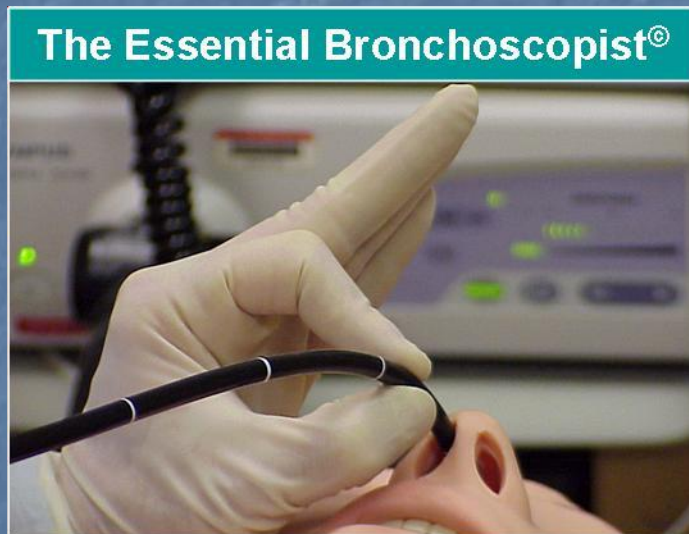


How to use the Essential Bronchoscopist®

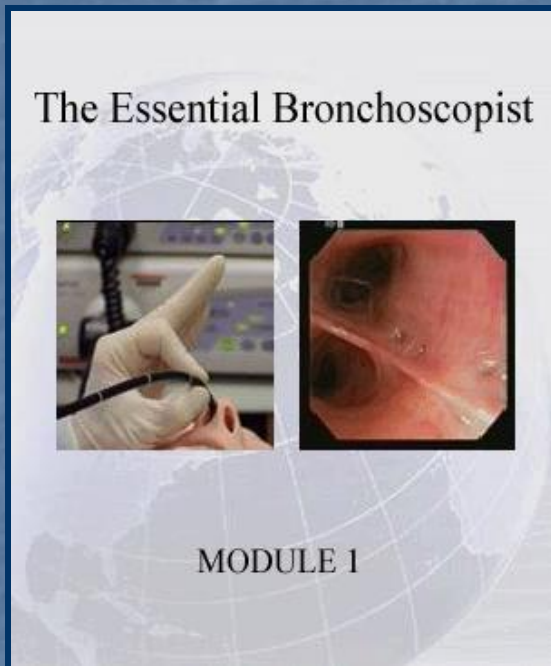
A laddered self-learning curriculum of bronchoscopy



