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The Cost of Not Addressing the Communication Barriers Faced by Hospitalized Patients

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Preventable adverse events (AEs) lead to poorer patient outcomes, added patient suffering and dissatisfaction, longer hospital stays, and billions in additional annual health care spending. Patients facing barriers to communication are 3 times more likely to experience a preventable AE than patients who faced no communication barriers. National data on hospital admissions, incidence and cost of preventable AEs, and the odds ratio regarding the risk of preventable AEs in people facing communication barriers were used to estimate potential benefits of improving patient communication. Reducing communication barriers could lead to an estimated reduction of 671,440 preventable AE cases and a cost savings of $6.8 billion annually. Facilitating patient–provider communication is an ethical and financial imperative. A multipronged approach, including increased awareness of and support for speech-language pathology services, is essential to creating a communication-friendly hospital culture, reducing patient suffering, and decreasing the financial cost of preventable AEs. Speech-language pathologists and allied health care professionals play a critical role in facilitating patient–provider communication and improving patient outcomes.

Hospitalized patients face many challenges while healing. Patients are typically hospitalized because they have experienced a significant illness or trauma. Some patients are able to communicate with their caregivers, but many conscious patients face communication barriers. Communication barriers can be the result of physical, cognitive, and/or linguistic differences or limitations. These barriers can impede patient–provider communication, increase the risk of experiencing an adverse event (AE; Bartlett, Blais, Tamblyn, Clermont, & MacGibbon, 2008; Cohen, Rivara, Marcuse, McPhillips, & Davis, 2005; the Joint Commission [JC], 2010), increase patient and provider stress, and decrease patient satisfaction with care (Balandin, Hemsley, Sigafoos, & Green,

2007; Hemsley, Balandin, & Togher, 2007; Hemsley, Balandin, & Worrall, 2011; Hoffman et al., 2005; Rodriguez et al., 2016). AEs lead to poorer patient outcomes, unnecessary patient suffering and dissatisfaction, longer hospital stays, and extra health care spending each year (David, Gunnarsson, Waters, Horblyuk, & Kaplan, 2013; JC, 2011). Thus, the JC specifically included meeting patients' communication needs in its 2012 standards (Blackstone, Garrett, & Hasselkus, 2011; Blackstone, Ruschke, Wilson-Stronks, & Lee, 2011).

The best efforts of nurses to guess what a patient wants can often fall short. Relying on a simple yes/no response and a "twenty questions" approach can be frustrating and often fails. The following case from our work at the University of Iowa Hospitals and Clinics illustrates the following:

> An elderly woman fell at her home and was emergently admitted to our ICU and was required mechanical ventilation. She was extremely distressed and was desperately trying to communicate with her nurses and her daughter. The endotracheal tube made it impossible for her to speak and the nurses could not make out what she was trying to mouth. She was given a white board and a sharpie and asked to write what she wanted. Because she was supine and had IVs in both arms, her attempts at writing did not produce anything that either the nurses or her daughter could decipher. In an attempt to discover what she was distressed by, she was asked whether she was in pain; she responded "no." She was asked whether she had questions about her accident; she responded "no." She was asked whether she was worried about her prognosis; again, she responded "no." The questioning continued for over twenty minutes. She was getting more distressed as were her nurses and daughter. Finally, she was asked whether what she was worried about was at home; she responded "yes" and after another long round of questions it turned out that what she was worried about was that before she had fallen she had taken some chicken out of the freezer and was worried that it would spoil since it was left on the kitchen counter. The strategy of using yes/no questions to triangulate and determine what the patient wanted had clearly failed leading to increased stress for the patient and the providers.

The Magnitude of the Problem of Adverse Medical Events

AEs (aka *medical errors*) are defined as "the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim" (Kohn, Corrigan, & Donaldson, 2000, p. 1). Hospital-initiated changes in provider practices (e.g., handwashing protocols) are critical to helping reduce many preventable AEs. Additional measures to improve patient–provider communication are likely also necessary to prevent AEs, particularly for patients with communication barriers. For instance, a patient with a communication barrier may have a harder time communicating about symptoms of AEs, such as adverse drug reactions, falls, pressure ulcers, ventilator-associated pneumonias, and delirium. If a patient can effectively summon help and communicate about pain or other symptoms, it should be easier for care providers to identify risks and intervene earlier.

