# WABIP Newsletter

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# WABIP Newsletter

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# Opinion/Editorial

**Chest Guideline and Expert Panel Report on Technical Aspects of EBUS-TBNA**

Endobronchial ultrasound (EBUS) consists of the convex probe EBUS used widely for real-time EBUS guided transbronchial needle aspiration (TBNA) of mediastinal and hilar lymph nodes and the radial probe EBUS used through the working channel of the flexible bronchoscope to guide sampling of peripheral lung nodules as well as to assess the central airway. EBUS is likely one of the most significant advances in the field of bronchoscopy in the past decade. EBUS-TBNA is being performed in an estimated over 3000 centers around the world. The ACCP 3rd edition lung cancer guideline summarized the role of EBUS-TBNA for lung cancer invasive mediastinal staging and reported a sensitivity of 89% and negative predictive value of 91% (1). Ultrasound guided needle techniques are now considered the first choice of invasive staging over surgical staging for accessible lymph nodes in centers that have the proper training and expertise. The WABIP Task force of Specimen Guidelines published their work on acquisition and preparation techniques of TBNA specimens (2). The Chest newest guideline on technical aspect of EBUS-TBNA examined the current knowledge of technical aspects including patient factors, procedural aspects (ultrasonographic features of lymph nodes, needle size, number of needle passes, use of suction, presence of ROSE) as well as proceduralists' training. The role of EBUS-TBNA for other mediastinal disease such as Tb, sarcoidosis and lymphoma were also addressed (3). Although some of the technical aspects overlap with the WABIP Specimen Guideline highlighted in our editorial last year, many new findings are present which is relevant to our practice during EBUS-TBNA.

15 PICO questions related to technical aspects of EBUS-TBNA were assessed which resulted in 12 statements: 7 evidence-based grade recommendations and 5 ungraded consensus-based statements. The summary of the recommendations were as follows: 1) moderate or deep sedation is an acceptable approach (Grade 2c), 2) US features can be used to predict malignant or benign diagnoses but tissue sampling should be performed (ungraded consensus-based statement), 3) suction can be used or not (ungraded consensus-based statement), 4) either the use of 21G or 22G needle is acceptable (Grade 1C), 5) minimum of 3 separate needle passes should be performed for lung cancer staging in the absence of ROSE (ungraded consensus-based statement), 6) tissue sampling can be performed with or without ROSE (Grade 1C), 7) additional sampling beyond those needed to establish the diagnosis is needed for molecular analysis of lung cancer (Grade 1C), 8) low or high fidelity simulation should be incorporated in training (Grade 2C), 9) validated EBUS skills assessment tests should be used for evaluation of operators (ungraded consensus-based statement), 10) EBUS is recommended to be used in patients with mediastinal and/or hilar adenopathy suspicious for sarcoidosis (Grade 1C), 11) EBUS is recommended to be used in patients with mediastinal and/or hilar adenopathy suspicious for Tb who require lymph node sampling (Grade 1C), 12) EBUS is an acceptable initial, minimally invasive diagnostic test in patient with suspected lymphoma (ungraded consensus-based statement). As this is only a summary, I would encourage everyone to review the entire guideline.

It should be noted that despite rigorous evidence-based literature search some of the PICO questions could not be answered due to lack of evidence and that some of the suggestions were only ungraded consensus -based statements. Since EBUS technology will continue to evolve, it will be important for us to continue high quality research to address some of the unanswered questions related to this important procedure in our field. New size needles including the 19 gauge and 25 gauge are now available and warrant evaluation with accumulation of data compared to the needles that have been used. Smaller EBUS scopes are in development and may change the standard of lymph nodes zones that need to be sampled. Recent advance in targeted therapy and immunotherapy for lung cancer also raises dilemma for bronchoscopists as quantity and the quality of tissue is the issue and not just the diagnosis. Tissue acquisition for PD-1/PD-L1 testing and other new molecular targeted agents will be demanded in the era of personalized medicine. I look forward to seeing new studies addressing these unanswered questions.

Dr. Kazuhiro Yasufuku
Editor-in-Chief

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# Technology Corner

## Technology corner: 25 g EBUS-TBNA needles

**Introduction:** EBUS- TBNA is recommended as the first best choice for staging the mediastinum in patients with lung cancer and is routinely used for diagnosing other causes of intrathoracic adenopathy including sarcoidosis, lymphoma or metastasis from extrathoracic malignancies (1-3). Quantity (i.e. cellularity) and quality (i.e. purity) of EBUS-TBNA specimens are relevant for diagnosis, comprehensive genetic and PD-L1 testing. There are a variety of EBUS-TBNA needles on the market, which vary in regards to sampling technique as well as the quantity, type (histology or cytology) and quality of the sampled specimen (4). The purpose of this essay is to describe the use of 25 gauge (G) EBUS needles and to summarize their potential advantages when compared with the larger gauge needles available on the market.

