

TALKING EARLY MOBILITY: GET MOVING WITH AAC

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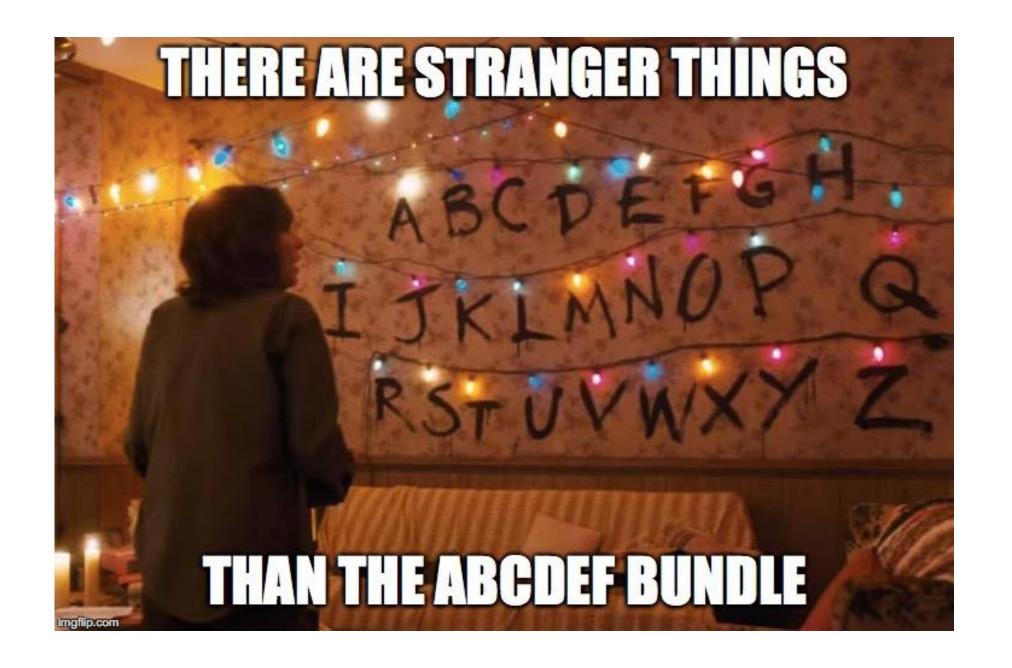
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ABCDEF Bundle

- A Assess, prevent, and manage pain
- **B** Both spontaneous awakening and spontaneous breathing trials
- C Choice of analgesia and sedation
- D Delirium: assess, prevent, and manage
- E Early mobility and exercise
- **F** Family engagement and empowerment



A – assess, prevent, and manage pain

- Patients are assessed for pain by all disciplines
- Pain scale > 4 requires re-assessment of pain after 30 minutes
- PT/OT/SLP manage pain with repositioning, distraction techniques, deep breathing
- Nonpharmaceutical approaches



B – Both Spontaneous Awakening and Breathing Trials

"Wake up and breathe"

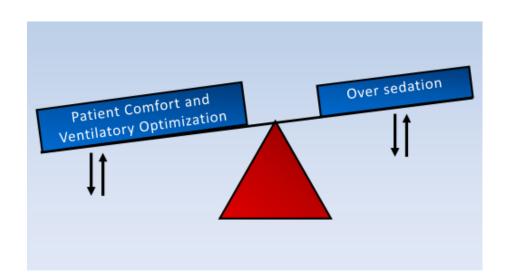
 Setting a time aside each day stop sedation, orient the patient, conduct SBT to attempt to liberate patient off the ventilator

May prevent ventilator associated PNA, reduce length of stay



C- choice of analgesia and sedation

- Sedation vacations allow for rehab interventions (passive ROM, "dangling", sit to stand, OOB to chair, ambulating)
- Titrate sedation down to lowest dose possible while minimizing agitation

