

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National 5)

**Unit code:** F88J 75

**Superclass:** PB

**Publication date:** August 2013

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**Version:** 03 (February 2017)

## Unit purpose

This unit has been designed as a mandatory unit of the National 5 Health Sector Course, but can also be taken as a freestanding unit. It is suitable for learners who have no previous experience of the health sector.

This unit will provide learners with an introduction to the structure and function of the cardiovascular system. Learners will apply this knowledge to investigate the effect of a disorder on the structure and function of the cardiovascular system.

Learners will participate in a practical activity which will help to develop knowledge and skills in taking physiological measurements at different activity levels. Learners will also participate in a practical activity to demonstrate current first aid procedures to provide emergency life support.

The health sector includes the National Health Service (NHS) (primary and secondary care), Independent Healthcare, Complementary Therapies, the Life Sciences and Retail Pharmaceutical Industries and the Community and Voluntary Sector.

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## **Outcomes**

On successful completion of the unit the learner will be able to:

- 1 Investigate the effects of a specific disorder on the structure and function of the cardiovascular system.
- 2 Participate in a practical activity which involves taking a physiological measurement at different activity levels.
- 3 Demonstrate skills in providing emergency life support in a health sector environment.

## **Credit points and level**

0.5 National unit credit at SCQF level 5: (3 SCQF credit points at SCQF level 5)

## **Recommended entry to the unit**

Entry to this unit is at the discretion of the centre.

## **Core Skills**

Opportunities to develop aspects of Core Skills are highlighted in the support notes for this unit specification.

There is no automatic certification of Core Skills or Core Skill components in this unit.

## **Context for delivery**

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

The Assessment Support Pack (ASP) for this unit provides assessment and marking guidelines that exemplify the national standard for achievement. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>).

## **Equality and inclusion**

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements).

# National unit specification: Statement of standards

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Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

## Outcome 1

Investigate the effects of a specific disorder on the structure and function of the cardiovascular system.

### Performance Criteria

- (a) Describe the structure of the cardiovascular system.
- (b) Describe the functions of the cardiovascular system.
- (b) Explain how a specific disorder affects the cardiovascular system.

## Outcome 2

Participate in a practical activity which involves taking a physiological measurement at different activity levels.

### Performance Criteria

- (a) Arrive on time and dressed appropriately.
- (b) Select the appropriate equipment for the activity.
- (c) Follow standard operating procedures for the equipment at different activity levels.
- (d) Comply with health and safety procedures throughout the activity.
- (e) Record measurements in the appropriate format.
- (f) Draw valid conclusions from recorded results.

## Outcome 3

Demonstrate skills in providing emergency life support in a health sector environment.

### Performance Criteria

- (a) Assess a casualty in need of emergency life support.
- (b) Open the casualty's airway.
- (c) Give effective rescue breaths.
- (d) Perform chest compressions.
- (e) Place the casualty in the recovery position.
- (f) Follow correct procedures throughout, in line with health and safety guidelines.

# National unit specification: Statement of standards (cont)

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## Evidence requirements for this unit

Evidence is required to demonstrate that learners have achieved all outcomes and performance criteria.

### Outcome 1 — Written and/or oral evidence

Evidence for Outcome 1 will be gathered in open-book conditions at an appropriate point during the unit. Learners will investigate the effects of a specific disorder on the cardiovascular system.

Evidence will be gathered in an individual folio of evidence. Learners will be given a brief for the investigation.

Learners are required to:

- ◆ describe the structure of the cardiovascular system
- ◆ describe **two** functions of the cardiovascular system
- ◆ explain how a specific disorder affects the cardiovascular system

### Outcome 2 — Performance and written and/or oral evidence

Performance evidence is required for Performance Criteria (a) to (e). An assessor observation checklist must be used to support the performance evidence.

Learners are required to demonstrate that they can:

- ◆ arrive on time and dressed appropriately
- ◆ select the appropriate equipment for the activity
- ◆ follow standard operating procedures at two activity levels
- ◆ comply with health and safety procedures throughout the activity
- ◆ record measurements in the appropriate format

For performance criterion (f) learners are required to produce written and/or oral evidence to:

- ◆ draw valid conclusions from the recorded results.

Further guidance on an appropriate practical activity can be found in the support notes.

# National unit specification: Statement of standards (cont)

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National 5)

## Outcome 3 — Performance evidence

Performance evidence is required for this outcome. Evidence will be gathered under supervision in a real or simulated health sector environment.

Learners are required to demonstrate skills in providing emergency life support by:

- ◆ correctly assessing the casualty
- ◆ opening the airway
- ◆ giving effective rescue breaths
- ◆ performing chest compressions
- ◆ demonstrating the recovery position
- ◆ following correct procedures throughout

An assessor observation checklist must be used to support the performance evidence.

