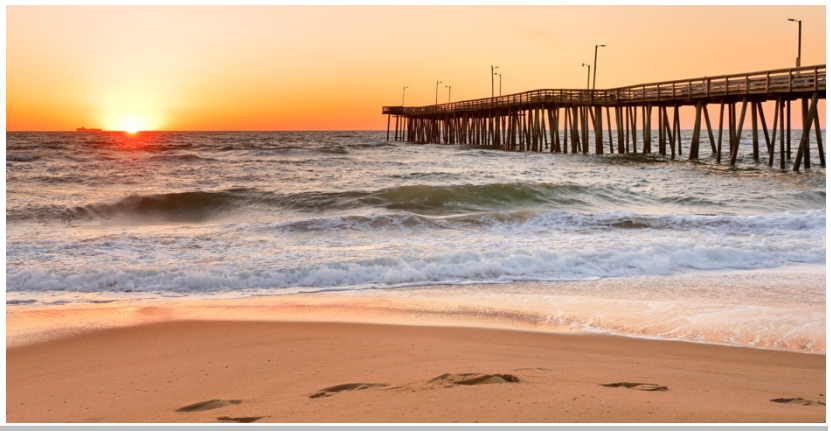
In this issue >>>



Summer | July 2023 | Volume 1 | Issue 4

Pulmonary Pulse

Virginia Society for Respiratory Care Newsletter

A message from the President >>>

As another one of my birthdays comes and goes, I think about how my body is slowly crumbling to dust. Ok, a bit of an exaggeration, but we do start to look at what we have done in our career and how are we helping others. Patient's is obviously our biggest reason for what we do, as we directly help them every day that we come to work. But there is a population that we vastly affect…and that is students.

One of our main pillars of strategy for the VSRC is: Engagement. This means helping build our profession by getting students interested and excited about Respiratory Therapy. There are a lot of great resources out there, from HOSA- Health Occupation Students of America, to MoreRTs.com. These are great sites that we need to continue to promote and advertise!

Yet, the best way to help lift up students, is by our own actions. Every time you have a student with you, you have a chance to change their mindset of RT, for better…or worse! So please, engage, mentor, ask them questions and then answer theirs. Make them feel welcome and their shift enjoyable, because your interaction could be the reason why they decide to work next to you in the future.

Derrick Many, MSc, RRT, RRT-ACCS
VSRC President 2023-24

Announcements >>>

RT Licence Plates
Pre-order yours today!

(see pg. 5)

Conference Registrations
Don't forget to register for upcoming conferences and symposiums online:
www.vsrc.org

Quarterly VSRC Meetings
ALL MEMBERS are invited and encouraged to attend the quarterly board of director meetings!

Board of Directors >>>

Officers
President **Derrick Many**
President-elect **Leslie Johnson**
Immed. Past President **Ryan Sharkey**
Vice president **Susan Arrington**
Secretary **Connie Lloyd**
Treasurer **Daniel Gochenour**

Delegates
Senior Delegate **Bessie Brooks-Garnett**
Delegate **Hanns Billmayer**

District Directors
Blue Ridge
Andrew Carruthers
Madison Fratzke
Central
Erica Chenault
Ali Brown
Northern
Sherleen Bose
Jared Rice
Tidewater
Brian McHale
Santiera Brown-Yearling
Western
Amber Lipes
Vacancy

Medical Advisor: Bruce Rubin

Upcoming Events >>>

July 15-17 | AARC Summer Forum | Ft. Lauderdale, FL
August 28 – October 2 | 2024 AARC Election
September 1- Sept. 30 | 2024 VSRC Election
September 29 | Neo/Peds Symposium | Inova Fairfax + Virtual Option
October 15 | Mountain Air Breakfast Symposium | Liberty University, Lynchburg
October 22-28 | Respiratory Care Week!
November 5-8 | AARC Congress 2023

For more details and to stay updated…
www.vsrc.org | AARC Connect "Virginia Society"
Twitter & Instagram @va_society_resp_care | Facebook @VirginiaSocietyRC

Vincent Richardson: A respiratory therapist without borders

What do you want your fellow RTs to know about medical missions? "Even though this is a medical mission trip, and the church works on spreading the word of God, we do lots and lots of medical attention. Last year with my help we diagnosed over 300 kids that had pneumonia. These kids were in poor condition from lack of antibiotics. This is a record for the most diagnosed kids with the help of a respiratory therapist."

