



Critical Care Therapy and Respiratory Care Section

Category:	Clinical
Section:	Diagnostics
Title:	Bronchoscopy Assistance
Policy #:	01
Revised:	03/00, 5/02

1.0 DESCRIPTION

1.1. Definition:

1.1.1. Bronchoscopy is an invasive procedure utilizing a fiberoptic bronchoscope connected to an appropriate light source allowing for illumination and visualization of the upper and lower airways of the respiratory system. The procedure allows for the collection of specimens from the tracheobronchial tree for diagnostic analysis as well. With the aid of the Olympus Imaging Cart (Ti1900) and the Mobile Work Station (WM-30), bronchoscopy procedures may be viewed by individuals, including the bronchoscopist, on the Trinitron (OEV203) monitor and the computer monitor on top of the Mobile Work Station. Procedures may be videotaped, if desired using the SR365U video cassette recorder. Bronchoscopy procedure information can be stored with the aid of the Olympus ImageManager. The ImageManager also allows images to be flagged and printed via the Sony Mavigraph. This procedure will describe the basic requirements for therapist assistance with fiberoptic bronchoscopy and transbronchial biopsy procedures.

1.2. Indications

1.2.1 Diagnostic indications for bronchoscopy include:

- 1.2.1.1 Inspection of the anatomical structures of the upper airway, larynx, and/or the tracheobronchial tree. This may be indicated for the assessment of vocal cord function, localization of bleeding, or for evaluation of airway lesions.
- 1.2.1.2 Performance of bronchoalveolar lavage for the purposes of diagnostic specimen analysis. Collection of specimens may be indicated for the diagnosis of infectious processes of the lungs or upper airways.

1.2.1.3 Performance of transbronchial biopsy for purposes of diagnostic tissue analysis. Biopsied tissue samples may be indicated for the diagnosis of neoplastic disease, infectious processes, or inflammatory conditions of the lungs or airways.

1.2.2 Therapeutic bronchoscopy may be indicated for:

1.2.2.1 Removal of foreign matter in the lungs

1.2.2.2 Suctioning of inspissated secretions, especially for patients with significant atelectasis or lobar collapse

1.2.2.3 Tamponade of bleeding

1.2.2.4 Aid in intubation of a difficult airway

1.2.2.5 Instillation of an anti-inflammatory steroidal agent into the tracheobronchial tree

1.3 Contraindications

1.3.1 A coagulopathy which cannot be corrected, pulmonary hypertension, uremia, and mechanical ventilation with high positive end expiratory pressure are absolute contraindications for transbronchial biopsy.

1.3.2 Further contraindications for bronchoscopy include recent ingestion of food, significant dysrhythmias and hemodynamic instability, recent myocardial infarction or unstable angina, refractory hypoxemia, lung abscess, and obstruction of the superior vena cava.

1.4 Complications

1.4.1 Complications associated with bronchoscopy include aspiration, laryngospasm, bronchospasm, seizures, cardiac dysrhythmias, hypoxemia, fever, and infection. Additionally, respiratory depression and hypotension may result from administration of narcotics or benzodiazepines required for patient sedation.

1.4.2 Complications associated with transbronchial biopsy include hemorrhage and pneumothorax.

1.5 Precautions

1.5.1 Bronchoscopy procedures should be performed in negative flow isolation rooms, **if possible**, to minimize the risk of transmission of infection to self, other patients, staff, and visitors.

- 1.5.2 Universal precautions must be followed throughout all bronchoscopy procedures including the wearing of hospital approved particulate respirators masks.
- 1.5.3 Emergency airway management equipment and manual resuscitation equipment must be set up and immediately available at the bedside.
- 1.5.4 Lidocaine with epinephrine should be readily available when performing transbronchial biopsy for management of excessive bleeding, should it occur.
- 1.5.5 Patients must be monitored throughout bronchoscopy procedures with a cardiopulmonary monitor and a pulse oximeter. The low saturation alarm should be set at 90 percent.
- 1.5.6 All procedures for bronchoscope decontamination and processing must be strictly followed. Failure to follow proper procedures may result in damage to equipment or cross-contamination.

