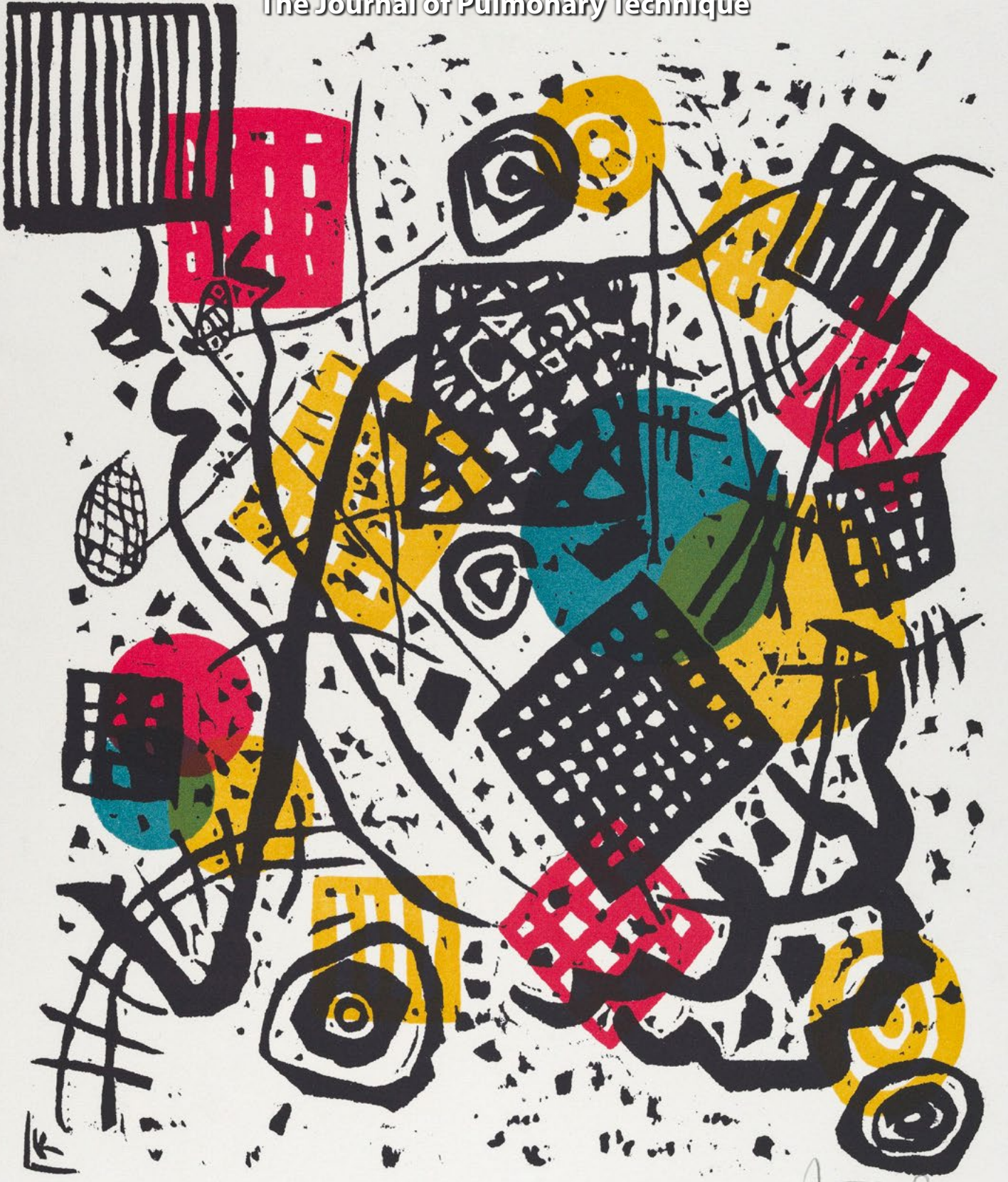


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Life After Mechanical Ventilation: An Expert Interview on a New Accreditation to Improve Outcomes