What was your favorite memory of Liberia? "One day we were leaving from one village deep in the jungle, and we had to arrive at the airstrip at 5am and wait for the plane to take us back to Monrovia. The wait was 3 hours so I decided to go for a run around the village. By the time I reached mile 6 I saw kids taking their daily 5 mile walk to school. They all looked at me with such curiosity that they began to run in their clean school uniforms with me. I had about 15 kids running with me and they were so happy to be a part of my morning. Not many kids would run in the morning especially those with so little."

Will you get to do anything different on your upcoming trip? "We always have an itinerary for going to different towns and their churches and deliver medical attention. If any new churches are built, we always go to a new church and meet the town. Regardless of religion, those that come are welcome!"

If an RT wants to be involved in overseas medical missions, how can they get involved? "Anyone can get involved with medical missions! All it takes is the effort to look. At Effort Baptist Church in Palmyra, VA (which is where I attend), on their Facebook or website, there are links to look at the mission that occurs every year."

> "Last year with my help we diagnosed over 300 kids that had pneumonia."

Scan to donate

gofundme

www.gofundme.com/b1392bfa

District Updates >>>

Blue Ridge | District director **Andrew Carruthers** and **Madison Fratzke** will be organizing a fun annual outing with CRCE opportunity on September 29th. See AARC Connect and social media for details!

Central | **Ali Brown** and **Erica Chenault** hosted the Capital City Syposium on March 18.

Northern | District directors **Sherleen Bose** and **Jared Rice** – Join us for a breakfast symposium on October 21st at the Mountain Air Symposium!

Tidewater | District directors **Brian McHale** and **Santiera Brown-Yearling** - Symposium by the Sea took place in Virginia Beach on May 23-25!

Western | **Amber Lipes** is learning her new role as District Director | Contact **President Many** DJM5W@uvahealth.org if you are interested in filling the vacancy for the second district director!

What district are you in? *(see pg. 6)*

2024 Candidates

President-Elect
Santiera Brown-Yearling
Nathalie Chantree

Secretary
Sherleen Bose
Amanda Patrone

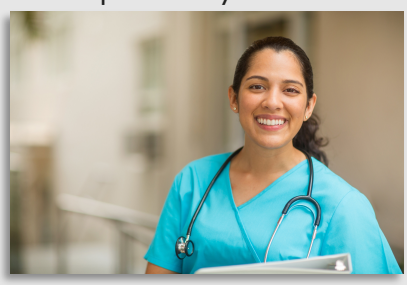
Treasurer
Jim Shuke
Douglas Wright

Blue Ridge District Director
Vincent Richardson

*The following districts did not receive any nominations and will be **write-in only**: Central District Director, Northern District Director, Tidewater District Director, Western District Director*

The ballot will be made available soon and the election will be open September 1st and close September 30th , 2023.

Looking for a career in Respiratory Care?



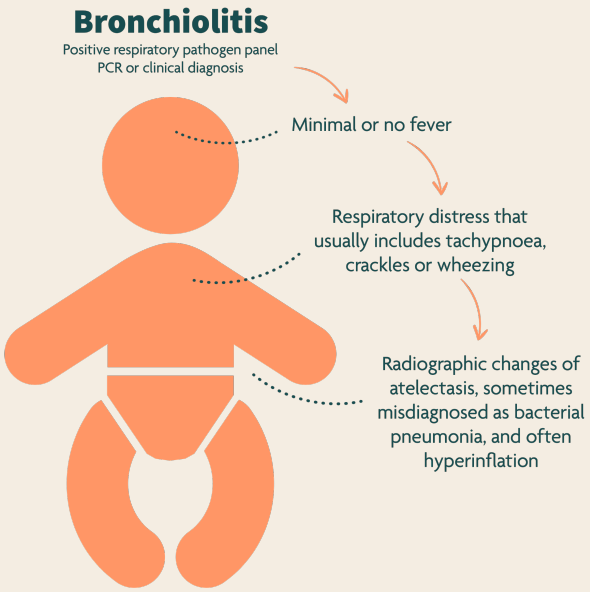
www.vsrc.org/jobs

Myth Busting Part 3: Bronchiolitis

We have just finished (I hope) a crazy bronchiolitis "season" so this issue's topic will be bronchiolitis myths. References to all statements are available on request if you contact me at: **bkrubin@outlook.com**.

