Presentation guide

DC = Statement of the competence for a particular domain
E = Elements of the competence for a specific statement of competence
P = Performance criteria for competency; associated with a specific element of the competence

Domain of competence DC.17

Perform pulmonary diagnostics and investigation testing on patients in a clinical setting

E17.1 Measure static and dynamic lung compliance

P17.1.1 Differentiate between static and dynamic lung capacity
P17.1.2 Describe methods utilized to evaluate pulmonary mechanics
P17.1.3 Identify the indications and contraindications for measurement of static and dynamic lung compliance
P17.1.3 Identify the indications for early and/or timely termination of a test
P17.1.4 Describe the variables measured during the measurement of static and dynamic lung compliance and their respective significance
P17.1.5 Prepare the equipment and material necessary to evaluate pulmonary mechanics in a clinical setting
P17.1.6 Prepare the patient for evaluation of pulmonary mechanics in a clinical setting
P17.1.7 Perform evaluation of patient pulmonary mechanics in a clinical setting
P17.1.8 Report and chart procedure and patient results in a clinical setting
P17.1.9 Perform routine equipment cleaning and maintenance in a clinical setting

E17.2 Perform walking oximetry

P17.2.1 Compare the methods utilized for a walk test
P17.2.2 Identify the indications and contraindications for distinct walk tests
P17.2.3 Describe the variables measured during a walk test including pulse oximetry and their respective significance
P17.2.4 Identify the indications for early and/or timely termination of a test
P17.2.5 Prepare the equipment and the patient for a walk test in a clinical setting
P17.2.6 Initiate and monitor patient during a walk test in a clinical setting
P17.2.7 Report and chart patient observations and data from a walk test in a clinical setting
**E17.3 Perform flow/volume loop measurement (spirometry)**

- **P17.3.1** Describe the principle of a flow/volume loop measurement
- **P17.3.2** Compare the indications and contraindications for a flow/volume measurement test
- **P17.3.3** Describe the variables measured during a flow/volume loop and their respective significance
- **P17.3.4** Describe how predicted values are determined for various spirometry tests
- **P17.3.5** Explain the rationale for pre and post bronchodilator testing
- **P17.3.6** Identify the indications for early and/or timely termination of a test
- **P17.3.7** Compare the principles of operation, advantages and disadvantages of devices used to perform spirometry tests
- **P17.3.8** List the advantages and disadvantage of using computerized systems for spirometry tests
- **P17.3.9** Prepare the equipment and material for a flow/volume measurement in a clinical setting
- **P17.3.10** Prepare the patient for a flow/volume measurement in a clinical setting
- **P17.3.11** Perform a flow/volume measurement on patients in a clinical setting
- **P17.3.12** Report and chart observations and patient results from a flow/volume measurement in a clinical setting
- **P17.3.13** Perform routine equipment cleaning and maintenance in a clinical setting

**E17.4 Measure lung volume, airway resistance and conductance by body plethysmography**

- **P17.4.1** Describe the method used for measuring lung volume, airway resistance and conductance by body plethysmography
- **P17.4.2** Compare the indications and contraindications for measuring lung volume, airway resistance and conductance by body plethysmography
- **P17.4.3** Explain the variables measured during a lung volume, airway resistance and conductance by body plethysmography and their respective significance
- **P17.4.4** Identify the indications for early and/or timely termination of a test
- **P17.4.5** Explain the functional principal of a body plethysmograph
- **P17.4.6** Prepare the equipment and material for lung volume, airway resistance and conductance measurement by body plethysmography in a clinical setting
- **P17.4.7** Prepare the patient for lung volume, airway resistance and conductance measurement by body plethysmography in a clinical setting
- **P17.4.8** Perform lung volume, airway resistance and conductance measurement by body plethysmography on patients in a clinical setting
- **P17.4.9** Report and chart observations and patient results from lung volume, airway resistance and conductance measurement by body plethysmography in a clinical setting
- **P17.4.10** Perform routine equipment cleaning and maintenance in a clinical setting

**E17.5 Perform functional residual capacity (FRC) measurements**

- **P17.5.1** Describe the method used for measuring FRC and its significance
- **P17.5.2** Compare the indications and contraindications for measuring FRC
P17.5.3 Identify the indications for early and/or timely termination of a test
P17.5.4 Explain the functional principal of the devices used to measure FRC
P17.5.5 Prepare the equipment and material for FRC measurement in a clinical setting
P17.5.6 Prepare the patient for FRC measurement in a clinical setting
P17.5.7 Perform FRC measurements on patients in a clinical setting
P17.5.8 Report and chart observations and patient results from FRC measurements in a clinical setting
P17.5.9 Perform routine equipment cleaning and maintenance in a clinical setting

