Impact of COVID-19 on **Patient-Provider Communication** in Critical Care: Case Reports

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Introduction Communication impairment during mechanical ventilation and prolonged critical illness is extremely frustrating and frightening for patients and increases the risk for miscommunication, misinterpretation, and poor outcomes. The COVID-19 pandemic amplified patient communication impairment in intensive care units. This article presents 3 case examples from the experience of a team of hospital-based speech-language pathologists providing augmentative and alternative communication support resources and services to intensive care unit patients treated for COVID-19 during the first wave of the pandemic. Cases were selected to illustrate the protracted and complex in-hospital and rehabilitative recovery of critically ill patients with COVID-19, necessitating creative problem-solving and nursing collaborations with speech-language pathologists to support patient-provider communication.
Clinical Findings The cases demonstrate (1) increased need for bilingual communication resources, (2) impaired cognitive and motor function associated with a variety of post–COVID-19 sequelae including severe critical illness myopathy, and (3) delayed transition to a speaking valve due to the secretion burden.
Diagnoses COVID-19 and acute respiratory distress syndrome (all), cerebral microhemorrhage, multisystem organ failure, hypoxic brain injury, altered mental status, seizure, stroke.
Interventions Multimodal and progressive augmentative and alternative communication interventions included low-technology strategies and simple communication boards, video language interpretation, tracheostomy speaking strategies, and a video intercom system.
Outcomes All patients made progressive gains in communication ability.
Conclusion Evaluation by augmentative and alternative communication specialists and progressive intervention from speech-language pathologists in collaboration with intensive care unit nurses can greatly improve patient-provider communication during treatment for and recovery from COVID-19 and other prolonged critical illnesses. (*Critical Care Nurse*. Published online April 7, 2022)

Acute care hospitals provide care for a large population of adult patients who are vulnerable communicators owing to airway tract changes (eg, intubation and tracheostomy tube placement) as well as acquired cognitive, communication, sensory, or motoric changes. These communication-vulnerable patients are 3 times as likely to have an adverse medical event during their hospital stay compared with patients without communication problems[1] and incur higher costs.[2] When communication needs are better addressed, patients report reduced communication difficulty, frustration,

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anxiety, and distress.[3-8] Augmenting or providing alternative ways to supplement or replace vocal communication—also referred to as augmentative and alternative communication (AAC)—is wide-ranging and includes gestures, pictures, and speech-generating devices.[9] The Joint Commission has long advocated for a patient's right to effective communication within the hospital environment, calling on speech-language pathologists (SLPs) to lead the charge "for meeting patient communication needs and training staff on available communication supports"[10(p63)] as hospital staff work together to "identify and address patient communication needs."[10(p50)] Equipped with specialized knowledge of communication needs, cognitive-linguistic function, and alternative methods of communication, SLPs are excellent resources for these patients. Nurses are best equipped for their role as communication partners for patients through introductory training in AAC and by partnering with SLPs for comprehensive assessment and implementation of a communication care plan tailored to individual patient needs and abilities.[4]

Nurses reported improved comfort, speed, and efficiency of communicating with the patient when using the reliable yes/no question method.

As worldwide awareness of the spread of the SARS-CoV-2 virus began, Massachusetts General Hospital, a 1000-bed tertiary care facility with 7 intensive care units (ICUs), prepared for the surge in COVID-19–related admissions by systematically converting multiple general hospital floors to ICUs and training staff nurses to serve populations with acute and severe respiratory demands. Providers were eager to assist with communication and open to receiving related education, and our AAC support program, which was started in 2017 by a dedicated team of inpatient SLPs, was poised to scale up. At the same time, an international, interprofessional COVID-19 task force was assembled through the Patient-Provider Communication Forum to develop a collection of resources addressing the communication needs of those affected by the pandemic.[11] This article presents our experience with use of the communication support resources and provision of acute and critical care communication support services to patients treated for COVID-19.

The following 3 case examples were selected to highlight the clinical complexity, challenges, and lessons learned in providing communication support to patients with COVID-19 during critical illness and recovery. Each case was assigned a pseudonym. In accordance with guidance from our institution, consent was obtained post hoc, after discharge, over the telephone with the health care proxy and a neutral witness for the first 2 cases. The third case is a composite, and therefore consent was not obtained.

Case 1: Non–English Speaking, Laryngeal Dysfunction, Critical Illness Myopathy

Clinical Findings and Diagnosis

"Cesar" was a 70-year-old Spanish-speaking man with a history of traumatic brain injury complicated by seizures. He presented to the hospital with COVID-19–related respiratory failure complicated by acute respiratory distress syndrome (ARDS). Cesar required prolonged intubation (including tracheostomy and gastrostomy tubes), mechanical ventilation, and intermittent proning for nearly 1 month. Because of persistently altered mental status after weaning from sedation, brain magnetic resonance imaging was performed, which revealed multiple cerebral microhemorrhages attributed to ARDS as well as left-hemisphere encephalomalacia due to prior traumatic brain injury. Before this hospitalization, Cesar lived independently and worked full time.

