



CJRT-RCTR

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**Join us! CSRT Annual Educational Conference & Trade Show
May 28–31, 2009**

**New CAREstream
Student Award**

Features

- Strategic Planning
- New Awards
- Obesity & Respiratory Disease

The journal for respiratory health
professionals in Canada

La revue des professionnels de la santé
respiratoire au Canada



**Canadian Journal of
Respiratory Therapy**
Revue canadienne de la
thérapie respiratoire

Official Journal of the CSRT
Revue officielle de la SCTR

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d'administration de la SCTR
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**CSRT membership inquiries /
Questions concernant l'adhésion
à la SCTR :**

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Cover Photo — Hilton Lac Leamy & Casino Lac Leamy
Site of the CSRT Conference 2009

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Online registration for the CSRT Conference is now available at www.csrt.com. You may also register for the Leadership or Educator's Congress or the Anesthesia Assistants Forum. Full registration includes a ticket to the President's Banquet as well as the Welcome Wine and Cheese Reception.

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Message from the President

Ray Hubble RRT, M.Ed.



I don't know about you, but I am tired of winter. I live on the east coast of Canada, and if your winter has been anything like mine, you are ready to throw away your snow shovel and dig out your shorts and t-shirts.

I let my mind drift to these thoughts when I received the CSRT conference programme. Lac Leamy in the Gatineau Hills of Quebec, just outside of downtown Ottawa is an area I have visited before. Not only are the accommodations top-notch, the natural beauty of the area is second to none. I already have plans to pack my shorts and t-shirts and put them to good use in the midst of great continuing education offerings and the industry sponsored trade show.

This is my last official message as the president of the CSRT. In the past, when I have read other similar farewell messages, I have noted a propensity to focus on the past. Actually, what excites me is the future.

The future is bright for your national professional association. We have an Executive Director, Christiane Ménard, who has changed our business practices in the head office to make the staff and the services they provide more

Continued on page 20

Mot de président

Ray Hubble, TRA, M.Ed

Je vis sur la côte Est du Canada et j'ai bien hâte que l'hiver prenne fin. Si vous avez connu un hiver comme le nôtre, vous êtes sans doute prêt à ranger votre pelle et à sortir vos vêtements d'été, vous aussi.

C'est l'arrivée du programme du congrès de la SCTR qui a suscité ces rêves de beau temps. La région du lac Leamy sur les collines de la Gatineau au Québec, tout près du centre-ville d'Ottawa, m'est familière. L'excellence de l'hébergement n'est surpassée que par la beauté naturelle de l'endroit. Je m'imagine déjà là, profitant des lieux en shorts et en t-shirt, tout en tirant avantage des séances éducatives et du salon commercial parrainé par l'industrie.

Il s'agit de mon dernier mot officiel à titre de président de la SCTR. Souvent, de tels messages d'adieu mettent l'accent sur le passé. Or, c'est l'avenir qui me passionne.

L'avenir de notre association professionnelle nationale est prometteur. Notre directrice générale a rationalisé les pratiques commerciales du bureau chef afin de rehausser l'efficacité du personnel et des services qu'ils offrent. Les liens solides qui ont été tissés avec les organismes de réglementation provinciaux continuent à évoluer. Il y a un engagement de la part des partenaires de l'industrie et les partenariats créés avec la SCTR et ses membres assurent un marketing à valeur ajoutée.

L'assurance responsabilité offerte par le biais de Marsh Ltée s'améliore sans cesse

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CAREstream Student Excellence Award

The CSRT is proud to partner with CAREstream Medical Ltd in an effort to increase the recognition of students.

It is with great pride that the CSRT announces the creation of the CAREstream Student Excellence Award. The goal of this award is to recognize education excellence in each Canadian program accredited through the Council of Accreditation of Respiratory therapy Education (CoARTE). Students do not have to be a member of the CSRT to be eligible for this award.

Currently there are 20 education programs eligible for this award. Each program has been informed in writing of the award program. The selection will be made in consultation with each education program.

The student selected from each of the eligible programs will receive their award at the President's Banquet during the CSRT Annual Education Conference. The award consists of:

- A certificate of excellence
- \$500 cash prize
- CSRT dues for one year (April to March)
- Complimentary registration to the CSRT Education Conference and Trade Show
- Complimentary ticket to attend the President's banquet

CAREstream Medical Ltd., one of Canada's fastest growing companies over the past 5 years, is a leading provider of specialized respiratory and anaesthesia equipment and supplies, and has always been a strong supporter of the profession. In addition to providing support for these student awards, CAREstream Medical Ltd., will make a significant contribution to the Annual Education Conference and Trade Show as well as to the journal and the web site. In recognition of their substantial support for the profession and professional association, the CSRT has conferred the "Elite Sponsor" category to CAREstream Medical Ltd.



CAREstream Medical Ltd., is committed to supporting excellence in respiratory care. We believe that students who excel in their studies today will be leaders in advancing the profession tomorrow.



**CAREstream
Medical Ltd.**

Moe Shariff
President, CAREstream Medical Ltd.



Respiratory therapy students are an integral part of the profession and our future. We are proud to partner with CAREstream Medical Ltd., in acknowledging their achievements.

Ray Hubble, President
Canadian Society of Respiratory Therapists

CSRT student members eligible for Gold, Silver and Bronze CSRT Student Awards

The CSRT will continue its long tradition of providing Gold, Silver and Bronze Student Awards to its student members who have achieved the highest marks at the CBRC national exam. The CSRT will provide travel and accommodation to the recipients of these awards to attend the CSRT Annual Education Conference and Trade Show.

Prix d'excellence académique CAREstream

La Société canadienne des thérapeutes respiratoires est fier de s'associer à CAREstream Médical Ltée pour la création du Prix d'excellence académique CAREstream.

Ce prix a pour but de reconnaître l'excellence académique au sein de chaque programme de formation en thérapie respiratoire agréé par le Conseil pour l'agrément de la formation en thérapie respiratoire (CoAFTR). Tous les étudiants sont admissibles à ce prix.

La Société a diffusé cette information aux dirigeants de chaque programme de formation et la sélection du gagnant sera effectuée en consultation avec eux. L'étudiant choisi recevra son prix durant le Banquet du président lors de notre Congrès éducatif annuel, soit le samedi 30 mai. Chaque étudiant recevra :

- un certificat d'excellence
- un chèque au montant de 500 \$
- un certificat d'adhésion à la SCTR pour une année (avril à mars)
- l'inscription gratuite au Congrès éducatif et Salon commercial 2009
- un billet gratuit pour participer au Banquet du président

CAREstream Médical Ltée est une entreprise canadienne qui connaît une évolution rapide depuis les cinq dernières années en tant que fournisseur d'équipements et de fournitures respiratoires et d'anesthésie spécialisés. CAREstream Médical Ltée appuie la profession et les activités de l'association professionnelle depuis longtemps. En plus du soutien financier accordé à ces prix étudiants, CAREstream

Médical Ltée versera une importante contribution financière au Congrès éducatif et Salon commercial de la Société et continuera d'appuyer les activités de la société dans ses publications et son site internet. En reconnaissance de son généreux soutien, la SCTR a conféré à CAREstream Médical Ltée le titre de « Commanditaire élite ».



CAREstream Médical Ltée s'engage à soutenir l'excellence des soins respiratoires. Nous croyons que les étudiants qui brillent sur le plan académique aujourd'hui sont les leaders qui feront progresser la profession demain.



Moe Shariff
Président, CAREstream Médical Ltée



Ray Hubble, Président
Président de la SCRT

Les étudiants en thérapie respiratoire font partie intégrante de la profession et de notre avenir. Nous sommes fiers de nous associer à CAREstream Médical Ltée pour mettre en valeur leurs réalisations avec un prix de mérite.

Les prix Or, Argent et Bronze seront remis aux étudiants qui sont membres de la Société canadienne des thérapeutes respiratoires.

La Société poursuit sa tradition de remettre des prix Or, Argent et Bronze aux étudiants, qui sont membres, et qui ont obtenu les plus hautes notes lors de l'examen national du Conseil canadien des soins respiratoires. La Société remboursera les frais de déplacement et d'hébergement aux gagnants de ces prix, leur permettant ainsi de participer au Congrès éducatif et Salon commercial annuel en mai 2009.

Response to “Respiratory Therapy and Smoking Cessation: Are We Doing Our Part?”

David Arbeau, RRT, CAE, Program Manager, Population Health, Regional Health Authority, New Brunswick

I was both pleased and excited to see Amy Reid’s article in the most recent CSRT journal, on the role (or lack of) respiratory therapists play in smoking cessation. As a program manager and respiratory therapist, I too have been troubled at the lack of interest and education around this addiction for many years in the respiratory therapy community given the tremendous burden it places on our clients and our health care system. However, to Amy and my colleagues around the country – I have good news to share!

For the past two years, I have been managing a national project (led by experts at the University of Ottawa Heart Institute) entitled “The Expansion of Evidence Based Smoking Cessation Interventions in Canadian Hospitals”, funded by Health Canada. In this project, we have been implementing the “Ottawa Model for Smoking Cessation” – an evidence-based, practical approach to smoking cessation. Even better, all of the project staff, who conducts assessments and counsel patients, are respiratory therapists. In fact, many hospitals throughout the country (over 40 are now implementing the model in some fashion) are using the respiratory therapists to facilitate and implement this model of care at their centers as well.

Our respiratory teams of counselors are the subject matter experts at our hospitals and have now intervened with close to 1000 tobacco users. Our cessation rates are very encourag-

ing and we are making a tremendous impact in the lives of our patients. Not only are we changing lives, we are part of changing health care provider attitude toward tobacco addiction by educating our colleagues and physicians...we are making change happen! We have conducted training workshops, (as well as attended many ourselves!), held sessions for front-line nurses, physicians and have formed taskforces in each of our hospitals (who drive tobacco cessation programming) with membership representing nursing, pharmacy, rehab & therapeutics, administrators, and many more.

It is now a regular occurrence at our hospitals for a front line nurse to not only ask about tobacco use (which they have been doing for some time now), but also to advise the client of the health risk and provide services such as self-help materials and pharmacotherapy (nicotine replacement therapy etc). Our respiratory therapist counselors then step in with more intensive counseling, tailoring quit plans and assisting clients by long term follow up after discharge and more.

Tobacco use is the leading cause of preventable death and disability in the world. We as respiratory therapists must do our part. I’m happy to inform you that many are involved and doing their part now! Thanks to Amy for enlightening us with your informative article.

School of Medical Rehabilitation Curling Championship



Left to right: Nikki Plesiuk, Dayna Dowbiggin, Alyssa MacDonald, and Reed Morrison.

RT students from the University of Manitoba placed first at the annual ‘School of Medical Rehabilitation Curling Championship’ held in Winnipeg, MB on March 21, 2009. They competed against over 20 other teams representing Physiotherapy, Occupational Therapy, and University Faculty. Not only did they show off their incredible curling talent, they were also crowd-pleasers with one of the evening’s best team costumes. As part of the faculty team Andrew West was awarded a top prize for the much less coveted title of ‘Best Fall of the Evening’. It seems at both ends of the talent spectrum, Respiratory Therapy has once again shown its supremacy!

Notice of Annual General Meeting

Membership of the Canadian Society of Respiratory Therapists

Notice is now given of the Annual General Meeting (AGM) of members of the Canadian Society of Respiratory Therapists/ La Société canadienne des thérapeutes respiratoires (the "Society").

Date: Friday, May 29, 2009

Time: 07:30 to 08:30 hours

Location: Delfosse Room, Hilton Lac Lemay
3 du Casino Blvd, Gatineau, QC J8Y 6X4

Objectives of 2009 Annual General Meeting:

a) To receive, and if thought fit, to adopt the reports of the Directors, the audited financial statement of the Society for

the year ended December 31, 2008 and the report from the Auditors thereon:

- b) To appoint auditors and to authorize the directors to fix remuneration;
- c) To conduct other business of the Society.

Current Registered/Honourary Members of the Society, in good standing, are entitled to vote in person at the meeting or by appointment of proxy. If you are unable to attend, you may complete a proxy form and return by mail or fax to the CSRT office by Friday, May 22, 2009.

Dated at Ottawa, Ontario, March 18, 2009

By order of the CSRT Board of Directors.

