Winter 2020 Issue 10

Prior to February 26, 2020, the Lung Health Foundation operated as the Ontario Lung Association. Enjoy this content from our archives.

An official publication of the Ontario Respiratory Care Society, a section of The Lung Association - Ontario

Update on Respiratory Health, Research and Education **is a publication of the Ontario Respiratory Care Society, a section of The Lung Association.** ***Update*** **is published three times per year and includes peer-reviewed original articles, clinical practice tools, health news, and communications between the ORCS and its membership.**

CHAIR'S MESSAGE

Welcome to 2020! A New Year *and* a new decade! I hope that everyone had a chance to pause over the holidays, to be in its moments of wonder and reflection, and to consider where we see ourselves as we begin anew. Whether you make resolutions or not, the beginning of the New Year is a key time for setting goals and defining strategies for the year ahead.

In reflecting, we should recap the busy fall schedule that recently passed. The Ontario Lung Association and the ORCS hosted four of five planned regional educational evenings and the topics were both timely and engaging. Special thanks to everyone who attended as well as the speakers and, of course, the regional chairs who were instrumental in co-ordinating and hosting these evenings. I am very proud of the educational opportunities that we provide and would urge anyone who is near Downtown Toronto on March 5th March to register for the remaining evening event featuring Dr. Roger Goldstein presenting on pulmonary rehabilitation. We hope to welcome a big crowd.

Speaking of big crowds, Better Breathing 2020 is only a few weeks away, commencing on January 23rd and running through the 25th, 2020! Hosted collaboratively by the Ontario Thoracic Society (OTS), the Ontario Respiratory Care Society (ORCS) and the Ontario Lung Association, this is one conference you definitely don't want to miss. We look forward to seeing you there!

The 10th annual Respiratory Health Forum is happening Jan 22nd –Jan 23rd and is free for all Primary Health Care Professionals in Ontario. It's a wonderful chance to get out and network and learn more about lung health with others working in Multidisciplinary settings.

In conclusion, we have another busy year ahead. I take this opportunity to remind you of the importance of your membership. I encourage you to renew starting on February 1st and also invite a friend or colleague to join. This year we will have lots of new perks to take advantage of, including Liability Insurance for our Respiratory Therapist members and great professional and lifestyle discounts for members of every discipline. As a society we have so much to offer and as professionals we have much to give – the perfect pairing for making a difference in 2020!

Submitted Respectfully,
Miriam Freymond-Turnbull
Chair, The Ontario Respiratory Care Society

EDITOR'S MESSAGE

Happy New Year! I am grateful for the opportunity to share this message, to remember the past year's challenges and achievements while looking forward to the promise of a new year and a new beginning. As our editorial team begins the 2020 journey, we will continue our commitment to sharing knowledge and providing education to everyone involved or interested in getting involved in respiratory care. This edition of *Update on respiratory health, research & education* provides informative articles on current topics of interest for healthcare professionals, students and patients.

As of October 1, 2019, OHIP will no longer cover Ontario travellers facing emergency medical expenses outside of Canada. Jessica Sopher's feature article provides an excellent overview of the new changes to OHIP travel insurance.

The burning issue of adverse effects of vaping is also featured in this edition. Dr. Constance Mackenzie is a respirologist in London, Ontario who shares her experience and knowledge on known and suspected negative effects of vaping with us.

In the Spotlight section of this edition features one of the long-standing members of the Ontario Respiratory Care Society, Mike Keim. Mike is a respiratory therapist whose leadership and commitment to education continues to inspire. Read the full article for details on a successful career path and inter-professional collaboration.

For those interested in post-rehabilitation programs for people with chronic lung disease, read the Toolbox section. Jody Hamilton offers information on the Fitness for Breath program, an innovative model for exercise maintenance for people with chronic obstructive pulmonary disease and other chronic respiratory diseases. This program is offered in partnership with fitness centers across the province.

We are proud to start the New Year by offering a variety of articles meant to provide information, answer questions or simply initiate conversations for future topics of interest. We welcome all to our community of scholars, practitioners, patients and caregivers involved in respiratory care. Your input is always welcome and feedback appreciated. From our own professional or personal platform, we all have knowledge and experience to share for the benefit of this community.

If this edition's articles sparked your curiosity and desire to learn more, there is no better way to engage in conversation than attending another amazing Better Breathing Conference. We hope to see many of you from January 23 to 25, 2020 in Toronto for this wonderful learning and networking experience. See you there!

Sincerely,
Yvonne Drasovean, BSc, RRT, MEd, FCSRT
Co-chair Editorial Board

Cuts to Ontario's Out-of-Country Traveler's Program - What Does this Mean for Ontario Residents?

