect on the human body recognising the common treatments for these.
2 Demonstrate ability to prevent infection in care.

Recommended prior knowledge and skills

Although entry is at the discretion of the centre it is recommended that candidates have previous work or voluntary experience working in a health care environment and are currently employed as a podiatry assistant or trainee podiatry assistant. Candidates should have an understanding of the role and scope of practice of the podiatry assistant and have successfully completed the Higher National Unit FN2C 34 *Principles of Professional Practice*.

Credit points and level

0.5 Higher National Unit credit at SCQF level 7: (4 SCQF credit points at SCQF level 7*)

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

General information (cont)

Core Skills

There are opportunities to develop the Core Skills of *Communication, Problem Solving* and *Working with Others*. There is no automatic certification of Core Skills or Core Skill components in this Unit.

Detail on the opportunities to develop aspects of Core Skills is highlighted in the Support Notes of this Unit specification.

Context for delivery

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

Higher National Unit specification: statement of standards

Unit title: Microbiology for Podiatry Support

Unit code: H1T7 34

Outcome 1

Describe the characteristics, structure and growth of micro-organisms and their effect on the human body recognising the common treatments for these.

Knowledge and/or Skills

- Micro-organisms including their structure and characteristics
- Factors that affect growth of micro-organisms
- Signs of inflammation
- Treatments used for common infections of the lower limb

Evidence Requirements

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

- Describe the characteristics and structure of the three types of micro-organisms
- Describe the three factors that affect growth of micro-organisms
- Describe the five cardinal signs of inflammation
- Explain the role of the inflammatory process related to infective states
- List the treatments used for common infections of the lower limb including systemic and topical treatments

Outcome 2

Demonstrate ability to prevent infection in care.

Knowledge and/or Skills

- Sources of contamination within the clinical and non-clinical environment
- Control of the environment
- Management of decontamination of equipment and instruments
- Personal protection
- Health and safety in relation to infection control
- Spillage of body fluids
- Aseptic techniques
- The ‘ideal’ wound dressing
- Specimen handling

Higher National Unit specification: statement of standards (cont)

Unit title: Microbiology for Podiatry Support

Evidence Requirements

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

- Identify nine sources of contamination within the clinical environment
- Demonstrate methods to reduce contamination and cross infection within the clinical environment in accordance with local policy
- Identify sources of contamination within a variety of care settings and client groups, ie patients own home, nursing home, bed bound or wheel chair bound patients
- Demonstrate equipment and instrument decontamination in podiatry practice
- Demonstrate effective hand washing
- Use the appropriate personal protective equipment/clothing specific to the equipment being used or procedures carried out
- Maintain a clean and tidy working clinical area during treatment session
- Demonstrate health and safety in relation to infection control:
  - safe disposal of clinical and non-clinical waste
  - specimen handling for example nail clippings
  - exposure to blood borne infections and other work related hazards
  - management of blood and body fluid spillages
  - respiratory hygiene and cough etiquette
  - application of the aseptic technique
- Describe the 12 characteristics of the ‘ideal’ wound dressing

Higher National Unit specification: support notes

Unit title: Microbiology for Podiatry Support

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

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 20 hours.

Guidance on the content and context for this Unit

This Unit is mandatory within the Professional Development Award (PDA) in Podiatry Support at SCQF level 7 and is designed to support candidates to develop knowledge of micro-organisms and their role in disease and infection. The candidate will also develop the skills to recognise the signs and symptoms of infection and will be able to recognise the sources of infection and contamination giving them the ability to reduce and manage this in a clinical and non-clinical environment.

Trainee podiatry assistants studying this Unit as part of the PDA in Podiatry Support SCQF level 7 will be working with patients in a podiatry clinical environment. In this environment, candidates will be under direct supervision by a Health Professions Council (HPC) registered podiatrist who will identify patients with podiatry conditions that are suitable for the candidate's level of training.

The Outcomes for this Unit are congruent with the microbiology section of the training manual developed by the Society of Chiropodists and Podiatrists (SOCP) for Podiatry Assistant Practitioners. The clinical content of this manual is a useful reference source.

Outcome 1

The aim of this Outcome is to develop knowledge of micro-organisms and their role in disease and infection and recognise the treatments for such infections.

The candidate should know that there are three types of micro-organisms: bacteria, viruses and fungi/yeasts. Bacteria are the largest group of micro-organisms and are classified according to their shape: Cocci (rounded/spherical); Bacilli (rod shaped) and spirochetes (spiral shaped). Viruses are smaller than bacteria and they have no cell wall and can only survive by dwelling in a host cell. Fungi and yeasts are plants, some of which can be seen by the human eye, eg mould. Not all micro-organisms are harmful but some do cause disease, these are called pathogenic micro-organisms.

