

"I shall miss the interactions which I have experienced with so many staff and volunteers throughout these years."

R. Ross Reid,
President & CEO, Ontario Lung Association

The ORCS wishes Ross Reid, President and CEO of the Ontario Lung Association since 1980, a happy and healthy retirement.



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Chest X-ray Interpretation for Allied Health Professionals

Vincent Lo, B.Sc.P.T., Physiotherapist, Cardiovascular Intensive Care Unit, St. Michael's Hospital, Toronto; Clinical Tutor, Department of Physical Therapy, Faculty of Medicine, University of Toronto

Chest x-rays often provide critical information used during the initial diagnosis of lung pathology in addition to evaluating the disease status. Examples of use during clinical decision-making include assessment of central line placement, endotracheal tube position, readiness for ventilator weaning, presence of aspiration or potential causes of respiratory distress. These and other issues can be addressed by making use of chest x-rays in current practice.

Physicians use x-rays routinely to diagnose or rule out pathology and to assist in medical management. Their usefulness as an assessment tool may be overlooked by the other health disciplines who are not as familiar with techniques of x-ray interpretation. Many healthcare professionals will admit that x-ray interpretation is a difficult skill to master. Despite its complexity, however, an x-ray can be thought of very simply as a picture of your patient. It is a reliable tool and may be a significant part of your assessment. Many articles, references

and university web-sites describe how x-ray images are captured, the radiological appearance of various tissue densities, the normal anatomical features visualized, and the standard order or approach to reading an x-ray. This basic information is readily available and a detailed review is beyond the scope of this paper. The purpose of this article is to highlight the type of information that a chest x-ray can reveal and to present a few examples of abnormalities and how to recognize them.



VINCENT LO

Many sources endorse the use of a comprehensive, organized, systematic approach to reading an x-ray. The order does not necessarily matter but the consistency in which you apply the method will minimize the chance

of missing an important feature. For example, Figure 1a shows a complete left lung consolidation. By simply looking at the lungs you will not likely appreciate the reason for this condition. In this case, the endotracheal tube (ETT) has been advanced too far or has migrated further into the tracheobronchial tree. The end of the ETT migrated into the right mainstem bronchus, thereby ventilating only the right lung, leaving the left lung under-ventilated or collapsed. Notice that the lung becomes partially re-expanded after correcting the position of the ETT (Figure 1b). The ideal position of the ETT tip is 1-2 cm above the carina or



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UPDATE

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MISSION STATEMENT

The Ontario Respiratory Care Society, a section of the Ontario Lung Association, is a progressive, multi-disciplinary organization of health care providers.

The Ontario Respiratory Care Society is committed to providing high quality respiratory care through:

- providing educational opportunities and research funding
- exchanging information, providing expertise and collaborating with the Ontario Lung Association, health care professionals and organizations to promote respiratory health and influence respiratory health care policy.

CHAIR'S MESSAGE

With this Fall newsletter we begin another busy academic year. The ORCS through its regional committees has a number of educational events that you will find beneficial. Four seminars have been planned and will be held in Markham, Windsor, Guelph and Toronto. Be sure to take advantage of these worthwhile educational opportunities.

Please see the Coming Events column for complete details. The Better Breathing conference for 2005 will be held again at the Doubletree® International Plaza Hotel. In general, participants felt that this location served our needs well. This conference is the highlight of our academic year. Plan now to attend. ORCS members are encouraged to submit posters of their research or clinical work by October 15.

As I reported to you in the last issue, our long-serving OLA President and CEO, Mr. Ross Reid, is retiring this year. Ross has devoted 24 years of stellar service to the OLA and its two Societies. We will miss his leadership, exuberance, warmth,



good humour and generous spirit. We wish Ross much health and happiness in retirement. A search committee of the Board of Directors worked to select a successor and the Board recently approved the appointment of Mr. Manu Malkani, effective October 4. We welcome him to the OLA and wish him all the best.

Also in September, the ORCS Provincial Committee plans to hold a retreat to reflect on our past activities and prepare a new 3-year strategic plan. To support strategic plan development, the ORCS has conducted a survey of members to obtain their views and has held five focus groups in various areas of the province. The information captured from these activities will be used to develop the new 3-year strategic plan. The ORCS wishes to thank the membership for their continued support and for their contributions to the development of the strategic plan.

LARRY JACKSON, CHAIR, ORCS

EDITOR'S COMMENT

I hope you have all had a GREAT summer. September is always a month of mixed feelings for me, sadness for leaving our lazy summer days behind and some relief to return to routine.

The Fall edition includes a lead article on Chest X-ray Interpretation. Although a topic that we all know to some extent, it is often refreshing to get updated on how to interpret CXR and Vince Lo provides an excellent overview and a good systematic approach. Candace Rahn's article provides us with highlights of her presentation at Better Breathing 2004 on music therapy and its role in health. Our spotlight is on Bonnie Solmes, a Past Chair of ORCS and a tireless leader with



The Lung Association. Please pay special attention to information on Research and Fellowship Awards (2005-2006 grant applications are due November 1) and Better Breathing 2005, scheduled for February 3-5.

We are pleased to welcome three new members to our Editorial Board: Janice Bissonnette, Rachel Stack and Mika Nonoyama.

We are indebted to AstraZeneca for sponsoring this edition of *Update*.

As always, your input is important to us and we welcome any letters to the Editors. Contact us at orcs@on.lung.ca.

DINA BROOKS, CO-EDITOR

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Plan now to attend *Better Breathing 2005*, the 25th annual conference of the Ontario Lung Association and the Annual General Meeting of the Ontario Respiratory Care Society. The ORCS program offers an exciting series of respiratory lectures, poster presentations and workshops. Watch for the program brochure later this fall.

On Thursday, February 3, the Respiratory Health Educators Interest Group (RHEIG) of the ORCS will hold its annual Pre-Conference Workshop, sponsored by AstraZeneca. The session begins with a talk on *Breathing Easier Outdoors and In: Health Effects of Common Air Pollutants* by The Lung Association's Air Quality Manager, Brian Stocks. The afternoon continues with the RHEIG Annual Meeting, followed by two sets of concurrent interactive workshops dealing with *Asthma Education: Learning Through the Eyes of a Child*, *Relaxation Techniques for Coping with Shortness of Breath*, *Asthma Education on the University Campus* and *Exercise for COPD Patients*.