Submitted by: Jessica Sopher, Policy & Public Affairs Associate, the Ontario Lung Association

The Ontario government has moved forward with their decision to cancel the Ontario Health Insurance Plan's (OHIP) coverage for emergency health services outside of Canada, becoming the only province or territory who does not offer some form of coverage in this area. Previously, if an Ontario resident had a medical emergency while abroad, OHIP reimbursed the cost of physician services and hospital services. To have been eligible, select criteria would have had to be met including: the treatment was medically necessary, the treatment was performed in a licensed health facility or hospital, and that the illness or condition was acute, unexpected and required immediate attention.[1]

With this being said, the amount of coverage was limited and did not account for all costs incurred abroad in the event of a medical emergency. Physician services were covered up to "the cost of the same physician service in Ontario" which is typically considerably less expensive than out of country physician visits. Emergency room visits were covered up to $50 CDN a day, inpatient services to $200 CDN a day except in select cases, and outpatient dialysis services to $210 CDN a day.[2]

With the new changes, the Ministry of Health is encouraging Ontario residents who are travelling to purchase travel insurance from an outside provider. They have highlighted that most Ontarians already have some type of travel insurance coverage through their employer or credit cards.[3] Ontario's Minister of Health, Christine Elliott, expressed that "The [aforementioned] program does little in the way of providing meaningful travel coverage or value to taxpayers, especially when private insurance plans are readily available and offer the level of coverage everyone should have when travelling".[4]

At the same time, the Government of Ontario has announced a new program to fund out-of-country dialysis services which will be operated by the Ontario Renal Network. The program, coming into effect in January 2020, is offered to hemodialysis patients who require medical care when they leave the country. A portion of the funds saved from cutting the Out-of-Country Traveler's Program will be allocated to the Ontario Renal Network for the implementation of the new program.[5]

Two contrasting perspectives on the decision made by the Government of Ontario have dominated the discussion in the media and other sources. On one end of the spectrum, certain news articles and researchers have outlined that the growing provincial debt is unsustainable and fiscal restraints are justified. To add to this, they have stated that cuts to OHIP travel will not make a large impact as coverage was extremely limited to begin with. Ontario's Auditor General reported in 2018 that a third of the Out-of-Country-Traveler's Program funding was being spent solely on administration costs to run the program.[6] On the other hand, critics, including the leader of Ontario's New Democratic Party, have called out the Government of Ontario for moving forward with these changes despite insufficient stakeholder consultation. Federally, Health Canada's Minister, Petitpas Taylor, also disapproved of the Province's decision declaring that it was inconsistent with the portability criterion of the *Canada Health Act*.[7] This section of the Act stipulates that Canadians are entitled to provincial or territorial coverage of medically necessary hospital or physician visits during temporary absences from their province/territory of residence.[8]

From an economic standpoint, certain groups have argued that further privatizing travelers' insurance will cost businesses hundreds of millions of dollars. This burden will ultimately be placed on the employee through increased copayments or premiums. Moreover, the approach taken by the Ministry of Health neglects individuals who are unemployed, only partially insured, or those working under contract.[9]

Changes to the Out-of-Country Traveler's Program were announced not long after cuts to OHIP Plus (OHIP+) came into effect on April 1st 2019, which limited coverage of prescription drugs for children and youth 24 years of age and under solely to individuals who are not covered under a private insurance plan.[10] The previous liberal government had introduced OHIP+ coverage for all children and youth 24 and younger despite whether they were covered privately or not. This move by Ford's conservative government caused significant backlash by different interest groups and organizations who argued that cuts like these only create additional barriers to healthcare access. This is a hot topic in Canada as the federal government examines potential ways forward for implementing a national pharmacare framework.

The changes to OHIP Traveler's Program will affect three groups in particular: "snow birds", Ontario residents who spend the winter months in warmer climates such as the southern United States or Caribbean; students who study abroad; and business travelers who travel often for work.[11] Ultimately, for Ontarians, the changes further emphasize the need to purchase supplementary insurance before planning to leave the country.

1 Ministry of Health and Long-Term Care [Internet]. Toronto: Queen's Printer for Ontario; 2019. Fact Sheet, Travelling Outside Canada; Feb 2012 [cited 2019 Nov 27]. Available from: http://www.health.gov.on.ca/en/public/publications/ohip/docs/travel.pdf

2 Ibid.

3 Ministry of Health and Long-Term Care [Internet]. Toronto: Queen's Printer for Ontario; 2019. Ontario Health Insurance Plan; 2019 Aug 8 [cited 2019 Nov 27]. Available from: http://www.health.gov.on.ca/en/public/programs/ohip/outofcountry/travellers.aspx

4 Government of Ontario [Internet]. Toronto: Queen's Printer for Ontario; 2012-2019. Newsroom. Ontario Launching Program to Fund Out-of-Country Dialysis Services; 2019 Aug 8 [cited 2019 Nov 27]. Available from: https://news.ontario.ca/mohltc/en/2019/08/ontario-launching-program-to-fund-out-of-country-dialysis-services.html