1.6 Adverse Reactions and Interventions

- 1.6.1 Desaturations below 90% on the pulse oximeter should be treated with an increase in the FiO₂ delivery. When desaturations are not readily responsive to increases in oxygen concentration, the bronchoscopy procedure should be discontinued and not resumed until a stable saturation can be achieved and maintained.
- 1.6.2 Vomiting which ensues during a bronchoscopy procedure must be attended to with immediate oral suctioning, or if severe, a withdrawal of the bronchoscope to the hypopharyngeal area for quick suctioning. Every effort should be made to prevent aspiration.
- 1.6.3 Cardiopulmonary instability as manifested by a change in heart rate, rhythm, or blood pressure should be reported to the bronchoscopist. Efforts to medicate the patient in cases of vagal irritation may be indicated.
- 1.6.4 Significant discomfort exhibited by a patient may be indicative of the need for additional sedation. Patients should be monitored throughout bronchoscopy procedures as to the tolerance of the procedures.

2.0 EQUIPMENT/MATERIALS

2.1 Olympus Imaging Cart

2.2 Mobile Work Station

2.3 Selection of an appropriate bronchoscope

2.4 Bronchoalveolar lavage supplies:

2.4.1 (1) sterile bronchoscopy tray (prepared by Central Hospital Supply). Contents include:

2.4.1.1 (4) four 80cc Leukens traps

2.4.1.2 (6) six 30 ml slip-tip syringes

2.4.1.3 (3) three 10 ml slip-tip syringes

2.4.1.4 (1) one 5 ml slip-tip syringe

2.4.1.5 (1) one 5 ml slip-tip syringe

2.4.1.6 (1) one 20 gauge needle (for dispensing lidocaine)

2.4.1.7 4 x 4 gauze sponges

2.4.1.8 (1) pentothal dispensing pin (for dispensing lavage)

2.4.1.9 (1) one suction connecting tubing (for attachment to bronchoscope)

2.4.1.10 (1) one straight connector (to extend suction from wall to bedside)

2.4.2 (2) 150 ml bottles of 0.9% NaCl (sodium chloride) solution

2.4.3 (3) 20 ml vials of 1% lidocaine

2.4.4 (1) 20 ml vial lidocaine with epinephrine (1:100,000)

2.4.5 (1) tube 2% Xylocaine jelly (viscous lidocaine)

2.4.6 Cytology brush and sterile specimen container (if indicated as per the bronchoscopist)

2.5 Oxygen therapy supplies

2.5.1 (2) aerosol masks

2.5.2 Misty Ox HI-FI Nebulizer and sterile water (1000ml bottle)

2.5.3 Corrugated tubing

2.5.4 Small volume nebulizer

- 2.5.5 Unit dose Tetracaine/Lidocaine solution for topical anesthesia (refrigerated)
- 2.5.6 Nasal cannula
- 2.5.7 Bite block (if indicated) for oral passage of the bronchoscope
- 2.5.8 Suction supplies (2 Cannisters with tubing and Yankauer)
- 2.5.9 Pulse oximeter
- 2.5.10 Manual resuscitator and appropriate size mask
- 2.5.11 Appropriate emergency intubation box
- 2.5.12 Sterile gloves, gowns, caps and goggles for bronchoscopists
- 2.5.13 Universal precautions apparel for assistants
- 2.5.14 Particulate respirator masks for all staff assisting with the procedure
- 2.5.15 Bronchoscope Portex adapter (for intubated patients)

2.6 Transbronchial biopsy supplies:

- 2.6.1 Biopsy forceps (blue handle)
- 2.6.2 Sterile specimen container
- 2.6.3 Mobile fluoroscopy unit
- 2.6.4 Lead aprons
- 2.6.5 Appropriate lead shield for gonadal protection of the patient

2.7 Cleaning supplies (See Post Procedure Care of the Bronchoscope.)

3.0 Pre-Procedure Setups and Checks

3.1 Pre-procedure Preparation: **Bronch Tray Setup**

- 3.1.1 Maintain asepsis throughout the tray preparation procedure. One hand should be maintained as "clean."

