Evidence-Based Communication with Critically Ill Older Adults

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KEYWORDS

• Communication • Mechanical ventilation
• Augmentative and alternative communication • Communication disorders
• Patient-centered care • Patient participation • Older adults

KEY POINTS

- Mechanical ventilation prohibits speech in critically ill patients.
- Being unable to communicate is frightening, frustrating and stressful for critically ill patients.
- Evidence-based methods to assess communication ability and select strategies to improve patient-clinician communication are important components of patient-centered care.

NATURE OF THE PROBLEM

Effective communication is the foundation of patient-centered care. Effective communication occurs when both the sender and receiver of messages achieve shared meaning and understanding.[1] Patient-centered communication builds on effective communication and includes patient perspectives, preferences, and choices. Furthermore, the patient's social and psychological context is valued as shared decision-making unfolds.[2]

The value of effective communication between health care providers and patients is acknowledged in health care accreditation standards as both a quality metric and as a fundamental patient right.[3] Communication failure is a critical factor in medical errors and in patient safety incidents.[4,5] Patients with communication impairments are at threefold risk for adverse events.[4] Despite the importance of communication to

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improve patient care and outcomes, health care providers receive little or no training in evidence-based approaches in communication assessment and accommodation.[6]

In addition to preexisting communication disorders, patients may acquire communication impairments because of therapeutic interventions, such as mechanical ventilation, sedation, and neuromuscular blockade during critical illness. Endotracheal intubation or tracheostomy prevents patients' ability to vocalize, which is frightening, frustrating, and stressful.[7,8] Communication difficulty is one of the most common and most bothersome symptoms reported by patients undergoing mechanical ventilation (MV).[7,9–13] The inability to speak limits accurate identification of symptoms and can restrict participation in treatment decision-making.[7,8,11,12,14–16] The inability to communicate contributes to physical and emotional distress and predicts psychological distress in the post–intensive care unit (ICU) period.[17,18] Despite known communication difficulties in critically ill patients, interventions to support nonvocal patients with critical illness are poorly and inconsistently applied.[13,19,20]

Older adults, defined as older than 65 years, comprise approximately 50% of ICU admissions annually and as the aging population increases, this percentage is expected to grow.[21] Critically ill older adults present communication challenges based on their unique vulnerabilities such as burden of underlying chronic conditions, sensory impairment, frailty, and cognitive dysfunction[22–26] Most ICU health care providers learn how to communicate with impaired patients by trial and error or by observing others.[6]

This article presents an overview of evidence-based strategies to improve communication during the critical illness with older adults who have preexisting and acquired communication disorders due to hearing loss, vision impairment, limited English proficiency, health literacy, cognition, and limited upper extremity mobility.

Epidemiology of Preexisting Communication Disorders

- One in 6 people in the United States have a communication disorder.[27]
- Of these, 28 million have communication disorders associated with hearing loss.[28]
- 14 million people have disorders of speech, voice, and/or language not associated with hearing loss.[29]
- 90% of adults older than 50 require corrective lenses[30]
- 1 in 3 adults older than 65 has a hearing loss[24]

Communication disorders often occur concomitantly with other chronic disorders, such as diabetes, heart failure, stroke, renal disease, and dementia, contributing to a decreased ability to engage in self-management and resulting in high rates of disability.[30–35]

Hearing loss

Hearing loss is a common but underrecognized and undertreated problem in older adults.[36,37] Few studies provide direction for improving communication with patients who have hearing impairment.[33,38] Even with mild hearing loss, low levels of ambient noise competes with one-on-one communication.[38] Higher than normal noise levels in the ICU compound the effects of hearing loss.[39] During hospitalization, hearing aids are often removed and sent home because of their cost, which worsens communication and limits patient engagement.[25,40] Preexisting hearing impairment is associated with delirium and poor recovery following an ICU stay.[41,42] The use of hearing aids in the ICU both reduces the incidence of delirium and facilitates mobility.[43]

