MAYO CLINIC

MECHANICAL VENTILATION

Conference

HILTON ROCHESTER MAYO CLINIC AREA
ROCHESTER, MINNESOTA
AUGUST 27-29, 2020

CE.MAYO.EDU/VENTILATIONCONFERENCE2020

General Information

Course Description

Mayo Clinic Mechanical Ventilation Conference is designed to provide high quality education and detailed hands-on instruction in mechanical ventilation management and to bring physicians, respiratory therapists, and other health care providers who are involved in providing respiratory care on a daily basis.

Course Learning Objectives

Upon conclusion of this program, participants should be able to

1. Outline the physiologic principles and cardiopulmonary interactions underlying the risks, benefits, and applications of ventilator support for respiratory failure.
2. Describe in detail the use of different modes of ventilator support for patients with respiratory failure.
3. Demonstrate appropriate use of mechanical ventilation equipment following participation in hands-on workshop.
4. Integrate pulmonary mechanics at the bedside in a personalized approach to mechanical ventilation.

Intended Audience

Mayo Clinic Mechanical Ventilation Conference is designed for critical care providers, respiratory therapists, physicians, physician assistants and nurse practitioners.

Credit

JOINT ACCREDITATION™
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACGME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

The American Medical Association (AMA) and the Accreditation Council for Continuing Medical Education (ACCME). Mayo Clinic College of Medicine and Science designates this live activity for a maximum of **20.75** *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The American Association for Respiratory Care approves a maximum of **20.32** contact hours *continuing Respiratory Care Education (CRCE)* credit for this activity.

General Information

Date and Location

Mayo Clinic Mechanical Ventilation Conference will be held August 27-29, 2020. Conference headquarters will be located in Hilton Rochester Mayo Clinic Area, 10 East Center Street, Rochester, Minnesota 55904. Meeting facilities are easily accessible by skyway, which connect the Hilton Rochester Mayo Clinic to Mayo Clinic, shops, and a variety of restaurants.

Visit *https://www3.hilton.com/en/hotels/minnesota/hilton-rochester-mayo-clinic-area-RSTMAHH/index.html* for more information.

Registration

To register online, visit https://ce.mayo.edu/anesthesiology/content/mayo-clinic-mechanical-ventilation-conference-2020.

The registration fee includes: conference registration, daily continental breakfast, break refreshments and lunches (meeting participants only), and welcome reception.

Although it is not Mayo Clinic School of Continuous Professional Development (CPD) or Mayo Clinic Department of Pulmonary and Critical Care Medicine and Mayo Clinic Department of Anesthesiology and Perioperative Medicine CME policy to limit the number of registrants for a conference, conference room facilities may necessitate closing of enrollment, therefore, early registration is advised. A letter of confirmation will be sent upon receipt of payment and completed registration form. Please present the confirmation letter when checking in at the meeting registration desk.

For additional information, contact:

Mayo Clinic School of Continuous Professional Development
Plummer Building 2
200 First Street SW
Rochester, MN 55905

Website: *http://ce.mayo.edu/ventilationconference2020*
Phone: 800-323-2688

Cancellation Policy

Requests for cancellations must be submitted in writing to cme@mayo.edu. When cancelling a registration for a conference for a conference 14 days or more before the conference start date, a full refund (minus a $75 administrative fee) will be issued in the same form of payment the registration was received. No refunds are granted less than 14 days before the conference start date.

Mayo Clinic Department of Pulmonary and Critical Care Medicine, Mayo Clinic Department of Anesthesiology and Perioperative Medicine and/or Mayo Clinic School of Continuous Professional Development reserves the right to cancel or postpone any conference due to unforeseen circumstances. In the unlikely event Mayo Clinic Department of Pulmonary and Critical Care Medicine, Mayo Clinic Department of Anesthesiology and Perioperative Medicine and/or Mayo Clinic School of Continuous Professional Development must cancel or postpone this conference, Mayo Clinic School of Continuous Professional Development will refund the registration fee but is not responsible for any related costs, charges, or expenses to participants, including fees assessed by airline/travel/lodging agencies.