Prepared By
Bronchoscopy International

Contact us at
BI@bronchoscopy.org

The Essential Bronchoscopist©



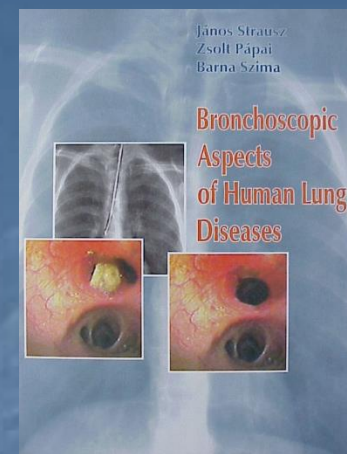
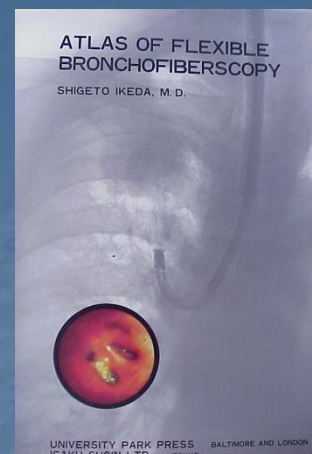
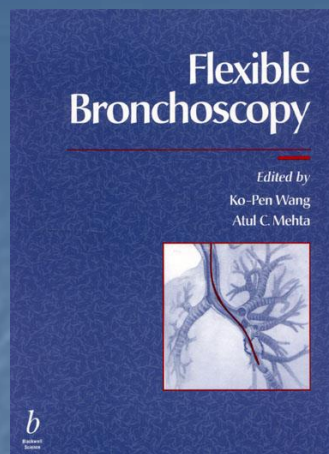
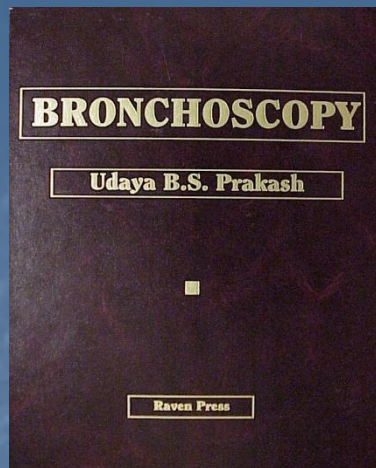
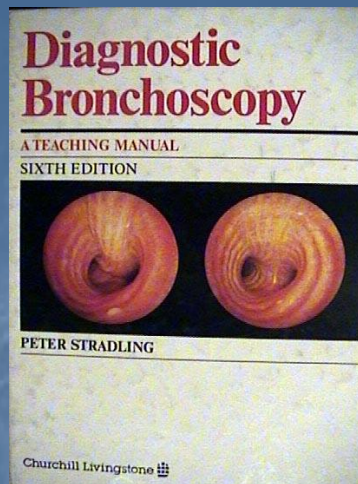
- Web-based and Free
- Interactive and multilingual
- Laddered learning
- Case based
- A foundation for debate with colleagues and mentors

Rationale for a common web-based curriculum of bronchoscopy-related theory

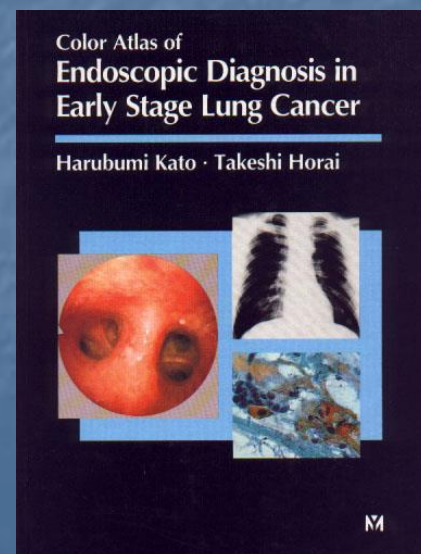
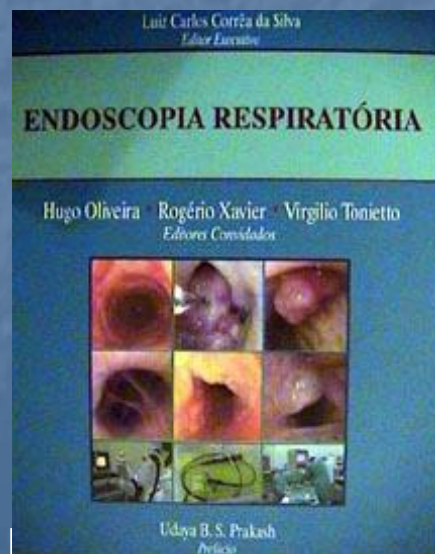
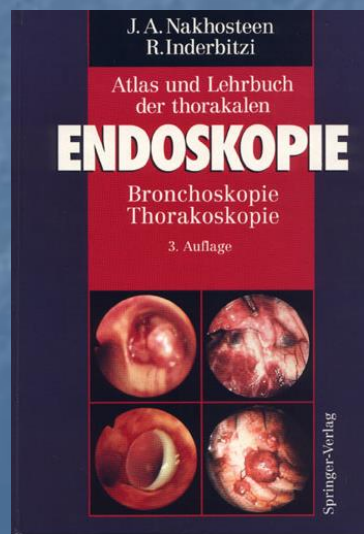
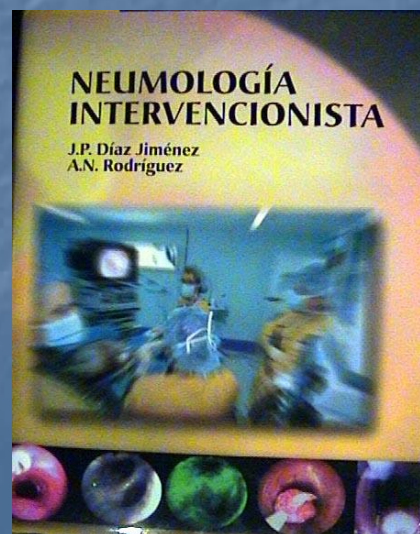
There is NO standard approach to learning bronchoscopy