Avis d'Assemblée générale annuelle

Membres de la Société canadienne des thérapeutes respiratoires

Avis est présentement donné que l'Assemblée générale annuelle des membres de la Société canadienne des thérapeutes respiratoires / Canadian Society of Respiratory Therapists (la « Société ») aura lieu :

Date : Le vendredi 29 mai 2009

Heure : 7 h 30 à 8 h 30

Lieu : Salle Delfosse, Hilton Lac-Lemay
3, boul. du Casino, Gatineau, QC J8Y 6X4

Objectifs de l'Assemblée générale annuelle de 2009 :

a) recevoir, et si indiqué, adopter les rapports des directeurs, les états financiers vérifiés de la Société pour l'exercice

terminé le 31 décembre 2008, ainsi que le rapport afférent des vérificateurs;

- b) nommer les vérificateurs et autoriser les directeurs à fixer la rémunération;
- c) expédier toute autre affaire de la Société.

Tout membre agréé/honoraire en règle actuel de la Société a le droit de voter en personne à l'assemblée ou en nommant un fondé de pouvoir. S'il vous est impossible d'y assister, vous pouvez remplir un formulaire de procuration et le retourner par la poste ou par télécopieur aux bureaux de la SCTR d'ici le vendredi 22 mai 2009.

Fait à Ottawa, en Ontario, le 18 mars 2009.

Par ordre du Conseil d'administration de la SCTR.

Meetings of Special Interest Groups

CBRC AGM

Wednesday, May 27
5:30PM – 10:00PM
Laberge Room, Ramada

CACERT

Stakeholders Meeting
Wednesday, May 27
Casino Royal, Ramada

Anesthesia Assistants SIG

Thursday, May 28
9:00AM to 12:00
Walker Room,
Hilton Lac Lemay

Leadership SIG

Thursday May 28
9:00AM to 12:00
Suzor-Cote Room, Hilton
Lac Leamy

CACERT

Business Meeting
Thursday, May 28
9:00AM to 12:00
Delfosse Room,
Hilton Lac Leamy

CSRT AGM

Friday, May 29
7:30AM – 8:30AM
Delfosse Room
Hilton Lac Leamy

Past President Council

Friday, May 29
11:00AM – 2:00PM
Hampton Room,
Hilton Lac Leamy

NARTRB

Business Meeting
Saturday, May 30
8:00AM to 5:00PM
Casino Royal
Ramada

Proxy Voting Instructions

Any CSRT member in good standing may assign a proxy vote to any current registered or honorary member in good standing. Your proxy holder must be present at the meeting. Proxy forms are available on the CSRT web site. If you do not have access to the CSRT web site, you may follow the example provided below.

Proxy forms must be received by mail or by fax no later than 15:00 hours EST on Friday, May 22, 2009.

On a plain white sheet of paper please include the following statement:

I _____, a current registered / honorary member in good standing of the Canadian Society of Respiratory Therapists (CSRT) residing in _____ in the province of _____ hereby appoint _____, registry number _____ as my proxy to vote on my behalf as directed below at the Annual General Meeting of the CSRT which will be held on Friday, May 29, 2009, Gatineau, QC.

Print your name

CSRT registry number

Signature

Signed this _____ day of _____, 2009.

Assigning your proxy vote: To facilitate the process, you may assign you proxy vote to one of the members of the Board of Directors* who will be in attendance at this meeting. The following are their names and CSRT registry number:

Christina Beaudin	Smiths Falls, ON	CSRT Registry number: 7078
Angela Coxe	Hamilton, ON	CSRT Registry number: 6536
Jeff Dmytrowich	Saskatoon, SK	CSRT Registry number: 7029
Robert Leathley	Saint John, NB	CSRT Registry number: 0749
Michael Lemphers	Kamloops, BC	CSRT Registry number: 2701
Daniel McPhee	Staffa, ON	CSRT Registry number: 3248

* Please note that the CSRT President was not included in the above list. The CSRT President is the Chairman of the Annual General Meeting. In case of a tie vote the Chairman of the Meeting shall have a deciding ballot.

Agenda items requiring a vote include: (the proxy form and information on the motions is available at www.csrt.com)

1. Motion to approve the audited financial statement for the period ending December 31, 2008

For _____ Against _____ At the discretion of proxy _____ (Please mark your vote with an "X")

2. Motion to appoint McCay Duff & Company LLP, of Ottawa, Ontario, as the CSRT's auditors for the 2008 fiscal year.

For _____ Against _____ At the discretion of proxy _____ (Please mark your vote with an "X")

Please fax to (613) 521-4314 or mail to the attention of Executive Director, CSRT, 102-1785 Alta Vista Drive, Ottawa, Ontario, K1G 3Y6

Instructions Liées au Vote par Procuration

Tout membre en règle de la SCTR peut assigner un vote par procuration à tout membre agréé / honoraire en règle. Votre fondé de pouvoir doit être présent à l'assemblée. Les formulaires de procuration sont disponibles dans le site Web de la SCTR. Si vous n'avez pas accès au site Web de la SCTR, vous pouvez suivre l'exemple ci-dessous.

Les formulaires de procuration doivent être reçus par la poste ou par télécopieur au plus tard à 15h00 HNE le vendredi 22 mai 2009.

Sur une feuille de papier blanc ordinaire, inscrire l'énoncé suivant :

Je _____, actuel membre agréé / honoraire en règle de la Société canadienne des thérapeutes respiratoires (SCTR) qui habite _____ dans la province de _____ nomme par la présente _____, numéro d'agrément _____ à titre de fondé de pouvoir pour voter en mon nom tel que précisé ci-dessous lors de l'Assemblée générale annuelle de la SCTR qui aura lieu de 7h30 à 8h30 le vendredi 29 mai 2009, à Gatineau, au Québec.

Nom en lettres moulées

Numéro d'agrément SCTR

Signature

Signé en ce _____ jour de _____ 2009.

Assignation de votre vote par procuration : Afin de faciliter le processus, vous pouvez assigner votre vote à l'un des membres du Conseil d'administration* qui seront présents à cette assemblée. Voici leurs noms et numéro d'agrément de la SCTR :

Christina Beaudin	Smiths Falls, ON	Numéro d'agrément de la SCTR : 7078
Angela Coxe	Hamilton, ON	Numéro d'agrément de la SCTR : 6536
Jeff Dmytrowich	Saskatoon, SK	Numéro d'agrément de la SCTR : 7029
Robert Leathley	Saint John, NB	Numéro d'agrément de la SCTR : 0749
Michael Lemphers	Kamloops, BC	Numéro d'agrément de la SCTR : 2701
Daniel McPhee	Staffa, ON	Numéro d'agrément de la SCTR : 3248

* Veuillez noter que le président de la SCTR ne figure pas dans cette liste. Le président de la SCTR préside l'Assemblée générale annuelle. Advenant l'égalité des voix, le président de la réunion a la voix prépondérante.

Points à l'ordre du jour qui exigent un vote : (formulaire de procuration, renseignements liés aux propositions disponibles au www.csrt.com)

1. Proposition d'approuver les états financiers vérifiés pour l'exercice se terminant le 31 décembre 2008

Pour _____ Contre _____ À la discrétion du fondé de pouvoir _____ (Indiquez votre vote à l'aide d'un X)

2. Proposition de nommer McCay Duff & Company LLP, d'Ottawa, en Ontario, en qualité de vérificateurs de la SCTR pour l'exercice financier 2009.

Pour _____ Contre _____ À la discrétion du fondé de pouvoir _____ (Indiquez votre vote à l'aide d'un X)

Veillez les acheminer par télécopieur au 613-521-4314 ou par la poste à l'attention de la directrice générale, SCTR, 102-1785, prom. Alta Vista, Ottawa, Ontario, K1G 3Y6.

CSRT Develops Strategic Plan for 2009–2012



Strategic planning is an essential tool of effective association management. It provides a framework for ensuring that limited resources are aligned with priorities and that performance can be measured over a specific period of time.

Strategic planning provides an opportunity to identify issues, to set priorities, to examine resource allocation, and to assess the overall operational and governance effectiveness of the association.

On February 20-21, 2009, the CSRT brought together a variety of individuals from within the organization and outside the organization to establish strategic directions and to develop objectives and activities for the CSRT for the next four years.

At the end of the two days, the participants had defined four key strategic directions for the CSRT for 2009 to 2012:

Strategic Direction #1

Advocate on behalf of the profession (professional practice issues)

Strategic Direction #2

Build the CSRT Membership (membership recruitment and retention)

Strategic Direction #3

Promote the Profession

Strategic Direction #4

Foster National Professional Standards

The information gathered during this strategic planning workshop will provide the foundation on which the CSRT Board of Directors and staff can build a strategic action plan. The strategic action plan will be available on the CSRT web site in June 2009 and will outline realistic objectives that can be achieved within the resources available to the CSRT.

La SCTR crée un Plan stratégique pour 2009–2012

La planification stratégique est un outil essentiel pour assurer la gestion efficace de toute association. Elle fournit un cadre permettant de veiller à ce que les ressources limitées soient affectées aux priorités et que le rendement puisse être évalué sur une période de temps spécifique.

La planification stratégique permet d'identifier les enjeux, d'établir les priorités, d'étudier l'allocation des ressources et d'évaluer l'efficacité globale des opérations et de la gouvernance de l'association.

Les 20 et 21 février, la SCTR a rassemblé une brochette d'intervenants au sein et à l'extérieur de l'organisation dans le but d'établir des orientations stratégiques et de développer des objectifs et des activités pour la SCTR pendant les quatre prochaines années.

Au terme des deux journées, les participants avaient défini quatre orientations stratégiques clés pour la SCTR pour la période de 2009 à 2012 :

Orientation stratégique no 1

Défense des intérêts de la profession (enjeux liés à la pratique professionnelle)

Orientation stratégique no 2

Augmentation des effectifs de la SCTR (recrutement et maintien des membres)

Orientation stratégique no 3

Promotion de la profession

Orientation stratégique no 4

Adoption de normes professionnelles nationales

L'information recueillie pendant cet atelier de planification stratégique constitue la pierre angulaire sur laquelle le Conseil d'administration et le personnel de la SCTR pourront élaborer un plan d'action stratégique. Disponible dans le site Web de la SCTR en juin 2009, le plan d'action stratégique précisera des objectifs réalistes pouvant être atteints avec les ressources dont dispose la SCTR.

Promotion and Recognition of Professional Achievement in Respiratory Therapy

Christina Beaudin, RRT, Membership Director, CSRT Board of Directors



Since joining the CSRT Board of Directors in the fall of 2008, I have spent some time reviewing our programs and services to members and looking at how we promote the profession.

For the Board of Directors, the most important element of promoting the profession is acknowledging and celebrating the achievements within the profession. As a result, we have taken a closer look at our awards program and have made some modifications that will appropriately reflect the contributions of our profession to the Canadian health care system.

The Robert Merry Lecture Award

This award was established to recognize the important contributions of Robert Merry, one of the pioneers of the RT profession who made significant contributions to the advancement of the profession and the professional association. Robert Merry was one of the seven founding fathers of the CSRT which was established in 1963. At that time Robert Merry was the department head at the Royal Victoria Hospital in Montréal. Before the CSRT was established, Montréal was a chapter in the American Respiratory Therapists Association. Robert Merry moved to London, Ontario in the late sixties where he established the School of Respiratory Therapy at Fanshawe College. He retired in 1986. Many respiratory therapists have benefited from his knowledge, his skills and judgement either as an educator or colleague at some point in their career. Robert Merry was also the first editor of the CSRT Journal and was the CSRT historian / archivist.

The Robert Merry Lecturer will be the keynote speaker of all future conferences. For a number of years, the CSRT has paid individuals to deliver a keynote address at our conference. Very often, these individuals' achievements were not related to the field of respiratory therapy. The Board of Directors believes that there are a number of respiratory therapists who have made significant contributions to the professional association and their profession and who would be excellent keynote speakers.

The Robert Merry Lecturer will be the focal point of the plenary program at each annual CSRT Educational Conference and Trade Show. To be selected to deliver this lecture will be considered an honour. It is expected that the lecture will reflect the vision and values of the association and the outstanding contribution and experience demonstrated by the recipient of this

award.

The first Robert Merry Lecture Award will be selected by the Board of Directors and will be announced during the President's Banquet. The recipient will be delivering his keynote lecture at next year's conference which will be held in St. John's, Newfoundland in May 2010. Nominations for all future Robert Merry Lecture Awards will be accepted from the membership.

Colya Kaminiarz Professional Achievement and Education Award

This award is designed to honour Colya Kaminiarz for the significant contributions he made to the profession and the professional association. Colya Kaminiarz, was a respected member of the CSRT Board of Directors, and President-Elect, when he passed away suddenly in 2007. He was a tireless promoter of the profession. He played many roles in the RT community, including clinical site coordinator, critical care RT with MedEvac and an anaesthesia technologist. He was a vocal member of many volunteer committees within the RT profession.

