BEDSIDE AAC SERVICE DELIVERY IN ACUTE CARE: INTERACTIVE CASE STUDIES ACROSS THE AGE SPAN

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DISCLOSURES

Financial Disclosures:

- Rachel Santiago is a salaried employee at Boston Children's Hospital
- Jessica Gormley is a salaried employee at University of Nebraska Medical Center
- Tami Altschuler is a salaried employee at NYU Langone Medical Center
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• Authors are co-organizers of the Patient Provider Communication Network

LEARNER OBJECTIVES

- Describe the bedside feature matched assessment and intervention considerations as they relate to the ICU or acute care hospital setting.
- 2. Perform elements of a pediatric bedside feature-matched assessment and make intervention recommendations to promote communication enhancement and patient care.
- 3. Perform elements of an adult bedside feature-matched assessment and make intervention recommendations to promote communication enhancement and patient care.

AGENDA

- 1. Discuss the state of AAC in medical settings
- 2. Review bedside feature-matched assessments
- 3. Describe intervention considerations for patients in ICU and acute care settings
- 4. Interactive patient cases
 - a. Break into groups or work together
- 5. Share patient cases, assessment considerations, and outcomes
- 6. Overview and conclusions
- 7. Questions

THE STATE OF AAC IN MEDICAL SETTINGS

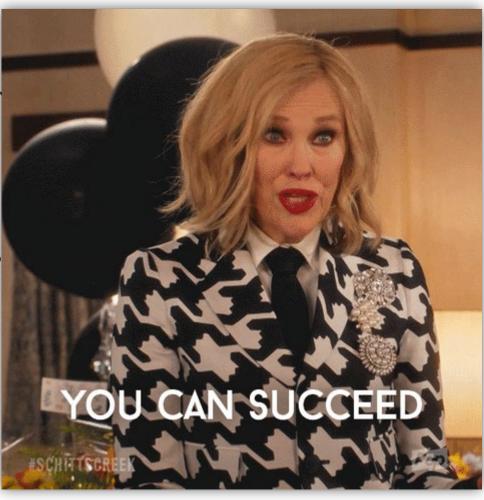
WE'VE COME A LONG WAY...

DISCLAIMER

We are SLPs currently providing bedside AAC evaluation. and supporting communication access and AAC implementation in medical settings.

As technology, practices, and the healthcare landscape evolve, so will our practice. Culture shifts take time. There is no cookiecutter manual for "how to do it"

BUT, you can get started NOW to amplify your patients' voices and promote communication accessibility. Work together WITH people who use AAC and listen to THEIR needs and perspectives.



WHAT DO WE ALREADY KNOW?

AAC assessment and implementation in health care settings is:

- helpful
- feasible
- cost-effective
- well-documented
- expected by laws in many countries

But, uptake and implementation can be slow and inconsistent



People who use AAC are at increased risk for:

Preventable adverse events

(Bartlett et al., 2008; Dithole et al., 2016; Happ et al., 2011; Hurtig, Alper, & Berkowitz, 2018).

Serious medical events

(Cohen, et al., 2009)

Poor medication compliance

(Andrulis, et al., 2002)

Increased risk of leaving against medical advice (Flores, 2003)

Increased fear, stress, and sleep disturbance

(Burns, et al, 2015; Fox & Pring, 2005; Garret, et al., 2007; Hemsley, et al, 2008; Law, et al, 2005; Morris, et al, 2013; Murphy, 2006).

Limited opportunities to participate in own care

Limited autonomy during hospitalizations

Benefits of AAC:

Better patient care and increased patient satisfaction (EFSoussi et al., 2015)

Increased satisfaction of the person receiving care (El-Soussi et al., 2015)

Less sedation

(The Joint Commission, 2010)

A quicker transition to lower levels of care (Balas et al., 2014; Happ, et al., 2004; Patak et al., 2009; Wieczorek et al., 2015

Reduces anxiety

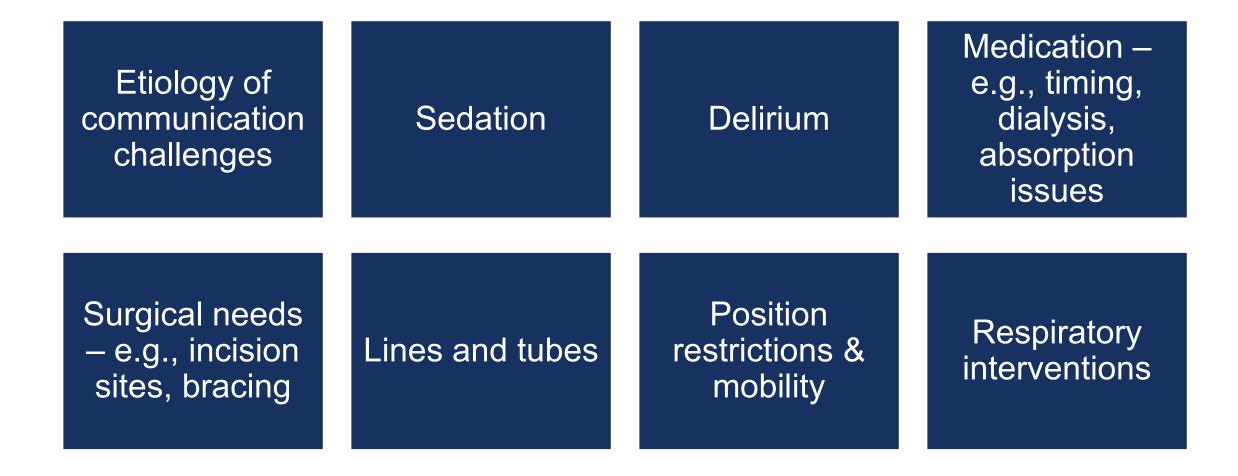
(Hosseini, et al., 2018)

Increased participation in care

What makes healthcare settings DIFFERENT?