**Background:** Commonly used EBUS-TBNA needle systems mainly vary in handle, actual needle design (eg. core trap, standard), size (i.e. needle gauge), locking mechanism (eg. adapter valves, luer-lock) and material (eg. nitinol) (4). All EBUS needles are echogenic, have an adjustable sheath length and a handle designed for stability and control of the needle during the TBNA procedures. There are no published surveys, however, assessing the operators' comfort level or user-friendly features for the various available systems. From clinical experience, the 25 G needles (Expect$^{TM}$ EBUS TBNA Needle, Boston Scientific; EchoTipProCore, Cook Medical) are more flexible than the available 22 G needles. This flexibility allows deflection of the EBUS scope to a greater degree than with the larger needles. This feature permits sampling of various regions of the lymph node (i.e. "stroking fan" technique), once the node is punctured, by simple flexion/extension of the bronchoscope lever (Figure 1). This technique allows cutting into previously non- traumatized lymph node tissues, potentially increasing the quantity and quality of the aspirated material. It remains to be determined whether this technical aspect of the EBUS-TBNA procedure offers any advantages over the conventional approach in EBUS practice, but it was shown to increase yield when compared with the standard technique in lesions sampled by EUS –FNA. To date, there are no comparison studies between the 25 G needles designed by different manufacturers. Familiarity, availability and costs continue to impact operators' selection of a particular EBUS needle.

**Clinical applications:** The 25 G EBUS TBNA needles with a standard (eg. Expect TM Boston Scientific) or lateral bevel design (eg. EchoTipProCore, Cook Medical), while approved for clinical use, have not yet been systematically studied. There are several issues that demand resolution in EBUS-TBNA, some of which may be resolved by using the 25 G needles. These include but are not limited to:

1. Difficulty in sampling certain station 4L lymph nodes when using the standard 22 or 21 gauge EBUS needles; this could be due to the needle stiffness, lack of flexibility or suboptimal sharpness. In fact, one of the reasons for the false negative rate of EBUS-TBNA is the inability to sample station 4L. Published evidence suggests that the benefit of adding EUS to EBUS staging of the mediastinum occurs when EBUS specimens from stations 4L and 7 are non-diagnostic or when these stations were unable to be sampled via EBUS (5-7). We found that 25 G needle is more flexible and sharp and to date, with the standard needle design (Expect$^{TM}$, Boston Scientific) we had no difficulty sampling station 4L nodes (Figure 1).
2. Specimens contaminated by blood may compromise adequacy for genetic profiling; the published literature suggest that while the specimen adequacy for diagnosis is not necessarily affected by the needle size, the 22 G needles result in less bloody samples than the 21 G needles (8). Data from thyroid lesions sampling also suggest that the smaller the needle gauge, the less bloody the specimens. This may explain the practice of using 25 G or even 27 G needles for thyroid FNAs (9). This is very relevant for EBUS-TBNA practice as there is an increasing body of literature showing that next generation sequencing (NGS) for genetic profiling of tumors is feasible and offers relevant information from cytology specimens. Studies show that molecular testing on cytology cell blocks is as sensitive and specific as that on histology (10-12). For both smears and cell block, tumor purity is important and most molecular laboratories require that slides are evaluated by a pathologist to confirm that a minimum of 20% of nucleated cells that were forwarded for DNA extraction are malignant (13). Consistent with data from other organ sampling, in clinical practice we found that the 25 G needle results in non-bloody specimens (Figure 2).
3. Improvement in the sensitivity for metastatic lymph node involvement; EBUS –TBNA already has a high diagnostic rate but this can potentially be further improved by optimizing the specimen acquisition technique. The sharpness of the 25 G needle allows a better needle control during the lymph node penetration and during the back and forth movement of the needle inside the node. This is relevant for clinicians, as the needle must be moved from capsule to capsule, covering the entire diameter of the node.

Studies show that in lung adenocarcinoma about 20% of patients have only subcapsular lymph node metastatic involvement (14). Data from EUS –FNA, however, suggests that the diagnostic rate offered by the 25 G ProCore needle is similar to the standard 22 G needle but with a fewer passes needed to achieve adequacy when the 22 beveled needle was used (15). Data from FNAs of the thyroid and breast suggest that for hyper-vascular and densely fibrotic nodes, smaller needles (25 G) may perform better (9).

