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Fanshawe College — RT Week

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New Emergency and Transport Ventilator

The CJRT acknowledges the financial support of the Government of Canada, through the Publications Assistance Program (PAP), toward our mailing costs.

Cover Photo
Manning the RT Week booth for Fanshawe College are Denis Zaravinos (right) and Alicia Rhyno.

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About This Issue

Welcome to another issue of the Canadian Journal of Respiratory Therapy. We have some great articles in this issue, including a report about RT Week activities from across the country. Some of our members really made creative and interesting displays, held contests, and raised money for charity. These individuals definitely made an impact on raising awareness of respiratory therapy in their communities.

On a sad note, as many of you are aware, Gord Hyland, the Registrar of the College of Respiratory Therapists of Ontario passed away recently.

I had the opportunity to sit on an advisory committee for the CRTO and was in attendance at a meeting at the CRTO head office in October. I was very happy to make the journey to Toronto, at least in part, to have the opportunity to spend some time with him. Gord was not at the office that day. I would later find out that he was in the hospital and had died that night.

Gord cannot be described in a single word. At every meeting he represented the epitome of collaboration, consensus building, careful thought and possibly most important, he listened. He always made his point and if he disagreed, you knew why. It was an easy and comfortable debate to an acceptable solution for everyone.

From that very first meeting, I used Gord as a role model for what I would like to be as an executive director. He made it abundantly clear that the position was not about implementing his will. It was about the opportunity to assist the respiratory therapists on the CRTO council in making their own choices according to the laws of the province and in the interest of the public. He contributed to the realization that professional/public interests and national/provincial interests are not the same, but can have a very close and collaborative relationship.

Gord was not a respiratory therapist, but his leadership by example should be an inspiration to every respiratory therapist in Canada. It would be hard to find a respiratory therapist that could exceed his dedication, knowledge and his absolute passion for our profession.

The National Alliance had a meeting in November and although the meeting was productive, there was an obvious hole in the room. Our interests are not the same, but can have a very close and collaborative relationship.

Gord, you will be missed. I am sure you are looking out for and attending to the National Alliance, CRTO council and our profession. We will miss you greatly.

Sincerely,
Doug Maynard, BSc, RRT, MBA
Executive Director, CSRT
dmaynard@csrt.com
Respiratory Therapists — On Call 24/7

During an Acadie-Bathurst Titan Quebec Major Junior Hockey League game, in September, Chantal Bernier, a respiratory therapist with 22 years experience, noticed another spectator had collapsed on the stairs. Along with a physician, Chantal ascertained that Leo MacIntire was in cardiac arrest. They immediately began CPR protocol.

Mr. MacIntire was transferred to the hospital where he was admitted to intensive care. After two weeks, Mr. MacIntire recovered from this incident. He is very thankful to Chantal and all the medical personnel on hand for their rapid response.

Since 1982, Chantal has worked as a respiratory therapist at the Chaleur Regional Hospital in Bathurst, New Brunswick. She has been assigned at the PFT Lab since 2001.

Once again, this incident proves that healthcare professionals save lives — any where, any time.

Bravo Chantal!

Medigas Award 2006

Renee Malone has been awarded an educational grant of $2,500 as the Medigas Award winner. Renee is an RRT and a member of a multi-disciplinary primary care team at the Downtown Community Health Centre and Pender Community Health Centre, in Vancouver, BC.

In 2004, there were only two respiratory therapists in North America in this type of role. Renee was one of them. She provides respiratory primary health care and chronic respiratory disease management to a marginalized population faced with challenges such as poverty, addiction, and mental illness. Renee works out of two downtown east side clinics with a patient population that is largely drug dependant and the very impoverished. Congratulations Renee!

Welcome Pam

The CSRT would like to welcome Pam Hicks to the front desk at head office. Originally from the Thousand Islands area in Ontario, Pam graduated from Carleton University in Ottawa with a major in French and with a minor in History. As Membership Assistant at the Canadian Association of Occupational Therapists, Pam worked on membership issues and the conference. She was also the project coordinator on the Workforce Integration Project — an 18-month project researching the barriers and facilitators of internationally trained occupational therapists trying to enter the Canadian workforce.

Pam spends her free time traveling, camping, hiking and canoeing. She hopes to eventually visit every continent.

Watch Your Mailbox

Did you sign up for the Leadership Special Interest Group? The CSRT has mailed you a survey to collect information on what respiratory therapists feel are the important factors in dealing with companies that supply core technology to the profession, including ventilators and blood gas analyzers. By filling out this survey you have the option of receiving the summary results of the survey. A great way to stay informed on what other respiratory therapists consider essential when dealing with these companies. A useful tool the next time that you need to purchase new equipment!

January Exam

The next sitting of the CSRT National Examination is January 8, 2007. Details for writing this exam are available on the CBRC website (http://www.cbrc.ca/).
Gord Hyland —
December 1, 1946 – October 11, 2006

Sadly, Gord Hyland, Registrar and CEO for the College of Respiratory Therapists of Ontario (CRTO), passed away with grace and dignity, with family and friends by his side, at the Credit Valley Hospital on Wednesday, October 11, 2006.

Gord’s dedication, leadership and tireless energy to the College of Respiratory Therapists of Ontario leaves us with a huge sense of loss. The numerous condolences people kindly sent to the CRTO office expressed the many ways Gord left his imprint on people. The messages that were echoed over and over spoke of Gord as: a leader, a true gentleman, kind, dedicated, highly conscientious, intelligent, knowledgeable, compassionate, helpful, supportive and wise.

In April 2002, the Council of the College of Respiratory Therapists of Ontario selected Gord to be the CRTO Registrar. From that day forward, Gord not only succeeded in fulfilling the CRTO’s mandate through his management and administration of the College’s work, but his insight, good judgment and inspiration helped to reshape the College during a time of unrest and transition. Perhaps a member from Windsor expressed this best:

“Our loss today, as members of an organization that, during the most turbulent and emotionally wrenching events for the CRTO, Gord struggled to show us proof of loyalty, support and leadership. I pause to think that sometimes..., there are reasons why special individuals like Gord, just happen along at the right place at the right time.”

Not surprisingly, Gord’s dedication was also present in his love for his wife and best friend of 36 years, Patricia. Gord was a very modest man, but when asked, he would proudly pull his fading wedding picture out of his wallet. The CRTO Staff loved to tease him about his mutton chop sideburns, that he quickly pointed out, were the fashion of the time. Gord always took the ribbing with good humour and would often joke about another of his passions — music by The Beach Boys. There was another woman in Gord’s life and in fact, it was the only photo he kept on his desk at the College, that of Daisy, his 4 year old grand-niece. Daisy held a special place in Gord’s heart; he would light up when he spoke of her.

Predeceased by his younger sister Janice Selinger by only three-months, both Gord and Patricia demonstrated their love and compassion for her. Most weekends were spent driving to and from the London area to be with her.

For over thirty years, Gord Hyland worked in the health care field. Gord’s early career was in science and research. He received formal education as a Medical Laboratory Technologist. He worked at the Toronto Western Hospital and Toronto General Hospital in management and medical research for 14 years. In the mid-1980’s, Gord’s career took an association management turn as he joined the Canadian Society of Laboratory Technologists, based in Hamilton, as the Assistant Director of Administration and Consultant in Immunology.

The past five years he dedicated to the College of Respiratory Therapists of Ontario and for 11 years before that, the College of Opticians of Ontario.

When Gord shared his vision for the CRTO he said, “A College is not there to create problems for the profession but to protect the public. It’s time to turn the page and start afresh.”

He did just that and more. We will all miss our great leader and friend.

In memory of Gord, donations to the Kidney Foundation would be greatly appreciated by the family.

Written in loving memory by, The Staff of the College of Respiratory Therapists of Ontario.
What a Wonderful RT Week it’s Been!

Danièle Filion, Coordinator, Public Relations and Marketing

Participants demonstrated incredible generosity, great passion, sheer energy and awesome creativity in leading the countless awareness-raising activities that took place during this year’s celebration. These activities most certainly impacted on both public and interdisciplinary awareness of respiratory therapy.

Working with Christina Beaudin, the Advocacy Committee Champion for Raising Awareness of the Profession with the General Public, we planned and executed a new RT Week awareness raising strategy. It was a three-pronged campaign topped by a contest: the CSRT encouraged educators to entice their respiratory therapy students to set up school-based displays in order to raise awareness with the student body; encouraged the membership to set up hospital-based displays to raise interdisciplinary awareness as well as awareness with the general public and the CSRT secured free-of-charge locations in malls in order for volunteers — and CSRT staff — to set up informational displays targeting the general public. CSRT promotional materials such as brochures, pens and banners were supplied to enhance RT week displays.