Health care professionals are often unaware of patients' hearing impairment and routine screening for hearing loss at the bedside lacks sensitivity.[26] Clinicians report

difficulty communicating with patients with hearing loss, yet few receive formal training to develop skills necessary to resolve communication barriers.[38,44] Hearing loss is not always documented in the medical record and furthermore, few health care professionals are aware of how to access services for patients with hearing loss.[44]

A hearing assessment is necessary for all older patients admitted to the ICU. Evidence of hearing loss may be subtle and overlap with signs of other problems such as delirium. For instance, patients with hearing loss may not respond to verbal stimulus, which may be confused with inattention. Patients with hearing loss may be more responsive when they can see the communication partner's face. Clinicians may compound communication problems by rapid speech and/or use of medical jargon.[38]

An audiologist should evaluate patients with suspected or diagnosed preexisting hearing loss and can recommend simple strategies to accommodate patients with uncorrected hearing loss. Audiologists can troubleshoot problems with hearing aids and can provide brief bedside instructions to staff for appropriate use and care of hearing aids. In addition, audiologists can provide temporary hearing amplification devices if patients' own hearing aids are not available or if the hearing loss is uncorrected by hearing aids. Hearing aids should be available and inserted during the day to facilitate comprehension.[38,43,44]

Vision impairment

Given the high rates of visual impairment in all age groups and the increased prevalence of vision problems with aging, many patients require corrective lenses for reading or for distance vision correction. In older adults, visual impairment is associated with ICU delirium and poor recovery outcomes.[41] During hospitalization, patients are often expected to review educational materials, consent forms, and personal messages. Despite this, corrective lenses are not frequently made available for patients in the ICU.[45] Corrective lenses provide patients a way to make sense of their environment, identify caregivers, and compensate for hearing loss using lip-reading.

Limited English proficiency

Older adults in whom English is not their primary language may experience language barriers, making communication as well as comprehending medical terminology more difficult. Currently 1 in 15 adults are identified as Limited English Proficient (LEP) and with projected increases in immigration, this number is expected to increase.[46–48] Fifteen million older adults are LEP resulting in poor health and disparate health care access.[48,49] For any patients who are LEP, language access such as interpreter services and written materials in patients' native language are mandated now by the Affordable Care Act.

Cognitive impairment

Many patients with critical illness experience changes in their level of consciousness. Changes in cognitive function or delirium can result in changes in communication initiation and symptom communication.[16] Use of a standardized assessment tool such as the Confusion Assessment Method - ICU or Intensive Care Delirium Screening Checklist provide important data about the presence of delirium, acute confusion experienced by many ICU patients and common in older adults.[50,51] provide. Features common to delirium that may influence patient communication are impaired sustained attention, distorted thinking, inability to follow verbal commands, and changes in level of consciousness.[50,51]

Communicating with older adults may be further complicated by preexisting cognitive impairment. Impaired attention and focus are hallmark features of both delirium

and dementia. Patients with delirium superimposed on dementia may have unpredictable communication patterns.[52] For instance, patients with dementia may have verbal fluency difficulties that the patient with delirium may not exhibit. Patients with dementia have slower cognitive processing speed making it difficult to understand and react to verbal input. Patients receiving sedating medications may also exhibit slower cognitive processing speed.

Because many patients experience delirium during their ICU stay, communication strategies directed at key features of delirium are imperative. To compensate for inattention, the clinician should initiate attention by facing the patient, establishing eye contact, and maintaining the face-to-face position.[53,54] Locking eyes can provide useful information for both the speaker and the patient.[53] The speaker can monitor patient engagement while the patient can see the speaker's mouth movement. Delays in comprehension may be due to cognitive impairment, sedation, fatigue, neurologic deficits, or hearing impairment.[55] Slowing the clinician's pace of speech and limiting ideas to one at a time can help to overcome delays in processing.[56] Increasing the duration of pauses between the sent message and the patient's response will allow the patient time to formulate a response. This technique can be useful in cases in which patients have motor slowing, as seen in Parkinson disease. Asking patients to confirm the sender's message or repeat the message may increase message accuracy and retention.[56]