4. Difficulty in sampling fibrotic lymph nodes: this is not a rare occurrence with the 21 or 22 G needles when attempts are made to re-stage the mediastinum after neoadjuvant chemo- or radiotherapy (16). Studies show that EBUS has a sensitivity of only 64% and 76%, respectively for restaging (16, 17), likely related to the fibrotic tissues inside or around the node. A smaller gauge sharp needle may be preferred in this situation as suggested by data from breast and thyroid FNAs (4, 9). We have successfully used the 25 G needle to penetrate lymph nodes after neoadjuvant chemo and radiation therapy, in circumstances when the 22 G could not be advanced in the node.

**Conclusions:** The available 25 G EBUS-TBNA needles have different physical properties, design and maneuverability. The lack of published literature makes a fair comparison between different 25 G needle systems in the same patient population impossible. We believe that by appropriately using the 25 G needles, practitioners can safely obtain a less bloody and potentially more adequate specimen during EBUS TBNA. This is particularly true for smaller lymph nodes, difficult locations or even for more fibrotic nodes such as those post chemo-and radiotherapy. Comparative studies are needed to confirm these hypotheses.

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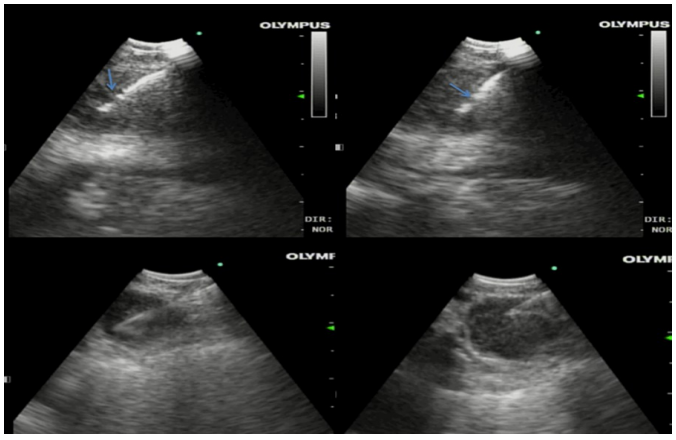


**Figure 1**
**Top panel:** two sequences from a video recorded during EBUS-TBNA. The 25-gauge needle (EchoTipProCore, Cook Medical) was used in this case. The lateral bevel is noted as a break in the hyperechoic line (arrow). The "stroking fan" technique was used, in which the needle direction can be changed inside the node to sample different areas of the node. This is possible, given the flexibility of this needle.
**Bottom panel:** Images from 4L lymph node during EBUS-TBNA using the 25-gauge needle (ExpectTM, Boston Scientific). The flexibility of this needle design allows easier penetration of the airway wall and better control of the needle during the puncture of the node, especially when the nodes are small. The "stroking fan" technique can easily be applied using this needle even for small sized lymph nodes. The 25 G EBUS needle is clearly visualized and well controlled inside the node with the thumb down (bottom left) and thumb up (bottom right) during the 'stroking fan" technique.

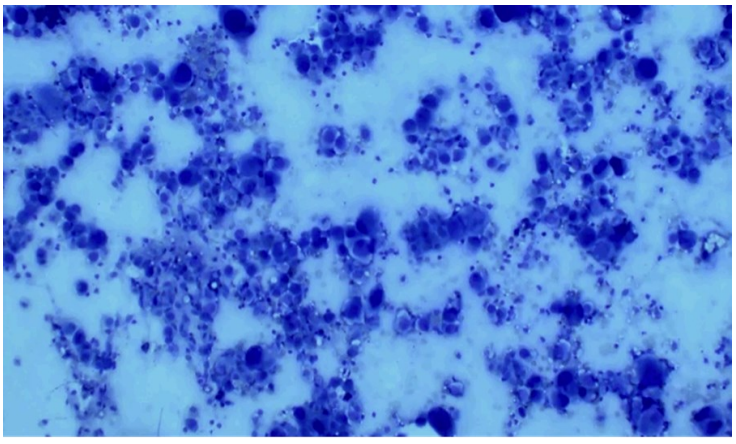

**Figure 2**
Diff Quik stain performed at the time of EBUS-TBNA (rapid on site evaluation) from a specimen obtained with a 25 G Expect TM Boston Scientific needle. The smear shows malignant cells; specimen is not contaminated by benign bronchial or red blood cells.