Our most important lesson learned is not to underestimate the great interest of respiratory therapists who are willing to take time out of their demanding work schedule in order to promote their profession. In 2007, we will ensure that the membership is made aware of available promotional materials and free exhibit space toward the beginning of August. RT WEEK 2007 will take place October 21 to 28.

The CSRT would like to give special mention to Douglas Ellingsen, Chris Grant and Janice Langis and her team of volunteers, for stepping up to the plate after we called for volunteers to set up and man mall-based displays. Douglas and Chris exhibited in Saskatoon’s Mall at Lawson Heights while Janice and her team of volunteers raised awareness in Moncton’s Highfield Square. CSRT staff, including Executive Director Douglas Maynard, set up and manned an RT Week Display based in Ottawa’s busy Rideau Centre.

We would also like to thank the Charlottetown Mall in Charlottetown, the Highfield Square Shopping Centre in Moncton, the Mall at Lawson Heights in Saskatoon, the Rideau Centre in Ottawa, Scotia Square Mall in Halifax, and the West Edmonton Mall in Edmonton. They have kindly offered to provide space and services free-of-charge RT Week mall-based displays.

Of course, the challenge of raising awareness surrounding our profession is far from being met. Thankfully, opportunities to raise awareness about respiratory therapy arise every day.

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On behalf of our members, the CSRT would like to extend a sincere, heartfelt thank you to all who have participated in raising awareness about our profession during RT WEEK 2006!

Rachel McCoy promotes the RT profession while taking advantage of some Trick or Treat options.
Message from the President

As I sit here writing my President’s Message, getting ready for my first official face-to-face Board of Directors’ meeting, I am reminded of a number of things and the many great people that I have come to know so far this year. I’d like to share a few of those events and stories here and make you aware of just some of the many people who make a difference to this profession.

In my last message I told you about the efforts underway to create a new communication tool amongst the schools. I’m pleased to say that at its first meeting in Ottawa, at the end of October, representatives from ten schools from across Canada, discussed the formation of the Canadian Advisory Council for Education in Respiratory Therapy. Initial work revolved around the development of terms of reference for the new Council and a preliminary list of objectives. Congratulations to Ted Yachemetz and Ian Pappin in being named the Interim Chair and Vice-Chair respectively of the Council. A future teleconference will discuss these issues further prior to an inaugural meeting to be held in conjunction with the Forum in Montreal.

Although the CSRT is assisting the Council by supporting the cost of hosting expenses and teleconference fees, the Council will be totally independent from the CSRT. It is hoped that through this Council, the schools will be able to offer advice to the CSRT as to how best to address national issues with respect to training and competency evaluation.

I attended this meeting as both the President of the CSRT and as a representative of my school, NBCC-SJ. Once I had dispensed with my late morning commitments I settled in to the discussions. I was immediately struck by how fortunate this organization is to have the opportunity to work with so many passionate individuals across this country all dedicated to respiratory therapy education.

After the meeting, our hosts, Algonquin College, provided us with an informative tour of their Simulation Centre for Health Studies. This is a new $1.5 million lab which contains several patient simulators in a mockup of an Operating Room, Intensive Care Unit and General Care Area all controlled and monitored by a central control room. Here respiratory therapists and other health care providers are trained in a simulated environment. If nothing else, giving nine other schools the opportunity to view this lab and considering the next level in respiratory therapy education made the Council’s formation worthwhile. My personal thanks go to Algonquin College’s Jo-Ann Aubut and Ian Summers for their hospitality.

The Alliance meeting held in Calgary has now come and gone. I appreciate the warm welcome which the College and Association of Respiratory Therapists of Alberta gave us. Thanks to Cliff Seville and Bryan Buell. As the Alliance meeting was held in conjunction with CARTA’s Educational Forum, we were invited to both attend some key lectures and mingle with the many therapists in attendance.

A considerable amount of work was done at the meeting with several key decisions being made. I would anticipate that an official Alliance spokesperson will make the minutes public in good time. One of the most significant aspects of the Alliance meeting for me was the attendance of Carol Donaldson from Nova Scotia. Carol was attending as an observer to the meeting so that she could become more informed of key issues for the Alliance once her province obtains regulation and becomes a member.

As previously stated, the CSRT is moving away from the function of a quasi-regulator and it is welcoming to see provinces move toward membership in the Alliance. Optimistically we should see Saskatchewan become a member soon followed by Nova Scotia, British Columbia and New Brunswick.

While I was in Calgary I was able to make arrangements to visit the Southern Alberta Institute of Technology. While there, Ron Wyrostok was generous enough to show me their Clinical Simulation Lab. The Lab is unique in that it has a full-size mock up of an ambulance in which students can “transport” a patient simulator to an Emergency Room. Upon entering the Lab you find yourself in a familiar living room setting. A typical scenario would have the patient in need of paramedics and emergency care. Once the initial assessment has been done, the patient is brought to a three bed ER where resuscitation efforts can be monitored via a central control room. Like Algonquin College, all of the students’ activities are recorded for future discussion and debriefing. This was another wonderful example of the many centers of excellence that we have associated with our profession.

I can’t mention the SAIT clinical simulation lab without also telling you about the big red RV that was parked nearby.

Continued on page 14
Au cours du forum qui s’est tenu à Au moment d’écrire ce mot, alors que je me prépare pour ma première réunion officielle du Conseil d’administration de face à face, je repense aux nombreuses choses que j’ai apprises et aux personnes spéciales que j’ai côtoyées au cours de cette année. J’aimerais vous raconter quelques-unes de ces activités et histoires, et vous parler de certaines des nombreuses personnes qui font une différence au sein de notre profession.

Dans mon dernier mot, j’ai traité des efforts qui sont déployés en vue de créer un nouvel outil de communication entre les écoles. Il me fait plaisir de vous dire que lors de sa première réunion, tenue à Ottawa à la fin d’octobre, les représentants de dix écoles de partout au pays ont discuté de la création du Conseil consultatif canadien sur l’éducation en thérapie respiratoire. Les premières étapes consistent à élaborer le mandat du nouveau Conseil ainsi qu’une liste préliminaire d’objectifs. Félicitations à Ted Yachmetz et à Ian Pappin qui ont respectivement été nommés président par intérim et vice-président par intérim du Conseil. Une prochaine téléconférence permettra de discuter à fond de ces sujets avant la séance inaugurale qui aura lieu en comité avec le Forum d’Algonquin pour monter à Montréal. Bien que la SCTR prête assistance au Conseil en assumant les couts des réunions et des téléconférences, le Conseil se veut un organisme complètement distinct de la SCTR. Il est souhaité que par l’entremise de ce Conseil, les écoles soient en mesure d’offrir à la SCTR des conseils à savoir comment aborder les enjeux nationaux liés à la formation et à l’évaluation des compétences.

C’est en qualité de président de la SCTR et de représentant de mon école, NBCCC-SJ, que j’ai participé à cette réunion. J’ai dû pronommer mon mot de bienvenue, au nom de la SCTR, plus tard que prévu en raison d’un retard de vol en quittant Saint John ce matin-là. Je me suis ensuite impliqué dans les discussions en cours. Je fus immédiatement saisi de la bonne fortune de cet organisme qui compte autant de personnes passionnées, provenant de tous les coins du pays, qui sont dévouées à l’éducation en thérapie respiratoire.

Après la réunion, notre hôte, le Collège Algonquin, a animé une tournée informative de son Simulation Centre for Health Studies (Centre de simulation des études sur santé). Ce nouveau laboratoire de 1,5 millions $ renferme plusieurs simulateurs de patients dans un modèle grandeur réelle d’une salle d’opération, une unité de soins intensifs et une aire de soins généraux. Lesquelles sont toutes contrôlées et surveillées par une salle de commande centrale. Ici, les thérapeutes respiratoires et autres professionnels de la santé reçoivent leur formation dans un environnement simule. Considération donnée à la prochaine étape de l’éducation en thérapie respiratoire, la possibilité de permettre à neuf autres écoles de voir ce labo a déjà rendu utile la création de ce Conseil. J’aimerais remercier personnellement Jo-Ann Aubut et Ian Summers du Collège Algonquin pour leur accueil.


Une importante quantité de travail fut accomplie lors de la réunion et plusieurs décisions clés ont été prises. J’imagine qu’un porte-parole officiel de l’Alliance publiera le proces-verbal sous peu. La participation de Carol Donaldson, de la Nouvelle-Écosse, constituait pour moi un des aspects les plus importants de cette réunion. Carol participant à titre d’obsèdée afin de se familiariser avec les enjeux clés de l’Alliance, en vue de la réadaptation éventuelle au sein de sa province et de son adhésion.