On Friday morning, early birds can enjoy a Breakfast Session sponsored by Glaxo-SmithKline (speaker TBA). The focus of this year's Plenary Session is *Knowledge Transfer*, addressing how evidence is translated into clinical practice. The keynote speaker on this theme will be Dr. David Davis from the University of Toronto, followed by three brief presentations by OTS and ORCS members, illustrating some examples of knowledge transfer. The ORCS/OTS Joint Session will feature Dr. Lianne Singer on *Lung Transplantation*, Dr. Thomas Stewart on *Ventilatory Strategies* and Dr. Lisa Cicutto and Dr. Dina Brooks on *Management of COPD: The Patient's Perspective*.

The ORCS Friday afternoon sessions focus on the theme *Making the Transition from ICU to the Community*, with a series of presentations on the roles played by health care professionals from various disciplines in the ICU/CCU, Acute Care and Community Settings. Midway through the



ROB BRYAN

afternoon, the ORCS Annual General Meeting will provide an opportunity for you to meet the members of the Provincial Committee and discuss ORCS programs and activities.

The Friday evening Banquet promises to be fun, celebrating the work of The Lung Association during the past year and featuring Canadian singer/songwriter Nancy White with her topical and humorous songs about Canada and life in general.

Saturday morning begins with a Breakfast Session, featuring Barb Craig, a Registered Nurse with Street Health, discussing *Providing Healthcare to the Homeless: Challenges and Successes*. Saturday morning continues with our popular workshop sessions. The early morning sessions include *Moderated Poster Presentations*, *Lung Protective Strategies* and *Adaptive Breathing Techniques*. The late morning workshops will be *Research Presentations*, *Evidence-Based Practice* and *Chest Assessment*.

For the first time, the Better Breathing conference will conclude with an ORCS/OTS luncheon, sponsored by Boehringer Ingelheim/Pfizer, featuring Dr. Denis O'Donnell from Kingston speaking on *Lung Hyperinflation: The new therapeutic target in COPD*.

Exhibitors will display their products and services and draw prizes will be awarded throughout the conference. *Better Breathing 2005* provides an excellent opportunity to meet health care professionals and Lung Association staff and volunteers from across Ontario, share information and learn about the latest research in the field of respiratory care. Don't miss it!

Note: The deadline for submission of abstracts for poster presentations at Better Breathing is October 15, 2004. For copies of the instructions and abstract form, call the ORCS office or visit www.on.lung.ca/orcs.

ROB BRYAN, RRCP, RRT
CHAIR, ORCS EDUCATION COMMITTEE

COMING EVENTS

September 23, 2004

The Respiratory Health Educators Interest Group (RHEIG) of ORCS will hold a seminar, *Living Well: Integrated Management of Respiratory Health*, at Le Parc in Markham. Topics include COPD: What's New?, Overview of the Ontario Asthma Plan of Action, Community Resources for Educators, Lung Transplantation, Home Oxygen Therapy Criteria and Palliative Care.

October 5, 2004

The ORCS, Essex-Kent Region will hold a seminar, *It's All About Lungs!: A Respiratory Care Update* at the Serbian Community Centre in Windsor. Topics include SARS – Planning for an Outbreak, Diagnosing SOB, PFT Interpretation, Chest X-ray Interpretation, New Respiratory Medications and Devices, Bi-level Ventilation Applications and Distinguishing between Asthma and Bronchiolitis.

October 21, 2004

The ORCS, South Central Ontario Region presents its annual fall seminar, *Respiratory Care in the Royal City*, at The Holiday Inn Guelph. Topics include Applications of CPAP: OSA and Beyond, Respiratory Issues for Neuromuscular Patients, Becoming an Asthma or COPD Educator, Counselling for Smoking Cessation, New Consensus Guidelines for Adult and Paediatric Asthma, ARDS in the Deteriorating Patient and Diagnosis and Management of Airborne Infectious Diseases.

October 22-23, 2004

The Physical Therapy Cardio-respiratory Team at Toronto General Hospital, University Health Network, presents *Acute Cardiorespiratory Physical Therapy Skills Update*, a course for graduate physiotherapists and students. Topics include respiratory rehabilitation, evidence-based practice, ICU lines, tubes and ventilators, CXR, ABG and ECG analysis. Location: Paul B. Helliwell Centre for Education, TGH, 200 Elizabeth St., Toronto. Contact Therese Hawn at 416-340-4800, ext. 4432 or therese.hawn@uhn.on.ca.

October 23-28, 2004

Chest 2004, the annual conference of the American College of Chest Physicians, will be held at the Washington State Convention and Trade Centre in Seattle Washington. Visit www.chestnet.org.

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bifurcation of right and left mainstem bronchus. The order that I have adopted in clinical practice for interpreting x-rays may be helpful to others. It is as follows: 1) orientation to the film, 2) location and placement of invasive lines, tubes and hardware, 3) soft tissues, 4) bony structures, 5) mediastinum/heart, 6) abdomen, and finally the 7) lungs.

1) Orientation to the Film:

The first step should always include checking the name of the patient. X-ray images look very similar and it is easy to mix up patients if the name is not checked each time you view an image. Also worth noting is the date and time that the x-ray was taken. This will be helpful in determining if the pathology is new, old, or getting progressively better or worse. Another thing to note is the view or position of the patient at the time the x-ray was taken (i.e., Anterior-Posterior, Posterior-Anterior/Lateral, supine/erect/lateral decubitus) as this will affect the size of the heart and where the fluid and air will shift. Note which side of the patient is left or right and orient the film so that you are looking at the film as if viewing the patient face-to-face. Finally, the quality of the exposure will affect the prominence of lung markings. You should see the vertebrae faintly in the media-

stinum. An over-penetrated film will make the lungs appear too dark and may mislead you to believe that the patient has COPD or a pneumothorax. Increased lung markings from an under-penetrated film may cause you to believe your patient has pulmonary vascular congestion or CHF.