- 3.1.2 Insert the pentothal dispensing pin into the 150ml bottle of 0.9% NaCl solution and fill (5) five 30 ml syringes with 0.9% NaCl solution. Reserve the pin for dispensing additional-solution if necessary.
- 3.1.3 Fill (1) one 5 ml syringe with viscous lidocaine (for local anesthesia).
- 3.1.4 Fill (1) one 5 ml syringe with 1% lidocaine with epinephrine and apply medication label for proper drug identification (lidocaine with epinephrine solution is for standby use in case of bleeding).
- 3.1.5 Fill (3) three 10ml syringes with 1% lidocaine.
- 3.1.6 Apply Xylocaine jelly on the gauze sponges (for lubrication of the bronchoscope).
- 3.1.7 Cover the bronchoscopy tray until ready to use.

3.2 Pre-procedure Preparation: **Oxygen Therapy Setup**

- 3.2.1 Assemble the HI-FI nebulizer and adjust to an FIO₂ of 0.60 (or greater depending on the patients oxygen requirements). Cut a large hole in the appropriate side of the mask for accommodation of a *nasally* passed bronchoscope, or cut a larger hole through the chin area for *oral* passage of the bronchoscope.
- 3.2.2 Prepare the small volume nebulizer by filling it with the tetracaine/lidocaine unit dose (this UD must be obtained from the 10D medication refrigerator and removal should be documented in the 10D pyxis medstation). Administer per bronchoscopist order.
- 3.2.3 Ensure that both suction setups are operational. Make sure there is a yankauer and suction catheters at the bedside.
- 3.2.4 Assist with attachment of the suction tubing to the bronchoscope and remove the gas cap as needed prior to beginning of the procedure.
- 3.2.5 Ensure that an age appropriate intubation box and emergency equipment are present and functional.

3.3 Pre-procedure Preparation: **Transbronchial Biopsy Setup**

- 3.3.1 Set up the mobile fluoroscopy unit as appropriate for viewing of diaphragmatic movement. (Refer to the CCT RCS "Siemens

Fluoroscopy Unit” policy and procedure for instructional use of the fluoroscopy unit.)

3.3.2 Ensure that all persons in the room are wearing lead aprons.

3.3.3 Place a shield under the patient for gonadal protection.

3.4 Pre-procedure Preparation: **Determine Type of Bronchoscope (EVIS or NON EVIS)**

CAUTION! THE POWER SWITCH OF BOTH THE LIGHT SOURCE (CLV-U20) AND THE EVIS Video Processing System (CV-200) MUST BE 'OFF' WHILE ATTACHING OR REMOVING INTERFACE CABLES. THE CABLES OR BRONCHOSCOPES MAY BE DESTROYED IF THE POWER SWITCH IS ON.

3.4.1 Interfacing the **EVIS** bronchoscope to the CV-200

3.4.1.1 Use the MD-149 Video Cable to the CV-200.

3.4.1.1.1 To attach, align the white dots on the male-pin side of the MD-149 cable and the CV-200 socket, and push or insert cable until it stops.

3.4.1.1.2 Turn the fastening ring (on the male-pin side) about 1/4 turn clockwise until a click is heard.

3.4.1.1.3 Attach the other end of the cable to the Evis bronchoscope by aligning the white dots and turning the locking collar 1/4 turn clockwise.

3.4.2 Interfacing the **NON EVIS** bronchoscope to the CV-200

3.4.2.1 Attach the male-pin side of Video Convertor Interfacing Cable OVC-200 (contained in the holding case) to the scope socket on the CV-200 Video Processing Unit.

3.4.2.1.1 To attach, align the white dots on the male-pin side of the cable and the CV-200 socket, and push or insert cable until it stops.

3.4.2.1.2 Turn the fastening ring (on the male-pin side) about 1/4 turn clockwise until a click is heard

3.4.2.1.3 Align the **yellow dot** on the cable with the yellow dot on the bronchoscope head.

3.4.2.1.4 Twist until locked in place.

3.4.3 Enter Patient/Bronchoscope Information into Olympus ImageManager

- 3.4.3.1 Plug in main power cord located in the rear of the cart.
- 3.4.3.2 Connect RGB barrel connectors from the cart to the large monitor OEV 203 by inserting and twisting.
- 3.4.3.3 Turn on main power switch located on Olympus WM-30 Mobile Work Station, and wait for main screen to appear.
- 3.4.3.4 Enter Proper Sign On into ImageManager