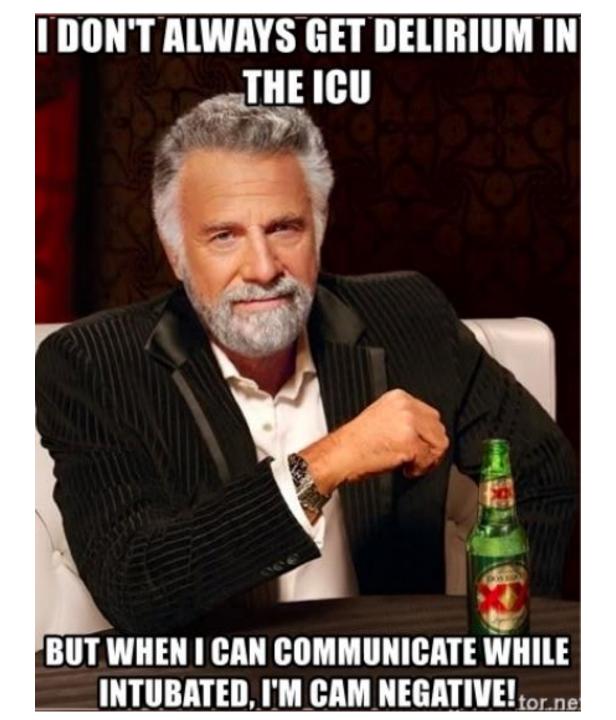




D- Delirium

- Sudden severe confusion and rapid changes in brain function that occur with physical or mental illness
- Hyperactive agitation, combativeness, heightened arousal, restlessness
- Hypoactive fatigue, decreased level of consciousness, inattention, disordered thinking
- Mixed fluctuations between hyperactive and hypoactive
- PT/OT/SLP screen for delirium with the CAM, CAM-ICU, CAPD
- Rehab provides education/training with families on delirium







E- Early Mobility and Exercise

- 18 hours for non-intubated patients
- 48 hours for intubated patients
- Nurses trained by therapy staff on transfer training and safe guarding during ambulation
- Use of algorithm to determine patient readiness for mobility
- Automatic order set for PT/OT for all PICU patients



F- Family engagement and empowerment

- Empower families to have a hands on role
- Encourage parent family engagement in therapy sessions

- Working towards patient and family goals
- Family Advisory ICU Council









Risks/Benefits

- Immobilization results in:
 - decreased QOL
 - muscle atrophy
 - impaired cardiopulmonary endurance
 - overall decrease in mobility
- Mobility improves:
 - function
 - enhances QOL post discharge
 - decreases length of stay



Contraindications

- Elevated intracranial pressure > 15mmHg (or otherwise specified by medical team)
- Uncontrolled seizures
- Acute change in mental status
- Positive end expiratory pressure >/= 10
- Fraction of inspired oxygen >/= 0.60
- Richmond Agitation Scale </= -3, >/= +4



Contraindications Continued

- Hemodynamic instability (significant/multiple pressure support agents, anything uncontrolled)
- Open chest/abdomen
- Unstable fractures



Precautions

- Difficult or insecure airway
- Richmond Agitation Scale -2, +2, +3
- Continuous dialysis
- Vasopressor medication
- Lumbar drain or EVD (need to re-calibrate with movement)
- Severe osteopenia



Signs of Intolerance (Do not resolve within 5-10 minutes)

- O2 sat below range established by medical team
- Increased work of breathing
 - accessory muscle use
 - cyanosis
 - diaphoresis
 - breath holding
 - nasal flaring
- Change in vitals deemed to be excessive as defined by medical team



Signs of Intolerance (Do not resolve within 5-10 minutes)

- Change or alteration in mental status
- Increased agitation
- Attempts to self-extubate



PT/OT Session

- Initial evaluation
 - Assess strength, sensation, proprioception, arousal
 - Perform bed mobility and sitting at EOB
 - Progress to OOB if appropriate
 - ADL's (e.g. toileting, oral care)
- Daily follow-up sessions
 - Progress mobility as appropriate
 - Assess/provide appropriate seating equipment when needed
- When are PT/OT co-treat utilized?
 - When patient requires more than 1 person assist
 - Patient can't tolerate multiple therapy sessions a day



Culture Change in the PICU

- Historically, inconsistent orders (mostly post-op)
- QI project to promote early mobilization
- Automatic order sets for PT/OT/SLP (however, can get "unclicked" by physician)
- Need to request orders at times
- Activity orders for all patients
- Staff training and education (therapists, nurses, MDs)



Culture Change in the PICU Continued

- Increased advocacy for SLP services
- Introduction of Communication Toolkit







Communication Vulnerabilities

- Medical treatment (intubation, trach, BIPAP)
- Neurogenic difficulties (aphasia, dysarthria, TBI)
- Sensory: hearing and vision
- Limited English proficiency / language difference
- Difficulty reading and/or writing
- Health literacy
- Inability to produce intelligible speech
- Pre-existing speech/language difficulties
- Altered mental status



Communication Risks

- Serious medical events (Cohen, et al., 2009)
- Sentinel events
 (The Joint Commission, 2007)
- Increased diagnosis of psychopathology (The Joint Commission, 2007)
- Poor medication compliance (Andrulis et al., 2002)
- Leaving Against Medical Advice (Flores, 2003)



Communication Risks Continued...

• Fear, stress, sleep disturbances (Happ, et al., 2004)

• Loss of ability to participate in own care (Garrett, et al., 2007)



Communication Access Benefits

- Received less sedation
- Transitioned quicker
- Increased patient satisfaction scores
- Felt more in control... generally do better...

