COPD Units of Learning

Title of overarching NOS: **CHS 192 Perform standard tests using automated analysers**	Unit of learning to demonstrate competence: Undertake measurements to determine the efficiency of gas exchange in respiratory system (Measurement of Gas Transfer (TLco), transfer coefficient (Kco) and alveolar volume (Va)
Details of the relationship between the unit to demonstrate competence and relevant national occupational standards (if appropriate)	Users will be able to demonstrate competence in understanding and undertaking measurements to determine the efficiency of gas exchange in respiratory system using appropriate mechanised equipment
Outcomes: The individual will know and understand:	Assessment criteria To be competent the individual will be able to:
Indicative Level	Level 1 (Expert/specialist) Level 2 (Experienced practitioner) Level 3 (Novice new to respiratory disease management (including COPD))
The clinical indicators for undertaking gas exchange measurements in COPD and /or other respiratory disease assessment and ongoing management strategies across the COPD spectrum and other respiratory disease	Clearly explain to the individual the clinical indications for performing and measuring of gas exchange measurements
The importance of checking the individuals identity	Confirm the identity of patient
How to assess an individuals understanding and readiness to participate in the procedure and give reassurance throughout in a professional manner	Instruct the individual prior to and at the end of the procedure to achieve compliance Check the individuals readiness and correct preparation for the procedure

The range of investigations for measuring gas exchange, their purpose and procedures in line with your level of competence and area of responsibility	Outline the common methods or techniques, their purpose and indications for undertaking measurements to determine efficiency of gas exchange and gas transfer to individuals with COPD and other respiratory diseases Demonstrate the application of knowledge of equipment and gases used to measure gas exchange, following agreed protocols and procedures for the range of investigations for measuring gas exchange
The applicability of gas exchange measurements in the assessment and management of COPD and other respiratory diseases	Identify the criteria to determine the severity of blood gas exchange and gas transfer in tissues and organs
Recognise the range of expected 'norm' results to determine the efficacy of gas exchange for individuals across the COPD spectrum and other respiratory disease, age, maturity and disease progression	Describe and determine the risks associated with measuring gas exchange efficacy
The contra indications and relevant actions for adverse or unexpected events during gas exchange measurements	Describe the pathological and presenting signs of poor gas exchange and gas transfer in organs and tissues Identify the referral criteria and pathways for poor or low blood gas exchange
How to prepare the individual for gas exchange measurements and how to explain the procedure in terms that they understand to gain compliance	Prepare the individual for the procedure , explaining the purpose and significance of the measurement in line with your level of competence and responsibility Correctly measure height of patient Check compliance with pre test instructions
The importance of optimisation, trouble shooting and undertake preventative maintenance of blood gas exchange measuring equipment in line with your level of authority and responsibility The importance of calibration and quality assurance measurements required for each	Check and confirm the operational requirements of the equipment meet the optimal performance levels for the measuring gas exchange Apply practical and theoretical knowledge of equipment set up, calibration and quality assurance to ensure accurate and high quality test results are obtained Check the calibration and quality assurance measurements for the equipment meet the required parameters prior to testing the individuals blood gas exchange

The procedures for the range of tests available for gas exchange measurements	Follow the procedures for measuring gas exchange in accordance with local protocols in line with national guidelines Report any deviations from above protocols/guidelines Demonstrate understanding of the pre test requirements when measuring gas transfer and take appropriate action(s) Demonstrate understanding of the effect of haemoglobin concentration on gas transfer measurements and correction factors used
How to interpret results from the investigations	Show ability to select the correct gas transfer manoeuvres to be used when calculating the gas transfer value to be reported Using appropriate reference equations, with normal ranges, differentiate between normal and abnormal test results for gas transfer in a patient with COPD and/or other respiratory diseases
The importance of modifying tests and procedures within your level of competence and area of authority too ensure patient safety and reproducibility of data	Modify tests and procedures based on emerging data to optimise results to aid diagnosis or ongoing management ensuring patient safety is maintained Record any modifications on final report
The importance of monitoring physiological parameters before, during and after gas exchange assessments	Monitor the individual during the procedure to ensure the individual is tested to their safe maximum ability and reproducibility criteria are met
The implications and relevant action for abnormal, low or unexpected blood gas exchange results for adults and children	Obtain and record acceptable measurements of gas exchange sufficient to assist assessment of an individuals lung function
Handle and record information maintaining dignity, respect and confidentiality	Record information in line with organisational requirements and maintain the rights of individuals and principles of confidentiality
The range of expected results across the COPD spectrum and other respiratory disease and the anticipated end points of the test procedure for individuals with COPD and other respiratory diseases relevant to age, gender and disease progression	Determine the efficiency of gas exchange and the level of deviation from the expected normal range for the individual with COPD based on their progression and stage of disease

The importance of sharing information with multidisciplinary teams using clarity, brevity and in a timely and professional manner	Liaise with the multi-professional team in the provision of results to enable and inform the individualised management plan for COPD and other respiratory diseases
Where , when and how to obtain advice and support from competent individuals	Seek advice and support from competent individuals when the procedure, data or patient response is outside your own level of competence
Endorsement of the unit by a sector or other appropriate body (if required)	COPD Strategy Group/DH England; respiratory education providers