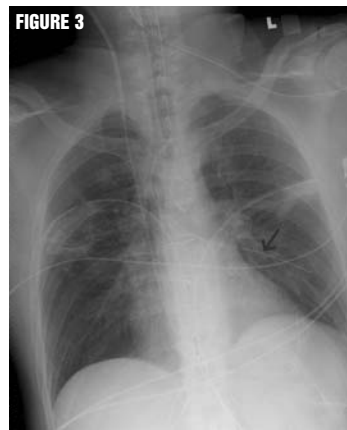
2) Invasive Lines, Tubes and Hardware:

A previous example described the consequences of a misplaced ETT. An example of another misplaced tube is shown in Figure 2. This x-ray shows a chest tube that was not inserted far enough or has partially migrated out of position. Chest tubes like any invasive line are marked with a radio-opaque line. In the case of chest tubes, there is a small break in the line about 3-4 inches from the tip that demarcates the lateral drainage hole. This should be inside the lateral costal margin but in the case depicted, it is outside and likely in the soft tissues. If it were to come out of the body, it could cause a pneumothorax.



Because they are inserted blindly, Nasal Gastric (NG) tubes may be problematic as they may end up traveling into the lung. The x-ray in Figure 3 reveals an NG tube that has entered the trachea and traveled into the left mainstem bronchus. Instillation of feeds via this NG

tube would cause immediate and potentially disastrous aspiration. The risk of misplaced invasive lines requires that standard practice include an x-ray to verify their position after insertion.

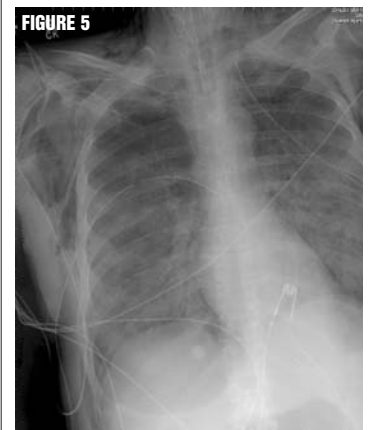


During x-ray interpretation, depending on the patient population, you may see such hardware as halo vests, internal/external fixation devices, joint arthroplasties, foreign bodies or permanent pacemakers/defibrillators. It is worth noting that hardware specific to your patient population is in the correct position. For example, Figure 4 shows a patient following Coronary Artery Bypass Grafting (CABG) with six sternal wires along the length of the sternum. Upon closer inspection however, the top and bottom wires appear out of alignment. This indicates sternal dehiscence either due to mechanical stressors or as a consequence of a sternal wound infection.

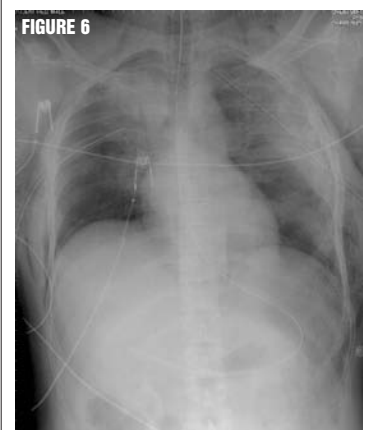


3) Soft Tissues:

Besides breast tissue, the only other significant finding in soft tissues is the presence of subcutaneous emphysema. Subcutaneous emphysema is air trapped in the skin and fatty tissues. This may occur in patients with penetrating/open wounds, chest tubes, a ruptured airway or a pneumothorax. Figure 5 shows a patient with significant bilateral subcutaneous



emphysema in the axillae, neck and chest with particular highlighting around the pectoralis major muscles. Clinically, if you do notice subcutaneous emphysema, you should look for a pneumothorax. It may be an indication of a large air leak.



4) Bony Structures:

There are many things to note in the bony structures such as fractures, chest expansion, scoliosis and joint pathology. Figure 6 shows a patient

Continued on page 5

involved in a motor vehicle collision. On the left, ribs 3-7 are fractured in 2 places causing a flail segment. Also of interest here are the pulmonary contusions in the lung as a result of the impact.

5) Mediastinum:

There are many things to note in the mediastinum including the tracheobronchial tree, the mediastinal contours and width, and the cardiac shape and dimensions.



Figure 7 shows an enlarged cardiac silhouette and incidentally the NG tube is in the LLL bronchus. In the postoperative heart surgery patient, an enlarged cardiac silhouette may indicate bleeding causing a pericardial tamponade or hematoma. In a non-surgical patient, cardiomegaly may be due to heart chamber dilatation or myocardial hypertrophy. Figure 8 shows a widened mediastinum. This could be an ominous sign and may indicate internal bleeding. This particular case depicts a ruptured dissecting aortic aneurysm.



6) Abdomen:

CT scans are much better for visualizing the abdomen because most of the abdominal organs have the same radiologic density on an x-ray. Bowel and stomach gas patterns may be seen on an abdominal x-ray film. Figure 9 shows a large collection of bowel gas with a noticeable lack of tone in the



intestines referred to as an adynamic or paralytic ileus. Distended loops of bowel are also concerning as they may be at risk of rupture. The crescent-shaped translucency illustrated in Figure 10 is due to free abdominal air trapped below the right hemidiaphragm and the top of the liver. It is abnormal

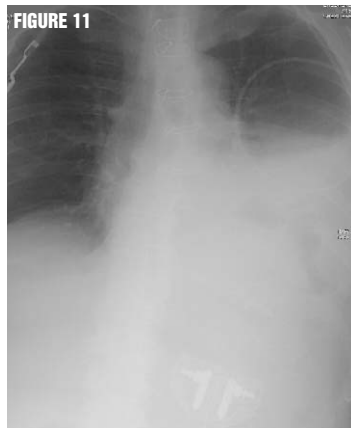


to have free air in the abdomen and a possible cause may be a perforated bowel. Such a case may require emergency surgical repair. Note that this free air is only apparent in the erect patient. If the patient were lying supine, the air would move

anteriorly and become obscured by the dense abdomen below. The diagnosis of free air under the left hemidiaphragm is more difficult because air-fluid levels due to the stomach and bowel are normal findings in the left upper quadrant.

7) Lungs:

Densities involving the lung fields can be broadly classified as extrapulmonary or intrapulmonary. Extrapulmonary opacities are generally smooth densities such as pleural effusions. Free flowing pleural effusions in an erect patient present with a smooth opacity at the base, possibly forming a horizontal fluid line with blunting of the costal/cardiophrenic angles as shown in Figure 11. In a supine patient, a pleural effusion will settle



behind the lung and cause a smooth opacity described as a "ground glass effect" much like a frosted shower door. An



example of this is found in Figure 12 where there is a pleural effusion on the right side. Pleural effusions may also be walled off or "loculated" due to high viscosity fluid such as blood or pus. The normal pleural fluid may be prevented from flowing freely due to the formation of pleural adhesions. Figure 13 shows a large loculated



left pleural effusion, which is, in fact, a hematoma from post-operative bleeding.