Tel qu’il fut mentionné précédemment, la SCTR se distancie de la fonction de quasi-organisme de réglementation et il est rafraîchissant de constater que les provinces évoluent vers l’adhésion à l’Alliance. La Saskatchewan devrait bientôt devenir membre, suivie de près de la Nouvelle-Écosse, la Colombie-Britannique et le Nouveau-Brunswick.

Pendant mon séjour à Calgary, j’ai visité le Southem Alberta Institute of Technology (SALT) et Ron Wyrroostok a gracieusement accepté de me montrer le labo de simulation clinique. Ce labo est unique en ce sens qu’il renferme un modèle grandeur réelle d’une ambulance dans lequel les étudiants peuvent « transporter » un simulateur de patient vers une salle d’urgence. En y pénétrant, on se retrouve dans un milieu familial, style salon d’en scène typique voudrait qu’un patient nécessite des soins d’urgence d’un ambulancier paramédical. Suite à l’évaluation initiale, le patient est amené à une salle d’urgence de trois lits où les tentatives de réanimation sont surveillées via une salle de commande centrale. Comme au Collège Algonquin, toutes les activités des étudiants sont consignées aux fins de discussion et de debriefing. Il s’agit d’un magnifique exemple des nombreux centres d’excellence qui sont associés à notre profession.

Il m’est impossible de discuter du labo de simulation clinique du SALT sans mentionner le grand véhicule récréatif rouge stationné à l’extérieur de l’hôtel pendant la réunion du CARTA. Il s’agit du labo mobile de simulation humaine de la Alberta Shock Trauma Air Rescue Society (STARS), une installation mobile remarquable qui permet d’enseigner par la simulation clinique, peu importe le lieu où se trouvent les participants en province. Équipe d’un simulateur de patient et d’un milieu qui ressemble à une salle d’urgence, les étudiants peuvent traverser divers scénarios tout en étant surveillés. L’enregistrement vidéo permet le debriefing et la révision. Pendant ma brève visite, Bonnie Sproule du STARS et Karl Weiss, formateur au SALT, ont su répondre à mes nombreuses questions.

Enfin, j’aimais conclure cette édition du mot du président avec un message d’adieu à un homme qui a accompli de grandes choses pour la thérapie respiratoire au Canada. Comme plusieurs d’entre vous le savent, Gord Hyland était le secrétaire général du College of Respiratory Therapists of Alberta. Bien qu’il n’était pas thérapeute respiratoire, je tiens à le mentionner puisqu’il était l’un de ces rares personnes à l’extérieur de notre profession qui a eu une immense influence sur la thérapie respiratoire. Son déces laisse un grand vide. Il a été décrit comme un homme doux, gentil et bienveillant qui avant tout, cherchait à rapprocher les gens les uns des autres. Il a accepté le poste de secrétaire général à l’époque où le moral des thérapeutes de l’Ontario était à son point le plus bas. Au fil des ans, il a travaillé à réparer les torts et à remonter le moral. Je ne l’ai connu personnellement que pendant une brève période et j’ai été fort ému de constater que la conversation que nous avions entamée à Calgary lors de la réunion de l’Alliance ne se poursuit pas. Je vous demande de célébrer sa vie et ses contributions à notre profession en faisant tout en votre possible pour la renforcer aussi magnifique qu’il l’entrevoyait.

Nous ne reconnaissions pas toujours la chance que nous avons d’avoir des gens comme Gord parmi nous. J’offre mes sincères sympathies à sa famille à l’occasion de la perte d’un être cher, ainsi qu’à tous ceux qui le connaissaient en qualité d’amie ou de collègue.

Rob Leathley, B.Ed., TRA
President de la SCTR
The CSRT would like to welcome Denis Boileau the position of Accreditation and Education Manager. Denis will fill in for Michelle Kowlessar as she takes maternity leave. We wish Michelle a speedy delivery and a restful time off with her expanding family.

Le SCTC souhaitait le bienvenue à Denis Boileau à la position du directeur d’accréditation et d’éducation. Denis prend la place de Michelle Kowlessar pendant qu’elle prend le congé de maternité. Nous souhaitons à Michelle une livraison rapide et un temps reposant avec sa nouvelle famille.

As Bilingual Accreditation and Education Manager, Denis is the primary link to organizations during their six-year accreditation cycle to enhance the accreditation process. As well, he is responsible for developing a process to determine the continuing education needs of the members of the Canadian Society of Respiratory Therapists.

Denis holds degrees in Business Administration and has his Master’s degree is in Kinesiology from the University of Ottawa.

He has a varied healthcare background including work in public health. He is an experienced educator, facilitator and project manager. He has worked in Los Angeles, CA, as a Business Development Manager for a national healthcare organization. He was recently employed with the Canadian Council on Health Services Accreditation Specialist working within the Ontario market, specifically with the southern Ontario market.

He is a Consumer Representative with the Canadian Standards Association, on their Technical Committee for Amusement Rides. He volunteers some time to the teaching of social and sport skills to developmentally delayed individuals. He enjoys running and developing further his skills in the martial arts.

Denis Boileau est le Directeur du programme d’accréditation et d’éducation. Il est le lien primaire pour les organismes durant leur cycle d’accréditation de 6 ans. En plus, développer un processus pour assurer les besoins de perfectionnement professionnel des membres.

Denis a obtenu un degré en Gestion ainsi qu’une maîtrise en Kinésiologie de l’Université d’Ottawa.


Il est le Représentant des Consommateurs avec l’Association Canadienne de Normalisation pour le comité Techniques des Manèges. Il dévoue de son temps à enseigner des habiletés sportives et sociales a des individus avec une déficience mentale. Il s’amuse à courir et à développer d’avantages ses habiletés dans les arts martiaux.
Pan-Canadian Health Human Resource Planning

Douglas Maynard, BSc, RRT, MBA, Executive Director, CSRT

A number of specific questions were asked in the 2005 CSRT Membership Survey in order to identify issues that affect the professional lives of our members. One of the most commonly raised concerns was workload and the lack of opportunity to expand practice due to shortages of respiratory therapists.

The issue of health human resource planning is both crucial and complex. It is currently being discussed at all levels of government and by many health care professional associations. This article presents an update on some of the current activities in which the CSRT is participating to address this very important issue.

Advisory Committee on Health Delivery and Health Human Resources (ACHDHR)

In 2003, at a meeting of the First Ministers, it was agreed that Canada is facing a critical shortage in health human resources (HHR). Traditionally, HHR planning falls under provincial and territorial jurisdictions. There was little collaboration in addressing challenges surrounding the supply and demand of HHR. From this meeting of federal, provincial and territorial Ministers, work began on the development of a Collaborative Pan-Canadian HHR Planning Framework.

This framework has a number of components (www.hc-sc.gc.ca/hc-sc/ssl-hsr-rhs/strateg/plan/index_e.html), including the development of the Advisory Committee on Health Delivery and Human Resources (ACHDHR). The CSRT has participated in the activities of this committee for the past two years.

Among the ACHDHR’s most recent activities are — the release of their framework document (2005); a number of consultations with stakeholders (including the CSRT); a survey on HHR planning. The ACHDHR has published their framework document on the Health Canada website at www.hc-sc.gc.ca/ahc-asc/public-consult/consultations/col/hhr-rhs/pan-can_e.html.

Key issues identified by the ACHDHR include:

- Finding the right mix of healthcare practitioners to ensure effective, efficient delivery of services
- Improving all jurisdictions’ capacity to plan for the optimal quantity, mix and distribution of healthcare practitioners
- Enhancing the capacity of each jurisdiction to work with employers and educators to ensure HHR have the appropriate skills and competencies
- Building sustainable, healthy work environments for HHR

The response to the initial paper at subsequent consultations was positive. However, a number of shortcomings were identified. Many participants felt the initial draft of the framework did not adequately address all key issues concerning HHR. Stakeholders raised concerns related to:

- The self-sufficiency of the healthcare workforce and its potential over-reliance on foreign trained practitioners
- The capacity of the current practice of “poaching” HHR from countries that cannot afford to lose their practitioners.

The various stakeholders have subsequently met with the ACHDHR to provide additional feedback and to further revise the framework. We are awaiting the publication of the revised framework.

Health Action Lobby (HEAL)

The CSRT is now in its second year of membership with HEAL. This influential group has proven to be an invaluable resource in addressing HHR-related issues.

HEAL has recently published its Core Principles and Strategic Directions for a Pan-Canadian Health Human Resource Plan discussion paper. The document can be found on the HEAL website at: www.physiotherapy.ca/HEAL/english/index.htm.