Factors that may impact AAC use in hospital settings



INPATIENT ENVIRONMENT CONSIDERATIONS

- Packed with machines and equipment
- Frequent presence of PPE
- Communication tools may:
 - Take up space
 - Require mounting
 - Easily get "hidden" within the room
 - Interfere with mobile technology
- Detailed cleaning protocols
- Equipment storage and management

OUTPATIENT AND EMERGENCY ENVIRONMENT CONSIDERATIONS

- Exam procedures and symptom management
- Familiarity with providers
- Wait times
- Number of communication partners
- Presence of caregivers
- Presence of baseline equipment (wheelchair, AAC systems, sensory materials)
- Rigid procedures and processes

ADDITIONAL CONSIDERATIONS



BARRIERS TO AAC IN HOSPITALS

Gormley & Light (2019)

AAC service delivery is logistically complicated

Barriers to AAC delivery: Time constraints

- Assessment
- Intervention
- Partner training
- Set up

Patient turnover & length of stay

Funding

- While inpatient
- Upon discharge Limited procedures and policies

Collaboration/cotreatment is key, but difficult to do Lack of training for SLPs

Santiago et al. (2017)

Surveyed 116 SLPs in U.S. hospitals

Low perception of hospital support Confidence in AAC service delivery:

- No-tech: Very confident
- Low-tech: Very confident

 High-tech: Not confident Significant barriers to AAC delivery:

- Financial support
- Productivity demands
- Availability of tools/materials
- Staff education

Jansson et al. (2019)

Surveyed patients and staff in a Swedish ICU

Awareness re: AAC availability in the ICU

- Lower among physicians vs. RN/RN assistants
- Higher awareness re: modified nurse-call systems
- Lower awareness re: observational screenings
 Administration of sedative drugs
- Higher among staff with <10 yrs. Experience

Morris, Greenblatt, and Saini, 2019

Healthcare provider experiences with ASD

Found key themes:

- 1. Complexity beyond usual role
- 2. Lack of knowledge and resources
- 3. Training and Prior Experience
- 4. Communication and Collaboration
- 5. Need for information and training
- 6. Need for care coordination and systemic changes

BARRIERS TO AAC SERVICE PROVISION

(GORMLEY & LIGHT, 2019; SANTIAGO, ET AL, 2018, BLACKSTONE ET AL, 2015)



ACTIONABLE WAYS TO OVERCOME BARRIERS

What have you done to try and overcome these barriers?

Before we even get to do assessment.....

Regardless of what role we play on the team, we cannot ensure that all people have appropriate communication access alone!

- Make sure:
 - you are visible within the team
 - there is a way that people can get ahold of you to perform the assessment
 - there is a sustainable plan for people to integrate AAC in their workflow

BEDSIDEASSESSMENTS

ASSESSMENT PROCESS

- Chart review
- Information gathering
 - Family
 - Bedside Staff
 - Multidisciplinary providers
- Direct observation
- Feature-matched assessment
- Trial of strategies
- Formulate recommendations + disseminate recommendations
- Follow up

CHART REVIEW

- Medical history, diagnoses, reason for admission, interval events
- Developmental history, diagnoses
- Baseline communication information
- Interval and/or acute communication changes
 - Respiratory status
 - Interventions affecting communication
- Anticipated communication challenges (e.g., trach, ALS)
- Physical status
- Relevant social history
 - e.g. Who is at bedside? Who is *not* at bedside (children? Parents? Etc.)?
- Documentation from other disciplines
- Other relevant information

GATHER INFORMATION

- Take note of chart review information
- First call:
 - Referring provider
 - Bedside RN
- Speak to bedside caregivers, family, and providers

DIRECT OBSERVATION

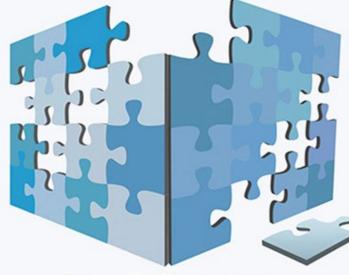
ABCS TO APPROACHING THE BEDSIDE

(COSTELLO, SANTIAGO, & BLACKSTONE, 2015)

- Assure; Acknowledge
- Bring
- Control
- Direct
- Emotion and Personality
- Fun; Functional

PATIENT-PROVIDER COMMUNICATION

Roles for Speech-Language Pathologists and Other Health Care Professionals



SARAH W. BLACKSTONE DAVID R. BEUKELMAN KATHRYN M. YORKSTON



DOMAINS OF BEDSIDE FEATURE MATCHED ASSESSMENT

Adapted from Patient-Provider Communication: Roles for Speech-Language Pathologists and Other Health Care Professionals, Chapter 7

Costello, J., Santiago, R., and Blackstone, S. (2015). Pediatric Acute and Intensive Care in Hospitals. Patient-provider communication: roles for speech-language pathologists and other health care professionals. S. Blackstone. San Diego, CA, Plural Publishing.

DOMAINS OF BEDSIDE FEATURE MATCHED ASSESSMENT

Assessment Domain	Example considerations	Assessment Domain	Example considerations	
Cognition	Sedation/wakefulness Attention Premorbid status	Sensory profile	Vision Hearing Swelling, incisions, etc.	
Physical access	Fine/gross motor skills Strength/coordination Use of physical communication behaviors (gestures, eye movement, facial expressions, etc.) Position restrictions Medical interventions	Vocabulary selection	Needs, desires, personality, interests, etc. Participation in: medical discussions, play, social interactions, and more Ask/answer questions Opt in/out Mobile communication	
Respiratory status/ventilation needs	Invasive vs. Noninvasive Breath support Trach: cuffed, uncuffed, speaking valve	Bedside environment	Lighting, noise Impact of equipment Storage of tools at bedside Access to tools within room Infection control	
Expressive- receptive communication skills	Primary language Pre-/post-morbid skills (speech and language) Vocal cord function	Communication partners	Primary language Caregivers and staff present (or not present) Partner training	
Literacy	Reading Writing/typing	Health literacy	Level of health literacy Prior hospital experiences Understanding of illness and assosicated	
	(Costello, Santiago, and Blackstone, 2015) information			

Assessment Domain	Example considerations	Example Solutions
Cognition	Sedation/wakefulness Attention, executive functioning Premorbid status	 Consider assessment across >1 visit Determine complexity of instructional language Determine types of supports at different times of day Consider memory book, visual supports, visual schedule, attention strategies, etc. Consider smart home assistant (e.g. Alexa, Siri) *if allowed
Physical access	Fine/gross motor skills Strength/coordination Use of physical communication behaviors (gestures, eye movement, facial expressions, etc.) Position restrictions Medical interventions	 Consider use of: Natural gestures, physical communication behaviors Unaided ways to convey yes/no/l don't know Consider method of selection: Direct selection (hand, eye, other) Indirect selection (partner assisted scanning, technology supported scanning) Consider mounting needs Consider keyguards
Respiratory status &/or ventilation needs	Invasive vs. Noninvasive Breath support Trach: cuffed, uncuffed, speaking valve	 Voice amplification for reduced volume, breath support Use of electrolarynx Optimized breath support strategies Speaking valve readiness trials, when indicated
Literacy	Reading Writing/typing	 Intact literacy skills: Keyboard (e.g. text-to-speech) Letter board; text-based message board (or combination) Writing tools Speech-to-text for improved comprehension

(Costello, Santiago, and Blackstone, 2015)