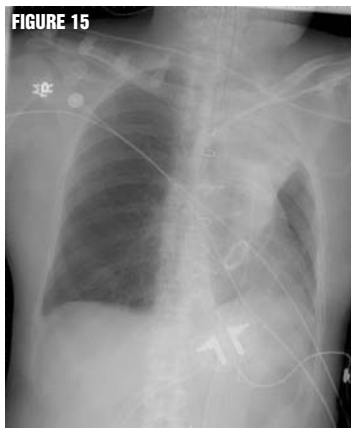
There are many causes of intrapulmonary densities and determining the underlying pathology requires additional information such as the history of presenting symptoms, unilateral or bilateral appearance,



and clinical signs of infection. For example, Figure 14 shows a complete opacification of the left lung. Comparing this film with a previous film would provide confirmation of a more acute presentation. In the case

Continued on page 6

of a complete consolidation, possible causes include atelectasis/collapse, a large pleural effusion, or pulmonary hemorrhage. Pleural effusions usually take some time to develop, and a pulmonary hemorrhage would cause hemoptysis with a possible drop in blood pressure and hemoglobin. In addition, the hallmark of atelectasis is intrapulmonary opacification with volume loss and subsequent deviation of structures towards the collapse. A small shift of the mediastinum towards the affected side may be seen on x-ray. In this particular case, a mucus plug obstructing the left mainstem bronchus was at fault. As such, the lung should re-expand after manual chest techniques, coughing, suctioning or bronchoscopy for bronchio-alveolar lavage (BAL). Mucus plugs may cause obstructions further down the tracheo-bronchial tree. Figure 15 shows a left upper lobe (LUL) collapse. Notice the silhouette sign



(obliterated edge of the aortic arch/left upper mediastinum). Similarly, obstructions may cause segmental collapses in any segment of the lung. Figure 16 shows a characteristic, “sail sign” typical of the right middle lobe (RML) collapse. In the case of RML collapse, the transverse fissure deviates down to form the angular side of the sail sign. Collapsed lung segments may be difficult to differentiate



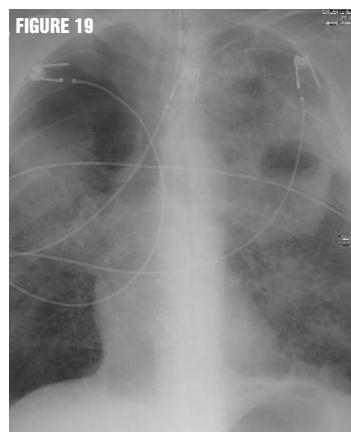
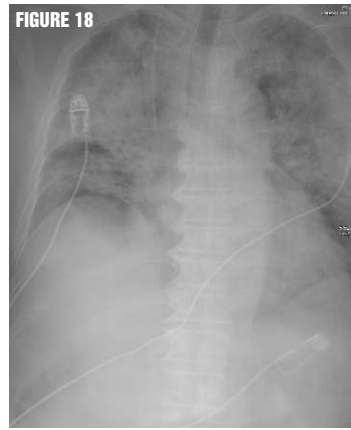
from pleural fluid collections. Distinguishing features of collapse include deviation of structures towards the collapse and clearer demarcation along anatomic fissure lines.

Infiltrates are intrapulmonary densities that have a “fluffy” appearance. These are a sign of diseases that affect the distal airways such as pulmonary edema or alveolar pneumonia. Figure 17 shows a patient with right-sided infiltrates indicative of pneumonia. Another example of intrapulmonary density is



shown in Figure 18 that depicts a patient with bilateral infiltrates indicative of severe pneumonia or acute respiratory distress syndrome (ARDS).

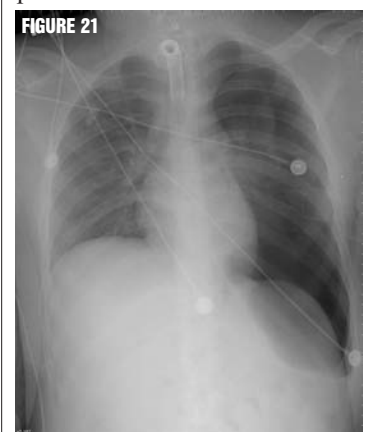
Hyperlucencies may also indicate pathology. Figure 19 shows a patient with coarse lung markings indicating pulmonary fibrosis, a cystic lesion with an air fluid line in the LUL which is a pulmonary abscess, and a hyperlucent RUL that suggests



emphysematic bullae. The hyperlucency in Figure 20 shows a patient with a right pneumothorax. With pneumothorax, you should look for the visceral pleura. This is a thin line which represents the edge of the lung. Also look for lung markings that terminate at that line. The size of the pneumothorax can be estimated by assigning the area a percentage of the total pleural space. The case presented shows an 80% pneumothorax. It is worth



noting that the position of the patient plays an important role in where to look for signs of a pneumothorax. Figure 21 shows a supine patient with a pneumothorax. Notice the dark shadow overlapping the left hemi diaphragm with a clearly defined edge. This is called a “deep sulcus sign” and represents the air shifting to the anterior portion of the pleural space during x-ray of a supine patient.



As you can see from just the few examples given here, x-ray interpretation is a complex skill that requires considerable dedication and training in order to gain proficiency. But the effort is well worth it in terms of professional satisfaction and the information that chest films offer may be extremely helpful in daily practice. Those not formally trained in interpretation of x-rays should always corroborate their observations with experts in radio imaging.

Acknowledgments

The author thanks C. David Mazer, MD., FRCPC, Medical Director, CVICU, St. Michael's Hospital, Professor of Anesthesia, University of Toronto for reviewing this manuscript and providing comments and suggestions.

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IN THE SPOTLIGHT: Bonnie Solmes, BSW, RSW



BONNIE SOLMES

Bonnie Solmes has been awarded The Lung Association's prestigious Meritorious Service Award, nominated by the ORCS Provincial Committee. A dedicated Lung Association and ORCS volunteer since 1988, she began her ORCS involvement as a member of the Toronto Regional Group Executive Committee, later chairing that Committee and joining the Provincial Committee as the regional representative. In 1995, she became

ORCS Chair-Elect and was Provincial Chair from 1997-1999, representing the Society on the Board of Directors and then serving a year as Past Chair. Bonnie was extensively involved in the planning of many ORCS seminars and Better Breathing conferences. She spoke at several programs and encouraged colleagues to become actively involved in the ORCS. She also chaired the OTS/ORCS Task Force on Home Oxygen Funding and committed extensive volunteer time to Lung Association advocacy efforts on this and other issues. Bonnie was also a member of The Lung Association, Metropolitan Toronto and York Region's Rehabilitation Committee and Board of Directors and was very actively involved in the development of patient education materials and programs. As a volunteer and in her work as a Social Worker at West Park Healthcare Centre, she has demonstrated a strong commitment to and compassion for patients with respiratory disease. Congratulations Bonnie!