The CSRT provided significant input to this document, which has become a central discussion point and has been referenced on numerous occasions in various consultations with the ACHDHR.

The response to the initial paper at subsequent consultations was positive. However, a number of shortcomings were identified. Many participants felt the initial draft of the framework did not adequately address all key issues concerning HHR. Stakeholders raised concerns related to:

- The self-sufficiency of the healthcare workforce and its potential over-reliance on foreign trained practitioners.
- The impact of differing provincial credentialing and entry to practice requirements on quality of care and patient safety. This issue touches on the frequent disconnect between credential requirements and job requirement.
- Inadequate mechanisms of accountability and compliance monitoring, for national HHR planning issues.

The CSRT continues to work with HEAL to raise awareness of respiratory therapy within the group’s membership and to ensure that the voice of respiratory therapists is included in addressing HHR planning issues.

If you have any questions about this information or any other issues related to HHR planning, please contact Doug Maynard at dmaynard@csrt.com.
A special thank you to Kevin De Jong, who had held this position for several years, is due here as well. For me, this situation evolved out of a couple of conversations with colleagues, some other points from volunteer work done in the past and a desire to give a little back to the profession that has helped me to achieve a number of personal goals since becoming a RRT. I am looking forward to the tasks at hand, to developing new relationships and strengthening existing ones and to being a part of the process of enabling our profession continue to grow into all it can be.

For National Respiratory Therapy Week (shared this year in our facility with an aggressive Patient Safety Week campaign), I took advantage of visiting three senior Biology classes at Goderich District Collegiate Institute (GDCI) in our rural community of Goderich, Ontario. A poll of the approximately seventy students, demonstrated a need to continue to get the word out about our profession. Only three of the seventy or so students had heard about the profession of Respiratory Therapist. Mine proved to be a timely visit. They had just begun a unit on the human respiratory system and were about to participate in the lab portion of this current unit — doing spirometry with a water seal spirometer — set up on the table at the back corner of the room. I had taken a laptop with me and was able to use their projector to show the CRTO/RTSO recruiting video and the AARC recruiting video to the students. This prompted some interesting questions and discussion.

As a second project, I had an “e-survey” sent out through the hospital intranet — to about 200 employees — receiving a lower response than I was hoping for. Of these, all believed that having a Respiratory Therapy Service should be “essential” with the exception of one who felt we are “valuable to the team concept” with the other choices being “a luxury” and “a good resource”. Everybody knew that we are about “airway management and critical care” but able to work in “virtually every area of health care”. We have five Registered RTs working in this community and visiting the hospital regularly. We are all doing our part to set an example for the profession and to provide much needed care in our community. I remain passionate about growing our service in small hospitals and do appreciate the support from my peers in “the city” when needed.

I encourage every member and prospective members (for those of you out there “wondering” on the edge of joining), to have a good look at the CSRT website. Looking at the section “About CSRT” — under Annual Report 2005 — and — Stats and Demographics — you will learn some interesting facts about your peers and the financial status of the Society as a whole. There are several good graphs, a report outlining financial information and a good list of those who have been involved in getting us to where we currently are with our various projects and programs. Together we can do more.
The CICF and CSRT Develop Closer Ties

Leaders from the Canadian Society of Respiratory Therapists (CSRT) and the Canadian Intensive Care Foundation (CICF) continue to co-operate on initiatives to promote research and education opportunities for critical care professionals.

“There is a strong feeling that it is vital for our organizations to work as closely together as possible since our goals are synergistic and complementary,” said Jim Winnick, BS, RRT and Past President, CSRT, the national professional association for respiratory therapists (RTs). A large portion of the CSRT’s membership works in Intensive Care Units (ICUs) across the nation.

The CSRT and the CICF recently formalized their relationship through the signing of a Memorandum Of Understanding (MOU). This document acknowledges some of the common goals and activities shared by the two organizations. The memorandum also provides a framework through which the CSRT and CICF can continue to collaborate and support each other as the organizations strive to achieve their respective missions and objectives. The CSRT and the CICF have a growing history as partners. The CICF has been a staunch supporter of respiratory therapists of the CSRT and of CSRT professional development activities. In turn, the CSRT has promoted the CICF to the membership both as a potential source for research and education funds and as a Charity of Choice.

The CSRT represents the profession on medical, government, education and advisory bodies, said current CSRT President Rob Leathley of New Brunswick. In concert, the CICF raises funds for research and education in intensive care and supports RT conferences through its education fund, added Foundation Chair Dr. Cindy Hamielec of Hamilton.

Accordingly, Leathley has appointed Winnick to join the CICF board of directors. Winnick also serves on the Foundation’s grants review committee which adjudicates annual education submissions.

E. Wayne Peterson, CICF executive director, said the importance of critical care education, and what these respiratory therapists stand for, is an integral part of what the Foundation represents. “As an organization with charitable status, we complement them when it comes to secure funds for specific educational initiatives,” said Peterson. “Working together will hopefully impact our ability to provide more research and education funds.”

As of September 2006, membership in the CICF stands at 2,000. Peterson continues to engage other related critical care organizations with the potential to achieve similar arrangements.

For more information on the CICF, advances in critical care medicine and research and education opportunities for RTs — check the Foundation website at www.cicf.ca.

Message from the President

outside of the hotel during CARTA’s meeting. The RV is the mobile human simulation lab run by the Alberta Shock Trauma Air Rescue Society (STARS). This is a remarkable mobile facility allowing clinical simulation education to be delivered to the participants regardless of their location in the province. Equipped with a patient simulator and Emergency Room-like setting, students can be taken through a number of scenarios while being monitored. Video recordings are again available to permit debriefing and review. During my brief tour, Bonnie Sproule from STARS and Karl Weiss, an instructor at SAIT, were very helpful answering my many questions.

Finally, I’d like to end this edition of the President’s Message with a sad farewell to a man who did much for respiratory therapy in this country. Gord Hyland, as many of you know, was the Registrar of the College of Respiratory Therapists of Ontario. Although Gord was not a respiratory therapist, I mention him here as he was one of the few individuals from outside our profession who has made a huge impact on respiratory therapy and left a great emptiness with his passing. He has been described as a kind, gentle and caring man and most certainly as one who tried to bring us together. He took on the job of Registrar at a time when the moral of Ontario therapists was at its lowest. Over the subsequent years he did much to repair the hurt and renew the spirit. I personally knew Gord for only a short time and it was with considerable sadness that I was unable to continue our previous conversation in Calgary at the Alliance meeting. I can only ask that you celebrate his life and his contribution to this profession by striving to make it as great as he thought it was. We do not know how fortunate we truly are to have had people like Gord amongst us, my sincere condolences to his family on their loss of a loved one and to the many who knew him as a friend and colleague.

Rob Leathley, B.Ed., RRT
CSRT President
This workshop was accomplished via tele-
phone and an online presentation through a
computer with access to the internet.

Thirty-nine sites registered for this first event
to listen and participate in this presentation.
Each site attempted to have many RT’s listen-
ing in on this presentation.

Dr. Alan Kaplan, Chairman of the Family
Physician Airways Group of Canada, was the
presenter for this teleconference. He provided
a review of current asthma guidelines
detailing current issues as well as recent
advances. There was a review of definition,
diagnosis, treatment, adult and pediatric
issues, follow-up, action plans and how to
deal with the non-responder. Dr. Kaplan is an
accomplished lecturer and as published
many articles in regards to this.

Asthma guidelines have been updated every
few years and this workshop has allowed for
an up-to-date review of this important sub-
ject matter.

The response received for this first initiative
was beyond our expectations. We are still in
the process of tabulating the number of indi-
viduals who were able to participate in this
event. Furthermore, an evaluation of this
event will be done to determine if these
workshops are worthwhile for the members,
as well as to suggest future topics. The CSRT
will investigate the best venue to present
these workshops in the future.

The CSRT will undoubtedly offer more
opportunities, such as this in the future,
to further enhance the Professional
Development of its members.

If you would like to suggest a topic, for future
professional development initiatives, please
feel free to e-mail these at coarte@csrt.com.
In advance, we thank you for your
suggestions.
Most RTs are proud of their profession and do their part to expand and improve it. But did you feel that way about your vocation when you first started as a student? There is a group of students at Fanshawe College in London, Ontario who could inspire anyone to do a little more for their profession.

A few weeks after starting the Respiratory program, these students decided that they needed a club to promote their new-found profession. They wanted a venue to connect with other students and working RTs in the community. They formed the Respiratory Therapy Student Federation (RTSF), a legitimate club at the college. Their philosophy reflects their goals — “to provide awareness of our profession throughout the college. Create an avenue to educate the public and develop increased interaction between first, second, and third year students here at Fanshawe College.”