By hospital day 57, Cesar was tolerating a capped tracheostomy tube with minimal supplemental oxygen but remained aphonic. The SLP was consulted to assess strategies to support patient-provider communication (Figure 1).

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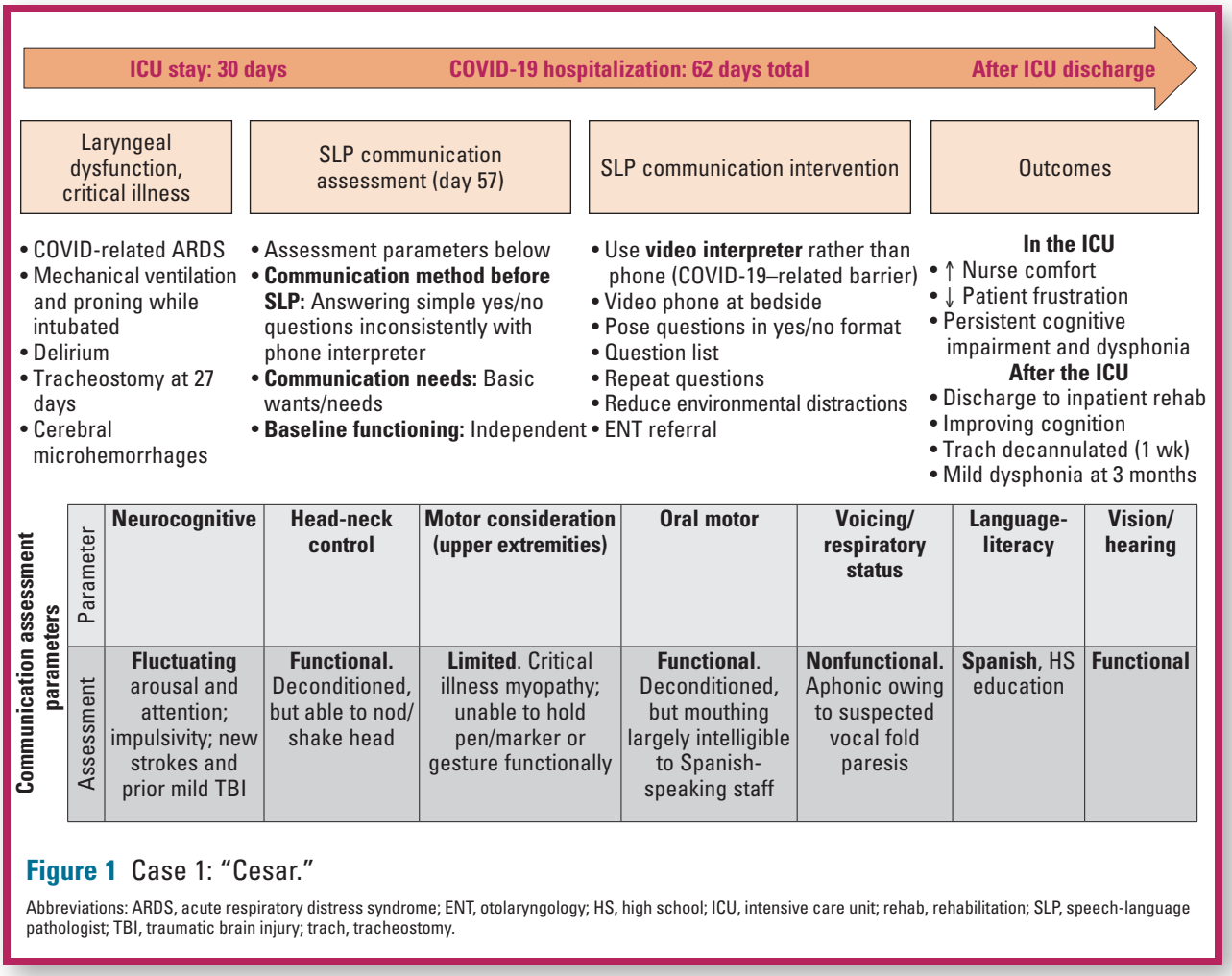

Figure 1 Case 1: "Cesar."

Abbreviations: ARDS, acute respiratory distress syndrome; ENT, otolaryngology; HS, high school; ICU, intensive care unit; rehab, rehabilitation; SLP, speech-language pathologist; TBI, traumatic brain injury; trach, tracheostomy.