Chest X-Ray Interpretation... *Continued from page 6*

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With my Gratitude A Message from the President & CEO

R. Ross Reid, B.Sc.Ph., MBA, President & CEO,
Ontario Lung Association



ROSS RIED

More than a year ago, I began a new journey in my life by informing the Ontario Lung Association Chairman that I would be planning to retire once my successor was in place. This past year has been filled with its ups and downs as we moved cautiously towards a new landmark moment. On October 4, Mr. Manu Malkani will assume the position of President & CEO and I will leave shortly thereafter.

This has been a 24 year sojourn for me, and I depart with many mixed feelings. Among them is the thought that I shall miss the interactions which I have experienced with so many staff and volunteers throughout these years. I am so grateful to those who have served with the Ontario Respiratory Care Society in various capacities. This Society was a fledgling body back in 1980, almost taking its last breath. How wonderful to see it today with a membership of some 800 individuals, and with its special interest groups, its many community based seminars, its active research support program - and so much more. This gives us all great encouragement for the future.

None of this would have been possible without the active support of staff and volunteers, all moving together to promote improved lung health through the various health disciplines you represent.

Thank you for your support. And thank you to Sheila Gordon-Dillane, your Director of Administration who has provided marvelous leadership for the last 14 years. I look forward to hearing from time to time of even greater successes as you move forward.

ORCS Breath of Hope Team



The *ORCS Inspiration Team* at the June 4 Toronto OPG Breath of Hope Relay. From left (back row): Ed Stedman, Dale Stedman, Larry Jackson, Joe Geremia, Therese Hawn, Sheila Gordon-Dillane, Jim Dillane. Middle: Krisztina Weinacht. Front row: Jacqueline Geremia, Kaitlin Hawn. The Team raised \$2,103 for The Lung Association.

Music Therapy for Respiratory Care

Candace Rahn, Hon. BMT, Music Therapist, Creative Arts Department, Long-Term and Veterans' Care Directorate, Sunnybrook and Women's College Health Sciences Centre, Toronto

We feed our hunger and quench our thirst, yet do not pay attention to the hunger and thirsting of the soul. The emptiness and helplessness within our society indicates that collectively our souls need food. Can music feed the soul? I believe the answer to this question is yes, and the ways it does so are varied and complex.

In this brief article, I will review some of the various therapeutic applications of music and describe in practical terms how drumming exercises can elicit feelings of calmness and relaxation, help individuals connect with rhythms and improve self-esteem.

If you have ever suffered from anxiety, panic or asthma, you will remember a time when you were forced to think about your breathing. Air and the sipping of it are taken for granted by most until our bodies are robbed of it. Clients with respiratory diseases like COPD must learn to cope with their breathing difficulties. Stress and anxiety can exacerbate breathing problems while calm states reduce ventilatory demand and promote lung emptying with each exhalation. Therefore, strategies to ease breathing effort or reduce stress can provide comfort.

Music can be important in ways that we may not have considered. For example, our very bodily functions are dictated by the elements of music through rhythm, vibration, tone, timbre, and dynamic levels. Most are oblivious to the strong connection between mind and body. The effect of music on the mind can affect the body as well.

There are 3 effects on the body that are commonly associated with music¹:

- 1 Low frequencies can **relax** (cello)
- 2 Rhythmical music can **invigorate** (drumming)
- 3 Loud music can create **agitation** (rock music)

A number of therapeutic applications of music have been described. The first music bath (later called “vibroacoustics”) was built in 1980. Its goal was to create an environment where the body could be



CANDACE RAHN

bathed in sound and vibration. Two years later, research was conducted using pure sinusoidal tones at low frequencies; it was discovered that after 3 minutes, it decreased spasms in children with Cerebral Palsy. The first experiments were done in Norway in 1981 and there are still 200 music baths being used

today. The music bath is contained in a soundproof room and houses a bed, chair and several speakers. The premise of the music bath is that the body vibrates according to the different sound waves and at 100HZ, the client absorbs 20% of the energy. It is also believed to influence the autonomic system.¹

Research on **low frequency electrical stimulation** (ultrasound) showed that muscular energy will increase or decrease with rhythms, breathing will accelerate or change its regularity and fatigue will increase or decrease. There was a marked variable effect on heart rate. Blood pressure, endocrine function, metabolism and biosynthesis of enzyme processes were also influenced with music.¹

At the Better Breathing conference in January of 2004, a most willing group of health care professionals, volunteers and members of The Lung Association, attended my workshop presentation to learn about the effects of music on breathing and the body. Those in attendance actively participated in a series of exercises designed to better understand the rhythm connection through hand drumming. Although I use a variety of instruments in my practice, the drum effectively illustrates the important concepts.

I chose hand drumming for the following reasons:

- De-emphasizes the importance of the therapist and emphasizes the importance of self in healing and awareness
- Releases negative feelings
- Causes the drummer to experience the “here and now”
- Reduces mind chatter
- Induces a state of inner peace
- Unlocks emotional blocks
- Increases Alpha brainwaves (feelings of well-being and euphoria)

Three drummers volunteered to participate in a series of exercises developed by psychotherapist and drummer, Robert Lawrence Friedman.² A drum circle is a sacred space where you leave everything behind. Feelings of respect and trust are fostered in this setting.²

1 The Heartbeat Rhythm (*focuses on concentration/stress management*)

Close eyes, hand on heart or wrist, transfer your heartbeat to your voice saying “gah gung”, when ready transfer to drum. Continue for up to 5 minutes.

2 Improvisational Heartbeat Rhythm (*focuses on listening skills, concentration, expression*)

One person plays heartbeat, once it is steady, other person has freedom to explore his or her creative expression. Switch roles.