General Information

Travel

Rochester, Minnesota is a friendly city that greets thousands of visitors from around the world each year. The city is serviced by a modern international airport with multiple flights daily via American, United and Delta Airlines. Access to and from the airport is provided by taxi, shuttle service, and rental car. The airport is located approximately 10 miles from the Hilton Rochester Mayo Clinic Area and the Mayo Clinic campus.

Note to Travelers: Several cities in the United States are named Rochester. When you make airline reservations and check your baggage, be sure that your destination is Rochester, Minnesota (RST) and that your baggage has been properly tagged

Minneapolis/St. Paul International Airport (MSP) is located approximately 82 miles from Rochester. The following shuttle services offer multiple trips daily.

Groome Transportation
800-280-9270
$37 per person
http://www.groometransportation.com/

Rochester Shuttle Service
507-216-6354
$34 per person
http://www.rochestershuttleservice.com

Rates are quoted for one-way fares to or from the Minneapolis Airport. Rates are subject to change and do not include taxes, fee, or gratuities.

Travel arrangements are the sole responsibility of the individual registrant.

Parking

Parking is available in hotel and city ramps. The cost for parking is not included in the registration fee; parking will not be validated.

General Information

Accommodations

Guest rooms have been reserved for attendees and their guests with special course rates at the Hilton Rochester Mayo Clinic Area and DoubleTree by Hilton Hotel Rochester. The hotels are easily accessible by skyway. The group rate will be available until **Wednesday, August 5, 2020** and will be based on space and rate availability. Please identify yourself as a participant of the *2020 Mayo Clinic Ventilation Conference (Group Code MVC)* when making your reservation.

Hilton Rochester Mayo Clinic Area
10 East Center Street
Rochester, MN 55904
507-258-5757
$269.00/night
Group Reservations or
https://www.hilton.com/en/hi/groups/personalized/R/RSTMAHH-MVC-20200826/index.jhtml?WT.mc_id=POG

DoubleTree by Hilton Hotel Rochester – Mayo Clinic Area
150 South Broadway
Rochester, MN 55904
507-281-8000
$229.00/night
Group Reservations or
https://doubletree.hilton.com/en/dt/groups/personalized/R/RSTDTDT-MVC-20200826/index.jhtml?WT.mc_id=POG

Quoted room rates do not include taxes or service fees. Check-in time is 3:00 p.m. on the day of arrival, and check-out time is 12:00 a.m. on the day of departure.

Lodging arrangements are the sole responsibility of the individual registrant.

Mayo Clinic Department of Pulmonary and Critical Care Medicine and Mayo Clinic Department of Anesthesiology and Perioperative Medicine are not responsible for expenses incurred by an individual who is not confirmed and for whom space is not available at the meeting. Costs incurred by the registrant such as airline or hotel fees or penalties are the responsibility of the registrant.

Welcome Reception

Thursday, August 27, 2020 – 5:30 p.m.
Attendees and guests are cordially invited to join conference faculty for the Welcome Reception on Thursday evening, August 27, 2020 at the Hilton Rochester Mayo Clinic Area.

Faculty

Conference Directors

Gustavo A. Cortes Puentes, M.D.
John J. Marini, M.D.
Todd J. Meyer, R.R.T., L.R.T.
Richard A. Oeckler, M.D., Ph.D

Robert S. Ashmun, P.T., D.P.T., Physical Therapist, Department of Physical Medicine and Rehabilitation, Mayo Clinic, Rochester, MN; *United States*

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Holly D. Behrns, R.R.T., L.R.T., Instructor of Anesthesiology, Department of Anesthesiology and Perioperative Medicine , Respiratory Care, Mayo Clinic, Rochester, MN; *United States*

★ **Richard Branson, MSc, R.R.T.,** Professor of Surgery, Director of Clinical Research, Department of Surgery, University of Cincinnati College of Medicine, Cincinnati, Ohio. *United States* Chief Editor, Respiratory Care

★ **Laurent J. Brochard, M.D.,** Chair, Interdepartmental Division of Critical Care Medicine, University of Toronto; Staff Physician, Critical Care Department, St. Michael's Hospital. Keenan Chair in Critical Care and Respiratory Medicine, St. Michael's Hospital and University of Toronto. Toronto, *Canada*