SLP Interventions

Cesar's communication was limited to mouthing in Spanish with good articulation but no phonation, which was challenging for his primarily English-speaking care team to comprehend. Unfortunately, during the COVID-19 surge, interpretation services were available only via telephone or video, and families were not permitted to visit. Communication was limited to a few yes/no questions interpreted by a telephone interpreter.

Although Cesar was alert, he was impulsive and inattentive. He benefited from frequent repetition of questions and reduced environmental distractors to optimize focus and attention. His voice was persistently aphonic, and his cough was weak, without a glottal coup (ie, a sharp clicking sound at the beginning of a cough that reflects the force of vocal cord adduction). These signs, in spite of an adequately sized tracheostomy tube, and his history of prolonged intubation and intermittent proning raised concern about laryngeal dysfunction; however, endoscopic evaluation was deferred due to the increased risk of COVID-19 aerosolization.

Cesar exerted great effort to communicate, with rapid mouthing of sentence-length responses; however, aphonia prevented successful telephone interpretation. With limited insight into the impaired communication, he often mouthed lengthy responses despite repeated explanations that providers were unable to understand Spanish, thus increasing his frustration. Due to critical illness myopathy, Cesar was unable to functionally use his upper extremities to write, gesture, or point and therefore was unable to use a variety of communication aids (eg, bilingual communication boards). Fortunately, he did provide reliable answers to yes/no questions via head nod/shake or mouthing, with occasional repetition and redirection.

Two primary interventions were implemented to optimize patient-provider communication and minimize Cesar's frustration: (1) care team education regarding use of video interpreters to allow interpreters to visualize

