THE COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO

Independent Health Facilities

Assessment Protocol for Pulmonary Function Studies - Technologist Assessor

INSTRUCTIONS: **Please complete (✓) the attached protocol during the assessment. Ensure that all the questions have been answered, please do not leave any questions blank. A space has been provided at the bottom of each section for your comments.**

FACILITY NAME/NO.: **Date:**

STAFF	Meets	Meets with Recommendations	Does not Meet	N/A	Comments
1. Do the technologists meet the qualifications as outlined on pg 6 of the CPPs & FS?					
2. Is there a Chief Technologist appointed? ➢ If appointed, does the Chief Technologist meet the qualifications as outlined on pg 6 of the CPPs & FS?					
3. Do the Technologists: ➢ Ensure they are current with the changing technical trends in the cardiopulmonary field by attending conferences, meetings or other forms of continuing education and reading current relevant literature?					
➢ Arrange patient appointments and staff work schedules?					
➢ Distribute to referring physicians and agencies the test requisition and the completed test reports?					
➢ Maintain proper policies & procedures?					
➢ Maintain records of equipment calibration, maintenance and repair procedures?					
➢ Maintain copies of test observations and reports?					
➢ Maintain administrative records?					
➢ Ensure that safety policies and the equipment and facilities necessary for their implementation are in place and in working order?					
➢ Ensure the safe and reliable performance of tests?					
➢ Observe and follow documented infection control measures?					
➢ Maintain all necessary facility supplies?					
➢ Ensure safe and accurate performance of testing procedures?					
➢ Implement current policies & procedures?					
➢ Provide assistance to the Quality Advisor?					

STAFF	Meets	Meets with Recommendations	Does not Meet	N/A	Comments
4. Are written job descriptions available for all staff?					
5. Are continuing professional development activities documented by technologists?					
6. Is all staff certified and current in BCLS?					

POLICIES AND PROCEDURES	Meets	Meets with Recommendations	Does not meet	N/A	Comments
Are there written policies/procedures guidelines for the following? ➢ Description of the proper methodology for performing each test offered by the facility, including criteria to ensure that the results obtained is reliable ?					
➢ The predicted normal values for each test offered by the facility including the references from which these values were obtained?					
➢ Procedures to be followed to maintain proper infection control/body substance precautions as described in the Provincial Infectious Diseases Advisory Committee of Public Health Ontario 2013 as outlined on Pg 26 of the CPP&FS.					
➢ Procedures to be followed for each test to ensure that the test is performed only on those patients for whom it can be performed safely?					

POLICIES AND PROCEDURES CONT'D	Meets	Meets with Recommendations	Does not meet	N/A	
➢ General safety precautions to be followed in operating the facility and performing the tests to prevent adverse health effects from occurring in the facility?					
➢ Specific first aid measures to be followed in the event of adverse health effect including a description of the arrangement made to transfer patients to an acute care facility when required?					
➢ A list of safety equipment and medications with expiry dates to be maintained by the facility?					
➢ Routine maintenance procedures to be followed to ensure reliable and accurate testing equipment?					
➢ Documentation of regular routine calibration and validation measures on test equipment?					
➢ Patient consent based on scope of practice in the facility in compliance with the Health Care Consent Act?					
➢ Latex anaphylaxis?					
➢ Material Safety Data Sheets (MSDS) current within 3 years for all chemicals maintained in the facility					
➢ A copy of the Workplace Hazardous Materials Information Systems (WHMIS) manual?					
➢ Fire safety including fire prevention; classes of fires and extinguishers, steps on discovery of fires, plans for reporting fires, fire evacuation plans and maps?					
2. Are policies/procedures reviewed annually and dated accordingly?					
3. Is there evidence that the staff know the policy or where to look for the policy if needed?					
4. Is there evidence that the policy and procedures are implemented?					

***Assessor may select staff at random to ask of knowledge or use of policies**

QUALITY CONTROL ACTIVITIES	Meets	Meets with Recommendations	Does not Meet	N/A	Comments
1. Are Quality Control Activities implemented for: ➢ ensuring the Calibrating syringe is not out-of-date of scheduled re-calibration.					
➢ successful daily calibration of spirometer according to manufacturer's recommendations.					
➢ successful daily calibration of gas analysers according to manufacturer's recommendations.					
➢ successful daily calibration of box pressure and mouth pressure according to manufacturer's recommendations.					
➢ successful leak check for body plethysmograph according to manufacturer's recommendations.					
2. Are additional Quality Control Activities implemented for: ➢ Linearity check of spirometer using 3-L Calibrating Syringe to simulate three individual flow volume loop with flow rates (±0.5; ±(4-6);±(>8)) L/sec. The difference between largest volume (FVC) and lowest volume (FVC) is < 0.105 L. Spirometer volume calibrated to an accuracy of (example: ± 3.5% of the syringe volume of 3 L with the accuracy of 0.5%)?					
➢ Syringe DLCOQC with a 3-L Calibrating syringe to simulate 2 tests with DLCO value ≤ 0.5 and the IVC , VA values are within the range of corrected ATPS/BTPS Conditions.					
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3. Non-specific Bronchial Provocative Test ➢ A new nebulizer's output must be determined by full calibration prior to use. The corresponding flow rate required to deliver the appropriate output must be recorded and used consistently.					
➢ *Checks of nebulizer output every 6 months need only test the output at that flow rate. If it varies by more than 10% during verification, a full calibration must be performed.*					