To increase compliance with patient care standards, the Centers for Medicare and Medicaid Services (CMS) have stopped reimbursing hospitals for the cost of treating preventable AEs and have implemented a reimbursement model more directly tied to patient outcomes and satisfaction. Preventable AEs or sentinel events pose a significant ethical and financial burden on the U.S. health care system. The Institute of Medicine report, *To Err Is Human: Building a Safer Health System*, highlighted the pervasive problem of AEs in health care (Kohn et al., 2000). Preventable AEs in the United States may have contributed to somewhere between 44,000 and 98,000 deaths a year. More recent estimates suggest that deaths related to preventable AEs are in excess of 100,000 a year (James, 2013). Adverse drug reactions, ventilator-associated pneumonias, pressure ulcers, and patient falls are among the most prevalent preventable AEs. Landrigan et al. (2010) found that, despite increased hospital awareness of patient safety, the number of patients harmed by

medical interventions had remained high (18% of admissions). Furthermore, the report contended that 63% of those injuries were preventable (Landrigan et al., 2010). Department of Health and Human Services reported that 13.5% of Medicare beneficiaries had experienced an AE and 1.5% experienced AEs that contributed to their deaths (Levinson, 2010). The number of AEs annually has been found to be vastly underreported (possibly by a factor of up to 10). Thus, the extra health care costs associated with treating the outcomes of AEs could be in billions of dollars (Classen et al., 2001). The prevalence of preventable AEs is seen in other countries as well (Davis et al., 2002; de Vries, Ramrattan, Smorenburg, Gouma, & Boermeester, 2008; Neale, Woloshynowych, & Vincent, 2001; Wu, Boyle, Wallace, & Mazor, 2013).

The problem of preventable AEs is particularly relevant to the field of speech-language pathology, because the risk of experiencing an AE is not uniform across all patients (Blackstone, Ruschke, et al., 2011; Hemsley et al., 2007, 2011). Patients with impaired communication abilities due to structural, cognitive, linguistic, or a combination of factors are three times more likely to experience a preventable AE than patients with no communication impairments (Bartlett et al., 2008).

Contacting a nurse is the patient's first and most fundamental means of communication. Many patients are unable to independently call their nurses. Approximately 14% of all conscious hospitalized patients over the age of 3 years are not able to access the nurse call system (Zubow & Hurtig, 2013). Thus, addressing patient–provider communication requires ensuring that all patients can access the nurse call system.

The inability to effectively communicate with caregivers during an acute illness makes it difficult for patients to understand their illness, participate in medical decision making, and engage in their treatment. Mechanical ventilation makes it impossible for many patients to speak for an extended period (Dasta, McLaughlin, Mody, & Piech, 2005; Wunsch et al., 2010). These "silent patients" cannot express their most basic needs or participate in life-or-death health care decisions. Zubow and Hurtig (2013) found that 33% of conscious and ventilated intensive care unit (ICU) patients are unable to communicate with caregivers. More recently, Happ et al. (2015) reported that 53.9% of their mechanically ventilated ICU patients met their criteria for needing assistance with communication.

These numbers are alarming for both ethical and financial reasons. Specifically, patients have a right to basic communication, and health care systems have a responsibility to mitigate unnecessary costs. There is an established, positive relationship between patient–provider communication and health outcomes (Balandin et al., 2007; Blackstone, Beukelman, & Yorkston, 2015; Cohen et al., 2005; Costello, 2000; Divi, Koss, Schmaltz, & Loeb, 2007; Dowden, Honsinger, & Beukelman, 1986; Downey & Hurtig, 2006; Hemsley et al., 2007, 2011; Hoffman et al., 2005; Hurtig & Downey, 2009; Patak, Gawlinski, Fung, Doering, & Berg, 2004). These studies identified the ramifications of language communication barriers in health care settings, including access to health care, participation in treatment planning, participation in critical decision making involving end-of-life issues, communication with medical providers regarding new or changing symptoms, and the ability to express dissatisfaction with their care.