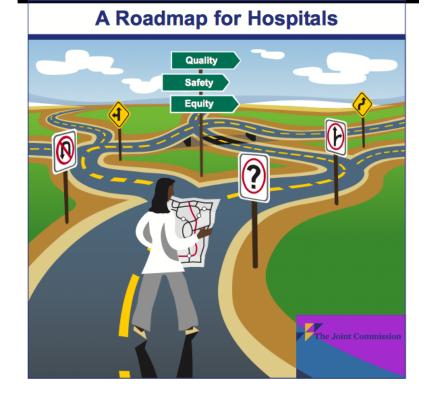
Happ, et al., (2004) Patak, et al., (2008)



Joint Commission Standards

- Effective scoring in 2012
- Guidelines for AAC access on admission, assessment, and intervention guidelines

Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care





New Joint Commission PC Requirements

<u>PC.02.01.21</u> The hospital effectively communicates with patients when providing care, treatment, and services.

Rationale for PC.02.01.21

This standard emphasizes the importance of effective communication between patients and their providers of care, treatment, and services. Effective patient-provider communication is necessary for patient safety. Research shows that patients with communication problems are at an increased risk of experiencing preventable adverse events,* and that patients with limited English proficiency are more likely to experience adverse events than English speaking patients.*

Identifying the patient's oral and written communication needs is an essential step in determining how to facilitate the exchange of information with the patient during the care process. Patients may have hearing or visual needs, speak or read a language other than English, experience difficulty understanding health information, or be unable to speak due to their medical condition or treatment. Additionally, some communication needs may change during the course of care. Once the patient's

communication needs are identified, the hospital can determine the best way to promote two-way communication between the patient and his or her providers in a manner that meets the patient's needs. This standard complements RI.01.01.01, EP 5 (patient right to and need for effective communication); RI.01.01.03, EP 2 (provision of language interpreting and translation services); and RI.01.01.03, EP 3 (meeting needs of patients with vision, speech, hearing, or cognitive impairments).

EP 1 The hospital identifies the patient's oral and written communication needs, including the patient's preferred language for discussing health care. (See also RC.02.01.01, EP 1)

Note: Examples of communication needs include the need for personal devices such as hearing aids or glasses, language interpreters, communication boards, and translated or plain language materials.

<u>EP 2</u> The hospital communicates with the patient during the provision of care, treatment, and services in a manner that meets the patient's oral and written communication needs. (See also RI.01.01.03, EPs 1-3)



Patient Satisfaction

- Hospital Value Based Purchasing Program adjusts what Medicare pays hospitals for patient experience.
- Reimbursement of up to 2% in 2018 which equals approximately \$1.8 billion.
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. Patient satisfaction is 25% of the equation.
- 10 out of 32 questions on the survey focus on communication.



HCAHPS Survey Question Examples

6.	During this hospital stay, how often did doctors <u>listen carefully to you</u> ?
	¹☐ Never
	² ☐ Sometimes
	³ ☐ Usually
	⁴□ Always
7.	During this hospital stay, how often did doctors explain things in a way you could understand?
7.	did doctors explain things in a way
7.	did doctors <u>explain things</u> in a way you could understand?
7.	did doctors <u>explain things</u> in a way you could understand? ¹□ Never



"I Understand When My Patient is Mouthing Words to Me"

- Only about 30% of all speech is visible on the lips
- Now consider:
 - ETT
 - Facial droop
 - Bell's Palsy
 - Oral motor weakness limiting ROM
 - Edentulous
 - Facial hair

- May result in accidental extubation
- Ineffective and frustrating for the patient (Etchels, et al., 2003)



The Lip Reader

https://youtu.be/R2F5vzsYWVw?t=169



Opportunity Barriers

(Beukelman and Mirenda, 1988)

- Policy
- Practice
- Knowledge
- Skill

Attitude





(Shameless Plug)



1474: Bedside AAC Service Delivery by SLPs in Acute Care - Current Practice and Call to Action (Seminar 1-hour)

Details

Location: CC/207 (Lvl 2)

Date: Friday, Nov 16 2:30 PM

Duration: 1 hour

Format: Seminar 1-hour

Code: 1474 PDH(s): 1 Hrs

Authors

Presenting Author

Rachel Santiago Boston Children's Hosp

Presenting Author

Tami Micki Altschuler NYU Langone Med Ctr

About

SLPs have a vital role in establishing and increasing bedside AAC service delivery in ICU/acute care settings. Despite hospital standards and performance requirements, multiple barriers impact implementation. Outcomes of a survey distributed to SLPs in acute care hospitals will be reviewed as well as the current state of practice. AAC strategies, considerations, and potential action plans will be discussed.