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## A BRIEF SUMMARY OF ENDOSCOPIC LUNG VOLUME REDUCTION

**Introduction:**

In recent years, Bronchoscopic Lung Volume Reduction (BLVR) has become a treatment alternative for a certain population. Chronic Obstructive Pulmonary Disease (COPD) patients with emphysema phenotype, severe hyperinflation, and who are symptomatic and do not present frequent exacerbations are the most suitable candidates for these interventions. [1]

Several technologies and devices have been proposed for this purpose but to date only a few devices have been proven to bring about an improvement in quality of life and lung function while maintaining a good safety profile. In this brief summary we review different techniques available for BLVR. Unidirectional valves and endobronchial coils are currently available for use mainly in Europe and a number of research projects and trials of these devices are ongoing. Other procedures such as thermal vapor ablation [2] are available in a selected number of institutions and further trials are needed to test their effectiveness.

These treatments should be performed in institutions with extensive experience in endoscopic lung volume reduction and a well-trained team is essential to achieve favorable outcomes in these seriously ill patients. From candidate selection through surveillance, these patients should undergo protocol-based assessment. When performed using proper procedures, data on patient outcomes can be collected in international registries or clinical trials, thereby advancing knowledge of patient management.

**Indications:**

Since the advent of endoscopic lung-volume reduction much has been learned. A consensus opinion has been established for patient selection. Though certain variation occurs depending on the device used, the procedure is generally performed on symptomatic COPD patients with emphysema phenotype who present with severe hyperinflation and residual volume (RV) over 175–200%. Recurrent acute exacerbations are a common cause of patient rejection and are associated with a poor prognosis. Other comorbidities such as severe pulmonary hypertension, suspicious nodules, and previous lung procedures are contraindications for these treatments. All the inclusion and exclusion criteria are summarized in Table 1.

**Planning:**

A focused study of the patient's medical records should be performed including past history of cardiologic and oncologic disease and relevant medical treatments, especially anticoagulant and antiplatelet therapy and related symptoms. Pulmonary function tests are the determining factor in patient selection, particularly lung plethysmography, which provides all the information concerning RV or total lung capacity (TLC).

Another essential tool for patient selection is chest CT-scan. Novel emphysema quantification software programs provide extra information on emphysema distribution and lung fissure integrity, which helps the physician decide where to direct treatment and which device is more suitable.

An initial bronchoscopy is a mandatory diagnostic test in our institution in order to rule out endobronchial lesions, airway colonization by microorganisms, and to collect information about anatomical characteristics. Additionally, collateral ventilation assessment using the Chartis system® (Pulmonx, Redwood city, CA, USA) is performed regardless of the integrity of lung fissures on CT scan. We propose a simple patient-management algorithm as shown in table 2.

**Sampling:**

One day before the procedure, the patient is hospitalized to begin prophylactic treatment with antibiotics, systemic steroids, and intensive bronchodilator treatment. All of these procedures can be performed using a therapeutic fibrobronchoscope with a 2.8-mm working channel. Depending on which device is used, the procedure varies considerably as explained below.

*Unidirectional valves:* There are two models of unidirectional valves available on the market in Europe: Spiration valves (IBV Olympus Respiratory America, Redmond, WA, USA) and ZEPHYR valves (EBV; Pulmonx Inc. Redwood City, CA, USA). The latter is the most commonly used model for lung volume reduction, and its efficacy has been assessed in several clinical trials [3]. There are different sizes available, and the most commonly used are those having a diameter of 4 and 5 mm.

While some facilities use general anesthesia, the procedure can also be performed with the patient under moderate sedation, usually using Midazolam or Propofol and opioids. At least, two experienced physicians working in a coordinated manner are needed for the procedure, one of them holding the bronchoscope in a stable position and the other handling the catheter and placing the valve. A variable number of valves (around 3–4 depending on the patient) are placed in all segmental bronchi of the targeted lobe by using a catheter containing the valve. Finally, correct position of valves is checked and the procedure is concluded.

Treatment with valves is most often unilateral, though bilateral treatment is feasible in selected patients.

*Endobronchial coils:* Made of nitinol, a variable number of these spiral-shaped devices (10–14, depending on the location) are placed in the targeted lobe. An increasing number of clinical trials have addressed the efficacy and safety of this treatment [4,5].

There are three sizes currently available: 100, 125, and 150 mm. This is a bilateral treatment, and at least 4–6 weeks must pass between both procedures. General anesthesia with a laryngeal mask (or endotracheal tube depending on anesthesiologist preference) and fluoroscopic control are required.

Once the bronchial tree is assessed, a semi-rigid catheter and a flexible guide wire are inserted through the working channel, and the tip of the bronchoscope is passed through the tube. One physician should maintain the bronchoscope in a fixed position in order to avoid its migration during the procedure. An experienced bronchoscopist is responsible of guide wire and catheter handling and will coordinate the whole team during the coil deployment. Subsequently, the guide wire is advanced to the distal airway with the aid of radioscopy until the pleura is reached, and then the guide wire is withdrawn at least 3 cm from the pleura. Holding the guide wire in place, the catheter is advanced to the tip of the guide wire. At this point, it is essential to determine the most suitable coil size; for this purpose, radiopaque markers can be seen with fluoroscopy and the size chosen will depend on the number of marks visible while the guide wire is aligned with the catheter. Once the size is decided, the coil is straightened inside a cartridge, advanced into the catheter, and deployed inside the lung using radioscopic guidance.