- Different techniques
- Different books
- Different learning habits
- Different cultures
- Different institutional and personal biases



Can anyone read ALL these books ?



11/1/2014

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Philosophy

- Scientific knowledge is a social capital.
- Boundaries to access should be eliminated.
- Teachers and students are partners in a dynamic bilateral process.
- Restriction to knowledge is neither moral nor practical.

Objectives of the EB©

- To complement traditional learning.
- To stimulate discussions among teachers, senior and junior doctors, and other health care workers.
- To facilitate learning in different cultural and institutional environments.
- To inform nonmedical bronchoscopy professionals and the general public
- To cross ALL disciplines
 - Pulmonary Medicine, Critical Care Medicine, Otolaryngology, Surgery, and Anesthesia

The EB © contains

- Basic *Essential* information all bronchoscopists should be aware of regardless of specialty and practice.
 - Anatomy
 - Bronchoscopic abnormalities
 - Instrumentation and equipment
 - Cleaning and sterilization
 - Safety
- Descriptions of *common* practical problems
 - Difficult airway management
 - Bleeding
 - Intubation
 - Biopsy and other techniques
 - Indications and contraindications
 - Anesthesia and risk management
 - Examples of diagnostic and therapeutic applications

Contents of the Essential Bronchoscopist©

It is important to distinguish between knowledge and concepts that are essential (need to know) and those which, though interesting, are not part of the core message (nice to know)

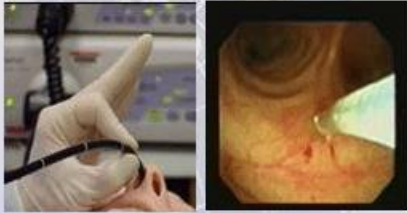
*Cantillon, P. ABC of learning and teaching in medicine:
Teaching large groups BMJ 2003;326:437*

Development

- All question-answer sets were written by the author and then reviewed by at least TWO bronchoscopists (one senior and one junior from the United States and Argentina) in addition to input from forty bronchoscopists worldwide.
- Content was derived from
 - Textbooks
 - Didactic lectures
 - Experience
 - Feedback
- Currently available in English and Spanish.
- Soon available in French, Japanese, and Portuguese

The Essential Bronchoscopist© is a laddered self-learning curriculum

The Essential Bronchoscopist



MODULE 6

Bronchoscopist



MODULE 5

ronchoscopist



MODULE 4

Bronchoscopist



MODULE 3

Bronchoscopist



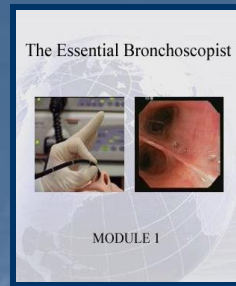
MODULE 2

Bronchoscopist



MODULE 1

Curriculum Design



- Six separate interactive modules each containing approximately 30 multiple choice question-answer sets.
- Specific learning objectives are listed at the beginning of each module.
- Information is provided in both the question and the answer.
- All modules are downloadable as PDF files.
- The website is currently hosted by the University of California Irvine.
- In compliance with HonCode principles.