Limited upper motor ability

ICU-acquired weakness (ICUAW) is profound neuromuscular dysfunction associated with critical illness and its treatment.[57,58] Preexisting functional impairment or frailty, common in older adults, is a risk factor for development of ICUAW.[57] Prolonged mechanical ventilation, sedation, and immobility are common and increase risk for ICUAW.[58] Patients with ICUAW exhibit decreased strength, muscle atrophy and decreased muscle mass, fatigue, weakness, and poor grip strength.[59] Effective communication strategies are limited by ICUAW. For instance, to write a message, patients should be able to sit upright, holding their head up, grip the pen, and produce a legible written message, ICUAW may prohibit use of writing as a strategy.

Pointing or gesturing is a common method of augmenting communication efforts and is an essential component for use of many communication strategies. If the patient can point, supportive communication strategies such as alphabet boards, picture boards or touch screens may be appropriate. Unfortunately, patients with critical illness may experience upper extremity edema, which can impair the ability to point or gesture. Use of sedating medications or paralytics will prevent use of pointing and writing. In addition, vascular access may make it difficult to move their extremities.[60,61]

Augmentative and Alternative Communication Strategies

Augmentative and alternative communication (AAC) strategies are a set of tools, technologies, and approaches used to overcome communication challenges that can be used to improve communication for voiceless patients in the ICU.[62] AAC strategies were originally developed to assist patients with acquired neurologic problems to communicate deficits but have been adapted by communication scientists to meet the needs of critically ill patients.[63] AAC strategies include unaided strategies (gestures, facial expressions, mouthing words), low-tech strategies (writing, letter boards) and high-tech strategies (computer-assisted devices, apps, speech-generating devices), as seen in **Table 1**.[19,63]

Adoption of AAC strategies in the ICU can lead to improved patient satisfaction with communication.[6,64,65] There are a variety of evidence-based methods to facilitate the

Table 1
Augmentative and alternative communication strategy classifications

Unaided *Nonspoken, natural*	Aided *Require external support*
Gestures Facial expression Body language Sign language	Communication boards Handheld devices Electronic devices
Low-tech strategies Strategy that does not require battery operated or electronic device	High-tech strategies Require energy source, electronic
Writing Picture boards Letter boards	Speech-generating devices Communication Apps VidaTalk LiveVoice Speak for Myself ICUTalk

use of AAC, including access to communication materials, and improving clinician knowledge and skills.[6,19,66–68] Barriers to use of AAC in the ICU include competing priorities for clinicians, as using AAC takes time away from other clinical activities.[6,67–69] Many clinicians limit communication exchanges with patients, as they have experienced frustration with communication breakdowns with nonspeaking patients.[70]

Low-tech strategies

Low-tech AAC include methods that enhance communication efforts using strategies and tools that do not require battery-operated devices. Communication boards include symbols, letters, pictures, icons, or a combination to facilitate messages by pointing by the patient or the clinician, as seen in **Fig. 1**. Communication boards can increase communication effectiveness and speed, decrease frustration, and improve patient satisfaction in communication with clinicians.[71,72] Communication boards, although the most restrictive option, are inexpensive, downloadable, and can be constructed on paper or purchased.

High-tech strategies

High-tech strategies include devices that use an electronic interface, as seen in **Fig. 2**.[64,73,74] Although more costly than low-tech strategies, some high-tech devices are able to generate speech in response to patients touching letters or symbols on the screen.[64,73–75] Some high-tech AACs use an application downloaded onto an electronic tablet.[76] Using the lettering feature enables patients to spell messages. To optimize effectiveness, patients should be alert and cognitively intact, unrestrained, and have the muscle strength and ability to point to icons.