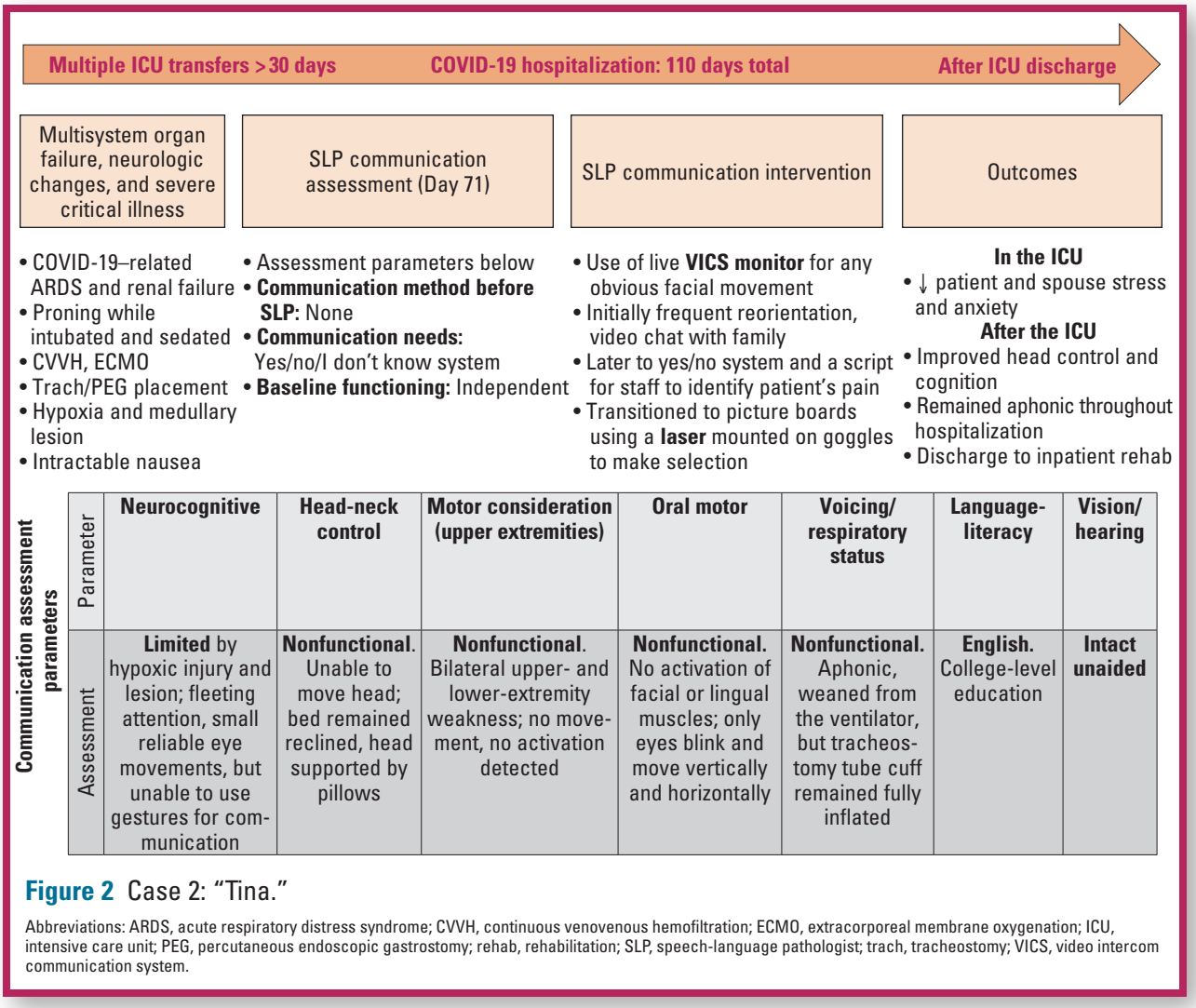

Figure 2 Case 2: "Tina."

Abbreviations: ARDS, acute respiratory distress syndrome; CVVH, continuous venovenous hemofiltration; ECMO, extracorporeal membrane oxygenation; ICU, intensive care unit; PEG, percutaneous endoscopic gastrostomy; rehab, rehabilitation; SLP, speech-language pathologist; trach, tracheostomy; VICS, video intercom communication system.

Cesar's mouth when speaking, and (2) creation of a streamlined list of routine, individualized yes/no questions in collaboration with interpreter services. This question list was made available at the bedside to increase efficiency of communication and ease Cesar's anxiety about whether his needs would be met.

Outcomes

Nurses reported improved comfort, speed, and efficiency of communicating with Cesar when using the reliable yes/no question method. A video camera was placed at the bedside, which allowed interpreters to visualize his mouthing. Although his speech was of limited intelligibility, interpreters were often able to identify the overall context of his communication.

Cesar was discharged to a long-term acute care rehabilitation hospital 5 days after the SLP evaluation with persistent dysphonia and slowly improving cognition. At the rehabilitation hospital, he continued to receive video interpreter support. After tracheostomy decannulation (1 week after hospital discharge), his voice improved slowly with only mild dysphonia approximately 3 months after initial presentation.

Case 2: Multisystem Organ Failure With Neurological Changes and Critical Illness Myopathy

Clinical Findings and Diagnosis

"Tina" was an independent 45-year-old, English-speaking woman with underlying asthma. Initially hospitalized for hypoxemic respiratory failure, she was diagnosed with COVID-19–associated ARDS and renal failure. Her ICU stay was marked by approximately 30 days of mechanical ventilation and proning, as well as other critical interventions (Figure 2). She remained minimally responsive for weeks after weaning from sedation. Her

Table Instructions for identifying pain with "Tina"

Pain	It's hard for the patient to point. Please use a series of yes/no-formatted questions and "partner-assisted scanning" to determine the location and severity of pain.
Pain location	If the patient responds "yes" to being in pain, identify location by listing body parts. Say, "I'm going to ask you where the pain is. Let's start from the head and work our way down. You can say yes or no. Do you have a headache? Chest pain? Pain in arms? In legs? Whole-body pain?"
Pain severity	Once the location of pain is identified, use the visual pain scale to determine severity. Ask, "How bad is the pain?" Point slowly to each smiley face and ask the patient to say "Yes" when you arrive at the one that matches the pain level. Confirm response is correct.

prognosis was significantly affected by a medullary lesion and a possible hypoxic brain injury, both sequelae of COVID-19. Her tracheostomy cuff remained fully inflated owing to persistent and intractable nausea and vomiting. After 2 months, Tina began to follow some commands with her eyes. The SLP was consulted to assess strategies to support patient-provider communication (Figure 2).

SLP Interventions

Initially, the only discernible movement that Tina could perform was with her eyes. Command following was inconsistent and limited to looking up and down and closing and opening her eyes. Gradually over the next 3 weeks, Tina gained more head control and began nodding and shaking for simple and personally relevant yes/no questions, such as, "Are you married?" As Tina regained some use of her facial muscles, she began mouthing a small set of words. Despite these gains, she could neither move her extremities for pointing, hold a mouth stylus, nor engage with partner-assisted communication techniques given their cognitive demand. A list of yes/no-formatted questions was developed and posted at the bedside to make communication across providers more efficient and reliable. The list was individualized with the help of Tina's spouse, who reported that pain was the most important topic of conversation. The SLP developed a separate page of instructions to help script and format questions about pain (see Table).

As she became more interactive, Tina struggled with accessing the nurse call light despite multiple interventions from nurses and occupational therapists. She became anxious when she could not gain the attention of a nurse when needed. As a result, a tablet computer, outfitted as a live monitor on an intravenous pole, was connected to the nurses' station. When Tina stared at the monitor and began trying to speak, a nurse was summoned to the room.

