Unit 48: Prepare for and Take Physiological Measurements

Unit reference number: K/616/7353

Level: 3

Unit type: Optional

Credit value: 3

Guided learning hours: 23

Unit summary

Care workers will often need to undertake and record an individual's physiological measurements. This may be for general routine monitoring of their body functions or for more specific reasons, for example as part of certain medical treatments. These measurements can include one or more of the following: body temperature, blood pressure, respiratory rate, pulse rate, body mass index. While carrying out these measurements, it is essential to maintain the individual's comfort, respect and dignity, as well as applying standards of hygiene and infection control precautions.

In this unit, you will learn why we may need to monitor and record basic physiological measurements. You will be required to demonstrate your skills in using the various equipment as part of this process, in line with manufacturers' instructions and following required health and safety measures. You will need to display patience and empathy towards individuals, and respect their privacy. In order to monitor the measurements in line with workplace procedures and healthcare requirements, you will need to update necessary records.

As defined by the assessment strategy, centres should ensure that assessors assessing this unit are technically competent and possess the relevant occupational knowledge. The assessment strategy can be found in *Annexe A* of the associated qualification specification.

Learning outcomes and assessment criteria

To pass this unit, the learner needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria outline the requirements the learner is expected to meet to achieve the unit.

Learning outcomes	Assessment criteria
1 Understand relevant legislation, policy and good practice for undertaking physiological measurements	1.1 Describe current legislation, national guidelines, organisational policies and protocols affecting work practice
2 Understand the physiological states that can be measured	2.1 Explain the principles of blood pressure to include: ● blood pressure maintenance ● differentiation between systolic and diastolic blood pressure ● normal limits of blood pressure ● conditions of high or low blood pressure 2.2 Explain the principles of body temperature to include: ● body temperature maintenance ● normal body temperature ● pyrexia, hyper-pyrexia and hypothermia 2.3 Explain the principles of respiratory rates to include: ● normal respiratory rates ● factors affecting respiratory rates in ill and well individuals 2.4 Explain the principles of pulse rates to include: ● normal pulse rates limits ● factors affecting pulse rates – raising or lowering ● pulse sites on the body ● the requirement for pulse oximetry measurements ● analysis and implication of pulse oximetry findings 2.5 Explain the principles of body mass index (BMI) in relation to weight/dietary control 2.6 Explain the major factors that influence changes in physiological measurements 2.7 Explain the importance of undertaking physiological measurements 2.8 Explain how physiological measurements may need to be adapted for the individual

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Learning outcomes	Assessment criteria
3 Be able to prepare to take physiological measurements	3.1 Explain to the individual the measurements that will be taken and why they are required 3.2 Reassure the individual during the physiological measurements process in line with agreed ways of working 3.3 Answer questions and deal with concerns during the physiological measurements process in line with agreed ways of working 3.4 Explain the help individuals may need before taking their physiological measurements 3.5 Explain why it may be necessary to adjust an individual's clothing before taking physiological measurements 3.6 Ensure all materials and equipment to be used are appropriately prepared in line with agreed ways of working 3.7 Confirm the individual's identity and obtain valid consent in line with agreed ways of working
4 Be able to undertake physiological measurements	4.1 Apply standard precautions for infection prevention and control in line with agreed ways of working 4.2 Apply health and safety measures relevant to the procedure and environment 4.3 Select and use appropriate equipment at the prescribed time and in the prescribed sequence to obtain an accurate measurement 4.4 Monitor the condition of the individual throughout the measurement in line with agreed ways of working 4.5 Respond to any significant changes in the individual's condition in line with agreed ways of working

Learning outcomes	Assessment criteria
	4.6 Follow the agreed process when unable to obtain or read a physiological measurement 4.7 Identify any issues outside own responsibility and refer these to other colleagues
5 Be able to record and report results of physiological measurements	5.1 Explain the necessity for recording physiological measurements 5.2 Explain common conditions that require recording of physiological measurements 5.3 Demonstrate the correct process for reporting measurements that fall outside the normal levels in line with agreed ways of working 5.4 Record accurately using the correct documentation physiological measurements taken in line with agreed ways of working