5 Ibid.

6 Ibid.

7 Government of Canada [Internet]. Ottawa. Canada Health Act- Frequently Asked Questions; 2011 Oct 20 [cited 2019 Nov 27]. Available from https://www.canada.ca/en/health-canada/services/health-care-system/canada-health-care-system-medicare/canada-health-act-frequently-asked-questions.html

8 Ibid.

9 Collier, R. Decisions by the new Ontario government worry science and health care communities. CMAJ [Internet] 2018 Jul [cited 2019 Nov 27]. 190 (30): 917-918. Available from https://www.cmaj.ca/content/cmaj/190/30/E917.full.pdf DOI: 10.1503/cmaj.109-5635

10 Ministry of Health and Long-Term Care [Internet]. Toronto: Queen's Printer for Ontario; 2019.OHIP+ Redesign Update – FAQs for Patients; 2019 [cited 2019 Nov 27]. Available from: http://www.health.gov.on.ca/en/pro/programs/drugs/opdp_eo/notices/fq_pat_exec_office_20190311.pdf

11 Ministry of Health and Long-Term Care [Internet]. Toronto: Queen's Printer for Ontario; 2019. Ontario Health Insurance Plan; 2019 Aug 8 [cited 2019 Nov 27]. Available from: http://www.health.gov.on.ca/en/public/programs/ohip/outofcountry/travellers.aspx

Fool Me Once…Fool Me Twice….

The Rise of E-Cigarettes.

Constance Mackenzie MD, MSc, FRCPC
Assistant Professor
Divisions of Respirology / Clinical Pharmacology and Toxicology
Western University, London, ON
Assistant Medical Director
Ontario/Manitoba/Nunavut Poison Centre
Hospital for Sick Children, Toronto, ON

In a few short months, electronic cigarettes (e-cigarettes) and vaping have gone from a promising harm reduction tool for smoking cessation[1] to the suspected cause of a massive outbreak of cases of severe lung injury[2] focused on, but not isolated to the United States. What is happening? Could the medical community have seen this coming?

E-cigarettes are battery-powered electronic devices that are used to aerosolize substances for inhalation including flavouring agents, nicotine, tetrahydrocannabinol (THC), cannabidiol (CBD), and potentially other illicit drugs. They were initially marketed as a safer alternative to cigarette smoke since they contain no tar or products of combustion. They were introduced to the US market in 2006 and nicotine-containing e-cigarettes became legally available for sale in Canada in May 2018.[3] However, even before they were "legally available" in Canada, their use became popular among youth. In Ontario in 2017, 18.9% of grade 12 students used e-cigarettes during the past year [4] and rates of use have been rising.[5]

An overwhelming number of e-liquid flavours ranging across fruity, candy, menthol, and tobacco flavours, can be easily purchased at various retailers and online in Canada. In addition to this, e-liquids can be customized by the user to create new flavours, change the nicotine content or add other substances such as THC, etc.[6] The act of vaping exposes the user to a complex mix of substances, including a carrier fluid, such as propylene glycol or vegetable glycerin, multiple flavouring chemicals, as well as varying concentrations of nicotine, THC or CBD.[6,7] Almost unbelievably, the majority of flavouring agents used in e-liquids, although labelled as "generally recognized as safe" under the United States Federal Food, Drug, and Cosmetic Act, have been tested for safety only for ingestion and not inhalation.[6] In addition to this, the process of heating the e-liquid changes the chemical composition producing a number of aerosol emissions including formaldehyde, volatile organic compounds, particulates and even metal emissions from the devices.[7]

What is EVALI?

When first recognised in August 2019, the cluster of lung complications that were tied to vaping was called "vaping associated pulmonary injury" (VAPI). This name has now morphed to "e-cigarette, or vaping, product use-associated lung injury" (EVALI) as the outbreak has expanded. The United States Centres for Disease Control and Protection (CDC) has provided case definitions for this diagnosis that have also been used by Health Canada and the Public Health Agency of Canada. The criteria to diagnose a confirmed case of EVALI is 1) airspace opacities on chest x-ray or CT scan; 2) no evidence of infection; and 3) no other alternative plausible cause in a patient using e-cigarettes or dabbing in the 90 days before symptom onset. The probable EVALI case definition is the same, with the exception that there may be some evidence of infection, or testing to rule out infection was not completed.[2]
As of November 20, 2019, over 2000 cases of EVALI have been reported to the CDC[2] with 11 confirmed or probable cases in Canada.[8] What is most alarming is that many of the severe cases have required mechanical ventilation and advanced life support measures, with one reported case requiring a double lung transplant, and 47 deaths to date.[2,9] The outbreak is affecting a disproportionate number of otherwise young, healthy people with 77% of cases reported in

patients under 35 years old, including 15% in youth under 18 years old.[2] Yet, the cause is not clear.