Over the next month, mouthing words became easier for Tina, but ongoing problems with emesis prevented her from using the tracheostomy speaking valve, which meant she was unable to vocalize. As Tina's strength and head control continued to improve, the SLP collaborated with occupational therapists to support the use of a communication board without the need for pointing. Ultimately, Tina used goggles with an attached laser pointer to access a series of clipboard-mounted, laminated photograph-and-word boards. This setup included a main page with expanded pages for select components of the board. The board was held together by binder rings, and the communication partner would navigate or turn to the next page and await a more detailed response based on Tina's selection. With this method, Tina could, for example, indicate that she had pain, and then on the second page identify its location on the body and severity.

Tina was ultimately able to select and navigate picture boards with a laser to make her general wants and needs known.

Outcomes

Tina's communication system evolved with her abilities. Ongoing assessments allowed the focus to remain on addressing immediate and unique patient needs to reduce her overall stress and anxiety by supporting communication over the course of approximately 2 months. Tina's spouse expressed gratitude for and satisfaction with the evolving communication systems and the level of collaborative communication during Tina's stay, which helped ease Tina's anxiety. Tina was ultimately able to select and

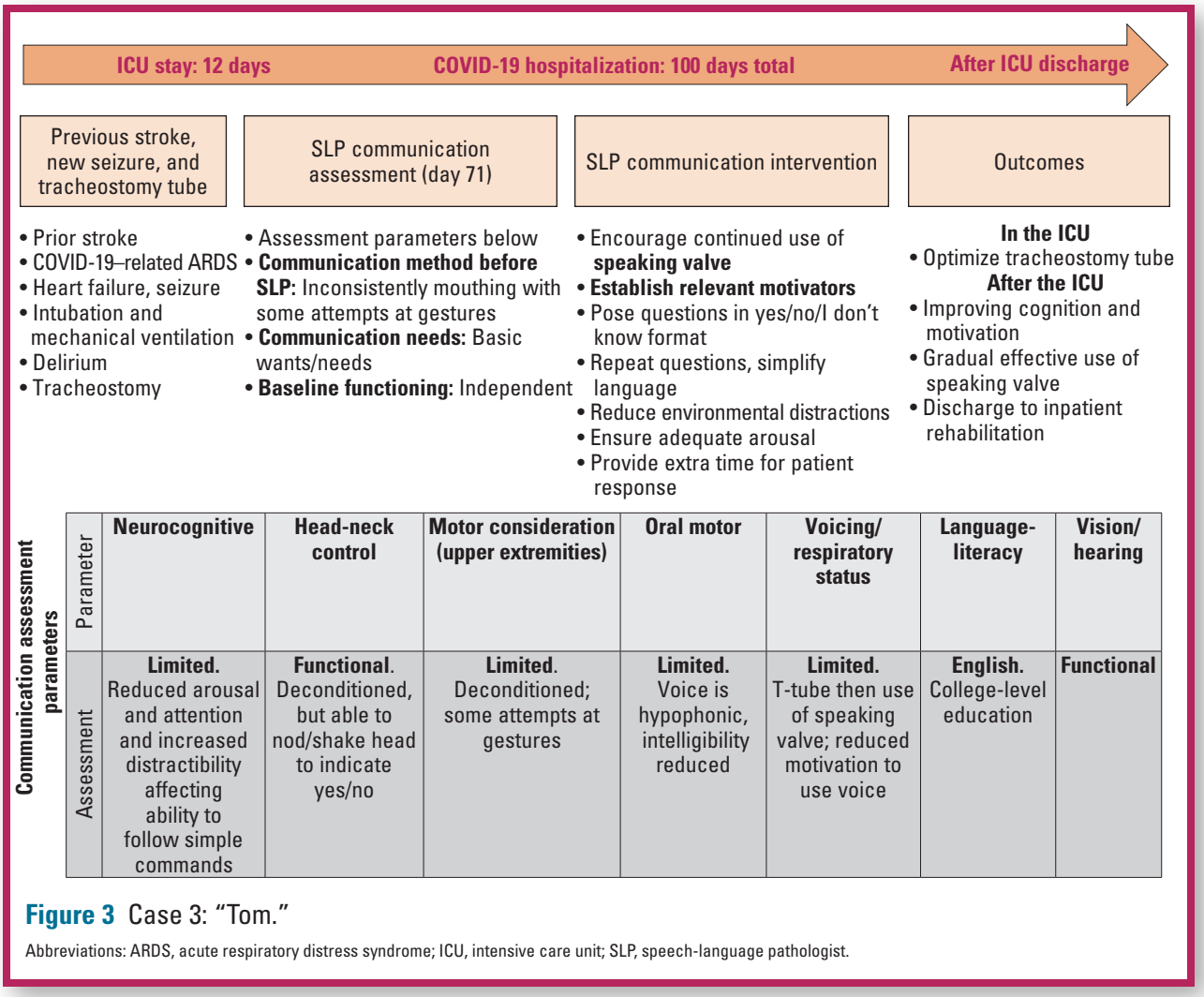

Figure 3 Case 3: "Tom."