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Executive Summary

When patients are unable to breathe sufficiently on their own, mechanical ventilation may be required. Mechanical ventilation is the most common intervention used in patients admitted to ICUs (Intensive Care Units). Mechanical intervention saves lives in acute cases, but numerous studies document how prolonged mechanical ventilation can lead to a host of negative physical, financial, and mental outcomes for patients. Over the past twenty years, Gene Gantt, RRT, FAARC has worked with TennCare, Tennessee's state Medicaid program, to develop best practices for safely and successfully weaning patients off of long-term mechanical ventilation. In this interview, he discusses his successes, which have recently been standardized as a widely-recognized accreditation available nationally through the non-profit Physician-Patient Alliance for Health & Safety.

Consequences of Prolonged Mechanical Ventilation

The need for mechanical ventilation may occur as a result of a range of breathing and respiratory illnesses, including acute asthma, chronic obstructive pulmonary disease (COPD), pulmonary fibrosis, pneumonia, lung cancer, and trauma. During the COVID pandemic, there was a surge in patients requiring mechanical ventilation. In the US, one study found that almost 90% of COVID patients required mechanical ventilation. An audit of patients from England, Wales, and Northern Ireland found that two-thirds of COVID patients who required critical care in the UK had mechanical ventilation within 24 hours of admission. Most COVID patients who experienced respiratory failure often required prolonged mechanical ventilation for two weeks or longer.

More than a million patients who are admitted to US intensive care units (ICUs) receive mechanical ventilation each year. Nearly 10% of all critically ill patients and up to 34% of those ventilated for more than two days require extended periods of ventilatory support. Prolonged mechanical ventilation (PMV) has been defined as ventilation for more than 21 days or for more than four days following a tracheostomy. Currently, over 100,000 patients per year require prolonged mechanical ventilation. With advances in skill and technology, the rate of PMV cases is increasing rapidly from year to year.

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When prolonged, mechanical ventilation, especially in alternate care settings where most patients are elderly, becomes a major safety issue. In the vast majority of states in the US, there are little to no quality requirements for mechanical ventilation in long-term care facilities (such as Skilled Nursing Facilities) that establish adequate staffing ratios of qualified respiratory therapists, advanced monitoring of pulse oximetry/end-tidal CO₂, outcomes tracking, use of advanced technologies, or quality oversight. Additionally, there is no accreditation program focused on this specialty service. As a result, there are ventilator-dependent/tracheostomized patients who receive substandard long-term care where no outcomes are achieved or expected.

Researchers have found that the care of patients who have prolonged mechanical ventilation is expensive and their overall outcomes are often poor. As Dr Mario Fadila and his colleagues at the SIU School of Medicine and the University of Missouri write:

“Prolonged mechanical ventilation increases the risk of pneumonia, barotrauma, tracheal injuries and musculoskeletal deconditioning. At the same time, delayed weaning is associated with increased morbidity, mortality, hospital stay and risk of long-term care facility discharge.”

The seemingly simple example of device alarm failure illustrates the dangers patients undergoing prolonged mechanical ventilation face. In 2002, the Joint Commission on Accreditation of Health Care Organizations (JCAHO) reviewed 23 reports of death or injury that were related to mechanical ventilation. Nineteen of those events resulted in death, four in a coma, and the vast majority — 65% — were related to alarms. There was often no response, or a delayed response, to mechanical ventilation alarms. In some cases, the alarm was set incorrectly. Some ventilator disconnections did not trigger an alarm. When an alarm was triggered, it was not always audible in all areas of patient care. This review prompted JCAHO to include alarm safety in the National Patient Safety Goals for 2003.

Until very recently, there have been no standardized protocols for safely weaning patients off of long-term mechanical ventilation.