This award will be conferred annually to a member of the CSRT who, in the opinion of the Board of Directors, is recognized for his leadership skills and who has made a significant contribution to professional practice and/or in the field of education at the national level.

The first Colya Kaminiarz award winner will be selected by the Board of Directors and the award will be conferred to the winner during the President's Banquet on Saturday, May 30, 2009.

CSRT President's Award

This new award will be conferred by the President each year to an individual or an organization that has provided support to the President in his role or has made a significant contribution to the Society during his/her term of office. The Board of Directors recognizes the large time commitment made by each President. This award will provide each President an opportunity to acknowledge an individual and/or organization that has been instrumental to his/her success as President.

Nomination process for 2010 and beyond

Because of the short time frame available this spring, the Board of Directors will nominate and select the first recipient of the Colya Kaminiarz Professional Achievement and Education Award as well as the first Robert Merry Lecturer.

Effective June 2009, nominations for the CSRT awards program will be accepted from the membership. Further information on the CSRT awards program and information about the nomination process will be available on the CSRT web site. The Board of Directors will review all nominations at its fall meeting and the winners will be contacted by the President shortly thereafter.

Promotion et reconnaissance des réalisations professionnelles en thérapie respiratoire

Christina Beaudin, TRA, Directrice, Adhésions, Conseil d'administration de la SCTR

Depuis que je me suis jointe au Conseil d'administration (CA) de la SCTR à l'automne 2008, j'ai passé du temps à analyser nos programmes et les services offerts aux membres, puis à évaluer les façons par lesquelles nous assurons la promotion de la profession.

Pour le CA, l'élément le plus important de cette promotion consiste à reconnaître et à célébrer les réalisations au sein de la profession. Par conséquent, nous avons réévalué notre programme de reconnaissance et y avons apporté des modifications qui refléteront à leur juste valeur les contributions apportées au système canadien de soins de santé par notre profession.

Le prix de conférence Robert Merry

Ce prix a été créé dans le but de reconnaître les importantes contributions de Robert Merry, pionnier de la profession de TR qui a fait d'innombrables contributions à l'avancement de la profession et de l'association professionnelle. Robert Merry était l'un des sept membres fondateurs de la SCTR, qui fut créée en 1963. À l'époque, Robert était chef de service à l'Hôpital Royal Victoria à Montréal. Avant la création de la SCTR, Montréal était une section de l'American Respiratory Therapists Association. À la fin des années soixante, Robert est déménagé à London, en Ontario, où il a établi la School of Respiratory Therapy au Fanshawe College. Il s'est retiré en 1986. De nombreux thérapeutes respiratoires ont tiré profit de ses connaissances, ses compétences et son jugement en qualité d'éducateur ou de collègue à un moment donné pendant leur carrière. Robert Merry fut également le premier rédacteur en chef de la Revue de la SCTR et il a occupé le poste d'historien / archiviste de la SCTR.

Le conférencier Robert Merry sera le conférencier d'honneur pour tous les congrès futurs. Depuis plusieurs années, la SCTR verse des honoraires aux personnes qui prononcent le discours-programme lors de notre congrès alors que très souvent, leurs réalisations ne sont pas liées au domaine de la thérapie respiratoire. Le CA est d'avis que les nombreux thérapeutes respiratoires qui ont fait d'importantes contributions à l'association professionnelle et à leur profession constitueraient d'excellents conférenciers d'honneur.

Le conférencier Robert Merry sera le point de mire des séances plénières à chaque Congrès éducatif et Salon commercial annuel de la SCTR. Le fait d'être choisi pour prononcer ce discours constituera un grand honneur. Il est prévu que le discours reflétera la vision et les valeurs de l'association, ainsi que la contribution et l'expérience exceptionnelles du récipiendaire de ce prix.

Le premier prix de conférence Robert Merry sera choisi par le CA et annoncé pendant le Banquet du président. Le récipiendaire

prononcera le discours-programme lors du congrès de l'an prochain à St. John's, Terre-Neuve en mai 2010. Les mises en candidature pour tous les futurs prix de conférence Robert Merry seront acceptées des membres.

Prix d'excellence professionnelle et académique Colya Kaminiarz

Ce prix a pour objet d'honorer Colya Kaminiarz pour ses importantes contributions vis-à-vis de la profession et de l'association professionnelle. Membre respecté du Conseil d'administration de la SCTR et président désigné lorsqu'il est décédé subitement en 2007, Colya était un infatigable promoteur de la profession. Il a joué maints rôles au sein de la communauté de la TR, dont ceux de coordonnateur de site clinique, TR en soins intensifs auprès de MedEvac et technologue en anesthésie. Membre de nombreux comités bénévoles au sein de la profession, il n'hésitait jamais à faire valoir son opinion.

Ce prix sera accordé chaque année à un membre de la SCTR qui, de l'avis du CA, est reconnu pour ses habiletés de leadership et qui a fait une importante contribution à la pratique professionnelle et/ou dans le domaine de l'éducation à l'échelle nationale.

Le lauréat du premier Prix Colya Kaminiarz sera choisi par le CA et le prix sera décerné pendant le Banquet du président le samedi 30 mai 2009.

Prix du président de la SCTR

Ce nouveau prix annuel sera décerné par le président à une personne ou un organisme qui a appuyé le président dans son rôle ou qui a fait une importante contribution à la Société pendant son mandat. Le CA reconnaît l'immense engagement en temps de chaque président. Ce prix permettra à chaque président de reconnaître une personne et/ou un organisme qui a joué un rôle déterminant relatif à son succès pendant son mandat.

Processus de mise en candidature pour 2010 et au-delà

En raison du temps limité dont nous disposons ce printemps, le CA nommera et choisira le premier lauréat du Prix d'excellence professionnelle et académique Colya Kaminiarz et le premier conférencier Robert Merry.

À compter de juin 2009, les membres pourront soumettre des candidatures pour le programme de prix de la SCTR. Des renseignements supplémentaires sur ce programme et sur le processus de mise en candidature seront disponibles dans le site Web de la SCTR. À sa réunion d'automne, le CA étudiera toutes les candidatures reçues et le président communiquera avec les lauréats par la suite.

CSRT Shows Continued Support to Respiratory Therapy Students

It is a great pleasure for me to announce some of the initiatives on behalf of students from across Canada.

NEW Free Professional Liability Insurance for CSRT Student Members

Effective April 1, 2009 students who are members of the CSRT, and who work under direct supervision of the “named insured”, that is a registered CSRT member with PLI coverage, will receive complimentary professional liability insurance. In addition, students who successfully complete the final exam and begin to render “professional services” up to the registration period of the next year will also have professional liability coverage at no charge.

NEW CAREstream Student Excellence Awards

CSRT has established the CAREstream Student Excellence Award. One student from each of the Canadian accredited education programs will receive an award. The selection will be made in consultation with each education program who will select the student who has obtained the highest marks during the previous year. The students selected for this award do not have to be members of the CSRT. The award will be conferred at the President’s Banquet during the CSRT Annual Education Conference. The award consists of:

- A certificate of excellence
- \$500 cash prize
- CSRT dues for one year (April to March)
- Complimentary registration to the CSRT Education Conference and Trade Show
- Complimentary ticket to attend the President’s banquet



Chantale Blanchard,
2nd year student,
New Brunswick
Community College,
CSRT Director,
Student Relations

CSRT Gold, Silver, Bronze Student Achievement Awards

Each year, the CSRT confers three student achievement awards to three CSRT student members. To be eligible, students have to be a CSRT student member, be a graduate from a Canadian accredited program, and have made their first successful attempt at the Canadian exam within 18 months of graduation. The awards are handed out by the President of the CSRT during the President’s banquet at the CSRT Annual Education Conference and Trade Show. The award recipients will receive a \$500 cash award and a certificate of excellence during the President’s banquet. In addition, funding is provided by the CSRT to cover the costs of travel, accommodation, conference registration as well as a ticket to the President’s Banquet.

The names of the 2009 recipients of the CSRT Gold, Silver, and Bronze Student Achievement Awards were not known at time of publication and the winners will be announced in the Summer Journal.

Initiatives additionnelles de la SCTR visant à soutenir les étudiants en thérapie respiratoire

Chantale Blanchard, étudiante de 2e année, Collège communautaire du Nouveau-Brunswick, Directrice des relations-étudiants, SCTR

J’ai l’immense plaisir de vous annoncer quelques-unes des initiatives, nouvelles et améliorées, de la SCTR qui s’adressent aux étudiants d’un océan à l’autre du Canada.

NOUVEAU Assurance responsabilité professionnelle (ARP) gratuite pour les étudiants membres de la SCTR

À partir du 1er avril 2009, le programme d’assurance responsabilité professionnelle de la SCTR couvrira les étudiants qui sont sous la supervision directe d’un membre agréé assuré de

la SCTR. Advenant qu’un ou une thérapeute respiratoire soit nommé dans une action en justice pour responsabilité civile, cela signifie que sa police s’élargira pour couvrir un étudiant qui travaille sous sa supervision. De plus, les étudiants qui réussissent l’examen final et qui commencent à fournir des services de TR jouiront d’une assurance responsabilité professionnelle gratuite jusqu’à la période d’inscription de l’année suivante. Les renseignements fournis dans la présente publication ne constituent qu’un aperçu général. La police est assujettie de modalités, de conditions et d’exclusions. Pour un complément d’information sur la police d’ARP de la SCTR, consultez le site Web de la SCTR.

NOUVEAU

Prix d'excellence académique CAREstream

La SCTR a créé les Prix d'excellence académique CAREstream. Un étudiant dans chaque programme d'études canadien agréé recevra un prix. La sélection sera faite en consultation avec chaque programme d'études qui choisira l'étudiant ayant obtenu les plus hautes notes au cours de l'année précédente. L'adhésion à la SCTR n'est pas obligatoire pour être admissible à ce prix. Les prix seront remis au Banquet du président lors du Congrès éducatif annuel de la SCTR. Ce prix consiste en :

- un certificat d'excellence
- une récompense de 500 \$ en argent
- les cotisations à la SCTR pour une année (avril à mars)
- l'inscription gratuite au Congrès éducatif et Salon commercial de la SCTR de l'année en cours
- un billet gratuit pour participer au Banquet du président

Prix de distinction Or, Argent et Bronze décernés aux étudiants de la SCTR

Chaque année, la SCTR remet trois prix de distinction à trois de ses membres étudiants. Pour être admissible, vous devez être membre étudiant, diplômé d'un programme canadien agréé et avoir effectué votre première tentative d'examen dans les 18 mois suivant l'obtention du diplôme. Les prix sont décernés par le président de la SCTR lors du Banquet du président au Congrès éducatif annuel de la SCTR. Les lauréats reçoivent une récompense de 500 \$ en argent et un certificat d'excellence. De plus, le transport, l'hébergement, l'inscription au congrès et un billet pour le Banquet du président sont fournis par la SCTR.

Les noms des gagnants des Prix de distinction Or, Argent et Bronze 2009 décernés aux étudiants de la SCTR n'étant pas connus au moment d'aller sous presse, ils seront publiés dans le numéro de l'été.

Lakeridge Health Service Excellence Award

Congratulations Susan and Dave!

Susan Ord and Dave McKay have been awarded the Lakeridge Health Service Excellence Award. This award is presented to an individual or team who, in the spirit of outstanding service, has gone above and beyond the call of duty to make health care a better place for employees to work, for physicians to practice and for patients to receive care.

Susan Ord and Dave McKay, both CSRT members, have worked for Lakeridge Health in the Senior Respiratory Therapists (RT) role for two years. Lakeridge is a corporation of four Ontario hospitals located in Oshawa, Bowmanville, Port Perry and Whitby.

Oshawa, the main hospital with 16-bed ICU, is the prime site for Susan and Dave, but they make rounds at Bowmanville and Port Perry weekly. They are in phone contact daily at other sites. Susan and Dave have demonstrated outstanding support for the various RT department staff and the Clinical Leaders.

They have been instrumental in the implementation of many policies and procedures to do with care and treatment service delivery from the RT group, including implementing business cases for the Medical Emergency Team (MET) also known as the Critical Care Response Team and the Infant and Paediatric Intubation initiative for the Maternal Child Program.