I will begin by declaring that I dislike the term "bronchiolitis" as it implies a false anatomic specificity. We all know that the viruses causing this clinical syndrome infects the airway from the stuffy nose to the distal airways. Indeed, most infants hospitalized with severe viral lower respiratory tract infection (LRTI) are better described as having pneumonia rather than bronchiolitis. This has several important implications. First is that most children hospitalized for "bronchiolitis" are much more likely to have crackles on auscultation than wheezing. In Europe and Australia/New Zealand, crackles and not wheezing are part of the clinical diagnostic criteria. Unfortunately, the emphasis on "wheezing" has led to the overuse of entirely ineffective beta agonists like albuterol as well as systemic or inhaled corticosteroids and the mistaken belief that bronchiolitis is a "pre-asthmatic" condition.

Note that nowhere in the above paragraph do I mention the respiratory syncytial virus (RSV). Yes, RSV is a very common cause of bronchiolitis but RSV + infant + respiratory distress does not = bronchiolitis nor is there a different disease called REV or rhinovirus bronchiolitis. As noted above, young kids with RSV can have life threatening pneumonia and this is not "severe bronchiolitis". Similarly, different viruses including rhinovirus, human metapneumovirus, and parainfluenza can cause an identical clinical syndrome and should not be identified as some different disease.



As we are stuck with the term bronchiolitis (just as we are stuck with the term "stethoscope", but perhaps that is best saved for another time) how is this diagnosed? Bronchiolitis occurs in infants or toddlers with a respiratory virus infection either identified by respiratory pathogen panel PCR or by the clinical diagnosis of a LRTI with minimal or no fever, and respiratory distress that usually includes tachypnoea, crackles or perhaps wheezing, and often is associated with radiographic changes of atelectasis, sometimes misdiagnosed as bacterial pneumonia, and often hyperinflation.

We have also cycled through many promising, but in the end failed, therapies for bronchiolitis including mist tents, sedation for comfort, mucolytics, antibiotics, ribavirin (is that old RTs I hear groaning?), albuterol, systemic or inhaled corticosteroids, aerosol epinephrine, 3% saline, and now the latest failed flavor of the month, high flow nasal cannula (HFNC). Yes, the initial observational studies (not masked/blinded) reported a benefit with the use of HFNC, only to be followed by controlled randomized trials that not only show that HFNC use increases the risk of PICU admission and need for more invasive ventilation while increasing length of stay, but recent clever studies by clever RTs show that when they introduced a trial of HFNC holiday, banning its use in bronchiolitis for a period of time, that PICU admissions dropped back down again.

So, what works for treating bronchiolitis? Keep the nose clear of secretions, administer oxygen only if hypoxemic not for comfort, and give fluids only if dehydrated. Best to remember to not just do something, stand there (with apologies to Lewis Carrol).

Finally, infants with RSV bronchiolitis often have a recurrent wheeze, but by age 8 there is only a slightly increased prevalence of asthma. However, bronchiolitis caused by human rhinovirus (often mistakenly called REV or rhino-enterovirus) *is* associated with a greater risk of asthma as the child ages.

As always – I love your feedback and hope that I can entice some of you into co-writing a column with me on one of your favorite topics. It would be great to have a collaborator who knows about big people to help out this pediatrician.

Bruce K. Rubin MEngr, MD, MBA, FAARC
Jessie Ball Dupont Distinguished Professor of Pediatrics
Virginia Commonwealth University
VSRC Medical Advisor

We need 450 pre-orders to get the RT License Plate in production!

Pre-order yours today for only $10!

VSRC Delegate **Bessie Brooks-Garnett** has worked diligently to help make it possible to create a Virginia license plate for Respiratory Therapists and supporters! We need your help to get 450 sign ups!

Go to AARC Connect "Virginia Soceity" or Scan this QR code for the link to download the pre-order form>>>

Blog | Clinical Pearls >>>

Mechanical Power 101

The trial published in the NEJM in the year 2000 (ARDSnet) suggested that lower tidal volumes were associated with better outcomes and lower mortality. Since this trial, there has been a paradigm shift towards focusing on protective strategies that limit ventilator induced lung injury (VILI) thereby improving outcomes. Biotrauma, a secondary inflammatory response to injury is believed to be the result of volutrauma, barotrauma and atelectrauma. These are the key components to VILI and are a direct result of energy transmitted from the mechanical ventilator to the lungs. Mechanical power is defined as the energy transferred from the mechanical ventilator to the lungs over time. The classic formulae for calculating Mechanical Power is below.

$$Power_{rs} = RR \cdot \left\{ \Delta V^2 \cdot \left[\frac{1}{2} \cdot EL_{rs} + RR \cdot \frac{(1 + I{:}E)}{60 \cdot I{:}E} \cdot R_{aw} \right] + \Delta V \cdot PEEP \right\}$$