Curriculum continued...

- Readers are prompted to progress from one module to the next after taking a ten question post test.
 - A **Passing score** requires 100% correct response first time or a 70% score the second time the test is taken.
 - One may move on to the next module regardless of score **ONLY** after taking the post test **THREE** times.
 - Learners can print out their test scores and present them to their Instructors.
 - Peer pressure incites completion and good performance
 - Printing out and sharing test scores reassures the instructor that the learner has reviewed material contained in each module.
 - Printing out and sharing test scores with colleagues or an instructor creates many opportunities to learn and share additional knowledge and to address topics that may not be covered in the EB®



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The Essential Bronchoscopist

Home
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Disclaimer
References

English

Espanol

Essential Bronchoscopist®

The Essential Bronchoscopist® has been intentionally designed for self and guided learning of bronchoscopy-related theory. Each module allows for ladder knowledge acquisition. The combination of linear learning and learning all-at-once maximizes both left and right brain information processing, and most importantly, allows learners to have fun while learning "essential, and good to know" material applicable to all health care providers regardless of specialty.

The Essential Bronchoscopist® provides a standardized approach to learning bronchoscopy theory based upon the concept of democratization of knowledge. The modular question-answer sets and soon-to-be-released BronchAtlas® of illustrations, exposes readers to a variety of ideas, images, and techniques. A mandatory 100 percent correct response score the first time the reader takes each module's post-test helps assure mastery of bronchoscopy knowledge.

The Essential Bronchoscopist® is best used to complement existing educational programs, patient-based learning experiences, textbook study, hands-on practice and other postgraduate and subspecialty training programs. We trust that bronchoscopy educators will use these learning modules to enhance each student's exposure to various opinions, biases and alternative approaches.

After years of experience, devoted learning and acquired awareness trainees will develop an individual approach to bronchoscopy based on generally accepted truths and considerations rather than on dogma and habit. Remembering that "no one is as wrong as the one who knows it all", the enlightened bronchoscopist can practice with confidence, curiosity to question conventional wisdom, a constant desire for self-improvement, and compassion for all patients.

Home Page Acknowledgments

Acknowledgements:

Questions and answers from **The Essential Bronchoscopist**® have been reviewed and improved upon based on input from dozens of junior and senior bronchoscopists from all over the world. Without their help, these modules would not be possible. Special thanks also go to Dr. Silvia Quadrelli and the Argentine association of Bronchology(Argentina), Professor Patrick Barron (Japan), Dr. Steven Crawford and Dr. Azita Robati Hassas (USA) and Professor Jean-Michel Vergnon and the groupe d'Endoscopie de langue Francaise (France) for their help with translations and organization of material.

[Begin](#)

Contact Us: Please contact us with questions, comments, ideas and suggestions.

Last Updated 12/22/2004



We subscribe to the HONcode principles. [Verify here.](#)

Learning Objectives and Log in

LEARNING OBJECTIVE TO MODULES

Readers of The Essential Bronchoscopist should not consider this module a test. In order to most benefit from the information contained in this module, every response should be read regardless of your answer to the question. You may find that not every question has only one "correct" answer. This should not be viewed as a trick, but rather, as a way to help readers think about a certain problem. Expect to devote approximately 2 hours of continuous study completing the 30 question-answer sets contained in this module.

When you are ready, you may choose to take the post-test. This ten multiple choice question test addresses specific elements of the learning objectives of each module. Questions pertain to information found in the answer paragraphs or figures in the module, but may not correspond directly with a question found in the module. A 100% correct answer score is expected on the post-test before readers can advance to the next module. If even one of your answers is incorrect, you must go back to the beginning of the post-test, and begin the entire test all over again.