June Mee Chae, M.D., Instructor in Medicine, Division of Pulmonary and Critical Care Medicine, Mayo Clinic, La Crosse, WI; *United States*

★ **Francesca Collino, M.D.,** Consultant, Humanitas Research Hospital, Humanitas University, Department Anesthesia and Intensive Care Units, Rozzano, Milan; *Italy*

Gustavo A. Cortes Puentes, M.D., Assistant Professor of Medicine, Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN; *United States*

Ashley G. Elkins, O.T., Lead Occupational Therapist, Department of Physical Medicine and Rehabilitation, Mayo Clinic, Rochester, MN; *United States*

Jennifer L. Elmer, APRN, CNS, D.N.P., Assistant Professor of Nursing, Department of Nursing / Medical ICU, Mayo Clinic, Rochester, MN; *United States*

David B. Erasmus, M.B, Ch.B., M.D., Assistant Professor of Medicine, Division of Transplantation Medicine, Mayo Clinic, Jacksonville, FL; *United States*

Alexander S. Finch, M.D., Assistant Professor of Emergency Medicine, Department of Emergency Medicine, Mayo Clinic, Rochester, MN; *United States*

★ **Inga C. Forde, M.D.,** Pulmonary and Critical Care Medicine, HealthPartners Regions Specialty Clinics, Saint Paul, MN; *United States*

Bhargavi Gali, M.D., Associate Professor of Anesthesiology, Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Rochester, MN; *United States*

Alice Gallo De Moraes, M.D., Assistant Professor of Medicine, Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN; *United States*

★ **Luciano Gattinoni, M.D.,** Former Chairman, Department of Anesthesiology and Intensive Care, University of Milan; *Italy*, Gastprofessor at the University of Göttingen; *Germany*

Peter C. Gay, M.D., Professor of Medicine, Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN; *United States*

Faculty

★ **Dean Hess, Ph.D, R.R.T.,** Respiratory Care, Massachusetts General Hospital, Boston, Massachusetts; *United States*

Denzil R. Hill, M.D., Instructor in Anesthesiology, Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Rochester, MN; *United States*

Steven R. Holets, R.R.T., L.R.T., Assistant Professor of Anesthesiology, Department of Anesthesiology and Perioperative Medicine, Respiratory Care, Mayo Clinic, Rochester, MN; *United States*

★ **Rolf D. Hubmayr, M.D.,** Emeritus Consultant, Division of Pulmonary and Critical Care Medicine, Mayo Clinic; Professor of Medicine and Physiology, Mayo Clinic College of Medicine. Rochester, Minnesota, *United States*

★ **Robert M. Kacmarek, Ph.D, R.R.T.**, Director, Respiratory Care Services, Massachusetts General Hospital, Boston, Massachusetts, *United States*

★ **Richard Kallet, MS, R.R.T., FAARC,** Director of Clinical Research, Department of Anesthesia and Perioperative Care, University of California, San Francisco, CA; *United States*

Andrea T. Lehnertz, APRN, CNS, M.S.N., Instructor in Nursing, Department of Nursing – Medical/Surgical/Transplant ICU/PCU, Mayo Clinic, Rochester, MN; *United States*

★ **Neil R. MacIntyre Jr., M.D.**, Medical Director of Respiratory Care Services, Pulmonary Function Laboratory and Pulmonary Rehabilitation Program, Chief of Clinical Services, Division of Pulmonary and Critical Care Medicine, Professor of Medicine, Duke University Medical Center, Durham, North Carolina, *United States*

★ **John J. Marini, M.D.,** Department of Pulmonary, Critical Care and Sleep Medicine, HealthPartners Medical Group & Clinics, Regions Hospital, St. Paul; Professor of Medicine, University of Minnesota Medical School, Minneapolis, *United States*

★ **Gary Nieman, MS,** Professor of Surgery, Upstate University, Syracuse, New York, *United States*

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Richard A. Patch III, M.D., Assistant Professor of Anesthesiology and Medicine, Department of Anesthesiology and Perioperative Medicine and Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN; *United States*

Cheryl A. Paulson, R.R.T., L.R.T., Instructor in Anesthesiology, Department of Anesthesiology and Perioperative Medicine, Respiratory Care, Mayo Clinic, Rochester, MN; *United States*

