Giving Voice: Nurse-Patient Communication in the Intensive Care Unit

By Mary Beth Happ, PhD, RN

Communication is the essence of the nurse-patient relationship. The critical care nurse's role in facilitating patient communication and enabling communication between patients and their families has never been more important or poignant than during the COVID-19 pandemic. We have witnessed tremendous examples of resourceful, caring nurses serving as the primary communication partner and support for isolated seriously ill patients during this pandemic. However, evidence-based tools and techniques for assisting awake, communication-impaired, seriously ill patients to communicate are not yet systematically applied across all settings. Missed communication or misinterpretation of patients' messages induces panic and fear in patients receiving mechanical ventilation and can have serious deleterious consequences. This lecture presents a 23-year program of research in developing and testing combination interventions (eg, training, tailored assessment, and tools) for best practice in facilitating patient communication during critical illness. Evidence from related nursing and interprofessional research is also included. Guidance for unit-based assessment, tailoring, and implementation of evidence-based patient communication protocols also is provided (*American Journal of Critical Care.* 2021;30:256-265)

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Communication is the essence of the nurse-patient relationship. The critical care nurse's role in facilitating patient communication and enabling communication among patients, providers, and families has never been more important or more poignant than during the COVID-19 pandemic. Critical care nurses have been tremendously resourceful and selfless in supporting communication for isolated seriously ill patients during this pandemic. News stories show nurses using their own or the patient's mobile devices, markers and paper or dry-erase boards, and messages posted on glass windows to facilitate communication, given barriers of patient intubation and protective masks worn by health care personnel.[1,2]

The pandemic has brought to light the fear, frustration, trauma, and dangers of communication impairment when a patient is receiving mechanical ventilatory support (MVS). Missed communication or misinterpretation of patient messages induces panic and fear in such patients and can have deleterious consequences. These problems, however, have been identified repeatedly during the past 40 years in numerous studies of the patient and family experience of mechanical ventilation and critical care nurses' experiences and perspectives in caring for patients receiving MVS.[3-14] Evidence-based tools and techniques for assisting awake but communication-impaired patients in the intensive care unit (ICU) to communicate have been developed and tested by nurse researchers and experts in communication disorders but are not yet systematically applied across all settings.[15-35]

Here, I present my 23-year program of research in developing and testing combination interventions (eg, training, tailored assessment, tools) for best practice in facilitating patient communication during critical illness. Evidence from related nursing and interprofessional research is also included. Guidance for unit-based assessment, tailoring, and implementation of evidence-based patient communication protocols is provided.

The Beginning

In my critical care clinical practice with patients receiving prolonged MVS, I rarely felt comfortable with my ability to read lips or interpret the silent speech of my patients. It was agonizing to watch patients when they tried unsuccessfully to communicate a message and be unable to resolve communication breakdowns. I became particularly concerned about the plight of older patients receiving MVS and about how nurses mediate the person-technology interface.

My dissertation research, a grounded-theory study, was focused on the interactions between patient, nurse, and technologies (eg, tubes, catheters) in ICUs. I discovered that the patient's inability to speak, or "voicelessness," during MVS complicated the nurses' work in maintaining the technologies as well as decision-making about starting or discontinuing the technologies.[36] Families lamented not being able to hear the patient's voice "one last time" and delayed treatment decisions "until she can tell us what she wants." A sense of personhood was restored once the patient's voice returned.[36]

> Critical care nurses have been resourceful in supporting patients' communication during the pandemic.

A review of the literature confirmed the problem of communication difficulty and associations between communication difficulty and patients' feelings of panic, anger, distress, and frustration.[3] Only 1 small, pilot, randomized controlled trial of communication boards had been published.[32] Although attention to this problem has increased in the past 20 years, authors of multiple literature reviews and syntheses continue to identify mostly qualitative studies, case reports of misinterpretation and/or individualized augmentative and alternative communication support, and small, single-arm intervention feasibility or pilot studies.[15-18] Overall, the literature confirms the need for (1) evidence-based communication tools, (2) clinician training, and (3) unit-based support to facilitate patient communication. My interdisciplinary program of research focuses on building and testing multicomponent (ie, bundle) interventions addressing these 3 areas through a variety of research methods, including clinical trials.