Abbreviations: ARDS, acute respiratory distress syndrome; ICU, intensive care unit; SLP, speech-language pathologist.

navigate picture boards with a laser to make her general wants and needs known. She was discharged to an inpatient rehabilitation facility. There, her goals included ongoing support of her current communication system until she was able to tolerate a speaking valve and voice responses.

Case 3: Preexisting Cognitive-Communication Deficits With New Tracheostomy Tube

Clinical Findings and Diagnosis

"Tom" was a 70-year-old, English-speaking man with a history of right hemispheric stroke with mild residual cognitive deficits affecting memory, visual processing, and executive functioning. He was a retired accountant, unable to work after the stroke. He presented to the hospital with altered mental status and seizure. Tom was intubated for airway protection and later found to be SARS-CoV-2-positive. His 12-day ICU course was complicated by heart failure and subsequent respiratory failure. A tracheostomy tube and percutaneous endoscopic gastrostomy tube were eventually placed. He was transferred to a step-down respiratory care unit for liberation from mechanical ventilation. Although Tom made considerable progress, he had poor arousal and attention. Eventually, Tom tolerated a speaking valve comfortably and used a combination of systems to communicate. An SLP was consulted to assess strategies to support patient-provider communication (Figure 3).

SLP Interventions

The SLP completed an initial evaluation once Tom was transferred to the step-down unit. He required frequent auditory and tactile stimulation to maintain arousal and to participate in the examination. When engaged, Tom demonstrated reduced sustained attention,

slowed processing speed, and distractibility. Communication was inconsistent and accompanied by a few gestures (smile, head nodding) and verbal responses on the word-phrase level. At this stage it was unclear how much of the cognitive impairment could be attributed to neurological sequelae of COVID-19,[12] resolving ICU delirium, or a recrudescence of his preexisting cognitive impairment.

Once liberated from the ventilator, Tom continued to require suctioning and humidified air. To minimize aerosolization during spontaneous coughing and when suctioning, our hospital used a T-tube connector (Figure 4). This setup maintained the in-line suction and, perpendicular to that, an elongated circuit to catch particles while allowing for humidification.

The SLP collaborated with the respiratory therapist on tracheostomy tube progression, identified barriers, and offered solutions. Given that Tom was a verbal communicator before this hospitalization, the SLP hypothesized that he might have greater success when new learning and cognitive demands were minimized and natural communication was emphasized. Therefore, use of a speaking valve was strongly encouraged. Transtracheal pressure measurements indicated the need for downsizing of the tracheostomy tube before using a speaking valve. Tom demonstrated limited success initiating verbal communication when using the speaking valve. Inconsistent command following, effort, and motivation were factors affecting outcomes. Therefore, reminders to increase volume and the use of a voice amplifier were not helpful.

The SLP communicated with Tom's family, who were eager to engage with him to optimize a communication plan. Although they were not permitted to visit because of COVID-19 restrictions, family members made themselves available via videoconferencing. Tom's motivation dramatically improved with increased video calls along with a gradual, whole-body recovery and an increased use of gestures that improved his communication abilities. To support a more coordinated patient-provider communication experience, the SLP provided resources to guide communication needs, including (1) ensuring adequate arousal, (2) eliminating distractions, (3) providing all verbal input using short and simple language, and (4) allowing time and multiple opportunities for Tom to provide a response.

Outcomes

Over several weeks, collaboration with nurses and respiratory therapists was essential to coordinating opportunities for Tom to practice verbal communication through videoconferencing with his family. Advocacy for the patient's care, the timing of sessions, establishing his relevant motivations (family communication, engagement, and encouragement), and understanding his new and preexisting cognitive conditions resulted in the ability to establish a natural and meaningful communication system.

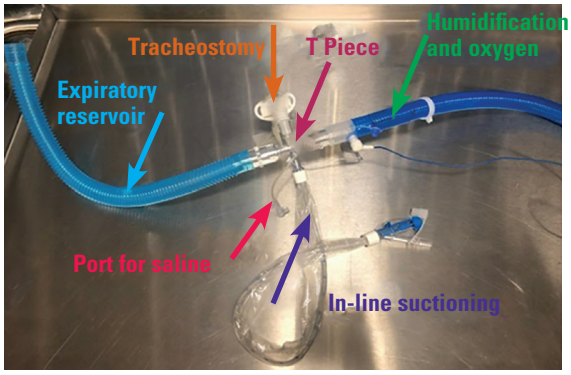

Figure 4 T tube connector.