In order to ensure staff and patient safety, Susan and Dave worked to improve the Endoscopy Suite through evaluation with the Surgical Team by doing a Failures Mode Effects Analysis (FMEA) and making recommendations to Clinical Leaders and Directors of the Medical and Surgical Program for process rework for Bronchoscopy procedures.

Both Susan and Dave demonstrate ongoing lifelong learning by attending conferences, seminars and have been instrumental in planning a RT education day for their department yearly. They continually support all RT and nursing staff in multiple departments daily for education and care needs for complex patients on invasive/non-invasive ventilation. Susan and Dave are known to support many other programs and services to achieve full scope of practice in their roles (Physiotherapist — Oxygen



Photo by Lindsay Gillard

Dave McKay and Susan Ord accept awards.

titration policy/procedure with subsequent certification education with the RT Clinical Education Leader).

Susan Ord and Dave McKay have participated in team family meetings with patients and families and truly support the fact that patients and families are active participants within the healthcare team and have a right to informed choice. During difficult times they have been a tremendous resource during family meetings and demonstrate extreme confidentiality in exploring and documenting sequence of events.

They have moved quickly to rectify any identified deficient service to meet the standard. As well, they have been instrumental in initiating standardized processes for patient safety such as Continuous Positive Airway Pressure. Both have demonstrated tact and confidentiality with staff members in achieving excellence in service delivery.

Thank You.

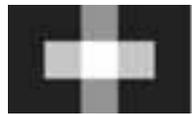
The CSRT acknowledges and thanks our conference sponsors
for generous educational grants.

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You're Invited!

to the CSRT Annual Educational Conference and Trade Show 2009

CSRT invites you to attend the CSRT Annual Educational Conference and Trade Show, as we focus on the issues that concern the profession of respiratory therapy. Join us at the Hilton Lac Leamy, in Ottawa/Gatineau, May 28–31, 2009.

We offer excellent opportunities for RTs to engage with colleagues in a variety of settings.

We have three pre-conference events:

- The Educator's Congress
- The Leadership Congress
- The Anesthesia Assistants Forum

These sessions will provide interested parties an occasion to discuss issues related to their fields — as well as take part in educational sessions. Instructions on registration can be found on our website.

During the conference, there will be a minimum of 38 topics presented. We will cover topics from Cognitive Therapy for Asthma to workshops on APRV. A detailed programme is available on our website at www.csrt.com.

There are several complimentary social events associated with Full Registration. A ticket is included for the Welcome Reception on Thursday evening May 27th and also a ticket for the President's Banquet on Saturday night. The Banquet, among other things, will recognize graduating students with the highest marks in each accredited school.

You will also be able to dance with the doctors! The Star Tools Band is made up mostly of area doctors who know how to rock the night away.

We will be cruising down the Ottawa River on Friday night. Everyone is invited, as we take a look at the nation's capital from a unique waterfront vantage point. An absolute must-do for those who have never been to the city.

Tickets are limited to 180, so please purchase in advance!

There are also a series of meetings of special interest groups that you may want to attend before or after the conference. Details are in this journal.

Check for conference details and the registration form at www.csrt.com or call us at 800-267-3422. You can also register online!

Vous invite

à participer à son Congrès éducatif et Salon commercial annuel

SCTR vous invite à participer à son Congrès éducatif et Salon commercial annuel où seront explorés de multiples enjeux d'intérêt pour la profession de la thérapie respiratoire. Soyez des nôtres au Hilton Lac-Leamy, à Ottawa/Gatineau, du 28 au 31 mai 2009.

Nous offrons aux TR d'excellentes occasions d'échanger avec leurs collègues dans une variété de contextes.

Trois activités précongrès sont prévues :

- le Congrès des éducateurs
- le Congrès sur le leadership
- le Forum des assistants en anesthésie

Celles-ci permettront aux parties intéressées de discuter des questions propres à leur domaine – et de participer aux sessions éducatives. Les instructions sur l'inscription sont affichées dans notre site Web au www.csrt.com.

Pendant le congrès, un minimum de 38 sujets seront présentés, à partir de la thérapie cognitive pour traiter l'asthme jusqu'à l'APRV. Vous référer au programme détaillé dans notre site Web.

Plusieurs activités sociales gratuites sont incluses avec l'inscription complète. Un billet est fourni pour la Réception d'ouverture du jeudi 27 mai, ainsi qu'un billet pour le Banquet du président le samedi soir. Entre autres, le Banquet reconnaîtra les étudiants sortants ayant obtenu les plus hautes notes au sein de chaque programme agréé. Vous

pourrez même danser avec les médecins! Le groupe Star Tools Band est composé principalement de médecins qui savent divertir les gens jusqu'aux petites heures du matin.

Une croisière sur la rivière des Outaouais est prévue le vendredi soir. Vous êtes tous invités à venir apprécier la capitale nationale à partir d'une perspective riveraine unique. À ne pas manquer par quiconque

n'a jamais visité la ville. Puisque les billets sont limités à 180, vous êtes prié de vous les procurer à l'avance!

Une série de réunions de groupes d'intérêts spéciaux est également prévue à l'horaire avant et après le congrès. Les détails sont publiés dans le présent numéro.

Consultez le www.csrt.com pour tous les détails liés au congrès et pour accéder au formulaire d'inscription ou téléphonez-nous au 800-267-3422. Vous pouvez aussi vous inscrire en ligne!

Satellite Symposia

We have structured the conference to include several Satellite Symposia hosted by our exhibitors.

Thurs., May 28 **Cardinal Health** — TBA
4:00 – 5:00PM

Thurs., May 28 **Draeger Medical** — Understanding the application of Mandatory Minute Ventilation (MMV) in the newborn population.
4:00 – 5:00PM
Speaker: Michael Finelli

Fri., May 29 **Ikaria** — The Artistry of Change: The Top 4 Habits of Highly Resilient People
11:30 – 12:30
Speaker: Carla Rieger, world-renowned expert on creative change management
From years of surveying and collecting case studies of what makes people resilient in organizations across North America, these are the top 4 habits of people who are thriving both personally and professionally especially in a high pressure work environment.

During this entertaining and practical presentation you will:

- explore tried and true ways to stay centred and confident when faced with unwanted change
- learn how to benefit from the unique opportunities provided by change
- re-connect to your natural creative human ability to thrive in high stress environments
- discover how to be proactive rather than reactive under stress and also how to inspire others to do the same
- learn a simple way to invite trust and respect from people you work with

Fri., May 29 **Huchinson Technology**
5:00 – 6:00PM
Tissue Oxygenation (StO₂) in Critically Ill Patients
This presentation will discuss the measurement of tissue oxygenation (StO₂) in critically ill patients arriving at the Emergency Department and the Intensive Care Unit, the physiologic premise behind StO₂ and clinical decision making.
Speaker: Corey Mohnike, Certified Respiratory Therapist, Registered Respiratory Therapist

1. What is Inspectra StO₂?
2. Understand the purpose and function of microcirculation in the organ system.
3. Explore tissue hypoxia in relation to shock and organ dysfunction.
4. Differentiate StO₂ with other oxygen saturation measurements.

Sat., May 30 **CAREstream Medical and Percussionaire®**
11:00 – 12:30
IntraPulmonary Percussive Ventilation (IPV) and Volumetric Diffusive Ventilation (VDR), revolutionary parts of the lifelong contributions of Forrest M. Bird, M.D., PhD., ScD. Presentations by Dr. Adel Bougatef, Neonatal and Intensive Care Specialist, Academic Children's Hospital, Free University of Brussels, Belgium.
Speaker: Adel Bougatef, MD, PhD, Neonatal Intensive Care Unit, Academic Children's Hospital, Free University of Brussels, Brussels, Belgium

This will be an excellent opportunity for you to become better informed about the many uses and results that can be obtained using IPV and VDR. There will be ample time for hands-on demonstrations, questions, and answers.

CONFERENCE HOST COMMITTEE

A very special thank you goes out to our host Chair, Christina Beaudin and her hard-working volunteers:

Sara Dorington

Andria Darlington

Deryk Lyddiatt

Ginette Greffe-Laliberté

Daphne Marrs

Renée Pageau

David Swift

Save the Date

CSRT Annual Conference and Trade Show

May 12–16, 2010

Delta St. John Hotel and Convention Centre



Some Topics include:

- NIV for the neuromuscular patient.
- Central/Complex sleep apnea.
- National home ventilation guidelines.
- Improving tolerance to CPAP therapy
- Management of an airway crisis!
- Nitric Oxide in the OR!
- Patient simulators for anesthesia training.
- Post anesthesia management of the OSA patient.
- Interventional bronchoscopies.
- Bronchothermogenic ablation for asthma!
- Asthma/COPD pharmacological control.

Symposiums satellites

Nous avons structuré le congrès de façon à inclure plusieurs symposiums satellites animés par nos exposants :
(Présentation offerte uniquement en anglais)

Jeudi 28 mai **Cardinal Health**
16h00 à 17h00

Jeudi 28 mai **Drager Medical** — Comprendre l'application de la ventilation imposée variable chez les nouveau-nés).
16h00 à 17h00
Conférencier : Michael Finelli

Vendredi 29 mai **Ikaria** — L'art du changement : les 4 principales habitudes des gens qui ont beaucoup de résistance)
11h30 à 12h30
Conférencière : Carla Rieger, experte de renommée mondiale sur la gestion créative du changement
Après avoir recueilli pendant des années et analysé des études de cas pour savoir ce qui favorise la résistance des gens dans des organismes partout en Amérique du Nord, Mme Rieger a identifié les quatre habitudes de gens qui se démarquent aux plans personnel et professionnel, notamment dans des milieux de travail à haute pression.

- Au cours de cette présentation divertissante et pratique, vous pourrez :
- explorer des façons éprouvées de demeurer centré et confiant lorsque vous êtes confronté à un changement non désiré
 - apprendre comment tirer profit des occasions uniques créées par le changement
 - renouer avec votre naturelle capacité créative humaine de vous démarquer dans des milieux à stress élevé
 - découvrir comment être proactif plutôt que réactif devant un stress, puis comment inspirer les autres à faire de même
 - apprendre un moyen simple d'inviter la confiance et le respect de vos collègues de travail

Vendredi 29 mai **Huchinson Technologie**
17h00 à 18h00
Oxygénation tissulaire (StO₂) chez les patients en phase critique
Description : Cette présentation discutera de la mesure de l'oxygénation tissulaire (StO₂) chez les patients en phase critique se présentant au Service des urgences et à l'Unité de soins intensifs; du principe physiologique qui sous-tend la StO₂; et de la prise de décision clinique.
Conférencier : Corey Mohnike, thérapeute respiratoire certifié, thérapeute respiratoire agréé

1. Qu'est-ce que InSpectra StO₂?
2. Comprendre le but et la fonction de la microcirculation dans le système d'organes.
3. Explorer l'hypoxie tissulaire relative au choc et au dysfonctionnement organique.
4. Différencier la StO₂ des autres mesures de saturation en oxygène.

Samedi 30 mai **CAREstream Medical et Percussionnaire®** — Ventilation à percussion intrapulmonaire (IPV) et ventilation volumétrique diffusive (VDR), éléments révolutionnaires des multiples contributions de Forrest M. Bird, M.D., PhD., ScD. Présentations par le Dr Adel Bougategf, Spécialiste des soins néonataux et intensifs, Hôpital universitaire des enfants, Université Libre de Bruxelles, Belgique.
11h00 à 12h30
Conférencier : Adel Bougategf, MD, PhD, Unité néonatale de soins intensifs, Hôpital universitaire des enfants, Université Libre de Bruxelles, Bruxelles, Belgique
Il s'agit d'une excellente occasion de vous familiariser avec les multiples utilisations et les résultats possibles du recours à la IPV et à la VDR. Une période de temps est prévue pour les démonstrations pratiques, questions et réponses.

EXHIBITORS LIST

Airliquide
Airsep
Alberta Health Services
Allied Healthcare
Ambu
Boehringer Ingeleim
Bunnell
BOMImed
Cardinal
CAREstream
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GE Healthcare
GlaxoSmithKline
Hollister
Ikaria
Invacare
Karl Storz Endoscopy
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TSI Medical
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VitalAire
Vitaide
Votran Medical

President's message **mot du président**

Message from the president continued from page 4

efficient. There have been relationships created with provincial regulators that are strong and growing. There is engagement of industry partners and value added marketing by partnering with the CSRT and its members.

The liability insurance offered via Marsh Ltd. keeps getting better with more value in coverage for low annual premiums.