The Role of Communication in Pain Management

Pain has been called *the fifth vital sign* (Campbell, 1996), and its management is a critical component of patient care. The assessment of pain is more straightforward for patients who can effectively communicate with their caregivers about the locus and magnitude of the pain. Delays in recognizing the pain associated with the tissue breakdown that can result in a decubitus ulcer, extend a patient's hospitalization, and result in further medical complications. The following case from Sarah Marshall at the University of Wisconsin University-Madison Communication Aids & Systems Clinic illustrates how critical patient–provider communication about pain can be to positive outcomes:

> Working with patients, you see and feel the frustration when they cannot communicate, especially with family. We had a patient who communicated using a speech generating

device provided by the hospital. She was able to communicate that she was experiencing stomach pain. When the medical team assessed her abdomen, it was determined that she needed surgery. Without the ability to communicate, this patient, most likely, would have remained in pain for an extended period and would have gone without treatment for an unnecessary amount of time.

The Role of Communication in Fall Prevention

The Agency for Healthcare Research and Quality (AHRQ) developed a toolkit for hospitals to use to prevent falls (AHRQ, 2013a) that identifies access to the nurse call system as a critical component to falls prevention. Many patients cannot independently reach for objects at the bedside, get out of bed, and safely ambulate without assistance. Thus, each bed is equipped with a nurse-call pendant so that patients can summon their nurses if they need (a) a urinal/bedpan, (b) their phone, (c) to be repositioned, and/or (d) to get out of bed. When the patient cannot reach or activate the pendant, the patient has no way to request an item or assistance in getting up. This can precipitate a fall if a patient attempts to independently reach for objects or get out of bed. Such falls can result in fractures, head trauma, an increased length of stay, and more patient suffering.

The Role of Communication in Preventing Pulmonary Issues

Caring for mechanically ventilated patients involves frequent oral and tracheal suctioning (Sole, Penoyer, Bennett, Bertrand, & Talbert, 2011). These patients, who cannot communicate their suctioning needs effectively, could be at a higher risk for ventilator-associated pneumonia or other complications from a mucous plug. Happ et al. (2015) found that over 50% of their mechanically ventilated patients would have benefited from some form of assistance to communicate with the ICU staff.

The Role of Communication in Detecting Adverse Drug Reactions

When patients are administered a new medication or a blood product, an adverse reaction is always possible. To avoid serious consequences, it is essential that patients can promptly report any reaction to the medication or blood product. Blenkinsopp, Wilkie, Wang, and Routledge (2007) suggested a role for patient report of adverse drug reactions. Patient care protocols require nurses to monitor patients and solicit any report of adverse reactions so that they can suspend the delivery of the medication or blood product and provide appropriate treatment (Bielefeldt, 2009). As with pain management, treating patients who experience barriers to communication complicates detecting and mitigating adverse reactions.

The Role of Communication in Preventing Delirium and Patient Stress

Because sedation and reduced mobility are also associated with increased risk delirium (Balas et al., 2014; Davidson, Harvey, Bemis-Dougherty, Smith, & Hopkins, 2013; Strøm, Martinussen, & Toft, 2010) and, more recently, posttraumatic stress disorder (Parker et al., 2015), reducing sedation and early mobilization are becoming more common in ICUs (Hopkins, Choong, Zebuhr, & Kudchadkar, 2015). As such, one can expect that a greater number of ICU patients will require interventions to address both their assistive technology (AT) and augmentative and alternative communication (AAC) needs.

Economic Impact of AEs

Given the changes in CMS reimbursement, hospitals now have added incentives to reduce the incidence of AEs. Medicare has also placed an increasing emphasis on patient outcomes and satisfaction, leading hospitals to focus more on patient satisfaction and to examine their care delivery models (e.g., communication-related question on the Hospital Consumer Assessment of Healthcare Providers and Systems Survey; CMS, 2017). Rodriguez et al. (2016) reported that providing AAC to adult ICU patients decreased frustration and improved patient satisfaction. Although it may not be possible to eliminate all risks associated with inpatient communication impairment, a number of hospitals have implemented a range of technologies to improve patient–provider communication (Blackstone et al., 2015).