Assessment Domain	Example considerations	Example Solutions
Expressive- receptive communicatio n skills	Primary language Pre-/post-morbid skills (speech and language) Vocal cord function	 Create communication tools/strategies in a bilingual format Consider use of picture-based displays Consider digitally recording messages in both languages for patient-provider and provider-patient communication Disseminate information regarding medical interpreter needs
	 <u>Speech</u> Reduced volume; dysphonia Moderately reduced intelligibility Severely reduced intelligibility Ability to gain attention 	 Consider use of: Letter and/or topic cuing Writing/typing Letter/alphabet board Word or symbol-based communication boards Speech-generating device Voice and message banking if indicated Voice-output device to gain attention Consider frequency, contextual implications of use, multiple strategies/modalities
	 Expressive language Word recall, naming, paraphasias Production of multiword utterances Ability to express wants, needs, thoughts, comments, cessation, rejection, etc. Ability to gain attention 	Consider use of: • Letter and/or topic cuing • Writing/typing • Letter/alphabet board • Word or symbol-based communication boards • Speech-generating device
	 <u>Receptive language</u> Ability to follow directions Answer yes/no questions Answer open ended questions Follow routines Understand language of the environment 	 Consider: Adapt language, vocabulary, and representation of language to the current level of comprehension Augmented input (via writing, pre-stored messages, symbols, etc.) Creation of social stories, visual schedules, visual reminders, etc.

(Costello, Santiago, and Blackstone, 2015)

Assessment Domain	Example considerations	Example Solutions
Sensory profile	Vision Hearing Swelling, incisions, etc.	 <u>Vision</u> Ability to see text, symbols, and overall layout Consider characteristics of text and symbol representation (e.g. size, contrast, color, orientation) Presence of acute vision changes and needed modifications Consider use of auditory scanning <u>Hearing</u> Voice amplification Need for hearing device from inpatient audiology Consider ability to wear glasses, CI processor or hearing aids Auditory vs. Visual vs. Auditory-visual scanning Consider sign language, interpreter needs (e.g. ASL, CDI), and input modality (e.g. virtual vs. In person interpretation) Consider environmental accommodations
Vocabulary selection	Needs, desires, personality, interests, etc. Participation in: medical discussions, play, social interactions, and more Ask/answer questions Opt in/out Mobile communication	 Pre-made communication boards or page sets Custom communication boards or page sets Gather personally relevant input from patient, family, and providers Consider generative spelling and text based solutions
Bedside environment	Lighting, noise Impact of equipment Storage of tools at bedside Access to tools within room Infection control	 Address how environment impacts features and availability of a system(s) Consider infection control policies Post signage at bedside with instructions for set up and use Consider medical equipment and placement of aided strategies

(Costello, Santiago, and Blackstone, 2015)

Assessment Domain	Example considerations	Example Solutions
Communication partners	Primary language Caregivers and staff present (or not present) Partner training	 Consider and accommodate for caregiver/family primary language, interpreter, and health literacy needs Provide partner training (just in time, modelling, handouts, signage) Consider access to and use of mobile technologies
Health literacy	Level of health literacy Prior hospital experiences Understanding of illness and associated information	 Consider patient's baseline medical knowledge Consider patient and family's understanding of the healthcare system Use language that meets patient's health literacy level Provide supplemental strategies to promote comprehension of medical jargon, procedures, expectations, and plans Consider use of social stories, journey maps, video modelling Collaborate with multidisciplinary team members to support health literacy needs

DOMAINS OF BEDSIDE FEATURE MATCHED ASSESSMENT

Assessment Domain	Patient Outcomes:	Assessment Domain	Patient Outcomes:
Cognition		Sensory profile	
Physical access		Vocabulary selection	
Respiratory status/ventilation needs		Bedside environment	
Expressive- receptive communication skills		Communication partners	
Literacy		Health literacy	
	(Costello, Santiago, and B	lackstone, 2015)	

SEDATION SCALES

Richmond Agitation-Sedation Scale (RASS)

Score Description

- +4 Combative, violet, danger to staff
- +3 Pulls or removes tube(s), aggressive
- +2 Frequent non-purposeful movement, fights ventilator
- +1 Anxious, apprehensive, not aggressive
- 0 Alert, calm
- -1 Awakens to voice >10 seconds
- -2 Light sedation; briefly awakens to voice
- -3 Moderate sedation, movement or eye opening, no eye contact
- -4 Deep sedation; no response to voice, but movement or eye opening to physical stimulation
- -5 Unarousable, no response to voice or physical stimulation

State Behavioral Scale (SBS)

Score Description

- +2 Agitated
- +1 Restless and difficult to calm
- 0 Awake and able to calm
- -1 Responsive to gentle touch
- -2 Responsive to noxious stimuli
- -3 Unresponsive

PHASES OF COMMUNICATION NEEDS: PATIENT PRESENTATION

(Costello, Patak, & Pritchard, 2010)

	Phase 0:	Phase 1:	Phase 2:	Phase 3:
	Pre-op or Pre-wakeful	Emerging from Sedation	Increased Wakefulness	Broad Communication Access
•	<text></text>	 Intermittent wakefulness Fluctuating attention Sedation may cause vision changes Weakness Delirium? 	 More time awake More time alert Attention may fluctuate Weaning sedation = ?improved vision and strength Increased participation in care 	 Awake and alert More interactive Greater potential for participation in conversation and care ?Access to mobile communications

PHASES OF COMMUNICATION NEEDS: POTENTIAL STRATEGIES

Phase 1: Emerging from sedation

- Yes, no, I don't know
- Adapted nurse-call system
- Simple voice-output communication aid (VOCA)
 - Gain attention + environment and leisure control

Phase 2: Increased

wakefulness:

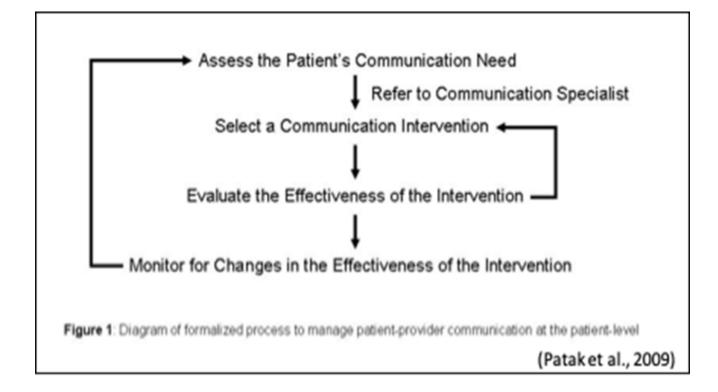
- Simple communication boards:
 - Letter boards
 - Qwerty
 - AEIOU
 - Other
 - Body/positioning
 - Comfort
 - Customized
- Voice amplification
- Multi-message VOCA
- Simple SGD