When the procedure is finished, patients are observed in the recovery area and after a few hours are transferred to the conventional inpatient ward.

***Other technologies or devices:***

As previously mentioned thermal vapor ablation (Uptake Medical Corporation, Seattle, WA, USA) is being used in the context of clinical investigations but its use is not extended nowadays [2]. Other technologies and devices such as Aeriseal ® (Aeris Therapeutics, Woburn, MA, USA) or “Airway By pass” Stent (Broncus Technologies, San Jose, CA, USA) are not available in the market nowadays and its future remain uncertain.

**Quality control:**

Once the procedure is finished, a routine chest X-ray is performed in order to rule out the presence of pneumothorax or other complications. If no complications occur during the following 24 hours, the patient is discharged and prescribed a 7-day prophylactic regimen consisting of antibiotics and oral steroids.

One month after the procedure, the patient is called in and assessed with a chest X-ray.

Protocol-based follow-up of these patients is performed at 6 months and yearly. The assessment includes a complete lung function evaluation (spirometry, CO diffusion, plethysmography, and six minutes walking test) and lung imaging. The Saint George Respiratory Questionnaire (SGRQ) and Modified Medical Research Council (mMRC) are performed at pre-treatment baseline visit and at every follow-up visit in order to assess the impact of the treatment on the patient.

In conclusion, when carried out in properly selected patients by experienced units, endoscopic lung volume reduction is a safe treatment with a low rate of adverse events and promising results.

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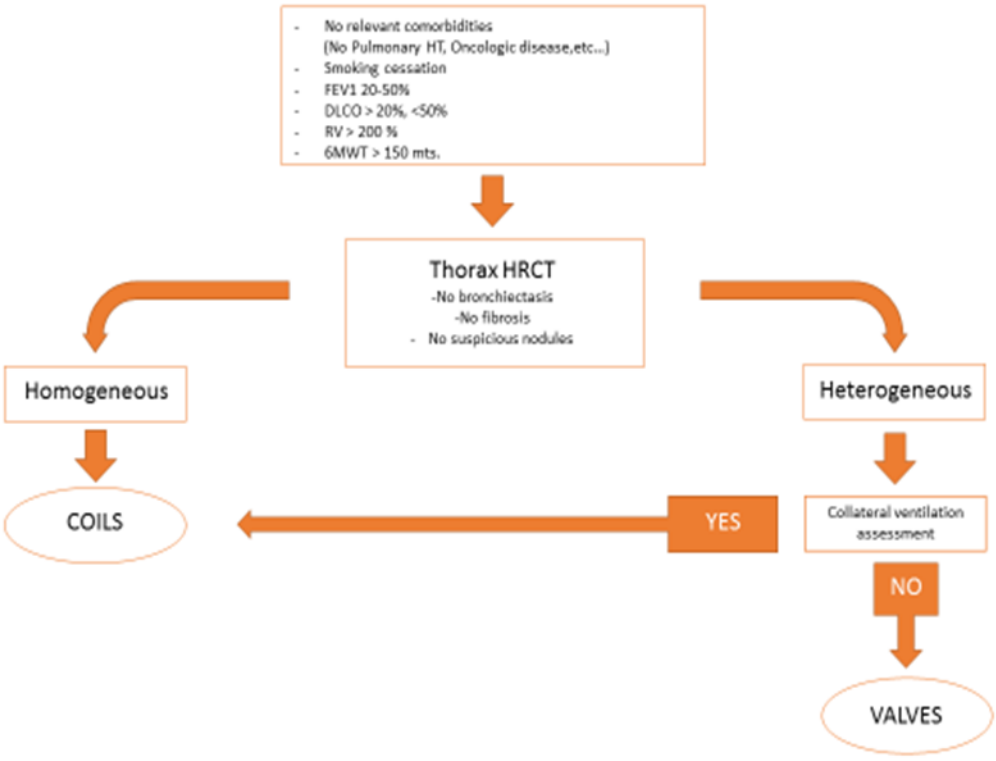
**Table 1. Indications and Contraindications of Endoscopic Lung Volume Reduction**