The JC's hospital accreditation standards (JC, 2010) have established that all patients must have access to their preferred mode of communication and that hospitals must address any communication barriers. Similarly, the National JC (Brady et al., 2016) has established a "Communication Bill of Rights" for individuals with disabilities. The older 2005 American Speech-Language-Hearing Association (ASHA) AAC practice guidelines summarized the importance of communication eloquently:

> Communication is the essence of human life and that all people have the right to communicate to the fullest extent possible. No individuals should be denied this right, irrespective of the type and/or severity of communication, linguistic, social, cognitive, motor, sensory, perceptual, and/or other disability(ies) they may present.

Of all the health professionals working in hospitals, speech-language pathologists (SLPs) have the training and expertise to help facilitate patient–provider communication for individuals experiencing barriers to communication. Thus, SLPs have a critical role in improving patient outcomes and reducing health care costs. The low- and high-tech AAC strategies that have been used with individuals facing chronic communication impairments have also been successfully used with hospitalized patients who may experience barriers to communication on a short-term basis (Blackstone et al., 2015; Holden, 2017). It is incumbent on SLPs working with hospitalized patients, in collaboration with nurses and other allied health care professionals, to address the unmet communication needs of all patients who face communication barriers.

To better understand the human and financial costs of communication barriers in hospitals, we present recent, national data about preventable AE rates and the costs of treating the AEs. The selected AEs include "never" events such as falls and pressure ulcers (CMS, 2008) and ventilator-associated pneumonias and adverse drug reactions. These AEs currently have unacceptable frequencies of occurrence and associated treatment costs. Furthermore, for these AEs, there is the potential to decrease their occurrence and/or severity by addressing barriers to communication.

The tracking of AEs varies greatly; however, hospitals are required to report the frequency of occurrence for each type of AE to the JC and regulatory agencies. The most up-to-date reports of the AHRQ and the American Hospital Association (AHA) provide robust overall estimates for rates of occurrence of the selected AEs (AHRQ, 2013b), ICU and non-ICU population sizes (AHA, 2016), and the costs associated with the treatment of each type of AE (AHRQ, 2013b). Table 1 presents the most recently available data on AE rates and the costs associated with treating those AEs. We used the AHRQ (2013b) report of the rate per 1,000 admissions for each type of AE and the average cost of treating each type of AE and the AHA (2016) report on U.S. hospital admissions. This analysis generated an estimate of the total annual costs associated with AEs in excess of $29 billion.

Table 1. Rates of adverse events and associated costs.

Adverse event	**Number**	**Average cost**	**Total cost**
Adverse drug reaction	1,427,266	$5,000	$7,136,328,030
Falls	254,995	$7,234	$1,844,636,318
Pressure ulcer	1,151,021	$17,000	$19,567,351,050
Ventilator-associated pneumonia	38,958	$21,000	$818,110,062

Calculation of AE Risk Reduction and Cost Savings

Using these national data, it is possible to estimate the reduction in the number of these AEs and the associated costs of treating the AEs.

$$\begin{aligned} \textit{Reduction in AE} = & ((\textit{Total Patients}) * (\textit{Percentage of Alert Patients})) \\ & *(\textit{Percent of patients facing communication Barrier}) \\ & *(\textit{AE-Rate adjusted for increased risk}) \end{aligned}$$