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Table 1
Nurse-patient communication model: basic tenets

All patients have the right to communicate with providers to the fullest extent possible.
Communication is a multimodal, 2-way interaction.
Acutely ill patients often need comprehension support to fully understand the nurse and for the nurse to accurately assess and assist patients to communicate to the best of their ability.
Communication-impaired patients can be assisted to make their needs and wishes known with proper matching of communication tools and strategies to the patient's abilities and preferences.
All behavior has meaning.

How Many Patients Are Eligible for Communication Support Intervention?

To demonstrate (to reviewers and administrators) that the problem of communication difficulty was sufficient in scope to warrant intervention, we conducted an electronic health record review of 50 randomly selected patients in the ICU who were receiving MVS and who did not survive hospitalization in a tertiary, academic medical center during a 12-month period.[37] We chose nonsurviving patients to avoid any "improvement" bias with recovering patients. Most records (72%) contained documentation of patient communication at some time during MVS, and most communication events were between nurses and patients. The primary methods of communication were natural, unaided (eg, head nods, mouthing words, gestures), and, less often, in writing. No use of communication boards or electronic aids was observed. Importantly, most of the documented communication events (n = 127 of 202; 62.9%) occurred when physical restraints were not in use.[37]

In an intervention study several years later, our team discovered that more than half of patients receiving MVS met basic communication criteria (ie, awake, alert, responsive) for at least one 12-hour period.[38] Other researchers observed a prevalence of 16% to 24%,[39] 33%,[40] and 35%[41] using different criteria and measurement techniques. It is notable that most prevalence studies were conducted *before* widespread implementation of minimal sedation protocols in the ICU. Because patients receiving MVS are now in a more wakeful, less sedated state, attention to communication becomes essential.

Intervention Development

Intervention development, testing, and clinical implementation began with learning about and then testing augmentative and alternative communication (AAC) tools and techniques. Augmentative and alternative communication refers to all forms of communication used to supplement or replace oral speech and to express messages (eg, facial expressions, gestures, body language, aided low- and high-technology tools) for persons with speech or language impairment.[42] With funding from the American Association of Critical-Care Nurses, our team explored the feasibility, acceptability, and use of electronic speech-generating devices (SGDs) in the medical ICU setting.[43] Using participant observation, interviews, questionnaires, and clinical record review, we collected data on communication events and SGD use with 11 critically ill adults. Patients' reported ratings on the Ease of Communication Scale[44] showed significantly less difficulty with communication after device use ($t > 2.62$; $P = .047$). Speech-generating devices were used in 25% of observed communication events and most often to communicate with family visitors. Patients initiated communication more often when using SGDs. Poor device positioning, deterioration in patient condition, staff time constraints, staff unfamiliarity with the device, and complex message screens were primary barriers to SGD use.[43] The lessons learned from this study were as follows:

- Electronic SGDs can be powerful in giving patients a "voice."
- Nonvocal patients use multiple methods to communicate.
- Speech-generating devices will not be used for all communication and cannot be used by all nonvocal patients in the ICU; therefore, patients need additional options.
- Nurses need training in how to determine patient candidacy for electronic SGDs or other tools, facilitate patient communication with SGDs and other tools, and accurately interpret patient messages.
- Electronic SGDs (ie, first-generation versions) used in this study are expensive and required technical expertise.

We partnered with a speech-language pathology scientist, Kathryn Garrett, who used aphasia as the model for communication intervention in the medical setting.[45] A situation-specific theoretical framework, "nurse-patient communication model,"[46] based on tenets from communication disorders science, person-centered care, and AAC research and practice, guided our research approach (Table 1). According to the revised research model (Figure 1), communication interactions between the nurse and nonvocal patients are affected by patient characteristics (eg, level of consciousness, delirium, illness severity, intubation mode, language, muscle strength/coordination) and nurse characteristics (eg, perceptions and attitudes

about communication, knowledge, experience). Communication performance (ie, quality, ease, and successful message transmission and interpretation) in nurse-patient interactions requires appropriate assessment, selection, and application of augmentative and alternative communication tools and techniques. Nurse-patient communication performance is further hypothesized to affect nursing care quality (eg, symptom recognition and treatment, sedation level, early mobilization) and patient response (eg, anxiety, frustration, communication difficulty).