★ **Michael Quintel, M.D., Ph.D,** Chair, Department of Anesthesiology, Emergency and Intensive Care Medicine. Professor of Anesthesiology, University of Göttingen. He served as President of the German Interdisciplinary Society of Intensive Care Medicine (DIVI). Göttingen, *Germany*

Matthew D. Sztajnkrycer, M.D., Ph.D., Professor of Emergency Medicine, Department of Emergency Medicine, Mayo Clinic, Rochester, MN; *United States*

Shannon E. Vold, P.T., D.P.T., Physical Therapist, Department of Physical Medicine and Rehabilitation, Mayo Clinic, Rochester, MN; *United States*

★ Guest Faculty

Pre-Conference Workshop

Wednesday, August 26, 2020
1:00pm-5:00pm

Pre-Course: **Mechanical Ventilation Essentials**

This half day course is designed to provide a foundation for providers with less mechanical ventilation experience. Combining hands-on simulations with interactive didactics attendees will learn the fundamentals of ventilator management. Topics covered will include ventilator terminology, functionality of various modes of ventilation, and basic ventilation strategies. Key components of ventilator monitoring will provide attendees the opportunity to have a better understanding of respiratory mechanics and lung physiology.

Agenda:

1:00pm -1:45pm	Respiratory Physiology and Pulmonary Mechanics
1:45pm-2:30pm	Ventilator Modes
2:30pm-3:00pm	**Break**
3:00pm-3:45pm	Intro to Ventilator Waveforms
3:45pm-4:30pm	Basic Mechanical Ventilation Strategies –How to Manage and Troubleshoot

Program

Day 1 – Thursday, August 27, 2020

7:00 Registration and Continental Breakfast

7:45 Welcome, Overview and Announcements

Lectures: Basics Physiologic Principles: Understanding Mechanical Ventilation

8:00 Essential Pulmonary Mechanics: Equation of Motion, Pressures, Volumes, and Flow

8:30 Patient-Ventilator Dyssynchrony and Wave Form Analysis

9:00 Basic Modes of Ventilation: Pressure vs. Flow Regulation

9:30 Refreshment Break and Exhibits

10:00 – 11:30 Breakout Sessions: Intensive Tutorials, Case Discussions, Introductory Workshops

Intensive Tutorials

Select ONE of these sessions (90 minutes):

1. Lung Protective Mechanical Ventilation: The role of PEEP today – Pros & Cons
2. Advanced Options and Non-standard Modes: Does the mode make a difference? – Pros and Cons
3. The Golden Hour of Mechanical Ventilation: Transitioning Respiratory Care from the Emergency Department to the ICU
4. "Catch The Wave" – Wave Form Analysis and Patient-Ventilator Dyssynchrony

OR select TWO of the following (45 minutes each):

Case Discussions

5. A Systematic Approach to Refractory Hypoxemia –the Mayo Model
6. Inability to Ventilate – Airway Obstruction and High Airway Pressures
7. Taking ownership of invasive and noninvasive ventilation devices – How to Manage and Troubleshoot

Introductory Workshops

8. The ABC of Prone Positioning: When, Why and How
9. Ventilation Adjuncts – Tubes, Aerosols and Clearance
10. Lung Recruitment and Setting PEEP: Is My Patient's Lung Recruitable?

11:30 Lunch and Exhibits

Lectures: Monitoring During Mechanical Ventilation

12:30 Ventilation in the Operative Room – Should it be different?

1:00 Mechanical Ventilation of the Organ Donor and ECMO

1:30 Heart Protective Ventilation

2:00 Refreshment Break and Exhibits

2:30 – 4:00 Breakout Sessions: Intensive Tutorials, Case Discussions, Introductory Workshops

Intensive Tutorials

Select ONE of these sessions (90 minutes):

1. Mechanical Ventilation Guided by Esophageal Pressure
2. Monitoring Diaphragmatic Activity and Respiratory Efforts
3. Mobilizing the Mechanically Ventilated Patient on ECMO
4. "Catch The Wave" – Wave Form Analysis and Patient-Ventilator Dyssynchrony