If this is your first visit to "The Essential Bronchoscopist", you'll need to create an account. Using this account, you'll be able to retrieve your place in the six-module course the next time you visit. Please note and enter a unique user ID (at least 6 characters) in the field below. To submit the ID, click on the "New User" button. For existing users, please enter your unique id, and click the "Login" button.

Login

New User

How Learners can use The Essential Bronchoscopist©

■ The Learner

- Should complete each module before proceeding to the next module.
- Should devote approximately 2-3 hours per module (30 question/answer sets).
- May enter and leave each web-based module at liberty.
 - But when reentering, the reader is obliged to tab through each question-answer set until reaching where the reader left off (This encourages review of material and enhances learning)
- PDF files may be printed after PASSING (or taking Post test 3 times). **Test scores can be printed out.**
- Should share their test scores and discuss debatable question-answer sets with colleagues and instructors.
- Of course, all PDF files can also be downloaded without taking tests (This is helpful for the industry and general public who wish to learn about bronchoscopy).

How Instructors can use The Essential Bronchoscopist©

■ The Instructor

- Should insist that learners complete each module before proceeding to the next module.
- Should consider group sessions in order to encourage discussion and debate and to present his or her own opinions and perspectives.
- Should ask trainees for their test scores and insist on the learner eventually achieving a passing score for each module.

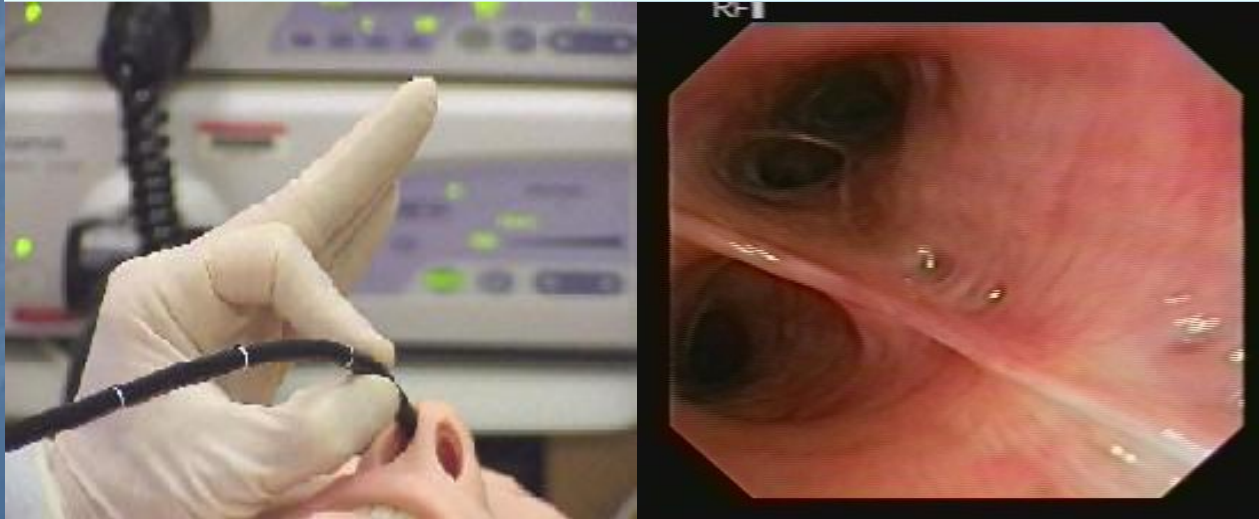
Why the EB[©] works

- Web-based learning is adaptable to every single student's time availability.
- The EB[©] respects each student's learning pace.
- The EB[©] is free and accessible. Type essential bronchoscopist into any search engine or go directly to the website.
- The EB[©] is easily adaptable to offline modes in order to work without Internet access. All files and images can also be downloaded to be read in manual or PDF form.
- Interactivity promotes interest and debate with the learner's colleagues, teachers, and mentors.
- Case-based learning prompts students to work with facts, analyze problems, and provide solutions.

