

Session Title

The Ins and Outs of Ventilation: Case Study Application of Mechanical Ventilation and Oxygen Administration

Speakers:

Ashley Parish, PT, DPT, CCS

Ellen A. Hillegass, PT, PhD, FAPTA

Naomi Bauer, PT, DPT

Ann Fick, PT, DPT, MS

Session Description:

Oxygen is an essential medicine. Healthcare professionals use supplemental oxygen to treat respiratory illnesses including COVID-19, pneumonia, COPD, ILD, and other individuals with SpO₂ less than 90%. One challenge, however, is that many healthcare providers do not fully understand the physiology of ventilation: including mechanical ventilation, noninvasive ventilation and all forms of supplemental oxygen. In this presentation, The speakers will bring their expertise as are the members of the oxygen consensus guidelines committee and will provide to discuss the more advanced concepts of mechanical ventilation, and the physiology behind it, the clinical use of mechanical ventilation as well as clinical concepts during weaning, as well as the evidence related to supplemental oxygen use during rest and with activity. This presentation will delve into the myths and misunderstandings surrounding use of supplemental oxygen, mobility with mechanical and and noninvasive ventilation, and as well as supplemental oxygen while considering and present the safety of use and legalities involved. The speakers will also discuss the newly developed recommendations for use of supplemental oxygen during physical therapy interventions will be discussed at the end allowing for questions and answers on these and how they apply in these clinical scenarios as seen through case studies.

Objectives

- o Analyze the physiology of different modes of breathing support including mechanical ventilation, noninvasive ventilation, and high flow oxygen
- o Evaluate the breathing support in three different cases and discuss the optimal interventions and oxygen needs for activity
- o Apply clinical decision making to case studies that include breathing support for optimal oxygenation and safety with monitoring
- o Relate the physiology and pathophysiology of specific diseases to the need for use of supplemental oxygen.

What will be the clinician/educator takeaways/skills that can be utilized immediately?

- o Understanding of physiology of mechanical ventilation, NIV, high flow O₂
- o Utilize knowledge of modes of ventilation to assist with mobility and activity with these devices and when working with these patients when weaning, or opting to use other oxygen delivery devices
- o Be able to apply the new oxygen consensus guidelines to complex

patient scenarios

Session Outline:

Overview of options for breathing support in clinical practice and the physiology involved in use of these options

Mechanical ventilation: comparing and contrasting volume

Vs pressure ventilation

30 minutes

Case Study of patient on MV and PT role during weaning

15-20 min

Case Study of patient on High flow and role of activity and monitoring

15 min

Case Study of patient on supplemental oxygen requiring different methods of oxygen delivery systems

15 minutes

Introduction Application of Oxygen Consensus Recommendations

10-15 minutes?

Summary, questions and answers

Speaker Bios:

Dr. Ellen Hillegass is an ABPTS board certified clinical specialist in Cardiopulmonary PT. She is a Professor at South College in Atlanta in the Department of Physical Therapy and the President of a web based continuing education company PT Cardiopulmonary Educators. She has published an entry level text entitled Essentials of Cardiopulmonary Physical Therapy with the 5th edition just published in 2022 and is the author of the recently published VTE guidelines for PTs.

Ann Fick PT, DPT, MS is a board certified cardiopulmonary clinical specialist who has been a member of the Oxygen consensus group and who was the Linda Crane Lecture Award winner for 2023 and presented her award winning presentation CSM 2023 entitled

Ashley Parish, PT, DPT, CRT, ABPTS Board Certified Cardiovascular and Pulmonary Clinical Specialist, is an Assistant Professor at UAB. She obtained her Bachelor of Science in Respiratory Therapy and her Doctorate of Physical Therapy from UAB. She is currently pursuing her PhD in Health Behavior with a focus on pediatric heart failure induced by obesity. She has over a decade of experience in the pediatric intensive care unit setting and remains in clinical practice part time. Parish currently serves as the Vice Chair of the Cardiovascular and Pulmonary Specialist Interest Group and Education Chair for APTA Acute Care. She was recently named the 2022 recipient of the Emerging Leader Award from Academy of Cardiovascular & Pulmonary Physical Therapy. She has experience teaching in both respiratory and physical therapy programs.

Naomi Bauer, PT, DPT, CCS received her Doctor of Physical

Therapy degree from Northeastern University in 2015. Following completion of the Cardiovascular and Pulmonary Residency Program at Duke University Health System in 2016, she became an APTA Board Certified Cardiovascular and Pulmonary Specialist in 2017. She has worked as a travel PT in the acute care setting at various hospitals, and as the Program Director for the Outpatient Pulmonary Rehab and Cardiopulmonary Therapy Program at WakeMed Health & Hospitals in Raleigh, NC for 5 years before transitioning into entrepreneurship. Naomi has presented on both a local and national level including multiple previous Combined Sections Meetings. She is a member of the American Physical Therapy Association Academy of Cardiovascular and Pulmonary Physical Therapy and is an author on the recently published Entry-Level Competencies for Cardiovascular and Pulmonary Physical Therapy.

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