Phase 3: Broad Communication Access:

- Broader range of vocabulary
- More sophisticated page sets
- Generative communication; text-to-speech
- Word/sentence prediction
- Mobile tech access; video, text, phone calls
- Internet access

(Costello, Patak, & Pritchard, 2010)

FOLLOWING A BED SIDE ASSESSMENT



FOLLOWING A BED SIDE ASSESSMENT

Trial strategies



Formulate recommendations

O Disseminate recommendations; partner
 training

Follow up; reassess; repeat

NEEDS ASSESSMENT: HOSPITAL POLICIES AND AVAILABLE SUPPORTS

(ALTSCHULER, ET AL., 2021)

Hospital Policies and Available Supports

□ Personal protective equipment (PPE) required when interacting with the patient:

Recommended communication supports to ensure patient-provider communication (e.g., dry erase boards, assisted listening devices):

- □ Available communication tools and equipment in the hospital/unit:
 - No-tech/low-tech tools:
 - High-tech equipment:

Nurse call bells:

□ Hospital policies on bringing communication equipment to the patient's bedside:

Hospital policies on infection control that may impact use of patient-provider communication supports:

NEEDS ASSESSMENT: PATIENT NEEDS AND COMMUNICATION STRATEGIES

(ALTSCHULER, ET AL., 2021)

Pa	atient Needs and Communication Strategies
	Communication supports to assist patient with hearing and/or vision:
	(ALTSCHULER, ET AL., 2021) Communication supports (e.g., AAC device, communication boards) the patient used prior to the hospitalization:
	Technology is available for virtual communication with staff and loved ones: O Patient-owned: Type: Able to access WiFi/Data: O Hospital-issued: Type: Able to access WiFi/Data:
	Important communication partners for this patient: (e.g. family, social worker, chaplain, etc.)

NEEDS ASSESSMENT: PATIENT NEEDS & COMMUNICATION STRATEGIES (CONTINUED)

(ALTSCHULER, ET AL, 2021)

Contact information and schedule:			
	Patient communicates "yes", "no", and "I don't know" using these methods: Yes: No: I don't know:		
	Patient gains attention from others using these methods (e.g., nurse call):		
	Patient needs/likes to communicate about: (e.g., topics, interests, family, friends, etc.)		
	Recommended tools and strategies to support the patient's comprehension: (e.g. speak slowly, use simple language, provide supplemental visuals and text, etc.):		
	Recommended tools and strategies to support the patient's expression: (e.g. use communication board, provide phone for typing, use voice amplifier, etc.):		

NEEDS ASSESSMENT: PROVIDER NEEDS, ROLES, & RESPONSIBILITIES (Altschuler, et al., 2021)

Pro	vider Needs, Roles, and Responsibilities		
	Information that providers need/want to communicate about with the patient:		
	The location where providers can access communication tools (e.g., shared compute boards, physical space on unit, space in the room):	r dı	rive to print Where/how providers can learn about the patient's communication needs and recommended communication strategies: • In person training: • Video training: • Written instructions: • Provider-to-provider handoffs: • Bedside signage in patient room: • Electronic medical record: • Notifications using secure in-network hospital phone or text systems:
			Person/people responsible for setting up the patient's communication system: Person/people responsible for monitoring for new patient communication needs: Person/people responsible for teaching the patient how to use communication supports: + contact:
			How often the patient be monitored for changes in communication function:

INTERVENTION CONSIDERATIONS

DEVELOP TANGIBLE RESOURCES



Available in many locations

Prepared ahead of time

Always aim to customize for individual needs

Communication toolkits

Low-tech tools

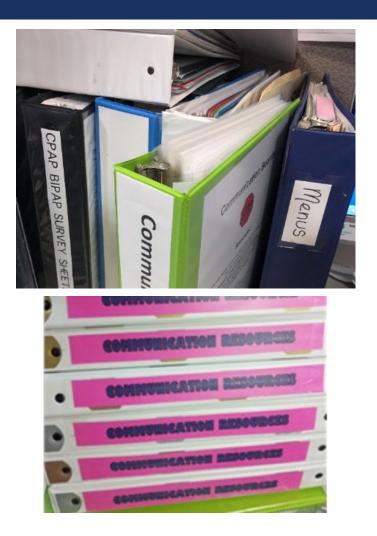
Make materials ahead of time

Template communication boards

Off-the-shelf

COMMUNICATION TOOLKIT EXAMPLES

- Communication boards: Alphabet, phrase, picture/text
- **Speech-generating devices**: Single message, multi-message
- Writing tools: Dry erase boards, clipboards, adaptive pens
- **Sensory aids**: Assistive listening devices, hearing aid batteries, reading glasses, magnifying glasses
- Voice amplifiers
- Bilingual communication tools
- Adaptive call bells



DESIGNATE COMMUNICATION CHAMPIONS

Identify individuals who show interest in communication access AND who intend to sustain any project or program changes:

- Nurses and nursing assistants
- Physicians
- LIPs (Nurse Practitioners, Physician Assistants)
- Social Workers
- PT/OT
- Child Life Specialists



COMMUNICATION PARTNER TRAINING

- Real time, just-in-time, on-the-spot
- Bedside signage
- Online modules (e.g., SPEACS-2)
- Staff orientations
- Pre-service education for medical students
- In-service education



GET REFERRALS

- Connect with your EMR (electronic medical record) team and learn how other services get consulted
 - Develop **screening protocols** that flag patients who may have communication vulnerabilities
 - SLP visibility be present on units, form relationships with staff
 - Highlight successes and recognize those who utilize bedside AAC

INTERPROFESSIONAL PRACTICE LEADS TO STANDARD PRACTICE

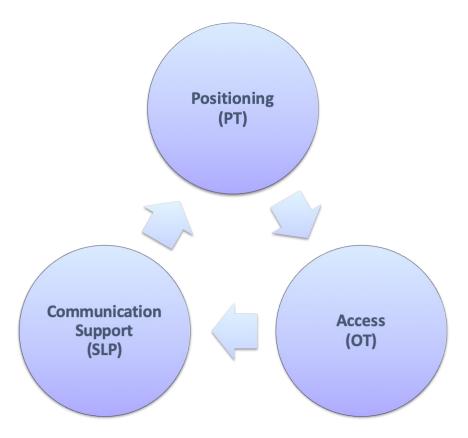
Establish a workflow that includes SLP as a key role but does not require your direct presence always.