Learner Outcome(s):

- · Review survey results and implications for bedside AAC practice
- Describe example tools and strategies SLPs and/or hospitals may consider to enhance inpatient service delivery
- · Discuss potential plans of action for SLPs and acute care hospital settings

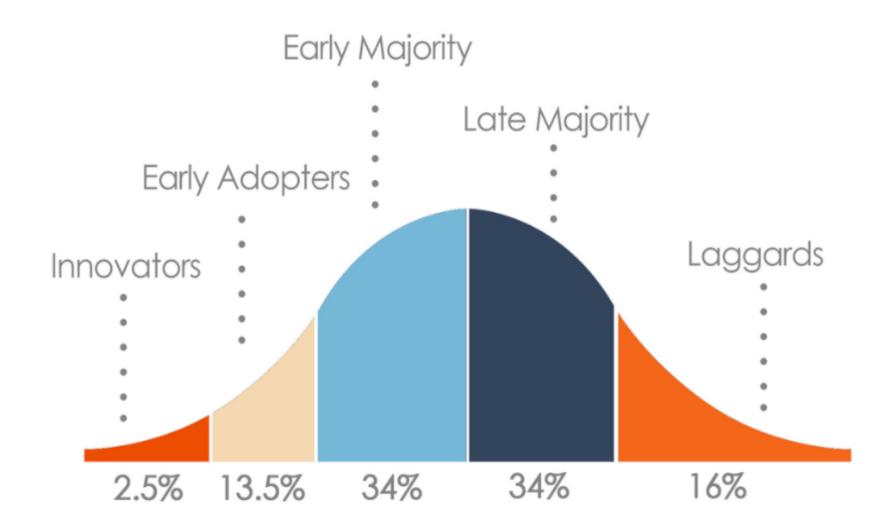
Keywords: AAC, Hospital, ICU, acute care, patient-provider communication

Audience(s)

International Affiliates Related Professionals Researchers Students



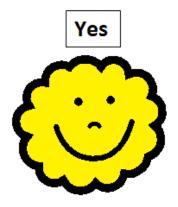
Innovation Adoption Lifecycle





Communication Toolkit



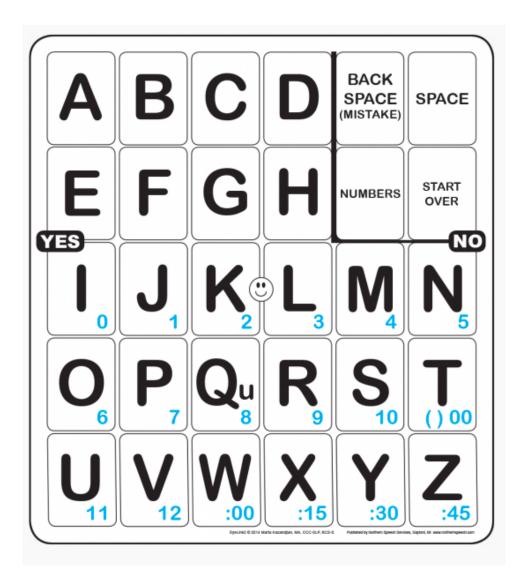




ALWAYS REFER THE PATIENT FOR A SPEECH/LANGUAGE EVALUATION



Eye Link 2





Vidatak Boards





Alphabet Board

Alphabe	et Board -	AEIOU						
A	B	\mathbf{C}	D				EPEA	
						START AGAIN		
	F	G	H			END OF WORD		
	J	K	L	M	N	END OF SENTENCE		
	D		D	C		1	2	3 6
U	P	Q	R	3	T	4	5	
						7	8	9
U	V	W	X	Y	Z		0	



Breaking Bad

https://youtu.be/FGQapTlrsR4



Single Message Device





Multi Message Speech Generating Devices





Boogie Boards





iPads





Apps

- Verbally
- Sounding Board
- Yes/No
- GoTalk Now
- Touch Chat
- Dictation Pro



High Tech Eye Gaze Device





Other Items to Include

- Voice amplifier
- Magnifying glass
- Pocket Talker (assistive listening device)
- Dry erase boards
- Clipboards
- Adaptive writing utensils





Use the dry-**Decision Tree** erase board Yes or "Boogie Board" or text to speech app on iPad Can the Yes patient Communication Use one of write or Yes Or Board (picture, type? the Go Talk phrase, devices Is the Yes alphabet) Can the patient No patient tracking point? objects? Use the eye Is the Use partner No gaze board patient Or assisted Work on No with picture responding visual tracking scanning symbols or **Ye**s to yes/no (auditory/visual) horizontally letters questions? and vertically Is the patient Work on No emerging establishing from yes/no sedation signals and alert? No Continue to assess alertness



Profile/Phases of Communication Vulnerable Patient

Phase 1: Emerging from Sedation

Phase 2: Increase Wakefulness

Phase 3: Need for Broad and Diverse Communication Access



Phase 1 – Emerging from Sedation

Yes – No – I don't know

Pain scale and body board

Call for nurse – modified access to call bell

Gain attention of loved ones/staff with simple voice output



Phase 2 – Increased Wakefulness

- All of Phase 1 strategies
- More relevant vocabulary
- Picture boards needs, body/comfort, personal interests
- Alphabet boards
- Multi-message voice output devices with digital or synthetic messages
- Voice amplification