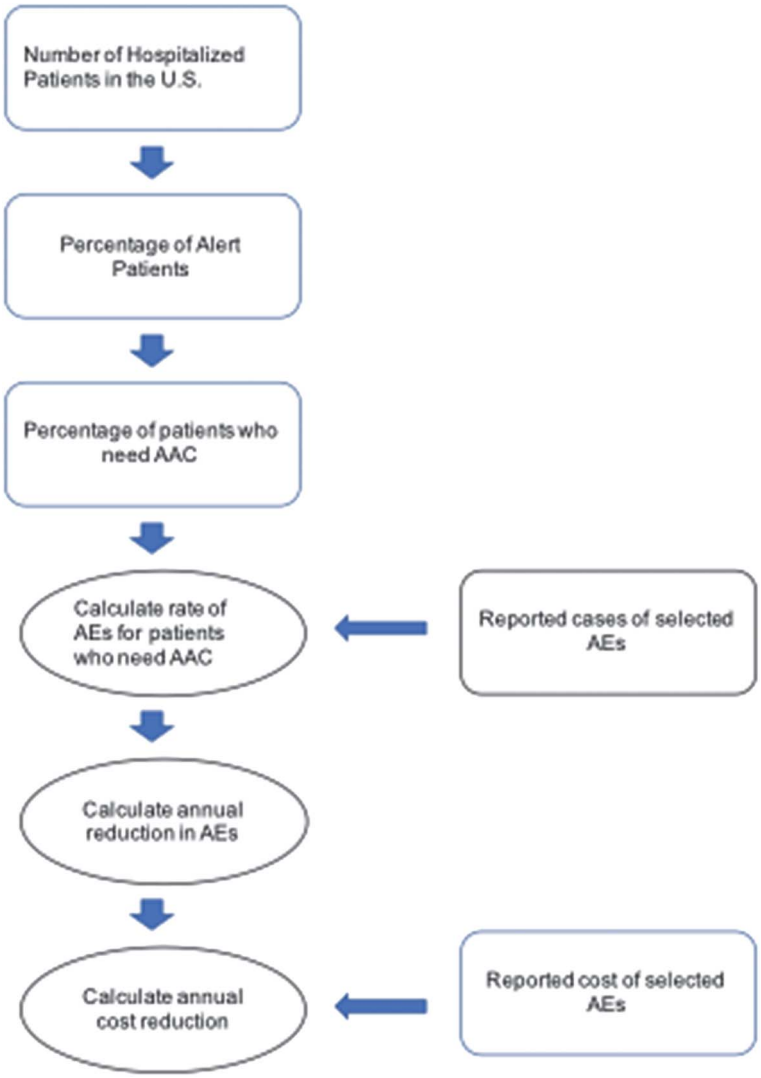
$$\textit{Reduction in AE costs} = (\textit{Reduction in AE}) * (\textit{Average AE treatment cost})$$

A key component of these calculations is the increased risk associated with barriers to communication. Bartlett et al. (2008) examined the risk factors associated with preventable AEs and found that the odds of experiencing a preventable AE were three times higher in patients with barriers to communication (i.e., language differences and/or communication impairment) as compared with patients with no communication impairment (M = 3, 95% CI [1.43, 6.27]). The adjusted odds ratios were based on analyses that controlled for potential confounders such as hospital, admission date, age, sex, admission profile, and comorbidities (Bartlett et al., 2008). We used the mean odds ratio and boundaries of the confidence interval to calculate potential risk reduction and cost savings values for each of the four targeted AEs. A low estimate of risk and cost reduction for each AE reflects the amount that would be saved if the odds of an individual with impaired communication experiencing an AE were the same as those of an individual with no communication impairment (i.e., reduction of odds ratio from 1.43 to 1). The middle estimate reflects the reduction from an odds ratio of 3 to 1, and the high estimate reflects the reduction in the odds ratio of 6.27 to 1.

Although Bartlett et al. (2008) have not broken down their increased risk assessment by the type of hospital unit, there are many more patients facing barriers to communication in an ICU than a non-ICU environment. ICU patients often have more critical health concerns—frequently accompanied more often by communication difficulties—than non-ICU patients. These difficulties can result from the inability to both independently access the nurse call (AT need) and use normal modes of oral and/or written communication (AAC need). Therefore, the rates of anticipated AE risk and cost reduction resulting from improving communication need to be calculated separately for ICU and non-ICU patients. Zubow and Hurtig (2013) found that 19% of ICU patients had both an AT need and an AAC need, whereas only 1% of non-ICU patients had an AT need and an AAC need at any given time. These domain-specific (i.e., ICU vs. non-ICU) rates of impaired communication were used in our calculations to ensure the most robust, conservative risk and cost reduction estimates. Adjusting for an estimated 50% ICU patient sedation rate is also critical to generating accurate estimates. The sedation rate estimate is consistent with data about the communication readiness (53.9%) of mechanically ventilated ICU patients (Happ et al., 2015).

