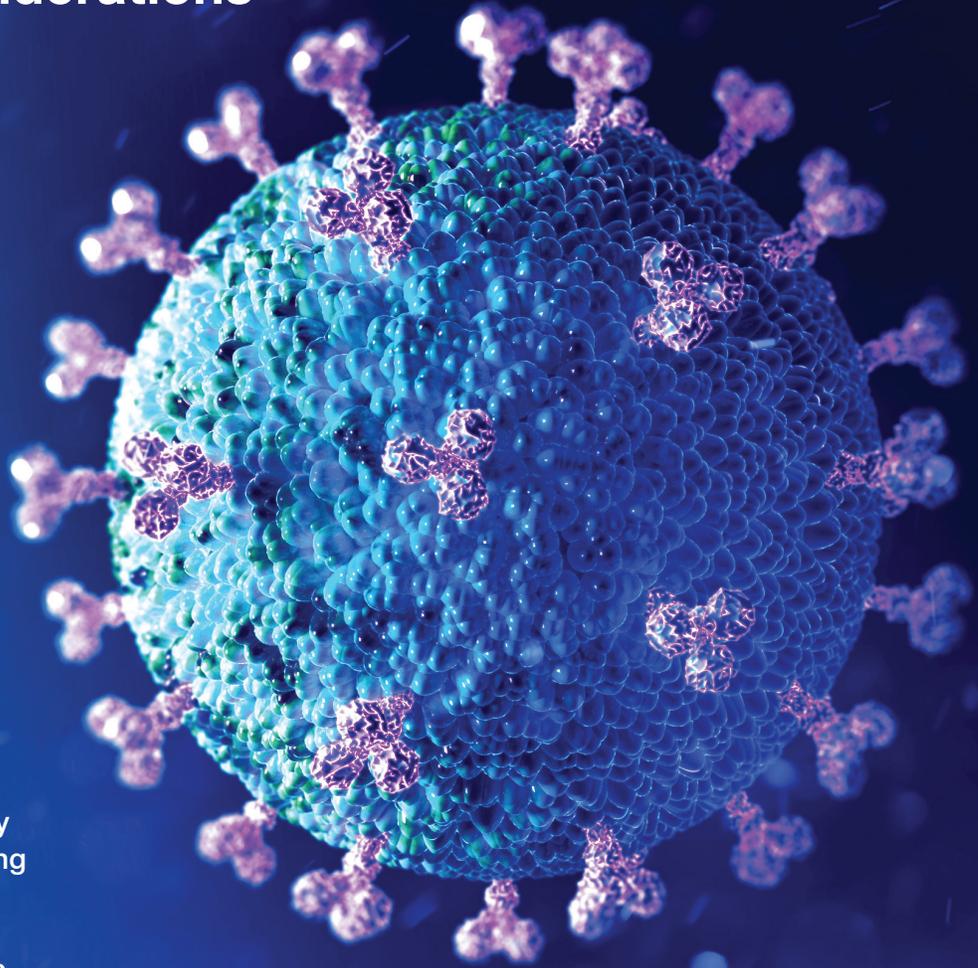




COVID-19

Ethical Considerations



Featured Articles:

Facing COVID-19:
From the Perspective
of Two Physician
Assistants

The Ethics & Essentiality
of Speaking & Swallowing
During COVID-19

Difficulties & Challenges
with Severe Illness
Following COVID-19

Insights from an Interprofessional
Post-COVID-19 Rehab Unit





Volume 4, Issue 1

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ARTICLES LEGEND



COVID-19



Ethics



Tracheostomy

Welcome to Passy-Muir, Inc.'s *Aerodigestive Health*: Ethical Considerations During COVID-19: Patient Case Studies

This past year we have all faced many challenges due to the COVID-19 pandemic. While the world around them collapsed, healthcare workers have stood their ground and continued to fight to save lives. This issue is dedicated to everyone in healthcare as we have faced a historic year that presented us with momentous lifestyle and practice changes. From face masks in public to overflowing hospitals, the pandemic has shaped new methods, guidelines, and protocols that impact daily life.

For this issue, the primary focus is **Ethical Considerations during COVID-19: Patient Case Studies**. Working within the fields of medicine that address the needs of patients with tracheostomies and mechanical ventilation, the care of patients has varied based on physician preference, facility policy and procedures, the existence of a trach team, and many other factors. The coronavirus pandemic has been a crisis that impacted many facets of healthcare. It has been so significant in its effects that it also revealed vulnerabilities in the healthcare system, causing devastating financial and personal losses.

This issue of *Aerodigestive Health* brings together multidisciplinary perspectives on this past year and working with patients following tracheostomy due to COVID-19. The variety of healthcare professionals participating in this issue is broad and makes the issue a strong representation of the multidisciplinary care necessary for addressing the needs of patients. The authors include physicians, physician assistants, respiratory therapists, and speech-language pathologists. Their knowledge and skills combine to enlighten the reader on how medical care met the challenges that COVID-19 presented. It also addresses how these challenges have evolved and what is still being faced. They focus on patient case studies from their respective facilities to assist with establishing what occurred for patients with tracheostomies during COVID-19. They share lessons learned and best practices.

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Through case studies, the authors share ethical considerations and how healthcare has had to meld and shape new practices due to the patterns seen with COVID-19. This progression is presented through both the authors' personal experiences and through the stories of patients diagnosed with COVID-19.

One of the biggest challenges with this pandemic has been knowing how best to address the respiratory component of the disease. Initially, many traditional interventions were halted due to the perceived risks with aerosol-generating procedures. In the beginning, patients were intubated for longer times than previously considered. While historically intubations for respiratory support were a short-term intervention with progression to a tracheostomy when long-term support was needed, COVID-19 changed the course of interventions. Intubation periods were lasting 30, 40, even 50 days and longer in some cases. Tracheostomies were delayed. The practice patterns were changing. Some of the most difficult impacts were on the loss of a patient's ability to have visitors and the loss of their voice, with no communication with families and caregivers. The focus of this publication is to provide educational and clinically relevant information to enhance the care of patients with tracheostomies, including the safe and efficacious use of the Passy Muir® Tracheostomy & Ventilator Swallowing and Speaking Valve (PMV®).

Each of these authors emphasize that multidisciplinary team management is a key element when working with patients of any age following tracheostomy and mechanical ventilation; additionally, the management of an open tracheostomy tube by using a PMV provides multiple benefits that assist with transitioning patients through the levels of care and may improve swallowing by restoring a pressurized system. The primary take-away from this issue is that even in the face of challenges caused by a powerful virus that brought forth new views of medicine, it is the people who make the difference, both patients and professionals.

Houston A King PhD, CCC-SLP

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Kristin King, PhD, CCC-SLP has been a speech-language pathologist in a variety of settings since 1995. She earned her PhD in Communication Sciences and Disorders from East Carolina University in 2008. Her expertise is in cognitive-communication and swallowing disorders with medically complex patients of all ages, particularly those with needs secondary to traumatic brain injury (TBI), tracheostomy/ventilator, and pre-term birth. Dr. King has published several peer-reviewed articles regarding evaluation and treatment of TBI, and she speaks to both domestic and international audiences regularly on the use of speaking valves, evaluation and treatment following TBI, and swallowing disorders.



Upcoming Issues:

If you have an interest in submitting or writing for one of our upcoming issues, please contact me at aerodigest@passymuir.com.



Communication Related to Quality of Life in the Patient with a Tracheostomy

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Healthcare providers have ethical and legal obligations to engage in communication with the patients they treat. Healthcare has been transitioning away from the model of providers as the primary decision-makers and moving towards a model that actively engages the patient and family in all aspects of care. Practitioners recognize that patients have the right to be informed about their care, to make educated decisions about their care, and to be heard by their providers. Patient-centered care is becoming the universal model of healthcare. Even though the Institute of Medicine (IOM) defines patient-centered care as “providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions” (IOM, 2001), ethical responsibilities of the healthcare provider, patient-centered care, and quality of life (QOL) are all placed in jeopardy when patients cannot communicate effectively.

Impaired Communication with Tracheostomy

Lack of airflow through the vocal folds due to the presence of a tracheostomy tube can result in the inability to produce audible phonation. Additionally, many patients with a tracheostomy have comorbidities, such as critical illness myopathy, neurological disorders, and delirium which also may impact their ability to use non-verbal communication methods successfully. Impaired communication in patients with tracheostomies may lead to safety concerns, violation of patient rights, isolation, anxiety, and poor quality of life. Difficulty communicating is one of the most frustrating experiences reported by patients with tracheostomies and is a major factor impacting QOL (Pandian et al., 2014). Speech-language pathologists (SLP) play a crucial role in advocating for communication rights and addressing the communication needs of patients with tracheostomies.

Impact of Impaired Communication on Quality of Life

Nakarada-Kordic et al. (2018) conducted a systematic review of the literature to investigate the experiences and QOL of adults living with tracheostomies. They found that patients reported mostly negative experiences which were related to management of

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the tracheostomy, communication, well-being, and quality of life. Foster (2010) had reported similar findings in an earlier study and revealed that patients described feelings of anger, frustration, and fear that were related to the presence of a tracheostomy tube.

The inability to communicate has often been reported as the primary cause of negative emotions and experiences. Loss of control, isolation, powerlessness, and hopelessness have been reported by hospitalized patients who do not have adequate access to communication (Flinterud & Andershed, 2015; Gottormson et al., 2015). Magnus and Turkington (2006) found that difficulty communicating led to reduced participation in treatment, which could lead to prolonged recovery. Some patients report that the need for communication is even more significant than the risk of tracheostomy-related airway complications (Donnelly & Wiechula, 2006).

Perhaps, the best way for healthcare practitioners to understand the impact that a tracheostomy tube has on a patient is to learn about their individual experiences. Freeman-Sanderson et al. (2018) conducted structured interviews six (6) months after tracheostomy decannulation, during which they investigated patient experiences regarding communication and quality of life with a tracheostomy tube. Some of the participants' statements were:

- I was very confused and so the lack of speech makes it worse.
- They gave me one of those cards with pictures of faces and the alphabet, which I couldn't use because I couldn't lift my hands to point at the pictures, so basically, I couldn't communicate at all.

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- Sometimes I'd want something, I'd want to ask something but the nurses couldn't understand properly so I would get frustrated and give up.
- Oh, it was horrendous. To not be able to make a sound is the most awful thing, especially when you can't move either. I just felt complete helplessness and frustration... anger at times that nobody could understand.
- I feel like I went a long time without a voice... It affected me quite a lot emotionally, for many months, even now.

This study revealed the devastation that patients experience when unable to communicate verbally. The authors summarized their findings by stating that the absence of voice restricted the patients' ability to understand information and to participate in their care, which led to universally reported negative emotions.

Pain Management

Another factor to consider is having access to adequate pain management, which may be related to quality of life. Patients must be able to describe the location and severity of their pain for healthcare providers to prescribe appropriate pain management regimens. Limaye and Katz (2006) found that difficulty communicating with healthcare providers is a significant barrier to accessing pain relief. Common psychological responses to pain include anxiety, depression, and stress, and unrelieved pain may prolong the stress response and adversely affect recovery (Guttormson et al., 2015; Wells et al., 2008). Poorly managed pain may lead to both adverse physical and psychological outcomes.

Safety

Patient safety is of the utmost importance in the healthcare setting. The Institute of Medicine (2001) reports that patient safety is "indistinguishable from the delivery of quality health care." When patients do not have access to effective communication, they are at risk for unsafe health practices. Bartlett et al. (2008) found that "patients with communication problems were three times more likely to experience preventable adverse events than patients without such problems." Even The Joint Commission reported in a quality and safety performance analysis that ineffective or inadequate communication between healthcare providers or between care providers and patients and families is a primary cause of sentinel events (The Joint Commission, 2007).

Patient Rights

The right to effective communication is supported by the American's with Disabilities Act (ADA) and The Joint Commission regulations. Both regulate that a patient must have access to the least restrictive means of communication and be able to participate in their medical care. The ADA states that hospitals are obligated to provide access to effective communication, which is critical in healthcare settings, as it may impact proper diagnosis or medical treatment (Effective Communication, 2010). The Joint Commission sets communication standards that address a hospital's responsibility to identify a patient's preferred language and to provide personal devices needed for discussing healthcare (R3 Report, 2011).

The Joint Commission defines effective communication as "the successful joint establishment of meaning wherein patients and healthcare providers exchange information, enabling patients to participate actively in their care from admission through discharge, and ensuring that the responsibilities of both patients and providers are understood" (The Joint Commission, 2010). In this report, it states that hospital staff must address the patient's communication needs before conducting an assessment, providing treatment, obtaining informed consent, discussing end-of-life, or engaging the patient in care discussions.

Improving Communication with Use of the Passy Muir® Valve

It has been well-established that effective communication is imperative for the patient with a tracheostomy. Speech-language pathologists have the knowledge, skills, and responsibility to establish successful communication for this vulnerable patient population. Since techniques such as lip reading, gesturing, and other non-verbal communication methods can be limited and ineffective (Altien, 2011), the SLP should strive to achieve the most natural means of communication. Restoration of voice with use of the Passy Muir Valve (PMV®) is ideal for this complex patient population. The PMV is a no-leak speaking valve that is placed on the hub of a tracheostomy tube or in-line with ventilator circuitry. This one-way Valve directs exhalatory airflow around the tracheostomy tube, through the vocal folds, and out the mouth and nose. This airflow through the vocal folds restores natural voicing and assists patients with a tracheostomy tube with regaining their ability to communicate effectively.

continued next page

SLPs should not wait until the patient is weaned from the ventilator to provide communication intervention. Numerous benefits to early assessment and intervention exist with the PMV. Research has demonstrated not only improvements in communication with PMV use but also improvements in secretion management, cough effectiveness, respiratory function, taste, smell, and swallowing, among several others (O'Connor et al., 2019). It has been demonstrated that improved ventilation and respiration may be achieved with placement of a Passy-Muir Valve in-line with the ventilator. Sutt et al. (2016) investigated the use of the PMV for patients with tracheostomies and ventilator dependence. They found that deflating the cuff and using the PMV improved verbal communication and increased end-expiratory lung impedance, thereby, improving lung recruitment. Freeman-Sanderson et al. (2016) reported that patients had earlier phonation and no increase in complications with use of the PMV in-line with mechanical ventilation. Restoration of communication also allows the SLP to conduct more thorough swallowing, speech, language, and cognitive evaluations. Early assessment and intervention lead to early treatment, which may result in faster recovery.

Improving Communication May Lead to Improved QOL

Restoring vocal communication allows patients to fully express themselves and their needs which enhances patient satisfaction and quality of life (Morris et al., 2015). Having a voice allows patients to make decisions and to define their goals for care. For many patients, this results in an improved sense of control and well-being. Freeman-Sanderson et al. (2018) reported that relief, satisfaction, and improvements in quality of life were experienced once verbal communication was restored. As one patient reported:

- Talking helped me recover quicker. I'm no doctor but it made me feel a lot better, when you feel better you recover.

The authors reported that return of voice increased the patients' ability to engage with staff and participate in care decisions. Effective communication empowered patients and aided their recovery.