3 The Scat Orchestra (*helps drummer become familiar with rhythm, induces creative mind, listening, team building, laughing will release endorphins*)

Each person chooses a scat card and practices saying the scat out loud; leader will snap fingers or tap knees lightly; one at a time each person chants their scat and repeats it in fluid motion, others join in with their scat; the same scat rhythms are tried on the drums. Examples of scat sounds are: “scubi do wa”, “do bah dee, do bah dee, do” and “squee’m, bop’m. boo dah”.

Our own bodies have internal rhythms, e.g., heart rate, blood flow, brainwaves, menstrual cycle, firing of neurons, circadian rhythms. What is the very first rhythm we ever hear? Our mother’s heart beat. We are surrounded by universal rhythms: 365 days the earth revolves around the sun, 28 days the moon revolves around the earth, 24 hours a day our planet rotates on its axis.

Our bodies crave synchronization with rhythms around us. The concept of **Entrainment** was discovered in 1665 and was described as the tendency of people and objects to synchronize to a dominant rhythm. Some examples of this are pendulums, birds flapping their wings and

Continued on page 9

menstrual cycles.² If we work in a busy, stress-filled office our inner rhythm may become one of pressure and stress. If we are walking down Bay St. at rush hour, we may walk quickly matching the pace even though we are on vacation.²

Become aware of the rhythms around you. Choose the ones you want to synchronize with.

4 Entrainment Exercise (*focuses on stress management, meditative states*)

Deep slow breaths, on every out breath hit the drum once and match your breath to the beat of the drum.

5 Drumming Meditation (*focuses on deep relaxation and meditative state*)

Sit comfortably, breathe in and say "RELAXING" in your mind while you hit the drum once, breathe out and say, "RELAXED" in your mind and hit the drum once.

6 Drumming Away Your Stress (*focuses on stress management and team building*)

Find a comfortable position, as you think about a stressor, begin hitting the drum; imagine your stress exiting from your hands into drum where it is transmitted to sound vibration and dissipated; do not stop until the stress is totally released.

This last drumming exercise we engaged in was truly spontaneous and the root of the experience is what musicians call Improvisation. It requires intuition. With intuitive drumming it is believed that we can externalize the rhythms that are within us.² If you allow this intuitive drummer to be part of your playing, you will not be thinking, "Does this sound okay?" or "Am I doing it right?" Accepting your intuitive drumming becomes a metaphor for accepting other parts of yourself just as they are.

7 Improvisation Exercise (*focuses on communication, enhanced self-esteem, increased energy, improved circulation, heightened state of awareness and socialization*)

You can discuss a theme for your improvisation or you can simply trust that each person will participate in the way he/she needs to. In a group setting anyone can start and anyone can end the improvisation. You can use vocalizations, hands, feet, drums and whatever else makes noise.

Next time you feel anxious, have a headache, tension and/or knotted shoulder muscles, pass by the Tylenol® and think about the healing power of music. Grab

your hand drum and tune in to the blocked rhythms in your body. Make your drum sing out all the unspoken thoughts and wishes of your day. Your body will thank you for it! Drumming becomes a metaphor for accepting other parts of yourself just as they are.

Through purposeful use of instruments, I guide clients in their music making to achieve therapeutic goals. Sessions may be conducted individually or with a group. Client satisfaction and attainment of goals is assessed after each session or series of sessions. Modifications to the sessions are made as necessary.

I hope you now have a better appreciation for the role of music therapy, a greater understanding of the rhythm connection and are more able to realize the many benefits of music for yourself and your clients.

References

1. Wigram R, Skille O. The art & science of music therapy: A handbook. In, T Wigram, R West & B Saperston (Eds), The effect of music, vocalisation and vibration on brain and muscle tissue: Studies in vibroacoustic therapy. 1995;2:23-57. Singapore: Harwood Academic Publishers.
2. Friedman RL. The healing power of the drum: a psychotherapist explores the healing power of rhythm. 2000; Gilsum, NH: White Cliffs Media.

Respiratory Articles of Interest

Balter MS et al. Canadian guidelines for the management of acute exacerbations of chronic bronchitis. Can Resp J, July/Aug 2003;10: Suppl B: 3B-32B.

This article presents an update to the guidelines published in 1994 and is the result of the combined effort of the Canadian Thoracic Society and the Canadian Infectious Disease Society. The Chronic Bronchitis Working Group used information gathered from a needs assessment and developed treatment recommendations based on the literature published between 1966 and 2002. They used three levels of evidence to weight the literature reviewed. A large amount of material is presented and the recommendations have been divided into numerous sections beginning with a review of epidemiology, risk factors and pathophysiology. A discussion of the management of acute exacerbation of chronic bronchitis (AECB) includes bronchodilator, oxygen and corticosteroid therapies and mucous clearing strategies. An extensive section on antibiotic therapy follows, which presents Anthonisen's classification of exacerbations, antibiotic treatment options and detailed discussions of resistance, trends, risk factors (for both treatment failure and hospitalization), risk stratification and prevention of AECB. Although some of the evidence presented is from the COPD literature and does not differentiate between the management of chronic bronchitis and

that of emphysema, this article is nevertheless a comprehensive summary of the literature about the management of chronic bronchitis.

Eaton T, Lewis C, Young P, Kennedy Y, Garrett JE, Kolbe J. Long-term oxygen therapy improves health-related quality of life. Respir Med. 2004 Apr; 98(4): 285-93.

This interesting article describes the impact long-term oxygen therapy (LTOT) has on health-related quality of life (HRQL) for patients with severe COPD. This prospective longitudinal interventional study compared the HRQL of patients who were given LTOT (n=43) with those who did not meet the criteria for (therefore not prescribed) LTOT (n=25). They found that the LTOT group improved after 2 months and was maintained at 6 months. In the non-LTOT group, HRQL progressively declined over 2 and 6 months. Other measures evaluated in the article: predictors of LTOT response and patient expectations. Interesting note: most prescription guidelines are based on the impact of oxygen on survival. HRQL should be considered in clinical management since it may pick up other potential benefits of LTOT; patients may weigh improved HRQL higher than the possibility of living slightly longer.

Compiled by Jocelyn Carr and Mika Nonoyama

November 3, 2004

The ORCS, Southwestern Ontario Region presents *Gasping for Air*, an educational evening at the Best Western Stoneridge Inn at Highways 401 and 4 between London and St. Thomas. Presentations will be Can't Get Air In, Can't Get Air Out: Restrictive, Obstructive - what's it all about? and Oxygen on the Go: what you need to know.