Our interprofessional partnership with Dr Garrett led to a National Institutes of Health–funded study on improving communication with nonspeaking patients in the ICU that we renamed the "Study of Patient-Nurse Effectiveness with Assistive Communication Strategies" (SPEACS).[33,47] This was a quasi-experimental study involving 89 patients and 30 nurses sequentially assigned to (1) usual care, (2) 4-hour nurse training plus low-technology communication supplies, or (3) addition of electronic AAC devices, 2-hour training on devices, and speech-language pathologist (SLP) consultation. The nurse training in basic AAC skills is based in communication disorders science and evidence from observational research in the ICU. We developed a clinical decision pathway (ie, an algorithm) to guide selection of communication techniques and tools on the basis of cognitive, language, sensory, and motor assessment parameters (Figure 2). The training program follows the assessment and AAC tool decision pathway (Figure 3).

To detect change in nurse-patient communication behavior, we collected and coded video recordings of nurse-patient communication at 4 times across 2 consecutive days. Analysis of nurse-patient interactions in the usual-care group showed little to no use of assistive communication materials (eg, writing supplies, alphabet or word boards).[48] Surprisingly, 37.7% of communications about pain were not successful. Patients in the usual-care group rated 40% of the communication sessions with nurses as somewhat to extremely difficult.[48] These findings underscored the patient safety and quality-of-care implications of untreated patient communication impairment.

The SPEACS intervention was associated with improvements in communication frequency and successfulness of communication exchanges about pain and other symptoms. Patients in the group receiving SLP consultation reported less difficulty with communication and greater use of AAC strategies.[33] In fact, the SLP role was vital to modeling communication techniques and tailoring communication plans to accommodate fluctuations in patient status and communication needs by integrating multiple AAC strategies for each case.[49]

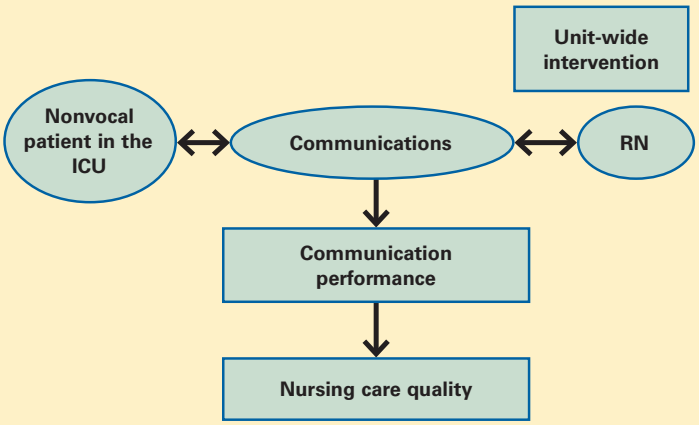

Figure 1 SPEACS-2 nurse-patient communication framework.

Abbreviations: ICU, intensive care unit; RN, registered nurse; SPEACS, Study of Patient-Nurse Effectiveness with Assistive Communication Strategies.