I would be remiss to not mention the numerous volunteers throughout our organization. From the Board of Directors who give up their time with family and friends to attend meetings to the numerous working committees who regularly conference and exchange information, a heartfelt thank-you. Being a volunteer can be a lonely proposition; however, the satisfaction that you get from being part of your profession is so much more rewarding than complaining from the sidelines.

My time with the CSRT is not done yet. I have another year as the Past-President and the CSRT representative on the National Alliance of Respiratory Therapy Regulatory Bodies.

Thank you to my family. My wife Denise is a respiratory therapist and has supported me since day one. As a former member of the Board of Directors, she recognizes the commitment and time it takes to move our profession forward. My two sons have also been supportive of my time away and the missed birthdays and hockey games. Lacrosse season, here we come!!

See you in Gatineau. I will be the guy wearing shorts and with really white legs! Cheers.

Ray Hubble RRT, M.Ed.
CSRT President

Mots du président suite de la page 4

la valeur de la couverture augmente et les primes annuelles demeurent basses.

Ce serait négligeant de passer sous silence les nombreux bénévoles à tous les échelons de notre organisme. Qu'il s'agisse des membres du Conseil d'administration qui donnent de leur temps pour participer aux réunions ou encore ceux des nombreux comités de travail qui s'échangent continuellement de l'information, je vous adresse un sincère merci. Si le bénévole n'est pas toujours prestigieux, la satisfaction que l'on retire à s'impliquer dans notre profession est tout de même nettement plus enrichissante que de se plaindre en coulisse.

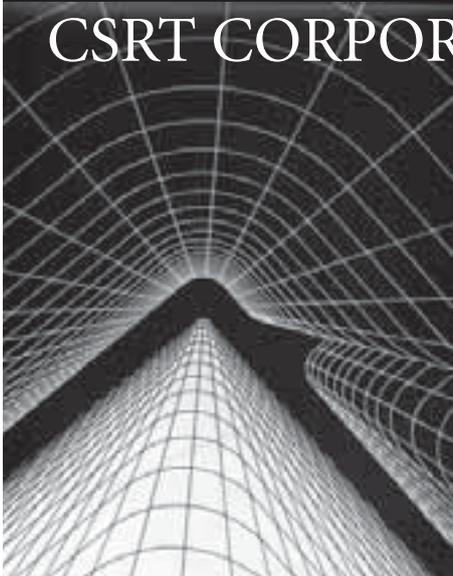
Mon implication au sein de la Société ne cesse pas de sitôt : il me reste un an à titre de président sortant et de représentant de la SCTR auprès de l'Alliance nationale des organismes de réglementation de la thérapie respiratoire.

Je tiens à remercier ma famille. Mon épouse Denise, qui est thérapeute respiratoire, me soutient depuis le début. Ayant siégé au Conseil d'administration, elle reconnaît l'engagement et le temps requis pour faire progresser notre profession. Puis, mes deux fils ont supporté mes absences lors d'anniversaires et d'innombrables joutes de hockey. Je compte me reprendre pendant la saison de crosse qui commence bientôt!!

Au plaisir de vous voir à Gatineau. Avec mes shorts et mes jambes très blanches, vous n'aurez pas de difficulté à me trouver!

Ray Hubble, TRA, M.Ed.
Président de la SCTR

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Living With Your Heart & Lungs

Amy Reid, RRT, CRE

Every day millions of people around the world come into contact with the healthcare system and unfortunately, many find this a disconcerting experience. The impersonal environment, layers of tests, multiple medical personnel and unfamiliar terminology often leave patients with feelings of inferiority, helplessness and loss of control. Many of us have heard comments from patients that indicate they're having just this kind of experience. "Who are these people?" "What are these tests for?" "What do all of those terms mean?" Even when their questions are answered, they may not understand the answers they've been given. Wouldn't it be nice if they had a guide to help them interpret what was going on? Stanley Bryant (CRT, AS-CIS, BSCS), and Glenn Obst (CRT) attempt to do just that in "Living With Your Heart & Lungs: A Book Gram & Gramp Can Grasp."

Given the subtitle, I expected and hoped that this book would be an easy read. If it were, I'd be the first to recommend it to my family and those I serve. This was, unfortunately, not the case. Bryant and Obst, not unlike most professionals, still fall back into multi-syllable words and high-level medical terminol-

ogy. My Gram and Gramp wouldn't get through the first page, much less the first chapter.

But, I didn't want to jump to conclusions too fast. After all, my grandparents speak English as a second language! I decided to calculate the reading level by using the SMOG Index (Simple Measure of Gobbledygook) which identifies the years of education needed to comprehend a piece of writing. The SMOG index set the grade level comprehension of "Living With Heart And Lungs" at Grade 14. Grade 14! My Gram and Gramps didn't get through grade school!

Moving on. Bryant and Obst make frequent use of illustrations, usually a good thing. I would have appreciated having them in colour to facilitate ease of learning.



Setting aside the issue of language and illustrations, let's talk about content.

Introduction to Cardiopulmonary Anatomy

In "Introduction to Cardiopulmonary Anatomy," the authors use detailed diagrams to illustrate the bones, sinuses, cartilage, lung segments, heart chambers and valves, arteries, the respiratory tract and the electrical pathways of the heart. The authors describe gas exchange, and blood flow through the body. This chapter is very informative. I wish I'd had this book in college! While I appreciated the thoroughness, when considering their target audience, the information was presented in a complicated way.

Patient Assessment

"Patient Assessment," detailed just that. This chapter encompassed everything: chart review, bedside observations, patient assessments, auscultation, respiratory patterns and chest excursions, ABGs, bronchoscopy, x-rays (types and uses), sleep studies, EKGs (3 and 12 lead including an explanation of which traces correspond to which areas of your heart), specialized testing and procedures (arterial lines, cardiac stress test, cardiac catheterization, coronary artery calcification scan, bypass surgery, CAT scan, MRI, PFTs [including a description of all measurements], V/Q scan and hypoxic altitude simulation test). Again, while informative and thorough, this is still too much information for Gram and Gramp.

Diseases & Treatments

"Diseases & Treatments," consists of an alphabetical listing of adult, pediatric and neonatal diseases. Under each disease there were headings for: definition, cause, symptoms, tests, and treatment. This chapter was done quite well. Each disease is specifically defined and the information given is appropriate and

concise, enabling a basic understanding of each condition. This information provides patients and family members with a base of knowledge that they can use to not only understand a diagnosis but also to enable them to form specific and appropriate questions. This chapter pleasantly surprised me. I was especially pleased to find not only adult conditions but also neonatal and pediatric conditions (which I did not anticipate).

Medications

"Medications," encompasses various types of medications: inhalers, medical gases, helium therapy, nitric oxide, general information, routes of administration, mucolytics and wetting agents, corticosteroids, antibiotics, xanthine drugs, IgE, leukotriene receptor antagonists, leukotriene inhibitors, neuromuscular blocking agents, surfactant, cardiac medications, and analgesics. I was pleased to see the authors advise the reader to use only one pharmacy as a way to minimize conflicting combinations of medication. The medication definitions were brief, basic, and very easy to understand.

Surgical Procedures

"Surgical Procedures," are detailed in the following chapter. Brief and concise explanations were given, and although the complicated medical terminology was included, I was very pleased to see layman's terms in brackets.

Home Healthcare & Equipment Equipment & Cleaning

"Home Healthcare & Equipment, Equipment & Cleaning," details important aspects of coping with chronic conditions at home. It illustrates when homecare is appropriate, what to

expect, and what equipment might be needed. I was pleased to see tips on breathing retraining, and breathing exercises. These are vitally important to all respiratory patients. Understanding their place is crucial to relieving the anxiety cycle and also a great starting place to start the discussion of exercise. The chapter also deals with the importance of proper equipment cleaning and the process by which to do that. I was concerned with the recommendation to drop a MDI in a glass of water to see how much medication was left. In Canada RRTs are taught that this is not best practice; the canister should be shaken to test for emptiness. The chapter concludes with information on trach tubes, chest tubes, mechanical ventilation, and a brief description of every mode of ventilation. This chapter is informative and thorough. All respiratory devices were detailed from home oxygen devices to flutter valves. This chapter provides a fantastic knowledge base for those facing a chronic respiratory disease.

Hazards & Dangers

“Hazards & Dangers,” are explored with regards to life within the hospital or at home. Examples provided include medication errors, name errors, blood type identification, use of oxygen and petroleum, oxygen dangers, power cords, bacterial growth in equipment such as nebulizers, expired medications, dangers to children and pets, running out of medications, and the effects of air quality on your breathing. Each of these topics are extremely important, and yet easily over-looked.

Conversion Charts

“Conversion Charts,” are highlighted and compiled in this next chapter.

What Should I Know

“What Should I Know,” includes some review of techniques previously discussed in past chapters. It also provides added information on sleep disorders, rehabilitation, and CPR. I was pleased that the authors discussed the rights and responsibilities of patients. I often feel not enough patients are aware that they can ask questions of their physicians and their treatment. This, in turn, compromises their ability to make informed decisions about their health.

Questions for My Doctor

“Questions for My Doctor,” offers a series of questions that patients and families may want to ask their doctors in order to help them understand their disease and prognosis. I was impressed with the quality of the questions. They give the reader good tools to help facilitate discussion between family members, and also between the family, patient and health care providers. The questions address quality of life issues, ways to press for further clarification if one is confused about diagnosis, prognosis, and symptoms, and how to speak about the impact of a disease not only on the patient, but also their family

Legal Documents and Forms

“Legal Documents and Forms,” outline and clarify the need for documentation. It is still surprising to see the number of patients that enter a hospital with no thoughts towards advance directives (living will, healthcare surrogate designation, do not resuscitate, and organ donation). This chapter describes the importance of having these documents in place, as well as describing what each document contains.

Death & Dying

“Death & Dying,” is the final chapter. This is a topic that medical and non-medical personnel often find difficult to speak of with clarity and sensitivity. The authors present the range of emotions that both family and patients experience through the process of dying and offer clear recommendations for how to respect the wishes of a dying loved one, and how to respond to them emotionally as they go through the process. It also emphasized self-care for the family. This chapter is incredibly emotional and very informative. I will carry it with me.

Despite my disappointment at the reading level required to digest this book, I would still recommend it. It is filled with valuable information and is a good teaching tool. I think the book's failure to keep it simple is a reflection of just how difficult it is for health care providers to take what they know and express it clearly to the common person. We all have a lot to learn here. Many families will find this book helpful in understanding the health care they receive at all stages of life. It gives relevant information, and will help to guide families through important decision-making processes.

Self-Regulation for Saskatchewan

On April 1, 2009 the profession of respiratory therapy becomes self-regulated in the province of Saskatchewan.

“Becoming self-regulated represents a significant step forward in the evolution of our profession”, stated Mark Herzog, President, Saskatchewan College of Respiratory Therapists. “Our journey toward self-regulation commenced long ago and involved the contribution of many therapists over the years.”

Along the road to self-regulation respiratory therapists had to deal with changes in government, changes in government liaison personnel, and numerous revisions to bylaw wording. Regardless of these many challenges, dedicated therapists worked closely with skilled personnel within the government's

Ministry of Health to make this new professional College for respiratory therapists a reality.

Self-regulation is designed to protect the public. A self-regulated organization sets rules for ethics, conflicts, disciplinary action and registration of its members. Continuing education requirements are also mandated by the Saskatchewan College of Respiratory Therapists.

Approximately 120 respiratory therapists practice in the province of Saskatchewan. The scope of practice includes adult and pediatric critical care, neonatal care, transport teams, home care, pulmonary function testing, sleep laboratory, pulmonary rehabilitation, and patient education.

Update — Council on Accreditation of Respiratory Therapy Education (CoARTE)

The spring of 2009 has brought a sea of renewal at CoARTE. Pam Hicks, the CSRT Accreditation and Education Manager, started her maternity leave in early March. Milena Cotinghi, who started in early February, will be Acting Manager until Pam's return in March 2010. Milena has a strong background in education in her native Romania and has already participated in two accreditation visits in New Brunswick and in Alberta.

In addition, CoARTE Council has moved forward with the review of the accreditation process. This process review will allow us to determine what works well, what does not and to make the required changes to ensure that we are meeting the objectives and requirements of an accreditation program.

CoARTE Council has reviewed a number of submissions and has hired Catalysis Consulting because of their experience and expertise in accreditation within the Canadian health care sector. The review will include a comprehensive consultation process and an assessment of best practice accreditation models. The CoARTE Council hopes that the review will result in improvements in the process for education programs, for program reviewers, for students and for the profession in general.