Conclusion

Healthcare providers have an ethical responsibility to communicate with their patients and to ensure that effective communication is accessible. When patients with tracheostomies are voiceless, patient-centered care is negatively impacted, patients' rights

are violated, and poor health-related quality of life are reported. Restoration of voice allows patients to express their goals for care, to participate in health-care decisions, and to experience improved quality of life. Freeman-Sanderson et al. (2016) reported that restoring voice facilitates effective communication which is beneficial for improved patient care in the ICU. It also may improve the reporting of medical symptoms and assessment, which may impact the management of pain, delirium, and emotional distress. Additionally, restoring communication results in compliance with some of the regulations of the ADA and The Joint Commission. Speech-language pathologists are integral members of the healthcare team who provide treatment for patients with tracheostomies and should strive to make effective communication a standard of care for this patient population.

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Article Summary

Throughout this issue you will find a sampling of research summaries which were selected based on clinical relevance by a small group of clinicians from respiratory therapy and speech-language pathology. The studies selected provide findings related to the significance of earlier tracheostomy than occurred at the beginning of the pandemic, the role of the speech-language pathologist for communication and swallowing, and the importance of managing long-term effects of COVID-19.

Early Tracheostomy with COVID-19

Bangash, M. N., Breik, O., Dawson, C., Idle, M., Isherwood, P., Jennings, C., Keene, D., Manji, M., Martin, T., Moss, R., Murphy, N., Nankivell, P., Parekh, D., Parmar, S., Patel, J., Pracy, P., Praveen, P., Richardson, C., Richter, A. ... Tasker, L. (Queen Elizabeth Hospital Birmingham COVID-19 airway team). (2020). Safety and 30-day outcomes of tracheostomy for COVID-19: A prospective observational cohort study. *British Journal of Anaesthesia*, 125 (6), 872 – 879. <https://doi.org/10.1016/j.bja.2020.08.023>

This prospective observational cohort study addressed patients confirmed to have COVID-19 who required mechanical ventilation. The study was conducted at a large tertiary hospital in Birmingham, UK and covered patient admissions that occurred between March 9th and April 21st of 2020. The primary outcome measure was the 30-day survival rate of patients who received tracheostomy compared to those who remained intubated. The secondary outcomes reported were related to ICU length of stay and to how many healthcare workers acquired COVID-19 during the study period.

A dedicated team managed these patients and received intensive training to assure standards, including use of PPE, were maintained by the healthcare workers who were managing care of the patients with tracheostomy. The study included 164 total patients: 100 patients met the criteria established by the airway team to receive tracheostomy (75 percutaneous/25 open). This group had a mean age of 55 years, and 29% were female. Sixty-four (64) did not receive a tracheostomy, and this group had a mean age of 57 years, and 25% were female.

The total overall 30-day survival rate was higher, at 85%, in patients who received tracheostomy, as compared to the non-tracheostomized group, which was 42%. Reduced ventilator days and reduced length of stay in the ICU occurred if the tracheostomy was received within 14 days of intubation. None of the healthcare workers on the tracheostomy care team developed any symptoms of COVID-19 and were negative for SARS-CoV-2 antibodies for two weeks following the study.

Overall, the conclusion of the investigators was that the survival rate was higher and the ICU stay shorter in those patients receiving a tracheostomy, regardless of severity of critical illness. The authors suggest this indicated that early tracheostomy is safe in COVID-19 patients.



Facing COVID-19: From the Perspective of Two Physician Assistants

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C O R O N A V I R U S T I M E L I N E

January 6, 2020

ABC News report (Schumaker, 2020)
“Mysterious pneumonia outbreak sickens dozens in China. So far, there’s no evidence of human-to-human transmission.”

January 11, 2020

U.S. News: A World Report (Associated Press, 2020)
“China reports 1st death from new type of coronavirus”

January 21, 2020

ABC News report (Schumaker, E., 2020)
“1st confirmed case of new coronavirus reported in US: CDC.”

January 30, 2020

ABC News report (Schumaker, E., 2020)
“Coronavirus declared global health emergency by WHO after 1st person-to-person US case reported: It’s only the sixth time the WHO has declared a global health emergency.”

We all remember these headlines, but who would ever have thought that these events would trigger a pandemic that would threaten our lives, those of family and friends, and the lives of every person around the world? In addition to the lives lost, America’s robust economy crumbled over the course of days. In the early stages of the pandemic, unemployment rates in the US reached a record high of 14.7% (Falk et al., 2020) and the country’s Gross Domestic Product (GDP) dropped by a staggering record 31.4% in the second quarter (BEA, 2020). This drop may be compared to the Great Depression when the GDP dropped by 30%; however, the Great Depression lasted for several years and had a much more significant impact overall (Economic Impact, 2020).

First Cases of Coronavirus

In January of 2020, the Centers for Disease Control (CDC) confirmed the first US coronavirus case in Washington State. The public received confirmation from the CDC of the first local transmission occurring in California during February of 2020. Soon after this announcement, cases started to emerge in New York. As residents of Connecticut, sitting on the couch and watching the local news that was providing pandemic-related headlines, even though skeptical, we began preparing. Was this the calm before the storm, or were we just overreacting? As New York City was running out of intensive care unit (ICU) beds, cases started to appear in Connecticut.

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It was starting to sink in, as physician assistants working in the surgical intensive care unit of a level one trauma center, we were going to be one of those healthcare providers on the front lines.

Our First Patients

On March 12, 2020, the hospital admitted its first patient, and soon the hospitalist service and the medical intensive care unit were focusing their efforts on managing COVID-19 patients. Initially, things were manageable. With the state-mandated shut-down of non-essential workers, it was thought that we may avert the surge New York City was experiencing. Eventually, as the case count continued to rise, our hospital's incident command center was activated, elective surgeries were halted, and the local community was afraid to step near a hospital. As a result, the hospital census initially declined, but was later inundated with more and more patients who were infected with COVID-19.

Since most areas of the hospital were shut down, many colleagues were furloughed. Simultaneously, COVID-19 admissions were rising, which resulted in an environment never before experienced - a disproportionate distribution of work. There was no COPD exacerbation, no appendicitis, no pneumonia - just COVID-19. These critically ill patients, who were initially located in the medical ICU (our designated COVID-19 ICU), were flooding the surgical ICU, cardiac ICU, the pre-operative area, and post-operative areas. This was when involvement in managing these critically ill patients became real.

Without hesitation, our team of eleven physician assistants and nurse practitioners started overseeing one of the critical care units to off-load some of the medical team's responsibilities. Walking into the COVID-only ICU was daunting. Many thoughts circulated - to trust personal protective equipment? To trust the ability to properly don and doff PPE? What was the risk of contaminating ourselves, other colleagues, or even other patients? Reports were that front-line workers across the country were becoming infected, and some were even dying. Would this be a fate healthcare workers possibly faced? What made this so terrifying was that the enemy was invisible; we were fighting a war against something we could not see, hear, taste, smell, or identify. Moreover, we did not have ammunition to fight this war. The unknowns far outweighed the knowns with COVID-19.

Sicker than the Sick We Knew

After working in a 600-bed tertiary care hospital for 20 years as physician assistants, what sick is and how to treat sick was known. Well, these patients were sicker than the sick we knew. As a result of

the visitor restrictions, family were prohibited from entering the hospital, and many patients would pass away without family at their side. This did not happen on one occasion; this was becoming the new normal. Each of these critically ill patients required a tremendous number of resources and manpower. Initially, treatment included hydroxychloroquine (immunosuppressive and anti-parasite drug, typically used for malaria), but as new data became available, recommendations continued to change, and soon, we stopped using hydroxychloroquine. We then used Lopinavir/Ritnovir (HIV antiviral medication), then Remdesivir (broad-spectrum antiviral medication), then steroids, and then convalescent plasma (antibody-rich product from blood of people who had the disease caused by the virus). The treatments were everchanging; however, improvements were minimal. As you can imagine, patients were scared and lonely; at times, some of the most impactful care was spent at the patients' bedside, holding their hand so they were not alone.

From a respiratory standpoint, the thought was to intubate early and avoid non-invasive ventilation and high-flow nasal cannula (HFNC) because of potential aerosol generation. However, with time, we realized that most patients who were intubated were never extubated, and as more data became available, there was a shift in practice to avoid intubation. Instead, treatment began to focus on noninvasive ventilation and HFNC. It was a type of respiratory failure that was uniquely different when compared to the acute respiratory distress syndrome (ARDS) previously seen. In addition, to avoid mechanical ventilation, these patients showed significant benefit from proning.

Proning has been the process of turning a patient with precise, safe motions from their back to their stomach which relieved the pressure of gravity and assisted with improving oxygenation (Penn Medicine Physician Blog, 2021). In the past, this was something rarely performed as it required the use of a specialty bed to secure the patient and prevent tube dislodgement. Without access to these beds, the alternative was something learned from our European colleagues, called the "Burrito" technique (Wiggermann et al., 2020). Working with physical therapy and occupational therapy colleagues, a proning team trained in this technique was created and responsible for successfully flipping many of the sickest patients. We also were worried about running out of ventilators. During this time, the media was fixated on this issue; however, everything was running low - including dialysis machines, dialysate solution for dialysis, IV pumps, and numerous medications.

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As the COVID-19 census increased, overflow make-shift ICUs in the pre-operative and post-operative units were deployed. COVID-19 forced us to tear down our silos and interact with members of different service lines more than we ever had before. We were now working collaboratively with nurses, doctors, advance practice providers, respiratory therapists, and rehabilitation staff; many with whom we had never worked. This shift in practice patterns involved a steep learning curve and a need to develop mutual trust rapidly, especially with the constant changes. We relied on each other, respected each other, and trusted each other. Professional title did not matter nor did seniority. It was incredible and inspiring to see how successful collaborations were under these conditions, even though from different teams; one thing that remained constant was how no one ever said, "I cannot do this."

Finding Serenity in a Pandemic?

Heading to work each day was a little different without traffic. The drive to work offered time for reflection, listening to music, or putting the window down for some fresh spring air. This time provided the serenity needed before arriving at work.



Daily, the bridge connecting the parking garage to the hospital displayed pictures and posters handmade by the local school children. One I remember vividly is *not all heroes wear capes* written in crayon by a seven-year-old. These posters were so precious that they would bring a lasting smile - a smile that lasted through the temperature check and applying my surgical mask. And continued as I walked to the locker room, changed into my scrubs, grabbed my eye protection and N-95 mask, and then headed to COVID Cave, called a cave as there were no windows to know whether it was day or night.

Peter S. Sandor

Medicine is humbling. As was to be expected, working in an ICU exposed us to death. However, knowing most patients will survive and will go back to a good quality of life made the job all worthwhile. In essence, the wins and the lives saved kept us, and continues to keep us, working in critical care.

With COVID-19, things were a little different. A recent publication reported that 40% of COVID-19 patients in the ICU would die and 59% of those who received mechanical ventilation would die (Tzotzos et al., 2020). These statistics were profoundly different from what had been known prior to COVID-19. Working in this environment was not only physically and mentally exhausting, but psychologically and emotionally exhausting as well. Truthfully, it was a privilege to care for these patients. While reflecting on these experiences, it would be hard to imagine it happening any other way. Much was learned and new protocols were designed. Though our Surgical ICU team worked hard, the real heroes were and are the nurses and respiratory therapists who continuously sacrificed while working intimately with this COVID-19 population.

Light at the End of the Tunnel

By Summer 2020, four months into this mess, a light was seen at the end of the tunnel. COVID-19 cases declined significantly with only a handful of cases in our hospital. It was the first time we were able to spend time together outside of work. It was on Saturday, July 11th, 2020 that we invited family over; our children had a chance to play by the pool, and the adults toasted with champagne to celebrate our belated MBA graduation. Life was good!

Hospitals on the other hand had to deal with the aftermath of the destruction which was unrelated to patient care. It has been estimated that U.S. hospitals have lost over \$200 billion (American Hospital Association, 2020), forcing many hospitals to either close their doors or file for bankruptcy (Ellision, 2020). Many hospitals turned to significant layoffs and restructuring to remain viable. Our hospital survived, and we were grateful to still have a job.

Second Wave

Then came the second wave. October of 2020, COVID-19 cases began to rise, and this time the pandemic was widespread and with little opportunity to shift resources. Was this second wave going to be worse? Would the previous layoffs impact capacity? Would healthcare professionals have the mental, physical, and emotional stamina to endure another wave?

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Healthcare workers were reaching emotional exhaustion, the hallmark of burnout.

At the time, when compared to California, you could say we were lucky as it related to capacity. In Los Angeles County, Emergency Medical Technicians (EMT) were told not to transport patients to the hospital who had little chance of survival. Additionally, they were told to ration oxygen as supplies were running low, and if you were lucky enough to obtain a ride to the hospital in an ambulance, you would most likely wait outside for several hours before getting through the door (Meeks et al., 2021). From a psychological and emotional standpoint, life was no longer as good. Throughout a career in medicine, good days, bad days, the ups and downs have occurred. Previously, with a few days of rest, resilience to bounce back happened, and this was true for most healthcare workers. However, this pandemic was not allowing days off; there was no time to bounce back. Healthcare workers were reaching emotional exhaustion, the hallmark of burnout.

Current State of the Pandemic

As we write this last paragraph, the COVID-19 numbers have begun to decline, vaccine rollout has become widespread, unemployment has been decreasing, and the global economy has begun recovering. This pandemic seems to be coming to an end, but it has permanently affected nearly every aspect of daily life. According to a survey performed by the Centers for Disease Control, 40.9% of respondents reported at least one new mental health condition related to this pandemic, 13.3% started a new substance to help relieve emotional stress, and over 10% have considered suicide in the last 30 days (Czeisler et al., 2020). These numbers are most likely conservative figures. COVID-19 has impacted the United States and other countries on many levels. Many movie theaters and banquet facilities have gone out of business. Restaurants, gyms, and stores were lucky if their businesses survived. Questions remain. Will we ever feel comfortable traveling or going to a concert again? Will we be able to safely hug, kiss, or shake hands with family and friends? Will we ever get back to our previous normal or are we just chasing pipe dreams and facing a new normal? These are some of the questions caused by COVID-19 but still to be answered.

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With a passion for quality and patient safety, we recently created Clear View Simulation, and just launched the new innovative and interactive tracheostomy trainer (website: www.clearviewsim.com)

COVID-19 Survey: Impacts on Patients - Communication and Benefits of Passy Muir® Valve Use

The COVID-19 pandemic, caused by SARS-CoV-2, has led healthcare facilities and professionals to reassess many aspects of patient care, from usage of personal protective equipment (PPE) to provided services and visitation policies. In a recent survey regarding general use of the Passy Muir® Tracheostomy & Ventilator Swallowing and Speaking Valve (PMV®), clinicians reported additional benefits, particularly regarding communication, in relation to some of the changes made in response to the COVID-19 pandemic. Survey questions that specifically addressed changes in the treatment of patients with tracheostomy due to COVID-19 were shared with random facilities throughout the United States. Healthcare professionals from acute care, long term acute care (LTAC), and skilled nursing facilities (SNF) responded anonymously. Interesting and thought-provoking trends are emerging from this ongoing survey:

Clinician Response	Percentage Reporting
Intubation, Tracheostomy, Speaking Valves	
<ul style="list-style-type: none"> Longer periods of intubation prior to tracheostomy post-COVID-19 as compared to pre-COVID-19 	80%
<ul style="list-style-type: none"> Average Intubation duration greater than 35 days 	20%
<ul style="list-style-type: none"> PMV assessment within 5 days of admission 	60%
<ul style="list-style-type: none"> In-line use of PMV with mechanical ventilation 	80%
<ul style="list-style-type: none"> Longer recovery times 	20%
Visitor and Therapy Policies	
<ul style="list-style-type: none"> No visitors or very strict limitations on number of visitors 	100%
<ul style="list-style-type: none"> Restrictions placed on therapies 	20%
<ul style="list-style-type: none"> Significantly less family involvement 	100%
Emotional Impact	
<ul style="list-style-type: none"> Increased negative emotional effects for patients 	80%
<ul style="list-style-type: none"> Longer recovery times due to psychological impact 	100%
<ul style="list-style-type: none"> Increases in fear, anxiety, stress, agitation, and sadness 	100%
Impact on Communication	
<ul style="list-style-type: none"> Loss of access to voice due to intubation or tracheostomy 	100%
<ul style="list-style-type: none"> Restoring communication with family was primary goal in treating this patient population 	80%

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Use of the PMV: Psychological Benefits

- All clinicians (100%) reported that communication with family was a primary benefit of PMV use.
- Sixty percent (60%) of clinicians reported improved patient attitudes.