| INCLUSION CRITERIA |
|---|
| COPD Emphysema phenotype |
| Non current smoker |
| Optimal treatment including rehabilitation program |
| FEV1 20-50% |
| RV > 175-200 (Depending on the device) |
| TLC > 100 % |
| DLCO > 20% , <50% |
| 6MWT > 150 meters |
| mMRC > 1 |
| **EXCLUSION CRITERIA** |
| Positive bronchodilator test. >15% variation in FEV1 |
| More than 3 exhacerbations per year |
| Chronic hypercapnia with BiPAP assistance needed |
| Previous lung surgery |
| Significant comorbidities affecting survival |
| For coils treatment |
| Pulmonary hypertension with PAP> 50 mmHg assessed by echocardiography |
| Giant bullae more than 1/3 of the total lung volume or more than 8 cm of diameter |
| Severe emphysema with important lack of parenchyma |
| Chronic anticoagulant or antiplatelet treatment |

**Table 2. Simple decision making algorithm for BLVR**



# Humanitarian News

The Horizon Project is a project of the World Bronchology Foundation and Separ Solidaria 2016. This project provided instruction of bronchoscopy trainers and delivery of bronchoscopic equipment to respiratory health professionals in Nicaragua. Dr. Enrique Cases (President of the World Bronchology Foundation), accompanied by Dr. María del Mar Valdivia Salas and the bronchoscopy specialty nurse Francisca Sanchis Moret, travelled from Spain to Nicaragua to conduct the training and provide instruction on the use and maintenance of the delivered equipment. Logistics and partial financial support was provided by the WBF together with grants from SeparSolidaria to accomplish this humanitarian endeavor.

**Figure 1: Dr. Enrique Cases (center) with Dr. Arguello and Bordas delivering an intubation model.**
**Figure 2: Drs. Sandoval, Amaya, Vivas, and Fernandez with Dr. Enrique Cases and the donated Pentax bronchoscope.**
**Figure 3: Drs. Cuadra, Arguello,Amaya and Enrique Cases with the donated Cryobiopsy equipment.**

During more than a week-long visit to Nicaragua, a three day seminar and hands-on workshop (using materials from the Bronchoscopy Education Project) workshop was conducted for pulmonologists of the Central Military Hospital in Managua, giving participants the opportunity to train in several different techniques of Interventional Pulmonology. Emphasis during the course was placed on interventional techniques, and the very first cryobiopsia ever obtained in Nicaragua was performed by Drs Christian Sánchez, Pablo Amaya and Hector Rugama during the program.

Several other hospitals were also visited, including centres of Masaya, León and Chinandega, by members of SEPAR and WABIP. The World Foundation Bronchology donated a Pentax flexible bronchoscope -which is the first bronchoscope in a public hospital apart from those at the Public Hospital Manolo Morales Peralta of Managua -, as well as a model for intubation. The company SIMMEDICA Endoscopy & Surgery Spain donated a cryoconsole apparatus along with a flexible cryoprobe. Furthermore, several biopsy forceps, needles, brushes, bronchial balloon blockers and a substantial number of instruments needed for pleural disease management and pleuroscopy were donated on behalf of Dr. Javier Flandes (from the Hospital Fundación Jiménez Díaz Foundation in Madrid, and Regent of the WABIP), and Dr. Enrique Cases (from the Hospital Universitario and Politécnico La Fe in Valencia, Spain).

For the World Bronchology Foundation, this project renews our organization's spirit of charitable giving, and serves as a model for individual donations, and collaborations with large national medical specialty societies such as SEPAR and AEER (both scientific societies with a wide, generous, and modern vision). It is also an example of collaboration and partnership with medical companies, in this case, the company is SIMMEDICA Spain, to help support and expand the practice of bronchoscopic procedures in other corners of the world as well as the delivery of donated equipment to countries in need.

As president of the World Foundation Bronchology and on behalf of all WBF Board members, I want to thank everyone who participated in this project for their selfless work and assistance.

Dr. Enrique Cases Viedma
President World Bronchology Foundation

# Education and Training

## WABIP Train the Trainer and Introduction to Flexible Bronchoscopy programs, Lima, Peru 2016

A Train the Trainers program with companion Introduction to Bronchoscopy course was held in Lima, Peru from August 31-September 2, 2016. Ten participants from Peru, Chile, Costa Rica, and Mexico attended the Train the Trainers program, and 36 bronchoscopists from Lima and surroundings attended the introductory course. The programs were conducted in Spanish. The multidimensional, structured curriculum included didactic lectures, interactive sessions, hands-on bronchoscopy skills training using inanimate models and step-by-step instruction, practical approach small group sessions, role-playing exercises, iPad-based instruction using BronchPilot™, structured feedback and debriefing sessions, and a careful evaluation of the use of assessment tools such as BSTAT, BSAT, and checklists (informed consent, practical approach, step-by-step). The major focus of the program was based on needs assessment, prompting the course faculty to concentrate on team dynamics, communication, and skills assessments as the major themes for the Train the Trainer seminar. The program was held under the auspices of the Peruvian Association for Bronchology and Interventional Pulmonology, with official endorsement from the Peruvian Pulmonary Society. Course directors were Bronchoscopy Education Project certified instructors Elizabeth Becerra and Pedro Garcia Mantilla from Peru. Guest faculty included certified instructor Domingo Perez (Paraguay) and master instructor Patricia Vujacich (Argentina) working with program facilitator Henri Colt (USA).