**E17.6 Measure pulmonary diffusion capacity**

P17.6.1 Describe the method used for measuring pulmonary diffusion capacity
P17.6.2 Compare the indications and contraindications for measuring pulmonary diffusion capacity
P17.6.3 Explain the variables measured during the measurement of pulmonary diffusion capacity and their respective significance
P17.6.4 Identify the indications for early and/or timely termination of a test
P17.6.5 Prepare the equipment and material for the measurement of pulmonary diffusion in a clinical setting
P17.6.6 Prepare the patient for pulmonary diffusion capacity measurement in a clinical setting
P17.6.7 Perform pulmonary diffusion capacity measurement on patients in a clinical setting
P17.6.8 Report and chart observations and patient results from pulmonary diffusion capacity measurement in a clinical setting
P17.6.9 Perform routine equipment cleaning and maintenance in a clinical setting

**E17.7 Perform bronchoprovocation testing**

P17.7.1 Describe the method used for bronchoprovocation testing
P17.7.2 Compare the indications, contraindications and hazards associated with bronchoprovocation testing
P17.7.3 Explain the variables measured during the bronchoprovocation testing and their respective significance
P17.7.4 Identify the indications, contraindications and hazards associated with specific drugs utilized for bronchoprovocation testing and how the provocation dose is determined
P17.7.5 Identify the indications for early and/or timely termination of a test
P17.7.6 Prepare the equipment and drugs necessary for bronchoprovocation testing in a clinical setting
P17.7.7 Prepare patient for bronchoprovocation testing in a clinical setting
P17.7.8 Perform bronchoprovocation testing in patients in a clinical setting
P17.7.9 Continue with dosing and testing protocol until a clear indication of bronchial reactivity or maximum dose has been reached in a clinical setting
P17.7.10 Evaluate the results of a bronchoprovocation test and determine the degree of reactivity in a clinical setting
P17.7.11 Report and chart procedure and patient results in a clinical setting
P17.7.11 Perform routine equipment cleaning and maintenance in a clinical setting

**E17.8 Measure inspiratory and expiratory pressure by occlusion**

P17.8.1 Describe the method used to measure inspiratory and expiratory pressure by occlusion
P17.8.2 Compare the indications, contraindications and hazards associated with the measurement of inspiratory and expiratory pressure by occlusion
P17.8.3 Explain the variables measured during the measurement of inspiratory and expiratory pressure by occlusion
P17.8.4 Identify the indications for early and/or timely termination of a test
P17.8.5 Prepare the equipment and material necessary for the measurement of inspiratory and expiratory pressure by occlusion in a clinical setting
P17.8.6 Prepare patient for the measurement of inspiratory and expiratory pressure by occlusion in a clinical setting
P17.8.7 Perform the measurement of inspiratory and expiratory pressure by occlusion in patients in a clinical setting
P17.8.8 Evaluate the results and ensure reproducibility of the measurement of inspiratory and expiratory pressure by occlusion in a clinical setting
P17.8.9 Report and chart procedure and patient results in a clinical setting
P17.8.10 Perform routine equipment cleaning and maintenance in a clinical setting

**E17.9 Perform testing to American Thoracic Society (ATS) standards**

P17.9.1 Define and summarize the importance of ATS standards
P17.9.2 Identify the factors affecting validity of spirometry test results according to ATS standards
P17.9.3 Perform spirometry testing in accordance with hospital protocol and ATS standards

**E17.10 Interpret and validate pulmonary function test results**

P17.10.1 Describe how pulmonary function tests are validated
P17.10.2 Describe how pulmonary function tests are interpreted
P17.10.3 Identify factors utilized to determine predicted values for particular pulmonary function tests
P17.10.4 Determine validity of procedure and derived results from pulmonary function tests in a clinical setting
P17.10.5 Report and chart validated results from pulmonary function test in a clinical setting

**E17.11 Perform/teach peak flow monitoring**

P17.11.1 Describe the purpose and applications for peak flow monitoring
P17.11.2 Describe how predicted values are determined for peak flow measurement
P17.11.3 Compare the principles of operation, advantages and disadvantages of devices used to measure peak flow
P17.11.4 Prepare/teach the patient for peak flow measurement in a clinical setting
P17.11.5 Perform peak flow measurements in patients in a clinical setting
P17.11.6 Report and chart observations and patient results from a peak flow measurement in a clinical setting
P17.11.7 Perform routine equipment cleaning in a clinical setting

**E17.12 Assist with bronchoscopy procedures**

- P17.12.1 Describe the application and purposes for a bronchoscopy procedure
- P17.12.2 Identify the indications and contraindications and hazards associated with a bronchoscopy procedure
- P17.12.3 Describe corrective actions in the advent of various complications associated with a bronchoscopy procedure
- P17.12.4 Differentiate between flexible (fiberoptic) and rigid bronchoscopes
- P17.12.5 Describe the purpose of various drugs commonly used during a bronchoscopy procedure
- P17.12.6 Describe methods of obtaining and preparing samples during a bronchoscopy procedure
- P17.12.7 Describe modifications required for bronchoscopy in an intubated and ventilated patient
- P17.12.8 Prepare the equipment, accessories and drugs necessary for a bronchoscopy procedure in a clinical setting
- P17.12.9 Prepare patient for a bronchoscopy procedure with special attention to monitoring in a clinical setting
- P17.12.10 Assist during a bronchoscopy procedure on patients in a clinical setting
- P17.12.11 Assume responsibility for monitoring and sample collection during the patient’s recovery period in a clinical setting
- P17.12.12 Report and chart procedure in a clinical setting
- P17.12.13 Perform routine equipment cleaning and maintenance in a clinical setting