The CSRT supports CoARTE in this initiative. We are looking forward to working together to continue building a sound foundation for the profession at the national level.

Mise à jour — Conseil pour l'agrément de la formation en thérapie respiratoire (CoAFTR)

Le printemps 2009 a déclenché une vague de renouveau au CoAFTR. Pam Hicks, directrice du Programme d'agrément et de formation de la SCTR, est partie en congé de maternité au début mars. Milena Cotinghi, embauchée au début février, occupera le poste de directrice par intérim jusqu'au retour de Pam en mars 2010. Milena dispose d'un bagage solide en éducation dans son pays natal, la Roumanie, et elle a déjà participé à deux visites d'agrément au Nouveau-Brunswick et en Alberta.

De plus, le Conseil du CoAFTR a entrepris une analyse du processus d'agrément. Celle-ci nous permettra d'identifier ce qui fonctionne bien et moins bien, puis, d'apporter les changements nécessaires pour s'assurer que nous respectons les objectifs et les exigences d'un programme d'agrément. Après avoir

étudié de nombreuses soumissions, le Conseil du CoAFTR a embauché Catalysis Consulting en raison de son expérience et son expertise vis-à-vis de l'agrément dans le secteur des soins de santé canadiens. L'analyse comportera un processus de consultation exhaustif et une évaluation des modèles d'agrément exemplaires. Le Conseil du CoAFTR souhaite que l'analyse entraîne des améliorations dans le processus pour les programmes d'étude, les réviseurs de programme, les étudiants et la profession en général.

La SCTR soutient le CoAFTR dans cette initiative. Nous avons hâte de travailler ensemble en vue de continuer à bâtir une base solide pour la profession à l'échelle nationale.

FACTOIDS

✓ **Rising Temperatures Boost Respiratory-Related Hospital Admissions**

Climate change will push summer temperatures higher and lead to more hospitalizations for respiratory problems, a European study finds.

The researchers analyzed a minimum of three years of hospital admission data in 12 European cities. They found that for every degree increase over 90 percent of a city's maximum apparent temperature (Tappmax), there was a 4 percent increase in respiratory-related hospitalizations. A rise in temperature was not linked to increases in admissions for cardiovascular or neurovascular-related conditions.

The Tappmax, which accounts for both air temperature and humidity, ranged from 14.7 degrees C (58°F) in Dublin,

Ireland to 29.5 degrees C (85°F) in Valencia, Spain.

Respiratory-related hospital admissions increased among residents of all ages when temperatures moved above 90 percent of Tappmax, but people aged 75 and older were especially affected, the study found.

It's known that increased temperatures can boost cardiovascular emergencies, so the finding that cardiovascular-related hospitalizations did not increase with temperature came as a surprise. But the researchers suggested this may be because many patients who experience cardiovascular emergencies die before they can receive medical treatment.

The study appears in the first issue for March of the *American Journal of Respiratory and Critical Care Medicine*.

Chronic Disease Management Model

Seamless, consistent patient care across the healthcare continuum...

Currently in Canada there are over 60 projects that have been implemented in the interest of chronic disease management. This project began in 1999 when GlaxoSmithKline Inc. (GSK) initiated the first PRIISME™ project in Quebec.

PRIISME™ is an integrated primary care model involving family practitioners, allied health professionals and people with chronic disease and their families. The focus is patient self-management of the following chronic diseases: asthma, chronic obstructive pulmonary disease (COPD) and diabetes.

The PRIISME™ model aims to:

- Improve the treatment of chronic disease,
- Improve the quality of life of those with chronic disease,
- Decrease health resource utilization, and
- Ensure optimal use of medications based on current Canadian guidelines

This integrated, multidisciplinary approach is based on the Wagner model of chronic disease management:

Key elements of the model

PRIISME™ is a public and private sector partnership between GSK and local health districts to meet and adapt to individual community needs. The PRIISME™ project at the Capital District Health Authority (CDHA) in Nova Scotia is focused on both asthma and COPD. PRIISME™ will build on existing infrastructure for these chronic diseases and use it to develop educational resources throughout the Cobequid Community catchment area (a community within CDHA). Addressing gaps to meet current best practice guidelines for the care of asthma

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and COPD patients and their families is a primary objective. This objective will be initially accomplished through evidenced-based continuing education for health professionals, patients and their families.

Planning and Development

The asthma and COPD project has been in place at the Cobequid Community Health Centre since the fall of 2008 and is currently disseminating a needs assessment to determine the areas of greatest need for education of local health care professionals. Future initiatives will include group educational sessions for people affected by asthma and COPD in the community. In addition, steps will be taken to further expand current community resources into sustainable and feasible long-term endeavors.

Other Nova Scotia asthma and COPD PRIISME™ initiatives are currently underway in the Annapolis Valley and Colchester East Hants health authorities.

PRIISME™ has been peer-reviewed and has proven achievable results.

FACTOIDS

✓ **Teens From Smoke-Free Homes Carry on Tradition**

Teens who live in homes with smoking bans are apt to choose a similar living arrangement when they move into their own place, a new study has found.

Researchers from the Boston University School of Public Health tracked 693 adolescents, 12 to 17 years old at the start of the study. Eventually, all the youths moved out of their parents' houses and lived independently, some at col-

leges or universities and others in apartments or other types of residences.

Overall, about 82 percent of the youths moved to smoke-free living quarters, and 18 percent moved to housing that permitted smoking. They also found that 89 percent of those who moved to smoke-free housing had grown up in a smoke-free home. Of those who moved to someplace that permitted smoking, 36 percent had grown up in a smoke-free house. The study was published in the *Journal Tobacco Control*.

Effect of Obesity on Pulmonary Function and its Association with Respiratory Disease

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Certification: Unless otherwise indicated all work in this project is original.

ABSTRACT

Background: Studies have identified a characteristic pulmonary function pattern in obesity. Obesity's association to respiratory pathologies, both contributive and causal, continues to be the subject of much research and analysis. These associations, often complicating the identification of the underlying clinical diagnosis, warrant special consideration in light of the growing obesity epidemic.

Objectives: A review of published literature to describe the major effects of obesity on pulmonary function and its interaction with respiratory pathophysiology, in order to provide a differential diagnostic tool for clinicians.

Results: A distinctly restrictive respiratory pattern is identified in the obese, evident by markedly reduced lung volumes, particularly the expiratory reserve volume (ERV). This is attributed to

decreased chest wall compliance, and impaired respiratory muscle function. There is some degree of airflow impairment seen in obesity not attributable to decreased lung volumes, shown by decreased expiratory flow rates. The association between chronic obstructive lung disease and obesity is not well defined. Obesity and asthma are shown to have a stronger correlation, which may in part be due to mechanical, immunological, and a variety of other mechanisms.

Conclusions: Clinicians must consider the degree of obesity and other objective data such as pulmonary function profiles in the diagnosis and treatment of obese patients exhibiting symptoms of respiratory compromise.

Key Words: Asthma, Chronic Obstructive Pulmonary Disease, Obesity, Pulmonary Function Tests

GLOSSARY OF ABBREVIATIONS

BMI:	Body Mass Index
COPD:	Chronic Obstructive Pulmonary Disease
DLCO:	Diffusing Capacity of the Lung for Carbon Monoxide
ERV:	Expiratory Reserve Volume
FEF _{25%} :	Forced Expiratory Flow at 25% of Forced Vital Capacity
FEF _{50%} :	Forced Expiratory Flow at 50% of Forced Vital Capacity
FEF _{25%-50%} :	Forced Expiratory Flow between 25% and 50% of Forced Vital Capacity
FEV ₁ :	Forced Expiratory Volume in One Second
FEV ₁ /FVC:	Ratio of Forced Expiratory Volume in One Second to Forced Vital Capacity
FRC:	Functional Residual Capacity

FVC:	Forced Vital Capacity
GERD:	Gastro Esophageal Reflux Disease
IC:	Inspiratory Capacity
kg:	Kilograms
MVV:	Maximum Voluntary Ventilation
m ² :	Square Meters
PL:	Transpulmonary Pressure
Raw:	Airways Resistance
TLC:	Total Lung Capacity
TNF-α:	Tumor Necrosis Factor α
RV:	Residual Volume
VC:	Vital Capacity
VLDL:	Very Low Density Lipoproteins
WOB:	Work of Breathing

INTRODUCTION

The obesity epidemic plagues the global community, posing a threat to the health of its populations. Obesity's association to other pathologies, both contributive and causal, continues to be the subject of much research and analysis. There is a mounting body of evidence describing the associations between obesity and various respiratory diseases and their effects on health. Through a literature search of available data, this article reviews the major effects of obesity on pulmonary function offering the clinician a foundation on which to investigate its interaction with respiratory pathophysiology. The association of obesity to several major classes of respiratory disease is then examined, while diagnostic considerations are offered.

Definition and Classification of Obesity

The body mass index (weight (kg)/height (m²)) is not a direct measure of body fat but is the most widely investigated and most useful indicator, to date, of health risk associated with overweight.¹ Table 1

describes the body mass index (BMI) classifications used by Health Canada and their association with the risk of developing health problems. While the World Health Organization² defines obesity as a BMI of over 30 kg/m², several studies were included in this review where alternative measures of obesity were utilized, including height to weight ratios, and most defined morbid obesity as a BMI of over 40 kg/m².

OBESITY AND PULMONARY RESTRICTION

Early studies into obesity and pulmonary function confirmed an obvious link between a restrictive pattern of breathing and obesity.³⁻⁵ A restrictive pulmonary pattern may be caused by a variety of parenchymal and extraparenchymal pathologies resulting in reduced lung volumes including, but not limited to, total lung capacity (TLC) and vital capacity (VC).⁶ Investigations into the increased work of breathing (WOB) seen in obesity indicated a total respiratory compliance that is diminished to as low as one third of the levels seen in the non-

Table 1: Canadian Guidelines for Body Weight Classification in Adults, adapted from Health Canada¹

Body Weight Classification by Body Mass Index		
Classification	BMI Category (kg/m ²)	Risk of developing health problems
Normal Weight	18.5–24.9	Least
Overweight	25.0–29.9	Increased
Obese		
Class I	30.0–34.9	High
Class II	35.0–39.9	Very High

obese.³ Further research described the specific pulmonary variables affected by this decreased respiratory compliance. Table 2 describes a summary of their findings.

A Restrictive Pulmonary Function Profile

Expiratory reserve volume (ERV) has been consistently identified as the most severely affected, typically decreased, variable of pulmonary function in obesity. This is most likely due to mass loading of the chest wall. In their study on the effects of pulmonary function in obesity, Emirgil and Sobol⁴ showed that there was an increase in ERV and functional residual capacity (FRC) with significant weight loss. The study also showed that there were no significant reductions in residual volume (RV) or TLC in obese subjects. Hallmark limitations of this early research into obesity and respiratory function included the small sample size used (n=4), questionable methods for defining obesity, and the inclusion of subjects without screening for prior respiratory complications or disease.

These early findings were however confirmed by later research by Ray, Sue, Bray, Hansen and Wasserman,⁵ which again showed a restrictive pattern with decreased lung volumes in obese subjects. By studying a larger sample of 43 obese and otherwise healthy subjects, this study demonstrated a decreased ERV with a striking increase after weight loss in all subjects as the major finding. A decreasing ERV was noted to be closely linked to increasing degrees of obesity. It was also seen that there were significant decreases in mean VC and TLC in those subjects only with extreme obesity, defined as a height to weight ratio greater than 1.0. These data demonstrated that the pulmonary effects of obesity were not fully explained by previous research, and that the resultant profile is dependent upon the degree of obesity. The discrepancy between the studies' results is likely explained by the small sample size used by Emirgil and Sobol⁴ which was not representative of more extreme forms of obesity. Interestingly, it was also seen that inspiratory capacity (IC) remained normal with varying degrees of obesity. It seems therefore that the restrictive effects of obesity are limited to expiratory pulmonary function variables, rather than inspiratory ones.

Further research has confirmed a decreased ERV, and demonstrated an unchanged RV in obesity.⁷ RV may however tend to exceed its predicted normal in correlation with higher degrees of obesity, particularly when considered in relation to the diminished TLC.⁵ These studies utilized accepted definitions for obesity such as body mass index, and height to weight ratios, improving the reliability and comparability of their results.