Figure 1 provides an overview of the steps we used to calculate risk and cost reduction.

Figure 1. Overview of steps used to calculate risk and cost reduction for selected adverse events (AEs). AAC = augmentative and alternative communication.



Results

Patients With an AT or AAC Need

Our estimates for the reduction in number of AEs and corresponding cost reduction values are presented in Table 2. Combining the estimates of each of the AEs yields an annual reduction in AEs of 139,170 cases for ICU patients and 408,736 cases for non-ICU patients, totaling to 547,906 fewer annual AE cases estimated across all patients. This corresponds to a potential annual cost reduction of $1.4 billion for ICU patients and $4.1 billion for non-ICU patients, with an overall potential cost reduction of $5.5 billion across all patients.

Table 2. Middle estimate of adverse event and related cost reduction for intensive care unit (ICU) and non-ICU patients who need assistive technology or augmentative and alternative communication.

Adverse event	**Estimated annual reduction in number of cases**		**Estimated annual cost reduction (millions of dollars)**
Pressure ulcers	ICU	55,771	948
	Non-ICU	166,049	2,823
	Total	221,820	3,771
Ventilator-associated pneumonias	ICU	1,888	40
	Non-ICU	N/A	N/A
	Total	1,888	40
Falls	ICU	12,355	89
	Non-ICU	36,786	266
	Total	49,141	355
Adverse drug reactions	ICU	69,156	346
	Non-ICU	205,901	1,000
	Total	275,057	1,346

Patients With AT and AAC Needs

Our estimates for the reduction in number of AEs and corresponding cost reduction values are presented in Table 3. Combining the estimates of each of the AEs yields an annual reduction in AEs of 79,091 cases for ICU patients and 44,444 cases for non-ICU patients, totaling to 123,535 fewer annual AE cases estimated across both settings. This corresponded to a potential annual cost reduction of $809 million for ICU patients and $448 million for non-ICU patients, with an overall potential cost reduction of $1.257 billion across all patients.

Table 3. Middle estimate of adverse event and related cost reduction for intensive care unit (ICU) and non-ICU patients who need assistive technology, and augmentative and alternative communication.

Adverse event	**Estimated annual reduction in number of cases**		**Estimated annual cost reduction (millions of dollars)**
Pressure ulcers	ICU	31,695	539
	Non-ICU	18,055	307
	Total	49,750	846
Ventilator-associated pneumonias	ICU	1,073	23
	Non-ICU	N/A	N/A
	Total	1,073	23
Falls	ICU	7,022	51
	Non-ICU	4,000	29
	Total	11,022	80
Adverse drug reactions	ICU	39,302	197
	Non-ICU	22,388	112
	Total	61,690	309

Overall Reduction in AEs for Patients Facing Any Barrier to Communication

Combining the estimates for the two communication barrier groups (i.e., AT or AAC, and AT and AAC) yields an estimated 671,440 fewer case of our AEs annually as a result of facilitating communication. This corresponds to an estimated $6.8 billion cost reduction annually for the four preventable AEs included in these analyses.

Additional Costs Associated With AEs

Our estimates were based on aggregated national data and must therefore be applied with caution to estimate the potential savings for individual hospitals. The CRICO Strategies (2016) identified both provider–provider and patient–provider communication breakdowns as factors contributing to added malpractice risks. The cost of malpractice claims associated with AEs is not trivial, and mitigating strategies include involving patients and family members (Bennett, O'Sullivan, DeVito, & Remsburg, 2000). The calculations of costs we have presented here did not include malpractice awards that also contribute to the total social costs associated with AEs (Goodman, Villareal, & Jones, 2011).

Discussion

Communication and AE Reduction

Good patient–provider communication is an ethical imperative and critical to patient well-being. It also has the potential of providing significant health care savings by decreasing the risk of preventable AEs. The results of our calculations demonstrate the potential return on investment for facilitating communication and reducing the frequency of preventable pressure ulcers, ventilator-associated pneumonias, falls, and adverse drug events. Specifically, the data suggest a potential cost reduction of $6.8 billion annually. Communication interventions might not bring the risk of these AEs down to that of individuals who do not experience any barriers to patient–provider communication. However, even the most conservative estimates (i.e., cutting the added risk in half) suggest that patient suffering could be reduced and AE-associated costs could be decreased by an

estimated $3.4 billion annually. This potential improvement of patient outcomes and reduction of health care costs underpin the argument for the importance of speech-language pathology services focused on supporting patient–provider communication in hospitalized patients.