PowerRS = Power power applied t the respiratory system
Delta V = tidal volume
ELRS = Respiratory System Elastance = 1/Resistance
I:E = Inspiratory to Expiratory Ratio
Raw = Airway Resistance

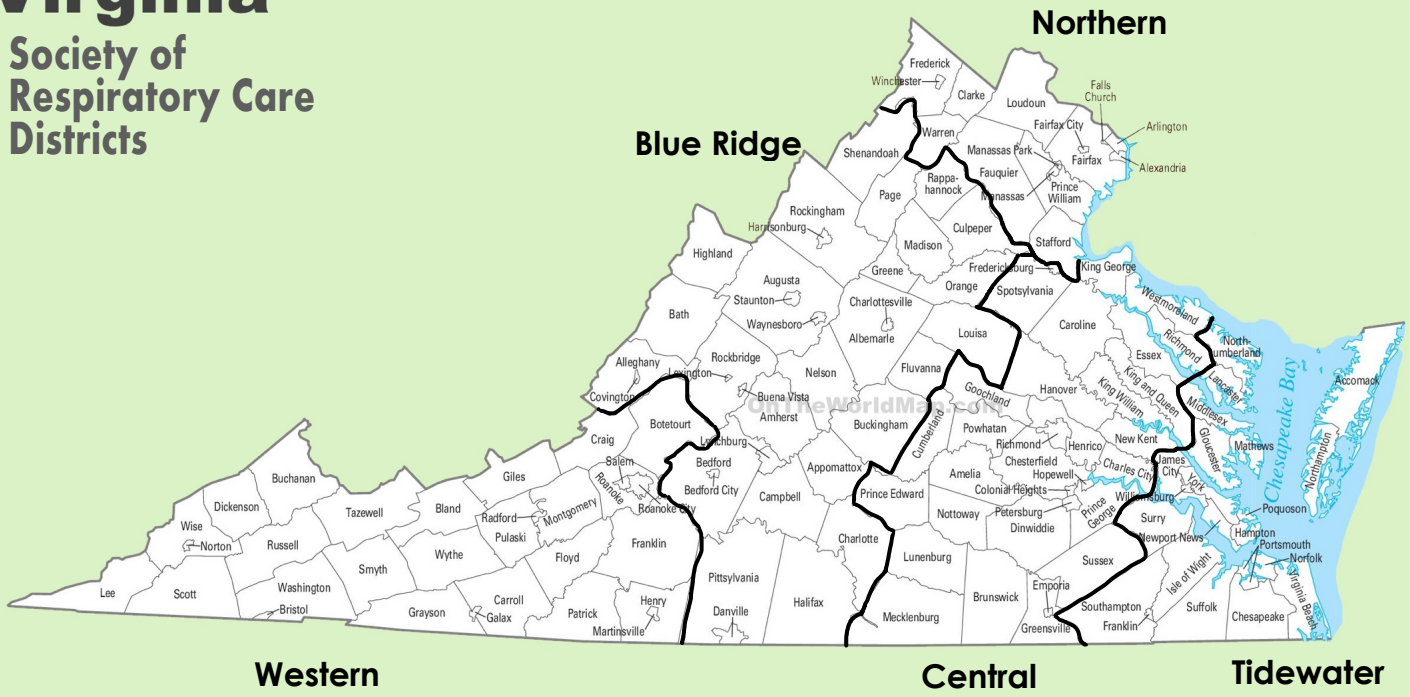
Values are expresed in Joules/min. Although the formula may be complex, and difficult to conceptualize, the important criteria that contribute to mechanical power are not. It is important as bedside clinicians to understand the criteria, and to focus on reducing mechanical power, VILI and improving outcomes. These approaches include reducing driving pressure, improving compliance, recruiting alveoli, and reducing frequency. Permissive hypercarbia may be necessary.

Diligence by the bedside clinician to reduce mechanical power to decrease VILI is imperative to provide the opportunity for the best outcomes when managing mechanically ventilated patients.

Keith Lamb, RRT, RRT-ACCS, FAARC, FCCM
lambrrt@gmail.com

Virginia

Society of Respiratory Care Districts



Comic >>>

Selected by **Derrick Many**, MSc, RRT, RRT-ACCS

Quote >>>

"Be the change you wish to see in the world."

-Ghandi

Editor >>>

Madison L. Fratzke, BS, RRT, RRT-ACCS
Respiratory Therapist
University of Virginia Medical Center
Charlottesville, VA

This newsletter is a compilation of news, announcements and articles produced by members of the Virginia Society for Respiratory Care. If you have any questions, requests for topics, contributions, or critiques please contact the editor at ***mlfratzke@gmail.com****.*