The RTSF has organized many events over the past year and a half — from fundraisers to educational events and even some social events. The largest of these was their RT week activities this past fall. They had events almost every day, including fundraising hundreds of dollars for the Lung Association, information booths throughout the college and social events as well.

There were two of the highlights of the week. One was the question and answer session, set up over dinner, for students who may not have decided on a career path yet. They invited RTs in from various aspects of the profession to talk about their jobs and answer questions. Almost 100 students attended.

The second event was a mock arrest to highlight the skills of respiratory therapists. They invited the paramedic program to assist and turned it into a full scenario from accident to ICU. The crowds that came out to watch were drawn into the excitement and were all very impressed. On top of all of this, many of these students also made a point of going out to the local community events that RT’s were hosting.

They say the youth are our future. I feel pretty confident that our profession has a great future ahead of it, if we have students like this joining us. For more information, visit their website www.rtstudentfederation.com.

The CSRT counts two new products in its line of promotional materials. These can be useful in raising awareness of the profession:

- The CSRT Code of Ethical and Professional Conduct for Respiratory Therapists and the CSRT Standards of Practice for Respiratory Therapists. A two piece set comprised of laminated prints, mounted onto a wooden backing. Each piece measures about 14” x 20”. Lamination is matte, contrasting with black glossy beveled edges. Sets are available in English and French. The set is a great addition to hospital RT departments as it demonstrates both professionalism and pride.

- The new bilingual What is a respiratory therapist? brochure. The CSRT’s Advocacy Committee has revamped the text of the previous What is a respiratory therapist? brochure, and its design has been freshened up. The new brochure is now available for distribution.

These products have been added to the CSRT’s RT Catalogue, which can be found at www.csrt.com.

The CSRT’s Advocacy Committee will continue to work to raise the profile of respiratory therapists. Should you have any suggestions for further activities or if you wish to give your name as an early-bird RT Week 2007 volunteer, please contact Danièle Filion, Public Relations and Marketing Coordinator, at (800) 267-3422 or dfilion@csrt.com.
Please be aware that there is a cap on the number of delegate registrations. Pre-registration is highly recommended. A Registration Form can be downloaded from the website under “About/Annual Meetings.” On-line registration will be available on the CSRT website in January. Here are some highlights:

**Wine and Cheese Reception, May 31, 2007**
Everyone is invited to attend the complimentary Wine and Cheese reception that will officially open the Exhibit Hall on Thursday night. Our exhibitors will be on hand to demonstrate the latest innovations in respiratory therapy equipment and services. This informal get-together is always a great opportunity to do some networking.

**Fun Night Fun! June 1, 2007**
What do the following have in common?
- Blonde
- Chocolate
- Rousse
- Smoked
- Raspberry

They all describe various types of beer! Yes, beer is not just a mix of malt, hops and yeast! In order to educate and entertain, the CSRT is offering an opportunity to investigate beer. Our Friday night Fun Night, June 1, 2007 will be held at the Windsor Station, which is hosting the Annual Mondiale de la Biere or Montreal Beer Festival.

Along with sampling various ales, lagers, porters, stouts, bocks, pilsner, brown, India Pale, creams, lights and darks, there will be tasty foods of the world as well. The Festival is a showcase for hundreds of large and small Quebec Brewers, as well as international beers. Tickets can be purchased onsite for $5.00 each. Only 500 have been ordered.

**President’s Banquet and Awards, June 2, 2007**
Along with an excellent sit-down meal at the Hilton on Saturday night, the CSRT and OPIQ will present several awards.

After dinner we will be dancing the night away to the high energy band — Alter Ego. Tickets are $50.00 each and are available through the Registration Form.

Please note that you must be of legal age to attend events where alcohol is served.

**Call for Abstracts**
**Post and Paper Presentations**
**Deadline March 16, 2007**
The 2007 CSRT Annual Educational Forum will be held in Montreal, Quebec. We expect over 800 delegates at this event and invite interested parties to showcase their latest abstracts or poster presentations to the Planning Committee for consideration.

Abstracts may pertain to any area of respiratory therapy including clinical practice, evaluation and respiratory healthcare delivery. Abstracts of no more than 250 words must be submitted according to guidelines (found on the CSRT website under About/Annual Meetings).

All submissions will be reviewed by a panel using a blind peer review mechanism. The deadline for submissions is March 16, 2007. Detailed information can be found on the CSRT website under About/Annual Meetings. Abstracts may be submitted in English or French.

Author of the winning Poster or Paper will receive free registration to Forum 2008.
On June 11, 2006 I attended the National Neonatal Resuscitation Program Steering Committee Meeting as representative of the CSRT. This meeting was held in conjunction with the Canadian Pediatric Society Conference and the launch of the new NRP standards. This was my first attendance at this meeting as the CSRT representative.

This year is the first that sees the National NRP Steering Committee as a committee of the Canadian Pediatric Society. In the past it had been a committee of the Heart and Stroke Foundation of Canada. The CPS will house a database to track NRP activity in Canada, but this will take time to establish. In the meantime, some provinces have elected to remain associated with their Heart and Stroke Foundations. Check with your local Neonatal Resuscitation Program for more information.

Those Respiratory Therapists involved with the care of neonates may already be aware of the changes to NRP announced with the launch of the new guidelines. A full summary of these changes and the Canadian addendum to the American Academy of Pediatrics NRP textbook can be found by following the link to NRP on the Canadian Pediatric Society website www.cps.ca. These changes reflect best evidence practice as researched by the NRP component of ILCOR, the international body responsible for overseeing all resuscitation programs. The Canadian addendum was the work of the scientific body representing NRP in Canada. For example, regarding the use of room air versus oxygen for resuscitation of the neonate, the Canadian addendum has defined the position on this more precisely than the AAP. http://www.cps.ca/english/prodev/NRP/addendum.pdf

Other guidelines such as the need to control FiO2 in the preterm baby, the introduction of t-piece resuscitators, the application of PEEP during PPV and the introduction of the laryngeal mask airway may lead to revisions in the resuscitation equipment used in Birth Units and NICUs. All of these changes and additions require a high level of involvement and input from Respiratory Therapists in both clinical and resource capacity.

The National NRP Steering Committee has undergone changes as well. It was decided that the committee would expand to better represent the interprofessional composition of the membership and related liaisons. There will be 8 core members, one of whom will be a Registered Respiratory Therapist. In addition to this core membership, there will remain liaison members representing a variety of professional organizations, one of which is the CSRT. The representation of Respiratory Therapy in the core membership of the National NRP committee speaks to the recognition of Respiratory Therapists as leaders in the arena of neonatal resuscitation.

The guidelines and best evidence practice for neonatal resuscitation have undergone a myriad of changes over the years. Despite the changes in how respiratory support is provided, it remains that this is the key to successful resuscitation. Respiratory Therapists are integral in providing not only clinical expertise but also leadership in applying the new NRP guidelines and identifying areas for further research.
Respiratory Syncytial Virus Infection Reduces 2-Adrenergic Responses in Human Airway Smooth Muscle

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Although respiratory syncytial virus (RSV) is the most common cause of lower respiratory tract illness in infants, the effect of RSV on human airway smooth muscle (HASM) has not been studied. We hypothesized that RSV has direct effects on cAMP formation and 2-adrenergic receptor (ADRB2) density and that ADRB2 haplotype influences this response. A recombinant green-fluorescent protein (rg) expressing RSV was used to determine whether RSV could infect cultured HASM. Influence of RSV infection on β2-adrenergic responsiveness was determined by measuring differences in isoproterenol (ISO)-induced cyclic AMP (cAMP) formation, ADRB2 density, and Gi expression in HASM cells challenged with RSV, with ultraviolet-inactivated RSV, and with mock infection. The rgRSV efficiently infected cultured HASM cells. ISO-induced cAMP formation was significantly reduced in cells infected with RSV, compared with mock-infected and ultraviolet-inactivated RSV, in a time- and concentration-dependent manner. Forskolin-induced cAMP formation and Gi expression were not altered in cells infected with RSV, suggesting that the influence of RSV on β2-adrenergic relaxation was upstream of cAMP formation. ADRB2 density was reduced in cells infected with RSV, compared with mock infection, and the Arg16Gln27 DRB2 haplotype was associated with decreased ISO-induced CAMP formation (P < 0.05) and with decreased ADRB2 density at baseline (P < 0.05). The implications of these results are that limitations of β2-agonists in the treatment of any airway obstruction associated with RSV infection may be related to direct effects of RSV on HASM, and ADRB2 genotype may predict β2-adrenergic responses.