Both courses were a great success with all sessions being highly appreciated. The program's goals were achieved, and major progress was made regarding future work in Mexico and Central America, as well as in consolidating changes in the bronchoscopy educational paradigm in Peru.

**Figure 1:** Participants from Peru, Chile, Costa Rica, and Mexico attended the Train the Trainers program. In addition to technical skills sessions, participants worked together on case-based exercises, Ipad-based lesson plans, and improving communication and teaching skills.

**Figures 2,3,4:** Participants from Peru, Chile, Costa Rica, and Mexico focused on Teamwork, Communication and bronchoscopy technical skills learning using checklists, assessment tools and step-by-step exercises.

# Board of Regents News

**NEW Board of Regents Members** - The WABIP is honored to welcome four new members on the Board of Regents, which is now over 40 members strong. These new members are: Dr. Ales Rozman (Slovenia), Dr. David P. Lazo (Chile), Dr. Domingo Perez (Paraguay) and Dr. Erik van der Heijden (the Netherlands). We wish to thank these new members and their respective societies for their continued collaboration and support.

(Left to right: Dr. Ales Rozman, Dr. David P Lazo, Dr. Domingo Perez, Dr. Erik van der Heijden)

**2017 Board of Regents Meetng** - The date & time of our next annual Board of Regents meeting has been determined. The online teleconference shall be held on March 11, 2017 (Saturday), at 8:00 AM JST. There will be many important items that require Board of Regents discussion and voting, and we hope that all Regent participate in this crucial meeting.

**Call for Commitee Membership Results** – We are very happy to have received over 50 applications for WABIP membership in the following committees: Bylaws, CME oversight, Membership and Education. As the deadline for submission had just passed, we are still processing the applications, and will determine the committee assignments shortly. While we, unfortunately, cannot accommodate all 50+ applicants due to limited committee openings, we sincerely thank everyone who submitted an application. We shall announce more opportunities for participation in other WABIP committees and/or projects in the coming months.

**Spotlight on a WABIP Member Society**- Founded in 1978, the Japan Society of Respiratory Endoscopy (JSRE) is one of the leading lung related non-profit medical associations of all of Japan. The current President of this 6,600+ member association is Dr. Norihiko Ikeda (Tokyo Medical University).

The mission of the JSRE is to promote the science of respiratory endoscopy using bronchoscopes, mediastinoscopes, thoracoscopes, and other such devices. The JSRE further aims to contribute to social well-being through research, dissemination awareness, communication, alliances and promotion. The Journal of the Japan Society for Respiratory Endoscopy is the leading Japanese-language publication on peer-reviewed reference information on respiratory endoscopy including bronchoscopy, thoracoscopy and closely related subjects. The society's office is located in central Tokyo, and their website may be visited at http://www.jsre.org/ .

特定非営利活動法人
日本呼吸器内視鏡学会
The Japan Society for Respiratory Endoscopy

# Research

## Simple vs. High Tech

Broncho-Alveolar Lavage (BAL) is arguably one of the most common and perhaps the simplest of all the bronchoscopic procedures performed. Its importance is often emphasized by calling it "liquid biopsy". However, numerous controversies such as the volume of fluid instilled, the quantity of fluid retrieved, the preferable technique for suctioning and the value of myriad of tests done on BAL remains unanswered. Fortunately, a recent study by Seijo et al: (1) answers one of these important questions regarding the technique of obtaining optimal return from BAL. When performing BAL, manual suction with syringe has a better return compared to wall suction for the same amount of fluid instilled. According to this study, significantly more patients (81 %vs. 59%; $p < 0.001$) met the ATS criteria of good BAL recovery of ≥30% of instilled fluid in the manual suction group compared to wall suction group.

Dr. Seijo's group included 220 consecutive patients undergoing BAL during flexible bronchoscopy under conscious sedation. Manual aspiration was performed in 115 patients (group 1), and wall suction (<50 mm Hg of negative pressure) was used in 105 patients (group 2). All patients received total of 150 cc of fluid for the lavage. The mean total amount of fluid recovered was 67 ± 20 ml in group 1 and 55 ± 22 ml in group 2 ($p < 0.001$).