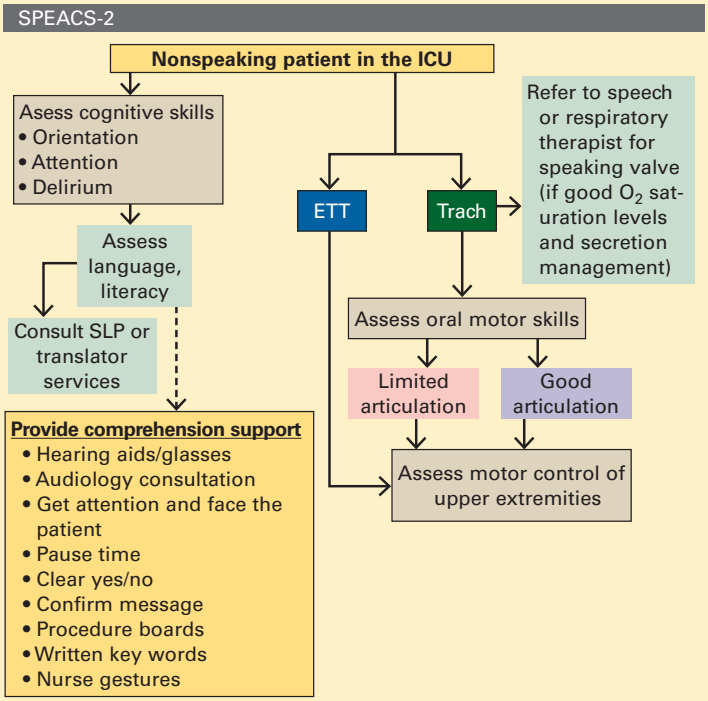

Figure 2 Assessment parameters.

Abbreviations: ETT, endotracheal tube; ICU, intensive care unit; O_2, oxygen; RN, registered nurse; SLP, speech language pathologist; SPEACS, Study of Patient-Nurse Effectiveness with Assistive Communication Strategies; trach, tracheostomy tube.

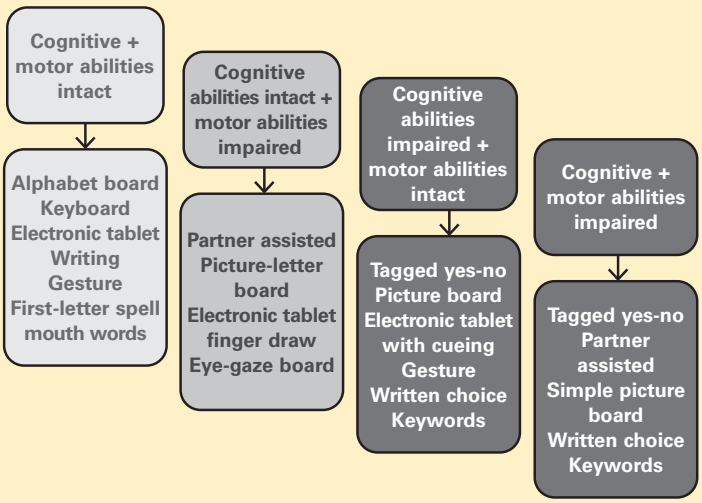

Figure 3 Selection of communication tools and strategies for augmentative and alternative communication targeted to the patient's communication ability.

The nurse-patient video recordings provided a valuable bank of observational data from which our team and doctoral students conducted in-depth measurement of symptom communication[46,50]; examined the influence of delirium and age on symptom communication[50]; explored the association between nurses' interaction behaviors and quality-of-care indicators[51]; and assessed family-patient communication.[52] Although only the first 3 minutes of each video recording were analyzed for the SPEACS study, we reexamined the full-length recordings and electronic health records for symptom communication and symptom treatment. From this expanded symptom-communication data set, we identified common critical illness symptom complaints not typical of standard symptom checklists, such as bloating, feeling hot or cold, and frustration.[50] Tate et al[50] conducted a substudy in which they explored the influence of delirium and age on symptom communication. Older age (≥60 years) was associated with self-report of pain, drowsiness, and cold. Patients who tested positive for delirium were more likely than those without delirium to complain of dry mouth.[50]

SPEACS was associated with improvements in successfulness of communication about pain and other symptoms.

In a dissertation study, Nilsen et al[51] explored associations between nurse-patient interaction behaviors (ie, eye contact, smiling, touching, engagement, responsiveness) and nursing-care quality indicators among older adult (≥60 years) patients receiving MVS (n = 38) and their ICU nurses (n = 24). Positive nurse behaviors were significantly associated with pain management and sedation level, suggesting a link between positive nurse interactions and quality indicators.