Key Words: 2-adrenergic receptor • haplotype • human airway smooth muscle • isoproterenol • respiratory syncytial virus


Addition of Inhaled Tobramycin to Ciprofloxacin for Acute Exacerbations of Pseudomonas aeruginosa Infection in Adult Bronchiectasis*

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Rationale: Pseudomonas aeruginosa lung infection in patients with bronchiectasis, a chronic airway disease that is characterized by episodes of exacerbation, is associated with more severe disease and a higher utilization of healthcare resources. Inhaled tobramycin solution reduces the number of acute exacerbations in patients with cystic fibrosis (CF)-related bronchiectasis with P aeruginosa infection but remains untested in the treatment of exacerbations in patients with non-CF bronchiectasis.

Objectives: This study tested the effect of adding inhaled tobramycin solution to oral ciprofloxacin (Cip) for the treatment of acute exacerbations of non-CF bronchiectasis in patients with P aeruginosa infection.

Methods: A double-blind, randomized, active comparator, parallel-design study conducted at 17 study centers (5 in the United Kingdom, and 12 in the United States) compared 2 weeks of therapy with Cip with either an inhaled tobramycin solution or placebo in 53 adults with known P aeruginosa infection who were having acute exacerbations of bronchiectasis.

Measurements: Clinical symptoms, pulmonary function, clinical efficacy, and sputum microbiology were investigated prospectively.

Main results: An inhaled solution of Cip with tobramycin, compared to placebo, achieved greater microbiological response but no statistically significant difference in clinical efficacy at days 14 or 21. Clinical and microbiological outcomes at the test of cure (ie, the clinical outcome assessment at day 21) were concordant when an inhaled tobramycin solution was added to therapy with Cip and compared to placebo (p = 0.01). Both subject groups had similar overall adverse event rates, but subjects receiving therapy with an inhaled tobramycin solution reported an increased frequency of wheeze (50%; placebo group, 15%).

Conclusions: The addition of an inhaled tobramycin solution to therapy with oral Cip for the treatment of acute exacerbations of bronchiectasis due to P aeruginosa improved microbiological outcome and was concordant with clinical outcome; the inability to demonstrate an additional clinical benefit may have been due to emergent wheeze resulting from treatment.

Key Words: acute disease • bronchiectasis • Pseudomonas aeruginosa • tobramycin

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Managing Fluids and Electrolytes — A Case Study

Crystal White

A 57 year old female, weighing 89 kg presents to the emergency department with c/o of increased SOB, weakness and decreased LOC. Initial assessment noted the patients’ skin to be extremely dry with decreased skin turgor and a flat JVP. O/A: a/e equal bilaterally. PmHx includes: large cell carcinoma of the lung that has been stable for the past 2 years, Type II Diabetes Mellitus, and hyperkalemia. The patient was born with one kidney and has diabetic nephropathy, which has resulted in chronic renal failure. Vitals on admission: BP = 69/31, temp = 36.6, RR = 24/min, SpO2 = 91%, HR = 110/min.

1. What are the vital signs and initial assessment telling you about this patient?
   a) the patient may be exhibiting signs of dehydration
   b) the patient is hypothermic
   c) the patient is hypotensive and tachypneic
   d) the patient is bradycardic

Select the correct answer:
1. a, b, and c
2. a and c
3. b and d
4. d only
5. a, b, c, and d

Blood tests reveal her initial potassium level to be 7.9 mmol/L. The patient admits to having a 2–3 week Hx of diarrhea with possible black stools due to an ischemic bowel. An arterial blood gas is drawn from the patient revealing a pH of 7.02, PaCO2 = 28mmHg, HCO3 = 6.9, B.E. = -24.1, PaO2 = 103.6 mmHg

2. What may be the cause of the patients’ acid base status?
   a) the patients is hypokalemic, which may contribute to the results
   b) the patient is hyperkalemic, which may contribute to the results
   c) both the lungs and the kidneys are the primary disturbance
   d) the 2–3 wk history of diarrhea may be contributing to the ABG results

Select the correct answer:
1. a, b, and c
2. a and c
3. b and d
4. d only
5. a, b, c, and d

Further blood tests are performed on the patient and the lab results reveal: Na+ = 147mmol/L, K+ = 7.3mmol/L, Cl - = 122mmol/L, Creatinine = 341mmol/L U/O = 400cc/day ABG = 7.10/43.4/93.5/12.9/-16.8.

3. From these results, calculate the anion gap.
   a) 19.4mmol/L
   b) 30.6mmol/L
   c) 45.2mmol/L
   d) 64.7mmol/L

4. What do these results indicate?
   a) loss of base
   b) renal failure
   c) oliguria
   d) hyperchloremic metabolic acidosis

Select the correct answer:
1. a, b, and c
2. a and c
3. b and d
4. d only
5. a, b, c, and d

Over the next few hours the patient becomes more and more obtunded and starts to exhibit Kussmaul’s respirations (rhythmic, gasping type of respiration, normally seen in diabetics). As the patient begins to tire and go into respiratory distress while on a non-rebreather, she is intubated with a #8.0 endotracheal tube secured at 22cm ATL. The patient is placed on the 840 and ventilated with the following parameters: Vt = 600mls, RR = 14b/min, FiO2 = .40, PEEP = 3cmH2O. PaO2 at present = 464.8.

5. What is true of the above parameters?
   a) the patient is probably being hyperventilated beyond physiological needs
   b) the patient is probably being hypoventilated
   c) the VE is adequate for the patient based on the 90–120mls/min/kg
   d) the FiO2 is too low for the patients needs

On your rounds to do a ventilator check, you notice the following parameters: Vt = 600mls, PIP = 35 cmH2O, PA = 20cmH2O, Pmean = 11cmH2O. Peak Flow = 55L/min, PEEP = 3 cmH2O.
Managing Fluids and Electrolytes — A Case Study

6. Based on the parameters above, what is the static compliance?
   a) 35.29mls/cmH2O
   b) 18.75mls/cmH2O
   c) 75mls/cmH2O
   d) 40mls/cmH2O

While enjoying your 15 minute coffee break, you get a page from the ICU. The nurse tells you the patients’ high pressure alarm keeps going off. After suctioning the patient, clearing the water in the tubing and checking for kinks in the tubing you decide to switch to pressure control to allow for better control of the pressures within the patients lungs. After switching to pressure control you decide to draw an ABG. The results of the ABG reveal: 7.17/56.8/102.4. The ABG is drawn with the patient on an FiO2 of .40.

7. What is true of these ABG’s?
   a) normal P(A-a) O2 gradient
   b) alveolar hyperventilation and uncorrected hypoxemia
   c) partially compensated metabolic acidosis
   d) ventilatory failure

8. Based on the above ABG results, what adjustments on the ventilator do you suggest at this time?
   a) decrease pressure setting
   b) increase FiO2
   c) decrease respiratory rate
   d) increase pressure setting

   After a few days, you notice the patient has become quite edematous and you start to wonder if the patient is third spacing.

9. What will patients who are third spacing exhibit?
   a) decreased colloid osmotic pressure
   b) decreased blood pressure
   c) positive fluid balance
   d) negative fluid balance

Select the correct answer:
1) a, b, and c
2) a and c
3) b and d
4) d only
5) a, b, c, and d

The patient is treated with a combination of albumin for her edema (to increase osmotic pressure) and Lasix for diuresis.

Unfortunately this lady still remains mechanically ventilated in the ICU requiring frequent units of blood for a recent bowel surgery that caused her to haemorrhage. Frequent dialysis is required for her renal failure and she recently received a tracheostomy in anticipation of long-term ventilation.

**Answer Key**

1. Correct answer = #2 (a and c).
   a) The initial assessment of the patient, which revealed decreased skin turgor, as well as dry skin and mucous membranes are signs of dehydration (Lippincott Williams & Wilkins, 2005) Skin turgor is a measure of the skins resistance to deformation and decreased skin turgor is a late sign of dehydration. Decreased skin turgor refers to the slow return of skin back to its original shape when pinched between the fingers (MedlinePlus, 2006). The decreased blood pressure and increased heart rate the patient presents with on admission are also indicative of dehydration, as lost fluid is not adequately replaced. The patient also complains of weakness, which is a symptom associated with dehydration (Lippincott Williams & Wilkins, 2005).

   c) Normal blood pressure, like most vital signs can vary between patient to patient, as well as with age. In general, the normal range for systolic blood pressure is between 90–140 mmHg, and the normal range for diastolic blood pressure is 60–90 mmHg. This patient is hypotensive, as hypotension is defined as a blood pressure that is less than 95/60 mmHg. Since the patient is breathing at a rate of 24 breaths/min, the patient is also tachypneic, as the normal adult respiratory rate ranges from 12 to 18 breaths/min, with anything above 18b/min being considered tachypnea, and anything below 12 being considered bradypnea (Wilkins, Stoller, & Scanlan, 2003).

   b) Hypothermic (Incorrect) The patient is not hypothermic, as hypothermia is defined as an extremely low body temperature below 35 degrees celsius (Medlineplus, 2006).

   d) Bradycardic (Incorrect) With a pulse rate of 110b/min, the patient is not bradycardic, but rather tachycardic. With the normal heart rate between 60–100 beats/min, anything that exceeds 100b/min is considered tachycardic, whereas anything less than 60b/min is considered bradycardic (Wilkins, Stoller, & Scanlan, 2003).