Voice-enabling strategies

Several methods have been tested to enable speech generation by patients on MV. In their review of communication strategies for critically ill patients, Ten Hoorn and colleagues constructed an algorithm of voice-enabling strategies to guide clinical decision making when considering individualized communication interventions.[77]

The talking trach was designed to enable patients to generate vocal tones in a whisper, as seen in **Fig. 3**.[78] The cuff on the talking trach remains inflated, enabling

Fig. 1. Using low-tech communication board.

ventilation and vocalization as separate and safe functions. A talking trach tube necessitates a change in tube conferring a degree of risk of an airway exchange. Issues with secretion management with this device also make it a less desirable method.[78,79]

An inline speaking valve is a one-way airflow valve to enable vocalization. Use of an inline speaking valve requires deflation of the tracheostomy tube or the presence of a cuffless tracheostomy. The Passy-Muir valve improves vocal communication and cough, as illustrated in **Fig. 4**.[79] Use of the Passy-Muir valve is precluded in patients

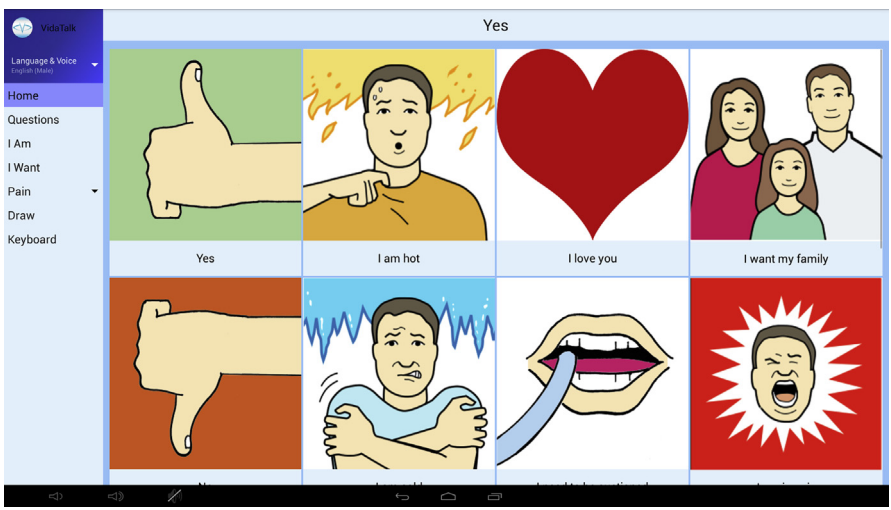

Fig. 2. Screen from Vidatalk application. (Courtesy of Vidatalk)

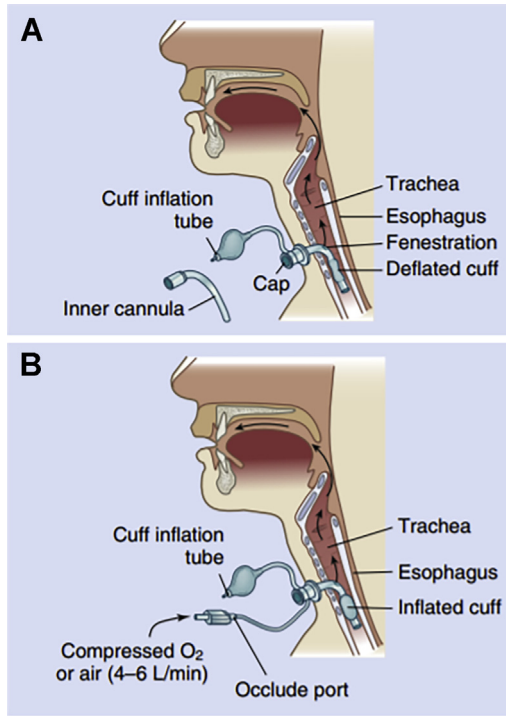

Fig. 3. (*A*, *B*) Talking Trach. (*A*) Fenestrated tracheostomy tube with cuff deflated, inner cannula removed, and tracheostomy tube capped to allow air to pass over the vocal cords. (*B*) Speaking tracheostomy tube. One tube is used for cuff inflation. (*From* Mathers, DM. Nursing Management. In: Heitkemper MM, Bucher Lin, Lewis SL, et al. (eds) Medical-Surgical Nursing: Assessment and Management of Clinical Problems, Ninth Edition, Philadelphia: Elsevier, 2014; with permission.)