In general, family members of patients in our studies have been very receptive to communication tools and attention to patient communication. We performed a qualitative analysis of enrollment notes, intervention logs, and observation records from the SPEACS study to identify which AAC tools families used and to describe family members' and nurses' perceptions of communication between family caregivers and patients receiving MVS.[52] Families were unprepared for the patient's inability to communicate and felt frustrated by unsuccessful communication. In the absence of AAC tools, they brought homemade communication flash cards, notebooks, or toys (eg, magic slate) as communication aids to the bedside in an effort to establish the highest level of communication possible with the patient.[52]

Implementation and Engagement

In focus groups with nurses who participated in the SPEACS training, the nurses evaluated the communication training as helpful and found several new strategies effective; however, advanced techniques, such as eye-gaze boards and partner-assisted selection, received mixed reviews.[53] Nurses identified the patients' mental status, time constraints, and the perceived need to prioritize technical aspects of care as barriers to integrating the program in practice. Nurses recommended that their colleagues receive the same training in an online approach to reach the entire ICU staff.[53] In response, we condensed the course to a 1-hour online continuing education program with video exemplars of techniques (SPEACS-2) accompanied by an assessment-intervention algorithm, a variety of communication boards, communication care plans, and other supplies. Nurses received a 1-hour continuing education unit and access to the materials.[34] Speech-language pathologists performed weekly communication rounds to role model the techniques with selected patients.[54]

Our interdisciplinary team implemented the SPEACS-2 nurse training and toolkit program unit-wide across 6 ICUs and 2 teaching hospitals. We prospectively tested nurse knowledge and attitudes about patient communication and retrospectively evaluated the quality-improvement effects on 1440 adult patients receiving MVS from each unit, using blinded medical record abstraction.[55] Patients who

Table 2
Common myths about communicating with nonvocal patients in intensive care units

Myth	Reality
I am a good lip reader.	Lip reading is a skill requiring specialized training. It is prone to misinterpretation and expectation bias. Look in the mirror and mouth "urine bag" (nurse saw: "you are bad") or "pants" (nurse saw: "pain").
I know the 5 things patients in the ICU need to say.	This myth is reinforced when we control the topics asked in yes-no questions and limit communication tools. See above regarding expectation bias. Patients want to ask about things outside the ICU (eg, pet, work, holiday plans, bills) and request unexpected things (eg, "Swiss Miss" [cocoa], raspberry ice, pants).
It takes too much time.	Nurses who become proficient in the techniques report that it saves time in incorrect guessing and communication breakdowns.
My patient can't use or is inappropriate for AAC.	Consult the SLP to assess complex communication needs and plan the best approach.
The patient's family will know what he is trying to say.	Family members often report frustration and an inability to accurately interpret the patient's nonvocal messages.[52]
Older adults cannot use or are not comfortable using electronic communication devices.	Many older adults use smartphones and tablet computers. Older adults demonstrate the ability to use tablet communication applications and other electronic devices. They may make more touch or fine motor errors and need to use a stylus or receive cueing on device use.[56,57]

Abbreviations: AAC, augmentative and alternative communication; ICU, intensive care unit; SLP, speech language pathologist.

met basic communication criteria were randomly selected and evenly distributed across units and periods during the study.[38]

In general, SPEACS-2 implementation met the training target, with 84% of ICU nurses completing the online training. Nurse participants demonstrated significant increases in knowledge, satisfaction, and comfort in communicating with nonvocal patients receiving MVS.[34] The SPEACS-2 program implementation, however, did not affect patient care quality indicators (eg, days with heavy sedation, pain score documentation, ICU-acquired pressure ulcers, physical restraint use) or resource use.[34] Our evaluation of implementation showed variation in program adherence and nurse engagement with the program across units. The evaluation revealed some deep-seated clinical beliefs (Table 2) that may require a disinformation or de-implementation approach and greater preimplementation unit assessment and staff nurse involvement in implementation planning. We also learned that, although the techniques are not difficult, changing habituated communication behaviors requires intention, commitment, and a bit of practice.