Some micro-organisms live in symbiosis with their host until the opportunity for infection arises. The candidate will be able to describe the conditions required for survival for example:

- food
- appropriate temperature
- an environment that, for them, is neither too acidic or alkaline

One of the key responses of human tissue to infection and/or irritation is inflammation.
The candidate will be able to explain and recognise the five cardinal signs of inflammation whilst describing the role of inflammation as a response to prevent spread of infection, eliminate infection and promote healing. The five cardinal signs are:

- redness
- swelling
- heat
- pain
- loss of function

For management of pathogenic micro-organisms there are common treatments used, some systemic such as orally or intravenously and some topical. The candidate will be aware of the classification of medications such as:

- antibiotics
- antipruritics
- antiseptics
- anti–inflammatory agents
- anti virals
- bactericide
- bacteriostatic
- detergent
- disinfectant
- fungicide
- fungistatic

Outcome 2

The candidate should have an understanding of healthcare associated infections and the importance of infection control in reducing such infections. The candidate will be able to identify the common sources of contamination such as the atmosphere, breathing, coughing or sneezing, hands, jewellery, clothing, hair, work surfaces and instruments.

Once the sources have been identified the candidate will be able to describe and demonstrate how to reduce contamination and cross infection within their clinical environment. Methods will include ensuring their clinical environment is kept clean and that furniture including jars and bottles are swabbed with a disinfectant, pedal bins are in use and that sinks are controlled with elbow taps. The candidate will also demonstrate appropriate clinical and non-clinical waste disposal and appropriate use and disposal of sharps and be able to describe the procedure for dealing with blood borne infections, spilled body fluids and needle stick or sharps injuries.

Equipment and instrument management is important when trying to control cross infection and contamination. The candidate will be able to describe and demonstrate the different methods of instrument control, decontamination and sterilisation, in line with local/departmental policy.

The candidate will also be aware of local/departmental policy regarding their own self-management in the reduction of cross infection and decontamination such as hand washing, uniform policy, hair tied back, no jewellery or ties and the different types of protective wear for example non sterile gloves, eye protection and face masks. The candidate will also be able to describe the procedure for handling, collection and sending of laboratory specimens.

The patient is also a source of cross infection and contamination, the candidate will be able to describe and demonstrate how this could be reduced by swabbing the patients feet ensuring any open wounds are covered with an appropriate dressing. Also be aware of the application of sterile dressings and procedures, again in line with local/departmental policy.

There are a number of dressings that can be used within the clinic which can be used in combination with antiseptics to dress cuts and wounds. These can also be used on their own as a dry dressing. These dressings are sterile and individually wrapped.

The candidate should be able to describe the factors which make up an 'ideal' dressing. These include:

- promotes a moist wound environment
- promotes wound healing
- provides mechanical protection
- allows for non-adherence to wounds
- allows for removal without pain or trauma
- capable of absorbing excess exudates
- allows for gaseous exchange
- non-cytotoxic to health tissues
- antimicrobial/antifungal
- acceptable to the patient
- easy to use
- cost effective

Indicative reading

Abbas, A. and Lichtman, A. 2008. Basic Immunology: functions and disorders of the immune system. 3rd ed. Philadelphia: Saunders

British Medical Association. 2011. British National Formulary. [online] Available from: **www.bnf.org/bnf/**

NES: Healthcare Associated Infection, Cleanliness Champions Programme. http://www.nes.scot.nhs.uk/education-and-training/by-theme-initiative/healthcare-associated-infections/educational-programmes/cleanliness-champions.aspx

Lorimer, D. L. ed. 2006. Neale's disorders of the foot. 7th ed. Edinburgh: Elsevier Churchill Livingstone

Metchnikof, E. 2008. Lectures on the comparative pathology of inflammation. Canada: Bibliolife

The Society of Chiropodists and Podiatrists Training Manual for Podiatry Assistant Practitioners. 2012. The Society of Chiropodists and Podiatrists, London

Yates, B. 2009. Merriman's assessment of the lower limb. 3rd ed. Edinburgh: Elsevier Churchill Livingstone

Guidance on the delivery of this Unit

This Unit is most likely to be studied by candidates undertaking the Group Award. It is primarily designed to equip trainee podiatry assistants with the underpinning knowledge and skills to work with patients with a footcare need.

The candidate should have an understanding of the role and scope of practice of the podiatry assistant and have successfully completed the *Principles of Professional Practice* Unit (FN2C 34).

This Unit is mandatory within the Professional Development Award (PDA) in Podiatry Support at SCQF level 7. In terms of sequence of delivery, it is recommended this Unit follows on from completion of the *Principles of Professional Practice* Unit (FN2C 34).The knowledge and skills highlighted within this Unit provide a theoretical and practical base for further study.