PARTNERSHIP EXAMPLE: EARLY MOBILITY

- PT & OT are typically consulted earlier than SLP
- Functional assessments of positioning and acces
- Co-treat benefits:
 - Sedation vacations
 - Clustered care
 - Increased wakefulness
 - Interprofessional practice

(Altschuler et al., 2018)



ESTABLISH TEAM PARTNERSHIPS

There are many interprofessional initiatives which would benefit from including communication access for better patient outcomes:

- Delirium
- Early Mobility
- Palliative Care
- Developmental Care
- Tracheostomy Care
- Other Care Pathways (e.g., Autism)

INFUSE PRACTICE INTO WORKFLOW

Get referrals

- Connect with your medical records team
- Develop screening protocols
- Be visible
- Highlight success

Attend rounds

- Multidisciplinary rounds
- Bedside rounds
- Walking rounds
- Interdepartmental meetings
- And more

COMMUNICATION TOOLS & STRATEGIES

JUST REMEMBER...

- AAC is not one size fits all
- AAC does not only = high tech, expensive equipment
- Low-tech communication boards are the highest recommended strategies early on in the dynamic assessment process in acute care! (Santiago & Howard, 2018)

EXAMPLES OF NO TECH



Sign Language

Eye Signals

1 blink = yes

2 blinks = no

Raise eyebrows = I don't know

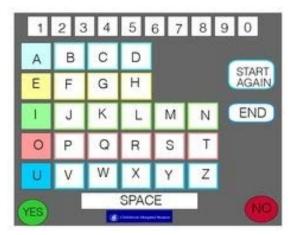


Gestures

<u>Things I Say</u>

When I click my tongue = get my letter board When I say "ah ah" = I want water

EXAMPLES OF LOW TECH TOOLS



Letter Boards



Pre-typed messages



Picture-communication boards





Eye gaze boards

EXAMPLES OF HIGH TECH TOOLS





Multi Message SGD

Switch access

We all have different communication priorities... its important to go beyond "basic needs"!



ENSURE CULTURAL DIVERSITY/INCLUSION

- Picture symbols must represent different cultures, skin tones, genders, family structures
- Communication tools should reflect the individual's culture (e.g., food)

SUCTION	WHAT'S MY STATUS?	CALL MY FAMILY	LIGHTS ON/OFF تشغيل / إطفاء الأضواء
TROUBLE BREATHING	PAIN	MEDICINE	HOT COLD
معوبة في التنفس	Å	دواء	
	ינק		حار/ بارد
BATHROOM	REPOSITION		
(المرحاض)	تغيير موضع	العناية بالفم	لوحة الرسائل
مكن -MAYBE	في وقت لاحق-DON'T KNOW لا أعرف-DON'T KNOW يد		



ALTERNATIVE ACCESS CONSIDERATIONS

Direct selection with adaptations

- Elbow support (e.g., propped pillow)
- Pointer (stylus, laser, pen with cap on)
- Using one's own body (does not have to be index finger)

Partner-assisted scanning

- Eye gaze
- Mounting support
 - Tablet holders
 - Device mounts
 - Pillows, wedges, tables
- Switches
 - Adapted nurse-call switch
 - Environmental control

EXAMPLES OF MOUNTING



EXAMPLES OF SCANNING

If it's hard for patient to point, please use "partner-assisted scanning" This is how:

Ask patient to focus on the communication board and find the message they want to communicate. Establish patient's "yes" (i.e. nodding, blinking, thumbs up, etc.)

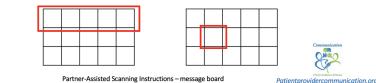
Proceed row by row. Point to each row and ask if the desired message is in that row
 (e.g. point to 1st row and ask, "Is it in this row?" followed by 2nd row, and so on)
 Patient will select a row using the established YES response. Verify the choice out loud.
 Point to each message within the selected row ("Is it suction?" "Trouble breathing," etc.).
 Patient will signal that you are pointing to the desired message using established YES response.
 Confirm the selection & repeat.

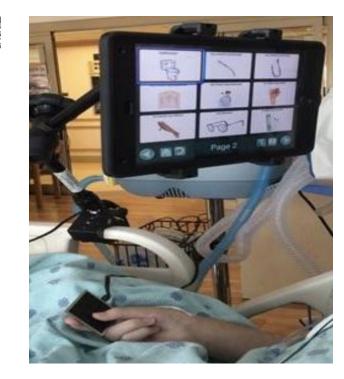
Additional Considerations:

- Hold this tool ~12 inches (~30 cm) from the patient's face.
- Ensure good lighting, head positioning, and vision.
- Speak loudly and clearly using simple language.

USSAAC

- Wearing masks and other PPE may make it difficult to understand speech. Consider using communication tools when speaking to the patient as well.
- If the patient can't use this tool effectively now, that does not mean the patient won't be able to use it later today, tomorrow, or this week. Continue to provide opportunities to support communication.







ADAPTED CALL BELLS

- #1 communication priority is ensuring patients can access their call bell when they need help
- Decreased motor skills impact access
- Sometimes provided by OT, Nursing, Engineering, SLP





AUGMENTED INPUT

Visual schedules

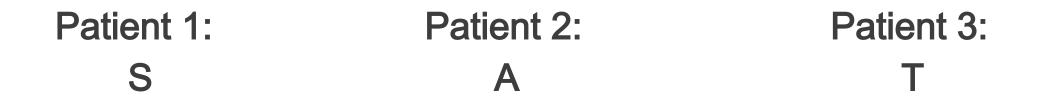
- Social stories
- 2D/3D models
- Care plans with pictures
- Checklists

Ari will have surgery at NYU Hospital





INTERACTIVE EXAMPLES



Discussion Questions

1. Describe an example first visit with this patient

- a. Information gathering
- b. Interview/intake
- c. How would you approach the bedside assessment?
- d. Describe potential findings
- e. Describe tools and strategies you might trial with the patient
- f. Discuss partner training needs and methods
- g. Identify next steps

DOMAINS OF BEDSIDE FEATURE MATCHED ASSESSMENT

Assessment Domain	Patient Outcomes:	Assessment Domain	Patient Outcomes:
Cognition		Sensory profile	
Physical access		Vocabulary selection	
Respiratory status/ventilation needs		Bedside environment	
Expressive- receptive communication skills		Communication partners	
Literacy		Health literacy	
(Costello, Santiago, and Blackstone, 2015)			

Patient 1:S

What do we know?