New accreditation is now available from the Physician-Patient Alliance for Health & Safety (PPAHS), a national non-profit (501(c)(3)) advocating for patient health and safety priorities. The PPAHS Accreditation in Enhanced Respiratory Care builds

on a program developed by Gene Gantt, Registered Respiratory Therapist, for TennCare. Gantt's program has achieved a 65% liberation rate from long-term mechanical ventilation and the American College of Chest Physicians awarded it a national recognition of excellence. The newly available Accreditation in Enhanced Respiratory Care is based on standards published by the American Association for Respiratory Care (AARC), where Gantt was also the former chair of the long-term care section and AARC representative to the Respiratory Compromise Institute.

I sat down to chat with Gene about TennCare's successes and the role of the new Accreditation in Enhanced Respiratory Care in translating these successes to the national level.

An Interview with Gene Gantt, RRT, FAARC What are the main issues and challenges healthcare providers face when it comes to patients on mechanical ventilation?

The main issue is finding the most appropriate quality resource for long-term ventilation. These vary from state to state. There are three discharge options:

- Long-term acute care hospitals, where available. These are still considered acute care and have a length of stay of 28-30 days, but then they too need discharge options for long-term care if liberation from ventilation isn't achieved in that time frame.
- Skilled nursing facilities. These vary in scope, quality, and payment availability. Depending on state Medicaid options a state may or may not cover these higher-acuity services.
- Direct discharge to home, where continued efforts to wean from ventilation are much less likely.

On the national level, what mechanisms are in place to ensure high standards of respiratory care for patients on long-term mechanical ventilation?

There are no national standards from the Centers for Medicare & Medicaid Services or any other governing bodies that provide target standards for long-term ventilator care. In terms of costs, which affect provision, each state sets its own payment rate and requirements.

Tell me about your role in starting the Enhanced Respiratory Care program in Tennessee.

We originally established Tennessee's very first long-term ventilator program in a Skilled Nursing Facility, which is to say, a state-regulated nursing home, in 2001, as a means of preparing families for ventilator care at home. Our idea was that we could do a better job preparing caregivers if we could do so at a slower pace than traditionally done in a busy hospital ICU. At that time we were the hands-on providers of respiratory care and as clinicians, we wanted to make our facility as safe and clinically sound as possible. Although there were no standard requirements at the time we opted to staff our unit 24 hours a day with respiratory therapists and to provide redundant monitoring in case of ventilator failure or accidental disconnect.

Once we admitted our first patients, our respiratory therapists recognized that the majority had weaning potential so they began the process of weaning them from the ventilator. In our first year, we were successful in liberating 65% of those admitted to the unit.

Realizing that model was successful, we developed the initial ten standards we felt to be key to our success and presented them to the Tennessee Board of Respiratory Care, who adopted

them as an official position statement. In 2007 we presented the Tennessee position statement to the AARC where it was adopted as a formal position statement there as well.

We continued our work as providers until 2013, and then joined the TennCare Bureau to develop the current pay-for-performance model we use today. We now oversee the quality of that program statewide.

Tell me about the relationship between national standards of respiratory care for patients on mechanical ventilation and Tennessee's efforts.

The standards of care were first developed and used in Tennessee beginning in 2001 and were first codified as a Medicaid requirement there in 2014. The successful outcomes achieved from following the standards stimulated the idea of national accreditation of facilities that met or exceeded the standards.

Could you describe the best practice for weaning a patient off mechanical ventilation?

The best practice will depend on the patient. Weaning from long-term ventilation is made more difficult due to patient stress and often deep depression. One of the very first steps we recommend is to humanize the patient so that they feel more optimistic. For example, the placement of a speaking valve so they can communicate does wonders for the weaning process. Not only does it allow them to speak but it's also beneficial in alveolar/lung recruitment resulting in more stable oxygen saturation. All of the patients in long-term care have failed standard protocols so respiratory therapists must be creative in their methods.

Where does PPAHS's Accreditation and Certification in Enhanced Respiratory Care fit into the national landscape of respiratory care provision?

There are two parts here to talk about, certification of the clinician, and then accreditation of facilities.