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Content

What needs to be learned
Learning outcome 1: Understand relevant legislation, policy and good practice for undertaking physiological measurements
Physiological measurements • Measurements that determine how well the body is functioning. • Types of measurement, e.g. temperature, height, weight, body mass index (BMI), blood pressure taken manually or electronically, pulse rates at a variety of sites, e.g. radial pulse, pulse oximetry, respiratory rate. **Relevant legislation** • Health and Safety at Work etc. Act 1974. • Data Protection Act 1998. • Care Act 2014. • Manual Handling Operations Regulations 1992. • Equality Act 2010. • Health and Social Care Act 2008. • The Essential Standards of Quality and Safety (Care Quality Commission). **National guidelines** • National Institute for Health and Care Excellence (NICE) guidelines. **Agreed ways of working** • Policies and procedures where they exist. • Referencing to and updating the individual's care plan where appropriate.
Learning outcome 2: Understand the physiological states that can be measured

Individual
• Someone requiring care or support; it will usually mean the person or people supported by the learner.
Principles of blood pressure
• Blood-pressure maintenance:
  ○ blood flow
  ○ heart rate
  ○ systemic circulation.
• Differentiation between systolic and diastolic blood pressure:
  ○ arterial pressure
  ○ ventricular contraction
  ○ ventricular relaxation.
• Normal limits of blood pressure.
• Conditions of high- or low blood pressure:
  ○ causes
  ○ hypotension
  ○ hypertension.

What needs to be learned

Principles of body temperature

- Body temperature maintenance:
  - balance of heat
  - receptors
  - respiration
  - evaporation
  - hypothalamus.
- Normal body temperature.
- Pyrexia, hyperpyrexia and hypothermia:
  - causes
  - symptoms.

Principles of respiratory rates

- Normal respiratory rates.
- Factors affecting respiratory rates in both ill and well individuals, e.g. blood pH level, drugs, alcohol, blood oxygen level.

Principles of pulse rate

- Normal pulse rate limits.
- Factors affecting the raising or lowering of pulse rates, e.g. illness, gender, age, body temperature, pain, exercise, blood pressure.
- Pulse sites on the body, e.g. carotid, brachial, ulnar femoral.
- The requirement for pulse oximetry measurements, e.g. deviation of blood oxygen baseline level, possible conditions affecting blood oxygen level, risks.
- Analysis and implication of pulse oximetry findings, e.g. saturation level, possible causes of incorrect reading.

Principles of body mass index (BMI)

- Healthy body mass index.
- Calculation of BMI, e.g. formula or graph, considering age and any other conditions.
- BMI and weight control, e.g. healthy diet, appropriate exercise.

Changes in physiological measurements

- Factors affecting changes in physiological measurements, e.g. illnesses and infections, stress, anxiety, lifestyle factors, medication, age, environment, time of day.

Importance of undertaking physiological measurements

- Assessment, e.g. body functions and health status.
- Providing information on, e.g. extent of disease or disability.
- Provision and/or response to therapeutic interventions.
- Trends and changes in physiology.

Adapting physiological measurements

- Adaptations may be necessary due to factors such as size, age, weight, mobility, existing conditions, e.g. thyroid.

What needs to be learned
Learning outcome 3: Be able to prepare to take physiological measurements

Explaining, reassuring and answering questions from the individual
• Appropriate method of communication, e.g. verbal and non-verbal.
• Confidentiality agreements.
• Range of information formats, e.g. verbal (audio description), written (easy read, Braille, multilingual) or electronic (online).
• Individual additional support, e.g. translators, advocates.
Helping individuals before taking physiological measurements
• In line with care plan/support plan.
• Access to equipment.
• Body positioning.
• Appropriate rest before taking measurements.
• Drink and diet before taking measurements.
• Dignity and privacy.
Adjusting of clothes
• Rolling sleeves up, loosening of tight clothes, adjusting clothing.
Preparing equipment and material
• Appropriate equipment and material:
  ○ stethoscope
  ○ sphygmomanometer – manual or digital
  ○ thermometer – electronic, tympanic membrane sensors
  ○ pulse oximeter
  ○ a watch with second hand
  ○ other recording devices
  ○ charts.
• Appropriate training before use of equipment.
• Health and safety guidelines, e.g. following legal and manufacturer instructions, calibration of equipment, working order.
• Standard precautions for infection control, e.g. hand washing, personal protective equipment (PPE).
Obtaining valid consent
• Must be in line with agreed UK country requirements.
• Verbal and non-verbal cues.
• Capacity to give consent.