2. Correct Answer = #3 (b & d).
   The ABG results reveal a metabolic acidosis, which can occur by two processes: 1. by a fixed acid accumulation in the blood 2. by a loss of bicarb from the body.

   b) Hyperkalemia: one of potassiums roles is to act as part of the bodys buffer system. The body alters the potassium level by moving hydrogen ions in and out of the cell...
Managing Fluids and Electrolytes — A Case Study

in exchange for potassium. In the case of hyperkalemia, potassium is drawn into the cell in exchange for hydrogen coming out, resulting in a metabolic acidosis. As plasma potassium increases about 0.6mmol/L, blood pH falls approximately 0.1 units (Wilkins, Stoller, & Scanlan, 2003).

d) The 2–3 week history of diarrhea is an example of a metabolic acidosis caused by the elimination of bicarbonate from the body (Wilkins, Stoller, & Scanlan, 2003).

3. Answer:

a) Hypokalemia (Incorrect) Hypokalemia results in the movement of potassium from the intracellular to extracellular spaces in exchange for hydrogen, resulting in a metabolic alkalosis, not a metabolic acidosis (Wilkins, Stoller, & Scanlan, 2003).

b) Renal Failure: The decreased urinary output, increased creatinine, increased potassium and metabolic acidosis, are all signs of the kidneys inability to function properly (Lippincott Williams & Wilkins, 2005).

c) Oliguria: Oliguria is defined as a decreased ability to pass urine and refers to a urinary output of less than 500ml/day

d) Hyperchloremic metabolic acidosis: When the metabolic acidosis is caused by a loss of bicarb from the body, the result is a chloride gain → increased reabsorption by the kidney, resulting in a hyperchloremic metabolic acidosis (Wilkins, Stoller, & Scanlan, 2003).

4. The anion gap is an assessment tool used to help determine the cause of a metabolic acidosis (whether it is caused by a gain of acid, or a loss of base). It works on the law of electroneutrality, which states that there must be an equal number of positive and negative charges in the body to maintain homeostasis (Wilkins, Stoller, & Scanlan, 2003)

Correct Answer: 5 (a, b, c, and d)

a) Loss of Base: A normal anion gap range is 15-20mmol/L. A metabolic acidosis which is accompanied by a normal anion gap (19.64 in this case) means the body has lost a greater than normal number of bicarb ions. An increased anion gap means the metabolic acidosis is caused by a fixed acid accumulation (Wilkins, Stoller, & Scanlan, 2003).

b) Renal Failure: The decreased urinary output, increased creatinine, increased potassium and metabolic acidosis, are all signs of the kidneys inability to function properly (Lippincott Williams & Wilkins, 2005).

c) Oliguria: Oliguria is defined as a decreased ability to pass urine and refers to a urinary output of less than 500ml/day

d) Hyperchloremic metabolic acidosis: When the metabolic acidosis is caused by a loss of bicarb from the body, the result is a chloride gain → increased reabsorption by the kidney, resulting in a hyperchloremic metabolic acidosis (Wilkins, Stoller, & Scanlan, 2003).

5. Correct answer = C.A Vt of 600 mls and a respiratory rate of 14 provide an adequate minute ventilation based on the equation Vt x RR/ weight in kg. The answer works out to be 94.4 mls/min/kg, which falls within the 90–120 range.

A — Hyperventilating (Incorrect): Based on the initial goal of a minute ventilation between the range of 90–120mls/min/kg, we are presently not hyperventilating the patient. Since the CO2 and ventilation have an inverse relationship, as one increases the other decreases. However, in this case ventilation is adequate, therefore CO2 should fall within normal range. A blood gas will have to be taken however, to determine if parameters have to be changed (Wilkins, Stoller, & Scanlan, 2003)

B — Hypoventilation (Incorrect) Similar to above, we are not hypoventilating our patient, because based on the 90–120mls/min/kg, we are not decreasing ventilation. A blood gas will reveal more accurate results however.

D — FiO2 is too low (Incorrect) Due to the previous blood gas measurement on 100% O2 revealing a PaO2 of 464.8 mmHg, the patient may be safe with an FiO2 of .40. It is favourable to reduce the FiO2 as soon as is practical to a level of .40 or .50 to avoid oxygen toxicity and absorption atelectasis. Again, an ABG will help to decide if changes need to be made (Wilkins, Stoller, & Scanlan, 2003).

6. The correct formula for static compliance is:

\[ C_{stat} = \frac{V_t}{P_{plateau} - PEEP} \]

Static compliance is a pressure measurement that is obtained under conditions of no air movement (Sibberson, 1996)

Correct answer: A - 35.29 ml/H2O

The correct formula was applied and the correct numbers were applied to the parameters.

B) 18.75 ml/H2O (Incorrect) — The wrong formula was used. This is the formula for dynamic compliance, where PIP is used in place of Plateau.
Managing Fluids and Electrolytes — A Case Study

C) 75ml/H2O (Incorrect) — The wrong formula was applied. The value for Pmean was used in place of Plateau.

D) 40ml/H2O (Incorrect) — The wrong formula was applied. Instead of subtracting PEEP from Plateau, Plateau was subtracted from PIP.

7. Correct answer: D: Ventilatory failure is classified as a PaCO2 of greater than 45 mmHg, therefore with a PaCO2 of 56.8 mmHg, the patient is presently in ventilatory failure (Cairo & Pilbeam, 2004).

A) Normal P(A-a) O2 gradient (Incorrect) | (760mmHg - 47mmHg) x .40 - 56.8mmHg/8 | - 102.4 works out to be 111.8 mmHg, revealing a severe increase in gradient.

B) Alveolar Hyperventilation (Incorrect): Hyperventilation refers to an increased alveolar ventilation resulting in a PaCO2 of less than 35. The patient exhibits excessively corrected hypoxemia as her PaO2 is 102.4 (>100) on supplemental oxygen.

C) Partially compensated metabolic acidosis (Incorrect): With an increased PaCO2 towards the acidic side, the lungs are not compensating at all for the metabolic acidosis. This is an example of a combined respiratory and metabolic acidosis (Cairo & Pilbeam, 2004).

8. To increase or decrease PaCO2 in pressure control ventilation, you can increase or decrease the pressure setting and observe the exhaled tidal volume (Wilkins, Stoller, & Scanlan, 2003).

Correct Answer: D: Increase Pressure setting. The PaCO2 is currently 56.9mmHg which is further adding to the acidic situation already taking place on the metabolic side of the pH equation. Our goal here is to decrease the PaCO2 in an attempt to normalize the pH. Since CO2 and ventilation have an inverse relationship, increasing the pressure setting should decrease the PaCO2. Another alternative to decreasing the PaCO2 would be to increase the respiratory rate, in the case where you already had the desired tidal volume and didn’t want to adjust the pressure to change this volume (Wilkins, Stoller, & Scanlan, 2003).

A) Decrease Pressure setting (Incorrect): Decreasing the pressure setting will only add to the already acidic pH, as the CO2 will continue to rise.

B) Increase FiO2 (Incorrect): With a PaO2 of 102.4 and an O2 saturation of 96.1, the patient currently has excessively corrected hypoxemia. No change or a decrease in the FiO2 (considering all other things associated with oxygenation are stable (ex: an acceptable Hb level) may be more appropriate.

C) Decrease Respiratory Rate (Incorrect): As previously noted decreases in ventilation will result in an increase in the CO2, when our goal at this point is to try to decrease the CO2 to bring the pH within normal range (Wilkins, Stoller, & Scanlan, 2003).