One participant commented that “decreased patient anxiety and use of sedatives, improved [patients’] sense of control” occurred with PMV use.

- Forty percent (40%) of clinicians reported changed or additional benefits, considering the changes to healthcare environments, with one participant reporting a “reduced sense of fear.” This finding is consistent with the research by Freeman-Sanderson et al. (2018) in which it was reported that having a return of voice was shown to result in significant positive change in self-esteem related to communication. The study also found that improved mood and increased participation in care decisions may also be associated with improved quality of life.
- All participants (100%) reported that they had observed psychological benefits during use of the PMV for patients being treated for COVID-19.

One clinical professional commented on the survey that “being able to talk to family on a phone has boosted morale for [the patients] and the family.”

- Participants in the survey reported that, overall, use of the Valve and restoration of communication increased patients’ and families’ feelings of relief and thankfulness, with some exhibiting “screams of joy.”

Some changes in facility protocols, including prohibiting visitors and restricting clinician access, limited access to communication and decreased stimulation for patients. With increased isolation, there also is an increased report of negative psychological effects (Freeman-Sanderson et al., 2016a, 2016b; Freeman-Sanderson et al., 2018). Clinicians reported that the only way to communicate with family and friends was by telephone, FaceTime, or other forms of videophone, placing patients who had lost their voice due to a tracheostomy at a further disadvantage. The responses within this survey specifically addressed changes occurring during COVID-19, but the findings regarding the importance of restoring communication through voice, using a Passy Muir Valve, are consistent with pre-COVID-19 research (Freeman-Sanderson et al., 2016a, 2016b; Freeman-Sanderson et al., 2018). Research continues to report that communication is essential to the psychological well-being and overall recovery of patients.

If you are interested in participating in this survey regarding patient care in your facility as it relates to intubation, tracheostomy, mechanical ventilation, and Passy Muir Valve use during the COVID-19 pandemic, please contact education@passymuir.com.

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The Ethics and Essentiality of Speaking and Swallowing During COVID-19: Lessons Learned on the Frontline

Kelsey Day, MS, CCC-SLP

Introduction

What began in late 2019 as a droplet-borne virus evolved into a global pandemic and then into a lesson (or, more accurately, a crash course) in medical ethics. This pandemic has been the ultimate test of my credibility and durability as a clinician; it has tested my ability to triage patients, to perform thoughtful risk-benefit analyses, and to make prognostic statements that would immensely impact the fate of my patients. It meant working under ever-evolving infection control policies with an inadequate supply of personal protective equipment (PPE) – and doing so while enduring months-long moral distress.

All my past education and experience has shaped me into a highly deontological clinician – in that advocacy is for the individual good of each and every patient. Deontological ethics in medicine is highly patient-centered and duty-based, arguing that the morality of an action should be judged on whether the action itself is right or wrong while considering a set of rules (Mandal, et al., 2016). This philosophy is held at the center of most medicine and is the basis for clinician-patient relationships, where clinicians do all they can for the good of their individual patients. As all healthcare clinicians are, I am morally bound to the concepts of beneficence and non-maleficence; I shall do good by all of my patients, and I shall do no harm. However, these principles assume the condition of adequate supply of medical resources and do not consider that doing individual good may pose grave threats to public health. Resource scarcity and public health crises often force clinicians to consider instead utilitarian medical ethics, which gauges the worth of actions by the consequences and values of the actions that are the most good for the most people, a society-centered approach (Gawronski & Beer, 2017).

Utilitarian Response

In March 2020, as the United States braced for what would surely be a devastating public health crisis, healthcare workers around the country received guidance to conserve all critical medical resources. On March 18th, the Centers for Medicare and Medicaid Services (CMS) addressed the SARS-CoV-2 virus with a statement that advised limiting

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non-essential surgeries and procedures, conserving ventilators and personal protective equipment, and limiting exposure of medical staff to the virus (CMS, 2020). In a world where all hospital-based medical services had previously been deemed necessary and “essential,” health systems were forced to establish a hierarchy of essentiality of each and every procedure in order to ration the limited PPE supply. Doing so would achieve the most good for the greatest number of patients.

In a pre-COVID-19 era, cancer treatments were undoubtedly essential; just as intubating a patient in acute respiratory failure was essential; and just as restoring a patient’s oral nutrition and establishing functional communication were essential. But when each of those procedures had the potential to necessitate five N95 respirators, five gowns, five face shields, and 10 gloves to be worn by medical staff, then a forced decision occurred as to which intervention was most essential, especially while PPE supplies were critically low. If the resources needed to help one patient could be used to help many more patients, which option is ethical? If a procedure for the good of one patient could pose a health risk to many others, is it still ethical? If the absolute medical necessity of cancer treatment was being called into question, then that also begged the question of the essentiality of speaking and swallowing interventions performed by speech-language pathologists (SLPs) during a global pandemic.

Facing the many unknowns related to COVID-19 led to ever-evolving clinical practice guidelines.

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In a downtown Los Angeles hospital, anticipation for an overwhelmed healthcare system yielded swift development of new policies and procedures. Under guidance from CMS and the American Speech-Language-Hearing Association (ASHA) in March, completion of theoretically identified aerosol-generating procedures (AGPs) was postponed indefinitely to protect medical staff and other patients from potential transmission, with specific attention paid to swallowing and speaking interventions such as Videofluoroscopic Swallow Studies (VFSS), Fiberoptic Endoscopic Evaluation of Swallowing (FEES), and use of speaking valves. Statements by the American Academy of Otolaryngology- Head and Neck Surgery (AAO-HNS) cited potential increased risk of COVID-19 transmission to otolaryngologists due to a high concentration of viral particles in the upper aerodigestive tract during their procedures (AAO-HNS, 2020), and that theoretically high risk for transmission was extrapolated to include SLPs and respiratory therapists (RTs). Procedures were considered aerosol-generating if they created and dispersed aerosols or if they caused a patient to cough or sneeze, which presumably included all voice and swallowing interventions performed by SLPs for the patient population with tracheostomies and ventilator dependence. The AAO-HNS specifically purported a high theoretical transmission risk for tracheostomy procedures and advised delaying tracheotomy for as long as possible (Parker, et al., 2020), which resulted in exceptionally long endotracheal intubation durations for COVID-19-induced acute respiratory distress syndrome (ARDS), and led to intubation durations reaching longer than 30 days.

SLPs in the acute care setting have long been tasked with managing the effects of endotracheal intubation and subsequent tracheotomy on voice and swallowing function but with typical intubation durations of fewer than 14 days. The catastrophic aftermath of month-long endotracheal intubations included unprecedented iatrogenic laryngeal injuries, critical illness myopathy and polyneuropathy with functional tetraplegia, and profound sedative-induced delirium. In addition to these iatrogenic injuries, patients also suffered profound physiologic effects of the virus itself, including COVID-19 associated encephalopathy, encephalitis, and strokes. Now charged with managing dysphagia and aphonia in patients with unparalleled acuity of illness, SLPs also were challenged to do so without access to necessary diagnostic and therapeutic tools, like endoscopic and videofluoroscopic swallowing evaluations or one-way swallowing and speaking valves, because of theoretical transmission risk. This management entailed careful risk-benefit analysis of potential risk for dysphagia-related pulmonary complications and the benefit of patient quality of life measured against public health risk.

Facing the many unknowns related to COVID-19 led to ever-evolving clinical practice guidelines. As more cases occurred and numbers rose, healthcare professionals were learning, and medical care was changing. Practice patterns and care plans were dynamic. The following case studies illustrate some stages of this evolution.

Case One: Timing of SLP Involvement

A middle-aged female with history of diabetes mellitus, hypertension, and asthma was hospitalized in March for dyspnea, cough, and fever. She tested positive for COVID-19 and rapidly developed ARDS with acute hypoxic respiratory failure, necessitating endotracheal intubation. Her hospital course was complex, involving three intubations with a total intubation duration of 32 days before undergoing a tracheotomy with a Shiley #8 cuffed tracheostomy tube. At the time, COVID-19 cases were surging in Los Angeles with rapidly depleting PPE resources. In an effort to reduce staff exposure to the SARS-CoV-2 virus, the SLP was not consulted for swallowing and voice management until the patient was weaned from mechanical ventilation, and the typical early in-line ventilator application of the Passy Muir® Tracheostomy & Mechanical Ventilator Swallowing and Speaking Valve (PMV) was intentionally bypassed.



Kelsey donning PAPR and coveralls to perform first FEES study for a trach/vent COVID-19 positive patient in her facility.

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After weaning from mechanical ventilation, the patient was functionally tetraplegic with profound critical illness myopathy and aphonic secondary to the tracheostomy. Without access to endoscopic or videofluoroscopic swallow studies for this patient, and with an unprecedented 32-day intubation, a percutaneous endoscopic gastrostomy (PEG) was advised for nutrition and hydration. The established plan was to address swallowing rehabilitation and endoscopic swallow study once the patient was no longer infectious. The patient remained nil per os (NPO), which means nothing by mouth, and was unable to use a Passy Muir® Valve for phonation because of the #8 tracheostomy tube; tracheostomy tube downsizes for COVID-19 positive patients were being postponed. For one week, the patient was unable to access any alternative communication method due to the severity of her myopathy and delirium. By post-operative day 13, the patient tested negative for COVID-19 – her tracheostomy was downsized to a Shiley #6 cuffless tube, and she achieved phonation with use of the Passy Muir Valve. I conducted FEES with the Valve in place, which revealed a mild oropharyngeal dysphagia; the patient immediately began a modified oral diet. Swallowing and voice rehabilitation continued, and the patient's diet was advanced. After team discussion, her tracheostomy tube was capped on post-operative day 21, and she was successfully decannulated the following day.

While the postponement of voicing and swallowing services was necessary and appropriate at the time – considering the saturation of our facility with COVID-19 patients and resource scarcity – it impacted short-term outcomes for the patient's quality of life. This utilitarian approach meant days of meaningful communication lost. Through the course of this pandemic, we also would come to understand that most patients with month-long intubations were able to return to full oral diets during their hospital course without PEG tube placement. This patient could have avoided PEG placement, if we had performed early instrumentation and tracheostomy interventions. However, the public health risk was judged to be too great.

Reconciling Utilitarianism with Deontology

As the weeks progressed and we received an influx of consultations for patients who were tracheostomy-dependent with COVID-19, it became increasingly difficult to justify postponement of voice and swallowing services for multiple reasons. First, postponing services had implications on the quality

of life and long-term outcomes of individual patients that could not be ignored. Kantian ethics, which most clinicians uphold, argues that there is a duty to do the right thing, even if it results in a bad outcome; therefore, withholding, or postponing services would be an immoral action.

Certainly, a hierarchy of PPE allocation was necessary and the good of society was rightfully prioritized during a time of medical resource scarcity; but did the previous allocation of resources actually reduce public health risk and were the consequences actually better for the community, since all options ultimately involved similar utilization of critical PPE? Was the initial guidance by multiple organizations – including the Centers for Disease Control (CDC), CMS, AAO-HNS, and ASHA – to postpone procedures actually utilitarian? How could the rationalization of the use of PPE for procedures like nasogastric and PEG tube insertions to manage suspected oropharyngeal dysphagia continue but not allow formal evaluation, diagnosis, and treatment of said dysphagia – especially when those evaluations and treatments could obviate nasogastric and PEG insertions altogether?

Postponing tracheostomy tube changes and speaking valve use, as advised by multiple organizations, meant longer tracheostomy dependencies, which in and of itself necessitated increased PPE use for daily tracheostomy care. How could we rationalize the postponement of tracheostomy tube changes and Passy Muir Valve use from a utilitarian perspective, when resuming our standard interventions could yield better patient outcomes with similar resource utilization? These questions expose the primary weakness of utilitarianism: that it is impossible to predict the long-term consequences of actions. What were initially believed to be measures to conserve precious PPE ultimately may have yielded little, or potentially negative, net benefit.

On April 17, 2020, Dr. Benjamin Domb wrote, “As it rightly should be, the attention is focused on immediate treatment of those experiencing symptoms of COVID-19, or the necessary preparations for the expected surge of patients in every state of the nation” (Domb, 2020). His words captivated my full attention, as he went on to suggest, “however, while we remain focused on the urgent medical needs today, a secondary health care crisis is also brewing, and it threatens to be much larger than the crisis caused by the virus itself” (Domb, 2020). His perspective captured the concerns I had for my individual patients, who had survived the horrific trauma of month-long intensive care stays and endotracheal intubations,

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only to wake without quality of life – without the ability to enjoy simple pleasures, like communicating and eating – for fear of public health costs. He elaborated, “It is the crisis of every other medical ailment that is being ignored, postponed or left untreated while we focus on coronavirus” (Domb, 2020). The initial utilitarian response, to postpone services and to conserve supplies, was aimed to benefit the most people – but if a larger number of patients suffered deleterious effects from the lack of intervention, then the consequences were not actually utilitarian at all.

At our hospital, we revised our practice and began, in a limited capacity, to perform instrumental swallowing evaluations and in-line ventilator Passy Muir Valve applications with use of appropriate PPE. While resources remained low, we implemented extended use and re-use procedures to maximize the supplies we did have. We invested in reusable PPE, including powered air-purifying respirators (PAPRs) and washable gowns. Our supplies were stable enough, and our burn (use) rates predictable enough, to serve the needs of each of our patients.

Case Two: Lessons Learned

A 60-something-year-old female with a history of rheumatoid arthritis and hypothyroidism was hospitalized in March for dyspnea, cough, fever, and hypoxia due to COVID-19 pneumonia and ARDS, resulting in endotracheal intubation for 18 days prior to a tracheotomy with a Shiley #8 cuffed tracheostomy tube. She suffered COVID-associated encephalitis, encephalopathy, and bilateral watershed strokes; she was comatose for several weeks after tracheotomy. As the patient began to regain consciousness, the SLP was consulted while the patient was on mechanical ventilation. Initial swallowing and in-line PassyMuir Valve evaluations were conducted with use of PAPR and gown. The evaluation for the Passy Muir Valve revealed absent upper airway patency, evidenced by absent ventilator leak with tracheostomy cuff deflation. I recommended continued use of nasogastric tube feeding and a tracheostomy tube downsize to a Shiley #6 cuffed tracheostomy tube, which was completed by the otolaryngologist the following day. This change successfully restored upper airway patency. After a FEES evaluation, the patient was able to consume a full oral diet while on the ventilator. She also tolerated in-line Passy-Muir Valve placement and was able to call her family, who had previously been informed of her comatose status. Her family cried, “Dios es bueno [God is good],” and they continued to call and speak with her daily. She was weaned from mechanical ventilation and her tracheostomy tube was capped on post-operative day 31.

She was successfully decannulated the following day and later met all swallowing and cognitive-communication goals.