Phase 3 – Broad and Diverse Communication Access

- All options from phases 1 and 2
- Generative communication with alphabet and sophisticated page sets
- Word and grammar prediction
- Encoding strategies
- Music and video files
- Internet access
- Telephone access



PT



OT



SLP





Co-Treat Benefits

Sedation vacations

Clustered care

Fewer disturbances for sleep hygiene

Interdisciplinary team goals for mobility and communication

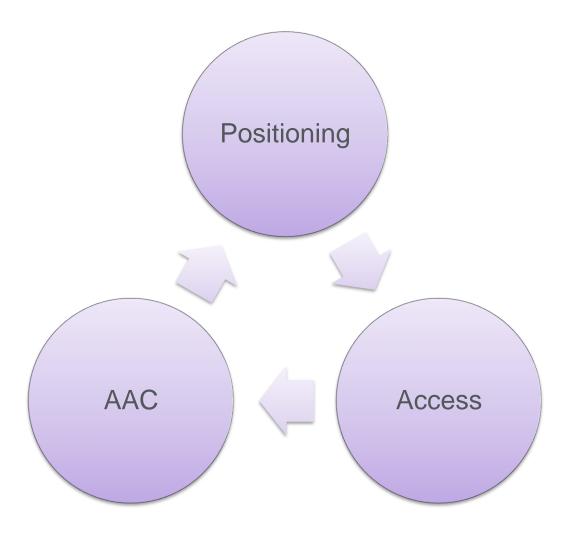


PT/OT/SLP

- PT/OT in first and assess alertness level
 request SLP orders coordinate scheduling
- PT/OT assess for optimal positioning for alertness, safety, access to communication devices
 - Tilt table
 - Sitting EOB
 - Wheelchair
 - OOB to chair
- OT provides UE functional assessment and assists in adaptive equipment



Trifecta





Positioning Options

- Upright in bed
- Tilt table
- Edge of bed
- Out of bed to chair
- Ambulating



Upright in Bed – Patient Pic



Edge of Bed – Patient Pic



Tilt Table – Patient Pic



OOB to Chair – Patient Pic



Ambulating – Patient Video



Adaptive Call Bells

- Fine motor difficulties = difficulty accessing call bell
- Often addressed by OT or Engineering
- SLPs can address options to call for help or gain attention
- Single message speech generating devices for use in pods











Switch Access











Adaptive Writing Tool





Adaptive Stylus







Mounting







9 years old, Septic Shock, s/p ECMO – Patient Pic



16 years old, Guillian Barre Syndrome – Patient Pic



19 years old, Duchenne Muscular Dystrophy – Patient Pic



Patient Video

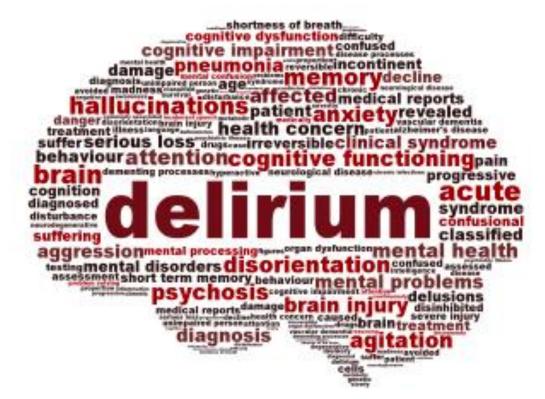


15 years old, Acute Flaccid Myelitis – Patient Video

"Well, I feel very thankful. It is making this process which is in fact very dreadful, I will not lie, a breeze. Not only can I call the attention of my mom and nurses, but come on now, I can actually communicate again."