COVID-19 certainly affected the length and complexity of Tom's admission and altered our institution's usual care and management. Specifically, Tom used a T piece rather than a humidified tracheostomy mask to limit the spread of aerosolized particles into the environment (Figure 4). As described by Mooney and colleagues,[13] the SLP played a pivotal role in driving the progression of the tracheostomy tube to support verbal communication and swallowing as part of a multidisciplinary team including respiratory and pulmonary therapists, nurses, and medical providers. Care coordination and documentation of anticipated barriers and next steps for an SLP assessment were critical.

Discussion

These COVID-19 case examples highlight the challenges of protracted and complex in-hospital and rehabilitative recovery necessitating creative problem-solving. For individuals who received tracheostomy tubes, transitioning to a speaking valve was often delayed by impaired secretion management or marked by the need for greater coordination of care because of new infection-control protocols. Procedures such as endoscopic laryngeal evaluation to diagnose laryngeal dysfunction were deferred to mitigate potential aerosolization and thus delayed interventions.

Having low-technology resources of varying levels of complexity became essential to meet the needs of patients

with persistently altered mental status or impaired cognitive function resulting from prolonged periods of sedation during intubation, delirium, extreme critical illness polyneuropathy, and neurological sequelae of COVID-19, including brain lesions and hypoxia. Hurtig and colleagues[14] proposed that the incidence of hospital-acquired adverse conditions is lower among patients who receive assistive technology intervention, supporting this assertion with data from an AAC demonstration study and lessons learned from SLPs from various institutions working to address these needs during the pandemic. The relevance and feasibility of this work are more evident during the COVID-19 pandemic, when nurses became resourceful to meet the communication needs of isolated patients. Implementing techniques to improve patient-provider communication can save time by reducing guesses and eases patient frustration.[15]

Bilingual communication resource boards, which were created for quick exchanges, also became critical given the disproportionate impact of COVID-19 on communities whose dominant language is one other than English and the initial limitations on in-person contact. Hurtig et al[16] discussed the importance of adapting resources to meet the needs of the growing number of hospitalized patients with limited English proficiency (LEP). Our hospital treated substantially more patients with LEP at the height of our regional surge (April 2020; approximately 50% LEP) compared with before the COVID-19 pandemic (an average of approximately 9% LEP). With increased demand and reduced provider contact, bilingual communication resources were essential and in high demand even for patients without communication impairments.

Bilingual communication resources were essential and in high demand even for patients without communication impairments.

The immediate relevance and growing need during the COVID-19 surge fostered an environment in which access to resources to support patient-provider communication and accompanying education was essential. Nurses used the AAC resources our SLPs provided in unanticipated ways. For example, dry erase boards intended as bedside patient communication tools became a valuable way for nurses to communicate with other providers through the window of an isolation room, reducing their need to enter the room or don personal protective equipment.

Relatively low-cost mobile communication technologies were critical to supporting accurate and essential patient-provider and patient-family communication. In Tina's case, the team used an alternative nurse call system when other methods were not accessible. The video intercom communication system was novel to the hospital, implemented in response to the restrictions during the pandemic to allow patient-provider face-to-face time. An application run on a tablet positioned on an intravenous pole was adapted to be a video monitor to ease patient anxiety and fear. For Cesar, video connection to the interpreter services allowed the interpreters to visualize his mouthing. Tablets used as a mode of patient-provider communication were not readily available to ICU patients before the pandemic and were initially instituted to connect patients with families during the "no visitors" policy.

Positioning, access, complexity, and content of the communication resources were matched to the patient's needs. As seen in Tina's case, and for others recovering from the significant multisystem sequelae of COVID-19, the recommended communication system evolved as the patient's abilities improved. Recovery time varied, as did the impact of the illness on the patient.

Speech-language pathologists and multidisciplinary team members have a moral and financial obligation to collaborate with the goal of improving communication between the patient and the provider. In the adult ICU setting, where patients' medical status is dynamic, a variety of communication tools that are easy to implement with minimal training should be readily available at the bedside. Speech-language pathologist leadership and bedside consultation in complex cases such as these are essential. We recognize, however, that not all hospitals have SLPs embedded in critical care services. In these cases, practice improvement can be led by nurses, with SLP consultation and guidance. Basic skills training sessions are available for all team members online (https://go.osu.edu/speacs2), as are downloadable communication tools.[11] Future directions for institutions should include identifying champions to initiate this Joint Commission–mandated work.