The shift in our ethical approach with this case (which was possible affected by the improved stability of PPE supply and better predictions of PPE burn rates) led to functional communication and oral intake while on the ventilator, avoided PEG placement, and allowed a home discharge for this patient.

Pragmatic Approach

As the COVID-19 census in downtown Los Angeles began to plateau, we resumed our voice and swallowing services to nearly pre-COVID levels. PPE remained in short supply, but we continued extended use and re-use practices. We had noticed a pattern: nearly all of our COVID-19 patients, even those intubated over 30 days, were able to resume oral diets within approximately two weeks of either their extubation or tracheotomy, avoiding PEG placements. Also, they were decannulated prior to hospital discharge. The benefits of SLP voice and swallowing interventions were judged to be worth the cost of scarce PPE from both deontological and utilitarian ideologies.

Case Three: Benefits of Early Intervention

A young female with history of diabetes mellitus, hypertension, and obesity was admitted in April for dyspnea, cough, and fever due to COVID-19; she developed pneumonia and ARDS, requiring two endotracheal intubations for a total of 26 days before a tracheotomy with a Shiley #8 cuffed tracheostomy tube was performed. Physicians resumed their early SLP consultations for tracheostomy and ventilator-dependent patients, and the consult for this case occurred on post-operative day one while the patient was ventilator-dependent. Swallowing and in-line Passy Muir Valve evaluations at 48 hours post-tracheostomy were conducted and dysphagia interventions began. The patient weaned from mechanical ventilation on post-operative day six, and a recommendation for a tracheostomy tube downsize followed. The otolaryngologist downsized the tracheostomy to a Shiley #6 cuffless tube the following day, and the patient achieved hoarse but functional phonation with use of the Passy Muir Valve. She called her sister for the first time and cried, “Te quiero [I love you].”

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On post-operative day eight, a FEES evaluation with a Passy Muir Valve in place, revealed a functional oropharyngeal swallow; the patient resumed a regular diet that day and the nasogastric tube was removed. She progressed quickly in voice rehabilitation and her tracheostomy tube was capped on post-operative day 14. When it was time for decannulation, and the patient was told therapy was ending because she had met all of her voice and swallowing goals, she cried, “Te extrañaré [I will miss you].”

Our pragmatic approach to medical ethics for this case, where the benefit of voice and swallowing interventions was judged to outweigh the risk of resource utilization, yielded an outcome that aligned with both deontological and utilitarian ethics. This patient received care that prioritized her quality of life and individual outcome but also facilitated rapid recovery so that resources could later be allocated to other patients in need.

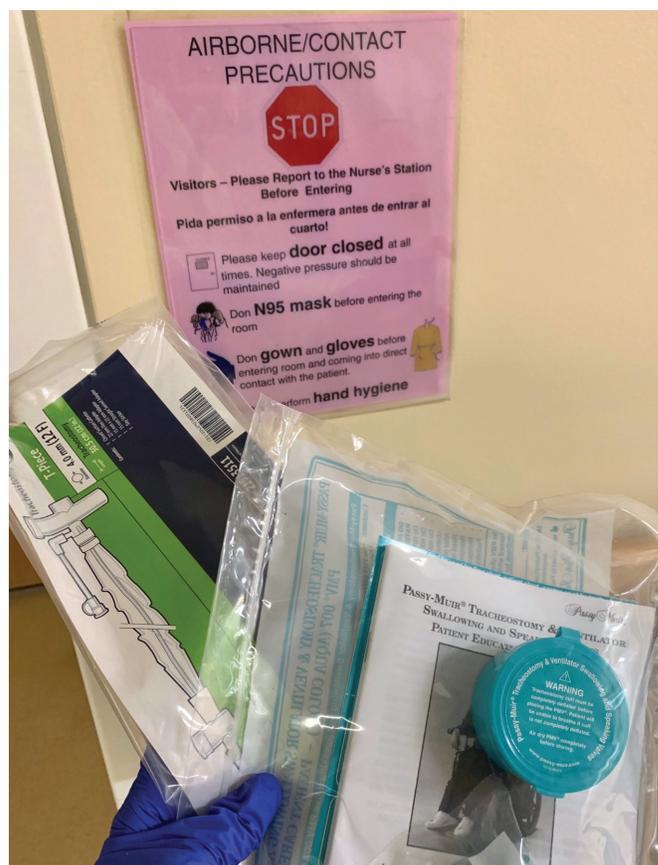
Conclusion

Strictly utilitarian approaches to medicine that ignore the mental and spiritual health of our patients will always elicit moral distress in deontological healthcare clinicians, and scarcity of medical resources will exacerbate the clash of these oppositional ideologies. A solution to this ethical distress means reconciling utilitarian and deontological ethics through a pragmatic approach during public health crises. Pragmatism maintains that ethics should be “a dynamic enterprise aimed at the resolution of concrete problems, and must be able to respond to the needs of a continuously changing reality rather than being a merely abstract activity in search of ‘immutable, extra temporal, principles, standards and norms’” (Inguaggiato et al., 2019).

The COVID-19 pandemic has confronted healthcare providers with the reality that our beliefs about medical ethics, which were previously considered useful and efficient guidelines for action, may no longer be adequate. In a pragmatic view of medical ethics, we consider fixed frameworks to build new solutions; conflicting values – like deontology and utilitarianism – are not rejected, but they “represent the essential starting point of every moral inquiry” (Inguaggiato et al., 2019). Pragmatism during the COVID-19 era means that we, as healthcare professionals, adjust our roles to the reality of our circumstances, considering both the individual needs of our patients and the resources necessary to provide interventions. We not only consider the impact of our service but also

the potential harm of our lack of intervention. We consider the unique circumstances of our patients, our communities, and our resources when making decisions regarding resource utilization.

Using this theory, a deontological approach is practically useful when resources are plentiful and the good of one does not pose harm to the good of another; while a utilitarian approach is pragmatic when resources are scarce and public health considerations are at play. It is possible that both deontological and utilitarian approaches, while contradictory, are ethical under different and evolving circumstances during a global pandemic. For ethical practice, it is essential that healthcare professionals continue to step up (and gown up) to provide services to critically ill patients when the benefits of our services outweigh the risks. Perhaps the biggest lesson to be learned from the COVID-19 pandemic is that an anti-dogmatic approach to medical ethics, where old truths meet new challenges, can address the needs of patients and healthcare workers – both individually and as a community.



Using a PMV® 007 (Aqua Color™) Valve to help patients communicate, even during COVID-19 with airborne precautions.

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Article Summary

Cognitive Communication Disorders & COVID-19

Ramage, A. E. (2020). Potential for cognitive communication impairment in COVID-19 survivors: A call to action for speech-language pathologists. *American Journal of Speech-Language Pathology*, 29 (4), 1821 – 1832. https://doi.org/10.1044/2020_AJSLP-20-00147

This paper examined the potential and prevalence of cognitive-communication disorders as a sequel to surviving COVID-19. Findings were collected through a database search of PubMed and the Cochrane Central Register of Controlled Trials. It also reviewed other coronaviruses due to the novel nature of COVID-19 and used terms related to cognitive impairment. The search revealed that potential neurological consequences of COVID-19 are related to the virus's, and similar coronaviruses', relationship with respiratory distress with intermittent or chronic hypoxia; increased coagulation factors that may lead to strokes in major vessels; and direct effect on the central nervous system, either through the mucous membranes of the nasal cavity or by breakdown of the blood-brain barrier as a response to hyperimmune system activity. Infections and disease processes that have resulted from COVID-19 and have demonstrated significant cognitive impairment included acute respiratory distress syndrome, chronic pulmonary obstructive disorder, and chronic obstructive sleep apnea, likely related to hypoxia.

The author examined the COVID-19 research related to delirium, a risk factor for the persistence of cognitive impairment and post intensive care syndrome (PICS). These disease processes were frequently seen in older patients in intensive care units. The author found evidence that illness-related features are likely altering brain function. Patients who are critically ill with COVID-19 may experience hypoxia, systemic inflammatory activity with potential for sepsis, and sedation related to intubation or mechanical ventilation. These are all causative mechanisms related to delirium. This interpretation of available research indicated that COVID-19 survivors would demonstrate deficits in attention, memory, and executive function.

The paper concluded with a call for speech-language pathologists (SLPs) to be aware of the potential for cognitive impairment in COVID-19 survivors and to evaluate and treat as early as possible. The author recommended that the evaluation should include subjective and objective measures of each domain of cognitive function, as well as an examination of mood, due to the possibility of exacerbated pre-existing psychiatric disorders which may impact cognition. The author emphasized that the SLP's role will be essential in identifying cognitive communication impairment and providing the necessary early intervention to improve outcomes.

As healthcare providers focus on the more immediate acute needs and life-saving measures required to ensure survival, this paper challenged the reader to consider an important secondary, long-term challenge for patients who are recovering or have recovered from COVID-19.



Difficulties and Challenges with Severe Illness Following COVID-19: A Case Study

Susan Dunkley, MS, CCC-SLP | Kevin Westbrook, RCP, RRT | Stacey Soltysik, RCP, RRT | Jacqueline Prado, MEd, CCC-SLP

COVID-19 is a very serious and infectious respiratory infection caused by a mutated strand of the coronavirus called SARS-CoV-2. Symptoms may range from mild to severe. The Centers for Disease Control and Prevention (CDC) (2021) reports that older people, especially those with comorbidities, are at the greatest risk of having severe illness from COVID-19, with 80% of COVID deaths occurring in people over age 65. In the most severe cases, patients may need the help of a tracheostomy tube and mechanical ventilation to allow their lungs to rest and heal. Research has shown that COVID-19 is more of an oxygenation issue than a ventilation issue (Centers for Disease Control and Prevention, 2021). In the following case study, we present a female who experienced a significant respiratory compromise and overall health decline from the COVID-19 virus, requiring prolonged hospitalizations and rehabilitation. She benefited from use of a Passy Muir® Valve (PMV®) to assist in weaning her from mechanical ventilation and improving her chances of decannulation, allowing her to return home with her family.

Case Study

History and Initial Admission

Mrs. Dee¹ is a female in her mid-sixties with a past medical history significant for hypertension (HTN), chronic kidney disease type 3 (CKD III), chronic obstructive pulmonary disease (COPD), asthma, anxiety, hoarseness, obstructive sleep apnea (OSA) (without regular use of CPAP), smoker, gastroesophageal reflux disease (GERD), Hyperlipidemia (HLD), depression, Diabetes Mellitus 2 (DM II) (diet-controlled), thyroid nodule, and chronic lung nodules. She presented to the emergency department (ED) in July of 2020 with complaints of shortness of breath (SOB). She was seen in the ED three days earlier with a positive COVID-19 test result and was discharged home for self-quarantine. However, on her second visit to the ED, she was noted to be febrile with a temperature of 102.8. Her chest x-ray showed patchy opacities medially at the lung bases, possibly indicating atelectasis or aspiration. She was diagnosed as COVID-19 pneumonia (PNA). Her oxygen saturations were in the low 90s at rest and 88% with ambulation. She again tested positive for COVID-19 and was admitted for further workup and medical management.

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Research has shown that COVID-19 is more of an oxygenation issue than a ventilation issue.

CDC, 2021

¹The name of the patient in this case study has been changed. Photos are shared with written consent.

continued next page

Acute Care Course with COVID-19

Two days after admission, she then needed an increase in supplemental oxygen. At that time, an arterial blood gas (ABG) was obtained, while she was on 5 liters per minute (LPM) nasal cannula. Results were as follows:

	Normal Ranges	Patient Results
pH	7.35 – 7.45	7.44
PaCO ₂	35 – 45 mmHg	38.8
PaO ₂	80 – 100 mmHg	52 ↓↓
BE	2 – 2.0	14.4 ↑
HCO ₃	22.0 – 26.0 mmol/L	29 ↑
tCO ₂	24.0 – 30.0 mmol/L	37.3 ↑
O ₂ Sats	95 – 100 %	85.0 ↓

Table 1: Mrs. Dee’s ABG results as compared to normal findings

Although this blood gas shows a full compensation (7.44), it also shows a severe hypoxia (PaO₂ 52). She was transferred to the Intensive Care Unit (ICU) as she was in multisystem organ failure. In the ICU, she was placed on a heated high flow nasal cannula (HHFNC), eventually requiring transition to non-invasive ventilation (NIV). Non-invasive ventilation was used as it creates positive airway pressure by providing positive pressure behind each breath, either triggered by the patient or set with a regulated delivery. By using this method, the patient’s lungs were kept open for gas exchange, in turn increasing her oxygenation. However, this method was unsuccessful for Mrs. Dee, and she eventually required intubation and placement on mechanical ventilation, approximately five days into her admission.

Multisystem Organ Failure

Due to the multisystem organ failure, she required blood pressure support with pressors (used to raise blood pressure and restore blood flow to vital organs). She was then diagnosed with sepsis with an anion-gap metabolic acidosis (caused by increased acid production in the body; blood has an imbalance of electrolytes) and was started on broad spectrum antibiotics. She received a plasma exchange. In early August of 2020, her creatinine was noted to be trending up, with a drop in her urine output despite diuretics. Nephrology was consulted, and continuous renal replacement therapy (CRRT) was initiated after

catheter placement. CRRT occurred through the first half of August as it is a slower form of dialysis that would put less stress on her heart and other organs (Tolwani, 2012). This form of dialysis was completed over 24-hours, slowly and continuously, to clean waste products and fluid from Mrs. Dee. It required a special anticoagulation to keep the dialysis circuit from clotting (Tolwani, 2012). She then transitioned to hemodialysis (HD) and remains HD dependent today.

During dialysis, she developed acute encephalopathy with seizure-like activity, which has since improved. She also had chronic anemia which required blood transfusions and were thought to be secondary to a possible gastrointestinal bleed (GIB). She presented with a drop in her hemoglobin and a small amount of coffee ground emesis was present in early September of 2020. During this time, the team initiated Protonix IV (prescription medicine used to treat symptoms of GERD), and she underwent an esophagogastroduodenoscopy (EGD), a procedure using an endoscope to view the esophagus, stomach, and duodenum. The EGD showed an oozing gastric ulcer and clips were placed. Leukocytosis (white blood cell count elevated above normal) also was present. There was a concern for deep vein thrombosis (DVT) and a heparin drip was initiated; however, this was shortly discontinued due to the GIB history.

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Palliative and Ethics Care Teams

Mrs. Dee was unable to wean from the ventilator, and a tracheostomy was placed in early September of 2020. The palliative and ethics care teams were involved with patients and families in acute care. The teams met with Mrs. Dee and her family. After these discussions, a percutaneous endoscopic gastrostomy tube (PEG tube) was placed in early October of 2020. During this time, psychiatry also was consulted to assess Mrs. Dee for her capacity to make medical decisions. Previously, she had been requesting to withdraw treatment; however, during these discussions, she decided to continue with aggressive interventions. Her fevers resolved and the antibiotics were discontinued.

Palliative care team is a specialized care model that focuses on quality of life and needs of patients and families during serious illness, with an emphasis on minimizing invasive procedures and potentially extending survival.

Ethics care team offers assistance in addressing ethical issues that arise in patient care and facilitate sound decision-making that respects the values, concern, and interests of those involved.