The Assessment Support Pack (ASP) provided for this unit illustrates the standard that should be applied. It contains an investigation pro forma, learner brief and assessor observation checklists. If a centre wishes to design its own assessments for this unit, they should be of a comparable standard.

# National unit specification: Statement of standards (cont)

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National 5)

## Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this unit. Employability is a key aspect of Skills for Work and is present throughout the unit. In addition, there are a number of other skills that learners will be expected to improve on and develop as they undertake this unit, these can be drawn from the main skills areas listed below. These must be built into the unit where there are appropriate opportunities.

### **1 Literacy**

- 1.1 Reading
- 1.2 Writing
- 1.3 Listening and talking

### **5 Thinking skills**

- 5.1 Remembering
- 5.2 Understanding
- 5.3 Applying
- 5.4 Analysing and evaluating

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level as the unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *National unit support notes*.

# National unit support notes

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National 5)

Unit support notes are offered as guidance and 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 has been designed as a mandatory unit of the National 5 Health Sector Course, but can also be taken as a freestanding unit. It is suitable for learners who have no previous experience of the health sector.

This unit will provide learners with an introduction to the structure and function of the cardiovascular system. Learners will apply this knowledge to investigate the effect of a disorder on the structure and function of the cardiovascular system.

Learners will participate in a practical activity which will help to develop knowledge and skills in taking physiological measurements at different activity levels. Learners will also participate in a practical activity to demonstrate current first aid procedures to provide emergency life support.

The health sector includes the National Health Service (NHS) (primary and secondary care), Independent Healthcare, Complementary Therapies, the Life Sciences and Retail Pharmaceutical Industries and the Community and Voluntary Sector.

### Outcome 1

This outcome is intended to provide learners with a broad understanding of the structure and functions of the cardiovascular system and the effects of a specific disorder. Learners should be made aware that the cardiovascular system pumps and circulates blood, transports nutrients, gas and waste in and out of the lungs with heart and blood vessels.

Suggested common disorders relevant to the cardiovascular system include:

Angina, Heart Failure, Myocardial Infarction, Arthero-sclerosis, Coronary Artery Disease, Hypertension, Sudden Adult Death Syndrome.

The investigation will be recorded in a learner folio and include all performance criteria specified. The folio could be produced in a variety of formats, eg a presentation which could be electronic, display, poster or leaflet. The language used throughout should promote equality and diversity and avoid cultural stereotypes.

## National unit support notes (cont)

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National level 5)

### Outcome 2

This outcome is intended to provide learners with opportunities to demonstrate specified employability skills within a practical activity. The physiological measurements could relate to the cardiovascular system studied in Outcome 1. Teachers/lecturers must ensure that the dignity and privacy of all individuals are respected when learners are carrying out practical activities.

The practical activity will have to be risk assessed by a teacher/lecturer to ensure that all health and safety requirements are complied with. Teachers/lecturers must also ensure that learners comply with infection control guidelines and protocols.

Examples of relevant practical activities could include:

- ◆ measurement of temperature, pulse, respiration and the effects of exercise
- ◆ measurement of blood pressure and the effects of changing position, eg lying, sitting, standing

### Outcome 3

This outcome provides learners with knowledge and skills required to carry out emergency life support. It is important that learners learn both the correct action to take and the reasons why these actions are important. Learners should be taught and assessed by an appropriately trained teacher/lecturer on how to assess the casualty, how to place an unconscious person in the recovery position, how to open the airway, give effective rescue breaths and perform chest compressions.

Learners should be given the opportunity to practise their skills on a resuscitation manikin. A risk assessment should be carried out by a competent person prior to the practical activity taking place. This includes ensuring the safety of equipment.

### Employability Skills

In this unit learners will generate evidence for the following employability skills:

- ◆ positive attitude to learning and the workplace
- ◆ self-respect and respect and consideration for others
- ◆ willingness to listen to others and respond constructively to feedback
- ◆ understanding of roles and responsibilities in the workplace
- ◆ reflecting on own abilities
- ◆ understanding of health and safety
- ◆ understand and seek clarification of instructions
- ◆ implementation of infection control procedures
- ◆ demonstrate an awareness of organisational standards for appearance and behaviour



# National unit support notes (cont)

## Unit title: Health Sector: Physiology of the Cardiovascular System (National 5)

Although not directly assessed in this unit, there are also opportunities to develop the following employability skills:

- ◆ Awareness of equality and diversity
- ◆ Contribute to team work
- ◆ Awareness and understanding of the importance of maintaining confidentiality
- ◆ Understanding of organisational principles and values in the health sector

## Guidance on approaches to delivery of this unit

### Outcome 1

Learners should be introduced to the function of the cardiovascular system using a variety of teaching materials including anatomical models, illustrations, computer simulations and multimedia presentations.