- 3.4.3.4.1 **Name:** br
- 3.4.3.4.2 **Password:** br
- 3.4.3.4.3 Click on "**Schedule Exams**"
- 3.4.3.4.4 Click on "**Scheduler**"

3.4.3.5 On "Select Patient" Screen: *New Patient ?*

- 3.4.3.5.1 Select "ADD"

3.4.3.6 Complete Required Fields

- 3.4.3.6.1 Salutation (Mr., Ms., etc.)
- 3.4.3.6.2 Last Name
- 3.4.3.6.3 First Name
- 3.4.3.6.4 Sex
- 3.4.3.6.5 Race
- 3.4.3.6.6 DOB (mth/day/yr)
- 3.4.3.6.7 Patient ID (MRN without dashes)
- 3.4.3.6.8 Click on "**Perform Now**"

3.4.3.7 Complete "Examination Information"

- 3.4.3.7.1 Date
- 3.4.3.7.2 Time
- 3.4.3.7.3 Procedure (bronchoscopy)
- 3.4.3.7.4 Room
- 3.4.3.7.5 Attending
- 3.4.3.7.6 Click "**Perform Exam**"
- 3.4.3.7.7 Confirm instruments used (select bronchoscope by serial number)
- 3.4.3.7.8 Click on "**Start Examination Now**"

3.4.3.8 On "Select Patient" Screen: *Previous Patient?*

- 3.4.3.8.1 Enter Last Name
- 3.4.3.8.2 Click on Magnifying Glass
- 3.4.3.8.3 Select the Patient
- 3.4.3.8.4 Click on "OK"
- 3.4.3.8.5 Select Procedure (BRONCH)
- 3.4.3.8.6 Select Attending
- 3.4.3.8.7 Select ECT (00:15)
- 3.4.3.8.8 Select Date
- 3.4.3.8.9 Select Time
- 3.4.3.8.10 Select Room
- 3.4.3.8.11 Select Nurse (Therapist)
- 3.4.3.8.12 Select Equipment

3.4.3.9 Click on "ADD" (information will be posted in the gray block)

3.4.3.10 Double click on gray block

3.4.3.11 Confirm instruments used (select bronchoscope by serial number)

3.4.3.12 Click on "Start Examination Now"

NOTE: All bronchoscopy procedures must be logged into the Olympus ImageManager. This includes those procedures when just a light source or the portable bronchoscope is used.

NOTE: Prior to the patient exam, the check to make sure the various components set to the appropriate settings.

3.5 Appropriate Settings Per Component

3.5.1 **Olympus CV-200 Video Processing Unit:** Make sure the following areas on the processor are active.

3.5.1.1 "Image Record":

3.5.1.1.1 DGTL file button

3.5.1.1.2 Hard copy button

3.5.1.2 "Image Source":

3.5.1.2.1 "NTSC" "scope" is active

3.5.1.2.2 "Y/C" "scope" is active.

3.5.1.2.3 "RGB" "D.File" is active

Note: Above "RGB" button, if "scope" button is lit, test can still be performed. However, data will not be stored and photographs cannot be obtained.

3.5.1.3 "IRIS" Selection

3.5.1.3.1 “**Peak**” button should be active if using a NON-EVIS scope.

3.5.1.3.2 “**Average**” button should be active using an EVIS scope.

3.5.1.4 “**Sub SCR N**” active

3.5.1.5 “**ENH**”, the “**Med**” setting is selected

3.5.1.6 “**HUE**” “**R & B**” diodes should lie in the center.