OR select TWO of the following (45 minutes each):

Case Discussions

5. Managing the obese patient: Obesity and Other Disorders of the Chest Wall
6. Integration of Pulmonary Mechanics –Transpulmonary and Airway Driving Pressure
7. Non-invasive ventilation in neuromuscular diseases

Introductory Workshops

8. Controlled Vs. Spontaneous Ventilation
9. Lungs in a Box: Ex vivo lung perfusion (EVLP) for lung transplantation
10. Air and Ground Transportation of Mechanically Ventilated Patient

4:00 Get to Know the Experts- Q&A

4:30 Adjourn

Program

Day 2 – Friday, August 28, 2020

7:15 Continental Breakfast

Lectures: Hypoxia

8:00 Lung Recruitment: Why, When and How?

8:30 How I optimize power to avoid VILI

9:00 Neuromuscular Blockade in the Acute Respiratory Distress Syndrome

9:30 Refreshment Break and Exhibits

10:00 – 11:30 Breakout Sessions:
Intensive Tutorials, Case Discussions, Introductory Workshops

Intensive Tutorials

Select ONE of these sessions (90 minutes):

1. How to optimize Mechanical Power to avoid VILI: A practical workshop
2. Extra-Corporeal Life Support –Indications, Initial Evaluation and Implementation
3. The Golden Hour of Mechanical Ventilation: Transitioning Respiratory Care from the Emergency Department to the ICU
4. Refractory Hypoxemia –A Systematic Approach

OR Select TWO of the following (45 minutes each):

Case Discussions

5. Taking ownership of invasive and noninvasive ventilation devices – How to Manage and Troubleshoot
6. Managing the obese patient: Obesity and Other Disorders of the Chest Wall
7. Non-Invasive Ventilatory Support in ARDS

Introductory Workshops

8. The ABC of Prone Positioning: When, Why and How
9. Bedside Assessment of Auto-PEEP, and Lung Stress and Strain – What should we monitor in the ventilated patient and when?
10. Setting PEEP and Bedside Assessment of Lung Recruitability

11:30 Lunch and Exhibits

Lectures: Ventilation

12:30 Liberation from Mechanical Ventilation

1:00 Non-Invasive Ventilation: Principles and Decisions

1:30 Non-invasive ventilation in neuromuscular diseases

2:00 High Flow Nasal Cannula for Whom?

2:30 Refreshment Break and Exhibits

3:00 – 4:30 Breakout Sessions:
Intensive Tutorials, Case Discussions, Introductory Workshops

Intensive Tutorials

Select ONE of these sessions (90 minutes):

1. How to optimize Mechanical Power to avoid VILI: A practical workshop
2. Mechanical Ventilation in Asthma and COPD
3. Extra-Corporeal Life Support – Indications, Initial Evaluation and Implementation
4. Mechanical Ventilation Guided by Esophageal Pressure

OR Select TWO of the following (45 minutes each):

Case Discussions

5. Airway Pressure Release Ventilation (APRV) in the treatment of ARDS
6. Integration of Pulmonary Mechanics –Transpulmonary and Airway Driving Pressures
7. Non-Invasive Ventilatory Support in ARDS

Introductory Workshops

1. Controlled Vs. Spontaneous Ventilation
2. Lungs in a Box: Ex vivo lung perfusion (EVLP) for lung transplantation.
3. Setting PEEP and Bedside Assessment of Lung Recruitability

4:30 Get to Know the Experts- Q&A

5:00 Adjourn

Program

Day 3 – Saturday, August 29, 2020

7:15 Continental Breakfast

Master Class Series:
Advances in Respiratory Failure Management

8:00 Practical Approach to Mechanical Ventilation during ECMO – Why and How?

8:30 Monitoring Regional Ventilation in Hypoxemic Respiratory Failure –the role of electrical impedance tomography

9:00 Should we adopt "Open Lung" approach for all?

9:30 Refreshment Break and Exhibits

10:00 Mechanical Power and Positive End-Expiratory Pressure – What is the real mechanical cause of VILI?

10:30 Who gets to be proned and how often?

11:00 Artificial intelligience in Respiratory Care

11:30 Pros & Cons Summary Debate

12:30 Adjourn