Learning outcome 4: Be able to undertake physiological measurements
Standard precautions for infection prevention and control • Legal requirements. • Cleaning of equipment. • Hand hygiene, i.e. washing, use of soap, single-use clean towels. • Protective clothing, e.g. disposable gloves and aprons. • Workplace procedures for disposal, e.g. use of yellow bags.

What needs to be learned

Health and safety measures

- Environment:
  - safety, dignity and privacy
  - temperature, humidity, ventilation, space and light.
- Procedure:
  - appropriate training to use equipment
  - moving and handling technique.

Obtaining accurate measurements

- Prescribed time:
  - in line with professional advice
  - hourly, four hourly, daily, weekly
  - before/after food
  - before hot/cold drinks
  - before/after exercise
  - on return from other treatment/investigation.
- Prescribed sequence:
  - follow training instructions
  - following manufacturer instructions
  - as prescribed by other professionals, e.g. GP
  - agreed ways of working.

Monitoring individual

- Use of verbal and non-verbal techniques.
- Awareness of cues from individual, e.g. wanting to pause, pain.
- Checking comfort of individual throughout intervention.

Significant changes

- Collapse.
- Cardiac arrest.
- Bleeding.
- Postural.
- Hypotension.

Dealing with issues

- Issues:
  - irregular physiological measurements
  - incorrect information included in care plan.

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What needs to be learned
Learning outcome 5: Be able to record and report results of physiological measurements
Necessity of recording measurements • Monitoring conditions and treatments. • Duty of care. • Appropriate and timely intervention. **Common conditions requiring the recording of physiological measurements** • Conditions, e.g. heart disease, kidney disease, asthma. **Process for reporting** • In line with agreed ways of working. **Recording and reporting measurements** • Use of correct documentation for type of physiological measurement undertaken. • Accurate and timely reporting. • Storage and sharing of records. • Confidentiality of records.

Information for tutors

Suggested resources

Books

Ayling P et al – *Preparing to Work in Adult Social Care Level 3 (Health and Social Care)* (Nelson Thornes Ltd, 2012) ISBN 9781408518137

Waugh A and Grant A – *Anatomy and Physiology in Health and Illness*, 12th edition (Churchill Livingstone, 2014) ISBN 9780702053252

Webster J – *The Physiological Measurement Handbook (*CRC Press, 2014) ISBN 9781439808474

Websites

www.bloodpressureuk.org	Blood Pressure UK website – in particular the Blood Pressure and You section.
www.bupa.co.uk	Health information (BMI calculator).
www.cqc.org.uk	Care Quality Commission – fundamental standards.
www.hse.gov.uk	Health and Safety Executive website – information on infections at work and health and safety.
www.nhs.uk	NHS website – Live Well section.

Assessment

This guidance should be read in conjunction with the associated qualification specification for this unit.

This unit is internally assessed. To pass this unit, the evidence that the learner presents for assessment must demonstrate that they have met the required standard specified in the learning outcomes and assessment criteria, and the requirements of the assessment strategy.

To ensure that the assessment tasks and activities enable learners to produce valid, sufficient, authentic and appropriate evidence that meets the assessment criteria, centres should follow the guidance given in *Section 8 Assessment* of the associated qualification specification and meet the requirements from the assessment strategy given below.

Wherever possible, centres should adopt an holistic approach to assessing the units in the qualification. This gives the assessment process greater rigour and minimises repetition, time and the burden of assessment on all parties involved in the process.

Unit assessment requirements

This unit must be assessed in accordance with the assessment strategy (principles) in *Annexe A* of the associated qualification specification.

Assessment decisions for learning outcomes 3, 4 and 5 (competence) must be based on evidence generated during the learner's normal work activity. Any knowledge evidence integral to these learning outcomes may be generated outside of the work environment, but the final assessment decision must be within the real work environment. Simulation cannot be used as an assessment method for learning outcomes 3, 4 and 5.

Assessment of learning outcomes 1 and 2 (knowledge) may take place in or outside of a real work environment.