November 12, 2004

The ORCS, Greater Toronto Region presents *Managing Severe Respiratory Disease Across the Lifespan* at the Ramada Hotel at 185 Yorkland Blvd., Toronto. Topics include Diagnosis and Management of BPD, Cystic Fibrosis Update, BOOP, Pulmonary Hypertension, Bronchial Fenestration and Bronchoscopic LVRS, Making Choices: The Use of Intubation and Mechanical Ventilation for Severe COPD and Ethical Issues in End-of-Life Care.

November 15-16, 2004

The Lung Association's Tuberculosis Committee presents a two-day conference, *TB - Everyone's Business*, for health care professionals. To obtain the program, e-mail Michelle Wilson at registration@eventives.ca.

November 26-28, 2004

The Canadian COPD Alliance conference, *Raising the Standard of Care in COPD*, will be held at the Delta Centre-Ville in Montreal. Contact cca@lung.ca for details.

February 3-5, 2005

Better Breathing 2005 will be held at the Doubletree® International Plaza Hotel in Toronto. See article elsewhere in this issue for program information.

June 2-4, 2005

Post-Polio Health International including the International Ventilator Users Network presents the Ninth International Conference on Post-Polio Health and Ventilator-Assisted Living: Strategies for Living Well in Saint Louis, Missouri. See www.post-polio.org or contact info@post-polio.org.

For further information on any of the ORCS programs listed above, call (416) 864-9911, e-mail orcs@on.lung.ca or visit www.on.lung.ca/orcs.

ORCS Research and Fellowship Awards

The ORCS Research and Fellowship Committee is pleased to announce Lung Association funding for the following Awards for the year 2004-2005:

Research Grants

Comparison of two methods of Continuous Positive Pressure (CPAP) to support successful extubation of infants of weights ≤ 1500 grams (C2CPAP)

Principal Investigator: Marilyn Hyndman, RRCP, RRT, MRS(c), Clinical Instructor, Respiratory Therapy, Sunnybrook & Women's College Health Sciences Centre, Toronto

Co-Investigators: Sharyn Gibbins, MSc (Nursing), PhD & Bruce Graham, MEd, MSc, PhD, SWCHSC

An examination of the nutritional factors affecting the severity of Bronchiolitis Obliterans Syndrome (BOS) in the Lung Transplant population: A pilot study

Principal Investigator: Janet Madill, PhD(c), RD, Research Practice Leader/Transplant Dietitian, Toronto General Hospital, University Health Network, Toronto

Co-Investigator: Johane Allard, MD, FRCPC, University Health Network

Psycho-social experiences of families with SARS from the perspectives of hospitalized children and adolescents, their parents and health care providers

Principal Investigator: David Nicholas, MSW, RSW, PhD, Academic and Clinical Specialist, Social Work and Respiriology, The Hospital for Sick Children, Toronto

Co-Investigators: Donna Koller, PhD(c), Robyn Salter Goldie, MSW, RSW & Robin Gearing, PhD(c), RSW, The Hospital for Sick Children

Fellowship Awards

Paula Burns, RRCP, CAE, MAEd, Hamilton: PhD, Curriculum, Teaching and Learning, OISE, University of Toronto

Jocelyn Carr, BScPT, Mississauga: Master of Science, Rehabilitation Science, University of Toronto

Cindy Ellerton, BScPT, Toronto: Master of Science, Rehabilitation Science, University of Toronto

Nancy Garvey, RRCP, RRT, CAE, Georgetown: Master of Applied Science (Respiratory Science), Charles Sturt University, Australia and The Michener Institute for Applied Health Sciences, Toronto

Renu Gupta, BScPT, Toronto: Master of Science, Rehabilitation Science, University of Toronto

Judy King, BHSPT, MHSc(HCP), Ottawa: PhD, Education, University of Ottawa

Christina McMillan, RN, BScN, Sudbury: Master of Science, Nursing, Laurentian University, Sudbury

Sharon Moloney, RN, BScN, Toronto: Master of Science, Institute of Medical Science, University of Toronto

Mika Nonoyama, BSc., RRCP, RRT, Toronto: PhD, Rehabilitation Science, University of Toronto

Andrea White Markham, RRCP, RRT, CAE, Mississauga: Master of Applied Science (Respiratory Science), Charles Sturt University, Australia and The Michener Institute for Applied Health Sciences, Toronto

2005-2006 Funding Year

The deadlines for funding for the 2005-2006 funding year are November 1, 2004 for Research Grants and February 1, 2005 for Fellowships and Education Awards for Advanced Respiratory Practice. Copies of the application forms and program guidelines can be obtained by calling (416) 864-9911 or by visiting www.on.lung.ca/orcs.

Register today for one of the ORCS fall seminars at www.on.lung.ca/orcs.

Lung Association Resources for Health Care Professionals

New Asthma Education Tool

Chris Haromy, RRT, CAE
The Lung Association



Taking Control of Your Asthma is an interactive PowerPoint presentation that covers the basics of asthma management. It is designed for health care professionals to present to their patients.

Although this asthma presentation can be used alone, it is generally designed to have the following items go along with it:

- 1 Presentation slide printouts for participants to follow along.
- 2 Full-colour "Control Questions" forms that allows each participant to follow along in the asthma control section of the presentation, to gauge the level of control of their own asthma.
- 3 Folder of The Lung Association's asthma education materials for each participant.
- 4 Pre-Workshop Questionnaire and Post-Workshop Questionnaire for each participant, to gauge whether they have gained knowledge about asthma. This is for The Lung Association's purposes to help us gauge whether the presentation is making an impact.

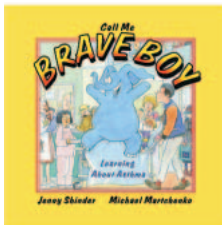
5 Participant Evaluation Form for each participant to help us ensure the presentations are meeting their needs.

6 Presenter Evaluation Form for each presenter to help us ensure we are meeting their needs.

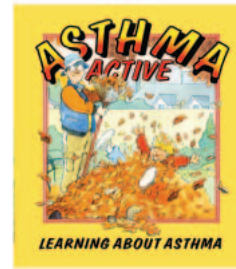
We have a small budget of \$100 honourarium for the speaker, \$100 for rental of space for the workshop, \$100 to rent equipment (e.g. LCD projector, laptop, screen), \$300 to promote/advertise, and \$50 for food/drinks. We can assist with the promotion, posters, etc.