3.5.1.7 **S1** = Freeze

3.5.1.8 **S2** = Print

3.5.1.9 **S3** = Zoom

3.6.1.10 **S4** = Release

3.5.2 Olympus CLV-U20 Light Source

3.5.2.1 Mode “**EVIS 200**” active

3.5.2.2 Air function is “**OFF**”

3.5.2.3 “**Brightness**”:

3.5.2.3.1 Cine • TV active, with the brightness adjustment set to “3”

3.5.2.3.2 AutoMode active

3.5.3 VCR:

3.6.3.1 Turn on Power

3.5.4 Sony Color Video Printer (OEP):

3.5.4.1 Turn on Power

3.5.5 Olympus (OEV203) Imaging Monitor:

3.5.5.1 Determine that the following information is displayed

3.5.5.1.1 Patient name

3.5.5.1.2 Patient I.D

3.5.5.1.3 Date

3.5.6 Perform “White Balance” (Adjusts color spectrum)

3.5.6.1 Press ignition button located on the Olympus CLV-U20

3.5.6.2 Ask physician to insert scope tip into white balance cup.

3.5.6.3 Depress white balance button located on processor until light stops flickering.

3.5.6.4 Assist the physician with the bronchoscopy procedure.
(See 3.8, Performing the Procedure)

3.6 Taking Photographs

3.6.1 Photographs can be taken by physician directly from the head of the bronchoscope or by the therapist through the Olympus Processor.

CAUTION: The “DGTL File” button on the Olympus CV-200 must be lit to perform photographic procedure.

3.6.1.1 Photographs taken by physician:

3.6.1.1.1 The bronchoscopist may use index finger to freeze image by pushing button S1. The frozen image of the selection will appear with the bronchoscopists never losing real time monitoring of the airway.

3.6.1.1.1.1 If picture is acceptable to the bronchoscopist, the bronchoscopist should press the S4 button to store in memory.

3.6.1.1.1.2 If the picture is unacceptable press the S1 button to unfreeze and repeat the process for additional photographs to be taken.

3.6.2.1 Photographs taken by therapist

3.6.2.1.1 The physician can instruct the therapist to freeze and capture images by clicking on the defined icons on the IBM computer monitor screen.

3.6.2.2 Flagging and Printing Images in ImageManager Database

3.6.2.2.1 This procedure can be performed by either highlighting the image and pressing the letter “p” on the keyboard or by double clicking the image to enhance it and label it.

3.6.2.2.2 Click on “**Exit**” button.

3.6.2.2.3 Then click “**OK**” to print images.

NOTE: Refer to Olympus ImageManager manual for additional information.

3.7 Patient Preparation

- 3.7.2 Monitor the patient via pulse oximetry. Make sure low saturation alarm is set at 90%.
 - 3.7.3 Connect the patient to electrocardiographic monitoring and set alarms appropriately.
 - 3.7.4 Administer lidocaine/tetracaine nebulizer or atomizer as directed by the physician. (Lidocaine/Tetracaine UD is stored in the 10D medication refrigerator. This medication needs to be signed out in the 10D Pyxis Medstation so that Pharmacy can resupply.)**
 - 3.7.5 Administer oxygen therapy and position the patient flat (with the pillow removed).
 - 3.7.6 Insert a bronchoscope adapter in line to the ventilator circuit (if appropriate).
 - 3.7.7 Determine from the bronchoscopist if videotaping or photographs will be required for the procedure.
- 3.8 Performing the Procedure
- 3.8.1 Assist with the instillation of lidocaine and normal saline and the collection of specimens as needed.
 - 3.8.2 Assist with videotaping and/or photography.
 - 3.8.3 Assist with the collection of biopsy specimens by operating the fluoroscopy unit as directed by the bronchoscopist.
 - 3.8.4 Monitor the patient throughout the procedure for signs of cardiopulmonary compromise, dyspnea, and wheezing, and notify the bronchoscopist if warranted.
 - 3.8.5 Increase the FiO₂ delivered to the patient if needed to maintain the patient's peripheral oxygen saturation by pulse oximetry (SpO₂) above 90 percent.
 - 3.8.6 Perform oral suctioning as needed to maintain a patent airway and prevent aspiration.
 - 3.8.7 Monitor the parameters of mechanical ventilation throughout the procedure for adequacy of ventilation and risk of barotrauma. Pressure and volume alarms must be maintained appropriately throughout the bronchoscopy. A transient increase in the FiO₂ to

1.0 may be indicated to decrease the risk of hypoxemia in the mechanically ventilated patient undergoing bronchoscopy.

4.0 PORTABLE BRONCHOSCOPY

A portable light source is used for bedside bronchoscopies when the need for video monitoring is deemed unnecessary by the physician.