In a more recent study by Biring, Manmohan, Michael, Liu, & Mohsenifar⁸ into the pulmonary physiologic changes in morbid obesity, a decreased ERV was reconfirmed as the most sensitive indicator of obesity on pulmonary function. The subjects of the study all exhibited extreme obesity, defined as a height to weight ratio greater than 0.9, and were again reviewed for pertinent history and co-morbidities. Unlike the study by Ray, Sue, Bray, Hansen and Wasserman,⁵ this study also reported a decreased VC in subjects with a less severe form of obesity, measured as a height to weight ratio of 0.9 to 0.99. TLC was again reported normal in all groups. While some variance between the results could be expected due to the nitrogen washout technique used by Emirgil and Sobol⁴ versus the helium dilution method used by Biring, Manmohan, Michael, Liu, and Mohsenifar,⁸ the correlation between VC and obesity has also been confirmed by other research.^{7,9} Zerah, Harf, Perlemuter, Lorino, Lorino and Atlan⁹ also found the severity of a restrictive breathing pattern and the change in lung volumes as measured by ERV and VC, to be positively correlated with the degree of obesity. These data demonstrate the effects of extreme forms of obesity on lung volumes including decreases in ERV, FRC, VC and TLC, with potential increases RV.

Maximum Voluntary Ventilation

There is data demonstrating the limiting effects of obesity on maximum voluntary ventilation (MVV). Ray, Sue, Bray, Hansen and Wasserman⁵ observed the MVV to be reduced only in subjects with a height to weight ratio greater than 1.0. Biring, Manmohan, Michael, Liu, and Mohsenifar⁸ in contrast discovered a significant reduction in extremely obese subjects, again with a height to weight ratio greater than 0.9. The differences found by the two studies are likely due to the increased sensitivity of the Biring, Manmohan, Michael, Liu, and Mohsenifar⁸ study design to extreme obesity, where all subjects studied had a height to weight ratio greater than 0.9. These reductions in MVV were thought to be primarily due to reduced respiratory muscle strength as the force output of the diaphragm is reduced due to overstretching beyond its optimal length in obesity.⁸ A more recent study

Table 2: The most commonly reported effect of obesity on key pulmonary function indicators of pulmonary restriction, relative to their normal predicted values.
(* indicates effect is evident in more extreme forms of obesity)

Pulmonary Restrictive Effects of Obesity	
Pulmonary Function Parameter	Effect of Obesity on Parameter
ERV	Diminished ^{4,5,7,9}
TLC	Diminished ^{5,6,9}
VC	Diminished ^{5,6,7,8,9}
FRC	Diminished ^{4,9}
RV	Unchanged, possibly increased (*) ^{4,8,9}
MVV	Diminished (*) ^{5,8}

into the chest mechanics of morbidly obese subjects also showed significant reduction of MVV with a clear inverse relationship to the subject's BMI.¹⁰ That study postulated that the decreased MVV was due to diminished chest wall compliance caused by an increased mass over the chest. These data support the idea that both reduced chest wall compliance and weakened respiratory muscles secondary to obesity may lead to restrictive impairment. The results also demonstrated that the accepted predicted normal values for MVV based on an American population likely underestimate the actual normal values for the Brazilian population studied. This highlights the need for further cross-racial comparisons to ensure such data can be accurately generalized between populations.

Diffusing Capacity of the Lung for Carbon Monoxide

Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) is commonly used as a marker for disorders which may be parynchomal or interstitial in nature.⁶ The results of several investigations that considered the effect of BMI on DLCO are conflicting.^{5,8,11,12,13} In a study performed by Saydain et al.,¹² a group of subjects with a DLCO of 85% to 115% and a group with a DLCO greater than 140% were compared. Their analysis identified a significant difference in the mean BMI between the two groups, though the results were not necessarily clinically significant. The mean BMI range of the control group was 29.4 kg/m², while it was 32.9 kg/m² in the group with the high (>140%) DLCO: a modest difference in BMI clinically compared to the clinically significant variance between the groups DLCO values.

Another recent investigation¹³ also demonstrated an association between DLCO and BMI. Investigating a large group of subjects with BMI measurements varying from normal weight to obese (class III), the study reported an increasing DLCO with higher BMI values. While these increases were only slight, they were significant. The mean DLCO of the highest BMI group (BMI > 40 kg/m²) was 108%, which is within the accepted normal range. It appears that while there may be a statistically significant correlation between BMI and DLCO, the relationship may not offer further insight into understanding the etiology of the pulmonary impairment seen with obesity.

Causal Factors of a Restrictive Pattern

The mechanisms responsible for the restrictive pattern seen in obesity relate to impedance of pulmonary mechanics. The causes of the impairment have been shown to include physical restriction of diaphragmatic function by abdominal contents impairment^{4,14}; a diminished chest wall and total respiratory system compliance secondary to increased chest wall fat,⁸ and impaired respiratory muscle strength.⁷ The impaired respiratory muscle function has been noted to possibly be related to fatty deposits in the muscles themselves¹⁵ and an overstretched diaphragm with diminished force output to below optimal levels.⁸ There is also evidence to suggest that respiratory muscles are placed at a mechanical disadvantage due to low lung volumes and air-trapping, leading to reduced strength.¹⁶

Alternate causes for respiratory restriction may also include factors that influence surfactant biochemistry. A study on young rats with elevated dietary lipids and obesity by Inselman, Chander and Spitzer¹⁷ found that despite an increase in alveolar surfactant lipids, proteins, and intracellular deposition of lipids, the rats showed evidence of shallow breathing and diminished lung compliance. These results suggest that the increased surfactant levels were not sufficient to overcome the mechanical disadvantage, or that causes other than those attributed simply to mechanical impairment exist.

Clinical Implications

As a primary cause for a restrictive pulmonary pattern, obesity is difficult to differentiate from other causal factors. There are some spe-

cific patterns notable on the pulmonary function studies that may however help to distinguish a restrictive pattern with obesity as its root cause from one of the possible alternative etiologies.

RV may be used as a hallmark variable in the analysis of the obese subject's pulmonary function studies. As RV is typically found to be normal or increased in the obese, Zerah, Harf, Perlemuter, Lorino, Lorino and Atlan⁹ suggests that that any significant decrease in the RV of subjects with a BMI greater than 40 kg/m² is indicative of an associated disease as the cause. As a more definitive means of differential diagnosis, Santana, Souza, Martins, Rascovski, and Salge¹⁸ suggested that abnormalities found in the pulmonary function studies of subjects with a BMI less than 60 kg/m², should be determined to be of a cause other than obesity. This suggestion however conflicts with the findings of some of the previous studies, where obesity was defined by BMI values less than 60 kg/m² and where varying degrees of pulmonary impairment were seen. While the BMI threshold value chosen the study authors may be over-permissive, careful consideration of possible alternative causes for the pulmonary function abnormalities seen in obese subjects who are less than severely obese must be made.

A decreased MVV has been clearly linked to morbid or extreme obesity while the correlation in other less obese subjects is controversial. A low MVV in the subgroup of those with less than morbid or extreme obesity might indicate a need to consider alternate causes of the abnormality. Sahebajami and Gartside¹⁶ suggest that obese subjects of any classification range demonstrating a reduced MVV might be considered a subgroup suffering more severe pulmonary dysfunction, when properly screened for other underlying causal factors.

OBESITY AND PULMONARY OBSTRUCTION

There are distinctly obstructive elements seen in the pulmonary function profile of the obese. The association between obesity and an increased airways resistance (Raw) in small airways less than 2mm in diameter was identified early by Douglas and Chong.¹⁹ The studies performed by Emirgil and Sobol⁴ later confirmed the finding noting that mild improvements in Raw are seen with weight reduction. Zerah, Harf, Perlemuter, Lorino, Lorino and Atlan⁹ quantified the increase in Raw to be 56 percent higher in the morbidly obese subjects studied than in those with a BMI of 25-29 kg/m². The obstructive picture and increased Raw seen in obesity can be characterized by identifying the elements of standard spirometric measurements most affected. These pulmonary function parameters are summarized in Table 3.

Is Obesity a Primary Cause of Pulmonary Obstruction?

It has been clearly shown that forced expiratory volume in one second (FEV₁) diminishes with increasing obesity in those with no underlying respiratory pathology.^{4,7,16} Peripheral airway narrowing is also suggested by other physiologic measurements of airway function in obesity. Significant decreases in the forced expiratory flow at 50% of forced vital capacity (FEF_{50%}) and the forced expiratory flow at 25% of forced vital capacity (FEF_{25%}) have been identified with increasing obesity,⁹ while a decreased forced expiratory flow between 25% and 75% of forced vital capacity (FEF_{25%-75%}) is seen in morbid obesity.⁸ These studies were performed on otherwise healthy, non-smoking obese subjects minimizing some of the study biases that may account for variances in early research results.

Rubinstein, Zamel, DuBarry and Hoffstein²⁰ examined the effects of obesity on airflow limitation by studying a large group of obese, otherwise healthy, lifelong non-smokers. Their results supported previous findings of the restrictive effects of obesity on pulmonary function, and also offered further clarification of obesity's effects on airway function. Reduced maximal expiratory flow rates at 50% and 75% of

Table 3: The most commonly reported effect of obesity on key pulmonary function indicators of airways obstruction, relative to their normal predicted values.

(*indicates effect is evident in more extreme forms of obesity)

Pulmonary Restrictive Effects of Obesity	
Pulmonary Function Parameter	Effect of Obesity on Parameter
FEV ₁	Diminished ^{4,7,10,13}
FEV ₁ /FVC	Unchanged, possibly increased ^{4,13}
FEF _{25%}	Diminished ⁹
FEF _{50%}	Diminished ^{9,17}
FEF _{75%}	Diminished ¹⁷
FEF _{25%-75%}	Diminished (*) ^{8,17}

FVC compared to the control group indicated that peripheral airway obstruction was an effect. Interestingly, the finding was evident only in the obese male subjects, while the obese female subjects showed evidence of air trapping. The possibility exists that the smaller airway diameter seen in females compared to males might lead to a more pronounced compromise in airway caliber with obesity, explaining the air trapping seen in the results of this study. Since this may also have been the result of limited sampling size, it indeed poses an interesting avenue for further investigation.

While the decrease in FEV₁ may be considered to be indicative of an obstructive pulmonary process, in the obese it has typically been seen in conjunction with a proportionally decreased forced vital capacity (FVC), and an often normal FEV₁/FVC ratio.⁴ These findings would indicate that the decreased FEV₁ in obesity is secondary to diminished lung volumes. This positive association has been described as being a direct result of an impaired FRC rather than being certain evidence of airways obstruction.¹⁰ This relatively simple explanation for a decreased FEV₁ may not however sufficiently account for the other expired flow abnormalities seen on the pulmonary function measurements of the obese.

In the airflow limitation studies performed by Rubinstein, Zamel, DuBarry and Hoffstein,²⁰ when expired flow rates were normalized for FVC some of the significant differences between the obese and the control groups disappeared. The results measuring FEF_{50%} no longer indicated reduced airflow, suggesting the decrease in expired flow rates is secondary to low lung volumes. The same study however discovered that with the corrections made for FVC that the significant differences in FEF_{25%} persisted between the obese subjects and the control group. This finding indicates the existence of factors unrelated to the compromised FVC causing air flow limitation in the small airways of obese subjects.

Causal Factors of Airflow Limitation in Obesity

A diminished FRC was indicated by the Zerah, Harf, Perlemuter, Lorino, Lorino and Atlan⁹ study to be a primary factor causing an increase in airways resistance (Raw). It demonstrated that the small airway obstruction or closure that occurs in obese subjects has a direct correlation with the lung's elastic recoil pressures. These elastic recoil pressures, responsible for the mechanism of an increased airway caliber with increasing lung volumes, are compromised in obesity due to

the diminished chest wall compliance. Further explanation for this phenomenon can be made using the early data of Naimark and Cherniack⁷ who documented an altered transpulmonary pressure (PL) in obesity. The compromise seen in the PL of obese subjects was determined to be the direct result of decreased chest wall compliance. As PL represents the pressure gradient responsible for maintaining alveolar inflation, it is likely that this mechanism would lead to peripheral airways obstruction or collapse, thus supporting the claim of Zerah, Harf, Perlemuter, Lorino, Lorino and Atlan.⁹

Alternative explanations for the decreased small airway caliber which can not be attributed to decreased lung volumes in obesity have been postulated. Evidence exists supporting the possibility of intrinsic changes in the structure of the peripheral lung units with obesity. Lipid deposition, cellular hyperplasia, and alveolar enlargement are seen in immature obese rats.¹⁷ An increase in pulmonary blood flow in obesity may also lead to a thickening of the airway wall caused by congestion of the bronchial submucosal vasculature.⁹

Obesity is frequently accompanied by hyperlipidemia, often defined by an increase in very low density lipoproteins (VLDL).⁶ VLDL have been shown to have specific stimulatory effects on histamine release from human basophils.²² It has been suggested that the release of histamine, triggered by the increased serum levels of VLDL in obesity, could be a potential cause of decreased peripheral airway caliber.⁹ The altered pulmonary blood flow previously described could also be a contributing factor, facilitating increased distribution of VLDL throughout the pulmonary vasculature.