Clinical Implications

The health care community has begun to recognize the importance of better patient–provider communication. The JC's standards on patient communication (JC, 2010) mandate that hospitals must find ways to enable their patients to summon a nurse or another care provider and to effectively communicate with the provider they summoned. Unfortunately, many hospitalized patients continue to face barriers to communicating with their care providers. The barriers to communication are not limited to those based on physical limitations, which preclude using speech and/or access to the standard nurse call. Language differences can also inhibit communication and must be considered when addressing communication needs (Bartlett et al., 2008; Cohen et al., 2005). As reducing sedation and early mobilization are becoming more common in ICUs (Hopkins et al., 2015), one can expect that a greater number of ICU patients will be conscious and require interventions to address both their AT and AAC needs.

SLPs are best positioned to advocate for all hospitalized patients with complex communication needs. Although a large portion of the caseload of hospital-based SLPs has focused on the assessment of swallowing, addressing the broad communication needs of hospitalized patients is within the scope of practice (ASHA, 2016). The range of strategies and tools that are part of best practices in AAC are the very ones that can be used to address patients' complex communication needs ranging from access to the nurse call system to being able to effectively communicate with their health care providers and family (ASHA, n.d.). Examples of implementing AAC strategies with adult and pediatric patients in acute care settings can be found in Costello, Santiago, and Blackstone (2015) and Hurtig, Nilsen, Happ, and Blackstone (2015). SLPs are primed to take a leadership role and work with hospital administrators to foster a culture of communication embraced by all hospital employees and advocate for resources to support patient–provider communication for all. Effective AAC interventions require more than only making technology available. SLPs must assess the communication barriers faced by patients and provide a range of tools that can be implemented quickly at the bedside. The SLPs will also need to provide both the patients and all their communication partners with training to ensure that the AAC strategies are implemented with fidelity. School-based SLPs work with teachers and family members to ensure an effective implementation of a child's AAC strategies in the classroom and at home; hospital-based SLPs must work with the entire health care team treating the hospitalized patients to eliminate the communication barriers that can contribute to adverse outcomes, lower patient satisfaction, and increased staff stress. There is no single tool or strategy that can address the needs of all patients. SLPs and allied health care professionals (e.g., occupational therapists and physical therapists) must work together to tailor solutions that meet the needs of each individual patient and to adapt those solutions as the patient's condition changes. Although some SLPs may not consider meeting the needs of patients with limited English proficiency as part of their scope of practice, the use of AAC tools, such as bilingual communication boards and speech-generating devices, can provide a critical tool to address the communication barriers faced by patients who have limited English proficiency (Hurtig, Czerniejewski, Bohnenkamp, & Na, 2013).

Institutional commitment is imperative when establishing a "culture of communication" and optimizing patient–provider communication for all patients. The SLP plays a critical role in terms of both advocating for patients' communication rights and providing professional services to address the patients' complex communication needs. The success achieved by the SLPs in providing patients with the means to summon help and to communicate with their caregivers will bring the entire health care team to appreciate the value of patient–provider communication.

The ability to express one's wants and needs; to engage with friends, family, and caregivers; and to participate in decision-making processes is a basic human right that is most important during times of a medical crisis. The data demonstrate the potential human, ethical, and financial

benefits of meeting every patient's communication needs. Although there are costs associated with meeting the AT and AAC needs of patients, the estimates of AE reductions and cost savings demonstrate a large potential return on investment. The cost of reusable communication boards and assistive devices would be considerably lower than the costs associated with preventable AEs. This fact should make it easier for SLPs to make the case to hospital administrators to provide the necessary support in terms of staff, equipment, and materials. Building a culture of communication can help mitigate the adverse effects resulting from communication barriers.

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