The investigation for Outcome 1 will require learners to gather information from a variety of sources which could include:

- ◆ Visiting speakers
- ◆ DVD presentations
- ◆ Internet
- ◆ Library
- ◆ Health boards
- ◆ GP surgery
- ◆ Local clinics
- ◆ Interviews with health practitioners
- ◆ Workplace visits

It may be beneficial for learners to work in groups and share information although the final investigation must be the learner's own work. Learners should discuss and agree with the teacher/lecturer a suitable disorder affecting the cardiovascular system to investigate. Where this unit is being taken as part of the National 5 Health Sector Course there are opportunities for integration of this outcome with Outcome 1 of the unit *Health Sector: Life Sciences Industry and the Health Sector (National 5)*.

### Outcome 2

Experiential learning is the main approach recommended for this outcome. This involves learning through practical experiences and activities. The activities should be undertaken in a real or simulated work environment. The teacher/lecturer should provide a demonstration on the safe and correct method of using equipment prior to learners undertaking any practical activity. Learners should use accepted methods of recording measurements in relation to physiology.

## National unit support notes (cont)

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National 5)

### Outcome 3

Experiential learning is the main approach recommended for this outcome. This involves learning through practical experiences and activities. The activities should be undertaken in a real or simulated work environment. The teacher/lecturer should provide a demonstration on the safe and correct method of carrying out emergency life support.

Delivery of this unit could incorporate a variety of teaching and learning methods including:

- ◆ teacher/lecturer presentations and demonstrations
- ◆ DVD presentations
- ◆ group work and discussions
- ◆ handouts
- ◆ visiting speakers
- ◆ workplace visits
- ◆ practical activities
- ◆ individual and group research
- ◆ internet searches
- ◆ interviews with health professionals/patients/relatives

### Guidance on approaches to assessment of this unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

# National unit support notes (cont)

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National 5)

## Outcome 1

The evidence will be gathered in a learner folio which will include identification of a specific disorder and an explanation of how this might affect the cardiovascular system.

The information will include:

- ◆ description of the structure of the cardiovascular system
- ◆ description of **two** functions of the cardiovascular system
- ◆ explanation of how specific disorder affects the cardiovascular system

## Outcome 2

Performance evidence for Outcome 2 should be based on a practical activity, specified by the teacher/lecturer, which must be observed using an observation checklist.

Learners should be given the opportunity to practise the skills before being assessed.

## Outcome 3

For Outcome 3, learners should be given the opportunity to practise the skills before being assessed. An assessor observation checklist should be used when gathering evidence. Performance evidence for this assessment should be generated by participation in a practical activity under supervision in a real or simulated health sector environment. Assessor observation checklists must be retained.

Learners are required to:

- ◆ correctly assess the casualty
- ◆ open the airway
- ◆ give effective rescue breaths
- ◆ perform chest compressions
- ◆ demonstrate the recovery position
- ◆ follow correct procedures throughout

An assessor observation checklist must be used to support the performance evidence.

The Assessment Support Pack (ASP) provided for this unit illustrates the standard that should be applied. It contains an investigation pro forma, learner brief and assessor observation checklists. If a centre wishes to design its own assessments for this unit, they should be of a comparable standard.

## National unit support notes (cont)

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### Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the evidence requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at [www.sqa.org.uk/e-assessment](http://www.sqa.org.uk/e-assessment).

### Opportunities for developing Core Skills

In this unit learners will be involved in an investigation and practical activities. There may be opportunities for learners to work with others which would enable them to develop effective communication and interpersonal skills.

If the learner uses a computer while undertaking any part of this unit, they will have the opportunity to develop *Information and Communication Technology (ICT)* skills.

## General information for learners

**Unit title:** Health Sector: Physiology of the Cardiovascular System (National 5)

This section will help you decide whether this is the unit for you by explaining what the unit is about, what you should know or be able to do before you start, what you will need to do during the unit and opportunities for further learning and employment.

In this unit you will investigate the structure and function of the cardiovascular system. This knowledge will be applied to investigate the effect of a disorder on the structure and function of the cardiovascular system.

You will participate in a practical activity which will help to develop knowledge and skills in taking physiological measurements at different activity levels. You will also participate in a practical activity to demonstrate current first aid procedures to provide emergency life support.

There may be opportunities for you to work with others which would enable you to develop effective communication and interpersonal skills. If you use a computer while undertaking any part of this unit, you will have the opportunity to develop *Information and Communication Technology (ICT)* skills.

# Administrative information

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**Published:** February 2017 (version 03)

**Superclass:** PB

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## History of changes to National unit specification

Version	Description of change	Authorised by	Date
3.0	Units moved into a new template and re-coded to align with corresponding course 2 code.  Outcome 3 – changed from performance and written and/or oral evidence to performance evidence.	QM	Feb 2017

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