- 3 year old, female
- Medical dx:
 - heterotaxy/polysplenia, bilateral SVCs, RV-dominant AV canal, parachute mitral valve, LVOTO, and aortic arch hypoplasia
- Admission reason:
 - Palliation to 2 ventricle etiology
 - Complicated post-operative course
 - Cardiac surgery: redo sternotomy and repair of tricuspid valve; Required catheterization
 - Post cath: Bilateral upper extremity weakness → complete paralysis of all extremities
- Day of consultation:
 - Endotracheal intubation
 - Already working with PT, OT, and child life specialists
 - Patient has been awake and alert

Discussion Questions

1. Describe an example first visit with this patient

- a. Information gathering
- b. Interview/intake
- 2. What might you prepare to trial, if anything, based on the information you have?

DOMAINS OF BEDSIDE FEATURE MATCHED ASSESSMENT

Assessment Domain	Patient BASELINE:	Assessment Domain	Patient BASELINE:
Cognition	Age appropriate	Sensory profile	 No hearing concerns No vision concerns No baseline sensory issues Known incisions due to surgeries
Physical access	-Walks independently -Plays independently (e.g. manipulates toys, stacks blocks, etc.) -Uses utensils + hands for self-feeding -Dresses self w/ min assist -PT/OT services through early intervention	Vocabulary selection	TBD
Respiratory status/ventilation needs	None	Bedside environment	 Cardiac ICU Crib
Expressive- receptive communication skills	-Cleft lip/palate - repaired -Expressive language delay; sign language/speech (yes, no, all done, more, momma, baby) -Receptive language: age appropriate -School initiated discussion re: AAC trial prior to admission	Communication partners	Mom Dad Brother Grandparents Community providers and friends School
Literacy	Early literacy (due to age)	Health literacy	Highly familiar with hospital environment Past medical experiences Exposure to medical vocabulary

(Costello, Santiago, and Blackstone, 2015)

Assessment Domain	Current:	Assessment Domain	Current:
Cognition	-Weaning sedation (dexmedetomidine) -Awake, alert, responsive, interactive -Near baseline attention	Sensory profile	-Acute quadriplegia; sensory status unclear -No vision concerns -No hearing concerns
Physical access	-Acute quadriplegia -Good eye contact, fix, follow	Vocabulary selection	-Current: only able to indicate yes/no and mouth baseline words (momma, bye bye) -Parents identified a variety of relevant vocabulary
Respiratory status/ventilation needs	-Endotracheally intubated	Bedside environment	 -CICU room: high risk for auditory, visual disturbances (e.g. hallway lights and sounds) -Crib -Ventilator on left side of bed -All nursing cares on right side of bed
Expressive-receptive communication skills	-Nodding head YES -Shaking head NO -Occasional mouthing around ETT	Communication partners	Parents Nurses Respiratory therapists Varied therapy providers Varied medical providers Frequent provider visits
Literacy	n/a	Health literacy	Highly familiar with hospital environment Past medical experiences Exposure to medical vocabulary +Acute changes and unfamiliar circumstances

What would you try next?

Notable outcomes:

- Quadriplegia + effective use of eye gaze
- Varied vocabulary and message needs across topics, contextually based due to age and baseline abilities
- Presence of endotracheal tube
- Many providers, frequent visits throughout the day

Communicative Functions:

- Control
- Gain attention
- Request or deny
- Play
- Socialization and affection
- Direct cares, simple
- Understand medical cares, simple
- Other

What we tried....

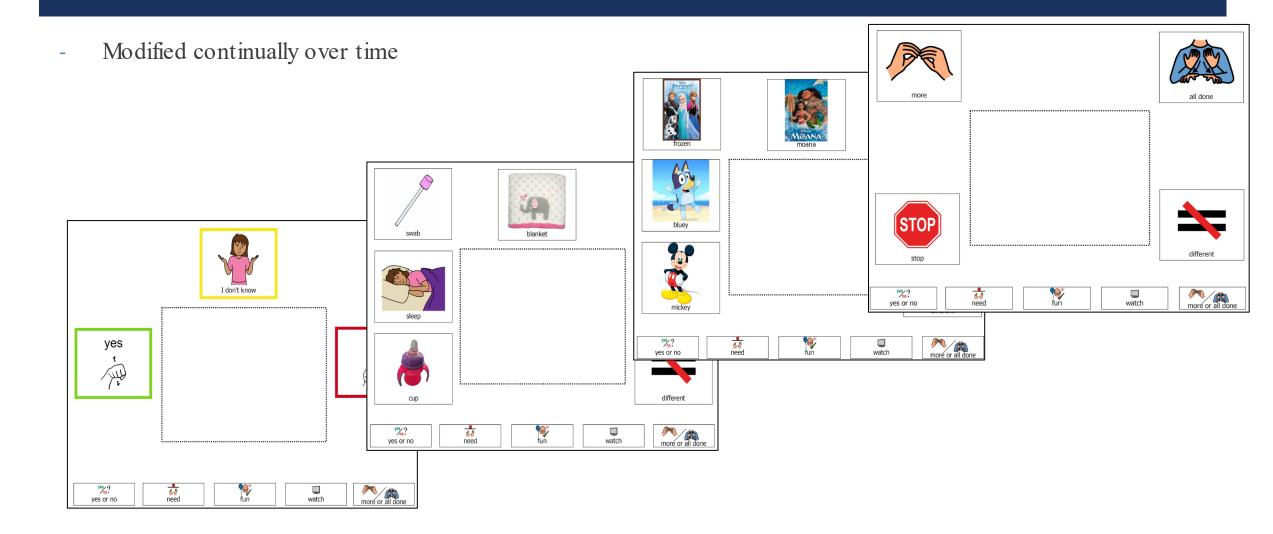
Low-tech communication book

- Eye gaze communication book
 - Sustained gaze
 - Partner-assisted scanning
- Picture-symbols
 - Photographs when indicated
- Categorically based
 - Tabbed pages
 - Quick access messages
- Hung on IV pole next to bed for quick access
- Yes/No responses:
 - Established: head nods/shakes
- Speech:
 - Honor intermittent mouthing of simple baseline words

Switch access

- Explore switch activation to gain attention and promote playful participation
- Mounted jellybean switch by side of head
- VOCA (Step by Step communicator with levels)
- Partner -assisted scanning
- Object choices
- ★ Partner training
 - Posted signage
 - Direct modelling for family and staff

Communication book



Discussion Questions

1. Describe an example follow up visit with this patient

- a. Information gathering
- b. Interview/intake
- c. How would you approach the bedside assessment?
- d. Describe potential findings
- e. Describe tools and strategies you might trial with the patient
- f. Discuss partner training needs and methods
- g. Identify next steps