4.1 Olympus CLK-4 Halogen Light Source (for use with non-evis bronchoscopes only)

4.1.1 To use portable light source:

4.1.1.1 With the power switch in the “off” position, plug in power cord to A/C outlet.

4.1.1.2 Insert the bronchoscope light guide connector into the output socket of the light source as far as it will go.

4.1.1.3 Turn the power switch “on” and check that the cooling fan is operating.

4.1.1.4 Make sure that light is emitted from the bronchoscope’s distal end.

4.1.1.5 Turn the “brightness” control knob to adjust light level.

4.1.2 The CLK-4 light source uses a high-intensity halogen lamp as its light source, therefore, all bulb changes should be performed by the Clinical Center’s Bio-Medical Engineering Department.

4.2 Battery Operated Bronchoscope

4.2.1 The Olympus LF-TP Tracheal Intubation Fiberscope has its own battery and halogen lamp and therefore, does not need an external electrically powered light source.

4.2.2 For battery or lamp replacement instructions refer to Olympus LF-TP Operation Manual, Chapter 3: Preparation and Inspection.

5.0 POST PROCEDURE

5.1 Patient Care

5.1.1 Immediately upon the withdrawal of the bronchoscope, replace the cut aerosol mask with a new one.

5.1.2 Monitor the patient's SpO₂ and wean the FiO₂ as tolerated. Administer oxygen via a nasal cannula for continuous therapy if indicated.

- 5.1.3 Assess the patient's breath sounds and treat for wheezing or bronchospasm upon written order by the physician.

5.2 Care of the Bronchoscope

5.2.1 Equipment and supplies:

- 5.2.1.1 Hydrogen peroxide
- 5.2.1.2 Sterile water (1000ml bottle)
- 5.2.1.3 Hibiclens and sterile water solution
- 5.2.1.4 Bronchoscope cleaning brush
- 5.2.1.5 Cotton tip swabs
- 5.2.1.6 4 x 4 gauze sponges
- 5.2.1.7 Suction apparatus including the suction cleaning adapter for the EVIS bronchovideoscope
- 5.2.1.8 Universal precautions apparel
- 5.2.1.9 Disposable suction valve (as needed)
- 5.2.1.10 Disposable Biopsy valve
- 5.2.1.11 One liter graduate container

5.3 Decontamination procedure:

IMPORTANT: Prior to cleaning the OlympusBF P200 EVIS bronchovideoscope, attach the water-resistant cap to the bronchoscope. Do not immerse the bronchoscope unless the water-resistant cap is attached to the bronchovideoscope. Failure to comply with these instructions may result in permanent damage to the bronchoscope.

- 5.3.1 Immediately following the use of the bronchoscope, insert the tip of the bronchoscope into an alkaline solution of hibiclens. (If blood is present, use hydrogen peroxide and then aspirate using the hibiclens solution). Apply suction and aspirate for 10 seconds.
- 5.3.2 Use the channel cleaning brush and scrub the insertion tube using a back and forth motion until the entire channel has been cleaned.
- 5.3.3 Use a hibiclens dampened 4x4 gauze and gently provide pulse type pressure from the top of the scope to the bottom in an attempt to remove particulate matter from the exterior of the scope. Do not pull or yank hard on the scope as the sheath (particularly the boot) may be stretched or pulled.
- 5.3.4 Clean out the suction port(s) and other orifices and crevices of the bronchoscope using cotton tip swabs.

WARNING: Do not inappropriately bend or hyperflex the bronchoscope at any time as this may cause extensive damage and contribute to costly repairs.

- 5.3.5 Soak biopsy forceps, bronchoscope suction parts, and the bite block (if used) in hydrogen peroxide. Remove all particulate matter from these parts, rinse them in sterile water, and dry prior to replacing them.

WARNING: After cleaning the forceps, do not inappropriately bend the forceps. Evaluate the operation of the forceps making sure that the teeth on the forceps open and close with ease. Package forceps with large loops in a large sterilization envelope avoiding excessive bending.