Initiating Speech Therapy

During her time in the hospital, COVID-19 tests were repeated to monitor its progression. She had positive tests in July and August of 2020, however, negative tests during September and October. She was assessed by speech therapy (ST) in mid-September. At that time, she was on high flow trach collar (40 LPM, FiO₂ of .51) with a Tracoe #7 cuffed tracheostomy tube, and her cuff was inflated. During her assessment, she presented with a reflexive, congested cough with her own saliva swallows. All food and liquid trials were recommended to be held until she tolerated cuff deflation. Later in September, she still was not able to use a PMV, but she was able to complete laryngeal strengthening exercises with ST. It was recommended that she continue to be nothing by mouth (nil per os (NPO)) and continue with PEG tube feedings for primary nutrition, hydration, and medication management. In late September, she continued to be dependent, with full ventilator support and her cuff on her tracheostomy tube inflated. She was deemed unlikely to wean from the ventilator per physicians. She presented with minimal laryngeal elevation and increased respiratory rate with a weak cough response to ice chip trials. Initially, she was

seen two days per week for skilled ST services in acute care to address her poor swallowing and secretion management; however, it was recommended that she remain NPO with an alternative means of nutrition. After a brief time, she was discharged from ST services due to a lack of benefit from services and a poor prognosis with the recommendation for reassessment once she was able to wean from the ventilator.

Transitional Care

In early October of 2020, a pulmonary note reported she was tolerating tracheostomy collar trials for 15 minutes and improvement had been noted with pressure support (PS) wean. PS was decreased from 20 to 16, and eventually she was able to tolerate a PS of 10. However, her volumes were not maintaining at 450 mL, her goal tidal volume; instead, she was maintaining at 99-150 mL with mild tachypnea.

The physicians felt she was not likely to tolerate these weans for long. Residual pulmonary fibrosis due to her COVID-19 diagnosis had been making mechanical ventilation difficult in multiple ventilator modes. The pulmonary team felt she was a good candidate for slow weans from the ventilator with continued physical therapy (PT). Her mood had improved once she was placed on Zoloft and lower doses of Seroquel. She also required a sedative and more improvement was noted. Once stable, she transferred to Lake Taylor Transitional Care Hospital (LTTCH) for further medical management and rehabilitation. Speech therapy, occupational therapy (OT), respiratory therapy (RCP) and physical therapy (PT) all initiated their evaluations with Mrs. Dee in early October of 2020 for treatments, with all four therapies seeing her for five skilled treatments per week.

On arrival, the interdisciplinary team reviewed outlying hospital documentation. The pulmonary and speech teams strategically came up with a weaning plan. PT and OT collaborated to establish a treatment plan for improving her functional mobility and ability to complete her activities of daily living (ADLs). In PT and OT, goals were established for improving bed mobility, grooming, transferring, and upper and lower extremity strengthening. Unfortunately, Mrs. Dee was discharged from therapy after about a week of treatment due to being medically unstable. She presented with oxygen desaturations during therapeutic activities with severe labored breathing and increased anxiety. PT and OT attempted deep breathing and relaxation strategies without improvement. They planned at that time to reassess as her weaning trials progressed.

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Making Progress

In ST, goals were established for tolerating the PMV and for returning to a PO diet (eating by mouth). A Modified Barium Swallow Study (MBSS) was completed in mid-October and results indicated minimal premature bolus spillage and mild bilateral vallecular and pyriform sinus residue across consistencies, which cleared with several swallows. One instance of audible aspiration on the fourth sip of thin liquids occurred. No further penetration or aspiration was present across consistencies. A mechanical soft ground texture and nectar thickened liquid diet were initiated. Her decreased sense of smell and taste (consequences of both the tracheostomy and COVID-19 diagnosis) presented as a barrier to her diet advancement. She exhibited poor intake with primarily consumption of small amounts of food and liquid due to not being able to taste the food. Her family often brought food in from home or from restaurants to improve her intake. She presented with difficulty voicing with the PMV placed in-line on the ventilator. Initially, Mrs. Dee often experienced severe coughing spells during PMV trials, which elevated her anxiety and altered her breathing pattern. However, she was instructed in deep breathing and relaxation strategies, which assisted in slowing her respiratory rate and improving her coordination of respiration and phonation while using the PMV.

In November of 2020, the pulmonary team began her tracheostomy collar trials (TCT) for weaning. During the weaning trial, the patient was very anxious and nauseous. She showed an increased work of breathing with accessory muscle use. Weaning was placed on hold at this time. Speech and pulmonary then collaborated to discuss a new plan. After further discussion, it was agreed to obtain an otolaryngology consult for a smaller trach. Otolaryngology was consulted and her tracheostomy was downsized to a Bivona #6 Tight-to-Shaft (TTS) tracheostomy tube which improved airway management and voicing. The PMV was being used in-line with improvement in coordination of respiration and phonation after her tracheostomy tube change.

She was discharged from skilled ST services in mid-November as she had achieved all her goals at that time. She was able to wear her PMV in-line on the ventilator as tolerated and without supervision. She was consuming a regular texture and thin liquid diet without signs or symptoms of aspiration. Her coughing spells had significantly decreased, and she was reporting improvements in her sense of smell and taste.

Setback and Discharge to Acute Care

In mid to late November, the weaning process from mechanical ventilation resumed. Mrs. Dee remained slightly nauseated and started complaining of throat and trachea pain. During this time, she also was reassessed by PT due to her improvement in respiratory function and overall medical stability. Goals were established for bed mobility, standing tolerance, and safety with transfers. However, she was unable to participate in treatment due to being discharged to an acute care facility for severe throat pain that was not improved with medicinal management at LTTCH.

Readmission to Transitional Care

She returned to LTTCH in early December with a new diagnosis of sepsis without acute organ dysfunction due to unspecified organism and tracheitis. While in acute care, she was seen by otolaryngology again and her trach was changed to a Tracoe #7 tracheostomy tube. She was reassessed by ST with the new admission as she had not worn her PMV in the acute care setting, and she was readmitted on a more restricted diet of mechanical soft chopped texture and thin liquids. She experienced intermittent nausea and vomiting following readmission; however, she was able to participate in laryngeal strengthening exercises and utilize safe swallow strategies for return to a regular texture and thin liquid diet.

After a week in LTTCH during this second admission, she began her weaning trials from mechanical ventilation. During this time, the interdisciplinary team's goals were closely followed, and the Pulmonary team felt changing her back to a Bivona #6 Tight-to-Shaft (TTS) tracheostomy tube would be beneficial for her progression for phonation and airway management.

She was reassessed by PT and OT during this admission. Goals were established for static balance, bed mobility, transfers, ambulation, ascending and descending stair management, and completion of activities of daily living. Mrs. Dee's Modified Barthel Index score improved from 16/100 at evaluation to 82/100 at discharge.

Modified Barthel ADL Index – one of the earliest standardized functional assessments. It is a measure of physical disability used to assess behavior relating to activities of daily living. It includes ten variables for ADL and mobility scoring. The higher the number, the greater the ability.

Barthel Index (2019)

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The initial recommendation at evaluation for total care at home following discharge was downgraded to 13 hours of assistance from a caregiver per week at discharge. The LPTA (licensed physical therapy assistant) on the team reported that Mrs. Dee's depression and anxiety really held her back at first. But once she started getting out of bed every day and walking, her mood changed. Even when restricted to the unit for therapy because of COVID-19, the LPTA shared that it really helped her to see how excited the nurses were when watching her walk up and down the halls.

By late December, she was discharged from ST services as she was again consistently tolerating her PMV in-line and on tracheostomy collar trials for 45 or more minutes with oxygen saturations higher than 93%. She was discharged with orders to wear the PMV as tolerated and without supervision. The pulmonary team continued to place the PMV in-line and on TCT for an open line of communication for the patient. She was tolerating a regular texture and thin liquid diet without signs or symptoms of aspiration. She reportedly maintained her calorie count through PO, and it was recommended that her feeding tube be removed. All medications were transitioned to oral form. Mrs. Dee demonstrated independent management of her anxiety.

[Mrs. Dee's] motivation to communicate with her family was stronger than the initial discomfort she felt wearing the PMV. Being able to communicate with her family helped brighten her spirits and guide her toward a full recovery.

Jacqueline Prado, MEd,CCC-SLP

Discharge to Home

After a tireless journey, Mrs. Dee was discharged home with her family towards the end of January 2021. At the time of discharge, she had returned to a regular texture and thin liquid diet. She was able to ambulate with the use of a walker. She had successfully been decannulated. She had improved her upper extremity strength and coordination. She was discharged with home health services, a shower seat, a three-in-one commode, and a wheelchair. She continues to require supplemental oxygen and a Trilogy with NIV for nighttime use. Dialysis will be completed in the community as an outpatient.

Mrs. Dee was interviewed prior to her discharge about her illness and recovery. She said that in the beginning, she:

“felt like I was useless. It was a horrible feeling. You can't talk or move. I couldn't even write my name. It is a horrible feeling when you can't function like you used to. I felt like I couldn't breathe, and they kept telling me to look at the numbers. I didn't know anything about the numbers. My mind was telling me I couldn't breathe, and I couldn't talk. I was frustrated.”

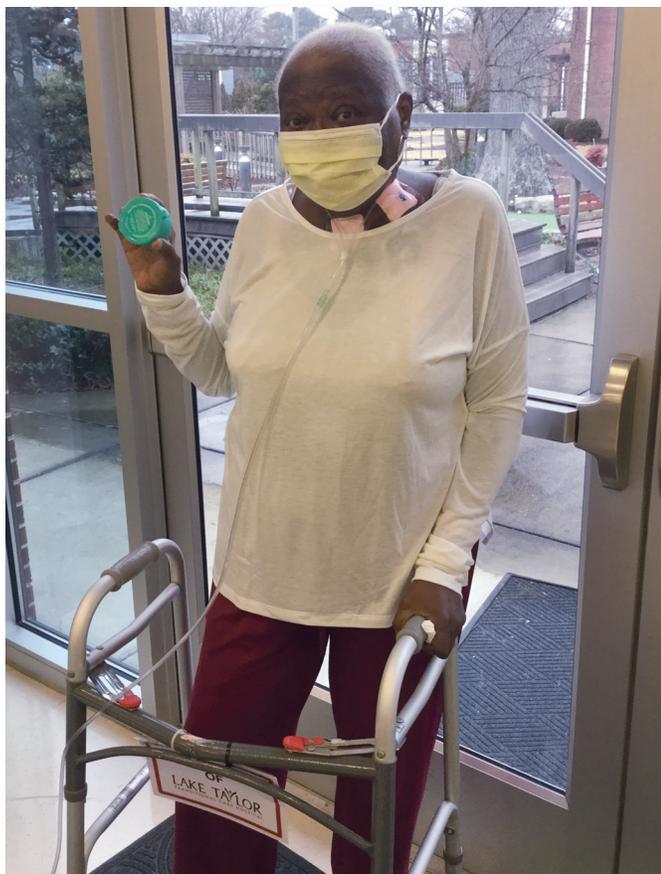
She reported feeling that the use of the PMV was the turning point in her recovery because she was able to take a more active role in her care with an open line of communication. She said she could talk with the interdisciplinary team and ask questions. She also shared that being able to talk helped to calm her anxiety.

Despite her many complications, including COVID-19, Mrs. Dee eventually was able to participate daily in skilled therapy services to improve her strength, coordination, respiration, communication, and swallowing function. Mrs. Dee put it best herself when she said, “you all have helped me so much. I don't want to leave you, but I got to go.”

Through the time with Mrs. Dee in their care, the team shared that while her case was difficult and challenging, it became a success story because of both the team's interdisciplinary approach to her care and because of Mrs. Dee, herself. She was sent to transitional care with the belief from the other acute care facility that she would never come off the vent. Due to her anxiety in the beginning, she was difficult to wean; however, having a great interdisciplinary team, a supportive family, and an amazing and determined mindset from the patient, her prognosis changed significantly. Do not count out any possibility even when it comes to COVID-19. Mrs. Dee worked hard, she overcame, and she got to go home.

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"Mrs. Dee" with her PMV after decannulation.



Back row (left to right): Kevin Westbrook, RCP, RRT;
Susan Dunkley, MS, CCC-SLP; Christine Gorcica, LTPA
Front row: Stacey Soltysik, RCP, RRT; "Mrs. Dee";
Jacqueline Prado, MSEd, CCC-SLP

Article Summary

Communication and Swallowing During COVID-19

Freeman-Sanderson, A., Ward, E. C., Miles, A., de Pedro Netto, I., Duncan, S., Inamoto, Y., McRae, J., Pillay, N., Skoretz, S., Walshe, M., & Brodsky, M. (2020). A consensus statement for the management and rehabilitation of communication and swallowing function in the ICU: A global response to COVID-19. *Archives of Physical Medicine and Rehabilitation*. Advance online publication. <https://doi.org/10.1016/j.apmr.2020.10.113>

The investigators of this study sought to develop a consensus statement on the treatment of communication and swallowing during COVID-19. As speech-language pathologists (SLPs) are part of the ICU team, providing key roles in the intensive care unit and on tracheostomy teams, they were the focus of this study. SLPs also provide clinical expertise in cognitive-communication and swallowing functions in the clinical management of patients during and after mechanical ventilation.

The survey included 66 statements that pertained to workforce planning and management of communication and swallowing function in the ICU. Participants in the survey included thirty-five SLPs from six continents and representing 12 countries. Each of the participants had greater than five years of clinical experience (median of 15 years). All recruited SLPs were known to the investigators or identified by peers as having expertise in communication and swallowing in the ICU. A modified Delphi methodology was utilized, with three electronic voting rounds. Consensus was achieved for 97% of the questionnaire's 66 statements. The statements that did not reach consensus were related to classifying aerosol generating procedures for communication and swallowing.

Findings from the survey suggested guidelines to help with the design and delivery of services to improve communication and swallowing function, while protecting and limiting risk of spread of the virus. The authors concluded that these statements provide support and direction for all members of the rehabilitation team as the services relate to patients admitted to the ICU during a global pandemic.



Insights From an Interprofessional Post-COVID-19 Rehabilitation Unit: A Speech and Language Therapy and Respiratory Medicine Perspective

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Objective: We present a case report that complements the conclusion of Stam et al. in their call to rehabilitation facilities to anticipate and prepare to address post intensive care syndrome in post COVID-19 patients.

Methods: The case report presented here provides insight into treating mechanically ventilated post COVID-19 patients.

Results: Early intervention with dysphagia therapy and speech therapy and ventilator-compatible speaking valves, provided within an interprofessional collaborative team, can mitigate the potentially negative consequences of prolonged intubation, long-term use of cuffed tracheostomy, and post intensive care syndrome resulting from COVID-19.

Conclusion: Such a treatment approach can be used to address what is important to patients: to be able to speak with family and friends, eat what they want, and breathe spontaneously.

Key words: COVID-19; post intensive care syndrome; speech and language therapy; swallowing; rehabilitation; tracheostomy management; speaking valve.

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We read with interest the call for action by Stam et al. (1), for rehabilitation facilities to anticipate and prepare to address post intensive care syndrome (PICS) resulting from SARS-CoV2 (COVID-19). Stam et al. emphasized the importance of adequate screening and early intervention for mechanically ventilated post-COVID-19 patients. As clinicians in speech and language therapy (SLT) and respiratory medicine, we would like to complement their conclusions by reporting insights from our experience treating this patient population in a rehabilitation facility for spinal cord injury/disorders and weaning centre.

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<https://medicaljournals.se/jrm/content/html/10.2340/16501977-2735>

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LAY ABSTRACT

This case report aims to complement the conclusion of Stam et al. in their call to rehabilitation facilities to anticipate and prepare to address post intensive care syndrome in post COVID-19 patients. The case report provides insight into treating mechanically ventilated post COVID-19 patients. Early intervention for swallowing and with speech therapy and the use of ventilator-compatible speaking valves, provided by an interprofessional collaborative team, can reduce the potentially negative consequences of prolonged invasive ventilation and post intensive care syndrome resulting from COVID-19. Most importantly, such a treatment approach can be used to address what is important to patients: to be able to speak with family and friends, eat what they want, and breathe spontaneously.