We used the lessons learned during SPEACS-2 implementation to assist colleagues with program implementation in a quality-improvement project conducted at the Hospital of the University of Pennsylvania.[58] Nurses (n = 385) across 5 ICUS were trained in SPEACS-2. I conducted in-person booster training sessions and unit communication rounds with communication champions. The before-and-after analysis demonstrated positive changes in patient-reported ease of communication, incremental improvements in program adherence, and the feasibility of incorporating the SPEACS-2 strategies into practice.[58] The SPEACS-2 training program continues to be implemented in ICUs across the United States, Canada, and Ireland, and it is available online (https://go.osu.edu/speacs).

To better address the gap in nurse training in how to communicate with communication-impaired patients, Judy Tate has led implementation of the SPEACS-2 program in the undergraduate and graduate prelicensure curricula at The Ohio State University College of Nursing.[59] The curriculum addressed common communication disabilities, such as hearing loss, aphasia, impaired vision, low English proficiency, that patients experience in settings beyond the ICU, using the SPEACS-2 framework. Student outcomes were evaluated 1 year after implementing a student version of the SPEACS-2. Junior nursing students (n = 85; 53%) completed the 16-item Nurse Communication Survey and provided feedback about the course content and examples of how they used the content in the clinical setting. Students rated the content as "very valuable"; however, they rated their overall ability to communicate with patients as average. Most (n = 60; 70.6%) reported using the program content in the clinical setting.[59] Lack of AAC tools in the clinical setting and clinical instructor knowledge or training

Changing habituated communication behaviors requires intention, commitment, and practice.

- Word–picture icons for common messages
- Voice output
- Pain location and rating
- Questions
- Keyboard – alphabet board
- Finger draw
- Language translation

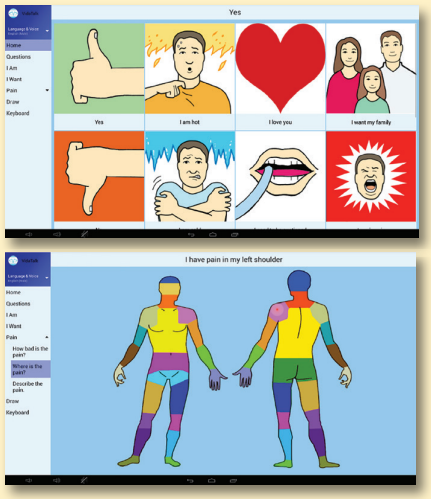

Figure 4 Features of the VidaTalk application (Vidatak, LLC).

Images courtesy of Vidatak LLC. Used with permission.

were barriers to implementation. This feedback prompted us to implement SPEACS-2 training for undergraduate clinical instructors. Our current work in this area includes curating case studies and other online teaching materials and clinical tools.

Next-Generation Tools

My most recent research has been in partnership with Lance Patak at Vidatak, LLC and his team in the iterative feasibility, acceptability, and usability testing of a patient communication application for tablet computers called VidaTalk using mixed-methods technology approaches.[56] The features of the application (app) are presented in Figure 4. In a separate study of the usability and acceptability of AAC tools among older adults, participants preferred the VidaTalk app (version 1.3) to the 2 other tablet apps for patient communication.[57] Older adults suggested they needed additional training and practice in the use of electronic communication apps. Similarly, we found that older adults were able to use the app effectively but had more touch errors and required more frequent cueing than did younger participants.[60] Our technology development and testing work culminated in a small randomized controlled efficacy trial that will be published separately.

> We have some great tools and resources to provide comprehensive communication support to critically ill patients.

We have learned that selected patients can effectively use the app to communicate a variety of standard and novel messages to bedside care providers and family caregivers. Several patients with continued communication impairment requested access to the app after leaving the ICU. We have also learned that most patients use the app in combination with other tools. A doctoral student, Jiwon Shin, applied the Facilitated Sensemaking Model in a complementary study to examine family and patient use of the VidaTalk app and the effect on family caregiver psychological outcomes. She hypothesizes that facilitating patient-family communication may relieve some family caregiver stress and anxiety.[61]

