

# PROCEDURAL COMPETENCY EVALUATION

Name \_\_\_\_\_

Date \_\_\_\_\_

## Spirometry Screening

Setting:  Lab  Clinical

Evaluator:  Peer  Instructor

Conditions (describe): \_\_\_\_\_  
 \_\_\_\_\_

### Equipment Used

\_\_\_\_\_  
 \_\_\_\_\_

S	U	N	N
A	N	O	O
T	S	T	T
I	A		
S	T	O	A
F	I	B	P
A	S	S	P
C	F	E	L
T	A	R	I
O	C	V	C
R	T	E	A
Y	O	D	B
	R		L
	Y		E

### Equipment and Patient Preparation

- |   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Verifies, interprets, and evaluates physician's order or protocol  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Selects, gathers, and assembles the necessary equipment  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Checks for adequate paper supply   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Checks for functional recording pens (if applicable)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Plugs the unit in if applicable; enters the date and time  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. If a volume displacement spirometer is used, checks the unit for leaks   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. If possible, turns on the recording device and makes sure the pen is recording on the baseline   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Checks and enters the room temperature   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Using a 3-L calibration syringe, checks the spirometer for accuracy; calculates or records the percent accuracy; repeats the calibration while varying the speed of volume injection | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Washes hands and applies standard precautions and transmission-based isolation procedures as appropriate  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Identifies subject; introduces self and department  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Explains purpose of the procedure and confirms subject's understanding  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Assessment and Implementation

- |   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 13. Assesses subject by obtaining the following information:  |                          |                          |                          |                          |
| a. Name and identification number   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Age on day of testing  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Height in stocking feet  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Gender   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Race (indicate white or nonwhite for purposes of race correction according to NIOSH and OSHA regulations for spirometry)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Determines whether previous testing has ever been done and whether it was done sitting or standing  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Elicits a respiratory history, including cough/sputum production, smoking history, dyspnea at rest and on exertion, medications, employment history, and previous illnesses | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Determines whether there are any contraindications to the performance of a baseline spirometry screening at this time by asking the subject the following questions:        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| a. Upper respiratory tract illness, influenza, or bronchitis within the last 3 weeks?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Any tight or restrictive clothing that may interfere with the performance of the test?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Eaten a heavy meal within the last 2 hours?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Any dental appliances, loose teeth, caps, gum or candy in mouth? Remove as appropriate   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Smoked within the last hour?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Recent surgeries?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Used an aerosolized bronchodilator within the last 4 to 6 hours?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. How are you feeling today? Any acute illness at the present time?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- i. Ear infections in the last 3 weeks?
- 17. If a positive response is obtained to any of the preceding questions, corrects problems or postpones test for the appropriate time period
- 18. Aseptically attaches clean disposable mouthpiece or flow sensing device to the main tubing; calibrates as needed
- 19. Instructs the subject in the performance of the SVC maneuver and confirms subject's understanding
- 20. Places the noseclips on the subject and verifies that there are no leaks
- 21. Positions the subject by instructing him or her to sit or stand straight, as appropriate, with chin slightly elevated; places a chair without wheels behind the subject if standing
- 22. Activates the machine and recording device; actively coaches the subject throughout inspiration and expiration and performs the SVC
- 23. Observes the subject for adequate effort and proper performance during the maneuver; reinstructs as necessary
- 24. Notes the volume obtained
- 25. Allows for adequate recovery of the subject
- 26. Repeats the SVC maneuver with active, forceful coaching until three tracings within 200 ml or 5 percent of each other are obtained
- 27. Instructs the subject in the performance of the FVC maneuver and confirms understanding
- 28. Places the noseclips on the subject and verifies that there are no leaks
- 29. Repositions subject
- 30. Activates machine and performs the FVC with active forceful coaching throughout inspiration and expiration
- 31. Observes the subject for adequate effort and proper performance during the maneuver; reinstructs as necessary
- 32. Notes the volume obtained and the shape and appearance of the graphic representation, if available
- 33. Allows for adequate recovery of the subject
- 34. Determines validity of the test
  - a. Three acceptable tracings free from cough or glottic closure, early termination of expiration, variable effort, leaks, and baseline error
  - b. Excessive hesitation at start of test; extrapolated volume must be less than 5 percent of the FVC or 200 ml, whichever is greater
  - c. Plateau defined as no change in volume in the last 1 sec of the tracing; test should be at least 6 sec in duration
  - d. Excessive variability: should be less than 5 percent or 150 ml difference between the two best FVC and FEV<sub>1</sub> results
- 35. Has the subject sign and date the spirometer tracing
- 36. Compares the SVC and FVC volumes and explains any discrepancies
- 37. If a postbronchodilator test is ordered, administers the medication, waits an appropriate length of time, and repeats the FVC
- 38. Calculates the percent change in FEV<sub>1</sub>
- 39. Calculates the percent change in FEV<sub>1</sub>/FVC ratio (FEV<sub>1</sub>%)