Patient Population

As part of the response to the COVID-19 pandemic, a separate ward was set up for post-COVID-19 patients in the Swiss Weaning Centre at the Swiss Paraplegic Centre (SPC), Nottwil, Switzerland. This post-COVID-19 designated ward is exemplary of how intensive care medicine and interprofessional rehabilitation can be combined to provide an effective and efficient care unit. From 15 April to 17 June 2020, this 6-bed interprofessional unit treated 4 female and 13 male patients, ranging from 33 to 75 years of age. The mean length of stay was 20.3 days (range 10–30 days). More than 50% of the patients received complete mechanical ventilation, while the remainder received partially mechanical ventilation combined with spontaneous breathing. All patients were transferred to the SPC for weaning, as the weaning failed in the referring hospitals. More than 60% of the patients had severe critical illness polyneuropathy, and all experienced moderate-to-severe dysphagia and pronounced multifactorial sarcopaenia. Furthermore, a commonality in all patients was the presence of hyperactive (predominately) to mixed delirium. By the end of June, 1 patient was still in a critical condition, 2 had died, 13 had been discharged to standard rehabilitation in the SPC or another rehabilitation hospital, and 1 was transferred back to the psychiatric ward of the originally referring hospital. The patients who recovered were completely oriented, decannulated, and fully oralized (able to eat, drink and swallow medication without increased risk of aspiration).

Interventions

The following crucial treatment elements were able to expedite improvement in the 17 patients:

- close collaboration within a small, COVID-19-designated ward;
- interprofessional teamwork oriented toward the needs of the patients;
- team members were well-informed regarding the use of ventilator-compatible speaking valves;
- established tracheostomy management based on many years of experience in spinal cord medicine (tetraplegia).

Objective

This case report aims to highlight that the early application of a ventilator-compatible Passy-Muir® Tracheostomy & Ventilator Swallowing and Speaking Valve is an essential therapeutic and rehabilitative intervention for COVID-19 patients, based on our experience treating patients in the COVID-19-designated ward at the SPC.

Mechanical Ventilation: A General Picture

Patients who experience severe COVID-19 symptoms due to extremely limited lung functioning often cannot be extubated, indicating the need for a tracheostomy. This was the case for all 17 patients treated in the post-COVID-19 designated ward at the SPC. Mechanical ventilation using a cuffed tracheostomy tube (an inflated balloon surrounds the tube) omits the use of an orotracheal tube in the pharynx and larynx, forcing inspiration and expiration to take place completely through the tracheostomy tube. This results in a continued lack of airflow through the upper respiratory tract, with serious consequences for the patient's ability to communicate and swallow. For example, without airflow through the larynx, pharynx, mouth, and nose, the production of voice and speech, as well as reflexive and/or voluntary throat-clearing and coughing as important salivation and phlegm clearing functions are impossible. Furthermore, the collection of saliva resulting from deficient clearing functions can lead to long-term desensitization of the pharynx, larynx and the area of the trachea above the cuff, as well as increased aspiration of saliva up to the cuff at least. Consequently, desensitization of the upper respiratory tract organs "trains" dysphagia in patients, which can lead to silent aspiration with potentially life-threatening pneumonia, even on the ward. Moreover, studies have shown that long-term cuffed tracheostomy tubes negatively affect the overall rehabilitation process (2–8).

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The inability to communicate verbally has huge negative consequences for a person’s mental health and quality of life, often coupled with misunderstandings and frustration (10–12). For COVID-19 patients, this is exacerbated by the absence of face-to-face contact with friends and family. In order to facilitate verbal communication and oral food intake in fully ventilated patients in its intensive care unit (ICU), SPC generally uses ventilator-compatible speaking valves as soon as the positive end-expiratory pressure (PEEP; i.e. the pressure given at the end of the exhalation phase of a respiratory cycle that allows increased time for oxygen exchange) (13) is <8 cmH₂O. The cuff of the tracheostomy tube must be completely deflated before the valve can be inserted. Furthermore, the treatment team must ensure that the exhaled air can pass alongside the tracheostomy tube (as seen in Fig. 1). Making sure that there is sufficient space between the tracheostomy tube and the trachea is essential to safeguard the patient from suffocating and to ensure that the serum CO₂ level does not increase. Therefore, the outer diameter of the tracheostomy tube needs to be selected to suit the anatomy of the patient’s trachea. This is essential for safe use of the speaking valve. Also key to safe use is a well-trained treatment team regarding the use of ventilator-compatible speaking valves. Moreover, a closely collaborating interprofessional team can immediately address any potential patient safety issues, tipping the balance toward benefits over the risks of using ventilator-compatible speaking valves.

The SPC has approximately 20 years of positive experience with this interprofessional approach to early valve use. The earlier the patient is able to physiologically exhale, at least intermittently, the greater the likelihood that desensitization and dysphagia can be avoided and the earlier these problems can be treated, if necessary. Moreover, there is some evidence that the use of speaking valves decreases the respiratory rate and the amount of CO₂ in exhaled air (EtCO₂) (14). It is important to note, however, that since the approach of deflating the cuff and deployment of a ventilator-compatible speaking valve with COVID-19 patients is considered an aerosol-generating measure, the decision to employ this treatment approach must weigh the health risks to the interdisciplinary team members versus the patient benefits. In light of the risk–benefit considerations, SPC decided to employ this approach with COVID-19 patients with strict adherence to the established precautionary protection measures and optimal use of personal protective equipment (PPE). There has been no evidence of virus transmission from patient to staff resulting from this approach at SPC.

Case Report

An example of employing ventilator-compatible speaking valves in the treatment of COVID-19 patients is a 62 year-old man who was admitted to SPC with severe acute respiratory distress syndrome due to COVID-19. With no relevant pre-existing conditions, he presented with critical illness polyneuromyopathy, ventilator-associated diaphragm dysfunction, weaning failure, tracheotomized, and completely mechanically ventilated with inflated cuff. He was completely nourished through a nasogastric tube. Due to the cuffed tracheostomy tube that was inserted 6 weeks prior to admission, the patient was unable to inform the treatment team of his needs or express his fears and experience of pain. Furthermore, it was impossible for him to (video) call with his family, and he was unable to write messages due to his tetraplegia. During a time of a serious health crisis and uncertainty about the patient’s prognosis, the inability to communicate, coupled with the impossibility of receiving visits from family (as part of the COVID-19 precautionary protection measures) implies for the patient unimaginable isolation, a feeling of being trapped, stress, psychological burden and, ultimately, physical burden. Interventions to restore the ability to communicate verbally are therefore essential.

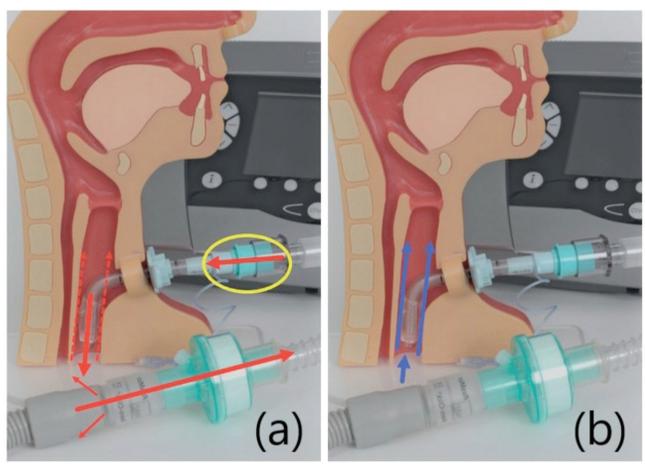


Fig. 1. Inserted ventilator-compatible speaking valve (PMV® 007, Passy-Muir, Inc., Irvine, California (USA)) during ventilation. (a) Airflow during inspiration, and (b) during expiration (9). There must be sufficient space next to the empty cuff for the exhaled air.

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In close collaboration between the SLTs and intensive care nurses, a ventilator-compatible valve could be inserted for the first time in this patient. Initially he struggled with accumulated pharyngeal secretion, but with some compression of the abdomen, he was able to cough it up. This led to an improvement in airflow in the upper respiratory tract and the first step toward enabling vocalization. After the second attempt, he was successful in speaking with the speaking valve, and a higher frequency of swallowing was observed. The patient was even able to swallow, albeit hesitantly, the first bolus of food (raspberry sorbet), which he clearly enjoyed, verbally commenting “it is good”; a small step towards normalcy. After 2 weeks of intensive functional dysphagia therapy, he was able to eat soft food with supervision while breathing spontaneously with the speaking valve. However, due to limited pharyngeal/laryngeal sensitivity and the associated risk of saliva aspiration, and weak voluntary coughing (200 L/min), tracheal suctioning was required. Moreover, his lungs were severely strained by COVID-19. To avoid unnecessary complications due to aspiration, the SLTs conducted frequent clinical evaluations of swallowing functions, and together with the ear-nose-throat (ENT) physician, performed fiberoptic endoscopic evaluation of swallowing to monitor swallowing. Four weeks after admission to the ICU, it was possible to safely remove the patient’s nasogastric and tracheostomy tubes. Interprofessional tracheostomy management enabled the patient to communicate verbally with his family, express his feelings about his dramatic experience with COVID-19, and eat and enjoy his favourite foods.

Discussion

Speaking and swallowing are major milestones in a patient’s rehabilitation, as evidenced by this case report. The authors have observed that improvement in these aspects of functioning have an anti-delirogenic effect and can be a motivator for patients to be more actively involved in their rehabilitation. We postulate that early intervention with dysphagia therapy and speech therapy and the use of ventilator-compatible speaking valves provided within an interprofessional collaborative team can mitigate the potential negative consequences of prolonged intubation followed by long-term use of cuffed tracheostomy, and extensive ICU-acquired weakness or PICS resulting from COVID-19. Furthermore, the early application of ventilator-compatible speaking valves supports weaning off mechanical ventilation (14–16). The authors recognize that this approach may be difficult to implement in some acute settings; nevertheless, the benefits to patients warrant the attempt. Specifically,

such an intervention approach can improve verbal communication and help patients to regain their sense of taste and smell (if not damaged by COVID-19) and considerably contribute to patients’ overall well-being and early restoration of quality of life.

The authors have no conflicts of interest to declare.

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Evolving Ethical Conversations in Speech-Language Pathology

Tiffany Oakes, MS, CCC-SLP

Ethics: the discipline dealing with what is good and bad and with moral duty and obligation

(Merriam-Webster, 2020)

From ancient civilizations to modern considerations, society has evaluated the need for ethical guidance. Developing a values-based framework that is philosophically consistent attempts to steer a society's, or a group within a society's, interpretation of what is right and wrong. Clinicians in the medical field have a responsibility to provide both evidence-based and ethically-based care. However, sometimes the patients and practices of speech-language pathology do not follow clean lines and leave speech-language pathologists (SLP) weighing the ethics of their decisions.

Some of the earliest literature found in ancient cultures reveal incidents concerning ethical behavior. Texts, such as the Sumerian *Farmer's Almanac* and the Egyptian *Instruction of Amenemopet*, outline acceptable considerations for the poor, and a great number of civilizations put forth a version of the golden rule, at least in its negative version: do not do to others what you would not want done to yourself (MacIntyre, 1998). With society and understanding constantly evolving, do these rudimentary ethical principles still apply to the modern-day complexities associated with making sound clinical decisions? An evolution of traditional ethical standards has been observed because standards for new issues are created, challenged, and revised. The conversation is often sparked by new developments in patient care as it constantly evolves. The development of bioethics, the moral ethics specific to healthcare, provides guidance on topics ranging from life and death situations to more common decisions, such as advance directives and organ donation. A sound understanding of ethical principles lies at the heart of all healthcare professions, and it is a requirement of many licensing and accrediting entities that healthcare professionals participate in regular education on the subject to keep up-to-date ethical practices in the forefront of clinical care.

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Code of Ethics

An established code of ethics is an essential part of any profession that claims to be self-regulating. Within all codes of ethics, there are consistent principles such as ensuring safe and effective care; establishing parameters of behavior; and promoting an environment of human rights, values, and customs.

Because the practice of medicine ... affects the health, well-being, and quality of life of individuals served, adherence to a code of ethical conduct is critically important in the health care environment.

(Kummer & Turner, 2011)

There also are considerations for universal values such as trustworthiness, respect, and caring. These standards touch all areas of healthcare. Navigating ethical concerns may be complicated and has led many healthcare boards and facilities to establish bioethics committees to specifically address these issues.

Specific to the practice of speech-language pathology, the American Speech-Language-Hearing Association (ASHA) developed a Code of Ethics to guide clinical decisions and practice (found at <https://www.asha.org/code-of-ethics/>). The ASHA Code of Ethics calls for SLPs to develop clinical practice on principles of duty, accountability, fairness, and responsibility (American Speech-Language-Hearing Association, 2016). By maintaining good ethical standards, SLPs ensure the welfare of the consumer, protect their own reputations, and the integrity of the profession. It is a framework designed to support the SLP's day-to-day decision making.

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Clinical Competency

Maintaining clinical competency is essential to providing effective evidence-based and ethical care. This means SLPs are practicing at the top of their license, efficiently utilizing the full extent of their education and training. Being competent requires the SLP to have the necessary ability, knowledge, and skill to perform a task successfully. An important ethical consideration is determining, not defining, competency. Does a passing score on a competency evaluation accurately demonstrate the SLP's skill level or comfort level for independently performing that task? The SLP also has the responsibility to perform a truthful self-assessment of skill levels and competencies and have an open conversation with supervisors concerning what further training and support may be needed to both look and feel competent.

SLPs are required to combine education, expertise, and ethics into the development of well-balanced plans of care to address disorders of cognition, communication, and swallowing. Beyond addressing the deficits and needs of the patient, these plans must also consider a patient's rights and safety, along with the time and costs. Simple, right?

The development of an individualized plan of care for each patient and situation may be anything but simple. It may be difficult and frustrating at times, which makes it appealing for an SLP to follow someone else's guidance, such as a supervisor. This allows increased opportunity for external pressures that may conflict with the Code of Ethics. Common productivity pressures include requirements to meet certain treatment numbers or to treat patients who may not actually need therapy or may not benefit from it. Pressure by a supervisor for an SLP to sacrifice quality of care for a quota that needs to be fulfilled, instead of basing it on patient needs, would be a violation of ethical standards. The ASHA Code of Ethics calls on the SLP to take responsibility for the welfare of the persons served and to exercise independent judgement when recommending and providing professional services (American Speech-Language-Hearing Association, 2016). Additionally, products and services should only be provided when benefit may be reasonably expected.

With the threat of losing a position, an SLP may succumb to productivity pressures. Consider, though, that these actions may not be only ethically wrong, but these actions also may be illegal. For example, reporting and billing for longer treatment times than what was actually provided is considered healthcare

fraud, and providing unnecessary or redundant services is healthcare abuse. Ethically, several rules have been violated. Following an administrative staff's mandates instead of the needs of the patient is not demonstrating independent clinical judgment. Competency as an SLP is not being demonstrated when the clinician is providing services to patients who may not need it.