Certain trends have emerged: 83% of cases reported use of THC-containing products, 61% reported nicotine-containing products, but 4% reported using neither. Findings of lipoid pneumonia and vitamin E acetate – an adulterant added to THC have been identified in some case samples, but not all. In addition to this, many of the cases seem to be related to products containing THC that have been purchased off the streets, on-line, or from acquaintances leading the recommendation from CDC to not use THC products from these sources.[2]

What about flavouring agents?

Speculation about the toxicity of flavouring agents used in e-liquids continues to be unresolved. A form of bronchiolitis obliterans or constrictive bronchiolitis also known as "popcorn lung "is a well described lung condition associated with inhalation of flavouring-agents This flavouring-associated lung disease was first described by Kreiss et al. in a cluster of workers exposed to diacetyl that was used as the butter flavouring at a Missouri microwave popcorn plant.[10] Similar clusters of irreversible obstructive lung disease have been reported in other groups of workers in diacetyl and flavouring manufacturing, cookie manufacturing and a coffee processing plant.[11] Diacetyl has been identified in more than 60% of e-cigarette liquid samples analyzed in one study[6], including in samples where diacetyl was not labelled as an ingredient.[12] Another study described the spontaneous chemical conversion of acetoin (another flavouring agent used in e-cigarettes) to diacetyl in e-liquids.[13] This process seemed to be accelerated when nicotine was added and resulted in increased concentrations of diacetyl over time[13], suggesting that e-liquids that have been stored for longer periods of time may have higher diacetyl concentrations. The Canadian Vaping Association has issued a statement recognizing this issue and their recommendations that e-liquids have a 2 year shelf-life with a labelled expiry date.[14] Despite this recommendation, it is not clear how this would be enforced in this largely unregulated industry.

Knowing that that diacetyl could be a risk factor for pulmonary injury, it is interesting to note that the pattern of bronchiolitis lung injury that would be most expected to be associated with diacetyl has only been described in one recent case report so far.[15] However, diacetyl should not be the only flavouring agent or substance of concern. In addition to diacetyl, chemical analysis of e-liquids have identified a long list of chemicals for which we have little, if any information about the injury pattern that can result from heating and inhaling them into the lungs.[16] The reported patterns of lung injury associated with e-cigarettes and vaping have been diverse including organizing pneumonia, diffuse alveolar damage, hypersensitivity pneumonitis and lipoid pneumonia to name a few[15], suggesting that there may be more than a single injury pathway involved. Additionally, despite extensive ongoing analyses of e-liquid samples associated with EVALI cases by the FDA and CDC, there has not been a single substance that has been associated with all of the cases and it seems likely that there are multiple contributing factors.[17]

If anything can been learned from experience with occupational and environmental exposures to inhaled toxins in exposed cohorts, it should be recognized that there can be a range of presentations and inter-individual variability in responses, and it often requires time to identify the association with certain exposures.[11] It is clear that it will take further investigations to understand the cause of this current outbreak of EVALI as well as to identify the long-term risks associated with e-cigarette use and vaping. For example, it took decades to understand and appreciate the risks associated with smoking tobacco cigarettes. The question is - how long will it take to understand and act on the risks of e-cigarettes and vaping this second time around?

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IN THE SPOTLIGHT – Mike Keim, RRT, MA

Written by Yvonne Drasovean, BSc, RRT, MEd, FCSRT

Motivation, hard work, sincere enthusiasm and passion are some of the many attributes defining great leadership. These same attributes and great leadership also describe Mike Keim.

Mike started his career in healthcare when he graduated from Fanshawe College with a diploma in Respiratory Therapy. While building experience as a new respiratory therapist, Mike soon proved to be an emerging leader in the profession. With a quiet demeanor, professionalism and genuine interest in education, Mike stepped into the Clinical Educator role at. St Joseph's Healthcare London guiding many generations of Respiratory Therapy students from Fanshawe College during their clinical placement. Over the years, Mike took on new leadership responsibilities at St. Joseph's Healthcare as Coordinator, Clinical Educator and Professional Practice Leader in the Respiratory Therapy Department. In these roles, Mike continued to advocate for advancement of the profession and interprofessional collaboration. Mike had an instrumental role in the development and advancement of the interprofessional Neonatal and Pediatric Critical Care transport team and enhancement of respiratory therapy practice in a level 3 neonatal intensive care unit at St. Joseph's Healthcare London. For a number of years Mike also shared his knowledge and experience with the healthcare professionals at Chatham Kent Health Alliance as the Operational manager of the Respiratory Therapy Services.

His passion for leadership and education was rewarded in 2012 with a Master's Degree in Leadership from University of Guelph. While continuing to promote education and leadership, Mike took on the role of Lead Educator at Ornge in 2010, where he specializes in education in air transport medicine including the use of high fidelity simulation in training air transport professionals. Ornge provides timely patient transportation involving a range of paramedical services, by air and by land. Mike has an avid interest in improving the skills of others by providing opportunities for his staff to engage in organizational leadership development.