9. Correct Answer: #1 (a, b, & c)

A) Decreased colloid osmotic pressure (Correct): Less osmotic pressure is available to pull fluid into the intravascular space (Lippincott Williams & Wilkins, 2005). In this patients case, her albumin level was noted to be 13g/L (N = 33-47g/L). This may be the result of her diabetic nephropathy, which overtime decreases the amount of albumin available in the intravascular space by increasing its excretion in urine (MedlinePlus, 2006).

B) Decreased Blood Pressure (Correct): The decrease in blood pressure is due to fluid moving out of the intravascular space into spaces where the body is unable to use it (ex: abdominal cavity, pleural cavity) (Lippincott Williams & Wilkins, 2005).

C) Positive Fluid Balance (Correct): These patients keep more fluid in, than they get rid of. Their input is greater than their output.

D) Negative Fluid Balance (Incorrect): In this case, output is greater than input. Third spacing refers to fluid that the patient is given that cannot be accounted for, because the input does not match the output.

10. Correct answer: B: furosemide. This diuretic blocks the re-absorption of sodium into the bloodstream, therefore increasing the loss of both sodium and water at the proximal and distal tubules of the loop of Henle (Colbert & Mason, 2002).

A) Naturally occurring diuretic hormone (Incorrect): This hormone is referred to as the Atrial Naturetic Peptide, which diuresis to decrease volume and return to normal blood pressure.

C) Spironolactone (Incorrect): Otherwise referred to by the brand name Aldactone, this potassium sparing diuretic does not allow potassium to be excreted with sodium like the loop diuretics and thiazides.

D) Increased excretion of Na and H2O at the distal convoluted tubules (Incorrect): These diuretics are referred to as the thiazide diuretics. (ex: Diuril) (Colbert & Mason, 2002)
New Emergency and Transport Ventilator

Draeger Canada launches the new Oxylog 3000. It sets new standards in primary care, secondary transport and strengthens the Oxylog family.

With Oxylog 3000, a patient can go with the kind of ventilation available in critical care during inner- or inter-clinical transport. The new emergency and transport ventilator offers an unmatched weight-to-performance ratio and can even be used to ventilate critical-care patients in transfer situations.

**Constant Advancement of ventilation**

By the continuous improvement of intensive care ventilators, the gap between high-end ventilation and transport-ventilation became larger. For Dräger Medical, the request consisted of almost closing the gap. Due to the new Oxylog 3000 this was realized and succeeded to implement the high performance in a new light, compact and easy to carry design.

**Ventilation Performance**

The SIMV mode of Oxylog 3000 actively supports the patient's breathing as well as the combination of pressure-controlled and spontaneous ventilation during the entire breathing cycle (PCV+). The Oxylog 3000 can automatically support insufficient spontaneous breathing (PSV). If intubation has to be avoided, even non-invasive mask ventilation (NIV) with leakage compensation is possible.

In the event of an apnea in the CPAP mode, Oxylog 3000 automatically initiates volume-controlled mandatory ventilation after a preset latency period. A tidal volume that starts at just 50 ml allows the new emergency and transport ventilator to be also used for pediatric patients while the patented blender permits an oxygen concentration as little as 40%.

**Handling Concept**

Handling follows an intelligent, centralized concept based on the familiar Dräger rotary knob, which shows readings, settings and flow or pressure curves at a glance.

Despite the Oxylog 3000’s outstanding ventilation qualities, this device is as tough as they come. It is built to withstand a 20 g-force impact (equivalent to a drop from 75 cm), is suitable for use in helicopters, is spray-water-proof and functions perfectly well from -20° to +50° C. Another innovation is the Oxylog’s smart battery. It will provide “typical” ventilation for up to four hours and has a built-in chip to tell how full it is.

In combination with the monolithically developed new carrying system with automatically electrical contacting and the rotating vehicle holder Oxylog 3000 sets a new standard of emergency rescue and transport unit.

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### Job Summary

Under general direction: RRTs plan, implement and evaluate respiratory care and services to assist physicians in the diagnosis and management of neonates with cardiopulmonary and related disorders in the NICU.

FMC Nursery Core trained RRTs also attend all high risk deliveries to provide neonatal resuscitation, intubation and care planning. They are integral to the RRTAN Neonatal transport team bringing critically ill neonates from all across southern Alberta and south-eastern British Columbia to FMC NICU. They participate actively in the education of Residents, nurses, patient’s families, students and themselves.

### Qualifications

- Graduate of an accredited school of Respiratory Therapy
- Registered with the College and Association of Respiratory Therapists of Alberta
- Successful completion of the CARTA/CSRT registration examination or NBRC
- Current general duty Respiratory Therapy knowledge and skills
- Current NRP certification
- Minimum 1 year current NICU experience
- Current Experience in Neonatal Resuscitation, Intubation and Transport.

For specific details of positions, and to apply, please log on to the Calgary Health Region web site: calgaryhealthregion.ca. For further information you may contact Lori Lowery at 1-403-944-1319.

The Calgary Health Region has over 22,000 employees making it the largest employer in southern Alberta. Calgary is a vibrant and growing city, with many beautiful communities close by, home to the second largest number of corporate head offices in Canada, with a thriving high tech sector. Excellent schools and ease of access to outdoor activities and adventure have contributed to impressive growth; more than a million people now live in Calgary and surrounding area. Relocation assistance is available.
Scientific news

New COPD Guidelines

The second edition of the Respiratory (Asthma/COPD) Guidelines for Family Practice is now available. These guidelines were first introduced in November 1998 as COPD guidelines and were widely distributed across Canada. Since their introduction they have been acknowledged as an excellent resource for the treatment and management of respiratory disorders. They have been instrumental in promoting optimal drug therapy in a number of community educational programs. The new guideline includes updates to COPD and has been expanded to include a new section on Asthma. Each Asthma and COPD section covers Diagnosis and Management issues.

They were developed by the Respiratory Review Panel, an independent body composed of family physicians, specialists, nurses and pharmacists. The development of the guidelines followed a similar evidence-based process to that of the Guidelines for the Treatment of Chronic Obstructive Pulmonary Disease (COPD) 1st edition. The process allowed for input from a number of reviewers and is formatted in a user-friendly manner to ensure their easy adoption.

“These guidelines are designed to support family practitioners in delivering the best care possible to their patients with major respiratory illness,” said Dr. Frank Martino, Assistant Professor, Department of Family Medicine, Faculty of Medicine, University of Toronto, and Chief of Family Medicine William Osler Health Centre. They are not intended to replace a physician’s judgment and are sufficiently flexible to allow health practitioners and patients to exercise judgment when choosing among available options.

For information on purchasing copies, please contact:
MUMS Guidelines Clearinghouse
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References

Crystal White is in her third year of Respiratory Therapy at Dalhousie University/ QEII School of Health Sciences, Halifax. She also has Science Degree with a focus in biology from Cape Breton University. Crystal plans to continue working in Nova Scotia after completing her four-year degree in Health Sciences.
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Prescribing Info

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Calendar of Events

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<tr>
<th>Date</th>
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<td>January 15 – 17, 2007</td>
<td>Root Cause Analysis Train the Trainer Workshop</td>
<td>Toronto ON, <a href="http://www.patientsafetyinstitute.ca/events">www.patientsafetyinstitute.ca/events</a></td>
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<tr>
<td>February 23 – 27, 2007</td>
<td>American Academy of Allergy, Asthma &amp; Immunology, 63rd Annual</td>
<td><a href="http://www.annualmeeting.aai.org">http://www.annualmeeting.aai.org</a></td>
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Registered Respiratory Therapist
NRP Steering Committee Membership

The NRP Steering Committee of the Canadian Pediatric Society provides the CPS with expertise and evidence based recommendations on issues related to neonatal resuscitation in Canada. The steering committee is also involved in CPS continuing professional development and serves as media spokesperson.

The NRP Steering Committee is interprofessional. This year a decision was made to increase the size of this committee to better represent the professional composition of the membership and related liaison organizations. There will be 8 core members funded by the CPS. This core group will represent Neonatology, Family Practice and Community based medicine, Nursing, Midwifery, and Respiratory Therapy. The committee will also include various liaison members who are funded through their respective organizations.

A Registered Respiratory Therapist is needed to fill one of the core member positions on this committee. This RT must be a member in good standing of the Canadian Society of Respiratory Therapists and have direct patient care responsibilities in a Neonatal Intensive Care Unit. The RT must hold current registration in NRP with registration as an NRP instructor preferred. If the RT is not currently registered as an NRP instructor, they should be prepared to obtain their instructor certificate. The RT should also be a member of the Canadian Pediatric Society, or be prepared to become a member.

Interested parties should forward a CV to Dr. Nalini Singhal, Chair, NRP Steering Committee, no later than December 15, 2006: Nalini.Singhal@CalgaryHealthRegion.ca.