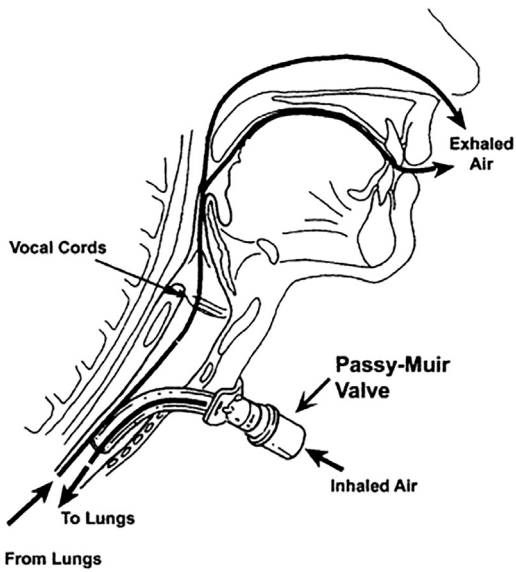

Fig. 4. Passy-Muir valve. (*From* Hodder RV. A 55-year-old patient with advanced COPD, tracheostomy tube, and sudden respiratory distress. Chest. 2002;121(1):279-280. https://doi.org/10.1378/chest.121.1.279; with permission.)

with heavy secretions, agitation, inability to maintain ventilation with a deflated cuff, and medical instability.[79,80] The use of an electrolarynx has been tested in mechanically ventilated patients.[81] Patients rated communication easier with the electrolarynx but its effectiveness was less when the patient experienced weakness.[81] In addition, patients required support for positioning the device and sentence intelligibility remained suboptimal.[81]

Communication Decision Support

Critically ill patients and their providers can learn to use communication aids in a systematic manner.[65,66] The SPEACS-2 algorithm is an evidence-based tool that guides patient assessment, selection of appropriate interventions to improve comprehension, and strategies to improve communication with mechanically ventilated patients, as seen in **Fig. 5**.[67,68] Using the SPEACS-2 algorithm, communication strategies can be attempted and used based on the patient's abilities and preferences. Communication strategies are not absolute, and as the patient's condition changes, communication approaches can be modified.

Speech Language Pathologists in the Intensive Care Unit

Speech language pathologists (SLPs) are experts in communication science and can be an invaluable resource for communication decisions.[82] For patients with more complex communication needs, such as those with neurologic disorders, expert consultation with an SLP is warranted.

Family Communication

Families often provide support and advocacy when patients are unable to speak for themselves.[83] Families experience distress when they are unable to communicate with the patient.[10,84,85] Patients on MV often appreciate the efforts of close relatives to understand them while they were unable to speak and families are likewise often interested in learning how to improve communication.[84,86] Studies have neither rigorously described patient-family communication in the ICU nor systematically tested communication strategies targeting families of the critically ill.

Engaging family members using telehealth

In the ICU setting, effectively engaging family members is essential. Information shared from family members is necessary to integrate data on a patient's medical, psychosocial, and behavioral history relevant to current illness. Support from family members can be represented a variety of ways, from providing silent companionship to actively responding and supporting patients' emotional and social needs.[86] Family members can be both surrogates and advocates, especially when the patient's communication ability is limited.[10,83,87,88] Efforts have been made to increase family presence in the ICU settings, such as using extended or open vitiation hours and inviting family to participate in daily ICU rounds.[89,90] However, family presence in the ICU is not always feasible. Decades of efforts to increase family presence in the ICU face a major barrier with the coronavirus 2019 (COVID-19) pandemic. Deprived access to family visits due to COVID-19 not only worsens suffering of patients and families but also adds stress to ICU clinicians.[91,92]