Mike has substantial volunteer experience with professional organizations. He volunteered with the Board of the Respiratory Therapy Society of (RTSO) for many years inspiring passion and leading by example.

Mike is a long-time member of and contributor to the Ontario Respiratory Care Society, specifically in his leadership role as Chair of the Education Committee and member of the Provincial Committee. He is well known and appreciated for his work in promoting education and organizing education events around the province as well as sharing his expertise in interprofessional education.

Mike is highly respected as an educator, and a professional and community leader. He has advanced the mission of the ORCS through his tireless efforts and we are most grateful.

Eye On

Telehomecare: Staying healthier at home

Intensive coaching/remote monitoring program helps patients with chronic obstructive pulmonary disease and/or chronic heart failure

Faced with several chronic conditions, Alberto was worried about daily activities like going for a walk and going to work. He told his family doctor that he felt like the “walls were shutting in” and had many questions about living with chronic obstructive pulmonary disease (COPD).

Alberto found a solution, Telehomecare, a flagship program of the Ontario Telemedicine Network (OTN) that has been providing distance care in partnership with leading health care organizations in many health regions in Ontario for more than 10 years. Telehomecare is an established intensive six-month coaching and remote patient monitoring program for people with COPD and/or CHF, developed in partnership with health care providers across the province.

“COPD and CHF are among the top conditions that land people in hospital,” says Dr. Ed Brown, CEO of OTN. “Monitoring and coaching is a winning combination; it gives patients and their caregivers peace of mind and also empowers patients to more confidently look after themselves.”

With Telehomecare, patients are provided with easy-to-use touchscreen technology and a blood pressure cuff, pulse oximeter and weight scale. They send their vital signs daily for monitoring by specially trained registered nurses (RNs) who review the results and contact the patient if there is a change in their health that needs further investigation. Reports are shared with the patient’s primary care provider.

The nurses also connect with patients every week by phone to help with the skills and confidence needed to manage symptoms, medications and lifestyle behaviours at home. There is no cost to patients or health care providers.

“This approach minimizes stress for patients, as well as travel and time off work. Patients love it,” says Dr. Brown. He notes that OTN is helping to incorporate virtual care solutions into new models of care in areas like mental health, diabetes, and palliative care, making it easier for people to manage their health at home in the face of a number of health challenges. To date, some 22,000 patients across Ontario have participated in the OTN-Telehomecare program.

Via an evaluation by the Toronto Health Economics and Technology Assessment Collaborative from the University of Toronto and the University Health Network[i], 91% of patients indicated Telehomecare helped them manage their health problems more effectively. For example, blood pressure was significantly reduced in hypertensive participants[ii]. Although not clinically meaningful, there was a statistically significant reduction in impaired oxygen saturation levels and weight fluctuations in program participants.

Telehomecare has also been shown by several of the Local Health Integration Networks (LHINs) to reduce hospital admissions and emergency room (ER) use among this patient population by over 60 per cent, according to LHIN-reported (unpublished program-reported data). As well, a joint OTN-Canada Health Infoway patient survey indicated that over 98 per cent of patients were satisfied with the program and 95 per cent indicated that the program improved their ability to self-manage their condition.[iii]

This was the case for Alberto, who says that the Telehomecare support he received was life altering and gave him hope and the ability to plan for key milestones, like spending time with his grandchildren and a milestone wedding anniversary. Having the help of a dedicated nurse who monitored his vital signs daily – water retention was key -- and answered his questions, helped him get the most out of life.

With data in hand to support its impact, and the support of the Ministry of Health, work continues to make the program available in all health regions in Ontario. To enable greater functionality and fully scale its program provincially, OTN has secured a robust platform to support Telehomecare, that opens the door for a variety of ways for patients to manage their conditions and interact with their health care providers.

Telehomecare is easy to use, and offers a range of interactive features, including videoconferencing. More information for providers is available here: https://otn.ca/providers/telehomecare/ and information for COPD patients is available here: https://otn.ca/patients/copd-mgmt/.

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i https://smdm.confex.com/smdm/2015mo/webprogram/Paper9278.html
ii https://www.ncbi.nlm.nih.gov/pubmed/28490229
iii https://www.infoway-inforoute.ca/en/component/edocman/2893-otn-telehomecare-system-and-use-survey-final-report/view-document?Itemid=101

The Respiratory Health Education Interest Group (RHEIG) is a multi-disciplinary group of ORCS members who promote and advance the field of respiratory education, with a specific interest in applying theory in a practical way.