Module 1

example of questions and answers

The Essential Bronchoscopist©



Module 1 learning Objectives

The Essential Bronchoscopist ■ ■ ■ ■ ■

At the conclusion of Module I, the learner should be able to:

1. List three figures important to the history of bronchoscopy.
2. Describe the "ideal" prebronchoscopy patient assessment.
3. List at least FOUR instances in which flexible bronchoscopy is of limited value.
4. Describe at least THREE scenarios of a difficult airway, and solve their specific management problems.
5. Define flexion, extension, and rotation of the flexible bronchoscope.
6. Identify major upper airway anatomy.
7. Compare ester and amide topical anesthetics.
8. Describe at least THREE effects of flexible bronchoscopy on cardiovascular hemodynamics.
9. List the names of abnormal and normal trachea shapes.
10. Define the terms "resolution" and "radiation exposure".

Begin

Click once for sample answer, then again for explanation

The Essential Bronchoscopist ■ ■ ■ ■ ■

Question 1.3: Which of the following should be addressed during a consultation for bronchoscopy:

- ☐ A: Analyze the request for bronchoscopy and justify the indication
- ☐ B: Review history and physical and pertinent radiographic images
- ☐ C: Formulate a prebronchoscopy plan with consideration to all bronchoscopic and nonbronchoscopic procedures needed to maximize diagnostic yield or therapeutic success
- ☐ D: Discuss patient safety issues, comfort, and informed consent
- ☒ E: All of the above

The correct answer is **E**.

Bronchoscopy is a minimally invasive procedure, but an invasive procedure nevertheless. Every indication for bronchoscopy must be justified, and alternative means (invasive and noninvasive) for diagnosis or treatment should always be considered. Bronchoscopy can also be a very costly procedure. Use of accessory instruments, specimen processing, and time in the hospital, and consequences of potential procedure-related complications further increase the cost. If possible, everything should be done so that diagnostic yield is maximized and diagnosis is obtained from a single (and not repeated) procedure.

For example, if bronchoscopic inspection reveals no airway abnormalities, the bronchoscopist should be ready to perform transbronchoscopic sampling. In this case, yield might be increased if radiographic guidance is used, and is definitely increased if cytopathologic analysis is performed on-site. Informed consent is ethically justified because patients "have a right to know", and has become mandatory in an increasing number of countries.

<< Previous

Next >>

Click once for sample answer, then again for explanation

The Essential Bronchoscopist ■ ■ ■ ■ ■

Question 1.16: When using a fluoroscopy C-arm, radiation exposure rates to the patient are higher when:

- ☐ A: The x-ray tube is closer to the table top
- ☒ B: The x-ray tube is farther from the table top
- ☐ C: X-ray tube to table distance is irrelevant

The correct answer is **A**. **The learner has answered incorrectly**

Radiation exposure rates are measured at the tabletop. They are excessively large if the x-ray tube, which is a standard rotating anode tube operated at currents that are much lower than those used in radiography, is closer than 12 inches (approximately 30 cm) to the table top. Shutters in the x-ray tube allow the operator to regulate the size and shape of the x-ray beam.



<< Previous

Next >>

Post tests

The Essential Bronchoscopist©



Begin post test

The Essential Brochoscopist Test ■ ■ ■ ■ ■

The following test is designed to verify that you've completed, and fully understood, the 30 questions for **Module** . In order to complete the module and move on to the next section, you must correctly answer the following 10 questions. If you miss even 1 of the 10, you must retake the test. Once you've successfully completed the test, your results will be recorded for future visits to the site. When you are ready, click the "Begin Test" button below.

Begin Test

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Example from Module 1 Post test

Question 7: Which of the following statements about upper airway anatomy is incorrect?