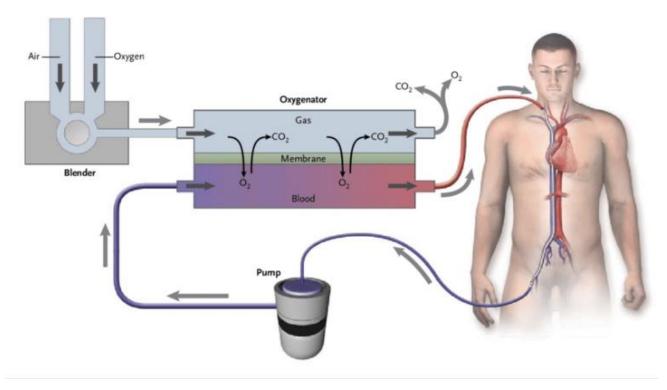


Get Involved





Get Involved



ECMO



Get Involved

			2
907 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:	908-01 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:	908-02 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:	908-03 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:
909-01 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:	909-02 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Drips: Breastmilk: Yes or No Communication:	909-03 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Drips: Breastmilk: Yes or No Communication:	909-04 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:
910-01 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Frecautions: Yes or No Drips: Breastmilk: Yes or No Communication:	910-02 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:	910-03 – 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:	910-04- 15 seconds Diagnosis: Primary Safety Concern: Respiratory Support: Rescue Med: DNR: Yes or No Critical: Yes or No Difficulty Airway: Yes or No Agitated: Yes or No Fall Risk: Yes or No Precautions: Yes or No Drips: Breastmilk: Yes or No Communication:





Barriers to Implementation

- Staffing
 - Nursing
 - SLP

- Scheduling
 - Coordinating with RT, RN, perfusionist (for ECMO) and PT/OT/SLP

- Equipment access
 - Limited options
 - Stored in other locations





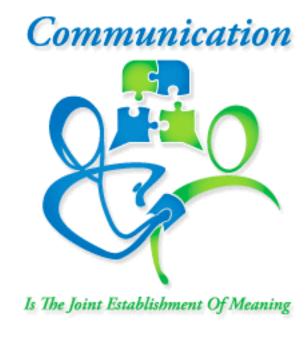
Future Growth

- Expand to all ICUs
- Equipment access
- Scheduling
- Delirium initiative
- Sedation protocol





Patient-Provider Communication Forum

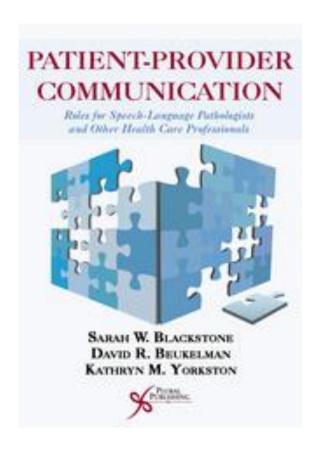


- Patientprovidercommunication.org
- Communication tools
- Past presentations on PPC
- Participants list
- Bibliography





Patient-Provider Communication: Roles for SLPS and other Health Care Professionals



- Chapter 1. Building Bridges to Effective Patient-Provider Communication
- Chapter 2. Issues and Challenges in Advancing Effective Patient-Provider Communication
- Chapter 3. Medical Education: Preparing Professionals to Enhance Communication Access in Health Care Settings
- Chapter 4. Enhancing Communication in Outpatient Medical Clinic Visits
- Chapter 5. Integrating Emergency and Disaster Resilience Into Your Everyday Practice
- Chapter 6. Adult Acute and Intensive Care in Hospitals
- Chapter 7. Pediatric Acute and Intensive Care in Hospitals
- Chapter 8. Patient-Provider Communication in Rehabilitation Settings
- Chapter 9. Residential Long-Term Care
- Chapter 10. Enhancing Communication in Hospice Settings
- Chapter 11. Making It Happen: Moving Toward Full Implementation







Patient-Provider Communication

Communicating with your patients should be easy, right? After all, we are communication disorder experts. However, even SLPs and audiologists have trouble communicating complex medical information about anatomy, physiology, diagnoses, and treatment options. Here are some resources to help.

Patient-Provider Communication

- Patient Provider Communication book
- Patient Provider Communication Forum
- Patient-provider Communication Bibliography from the Institute for Healthcare Improvement
- Hablamos Juntos: Language Policy and Practice in Health Care
- Information for your patients on how to improve health communication
- AAC RERC podcasts on patient-provider communication
- Communication passport for accident and emergency, from the Royal Berkshire NHS Foundation Trust
- · Hospital procedures symbols, from Sheffield Children's NHS Foundation Trust

Health Communication

- Healthy People 2020 Health Communication and Health Information Technology
- Making Health Communication Programs That Work (the "Pink Book")

Working with Interpreters

. Collaborating with Interpreters and Translators

The ASHA Leader Articles

- . Communicating Effectively with Elders and Their Families
- Effective Patient Communication: Enhancing Learning Styles and Language Yields Better Outcomes

Related Resources

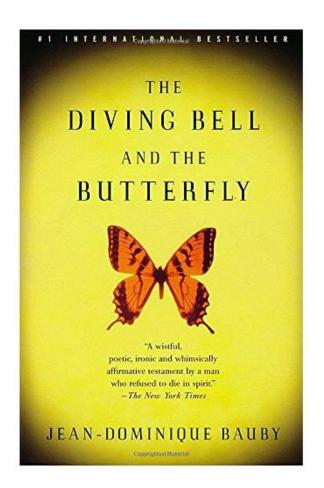
Health Literacy

- PPC Forum
- PPC Book
- Bibliography
- AAC RERC podcasts
- ASHA Leader articles
- Joint Commission info
- Health literacy info



"...hospital staff are of two kinds: the majority who would not dream of leaving the room without first attempting to decipher my SOS messages; and the less conscientious minority, who make their getaway pretending not to notice my distress signals..."