This study confirms a time tested wisdom of applying slow and intermittent suction while keeping one's eyes on the screen to avoid airway collapse that we have used for decades for better return in clinical and research arenas rather than high power constant suction for quick and easy procedure.

This study also compared both methods of retrieving BAL fluid in terms of the diagnostic yield, effect of location and presence or absence of pulmonary lesions. Importantly, no statistical difference was noted between the two techniques in the diagnostic yield of BAL for infectious, inflammatory or malignant diseases.

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# BRONCHOSCOPY IN PARAGUAY

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Paraguay's population is estimated to be at around 6.5 million, and nearly a third of Paraguay's population lives in the capital and largest city, Asunción.

Historical, geographic and economical reasons have resulted in an inadequate availability and composition of the health workforce with 70% of them concentrated in the area around Asunción.

Bronchoscopy in Paraguay is performed mostly by pulmonologists. The population of pulmonologists is estimated in 80. Approximately 25% pulmonologists consider themselves with competency in bronchology and 15% regularly performed bronchoscopies.

Bronchoscopy is performed mainly in the public hospitals (85% of the procedures) where the bronchoscopes belong to the institution. In the private sector, most of the bronchoscopists own their equipments and work on a freelance basis. Considering both sectors, there are approximately 4 rigid bronchoscopes, 12 flexible fiberoptic bronchoscopes and 4 videoendoscopes in the country. A total of 1300 bronchoscopies is performed every year in Paraguay.

Most of diagnostic procedures are performed with the suspicion of TB (68 %). TB is still a prevalent disease but prevalence decreased from 92 to 53 cases per 100.000 between 1990-2013, representing a 43% reduction by 2015. Bronchial washing, BAL, bronchial and transbronchial biopsies are regularly performed. TBNA is only occasionally performed because of the cost of the needles and the scarcity of trained bronchoscopists.

Interventional bronchology is offered in 1 center (Instituto Nacional de Enfermedades Respiratorias y Ambientales- Asuncion). Usual methods used for deobstruction of the airways are most of the cases. Laser technology is not available in the country and the placement of stents is limited by the difficulties for access to the stents . EBUS is not available yet in the country.

In spite of their many difficulties and limitations, bronchoscopy has greatly improved in Paraguay during the last decade. The Paraguayan Association of Pulmonology performs training courses once a year or every other year with the support of WABIP, South American Association for Bronchology and Argentinean Association for Bronchology. That support is essential for improving the opportunities of access to a high quality education in bronchoscopy. We have also hosted a Faculty Development Program as well as the Introduction to Flexible Bronchoscopy course and the Train the Trainers workshop with WABIP support, recently. The Bronchoscopy Education Project Learning Materials are broadly used in the country and are the main learning materials of the Paraguayan Society of Respirology (Sociedad Paraguaya de Neumologia).

Currently, we are proud to assure that 70% of bronchoscopists in the country are trained following the guidelines, material and teaching modalities of the WABIP educational programmes.

Paraguayan economy grew in the last decade at an average of 5% and progress has been made on the social front, but still main challenges in Paraguay are the improvement of free access to primary health care and basic education. In that context, respiratory medicine in general and bronchology in particular are doing their best efforts in order to get a better development according to the priorities of the population and with the objective of providing the best quality of care.

## WABIP ACADEMY- WEBCASTS

The WABIP has started a new education project recently: *THE WABIP ACADEMY.* The WABIP Academy will provide free online webcasts with new and hot topics that will interest pulmonologists and interventionalists.

Current webcast topic: **Tissue acquisition for biomarker directed therapy of NSCLC**


**You can reach these webcasts by using this link: http://www.wabipacademy.com/webcast/**

# Links

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| www.bronchology.com | Home of the Journal of Bronchology |
| www.bronchoscopy.org | International educational website for bronchoscopy training with u-tube and facebook interfaces, numerous teachiing videos, and step by step testing and assess ment tools |
| www.aabronchology.org | American Association for Bronchology and I nterventional Pulmonology (AABIP) |
| www.eabip.org | European Association for Bronchology and Interventional Pulmonology |
| www.chestnet.org | Interventional Chest/Diagnostic Procedures (IC/DP) NetWork |
| www.thoracic.org | American Thoracic Society |
| www.ctsnet.org | The leading online resource of educational and scientific research information for cardiothoracic surgeons. |
| www.jrs.or.jp | The Japanese Respirology Society |
| sites.google.com/site/asendoscopiarespiratoria/ | Asociación Sudamericana de Endoscopía Respiratoria |