- A. In adults, the glottic opening (also called the rima glottides) is more narrow than the cricoid.
- B. An omega epiglottis is elongated, curved and is seen in adults but also in many infants.
- C. The arytenoid cartilages lie superior to the corniculate cartilages at the posterior commissure of the larynx.
- D. The adult trachea cross-sectional area, usually about 2.8 cm², increases with age.
- E. The recurrent laryngeal nerve supplies motor and sensory innervation of the intrinsic muscles of the larynx.

Answer to question 7 of MODULE I POST-TEST

Answer 7: C*

- No explanations are given with the answers of the Post test.
- Readers are encouraged to review the entire module before retaking the test.

* Did you know why answer C is the correct answer?

The arytenoids actually lie inferior to the corniculate cartilage.

Congratulations

The Essential Bronchoscopist ■ ■ ■ ■ ■

[Module 1](#) | [Module 2](#) | [Module 3](#) | [Module 4](#) | [Module 5](#) | [Module 6](#) |

Congratulations, you've successfully completed "The Essential Bronchoscopist". You may review any of the completed modules by clicking the pdf links above or decide to retake the course by creating a new user id.


[Begin](#)

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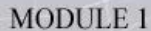
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The Essential Bronchoscopist[©] is part of a comprehensive curriculum for Flexible Bronchoscopy. Our goals are to help health care workers become better at what they do, and to decrease the burden of procedure-related training on patients.

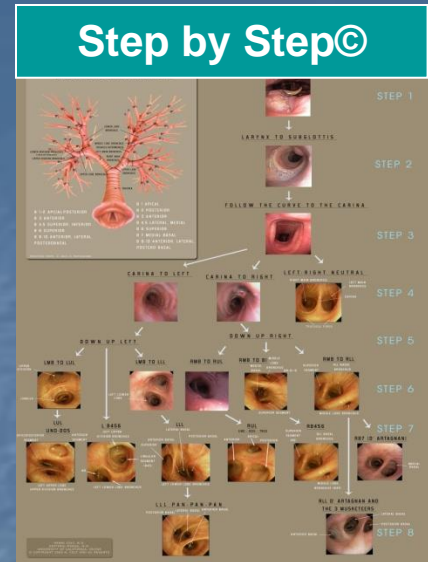
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MODULE 1



Assured competency and proficiency



1. **Web-based Self-learning study guide.**
2. **Computer-based simulations, didactic lectures, and image encyclopedia.**
3. **Bronchoscopy step-by-step©: Practical exercises, skills and tasks, competency testing.**
4. **Guided apprenticeship.**
5. **Learning the art of Bronchoscopy.**

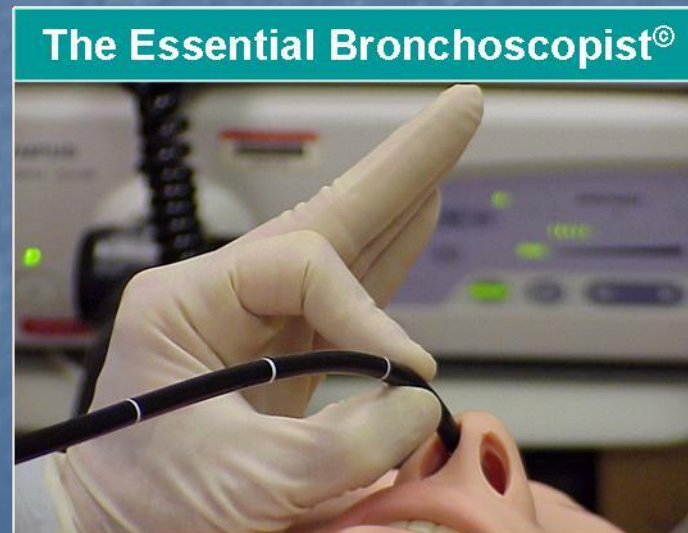


DEMOCRATIZATION AND GLOBALIZATION OF KNOWLEDGE

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<http://www.ucihs.uci.edu/com/pulmonary/bronchoscopy>. Published 2004 (Please add "Date Accessed").



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