Certification entails clinicians taking continuing medical education courses on Enhanced Respiratory Care. These courses educate clinicians through online and hands-on learning in:

- Culture of a Weaning Program
- Resident Selection
- Quality of Life
- Weaning Approaches
- Ventilator Unit Technology/Equipment
- Discharge Processes
- Process Improvement

There are relatively few training courses that are specific to long-term care. Respiratory therapists who specialize in this arena rely on manufacturers and clinical experience to learn the ropes. The PPAHS offers specialized programs targeted toward long-term care.

Accreditation of facilities is recognition that the facility has met or exceeded the national standard of care. Previously, there were no regulatory or Medicare/Medicaid standards from state to state. Enhanced Respiratory Accreditation offers facilities an opportunity to practice at a high level and to be recognized once they meet or exceed the standards. These standards create a safe environment for those receiving care in non-acute facilities. Additionally, it provides families with the assurance that the facilities are operating at a high clinical level and that their loved



West Meade Place (Nashville, TN) was the first facility to receive Enhanced Respiratory Care Accreditation. Pictured with Gene Gantt (far right) are Michael Wong (PPAHS) and James Wright and Clyde Heflin.

ones are being cared for according to a recognized standard of care.

What role does data collection/metrics tracking play in improving and maintaining high standards of respiratory care? What are some of the issues and challenges in data collection and management on state and national levels?

Collecting data is extremely important, if nothing is measured there is no benchmark for improvement. By collecting data and participating in accreditation a facility can benchmark their success to that of other institutions practicing in the same manner. This gives a facility a way to measure improvement.

The challenge to collecting accurate data is to make sure that each facility is using the same formulas for calculation. For example, if a facility only counts patients they “think” they can wean versus “all qualified admissions,” the data wouldn’t match up to those who use the “all qualified admissions” category.

How about equipment, what needs to change in terms of availability and training to improve and maintain high standards of respiratory care?

Many long-term care respiratory therapists don’t get the opportunity to attend live state or national seminars and as a result, they are not aware of the latest technological advances. That’s one of the main benefits of the new PPAHS certification. As new products become available, we will host periodic equipment showcase sessions where manufacturers will come to the respiratory therapists to showcase new products.

There will often need to be investments made to improve outcomes and many times these costs pose a challenge. However, improved outcomes should equal increased reimbursement from a payer like managed care or TennCare in order to offset the costs of investment in new equipment.

Structuring reimbursement properly provides the best outcome for clinicians and their patients.

How can we continue to improve outcomes for weaning patients from mechanical ventilation?

By expecting success instead of settling for providing custodial care for long-term ventilation patients.

Where can clinicians and patients get more information on Enhanced Respiratory Care?

More information on certification and accreditation in Enhanced Respiratory Care can be obtained by going to <https://ppahs.org/enhanced-respiratory-care/>.

About Gene Gantt, RRT, FAARC

Gene Gantt is the co-founder and CEO of Eventa, LLC, and a well-respected registered respiratory therapist who has practiced in the post-acute care arena since 1984 and is widely recognized for his excellent work on critical patient safety issues. He has represented the American Association for Respiratory Care (AARC) at various conferences addressing the need for patient monitoring and promoting clinician awareness of early recognition of respiratory compromise. He is the AARC representative to the Respiratory Compromise Institute, a coalition of leading medical organizations, and the Physician-Patient Alliance for Health & Safety.

About Physician-Patient Alliance for Health & Safety

The Physician-Patient Alliance for Health & Safety is ranked internationally as a top-100 patient safety organization (Agilience Authority Index, July 2023) and is a national advocacy force for addressing patient health and safety priorities shared by patients, physicians, regulators, and industry. PPAHS seeks to ensure that the best medications, medical inventions, and technology that can improve care and reduce costs are employed. PPAHS works to advance patient health and safety by developing and highlighting best practices and recommendations through better use and application of clinical practices and experiences, information technologies and checklists, and healthcare information. As a voice in support of ideas and innovation that can improve care, we encourage a health ecosystem that fosters a culture of patient safety. For more about PPAHS, please visit www.ppahs.org.