TOOL BOX

Fitness for Breath
Physical Activity is Leading to a Better Quality of Life

Jody Hamilton BSW, MSW, Patient Engagement and Community Programs Manager
Ontario Lung Association

The Ontario Lung Association is thrilled with the on-going expansion of the Fitness for Breath (FFB) program across Ontario. What started out as a pilot in the fall of 2014 at the Abilities Centre in Whitby, and FFB has now expanded to 21 sites and is still growing.

Fitness for Breath is a relatively new model for exercise maintenance designed specifically for people living with chronic lung diseases such as: COPD, severe asthma and pulmonary fibrosis. Fitness for Breath is intended for people who have attended a pulmonary rehabilitation (PR) program, however, since many people do not have access to a PR program in their community, they join FFB programs by self-referral and the signed consent of their physician. FFB is intended to ensure the continuation of pulmonary rehabilitation, allowing the participants to continue their exercise routine in their communities.

What makes Fitness for Breath unique is that it is a partnership with local fitness centers across the province. FFB classes are supervised by qualified fitness instructors at each location. Classes are typically offered twice a week and are at least 60 minutes in length. The class components include aerobic exercises, resistance / strength training and flexibility exercises. These classes are designed to work with individuals at any fitness level and ability. In the FFB program, participants learn the importance of staying active on an ongoing basis, to ensure the continuation of the health benefits of regular exercise: improved daily functional abilities and an overall improved quality of life.

This is not a funded program, so FFB program participants must buy a monthly membership to the fitness center or pay a per session fee, but the Ontario Lung Association is committed to assisting with the ongoing training needs of the fitness staff as well as the promotion and resource requirements of each site.

To that end, a “Fitness for Breath Trainer Exercise Manual” has recently been completed. The purpose of this manual is to provide a reference manual for fitness trainers in planning and delivering the Fitness for Breath exercise program. Recommended exercises are geared to participants living with a chronic lung disease. Fitness trainers complete a “Lung Health 101” training through The Ontario Lung Association or another certified training program, which include exercises, from warm up to aerobic and strengthening exercises, through to cool down.
Additionally, an on-line exercise e-module for people who would like the option to exercise in their own homes has been developed. A person can adapt the one-hour exercise program to suit their energy level and ability. Please use the link below to view this exercise e-module.

https://breathe.r5pro.com/interface/r5/SCO_01/index.php?courseid=5ced7b1f4cf14&siteid=1627&alias=fitness-for-breath

For more information on the Fitness for Breath program, please contact The Lung Association Lung Health Line at 1-888-344-5864

RESPIRATORY ARTICLE OF INTEREST #1

Review by Elizabeth Gartner

Gordon CS, Waller JW; hDCook RM; Cavalera SL, Lim WT,Osadnik CR, . Effects of Pulmonary Rehabilitation on Symptoms of Anxiety and Depression in COPD A Systematic Review and Meta-Analysis. Chest. 2019 July;156(1):80-91. Available from: https://journal.chestnet.org/article/S0012-3692(19)30873-6

This paper describes a review of randomized control studies evaluating the effectiveness of pulmonary rehabilitation (PR) on anxiety and depression symptoms in COPD. Studies included compared PR, programs lasting longer than 4 weeks, to usual care. A subgroup analysis was also done comparing less than 8 weeks vs greater than 8 weeks of rehabilitation. The working definition of PR was exercise training with a minimum of 8 sessions with or without education and psychological support. In comparison, usual care was defined as the absence of formal intervention. Studies had to have outcomes related to anxiety and/or depression, two common comorbidities with COPD.

After an extensive search, 11 studies were included, with a total of 734 participants. The Hospital Anxiety and Depression Scale (HADS) was used as a reference instrument in the analysis as it is one of the most widely used, “and has published minimally important difference thresholds” for both anxiety and depression.

This review and meta-analysis offer evidence to support the use of PR as an effective means of symptom improvement for people diagnosed with COPD, anxiety and depression. The benefits found were of a moderate and large effect for anxiety and depression respectively thus the conclusion that PR has clinically relevant benefits compared to usual care in this population.

RESPIRATORY ARTICLE OF INTEREST #2

Review by Shirley Quach

Bourbeau J, Bhutani M, Hernandez P, Aaron SD, Balter M, Beauchesne MF, D'Urzo A, Goldstein R, Kaplan A, Maltais F, Sin DD, Marciniuk DD. Canadian Thoracic Society Clinical Practice Guideline on pharmacotherapy in patients with COPD – 2019 update of evidence. Canadian J of Respiratory, critical care and sleep medicine [internet]. 2019 Oct [cited 2019 Nov]; 3(4): 210-232. Available from: https://www.tandfonline.com/doi/full/10.1080/24745332.2019.1668652 DOI 10.1080/24745332.2019.1668652

The Canadian Thoracic Society (CTS) position statement serves as a guide for clinicians to use to personalize and optimize pharmacotherapies for patients living with chronic obstructive pulmonary disease (COPD). In light of recent research studies and clinical evidence, the recommendations in the CTS clinical practice guideline were updated in October 2019. READ MORE