Dysphagia

Within the practice of speech-language pathology, dysphagia management presents unique challenges when ethical considerations must be contemplated. If dysphagia is suspected, an SLP may request an instrumental swallowing study to confirm, but the patient has the right to refuse any aspect of care, from the recommendation for an instrumental to the treatment intervention. Additionally, the patient may request and consent to treatment of dysphagia without the instrumental assessment. Patients have that right. ASHA allows that there are indications for non-instrumental clinical examinations "to observe the presence (or absence) of signs and symptoms of dysphagia" and may include observing the patient while eating consistencies that are typically eaten by the patient (American Speech-Language-Hearing Association, 2021). It is the responsibility of the SLP to weigh a patient's wish with the ethical considerations, skills, and competencies of the SLP when determining a treatment plan.

Often, in the treatment of dysphagia, an SLP will recommend modified diets, and again, the patient has the right to refuse. In any of these situations, it is important that the SLP provide thorough education regarding the benefits of the recommended services and risks of refusal so that the patient can make an informed decision. If the patient continues to refuse the service, the SLP must respect the patient's rights and decisions. One way to do so is to form a plan, according to competencies and ethical boundaries, that provides the patient as much benefit and safe intervention within the boundaries set by the patient. Labeling the patient as non-compliant and discontinuing services may cause risk to the patient and may constitute abandonment. True non-compliance occurs when a patient does not take a prescribed medication or does not follow a prescribed treatment plan. Non-compliance is considerably less common than a patient who is exercising the right to refuse a particular treatment while still seeking the SLP's services in other areas and the benefits from those services. Just as important as distinguishing the right to refuse from non-compliance is the SLP's

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ability to recognize non-compliance as a possible form of self-neglect, forgetfulness, apathy, or even a cognitive-communicative deficit. Appropriate recognition of the patients needs may lead to referrals, rather than discharging a patient from services.

Ethical considerations regarding dysphagia treatment also present themselves frequently due to end of life or quality of life situations. Long-term modified diet plans have higher rates of non-compliance, and an SLP may need to review the benefit of the modified diet and compare it to the risks of undernutrition or dehydration (O’Keeffe, 2018). A patient may benefit more from education on the management of dysphagia and focusing on the importance of maintaining good communication, which may be more functional for the patient at the end of life (Brady Wagner, 2008).

Communication

Patients have a right to communicate, and, typically, a patient’s preferred method of communication is whatever their typical form of communication is when not under medical care. Hasmi et al., (2010) emphasized the importance and complexity of the decision-making process regarding communication. They describe how the inability to speak has been shown to increase psychological distress, depression, and malaise. They also addressed nonverbal communication techniques, e.g., lip reading, communication boards, writing or typing, and computerized augmentative communication systems, which are imprecise, cumbersome, costly, and prone to breakage. For example, lip reading, which is commonly used with the patient having a tracheostomy, has been shown to have poor effectiveness, with lip-reading accuracy at very low level of barely greater than 10% (Altieri, 2011).

SLP’s have an ethical responsibility to restore a patient’s access to communication. In 2016, The Joint Commission reported that communication is essential to develop a safe health care environment and that strong patient-provider communication results in better acclimated patients who are less likely to experience adverse events and unnecessary hospital readmissions. The Americans with Disabilities Act also calls on facilities and clinicians to provide aids and services which allow effective communication with people who have communication disabilities, and the goal is for that communication with people with disabilities to be as equally effective as communication with people without disabilities (ADA, 2014). Essentially, the Americans with Disabilities Act regulations strive for a communication method to be

chosen for the patient with two essential considerations: (1) which possible method is most effective and (2) which possible method will result in the least opportunity for error.

By improving communication, a patient will have a say in their treatment and care, possibly decreasing the risk for further treatment dilemmas which could lead to ethically challenging situations. However, with communication disorders, particularly receptive language and processing disorders, the SLP must first determine if these deficits affect the patient’s ability to provide effective communication. Often, communication effectiveness is a factor used in determining the ability to provide informed consent and may impact determinations of competency.

There is risk associated with assuming a patient’s cognitive capacity. The SLP must consider the possible consequences if no attempt is made to support communication. Not only may poor communication access mask other underlying issues, but it also may cause deficits to be seen where none exist. The clinician determines the existence of communication impairments, and whether language or cognitive deficits co-exist, and then provide treatment and support for communicating medical care decisions as needed (Kagan et al., 2020). Conversely, if the impairment affects decision-making, then the healthcare team may address the ethics of surrogacy, a healthcare representative, and advance directives. If no decisions on desired healthcare measures were made prior to the impairment, a representative may have to be appointed to make decisions for the patient. Regardless of the patient’s cognitive processes, it should be the initial goal of the SLP to work towards restoring the ability to express decisions and maintain autonomy, through the patient’s primary communication style.

To limit exposure and possible spread of the COVID-19 virus, some facilities limited which disciplines had access to patients who were confirmed or presumed positive, and SLPs were often in the restricted access group. Especially for patients with tracheostomy or who were treated with mechanical ventilation, the concern for aerosol generating procedures would delay access to communication. This new practice could affect the patient’s ability to participate in their own medical decisions. Restoration of voicing and communication also has been related to improved quality of life and recovery outcomes (Freeman-Sanderson et al., 2016). The decision to deny this potential benefit to a patient would certainly constitute an ethical dilemma.

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Conclusion

The ethical considerations in speech-language pathology are as diverse as the discipline itself. While ethics are continually evolving, the core framework of practicing good ethical principles remain the same. It is important for SLPs to have a firm understanding of the basic principles and to build a practice upon them. To meet these needs, the SLP studies new information and guidelines. As unique patient situations or new diseases and treatment approaches arise, the SLP must rely on their education, training, clinical skills, competence, and foundational ethics to make appropriate decisions regarding patients' care. The SLP should not view ethical concerns as an isolated burden but should feel comfortable with seeking the counsel of others, particularly an ethical committee designed for such a purpose, to discuss complicated situations. Ethical conversations and discussions may be helpful and insightful. After all, SLPs are the professional experts when it comes to communication.

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Article Summary

COVID-19: Case Studies and Decannulation

dos Santos, T. D., Gomes, F. M. L., Gomes, D. C., Taquemori, L. Y., & Tonelotto, A. (2021, April). *Speech therapy and tracheostomy rehabilitation in COVID 19: Five preliminary case reports* [Unpublished manuscript]. Retrieved from <https://assets.researchsquare.com/files/rs-320075/v1/571274bb-a10f-4de3-bce5-f52bc3047c38.pdf>

This review presents five patients, ranging in age from 41 to 74 years, with COVID-19 through whom they examine the process of weaning from tracheostomy. The authors discuss the role of the speech-language pathologist on a multidisciplinary team for cuff deflation, speaking valve use, and decannulation. Overall, the decannulation process took up to 10 days, with a mean duration of 6.4 days.

Speech-language evaluations were conducted to determine both readiness for cuff deflation and to assess swallowing. The authors report the use of personal protective equipment and pre-oxygenating patients with 100% FiO₂ to lessen the risks with aerosol generating procedures. Early use of a speaking valve was done to allow verbal communication with family and friends, assisting with decreasing anxiety and elevating mood. Initially, the speaking valve was worn for three hours and then advanced to continuous use on day two. This facility has a policy to then change the tracheostomy tube to a metal tracheostomy tube, if use of a speaking valve is successful. This is done prior to decannulation, which occurs if the patient remains stable for 48 hours (24 hours during COVID-19). Swallowing was also addressed during this time to transition the patients from enteral feeding to oral feeding as soon as possible. None of the patients exhibited moderate or severe dysphagia and transitioned easily.

The authors use the five case studies to illustrate their process and report on how weaning and decannulation proved to be safe, fast, and promising in regard to optimization of care during the pandemic.



Ethical Considerations with Patients Following Tracheostomy: A Respiratory Therapy Consideration

Michael S. Harrell, BS, RRT

Ethical considerations may at times seem far removed from the day-to-day work of respiratory therapists (RT) providing direct patient care. Nothing could be further from the truth. Whether consciously considered or not, an ethical framework underlies and informs every interaction between the respiratory therapist and patient. It seems prudent then to consider the ethical principles which guide these everyday interactions and may have a profound effect on the life and health of patients.

Simply defined, ethics is the field of study involving good and bad behavior. A focus on medical ethics demands more direct consideration as it applies to healthcare, and the continuously changing nature of healthcare delivery renders the on-going discussion of applied ethics a necessity. Advances in medical care also necessitate an examination of ethical standards which emerge on many levels to meet the demands for proper patient care and professional practice (King, 2018).

Ethics in the Field of Respiratory Therapy

In the field of respiratory therapy, technology is a significant factor impacting the care provided. Historically, the iron lung was the primary method of providing ventilation support for polio induced paralysis; however, current technology involves computer driven mechanical ventilators with sophisticated options and graphic monitoring capabilities. This dramatic change in technology has necessitated a change in the supportive care provided for patients. As technology and the related patient care advance, a careful and on-going ethical consideration regarding patients' rights and access to communication is essential to insure safe, effective, and responsible care.

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For ethics to be meaningful at the patient care level, its principles need to be applied to the clinical situations unique to each healthcare profession. The practice of respiratory therapy is represented by a professional association, a national credentialing board, and state licensing boards; it is self-regulating; and it follows a statement of ethics and professional conduct. The professional association is the American Association of Respiratory Care (AARC), and the national credentialing board is the National Board of Respiratory Care. The position statement on ethics has been established by the American Association for Respiratory Care and may be found on the AARC website at <https://www.aarc.org/wp-content/uploads/2017/03/statement-of-ethics.pdf>.

Sixteen specific statements make up the ethical guidelines for the respiratory care profession. The introduction to the position statement contains mandatory language. The word used is "shall," not "may," or even "should." This language emphasizes that the code is not optional but, instead, the guidelines apply to every respiratory therapist in every patient care situation.

In the conduct of professional activities the Respiratory Therapist shall be bound by the following ethical and professional principles. Respiratory Therapists shall...

<https://www.aarc.org/wp-content/uploads/2017/03/statement-of-ethics.pdf>

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When applying these ethical guidelines to the care of patients with a tracheostomy, there are five general categories to consider:

- *Competency – how we care for patients.*

Competency is defined as having the necessary ability, knowledge, or skill to do something successfully. This category of principles not only includes conducting duties competently, but promoting and practicing evidence-based care and seeking continuing education opportunities to improve and maintain professional competence.

- *Patient rights – what patients shall expect from us.*

This group of principles includes the respiratory therapist's responsibility to respect and protect the legal and personal rights of the patient, including informed consent, the right to privacy, and the right to refuse therapy. The respiratory therapist also shall provide care "without discrimination on any basis, with respect for the rights and dignity of all individuals."

- *Legal compliance – the respiratory therapist must follow the law.*

This concept is simple. The respiratory therapist must not participate in illegal or unethical acts. Compliance with state or federal laws which govern and relate to the practice of the respiratory therapist is also mandated.

- *Collaboration – the respiratory therapist must work as a member of the team.*

This principle mandates that all respiratory therapists must maintain respectful, functional, and beneficial relationships. RTs also must establish appropriate communication with all health professionals. This statement specifically prohibits bullying of other healthcare professionals.

- *Professional behavior – respiratory therapists must act with integrity and foster trust.*

This set of principles relates to the importance of professional integrity, objectivity, and trust.

How do these principles apply to the everyday care of patients with a tracheostomy? Because of the redirection of air flow through the tracheostomy tube, communication presents itself as a major concern when caring for an individual with a tracheostomy. Being competent, providing evidence-based care, and assisting with access to communication involves many of the ethical principles for RTs in clinical practice.

Case Example One

A male patient on a ventilator was under deep sedation due to the severity of illness and the level of mechanical ventilator support required. Due to a severe infection, a powerful antibiotic needed to be administered. The physician and caregivers noted a significant rash and were concerned that the high-powered antibiotic could be the cause. This could indicate a significant adverse response to the antibiotic, which was needed to successfully treat the infection. However, the patient's medical history did not provide information that would answer the question of whether the medication or another issue was causing the rash. This presented a serious dilemma to the physician and healthcare team.

The patient was unable to communicate any additional medical history which may explain the rash. Without a full history, the medical team had limited information to use that could be helpful in deciding the course of therapy. However, the patient had used a Passy Muir® Valve (PMV®) in the past to speak while on the ventilator. The physician made the decision to bring the patient out of the deep sedation and use the Valve to speak directly to the patient. Once the patient was alert enough to answer questions, the patient informed the medical team that this rash was due to long-standing psoriasis. The patient was returned to deep sedation, and the antibiotic was continued. Appropriate and life-saving care was provided because of the restoration of the patient's ability to communicate. The unknown diagnosis of psoriasis nearly prevented appropriate therapy. How can the healthcare professional provide the required competent care if pertinent information is unknown, and the patient cannot communicate the history?

Bartlett et al. (2008) found that patients with communication problems were three times more likely to experience a preventable adverse event than patients without communication problems. As illustrated in the above example, the patient's ability to communicate medical history had an impact on the decisions being made. The Joint Commission (2016) also strongly encourages patient participation in their own care as it may lead to better outcomes. Better outcomes require effective communication.



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Ethical Considerations

Important ethical considerations surround the selection of communication options for the patient with a tracheostomy. The ethics principle which states that respiratory therapists shall “comply with state or federal laws which govern and relate to their practice” has direct impact on addressing the needs of patients with tracheostomies (AARC, 2015). The Americans with Disabilities Act provides federal guidelines related to appropriate interventions for those people with disabilities. Disabilities are defined as any physical or mental impairment that substantially limits one or more major life activities. Included in this area is the ability to communicate with the ADA requiring that each patient be provided the most effective method of communication possible (U.S. Department of Justice, Civil Rights Division, Disability Rights Section, 2014). Published guidelines specifically related to patient rights based on the ADA stipulate that (U.S. Department of Justice, Civil Rights Division, Disability Rights Section, 2005):

- The ADA applies to all hospital programs and services.
- Wherever patients are interacting with hospital staff, the hospital is obligated to provide effective communication.
- Effective communication is particularly critical in healthcare settings where miscommunication may lead to misdiagnosis and improper or delayed medical treatment.

These regulations have obvious applicability when considering the communication options for patients with a tracheostomy. AARC mandates that RTs respect and protect the legal and personal rights of patients, including the right to privacy, informed consent, and refusal of treatment (AARC, 2015). Is obtaining consent, or determining the patient’s medical choices more dependable and less prone to error when the patient can speak? Here is another real-life situation to illustrate this point.

Case Example Two

An elderly gentleman was hospitalized in the critical care unit of an acute care hospital, receiving mechanical ventilator support. He had a terminal illness, and his medical prognosis was poor. This gentleman had no advance directive, and his son did not know his father’s wishes regarding life support. As it became necessary to determine how to proceed with life support, the medical team and family, including the physician, nurse, respiratory therapist, and the man’s son, gathered in the patient’s room.

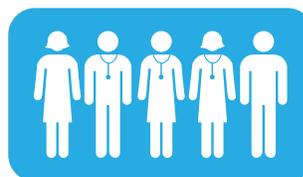
After some explanation, the physician asked the patient if he wished to have the ventilator turned off. After watching the patient’s face closely, all present determined that the man had said, “yes.” This meant that the ventilator would be discontinued, and the patient would be allowed to die.

However, prior to carrying out this decision, the nurse remembered that this man had used a speaking valve in the past. The nurse was able to retrieve the Valve and the respiratory therapist placed it in the ventilator circuit. The same question was then repeated to the patient, “Do you want us to discontinue your ventilator?” The man responded with a clear verbal “no.”