Assessment Domain	Current (2 weeks later):	Assessment Domain	Current:
Cognition	-OFF sedation -Even more awake, alert, responsive, interactive -Baseline attention	Sensory profile	- <mark>Endorsing diaper change needs</mark> -Endorsing hot/cold -Enjoying some assisted water play
Physical access	-Acute quadriplegia; minimal return of slight movement to hands and hips (?reduced blood flow to spinal cord) -Good eye contact, fix, follow -Activating switch via head mount	Vocabulary selection	-Functional use of communication book -Need for increased language access -Varied topics, functions, contexts
Respiratory status/ventilation needs	-Endotracheally intubated -Plan for tracheostomy placement	Bedside environment	 -CICU room: high risk for auditory, visual disturbances (e.g. hallway lights and sounds) -Crib -Ventilator on left side of bed -All nursing cares on right side of bed -Many toys, pictures, decorations
Expressive- receptive communication skills	-Nodding head YES -Shaking head NO -Continued mouthing around ETT -Functional use of communication book -Increased language access needs	Communication partners	-Parents -Nurses -Respiratory therapists -Varied therapy providers -Varied medical providers -Frequent provider visits -More video calls with family
Literacy	-Participating in shared book reading –Answering yes/no questions –Eye gaze toward pictures –Choosing books via eye gaze/head nods	Health literacy	-Upcoming tracheostomy placement is unfamiliar

Speech-generating device:

- Tobii I-16; TD Snap with customized page set (built off modifiedVocoChattemplate)
 - Eye tracking technology
 - Access to context based language and formulation
 of novel utterances
- Rolling floor mount with floating arm
 - Need for careful mounting and positioning in bed and within room
- Yes/No responses:
 - Established: head nods/shakes
 - More nuanced vocabulary in SGD
- Speech:
 - Honor intermittent mouthing of simple baseline words

Switch access:

- Ongoing access
- Partner -assisted scanning:
 - Ongoing implementation as indicated
- Object choices:
 - Ongoing as indicated
- Social stories:
 - Created with Child Life Specialist
 - Topics: Hospitalization, New Tracheostomy

★ Partner training:

- Additional, ongoing training of Tobii I-16 set up and implementation
- Posted signage (in room, on device, on door)
- Direct modelling for family and staff

 Cotreat with physical therapist, nurse, mom, and SLP



Patient 2:A

- 67 year old male; husband, father of 1 son, lawyer; loves old movies and Elvis, from Hungary
- History of quadriplegia after a diving accident in the 1970s
- Admitted after choking on food at home and was in respiratory distress
- Intubated and emerging from sedation at time of evaluation

Discussion Questions

1. Describe an example first visit with this patient

- a. Information gathering
- b. Interview/intake
- 2. What might you prepare to trial, if anything, based on the information you have?

Assessment Domain	Current:	Assessment Domain	Current:
Cognition	-Weaning sedation -Awake, alert, responsive, interactive	Sensory profile	- Vision and hearing intact
Physical access	- Quadriplegia since a diving accident in the 1970s	Vocabulary selection	-Current: only able to indicate yes/no reliably with head nodding
Respiratory status/ventilation needs	-Endotracheally intubated at first and then trach to vent	Bedside environment	 ICU room: high risk for auditory, visual disturbances (e.g. hallway lights and sounds) Ventilator on left side of bed All nursing cares on right side of bed
Expressive-receptive communication skills	-Nodding head YES -Shaking head NO -Occasional mouthing around ETT	Communication partners	- Spouse and son (fluent Hungarian) - Home caregiver (bilingual) - Bedside providers (English)
Literacy	- In English and Hungarian	Health literacy	 Highly familiar with hospital environment Past medical experiences New vocabulary for intubation, trach, suctioning, feeding tube

What would you try next?

What we tried....

SUCTION fájdalom	ITCHY NOSE viszkető orr	EYE DROPS szemcsepp	CLEAN EYES tiszta szemek	REPOSITION újrapozícionálás	PAIN fájdalom
TROUBLE BREATHING légzési nehézség	MEDICINE gyógyszer	HOT / COLD forró / hideg	BOWEL MOVEMENT bélmozgás	URINATE vizel	MOUTH CARE szájápolás
THIRSTY szomjas	CHAIR szék	BED ágy	CALL MY FAMILY hívd fel a családomat	WHAT'S MY STATUS? mi az állapotom	TIME / DAY? Idő / nap
THANK YOU köszönöm	I'M TIRED fáradt vagyok	HOW ARE YOU? Hogy vagy?	LIGHT ON / OFF fény tovább / ki	TV ON/OFF televízió tovább / ki	MUSIC Zene
MAYBE talán		DON'T KNOW nem tudom		LATER a későbbiekben	

General Need – 24+ targets – text only

AÁBCCsDDzDzsEÉF GGYHIÍJKLLYMN NYOÓÖŐPQRSSzT TYUÚÜŰVWXYZZs_

Α	В	C	D	SPACE	END OF MESSAGE
E	F	G	н	START OVER	I DON'T KNOW
Ι	J	K	L	Μ	Ν
0	Ρ	Qu	R	S	Т
U	V	W	X	Y	Ζ
12	34	56	78	9 Ø	YES NO

Patient 2:T

- 21-year old
- Diagnosis: Down syndrome and Autism
- Reason for Hospitalization: respiratory distress related to COVID-19
- Was previously intubated (6 weeks prior to AAC evaluation)
- Referred to SLP services from Physical Therapist who reported having difficulty supporting Tasha
- Lives at home with her mother
- Is in an isolation room due to skin infection precautions

Discussion Questions

1. Describe an example first visit with this patient

- a. Information gathering
- b. Interview/intake
- 2. What might you prepare to trial, if anything, based on the information you have?

Assessment Domain	Current:	Assessment Domain	Current:
Cognition	-Awake, alert, interactive - Moderate intellectual developmental disability	Sensory profile	 Can see and hear without Sensitive to loud noises, certain smells, and food/temperature
Physical access	 Requires 2-people to assist with walking in room (important goal to discharge = able to walk independently) Able to to point, write, and complete cares with assistance 	Vocabulary selection	-Current: no symbols or text in room beyond room signs
Respiratory status/ventilation needs	- On room air	Bedside environment	 All staff wears PPE head to toe – Tasha does not know who is doing what and is fearful that everyone will have her do a needlestick Signs in room for PT Sad that she needed to have her head shaved
Expressive-receptive communication skills	 Able to speak sometimes in single words but hesitant to do so with new people Can communicate via: pointing to objects, head movements, body movements (e.g., pushing items away, turning from staff) 	Communication partners	 Mom Nursing staff Physicians Therapists: OT, PT, SLP
Literacy	 Can read simple sentences Is highly motivated to interact with text 	Health literacy	 Difficulty to understand hospital routines or trust hospital staff leading to reluctance to participate in care routines

What would you try next?

What we tried....