OBESITY AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

The association between Chronic Obstructive Pulmonary Disease (COPD) and obesity has not yet been explained. There is evidence presented by Guerra, Sherrill, Bobdilla, Martinez and Barbee²³ to indicate that when associated with obesity, COPD usually presents in the form of chronic bronchitis rather than emphysema.²³ COPD has been considered as a cause of obesity. It is quite likely that COPD could lead to a more sedentary lifestyle and could therefore contribute to the progression of the obesity.²⁴ It is also however possible that obesity may influence the pathology of COPD, though little research has been done on the subject. Interestingly, it has been proposed by Landbo, Perscott, Lange, Vestbo and Almdal²⁵ that the clinical prognosis in severe COPD improves with overweight and obese subjects. This large epidemiologic study compared the prognosis of subjects with COPD at varying BMI ranges, and with COPD severity controlled for in the analysis. While it is clear that those in the lowest BMI range had the highest mortality rates, interpretation should consider the results of Guerra, Sherrill, Bobdilla, Martinez and Barbee²³ described above. While it is known that the pathologic elements consistent with both emphysema and bronchitis may be present in most subjects with COPD, the relative contributions of each to any resultant obstructive processes may vary between those subjects.⁶ The possibility exists that this epidemiologic study compares two distinct subgroups within the COPD classification, with two quite distinctive population profiles, chronic bronchitis and emphysema. Also, diagnostic techniques may have led to misclassifications of the severity of COPD in the subjects. This could skew the results, particularly if low lung volumes are not considered as a possible cause of airflow limitation. Further research is indicated in this area to verify the findings and to identify physiologic explanations for the observed data.

Clinical Implications of Obesity on COPD

Regardless of the mechanism of its association to obstruction, obesity is a cause of a pulmonary function profile which may confound

the diagnostic picture of COPD. Obesity is likely to pose an increased risk in COPD subjects if the obstruction is inappropriately diagnosed and managed. Special consideration should be given to interpreting the obstructive pulmonary diagnostic results of the obese. Obesity must be considered as a possible etiology of an obstructive pulmonary function profile, particularly in subjects who exhibit evidence of airflow limitation without compromise to the ratio of FEV₁ to FVC.

Since obesity may compromise the simplicity of the evaluation of COPD through the traditional means of pulmonary function, clinicians may gain valuable assistance in the assessment of COPD in obese subjects, through evaluation of exercise capacity rather than through resting pulmonary function or BMI evaluation only. The prognostic capability of exercise capacity allows more objective and comprehensive evaluation of the severity of COPD than simple pulmonary function or FEV₁.²³

OBESITY AND ASTHMA

There is much evidence to support an association between asthma and obesity, though perhaps not enough to postulate a certain causal relationship. Numerous cross-sectional studies are suggestive of an increased prevalence of obesity amongst adults with asthma²⁷ but do not describe any cause and effect type relationship between the two. They do however indicate a clear association between the illnesses and substantiate the need for further investigation.

The idea that an increased body mass index leads to the development of asthma has been described by several prospective trials.^{28,29} An analysis by Ford²⁷ noted that the relative risk (RR) obesity poses to the development of asthma varies from 1.6 to 3.0 in these studies, with the majority of them determining the asthma diagnosis based on self-reported status. For example, BMI has been shown to have strong association with the risk of developing adult-onset asthma in a sample of subjects with self reported, physician diagnosed asthma.²⁸ This study found that the relative risk for development of self reported asthma increased from 0.9 in those subjects with a BMI less than 20 kg/m², to 2.7 in those with a BMI greater than 30 kg/m².

BMI has been shown to have strong association with the risk of developing adult-onset asthma.²⁸ Some population based studies linking obesity to a higher prevalence of asthma have found the association to be strongest in women.³⁰ Guerra, Sherrill, Bobdilla, Martinez and Barbee²³ supported this claim and identified a BMI ≥ 28 kg/m² as a significant risk factor for asthma among females. Studies into the effects of surgically mediated weight loss on obese asthmatics have shown symptomatic and medication usage improvements.³¹ One study found that weight reduction in obese women with asthma led to improved pulmonary function but showed no significant effect on airway reactivity.³² These data might suggest that the improvements noted were not due to do improvements in the asthma itself but the underlying obesity induced airway obstruction previously described. With these associations recognized, identification of the responsible mechanisms is important.

Associations: Obesity and Asthma

Certain mechanical effects of obesity may affect asthma secondarily to the restricted lung expansion already described. Impaired lung volumes may lead to altered airway protective mechanisms. Boulet, Turcott, Boulet, Simard and Robichaud³³ observed that the loss of bronchoprotective deep inspiratory maneuvers that is known to occur in asthmatic subjects also occurred in obese non-asthmatic subjects. This study postulated that the abnormality might predispose subjects to an increased responsiveness to antigenic exposure leading to early development of airway hyperresponsiveness. The study showed that

the degree to which FRC is compromised in obesity is more significant than the resultant compromise in TLC. The depth of any given inspiration in subjects with a BMI greater than 30 is therefore not as large relative to the amplitude of the breath, when compared to subjects with a BMI less than 30. The study author's therefore concluded that deep inspiration in obese subjects may not elicit the same results as in the non-obese. Specifically, the potent bronchodilating effects of stretching the airway smooth muscle would be nullified mechanically.

Another frequently associated mechanical effect of obesity identified to affect asthma is gastro-esophageal reflux disease (GERD). A significant association has been found between obesity and GERD.³⁴ Possibly caused by increased abdominal pressures seen in obesity, GERD's effect on asthma includes bronchoconstriction induced by acid aspiration.³⁵

Immunological mechanisms have also been identified as contributing factors to asthma in obesity. Among these mechanisms, inflammatory mediators that are increased with obesity, and due at least in part to the adipose tissue itself, may be responsible for changes in the function of the airway smooth muscle. Increased serum tumor necrosis factor α (TNF- α) is seen as a particularly significant potential cause for increased smooth muscle contractility. Other factors that are increased in obesity and potentially linked to effects in airway function include leptin, adiponectin, and plasminogen activating inhibitor.³⁶ An analysis by Bergeron & Hamid³⁷ into the effects of this low-grade systemic inflammation however found no significant differences in the number of sputum eosinophils and neutrophils in obese compared to non-obese moderate and severe asthmatics.

Alternative models of obesity's effects on asthma include sex specific factors, including effects of the sex hormone estrogen, the effects of diet, physical activity, and prenatal through to childhood development. Further discussions on these topics are beyond the scope of this review but much investigation into their relationships to asthma is in progress.³⁸

Clinical Implications of Obesity on Asthma

Studies demonstrating an often inappropriate diagnosis of asthma in the obese suggest that methods of more accurately diagnosing the disease must be utilized by clinicians. One Australian study raises concern over the potential over-diagnosis of asthma in obese children, a phenomenon it attributes to the lack of the use of objective diagnostic methods, including bronchial hyper-reactivity studies.³⁹ The study showed an increased prevalence of cough or wheeze in obese children, but showed no increased prevalence of airway obstruction or hyper-responsiveness in the children. Data such as these are suggestive that symptoms mimicking those of asthma exist in the obese, and may lead to misdiagnosis of asthma when objective diagnostic measures are not used.

Other research also suggests that obesity is associated with an over-diagnosis of asthma and the overuse of asthma therapies. In their study of 16,171 subjects, Sin, Jones and Man⁴⁰ demonstrated that while obesity was a risk for self reported asthma, obese patients were at a lower risk for objectively measured airflow obstruction. The study divided subjects into 5 quintiles based on BMI and measured self reported asthma and objectively measured lung function. Its results showed that the highest risk for the occurrence of self reported asthma and the lowest risk for objective demonstration of obstruction, defined as a FEV₁/FVC ratio less than 80% of predicted values, were both seen in the quintile with the highest BMI range, or greater than 31.0 kg/m². The correlation of asthma and BMI increased throughout increasing BMI ranges. The authors suggested that these data indicate that mechanisms other than airflow obstruction were responsible for the subjects' asthma-like

symptoms. Data from this study are also suggestive that asthma might be over-diagnosed in the obese population.

The use of symptoms alone is not an effective diagnostic method for asthma in obesity. Clinicians must take care in ensuring that objective data, particularly bronchial hyper-reactivity studies, is utilized in the diagnosis of asthma in the obese.

CONCLUSION

A lack of awareness amongst clinicians permits the characteristic pattern seen in the pulmonary function of the obese to be misinterpreted, leading to inaccurate and inappropriate diagnoses and clinical treatment regimes. Special care must be made by all clinicians to ensure that objective data is obtained and properly interpreted for the management and diagnosis of pulmonary disease in obese subjects. This review offers insight useful in the management of the obese sub-

ject with respiratory compromise.

These findings do bring several questions to light whose conclusions may contain further information relevant to clinicians. Further quantification of the respiratory impairment seen with varying degrees of obesity, and comparisons of cross-racial variations of the impairment, may lead to more accurate methods of pulmonary function analysis and predicted normals. The gender differences seen in the effect of obesity on both peripheral airways obstruction and on its association with asthma are of particular interest. Investigation into the variance in respiratory profiles between the sexes could be of great benefit.

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ABSTRACT

Mechanical Compression Attenuates Normal Human Bronchial Epithelial Wound Healing

Background: Airway narrowing associated with chronic asthma results in the transmission of injurious compressive forces to the bronchial epithelium and promotes the release of pro-inflammatory mediators and the denudation of the bronchial epithelium. While the individual effects of compression or denudation are well characterized, there is no data to elucidate how these cells respond to the application of mechanical compression in the presence of a compromised epithelial layer. **Methods.** Accordingly, differentiated normal human bronchial epithelial cells were exposed to one of four conditions: 1) unperturbed control cells, 2) single scrape wound only, 3) static compression (6 hours of 30 cmH₂O), and 4) 6 hours of static compression after a scrape wound. Following treatment, wound closure rate was recorded, media was assayed for mediator content and the cytoskeletal network was fluorescently labeled. **Results.** We found that mechanical compression and scrape injury increase TGF-β₂ and endothelin-1 secretion, while EGF content in the media is attenuated with both injury modes. The application of compression after a pre-existing scrape wound augmented these observations and also decreased PGE₂ media content. Compression stimulated depolymerization of the actin cytoskeleton and significantly attenuated wound healing. Closure rate was partially restored with the addition of exogenous PGE₂, but not EGF. **Conclusions.** Our results suggest that mechanical compression reduces the capacity of the bronchial epithelium to close wounds, and is, in part, mediated by PGE₂ and a compromised cytoskeleton.

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ABSTRACT

Ventilator-Associated Tracheobronchitis — The Impact of Targeted Antibiotic Therapy on Patient Outcomes

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Abstract: Nosocomial lower respiratory tract infections are a common cause of morbidity and mortality in ICU patients receiving mechanical ventilation. Many studies have investigated the management and prevention of ventilator-associated pneumonia (VAP), but few have focused on the role of ventilator-associated tracheobronchitis (VAT). The pathogenesis of lower respiratory tract infections often begins with tracheal colonization that may progress to VAT, and in selected patients to VAP. Since there is no well-established definition of VAT, discrimination between VAT and VAP can be challenging. VAT is a localized disease with clinical signs (fever, leukocytosis, and purulent sputum), microbiologic information (Gram stain with bacteria and leukocytes, with either a positive semiquantitative or a quantitative sputum culture), and the absence of a new infiltrate on chest radiograph. Monitoring endotracheal aspirates has been used to identify and quantify pathogens colonizing the lower airway, to diagnose VAT or VAP, and to initiate early, targeted antibiotic therapy. Recent data suggest that VAT appears to be an important risk factor for VAP and that targeted antibiotic therapy for VAT may be a new paradigm for VAP prevention and better patient outcomes.

Keywords: aerosolized antibiotics antibiotic therapy methicillin-resistant *Staphylococcus aureus* morbidity and mortality prevention *Pseudomonas aeruginosa* ventilator-associated pneumonia ventilator-associated tracheobronchitis

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To find out more about the CBRC, visit www.cbrc.ca