**E17.13 Perform laryngoscopy procedures**

- P17.13.1 Describe the application and purposes for a laryngoscopy procedure
- P17.13.2 Identify the indications and contraindications and hazards associated with a laryngoscopy procedure
- P17.13.3 Describe corrective actions in the advent of various complications associated with a laryngoscopy procedure
- P17.13.4 Prepare the equipment and accessories necessary for a laryngoscopy procedure in a clinical setting
- P17.13.5 Prepare patient for a laryngoscopy procedure with special attention to monitoring in a clinical setting
- P17.13.6 Perform a laryngoscopy procedure in patients in a clinical setting and apply corrective action in the advent of complications
- P17.13.7 Monitor patient during laryngoscopy procedure and recovery period in a clinical setting
- P17.13.8 Report and chart procedure in a clinical setting
- P17.13.9 Perform routine equipment cleaning and maintenance in a clinical setting
E17.14 Assist with laryngoscopy procedures

P17.14.1 Prepare the equipment and accessories necessary for a laryngoscopy procedure in a clinical setting
P17.14.2 Prepare patient for a laryngoscopy procedure with special attention to monitoring in a clinical setting
P17.14.3 Assist during a laryngoscopy procedure in patients in a clinical setting
P17.14.4 Monitor patient during laryngoscopy procedure and recovery period in a clinical setting
P17.14.5 Report and chart procedure in a clinical setting
P17.14.6 Perform routine equipment cleaning and maintenance in a clinical setting

E17.15 Perform transcutaneous monitoring (e.g., transcutaneous oxygen and carbon dioxide pressure [TcP02, TcPC02])

P17.15.1 Describe the purpose and applications for transcutaneous monitoring
P17.15.2 Describe the indications and contraindications for transcutaneous monitoring
P17.15.3 Identify the complications and corrective action associated with transcutaneous monitoring
P17.15.4 Describe the basic principle of operation for transcutaneous blood gas monitoring
P17.15.5 Prepare the equipment and material for transcutaneous monitoring in a clinical setting
P17.15.6 Prepare patient for transcutaneous monitoring in a clinical setting
P17.15.7 Institute and monitor transcutaneous monitoring in patients in a clinical setting
P17.15.8 Report and chart procedure and patient data in a clinical setting
P17.15.9 Perform routine equipment cleaning and maintenance in a clinical setting

E17.16 Perform end-tidal carbon dioxide monitoring (e.g., set-up and interpretation)

P17.16.1 Describe the applications and limitations of end tidal carbon dioxide analyzers/monitors
P17.16.2 Describe monitoring of end-tidal carbon dioxide via capnography including purpose and applications
P17.16.3 Describe the indications and contraindications for end-tidal carbon dioxide monitoring
P17.16.4 Compare the technical operation of end-tidal carbon dioxide analyzers/monitors: side stream versus mainstream sampling
P17.16.5 Identify complications and corrective action associated with end-tidal carbon dioxide monitoring
P17.16.6 Interpret end-tidal carbon dioxide waveforms and trends
P17.16.7 Prepare the equipment and material for end-tidal carbon dioxide monitoring in a clinical setting
P17.16.8 Institute and monitor end-tidal carbon dioxide monitoring in patients in a clinical setting
P17.16.9 Report and chart procedure and patient data in a clinical setting
P17.16.10 Perform routine equipment cleaning and maintenance in a clinical setting
E17.17 Perform basic sleep studies (e.g., oximetry plus one or more channels)

P17.17.1 Explain the significance of recordings obtained during sleep studies
P17.17.2 Explain the principles of operation of commonly used measuring devices (e.g., single channel)
P17.17.3 Prepare the equipment and accessories, including the room, for sleep studies per protocol in a clinical setting, including oximeter
P17.17.4 Prepare patient for a sleep study per protocol in a clinical setting
P17.17.5 Perform sleep study and ensure patient compliance per protocol in a clinical setting
P17.17.6 Monitor patient and equipment during sleep study per protocol in a clinical setting
P17.17.7 Evaluate, document and report the results of a sleep study in a clinical setting
P17.17.8 Perform routine equipment cleaning and maintenance in a clinical setting

E17.18 Perform overnight oximetry

P17.18.1 Describe overnight oximetry monitoring including purpose and applications
P17.18.2 Describe the indications and contraindications for overnight oximetry monitoring
P17.18.3 Identify complications and corrective action associated with overnight oximetry monitoring
P17.18.4 Prepare the equipment and material for overnight oximetry monitoring in a clinical setting
P17.18.5 Prepare patient for overnight oximetry monitoring in a clinical setting
P17.18.6 Initiate and monitor overnight oximetry monitoring in patients in a clinical setting
P17.18.7 Report and chart procedure and patient data in a clinical setting
P17.18.8 Perform routine equipment cleaning and maintenance in a clinical setting