To improve symptoms, exercise tolerance and health status in stable COPD:

- LAMA/LABA dual therapy is recommended for patients with persistent dyspnea, exercise intolerance and poor health status
- LAMA/LABA/ICS triple therapy is the suggested next step when patients continue to have persistent dyspnea and poor health status despite use of LABA/LAMA dual therapy
- Consider "step down" therapy in patients using LAMA/LABA/ICS triple or LAMA/LABA dual therapy when improvement in symptoms, exercise or health status are not observed

To decrease risk of acute exacerbations in stable COPD:

- In patients with high risk of AECOPD, ICS/LABA dual therapy is recommended instead of as needed SABA therapy
- LABA/LAMA or ICS/LABA dual therapy is recommended for patients at risk of AECOPD
- LAMA/LABA/ICS triple therapy is recommended in patients with continued risk of AECOPD despite use of either LAMA monotherapy, or LAMA/ICS or LABA/LAMA dual therapies
- Oral N-acetylcysteine (600mg twice a day) is recommended in patients with chronic bronchitis and risk of AECOPD despite using long-acting inhaled therapy
- Oral theophylline is not recommended as there is no evidence to support its use in decreasing the risk of AECOPD

AECOPD-acute exacerbation of COPD
ICS-inhaled corticosteroid
LABA-long acting Beta-agonist
LAMA-long acting muscarinic antagonist
SABA-short acting beta-agonist

RESPIRATORY ARTICLE OF INTEREST #3

Review by Lily Spanjevic, RN, BScN, MN, GNC(C), CRN(C), CMSN(C)

Benefits of different intensities of pulmonary rehabilitation for patients with moderate-to-severe COPD according to the GOLD stage: a prospective, multicenter, single-blinded, randomized, controlled trial

Xie He, G., Li, N., Ren, L., Shen, H.H., Liao, N., Wen, J.J., Xu, Y. M., Wang, J., & Yun Li, Q. (2019) Benefits of different intensities of pulmonary rehabilitation for patients with moderate-to-severe COPD according to the GOLD stage: a prospective, multicenter, single-blinded, randomized, controlled trial. ***International Journal of Chronic Obstructive Pulmonary Disease,*** 2091: 14: 2291-2304. Available from: https://www.dovepress.com/benefits-of-different-intensities-of-pulmonary-rehabilitation-for-pati-peer-reviewed-article-COPD

It is well known that Pulmonary Rehabilitation (PR) is essential in managing patients with COPD. PR includes exercise training, counseling, instructional training and behavioral change tailored to each patient. However, there is a lack of research data that identifies specific frequency, intensity of exercise, the degree of supervision, and the appropriate duration of PR exercise.

The authors of this study wanted to investigate the appropriate intensity of PR exercise training for patients with moderate-to-severe COPD as per GOLD staging. They embarked on a prospective multicenter randomized controlled trial that was conducted from January 2014 to October 2018 across five medical centers in China. The criteria for enrollment was: 1) age ≥ 40 years; 2) clinical features of COPD and moderate-to-severe COPD, an FEV_1/FVC ratio ≤0.70, and an FEV_1 measurement between 30% and 80% based on post bronchodilator spirometry; 4) no clinical features of asthma and/or evidence of bronchodilator responsiveness on spirometry; and 5) stable COPD with no recent exacerbation requiring hospitalization during the last 3 months. Exclusion criteria were: 1) co-existing TB, lung cancer, pulmonary fibrosis or pneumothorax; 2) physical illness or cognitive impairment that prevented participation; 3) coronary artery disease; 4) CHF; 5) active microbial infections; 6) participation in a cardiopulmonary rehab program in past year. The participants (n=217) were randomly assigned to three groups with different intensities of PR, according to their maximum oxygen uptake percentage determined by cardiopulmonary exercise testing. The intervention provided a 20 week supervised inpatient PR program, included 10 education sessions delivered by a multidisciplinary team (including, RT, MD, RD, PT, Counsellor). The patients underwent conventional exercise training 5 days per week for 40 mins, with 10 mins of warm up before training, as well as 10 mins of relaxation exercises after training. ECG and oxygen saturation levels were monitored during the exercise session and within 1 hour after the exercise.

After 20 weeks of exercise training the effects of low, moderate, and high intensity exercise interventions on patients were compared to determine the most appropriate PR regimen. The BODE index was used to compare patients baseline and at the 20th week. Participants were followed up for 24 months after active participants in a PR program.

For patients with moderate COPD, all measured parameters were significantly improved in the moderate and high intensity PR groups ($P<0.01$), while there was no significant difference in the frequency of acute exacerbations and the mMRC questionnaire after 20 weeks of PR exercise in the low-intensity PR group. For patients with severe COPD, all variables were also improved in the high intensity PR group ($P<0.05$), while the mean difference of pre- and post-PR were lower

than those in patients with moderate COPD. There was no significant difference in the low intensity PR group ($P>0.05$) in their anxiety rating (using the Hamilton Anxiety Scale) or BMI.