Telehealth, defined as the use of electronic information and telecommunication technologies to support health services delivery may be a timely solution to continue and improve family engagement for the critically ill.[93,94] In critical care, telehealth was initially introduced as a tool to reduce disparities in access to critical care workforces in rural areas.[95,96] Recently, family engagement has proven to be another area that

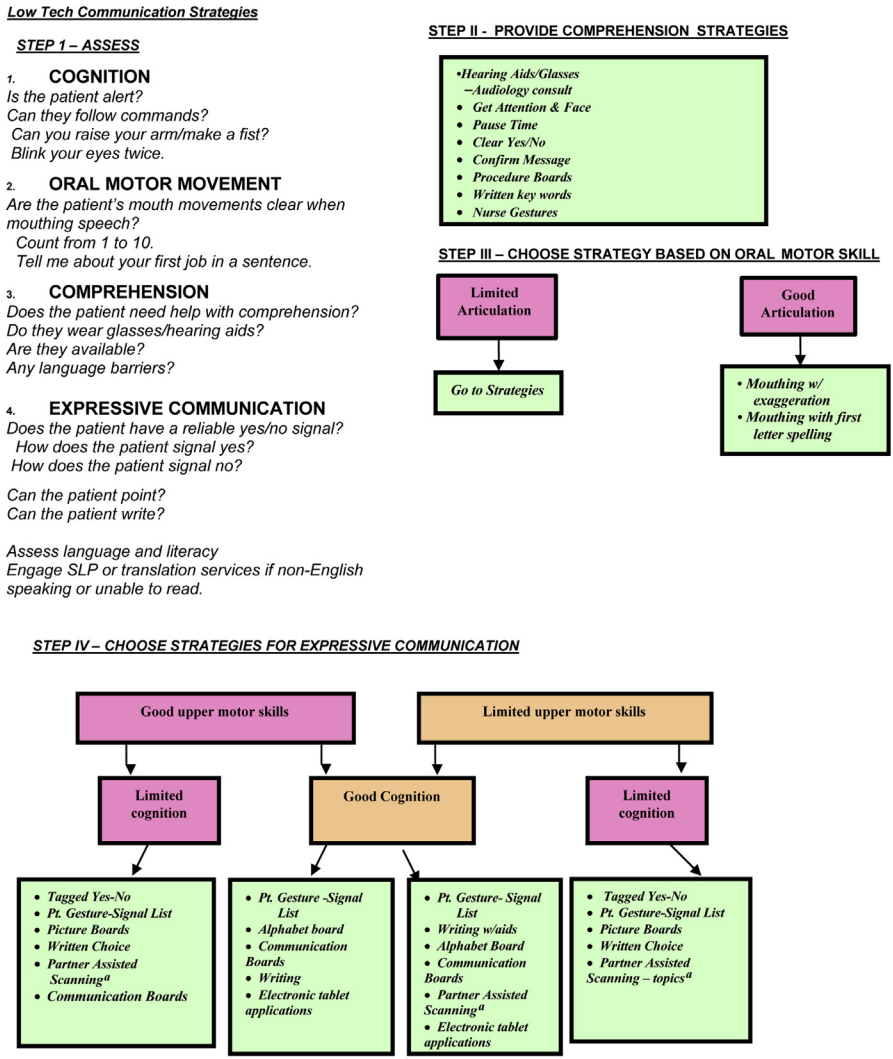

Fig. 5. SPEACS-2 algorithm.[a] Consult speech language pathologist (SLP) for complex strategies or if selected strategies are unsuccessful. (©Garret, Happ, Tate 2006 (Revised 2009: SPEACS-2; 2016) R01 HD043988.)

may benefit from telehealth. Telehealth is a solution to help family members maintain connections with patients and participate in both communication and decision making with the health care team.