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- 40. Instructs the subject in the MVV maneuver, if appropriate, and confirms understanding
- 41. With the subject seated, has subject begin breathing as rapidly and deeply as possible; activates the machine and actively coaches test performance for 12 to 15 sec
- 42. Allows for adequate recovery of subject
- 43. Multiplies the volume achieved by 6 or 4 to obtain the volume per minute; records the results

**Follow-up**

- 44. Discards any disposable noseclips, mouthpieces, or flow sensors in an infection waste container; disinfects any nondisposable mouthpieces and tubings
- 45. Washes hands
- 46. Records pertinent data in chart and departmental records
- 47. Notifies appropriate personnel and makes any necessary recommendations or modifications to the patient care plan

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Signature of Evaluator

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Signature of Student

**PERFORMANCE RATING SCALE**

- 5** EXCELLENT – FAR EXCEEDS EXPECTED LEVEL, FLAWLESS PERFORMANCE
- 4** ABOVE AVERAGE – NO PROMPTING REQUIRED, ABLE TO SELF-CORRECT
- 3** AVERAGE – THE MINIMUM COMPETENCY LEVEL, NO CRITICAL ERRORS
- 2** IMPROVEMENT NEEDED – PROBLEM AREAS EXIST; CRITICAL ERRORS, CORRECTIONS NEEDED
- 1** POOR AND UNACCEPTABLE PERFORMANCE – GROSS INACCURACIES, POTENTIALLY HARMFUL

**PERFORMANCE CRITERIA**

**SCALE**

1. DISPLAYS KNOWLEDGE OF ESSENTIAL CONCEPTS	5	4	3	2	1
2. DEMONSTRATES THE RELATIONSHIP BETWEEN THEORY AND CLINICAL PRACTICE	5	4	3	2	1
3. FOLLOWS DIRECTIONS, EXHIBITS SOUND JUDGEMENT, AND DEMONSTRATES ATTENTION TO SAFETY AND DETAIL	5	4	3	2	1
4. EXHIBITS THE REQUIRED MANUAL DEXTERITY	5	4	3	2	1
5. PERFORMS PROCEDURE IN A REASONABLE TIME FRAME	5	4	3	2	1
6. MAINTAINS STERILE OR ASEPTIC TECHNIQUE	5	4	3	2	1
7. INITIATES UNAMBIGUOUS GOAL-DIRECTED COMMUNICATION	5	4	3	2	1
8. PROVIDES FOR ADEQUATE CARE AND MAINTENANCE OF EQUIPMENT AND SUPPLIES	5	4	3	2	1
9. EXHIBITS COURTEOUS AND PLEASANT DEMEANOR	5	4	3	2	1
10. MAINTAINS CONCISE AND ACCURATE RECORDS	5	4	3	2	1

**ADDITIONAL COMMENTS: INCLUDE ERRORS OF OMISSION OR COMMISSION, COMMUNICATIVE SKILLS, AND EFFECTIVENESS OF PATIENT INTERACTION:**

**SUMMARY PERFORMANCE EVALUATION AND RECOMMENDATIONS**

**SATISFACTORY PERFORMANCE – Performed without error or prompting, or able to self-correct, no critical errors.**

\_\_\_\_\_ LABORATORY EVALUATION. SKILLS MAY BE APPLIED/OBSERVED IN THE CLINICAL SETTING.

\_\_\_\_\_ CLINICAL EVALUATION. STUDENT READY FOR MINIMALLY SUPERVISED APPLICATION AND REFINEMENT.

**UNSATISFACTORY PERFORMANCE – Prompting required; performed with critical errors, potentially harmful.**

\_\_\_\_\_ STUDENT REQUIRES ADDITIONAL LABORATORY PRACTICE.

\_\_\_\_\_ STUDENT REQUIRES ADDITIONAL SUPERVISED CLINICAL PRACTICE.

**SIGNATURES**

STUDENT: \_\_\_\_\_

EVALUATOR: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