This situation powerfully illustrates the importance of having access to effective communication and the healthcare professional’s responsibility to respect the patient’s right to make their own healthcare decisions. Providing speech for this individual with a tracheostomy and on mechanical ventilator support made the difference between life and death. Regardless of the opinion of any of the health care providers, or this man’s son, the patient had the right to make the decisions about his own health care. It was the healthcare provider’s responsibility, both ethically and legally, to provide the communication method which would allow him to do so. It also demonstrates the importance of working together as an interdisciplinary team.

Working within a Team

Per the position statement on ethics, respiratory therapists work to achieve and maintain respectful, functional, beneficial relationships and communication with all health professionals (AARC, 2015). This principle addresses the need to work closely with the healthcare team. Heffner (2005) reported that studies have demonstrated more rapid decannulation and improved outcomes when trained multidisciplinary teams with access to physician specialists and standardized protocols promoted adherence to bundled tracheostomy care. Respiratory therapists then have an ethical responsibility to work effectively together with the interdisciplinary team to accomplish the best possible outcome for the patient with a tracheostomy. This also indicates the need to develop and practice in accordance with interdisciplinary protocols.



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An important aspect of teamwork is providing effective hand-off communication. Poor hand-off communication may lead to errors, near misses, and adverse events. A study conducted at Johns Hopkins found that medical errors are now the third leading cause of death in the US; however, they share that this finding may be an under-statement, as there is not an assigned ICD code for human and system factors, and it does not appear on death certificates (Makary & Daniel, 2016). The science of safety is increasingly considered as it relates to patient care, harm, and death. The primary considerations are communication breakdowns, diagnostic errors, poor judgement, and inadequate skill: all are errors which may occur at the individual or system level. These errors are, however, preventable which provides for room for improvement.

Good communication improves quality and safety. When transferring the patient with a tracheostomy to another facility, care unit, or shift a complete patient history and all pertinent information must be provided. An assumption of knowledge should not occur but instead all the specific information necessary to provide safe and effective care be provided.

Conclusion

Respiratory therapists must act with integrity and foster trust. For this accomplishment, each individual respiratory therapist needs to develop a knowledge and sensitivity to the content within the statement of ethics provided by the AARC. The patient population with tracheostomies is an important group of patients for whom we, as respiratory therapists, provide frequent care. Considering the practical application of ethics to the daily functions of healthcare is a part of the respiratory therapists' job.

Although it may not seem so in the day-to-day rush of providing patient care, ethical considerations are important, even unavoidable, in the effort to provide that care. It is likely, however, that the most significant barrier perceived to the provision of care by practicing healthcare professionals is time: the push to do more with less, to see more patients in a shorter time. In the current hospital environment, the time crunch is exacerbated by the pressure of increased critical care needs brought on by the COVID-19 pandemic. This is a day-to-day balance which can only be achieved by the individual healthcare professional. Supervisors, managers, administrators, educators, and practitioners have the responsibility to provide essential resources and support, creating an environment in which ethical consideration and practice is built into the workplace culture. Ultimately, the decisions made daily at the bedside are in the hands, minds, and hearts of each individual caregiver.

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Glossary of Terms: Understanding Healthcare Ethics

Kristin King, PhD, CCC-SLP

Ethical standards and codes have existed throughout history. One of the first known ethical codes was written in approximately 1754 BCE by the King of Babylon and is referred to as the Code of Hammurabi. The Ten Commandments have been an important foundation for ethical behavior for Judaism, Islam, and Christianity for centuries. The writings of Gautama Buddha and Confucius in the fourth and fifth centuries BCE have contributed significantly to moral thought and behavior within eastern cultures. Discussions on various philosophies of ethics continue to evolve as societal and individual challenges cause dilemmas that shape how we think, act, and react. This list provides a quick review of some of the terms used in discussions and writings on healthcare ethics.

Seven Principles of Healthcare Ethics (Schroder-Back et al., 2014):

Non-maleficence – the idea that a medical professional has a duty to do no harm and may not allow harm through neglect.

Beneficence – defined as an act of charity, mercy, or kindness. The connotation is that one must do good unto others, including having a moral obligation to do so. From a professional standpoint, it is the foundation of having a moral imperative of doing right (Kinsinger, 2009).

Health maximization – a healthcare philosophy based in resource-utilization. It weighs the economic value of various preventive measures and therapies. It favors options that the most efficient.

Efficiency – since there is always more health needs than resources, this duty is to use scarce health resources efficiently, allowing more benefit for the greatest number of people.

Autonomy – the quality or ability to be self-governing, moral and personal independence. This is the ability of a person to act on their own values and interests, using self-knowledge.

Justice – moral obligation to act on a claim based on fairness and equality. Broadly, it means that people receive what they deserve; however, “deserving” has differing viewpoints depending on context and in what profession.

Proportionality – responses should be proportional to the good that will be achieved or the harm that may occur. In medical ethics, interventions and risks should be proportionate to the lives saved.

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Ethical Philosophies:

Deontological – the idea that at least some acts are morally obligatory regardless of the consequence on human welfare. Familiar phrases that embody this philosophy are: “Duty for duty’s sake,” and “virtue is its own reward.”

This ethical philosophy judges whether an action is right or wrong based on a moral code. Consequences of those actions are not taken into consideration. These theories emphasize how patient-centered care reflects ethical standards inherent in medicine. Examples are respect for persons and shared decision-making.

Utilitarian – the idea that a course of action should be taken based on the most positive outcome. It focuses on the consequences of actions – determines right from wrong. Looking at the benefit and costs to all stakeholders. It is society-centered, striving to achieve the greatest good for the greatest number.

Pragmatism – rejects the idea that there is any universal ethical principle or universal value. It holds that principles should be social constructs that are evaluated in terms of their usefulness. Meaning is found in the practical consequences. If something is considered to be true then it does not have to be confirmed as universally true. Some consider this to be an “American” philosophy (Serra, 2019).

Kantian – the idea that people have a duty to do the right thing, even if it produces a bad result. A set of universal moral principles that apply to all humans, regardless of situation.

Kantianism and utilitarianism determine whether an act is right or wrong differently. According to **Kant**, it is based on intentions of a particular action. While **Utilitarians** feel that actions should occur based on what will produce the greatest amount of happiness (Sirotkin, 2014).

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Article Summary

Tracheostomy Care & COVID-19

Rovira, A., Dawson, D., Walker, A., Tornari, C., Dinham, A., Foden, N., Surda, P., Archer, S., Lonsdale, D., Ball, J., Ofo, E., Karagama, Y., Odutoye, T., Simo, R., & Arora, A. (2021). Tracheostomy care and decannulation during the COVID-19 pandemic. A multidisciplinary clinical practice guideline. *European Archives of Oto-Rhino-Laryngology*, 273, 313 – 321. <https://doi.org/10.1007%2Fs00405-020-06126-0>

A narrative review was conducted following experience with over 120 patients with tracheostomy secondary to COVID-19. The authors analyzed currently available evidence for safe tracheostomy care in COVID-19 patients and combined those findings with their facility's clinical experiences with a COVID-19 patient population. COVID-19 has led to an increase in the number of critically ill patients admitted into ICUs due to the severity of illness and a frequent need for long-term mechanical ventilation. At an early stage of intubation and ventilatory support need, careful evaluation was conducted for early tracheostomy (7 to 10 days). Other considerations of tracheostomy needs include airway obstruction, laryngeal edema, unsuccessful extubation due to weakness, and poor secretion management.

A tracheostomy and the use of tracheostomy appliances are recognized as aerosol generating procedures, so healthcare workers are at risk of infection during insertion and subsequent care, even when appropriate personal protective equipment (PPE) is used. Initially during the pandemic, the prevailing thought was that delaying tracheostomies for patients with COVID-19 may reduce risk of aerosolization exposure, but in return, these delays led to patient complications – extended duration of intubation, longer sedation times, and longer use of mechanical ventilation. Benefits of tracheostomy included the ability to improve communication, to participate in rehabilitation, to facilitate secretion clearance, and potentially, to reduce long-term complications such as vocal cord injury, subglottic stenosis, and scarring. The findings from this review, in which the effects of clinical experience were paramount, found that the same basic principles of care should apply to a tracheostomy patient with suspected or diagnosed COVID-19 infection as for any other patient with a tracheostomy in the hospital. However, re-evaluation of current bedside techniques was established, which included keeping cuff pressures in the higher limits of 25 – 30 cmH₂O, starting ventilation therapy with an HME in line, using normal saline to maintain tube patency, providing airway humidification, and only using aerosolized mucolytics, if necessary.

Clinicians in one unit proceeded by starting cuff deflation once the patient is stable. This review found that using one-way valves assists in tracheostomy weaning, facilitating phonation, and increasing verbal communication. The authors stressed that restoring voice during COVID-19 had the added impact on care and benefit to the patient due to strict no-visitor policies. Having a voice allowed the patients to communicate with family and friends via phone or video link. Their findings found that use of full PPE was paramount to working with these patients. The findings also supported the requirements for a coordinated multidisciplinary team approach to ensure infection control, weaning and decannulation, with integrated processes for continuous prospective data collection and audit.

Featured Authors

2021 | Volume 4 | Issue 1



Carmin Bartow, MS, CCC-SLP, BCS-S

Carmin Bartow is a speech-language pathologist (SLP) with over 20 years of clinical experience treating patients in acute care. She has special interest in swallowing and swallowing disorders, head and neck cancer, and tracheostomy and mechanical ventilation. She was instrumental in developing the tracheostomy team in her previous position as an SLP at Vanderbilt University Medical Center. She is frequently an invited speaker at both the state and national levels and has authored a variety of papers. She is currently with Passy-Muir, Inc. as a full-time Clinical Specialist.



Irene Buss, Certified Speech Therapist

Irene Buss graduated from the University of Applied Sciences and Arts Northwestern Switzerland with her Bachelor of Arts in Speech and Language Therapy (SLP) in 2015. Since that time, she has been working as an SLP at the Swiss Paraplegic Centre (SPC) in Nottwil. Her clinical experience pertains primarily to the management of dysphagia, and patients with tracheostomy tubes and mechanical ventilation. Additionally, she has been a board member of the Deutschschweizer Logopädinnen-und Logopädenverband, DLV (German- Swiss Association of Speech and Language Therapists) since 2016.



Kelsey Day, MS, CCC-SLP

Kelsey Day is an acute care speech-language pathologist who specializes in dysphagia management for the patient populations who are critically ill and tracheostomy and ventilator-dependent. Kelsey received her Master of Science degree from Northwestern University and now serves as the Lead SLP at California Hospital Medical Center in downtown Los Angeles. She has been involved in developing educational materials for SLPs and provides mentorship.



Susan Dunkley, MS, CCC-SLP

Susan Dunkley has practiced as a speech-language pathologist for sixteen years, with fourteen years spent in acute and LTAC settings. She specializes in tracheostomy/ventilator patients and dysphagia. She has served as a clinical instructor for numerous students and mentees. She has presented at both state and national levels.



Michael Harrell, BSRT, RRT

Michael Harrell has experience in respiratory care clinical practice, education, and management. Prior to joining the Passy-Muir clinical team in 2005, he was a Director of Respiratory Care in Florida. Michael also presided as President of the Florida Society of Respiratory Care where he brought together his clinical knowledge and strong advocacy for patient care to improve respiratory care in the state of Florida. In his role as Director of Clinical Education-Respiratory with Passy-Muir, Inc., he has presented both domestically and internationally.



James Lunn, MBA, MHS, RRT, PA-C, DFAAPA, FCCM

James Lunn is originally from New York and a graduate of Quinnipiac University's (QU) Respiratory Care Program. He worked in various areas of critical care, including pediatrics and adult medicine. After a few years, he returned to QU to obtain his MHS degree in Physician Assistant studies and recently his MBA in Healthcare Administration. James has over 25 years of experience in critical care and has specialized in the surgical intensive care field for over 20 years. His special interests include airway management, tracheostomy education, and improving healthcare quality and patient safety.

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Tiffany Oakes, MS, CCC-SLP

Tiffany Oakes has been a medical SLP in various settings, treating both adult and medically complex pediatric populations. Tiffany has developed patient care pathways for patients in home health, at both the state and national level. She has participated in research related to patients with TBI and sports concussions, and she has authored various papers. She also is a volunteer for Remote Area Medical (RAM). She develops multimedia education related to healthcare and clinical practice and teaches related courses. She is currently a full-time Clinical Specialist with Passy-Muir, Inc.



Jacqueline Prado, MSED, CCC-SLP

Jacqueline Prado has practiced as a speech-language pathologist for four years, all of which have been at Lake Taylor Transitional Care Hospital. She actively treats pediatric and geriatric patients with tracheostomies and ventilator patients at Lake Taylor. She is currently serving as a clinical instructor for a local student.



Peter Sandor, MBA, MHS, RRT, PA-C, DFAAPA, FCCM

Peter started his career in medicine at the age of 16 as a volunteer EMT in New Jersey. He obtained his BS in Respiratory Care, and later became a Physician Assistant specializing in surgical critical care. Additionally, he has 16 years as an Adjunct Clinical Assistant Professor. Throughout his 20 year career, he has performed countless tracheostomy procedures. He has been an invited speaker and authored a book chapter on tracheostomy. He partnered with James Lunn, and together they created the ClearView Tracheostomy Simulator for improving education related to tracheostomies.



Hans Schwegler, Certified Speech Therapist

Hans Schwegler has worked as a Speech and Language Therapist (SLP) at the Swiss Paraplegic Centre in Nottwil since 1995. His clinical work focuses on the diagnosis and treatment of dysphagia, especially in patients with tracheostomy tubes. Since 2005, he has shared his knowledge and expertise through courses conducted on tracheal cannula management and presented at various SLP colleges in German-speaking countries. He is the author of the book "Trachealkanülen-Management – In sicheren Schritten Richtung Dekanülierung," for which the 3rd edition was published by Schulz-Kirchner-Verlag in 2020.



Stacey Soltysik, RCP, RRT

Stacey Soltysik is a seasoned Registered Respiratory Therapist with approximately 17 years of experience in varied settings and facilities, including critical care and emergency care in the hospital setting, chronic long-term care in the SNF setting, and catastrophically, chronically ill patients in the long-term acute care setting. She is highly skilled with patient assessments, tracheostomy care, and ventilator management. She has educated students and staff on many aspects of respiratory care. She is currently the Director of Respiratory at Lake Taylor Transitional Care Hospital.



Sarah Stierli, BA, Certified Speech Therapist

Sarah Stierli graduated from the University of Fribourg with her Bachelor of Arts in Speech and Language Therapy (SLP) in 2007. Her clinical experience focuses on dysphagia management, tracheal cannula management, and instrumental swallowing assessment (FEES and VFSS). Since 2019 she has been working as an SLP at the Swiss Paraplegic Centre (SPC) in Nottwil.



Kevin Westbrook, RCP, RRT

Kevin Westbrook has practiced as a Registered Respiratory Therapist for over 10 years, with nine spent in acute care and trauma. He specializes in patients with tracheostomies and ventilators, who have special airway conditions. He has traveled throughout the states of VA, NC, and SC, working at different locations. He has served as a clinical mentor for the Board of Respiratory Care in North Carolina. He also has presented at the state level. He is currently serving as a daytime respiratory supervisor at Lake Taylor Transitional Care Hospital.

This bibliography represents a sampling of research articles that address COVID-19 considerations. The articles were selected by respiratory therapists and speech-language pathologists in four categories: clinical and medical management, discipline-specific recommendations, tracheostomy recommendations, and post-COVID-19 long-term considerations.

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