High intensity PR exercise is helpful for patients with moderate to severe COPD. Moderate COPD patients need to receive intensive PR training; improvements in PR interventions were higher than those with severe COPD. High intensity PR exercise may be more beneficial for patients with severe COPD if they can tolerate it.

WAYS TO GET INVOLVED

Ontario Respiratory Care Society (ORCS) Committees

Joining an ORCS Committee is a great way to get involved!

Provincial Committee
The Provincial Committee provides leadership to the ORCS and is comprised of the ORCS Chair, a Chair-Elect or Past Chair in alternate years, the Chairs of the five standing committees, the Chairs of the regional planning committees and a member of The Lung Association Board of Directors.

Editorial Board
Produce an electronic publication for the Ontario Respiratory Care Society (ORCS) members; provide academic content for the publication.

Respiratory Health Educators Interest Group (RHEIG)
Provide respiratory education and a half-day session at the Better Breathing Conference; provide patient education content for the ORCS publication.

Education Committee
Session planning for the Better Breathing Conference.

Research and Fellowship Committee
Manage the funding process including Grant and Fellowship application review and funding allocation.

Regional Planning Committees
Regional Planning Committees plan educational events in their respective regions. The Regions include:
Northeastern Region
Northwestern Region
Eastern Region
Central Region
Western Region

To find out more, or to join one of these committees, contact the OTS/ORCS Coordinator,

Natalie Bennett, nbennett@lungontario.ca

MEMBERSHIP RENEWAL TIME IS COMING...

With so many amazing perks to save you money this year… Membership is a MUST!

The ORCS is proud to be partnering with JD Smith to offer Liability Membership for RT members! **2M Liability packages start at $130.00** THIS PRICE INCLUDES YOUR $40 MEMBERSHIP!

On-Line registration will be open February 1st, 2020!!

https://lungontario.member365/

For more information please email: societies@lungontario.ca

Your $40 Membership includes:

- Discounts on Home, Auto, Travel and Health Insurance for all ORCS Members
- Big Discounts with Park N' Fly
- Shopping, Entertainment perks and more… FREE through Perkopolis with your ORCS membership.
- Discount at Stethoscope.ca. This includes free engraving and 1/2 price cases.
- **15%** off all purchases at scrubscanada.ca
- **10% coupon from Dell.ca** to help with your business and personal computing needs.
- Discounts on Professional Development (**$175** off the cost of registration to the Better Breathing Conference 2020)
- Discounts of up to **40% off** GoodLife fitness memberships for ORCS members and their families. Rates
- Volunteer with the ORCS by joining a committee, writing an article for one of our Publications, or becoming a member of our Speaker's Bureau.
- Discounts to Education Seminars and Workshops and The Annual Better Breathing Conference!

UPCOMING EVENT LISTINGS

10th Annual Respiratory Health Forum for primary care practitioners - Free Registration
Date: January 22-23, 2020
Location: Marriott Downtown at CF Toronto Eaton Centre
For more information, visit: lungontario.ca/rhf

Better Breathing Conference 2020
Date: January 24 & 25, 2020
Location: Marriott Downtown at CF Toronto Eaton Centre
For more information, visit: betterbreathing.ca

Digital Health Forum I 12:00 PM – 1:30 PM EST
Date: January 25, 2020
Location: Marriott Downtown at CF Toronto Eaton Centre
For more information, visit: https://tladigitalhealthforum.eventbrite.ca

February 11, 2020 I 11 am – 12 pm EST
COPD and its management – KOTM/OTN Series -Part one
Presented by: Diane Feldman, RRT, CRE
Webcast link: http://webcast.otn.ca/mywebcast/?id=157009352
OTN Event ID #: **157009352**

Date: March 5, 2020
Location: The Michener Institute, Toronto, Ontario
An educational evening for Healthcare Professionals and Students brought to you by the *Ontario Respiratory Care Society – Central Ontario Region*. **Dr. Roger Goldstein** will present on **The Magic of Pulmonary Rehabilitation**, followed by an interactive session on *Facilitating Collaborative Practice in Pulmonary Rehab***.**
Register at https://bit.ly/39REpD2

March 10, 2020 I 11 am – 12 pm EST
COPD and its management – KOTM/OTN Series -Part two
Presented by: Diane Feldman, RRT, CRE and **Sara Han,** RRT, CRE
Webcast link: http://webcast.otn.ca/mywebcast/?id=157050804
OTN Event ID #: 157050804

For more information or to set up a workshop in your area for your healthcare team or organization please contact us at pep@lungontario.ca

An official publication of the Ontario Respiratory Care Society, a section of The Lung Association - Ontario.