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Contact Us

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References

Altschuler, T., Costello, J., Francin, C., Quarles, J.K., Santiago, R.(2016). *Putting Patient-Provider Communication at the Forefront: Overcoming Barriers through Phases of Pediatric Inpatient Program Development.* Presentation at the Biennial Conference of the International Society of Augmentative and Alternative Communication, Toronto, Canada.

Bartlett, G., Blais, R., Tamblyn, R., Clermont, R. J., & MacGibbon, B. (2008). Impact of patient communication problems on the risk of preventable adverse events in acute care settings. *CMAJ*, 178(12), 1555-1562. doi:10.1503/cmaj.070690

Blackstone, S. W., Beukelman, D.R., & Yorkston, K.M. (2015). Patient-Provider Communication: Roles for Speech-Language Pathologists and Other Health Care Professionals. San Diego: Plural Publishing.

Brady, N. C., Thiemann-Bourque, K., Fleming, K., & Matthews, K. (2013). Predicting Language Outcomes for Children Learning Augmentative and Alternative Communication: Child and Environmental Factors. *Journal of Speech Language and Hearing Research*, *56*(5). doi:10.1044/1092-4388(2013/12-0102)

Broyles, L. M., Tate, J. A., & Happ, M. B. (2012). Use of augmentative and alternative communication strategies by family members in the intensive care unit. *Am J Crit Care*, *21*(2), e21-32. doi:10.4037/ajcc2012752

Cameron, S., Ball, I., Cepinskas, G., Choong, K., Doherty, T. J., Ellis, C. G., ... Fraser, D. D. (2015). Early mobilization in the critical care unit: A review of adult and pediatric literature. *Journal of Critical Care*, *30*, 664-672.

Center for Medicare and Medicaid Services. (2019). *Understanding the Fiscal Year 2019 Hospital Value-Based Purchasing Program.* Retrieved from

https://www.qualityreportingcenter.com/wpcontent/uploads/2018/07/09_VBP_FY2019_PPSRRelease_ProgramSummary_vFINAL508.pdf

Choi, J., Campbell, M. L., Gelinas, C., Happ, M. B., Tate, J., & Chlan, L. (2017). Symptom assessment in non-vocal or cognitively impaired ICU patients: Implications for practice and future research. *Heart Lung, 46*(4), 239-245. doi:10.1016/j.hrtlng.2017.04.002



Costello, J. (2000). AAC intervention in the intensive care unit: The children's hospital Boston model. *Augmentative and Alternative Communication*, 16(3), 137-153. doi:10.1080/07434610012331279004

Costello, J. M., Patak, L., & Pritchard, J. (2010). Communication vulnerable patients in the pediatric ICU: Enhancing care through augmentative and alternative communication. *J Pediatr Rehabil Med, 3*(4), 289-301. doi:10.3233/PRM-2010-0140

Costello, J. M., Santiago, R., & Blackstone, S. (2015). Pediatric Acute and Intensive Care in Hospitals. In Blackstone, Beukelman, & Yorkston (Eds.), *Patient-Provider Communication: Roles for Speech-Language Pathologists and Other Health Care Professionals*: Plural Publishing.

Dowden, P. A., Honsinger, Melissa J., and Beukelman, David R. . <Serving nonspeaking patients in acute care settings an intervention approach - Downden Honsinger Beukelman.pdf>.

Ebert, D. (1998). Communication disabilities among medical inpatients. New England Journal of Medicine, 339:272-3.

Ely EW, Baker AM, Dunagan DP, et al. Effect on the duration of mechanical ventilation of identifying patients capable of breathing spontaneously. *N Engl J Med* 1996 Dec;335(25):1864-9. PMID: 8948561.

Flores, G., Laws, M. B., Mayo, S. J., Zuckerman, B., Abreu, M., Medina, L., & Hardt, E. J. (2003). Errors in medical interpretation and their potential clinical consequences in pediatric encounters. *Pediatrics*, 111(1), 6-14.

Grossbach, I., Stranberg, S., & Chlan, L. (2011). Promoting effective communication for patients receiving mechanical ventilation. *Crit Care Nurse*, *31*(3), 46-60. doi:10.4037/ccn2010728



Happ, M. B., Roesch, T. K., & Garrett, K. (2004). Electronic voice-output communication aids for temporarily nonspeaking patients in a medical intensive care unit: a feasibility study. *Heart Lung*, *33*(2), 92-101. doi:10.1016/j.hrtlng.2003.12.005

Huer, M. B. (2008). Toward an understanding of the interplay between culture, language, and augmentative and alternative communication. *Perspectives on Augmentative & Alternative Communication*, 17(3), 113-119.

