Pulmonary Diagnostics: Critical Values

Site Applicability

St. Paul's Hospital

Mount Saint Joseph Hospital

Practice Level

Respiratory Therapist

Need to Know

Providence Health Care has created a flow sheet to allow staff to know when to contact the Medical Director of the lab when testing results are abnormal. If the Medical Director is not available the On Call Respirologist will be contacted and the Respiratory Therapist will be instructed on how to proceed with their patient.

Procedure

Spirometry

If no previous test results are available and the patient is not seeing a Respirologist the same day:

- FEV1 less than 30% predicted in the setting of airflow obstruction (FEV1/FVC below 95% CI)
- FVC less than 50% predicted with normal FEV1/FVC ratio (restrictive pattern)

If there are previous test results for comparison:

- If there is a 25% drop in FEV1 or FVC from the previous test and they are not seeing a Respirologist the same day

Full Pulmonary Function Test

If no previous test results are available and the patient is not seeing a Respirologist the same day:

- TLC less than 50%
- VC less than 50%
- DLCO less than 40%

If there are previous test results for comparison:

- If there is a 25% drop in TLC, VC, or DLCO from the previous test and they are not seeing a Respirologist the same day

Arterial Blood Gas

- PO_2 less than 50 mmHg on room air or oxygen
- PCO_2 greater than 70 mmHg and/or pH less than 7.25

Oximetry

- Baseline SpO_2 less than 85% (except in SHUNT patients)
- Walking or exertion related desaturation to less than 80%

Nocturnal Oximetry

- At least 50% of the night with a SpO_2 less than 88%
- A 4% desaturation index or greater than 30 per hour

Terms

- CI: Confidence interval
- FEV1: Forced expiratory volume during the first second of exhalation
- FVC: Forced vital capacity
- TLC: Total lung capacity
- VC: Vital capacity
- DLCO: Single-breath carbon monoxide diffusing capacity
- PO_2: Partial pressure of oxygen
- PCO_2: Partial pressure of carbon dioxide
- SpO_2: Saturation of peripheral oxygen

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