- 5.3.6 Once again apply suction and draw the Hibiclens sterile water solution through the bronchoscope. Wipe down the exterior of the bronchoscope including the eyepiece (if one is present).
 - 5.3.6.1 Continue the suctioning and wiping down procedures using first the hydrogen peroxide and then the sterile water.
 - 5.3.6.2 Suction sterile water through the bronchoscope one final time, and then suction air through the bronchoscope until no more water droplets are seen through the suction tubing. This is best accomplished using a pulsatile action on the suction port.
 - 5.3.6.3 Dry the exterior of the bronchoscope and disassembled parts with 4 x 4 gauze, and reassemble.
 - 5.3.6.4** Visually inspect the bronchoscope for damage or debris, including a look through the fiberoptics of the bronchoscope. **If damage to the bronchoscope is noted, complete the CCTRCS “Broken Equipment” information sheet and notify a supervisor immediately. NOTE: Damaged bronchoscopes should not be sent to CHS for sterilization.**
 - 5.3.6.5 Replace disposable and single-use suction and biopsy valves as indicated.
 - 5.3.6.6 Clean and disinfect the interior of the bronchoscope carrying case with a CC approved disinfectant.
 - 5.3.6.7 Clean exterior portion of the bronchoscope carrying case. Remove all old tape and expiration stickers.
 - 5.3.6.8 Replace the gas cap on the bronchoscope, **OR if using the EVIS bronchovideoscope, remove the water-resistant cap,** and secure the bronchoscope in its carrying case.

5.4 Preparation for Sterilization

- 5.4.1 Equipment and materials:
 - 5.4.1.1 Sterile half sheet
 - 5.4.1.2 Gas sterilization indicators

- 5.4.1.3 Gas sterilization tape
- 5.4.1.4 "Bronchoscopy processing check-off sheet"
- 5.4.1.5 Requisition slip

- 5.4.2 Place the half sheet in the carrying case.

- 5.4.3 Secure gas sterilization indicators with gas sterilization tape to the Bronchoscope Processing Checkoff Sheet.

- 5.4.4 Fill out the "Bronchoscopy Processing Check-off Sheet," and place the sheet inside the carrying case so that the information is visible.

- 5.4.5 Package biopsy forceps in separate sterilization envelopes in a large looped fashion to minimize damage to the forceps; include sterilization indicators as well.

- 5.4.6 Transport the bronchoscope and related equipment to Central Hospital Supply (CHS) with a requisition slip. Enter the equipment in the CHS log book. Retain the blue copy of the triplicate requisition slip in the lab.

- 5.4.7 Post CHS slip in the 10D MICU Stat Laboratory. Include the bronchoscope model number, serial number and size of the scope on the CHS requisition sheet.

- 5.4.8 Retrieve the bronchoscope from CHS within a 24 hour period. Analyze the gas strip to determine if the bronchoscope met the criteria for sterilization (Gas strip changes from yellow to brown). Notify supervisor if scope did not reach total sterilization.

5.5 Documentation

5.5.1 Document procedure on the CCTRCS Workload and Productivity sheet.

5.5.2 All completed "Bronchoscopy Processing Check Off Sheets" should be placed in the "Bronchoscopy Processing Tracking Manual" once a bronchoscopy has been performed. Documentation should include the following:

5.5.2.1 Patient name

5.5.2.2 Date

5.5.2.3 Time

5.5.2.4 Medical record number

5.5.2.5 Therapist (assisting with procedure)

5.5.2.6 Location

5.5.2.7 Bronchoscopist

5.5.2.8 Bronchoscope serial number

6.0 REFERENCES

- 6.1 Olympus BF P200 EVIS Bronchovideoscope Instructions
- 6.2 Olympus CV-200 EVIS Videosystem Center Instructions
- 6.3 Olympus OVC-200 Converter Instructions
- 6.4 Olympus CLV-U20 Light Source Instructions
- 6.5 Olympus CLK-4 Light Source Instructions
- 6.6 Sony Color Video Printer Mavigraph OEP Operating Instructions
- 6.7 JVC 365U Video Cassette Recorder Instructions
- 6.8 Trinitron Color OEV203 Olympus Monitor Operating Instructions

SIGNATURE: _____
Assistant Section Chief, CCTRCS, CCMD

DATE: _____

SIGNATURE: _____
Section Chief, CCTRCS CCMD

DATE: _____

SIGNATURE: _____
Medical Director, CCTRCS CCMD

DATE: _____

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