Each Outcome is mutually supportive of each other and builds on knowledge and skills in a sequential way. An understanding of each of the Outcomes will be required in order to evidence all the Outcomes of this Unit.

Guidance on the assessment of this Unit

In order to achieve this Unit, candidates are required to submit sufficient evidence to demonstrate they have met the knowledge and skills requirements for each Outcome.

An understanding of both the theory and its application to clinical practice is a requirement for both Outcomes.

A range of assessment strategies could be applied and these could be integrated for all the learning Outcomes where possible.

Candidates should be encouraged to complete a reflective log for all learning activities and to maintain this within a portfolio of evidence. This portfolio can be used to support the Evidence Requirements of the candidate's knowledge and skills in relation to all Outcomes. Clinical practice competences will be formally assessed by the supervising podiatrist and documented in a competency record.

Understandings of the underpinning theory allowing recognition of infection in clinical practice and prevention techniques are required.

Outcome 1 could be assessed in a closed-book environment where the candidate provides the answers to short answer questions. Alternatively this could be completed by a case study where the candidate could write up an example of a case they have witnessed being managed or a patient they have managed themselves incorporating elements of reflection in the candidates' reflective log that covers all of the Evidence Requirements for Outcome 1.

Outcome 2 could be assessed in a clinical or simulated clinical environment. This could be done as part of an on- going assessment carried out by the candidates mentor and documented in a competency record on at least three separate occasions.

The candidate would be observed setting up the clinical site and performing relevant decontamination techniques. During a treatment session the mentor/assessor will observe clinical waste management, hand washing, the use of appropriate protective clothing and equipment. Finally, once the treatment session was complete, the management of equipment and instrument decontamination could be observed. This could be recorded on a check list and once completed signed off and held in the candidates' competency record.

Online and Distance Learning

The theory elements within this Unit are suitable for online and distance learning with tutor support. It is the responsibility of the centre to ensure the authenticity of the candidates work. The Evidence Requirements stated must be met for both Outcomes.

Opportunities for developing Core Skills

The Core Skill of *Communication* can be developed through the practical aspect of working with patients in a clinical setting. Obtaining a pertinent history and recording clinical information in a structured format will support the development of verbal and written communication skills. Identifying and summarising information from reference sources will be required to support the Evidence Requirements for this Unit.

The Core Skill of *Problem Solving* may be developed through the analysis of clinical signs and symptoms of infection. Identifying possible risks of cross infection and contamination and, where possible eliminating or reducing these.

There is opportunity for development of the Core Skill of *Working with Others* within this Unit. It is anticipated that candidates undertaking this Unit will be trainee podiatry assistants or podiatry assistants who will be working with patients within a podiatry department and supervised by an HPC registered podiatrist.

Disabled candidates and/or those with additional support needs

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

History of changes to Unit

Version	Description of change	Date

General information for candidates

Unit title: Microbiology for Podiatry Support

This Unit has been designed to develop knowledge of micro-organisms and their role in disease and infection. The Unit will also develop the knowledge and skills to recognise sources of infection/contamination and will develop skills in how to reduce this in the clinical and non-clinical environment.

This Unit is made up of two Learning Outcomes. On completion of the Unit you should be able to:

1 Describe the characteristics, structure and growth of micro-organisms and their effect on the human body recognising the common treatments for these.
2 Demonstrate ability to prevent infection in care.

Outcome 1 will allow you to develop your understanding of the different types of micro-organisms that can cause infection of the lower limb. Therapeutics is the branch of medicine that deals with methods of treatment and healing. One of the aims of this Outcome is to introduce you to some of the commonly used medications in the management of these infections.

Outcome 2 will develop your knowledge skills and awareness of the prevention of healthcare associated infection. You will have the knowledge and skills to identify sources of possible infection and be able to reduce these within the clinical and non-clinical environment. Decontamination and/or sterilisation of instruments that become contaminated is an important role within clinical practice and you will be given the skills to manage this in line with your local departmental policies and guidelines. Knowledge of dressings and their application will enable you to assist in infection control and enhance wound healing.

Although entry is at the discretion of the centre it is recommended that you have previous work or voluntary experience working in a health care environment and are currently employed as a podiatry assistant or trainee podiatry assistant. You should have an understanding of the role and scope of practice of the podiatry assistant and have successfully completed the *Principles of Professional Practice* Unit (FN2C 34).

This Unit is mandatory if you are studying for the Professional Development Award (PDA) in Podiatry Support at SCQF level 7.

You may be assessed using a range of assessment instruments and strategies which could include a reflective log, short questions, case study and presentation of discussion of the clinical findings on a minimum of three patient cases.

Over the course of this Unit there may be opportunities for you to develop the Core Skills of *Communication, Problem Solving* and *Working with Others*.