A simple approach, for example, playing the audio-recorded voice of family members, can benefit both patients and families. Munro and colleagues[97] developed and pilot-tested a cognitive reorientation intervention to prevent delirium in critically ill patients. In their intervention, family members were instructed to read and record a scripted 2-minute message and the recorded message was played in the patient's room. Reorientation messages include orientation of the patient's current location and

reasons for physical limitations (eg, endotracheal tube). Results of this randomized controlled trial demonstrated preliminary efficacy in reducing delirium.

Video-conferencing and Web-based portals may be the most popular technologies considered for family engagement. Video-conferencing sets up real-time interactions between 2 or more parties, whereas Web-based portals may have conferencing capabilities but also have pre-posted information or patient centered apps, for example, VidaTalk. Various commercial online platforms are now Health Insurance Portability and Accountability Act (HIPAA)-compliant. Despite their potential to promote family engagement, establishing evidence specific to gero-critical care settings is a remaining step for its real-world application. For example, video-conferencing technologies may appear to be an obvious solution to promote real-time engagement of family members in patient visits, ICU clinical team rounds, and family meetings.[98–102] However, the acceptance by families or clinicians of the use of video conferencing for virtual family rounds, varies.[103] Most family members and clinicians are supportive of the idea of virtual rounds; however, family members have varying levels of technology literacy and comfort levels. Some clinicians expressed concerns of adding burden to their clinical workload.[103]

Another example of using telehealth to engage family members includes interactive online decision-support programs to guide complex surrogate decision making, such as goals of treatment.[104,105] Guided by theories addressing both cognitive and emotional aspects of decision making, online decision-support programs have made rapid developments.[104] Although the initial program was mainly based on the cognitive aspects of surrogate decision making, a recent development added a tool to support the emotional and psychological challenges that families experience during decision making.[104,105] These programs were suggested as an adjunct to help families prepare for complex conversations during in-person meetings with the ICU clinical team.[105]

The aforementioned technologies, from the use of a voice recording device to communication and/or decision-aid software, highlight the different media available to improve family engagement in the ICU. In the process of adopting these technologies, attention should also be paid to disparities in access to the technology, digital literacy, and Internet access among the family members. Efforts to resolve these disparities are important to ensure people with fewer resources and access are included.

Box 1
Communication resources

Communication resources
Patient-Provider Communication Organization
https://www.patientprovidercommunication.org/

Communication training
https://nucleus.con.ohio-state.edu/media/speacs2/project_desc.htm

Organizations
US Society for Augmentative and Alternative Communication
https://ussaac.org/
International Society for Augmentative and Alternative Communication
https://www.isaac-online.org/english/home/
American Speech Language Hearing Association
https://www.asha.org/

SUMMARY

Losing the ability to speak while on MV can be a frightening and frustrating experience for patients. Effective communication with mechanically ventilated patients is a critical component of patient-centered care. Given the number of older adults in the ICU with preexisting communication disorders and cognitive impairment, older adults are at greater risk for communication breakdown in the ICU. Communication assessment and selection of appropriate strategies should be approached systematically. Additional resources can be found in **Box 1**.

CLINICS CARE POINTS

Recommendations for ICU Practice Change Related to Communication

- *ICU rounds*: During ICU rounds, the clinicians should be able to answer: (1) Is the patient communicating effectively? If yes, using what mechanism? (2) Is a sign posted in the patient's room denoting communication difficulty? (3) Has a speech language pathologist been consulted? If so, what are their recommendations? and (4) Has there been a change in the patient's condition that might affect their communication ability?
- *Documentation*: Nurses should systematically and routinely chart the patient's communication function: (1) How are they communicating overall, and specifically their ability to communicate "yes" and "no"? and (2) Are there changes in patient's condition that might affect their communication ability?
- *Communication plans:* A communication plan should be posted by the patient's bed that lists how the patient is able to both (1) convey thoughts, needs, and symptoms accurately to their providers, and (2) understands what care providers are communicating, including sensory aids (eg, glasses, hearing aids).

DISCLOSURE

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