It helps if you encourage me!

I like to work towards the "yellow" and "green!



Everybody looks the same with PPE!

Please tell me who you are and what we will do together! Doing this helps me be prepared!







Drink









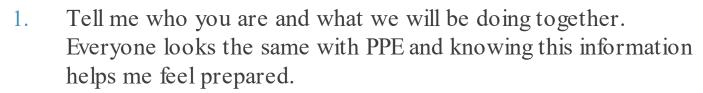






Working towards "yellow" and "green" !!





- 2. Whenever possible, give me choices. This helps me feel in control and independent.
- 3. Tell me what we are doing before it happens. This helps me feel prepared.
- 4. Encourage me! I like being reminded that I am working towards "yellow" (walking with less assistance) so I can go home faster.
- 5. Sometimes I get overstimulated. When this happens, it helps if things are quiet and directions are simple and clear.

Things I Like:

- 1. Crunchy Cheetos in Fun Sized Bag
- 2. Music on the ipad: Veggie Tales, The Wiggles
- Watching TV: Ask me what channel I like (e.g., Disney Junior, PBS Kids, etc.)
- Chocolate milk, root beer (no ice), chocolate boost
- 5. Breakfast: scrambled eggs, pancakes
- Lunch: 2 peanut butter sandwiches + root beer
- 7. Grilled cheese sandwhich

Wheelchair E sheet fresh gown on get in wheelchair frish sheet on top go to new room 26 put stuff in bass transfer into bed charr

IMPLEMENTATION & SUSTAINABILITY CONSIDERATIONS

IMPLEMENTATION CONSIDERATIONS

Change is not immediate or guaranteed

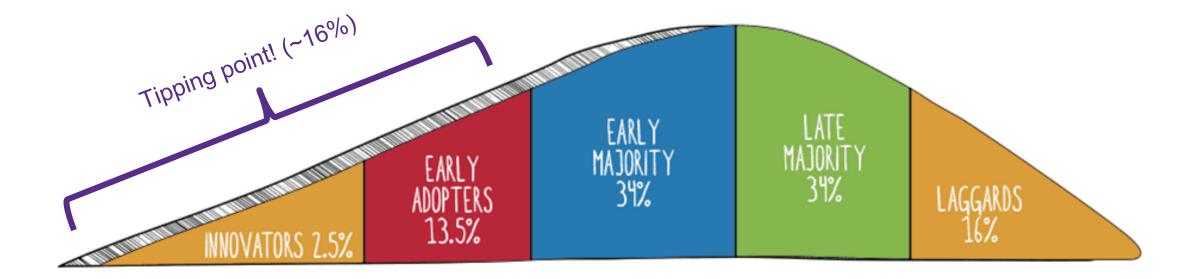
- On average, it takes <u>~17 years</u> for 14% of new discoveries to be "adopted" into daily clinical practice (Westfall et al., 2007)
- 1/3 or less of guidelines are routinely adhered to in clinical practice (Mickan et al., 2011)



SO HOW CAN WE SPEED UP "ADOPTION"?

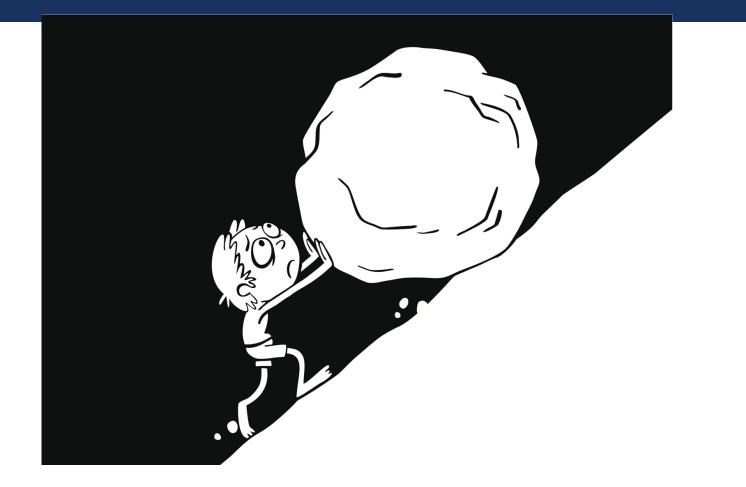


YOU ARE A CHANGE AGENT!!! WHERE ARE YOU ON THIS CURVE? WHERE ARE YOUR CO-WORKERS, ETC.?

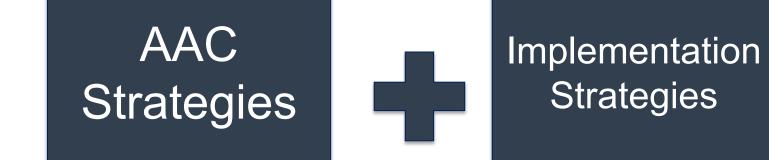


ESSENTIAL MARKETING MODELS HTTP://BIT.LY/SMARTMODELS

SOMETIMES WHAT IT FEELS LIKE TO BE AN INNOVATOR OR EAN ADOPTER....



THE GOAL



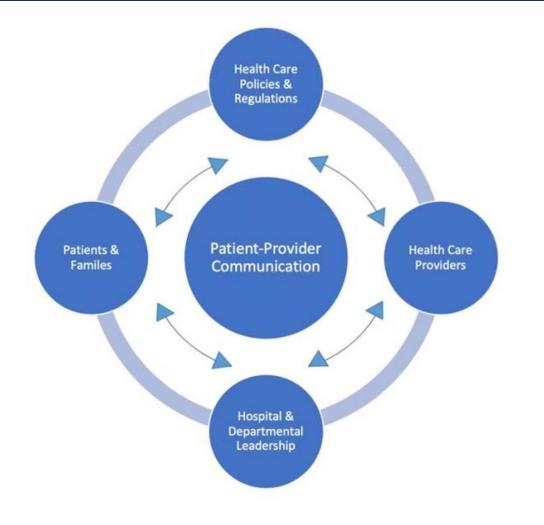
Accelerated Uptake

EXAMPLE IMPLEMENTATION STRATEGIES (POWELL ET AL. 2015)

- Access new funding
- Assess for readiness and identify barriers & facilitators
- Build a coalition
- Change physical structure & equipment
- Change record systems
- Conduct cyclical small tests of change

- Conduct ongoing training
- Develop educational materials
- Identify & prepare champions
- Identify early adopters
- Involve patients/consumers & family members
- Stage implementation scale up
- Tailor strategies

REMEMBER THAT MULTIPLE SYSTEMS INTERACT WHICH MA CHANGE STRATEGY EFFECTIVENESS



(Santiago et al., 2021)



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QUESTION[®]

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