If you are interested in presenting this talk or to order this presentation, please contact our Asthma Action Helpline at 1-800-668-7682. It is available by e-mail or alternatively in CD format or overhead sheets.

New Educational Asthma Materials for Children



Call Me Brave Boy, which is targeted to children 2-6 years of age, is a picture book designed for a parent or caregiver to read to a child who has asthma. It is written by new author Jenny Shinder and wonderfully and humorously illustrated by Michael Martchenko, Canada's foremost children's book illustrator.



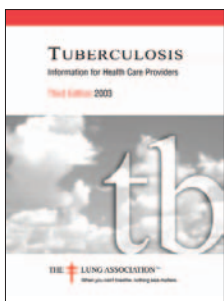
Asthma Active, an activity book targeted to children 7-12 years of age, is full of educational games that teach about asthma in a fun way. Toronto Maple Leafs' star forward, Gary Roberts, can be found in this book promoting proper asthma control to allow you to reach your goals.



What Sets You Off is a set of educational asthma trigger stickers that can be placed on a colourful poster depicting home and outdoor trigger scenes.

To order these free materials, please contact our **Asthma Action Helpline at 1-800-668-7682.**

TUBERCULOSIS RESOURCES



Tuberculosis: Information for Health Care Providers, Third Edition 2003, written by members of The Lung Association's Tuberculosis Committee, is an excellent comprehensive resource for physicians, nurse practitioners, public health, hospital and occupational health nurses, infection control practitioners, community healthcare providers, staff of long-term care facilities and others who work with those at risk for

TB. Price: \$3 per copy for 1-49 copies, \$2.50 for 50-99 copies and \$2.00 for 100 or more copies, plus GST. (A French edition will be available in 2005).

Tuberculosis: Key Issues for Health Care Providers: the video, a 19 minute video for



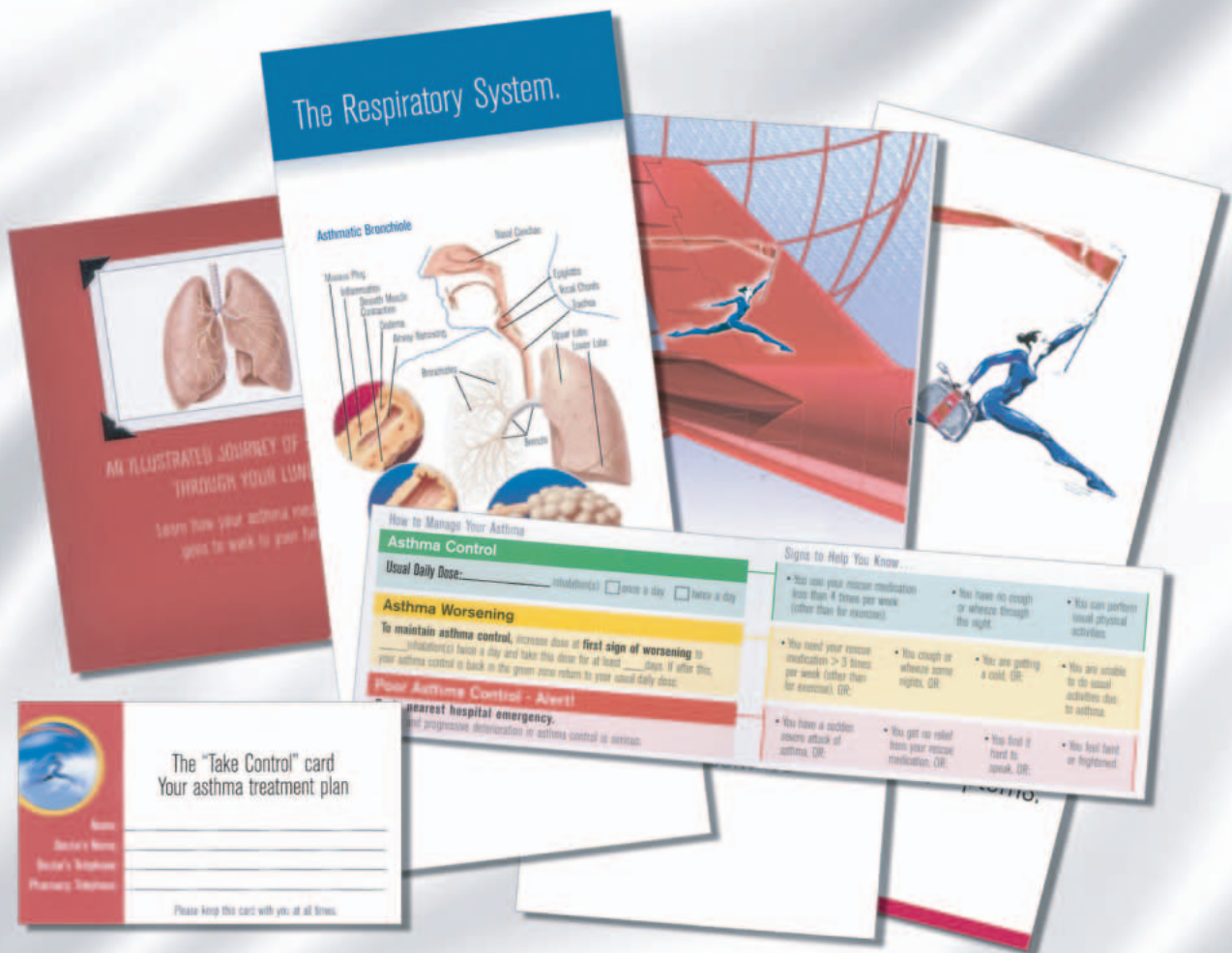
health care professional education addressing pathophysiology, diagnosis, treatment and the roles of Public Health and The Lung Association is also available. Price: \$20 plus \$1.40 GST.

Facts About Your Lungs: Tuberculosis – Preventable, Treatable, Curable – a new pamphlet addressing What is TB?, Transmission, Signs and Symptoms, Active vs. Latent TB and Treatment is now available free of charge in Ontario.

To order or for information about other TB Resources from The Lung Association, call 1-800-972-2636.

Plan to attend **TB – Everyone's Business**, a conference for health care professionals on November 15-16, 2004 at the Crowne Plaza Hotel in Toronto. See Coming Events.

AstraZeneca - Helping you help your asthma patients take control



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