QUALITY CONTROL ACTIVITIES CONT'D	Meets	Meets with Recommendations	Does not Meet	N/A	Comments
➢ Methacholine/provomethacholine used is Health approved and documentation is supported by purchasing invoice and stored according to Manufacturer recommendation.					
4. Stage 1 Exercise Testing ➢ Is the mechanical bicycle tested for accuracy according to manufacturer's recommendations?					
➢ Is the electronic bicycle calibrated according to manufacturer's recommendations.					
➢ Is the treadmill's belt velocity and grade tested according to manufacturer's recommendations?					
5. BIOLOGIC CONTROLS					
➢ Are subjects used in biologic controls are healthy, non-smoking individuals?					
➢ Spirometry parameters include but not limited to: FVC and FEV1					
➢ Lung volumes parameters by dilution include but not limited to: FRC and VC					
➢ Lung volumes parameters by plethysmography include but not limited to: FRC and VC					
➢ Airway resistance parameters by plethysmography include but not limited to: R_{AW}					
➢ Diffusion capacity parameters by single breath include but not limited to: DLCO, IVC, VA					
➢ MIP and MEP parameters include but not limited to: MIP and MEP					
➢ Cardiopulmonary Exercise parameters include but not limited to: VE, VO_2, and VCO_2					
➢ Pulse Oximetry parameters include but not limited to: SpO_2 and HR					
➢ Are biologic controls performed monthly?					
➢ Are biologic controls being monitored monthly from a pre-established mean and 2 standard deviations from at least 10 acceptable and repeatable dataset?					

QUALITY CONTROL ACTIVITIES CONT'D	Meets	Meets with Recommendations	Does not Meet	N/A	
➢ Are biologic controls being monitored on a control chart (Levey-Jennings Plot) or tabular format?					
6. ARTERIAL BLOOD GASES					
➢ Is there a one point calibration performed every 30 minutes or at least prior to the patient sample?					
➢ For pH is a one-point calibration is performed using the calibration solution with normal pH to determine the status of the electrode? Is a two-point calibration is performed every 8 hours using 2 pH buffer solutions (e.g., 7.4 and 6.8) to determine the sensitivity of the electrode?					
➢ For PCO_2 is a one-point calibration is performed using a precision CO_2 gas mixture (e.g. 5%) to determine the status of the electrode? Is a two-point calibration is performed using 2 precise mixtures of CO_2 concentrations (e.g., 5% and 10%) to determine the sensitivity of the electrode?					
➢ For PO_2 is a zero point value performed using 0% O_2? Is a one-point calibration performed using one O_2 concentration (e.g., 20%) to determine the sensitivity?					
➢ Is the spectrophotometer calibrated over the fixed wavelengths using a water sample to determine the zero point and the drift? Is a tHg calibration performed every 3 months?					

ENVIRONMENT, EQUIPMENT AND SUPPLIES	Meets	Meets with Recommendations	Does not Meet	N/A	Comments
1. Is the facility clean?					
2. Is all equipment used in the facility CSA approved?					
3. Are electrical cords, plugs, outlets routinely checked for damage?					
4. Are gas cylinders • Properly labeled and secured to a wall or placed in a stationary cart whether or not they are in use?					
5. Is the laboratory equipped with laboratory-grade external environmental devices for temperature, humidity and barometric pressure to verify the accuracy of built-in devices of the pulmonary diagnostic systems?					
6. Are the physicians and staff familiar with the current recommendations of the ATS/ERS regarding pulmonary function standards?					
7. Is mandatory compliance with the minimal recommendations for spirometry, lung diffusion and lung volumes as published in 2005 by the joint publications of the ATS/ERS Task Force be adhered to by staff?					
8. Are the physicians and staff familiar with the Clinical Practice Parameters and Facility Standards?					
9. In rooms where pharmacological challenge testing is done: ➢ Is there adequate ventilation?					
➢ Are filters used on the expiratory circuit of the mouthpiece apparatus?					
10. Are all tubings and valves sterilized after each use?					
11. Are clean mouthpieces and noseclips used for each patient?					
12. Are disposable bacterial filters used unless the circuitry is changed after each patient?					
13. Is equipment that cannot be subjected to heat or chemicals sterilized using a cold sterilizing solution?					
14. Does the facility follow manufacturer's recommendations for disinfecting and sterilization equipment?					

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15. Is the following equipment available in facilities performing exercise testing and bronchoprovocative testing? ➢ Sphygmomanometer and stethoscope					
➢ Wheelchair					
➢ O_2 source with mask					
➢ Connective tubing					
➢ Resuscitation equipment					
➢ Airway management equipment					
➢ Appropriate drugs					
16. Are all resuscitation equipment, drugs and sterile equipment checked monthly for expiry dates?					
➢ Is this activity documented?					
17. Are fire evacuation plans/maps posted throughout the facility?					
18. Are fire extinguishers easily accessible and checked each month and replaced if outdated or used?					
19. Is the fire evacuation plan practiced periodically?					
➢ Is fire safety plan activities documented?					

OBSERVATION OF PROCEDURES

Instructions:
Some items to cover (these are not questions, and should not simply be answered with a "yes", they are prompts to ensure you cover the required information)

How many procedures were observed?
What types?
Identify Tech.
How did the tech(s) do? (ie., attitude, competency, ensure patient comfort, answer questions, etc)
Patient Consent obtained?

Procedures:

Comment:

Recommendation:

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