Conclusion

Critical illness related to COVID-19 has unique aspects, and the pandemic surges and visitor and personnel restrictions have posed multiple challenges in

terms of intervention timing, limited entry and exposure to the patient and family, illness severity, tablet adaptations, and protracted length of stay. These issues are, however, not uncommon for many ICU patients recovering from ARDS, multisystem organ failure, serious neurological illness or injury, or cardiothoracic surgical complications. Supporting communication, providing education to family members, and interprofessional collaboration and creative problem-solving are essential to optimizing patient communication and humanizing the critical care experience for patients and their families. Application of the lessons learned in these cases is, therefore, important beyond the COVID-19 pandemic and relevant to all hospitalized patients with communication impairments. The need for improved nurse-SLP collaboration and operationalization of communication support strategies was dire before the pandemic and will remain critical in years to come. CCN

Acknowledgments
This augmentative and alternative communication initiative at Massachusetts General Hospital is ever evolving, a process of learning and adapting, of nurturing and sharing resources to serve individuals at profound moments of their lives. This work would not be possible without the expertise and guidance of Audrey Kurash Cohen, MS, CCC-SLP, and the unwavering support from the director of the hospital's Department of Speech, Language, Swallowing, and Reading Disorders, Carmen Vega-Barachowitz, MS, CCC-SLP. We acknowledge the indispensable opportunity afforded to us and the mentorship received through the Patient-Provider Communication Forum. We also acknowledge the entire Massachusetts General Hospital SLP department, especially the inpatient team, for their dedication.

Financial Disclosures
None reported.

See also

To learn more about caring for patients with COVID-19, read "COVID-19–Associated Pulmonary Aspergillosis in the Critical Care Setting" by Livermore in *AACN Advanced Critical Care,* 2021; 32(4):398-403. Available at **www.aacnacconline.org**.

References
1. Bartlett G, Blais R, Tamblyn R, Clermont RJ, MacGibbon B. Impact of patient communication problems on the risk of preventable adverse events in acute care settings. *CMAJ*. 2008;178(12):1555-1562.
2. Hurtig RR, Alper RM, Berkowitz B. The cost of not addressing the communication barriers faced by hospitalized patients. *Perspect ASHA Spec Interest Groups*. 2018;3(12):99-112.
3. Patak L, Gawlinski A, Fung NI, Doering L, Berg J, Henneman EA. Communication boards in critical care: patients' views. *Appl Nurs Res.* 2006; 19(4):182-190.
4. Altschuler T, Happ MB. Partnering with speech language pathologist to facilitate patient decision making during serious illness. *Geriatr Nurs.* 2019;40(3):333-335.
5. Berning JN, Poor AD, Buckley SM, et al. A novel picture guide to improve spiritual care and reduce anxiety in mechanically ventilated adults in the intensive care unit. *Ann Am Thorac Soc.* 2016;13(8):1333-1342.
6. Koszalinski RS, Heidel RE, Hutson SP, et al. The use of communication technology to affect patient outcomes in the intensive care unit. *Comput Inform Nurs.* 2020;38(4):183-189. doi:10.1097/CIN.0000000000000597
7. Rodriguez CS, Rowe M, Thomas L, Shuster J, Koeppel B, Cairns P. Enhancing the communication of suddenly speechless critical care patients. *Am J Crit Care.* 2016;25(3):e40-e47. doi:10.4037/ajcc2016217
8. Trotta RL, Hermann RM, Polomano RC, Happ MB. Improving nonvocal critical care patients' ease of communication using a modified SPEACS-2 program. *J Healthc Qual.* 2020;42(1):e1-e9. doi:10.1097/JHQ.0000000000000163
9. American Speech-Language-Hearing Association. Augmentative and alternative communication (AAC). American Speech-Language-Hearing Association website. Accessed August 16, 2021. https://www.asha.org/NJC/AAC
10. The Joint Commission. *Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care: A Roadmap for Hospitals.* The Joint Commission; 2010.
11. Patient-Provider Communication Forum. Patient-Provider Communication Network. Accessed August 16, 2021. https://www.patientprovidercommunication.org
12. Favas TT, Dev P, Chaurasia RN, et al. Neurological manifestations of COVID-19: a systematic review and meta-analysis of proportions. *Neurol Sci.* 2020;41(12):3437-3470.
13. Mooney B, Lawrence C, Johnson EG, Slaboden A, Ball K. How COVID-19 patients were moved to speak: a rehabilitation interdisciplinary case series. *HSS J.* 2020;16(suppl 1):56-63.
14. Hurtig RR, Alper RM, Altschuler T, et al. Improving outcomes for hospitalized patients pre- and post-COVID-19. *Perspect ASHA Spec Interest Groups.* 2020;5(6):1577-1585.
15. Happ MB. Giving voice: nurse-patient communication in the intensive care unit. *Am J Crit Care.* 2021;30(4):256-265.
16. Hurtig RR, Czerniejewski EM, Bohnenkamp L, Na J. Meeting the needs of limited English proficiency patients. *Perspect Augment Altern Commun.* 2013;22(2):91-101.