Research on the development and testing of AAC tools (eg, tablet computer/mobile device applications, eye-gaze or eye-tracking devices, integrated nurse call-communication devices, communication boards) designed for use in hospital and ICU settings has increased in the past 10 years.[18-31,35] Most, however, are small pilot feasibility and usability studies. Although large randomized controlled trials are lacking, associations have been demonstrated between AAC tool deployment and reduced patient anxiety ratings,[22,23] depression,[23] frustration levels,[29] and improving communication ease[22,29] and patient satisfaction with communication[29] among qualifying patients in the ICU. Because patient outcome variables such as delirium, anxiety, and depression are affected by patient condition and care practices (eg, sedation) unrelated to communication interventions, patient outcome selection and measurement are challenging. The implementation barriers identified by investigators confirm that new and improved communication tools for use with communication-impaired patients cannot be effectively used in the ICU without proper training of nurses and other interprofessional team members, access to SLPs for communication assessment and care planning, and availability of a menu of communication tools and supplies.

COVID-19 Response

The COVID-19 pandemic placed an urgency on dissemination of communication materials and education and support for bedside providers. Clinicians in the ICU need access to simple communication tools to interpret quickly and reliably the messages of patients with COVID-19. In addition, patients with COVID-19 who are receiving MVS may also have difficulty understanding instructions and messages from care providers who are wearing protective masks. We joined a national group of interprofessional experts on a COVID-19 task force to get the word out and to create a suite of free communication tools, language translations, and tips; these are located on the Patient-Provider Communication website (https://www.patientprovidercommunication.org). The "case example" tab on the webpage provides

examples of patients with COVID-19 to illustrate how SLPs work with nurses to construct reliable methods to communicate with patients with COVID-19. Our research team also made video examples of communication techniques available on the SPEACS-2 website. In addition, we worked with the American Thoracic Society Nursing Assembly to produce a podcast on "Tips for Communicating with your COVID-19 Patients on Mechanical Ventilation."[62]

What's Next

When I started this journey, the provision of AAC consultation and support in the medical setting was a specialty in which relatively few SLPs were trained or interested. It was not a service routinely provided by most hospital speech pathology departments. I am happy to report that this is changing. Although there are still capacity and staffing challenges, SLPs are more widely trained in delivery of AAC to acute and critically ill patients. In the past 5 years, I have seen a groundswell of in-patient communication support programs led by SLPs and implementation of the SPEACS-2 program by SLPs and critical care nurses pursuing doctor of nursing practice education. Although nurses are the most consistent and crucial communication partners at the patient's bedside, our SLP colleagues are vital to a successful and robust ICU patient-communication support program.[45,49,54,63]

Barriers to widespread availability and competence in the use of AAC tools and techniques in acute and critical care include competing priorities, lack of knowledge, perceived time commitment, and a general lack of programmatic ownership in many institutions for the provision of communication support. Our colleagues across the country continue to report a lack of training on how best to communicate with communication-impaired patients, unavailability of communication supplies at the bedside, and underuse of inpatient SLP services for communication support consultations.

This work is applicable beyond the ICU to a wider group of hospitalized patients with communication impairment, such as those recovering from stroke, or head and neck surgeries and traumatic injuries. It is also applicable in end-of-life situations and specialty settings. The next phase of this research is in implementation science addressing best practice and methods for optimizing implementation and measuring outcomes that are important and linked to patient-provider communication. I also hope to study patient involvement in treatment and care decisions with AAC communication support.[63-65]

In summary, we know what to do and have some great tools and resources to provide comprehensive communication support to critically ill patients with communication disability during critical care hospitalization. However, these resources (eg, hearing amplification, communication boards, writing tools, electronic devices, SLP consultation) are not standardized or readily available in many acute care hospitals. Moreover, most interprofessional teams are not trained in communication assessment and the use of assistive tools and techniques tailored to an individual patient's abilities and preferences. Given the evidence that training, tools, and SLP consultation are feasible, acceptable, and result in individual and group improvements, it is time for development of patient communication guidelines and practice implementation in critical care.

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This lecture is dedicated to the memory of Dr Ellen B. Rudy, an extraordinary critical care nursing research pioneer and mentor. I share this honor with a fantastic interprofessional team of faculty and student colleagues as well as the critical care nurses, speech-language pathologists, patients, and family members who participated in this research.

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