


QUALITY WORK INSTRUCTIONAL MANUAL	 HALCYON MARINE HEALTHCARE SYSTEMS	DOCUMENT NO. QWI 13.0	EFFECTIVITY DATE: December 11, 2018
		PREPARED BY: Marilar F. De Guzman, MD QAM	REVISION NO.: 2
			APPROVED BY: Glennda E. Canlas, MD Medical Director
SUBJECT: WORK INSTRUCTIONAL MANUAL FOR SPIROMETRY			

I. WORK INSTRUCTIONS FOR SPIROMETRY:

A. Carefusion


1. Plug in the computer.
2. Turn on the CPU and monitor.
3. Prepare the following:
 - Disposable mouthpiece
 - Canister with forceps
 - Alcohol
 - Clean towel for spirometer
4. Prepare the Carefusion Spirometer by following these measures:
 - a. Unbox the parts and cords from the case properly.
 - b. Plug the AC adapter into the main supply and connect the adapter output plug into the power input socket on Spirometer cradle. The blue lights on the cradle will be illuminated once it is rightly connected from the power source.
 - c. Connect the USB cord to the Spirometer cradle and to the PC.
 - d. Place the Carefusion Microloop touchscreen unit in the Spirometer cradle.
 - e. Connect the Spirometer transducer to the Carefusion Microloop touchscreen unit.
 - f. Plug the Carefusion Spirometer USB Key to the PC.
Note: Spirometry PC Software (SPCS) will not work without the Spirometer USB Key.
 - g. Turn on the Carefusion Microloop touchscreen unit by pressing the power button lightly.
 - h. Launch the Spirometry PC Software (SPCS) from the desktop.
5. Log-in your account at Halcyon Marine ICMS, click "Diagnostics" and then, click "Spirometry".

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6. Receive patient and verify his identity through the ticket submitted.
7. Enter PEME number of the patient. Select the time.
8. Click and open the "Vital Signs" and "Spirometry" to new tab.
9. If the patient has previous medical history in HMHS, copy the recorded height from the previous medical examination.
10. If the patient has Spirometry test, click the Spirometry PC Software (SPCS)
11. Locate the "Patient" bar and then, select "New" to add patient's data.
 - Enter PEME number, first name and last name of the patient, date of birth (DOB), gender, height (in cm), weight (in kg) and ethnic origin.
 - For Smokers, select the number of years that the patient has been engaged in smoking.
 - Click "Save+Close" or press F3
 - Once all the patient details are added to the database and the main menu is displayed with the patient name at the "Patient" bar of the screen, click the "Perform test" tab and then, select "Spirometry"
 - Once the height and weight are correct and the "Predicted set" mode is in Brazil (Knudson), click "Forced Base" or press F3.
12. Explain the maneuver to the patient properly (perform a maximal inhalation and then a maximal exhalation)
13. Insert a disposable mouthpiece in the turbine. Instruct the patient that the one-fourth to one-third part of the mouthpiece should be inserted into his/her mouth sealed by his/her lips and the nose should be clipped or pinched.
14. The patient will perform the test by inhaling deeply and then exhaling forcefully and sustain for 6 seconds, and inspire fully.
15. Perform the test for three times until the normal result is achieved.

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16. Click "Accept+Done" and review results.
17. Select the "Print" icon, then type the patient's name and save to the designated folder.
18. Go to the patient's window -"Add Exam Result" Spirometry.
19. Fill up the following indices: FVC, FEV1, and PEFR.
20. Upload the PDF result into the Bravo – Google Drive.
21. Log PEME number, patient's name and result in the logbook.
22. Replace the disposable mouthpiece in the turbine after every patient.

II.SPIROBANK

1. Plug in the computer.
2. Turn ON the monitor.
3. Connect the USB cord to the Spirobank G spirometer, then click "Winspiro Pro".
4. Open the Halcyon Marine ICMS (new window) and log in your account, click "Diagnostics" then click "Spirometry".
5. Receive patient and verify his identify through the ticket submitted.
6. Enter PEME number and last name of the patient.
7. Click the "Spirometry".
8. Open the "Winspiro Pro".
9. Click "Patient "and then, click "New".
10. Enter PEME number, last name of the patient, first name, birth date, birth place, and ethnic group.
11. Select and click the gender, and then click "Go to visit".
12. Enter the remaining information on the second screen; height (cm) and weight (kg).
13. For smokers, enter the number of sticks per day and number of years. Click "Save".

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14. Explain the maneuver to the patient (perform a maximal exhalation and then a maximal inhalation)
15. Close the screen (patients' data) and click "FVC".
16. Insert a disposable mouthpiece in the turbine.
17. Instruct the patient to perform the test inspiring and expiring maximally, until the volume graph appears.
18. Perform the test by inspiring and expiring normally for three times, inspiring fully, then expire fully and maximally, until 6 seconds and inspire fully.
19. Perform the test three times.
20. Select "Print" icon, then type the patient's name and save to the designated folder.
21. Go to Halcyon Marine ICMS patients' list.
22. Click browse –Result of data appears –click Open.
23. Encode the following: FVC, FEV1, and FVC1/FVC.
24. Click "Result" and a drop down list will appear. Choose the one indicated in the Spirometry result.
25. Click Save.
26. Upload the PFT graph/result into the patient's Bravo – Google Drive folder.
27. Log PEME number, patient's name and results in the logbook.
28. Replace the disposable mouthpiece in the turbine after every patient.

III. PROCEDURE FOR DESINFECTING TURBINE:

Cleaning the Transducer (turbine)

1. Rotating the turbine transducer anti-clockwise until the locating pipe lines up with a small rectangular cut-out in the housing.

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2. Gently pull the transducer away from the housing.
3. The transducer may now be immersed in warm soapy water for routine cleaning or immersed in cold disinfecting solutions for a maximum of 10 minutes (Alcohol and chloride solutions should be avoided). After cleaning/disinfecting, the transducer should be rinsed briefly in distilled water and dried.
4. Reassemble the mouthpiece holder.
5. Record the date of disinfection in the logbook on a daily basis.

IV. PREPARATION PROCESS FOR POSSIBLE SYSTEM DOWNTIME/ POWER OUTAGE

1. Ensure to have a complete record of Patient's name written in the logbook for easier retrieval in the event of system downtime or power outage.
2. Spirometry results saved in the database must be transferred to the unit's backup server.


V. CHECKING OF RESULTS DUE TO WRONG ENCODING

1. Spirometry Nurse shall ensure a complete, correct and accurate encoding of results obtained from the test procedures.
2. Any verification from other units regarding the results should be checked and/or corrected immediately for on time updating.

VI. PROCEDURE FOR PATIENTS WITH LOA (Letter of Authorization)

1. Receives endorsed LOA by the General Manager for Operations via email and group chat. The Spirometry Nurse takes note the date of test of the SSMA patient.

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2. The patient submits LOA and a valid ID to the Spirometry Nurse for identity verification and confirmation of test indicated in the letter. In case the patient had no previous PEME record, a ticket will be included in the verification process.
3. Once confirmed, the patient's personal details such as name, date, age, sex and company will be encoded in the INet system.
4. The Spirometry Nurse explains the testing procedure to the patient.
5. Start the Spirometry test.
6. The Spirometry Nurse encodes the test result in the patient's profile and prepare for the official test result.
7. The Spirometry Nurse tallies the encoded results in INet against the official result.
8. The Spirometry Nurse converts the results in the scanned copy format.
9. Send the soft copy of the official result to the BPM Nurse for printing.
10. The BPM Nurse sends the Spirometry official test result to the SSMA's email and copy furnished the General Manager for Operations.

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