Hurtig, R.R., & Downey, D. (2009). Augmentative and Alternative Communication in Acute and Critical Care Settings. San Diego: Plural Publishing.

Hurtig, Richard & Alper, Rebecca & Berkowitz, Benjamin. (2018). The Cost of Not Addressing the Communication Barriers Faced by Hospitalized Patients. *Perspectives of the ASHA Special Interest Groups*. 3. 99. 10.1044/persp3.SIG12.99.

Lee, J., Pérez-Stable, E., Gregorich, S., Crawford, M., Green, A., Livaudais-Toman, J., . . . Karliner, L. S. (2017). Increased Access to Professional Interpreters in the Hospital Improves Informed Consent for Patients with Limited English Proficiency. *JGIM: Journal of General Internal Medicine*, 32(8), 863-870. doi:10.1007/s11606-017-3983-4

Marra, A., Ely E.W., Pandharipande, P., Patel, M. (2017). The ABCDEF Bundle in Critical Care. *Journal of Critical Care*, Apr;33(2):225-243.

Maeder, J. M., Fager, S., Collins, K., & Beukelman, D. R. (2012). Representation of potential communication items in medical settings: an intervention note. *Augment Altern Commun*, 28(3), 190-196. doi:10.3109/07434618.2012.704526

Magnus, V. S., & Turkington, L. (2006). Communication interaction in ICU—Patient and staff experiences and perceptions. *Intensive and Critical Care Nursing*, 22(3), 167-180. doi: https://doi.org/10.1016/j.iccn.2005.09.009



Maeder, J. M., Fager, S., Collins, K., & Beukelman, D. R. (2012). Representation of potential communication items in medical settings: an intervention note. *Augment Altern Commun*, 28(3), 190-196. doi:10.3109/07434618.2012.704526

Magnus, V. S., & Turkington, L. (2006). Communication interaction in ICU—Patient and staff experiences and perceptions. *Intensive and Critical Care Nursing*, 22(3), 167-180. doi: https://doi.org/10.1016/j.iccn.2005.09.009

Mayo, R., Parker, V. G., Sherrill, W. W., Coltman, K., Hudson, M. F., Nichols, C. M., . . . Paige Pribonic, A. (2016). Cutting Corners: Provider Perceptions of Interpretation Services and Factors Related to Use of an Ad Hoc Interpreter. *Hispanic Health Care International*, 14(2), 73-80. doi:10.1177/1540415316646097

Nápoles, A. M., Santoyo-Olsson, J., Karliner, L. S., Gregorich, S. E., & Pérez-Stable, E. J. (2015). Inaccurate Language Interpretation and its Clinical Significance in the Medical Encounters of Spanish-speaking Latinos. *Medical care, 53*(11), 940-947. doi:10.1097/MLR.0000000000000422

Patak, L., Gawlinski, A., Fung, N. I., Doering, L., Berg, J., & Henneman, E. A. (2006). Communication boards in critical care: patients' views. *Appl Nurs Res, 19*(4), 182-190. doi:10.1016/j.apnr.2005.09.006

Patak, L., Wilson-Stronks, A., Costello, J., Kleinpell, R., Henneman, E.A., Person, C., & Happ, M.B. (2009). Improving patient provider communication: A call to action. Journal of Nursing Administration, 39, 372–376.

Radtke, J. V., Baumann, B. M., Garrett, K. L., & Happ, M. B. (2011). Listening to the voiceless patient: case reports in assisted communication in the intensive care unit. *J Palliat Med, 14*(6), 791-795. doi:10.1089/jpm.2010.0313



Santiago, R., & Costello, J. M. (2013). AAC Assessment and Intervention in Pediatric ICU/Acute Care: From Referral Through Continuum of Care. SIG 12 Perspectives on Augmentative and Alternative Communication, 22(2), 102-111. doi:10.1044/aac22.2.102

Ten Hoorn, S., Elbers, P. W., Girbes, A. R., & Tuinman, P. R. (2016). Communicating with conscious and mechanically ventilated critically ill patients: a systematic review. *Crit Care*, 20(1), 333. doi:10.1186/s13054-016-1483-2

The Joint Commission. (2010). Advancing effective communication, cultural competence, and patient and family centered care: A roadmap for hospitals. Oakbrook Terrace, IL: The Joint Commission. Retrieved from http://www.jointcommission.org/assets/1/6/ARoadmapforHospitalsfinalversion727.pdf

Zubow, L., & Hurtig, R. (2013). A Demographic Study of AAC/AT Needs in Hospitalized Patients. SIG 12 Perspectives on Augmentative and Alternative Communication, 22(2), 79-90. doi:10.1044/aac22.2.79





THANK YOU

