| “Communication Vulnerability in the Hospital and the New Joint Commission Standards: The SLP and Need for Professional Preparedness” |
| Childrenshospital.org/acp |

| **AAC in ICU/ Acute Care: Changing Roles for Speech-Language Pathologists** |
| Putting the Assessment Pieces Together |

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| Director, Augmentive Communication Program |
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| **Based in part on:** |
| Communication vulnerable patients in the pediatric ICU: Enhancing care through augmentative and alternative communication. Journal of Pediatric Rehabilitation Medicine: An Interdisciplinary Approach (In press) |

| * AAC-RERC sponsored issue |
## Agenda

- Communication vulnerability and risk to care
- 2011 The Joint Commission (TJC) Standards
- Illness and the child’s perspective
- Three profile of patient needs
- Review domains of assessment for ICU/acute care

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### Communication Vulnerability

(Patak, et.al. 2008)
What is communication vulnerability?

- Vision so poor that the patient is unable to read/see, even with corrective lenses*
- Inability to understand loud speech, even with hearing aids*
- Inability to produce speech that is intelligible to the team*
- Altered mental status*
- Inability to speak or understand the language of the medical team/environment

*Serious communication disabilities in hospitalized patients, Ebert, D. N Engl J Med 1998

Patients with communication vulnerability

- Congenital conditions
- Acquired conditions
- Degenerative conditions
- Condition related to medical intervention (surgery)
- Condition related to medical treatment
- Related to cultural diversity/mismatch with the hospital culture

Guidelines for admission to Pediatric ICU

American Academy of Pediatrics and the Society of Critical Care Medicine
Pediatrics, V 103, No. 4 April 1999,

Severe or potentially life threatening pulmonary or airway disease requiring:
- Endotracheal intubation and potential mechanical ventilation
- Rapid progressing pulmonary disease with risk of respiratory failure
- High supplement of oxygen
Children with severe, life threatening or unstable cardiovascular conditions

Includes children with high risk cardiovascular procedures.

Neurological conditions or seizures
- Spinal cord compressions
- Head trauma
- Progressive neuromuscular dysfunction

Hematology/oncology disease: tumors or masses compressing (or threatening to compress):
- vital vessels
- airway
- nerves of the face
**Guidelines for admission to Pediatric ICU**

*American Academy of Pediatrics and the Society of Critical Care Medicine, Pediatrics, V.108, No. 4 April 1999*

**Endocrine/metabolic disease**
- inborn error of metabolism and acute deterioration requiring respiratory support
- acute dialysis management of intercranial hypertension

**In general, these conditions include**

- Airway patency/management of blood gases
- Muscle function, strength and coordination
- Neuro-cognitive/neuro-linguistic impairment

**Communication vulnerability may be related to one or all of these**
In US, announced changes to hospital standards for accreditation that address “communication vulnerability” in 2011.

Increased focus nationally and internationally on the impact of communication vulnerability on patient care.

Increased focus on International Joint Commission Standards.

Importance of communication and potential impact on patient outcomes is recognized by:

- American Association of Critical Care Nurses
- Society for Critical Care Medicine
- National Institute of Health
- The Joint Commission

Recommended issues and related practice examples to address during Admission:

Identify whether the patient has a sensory or communication need... "It may be necessary for the hospital to provide auxiliary aids and services or augmentative and alternative communication (AAC) resources to facilitate communication."

Identify if the patient uses any assistive devices... "Make sure that any needed assistive device are available to the patient throughout the continuum of care."

Why is this topic timely?

- In US, announced changes to hospital standards for accreditation that address “communication vulnerability” in 2011.
- Increased focus nationally and internationally on the impact of communication vulnerability on patient care.
- Increased focus on International Joint Commission Standards.
Monitor changes in the patient’s communication status. “Determine if the patient has developed new or more severe communication impairments during the course of care and contact the Speech Language Pathology Department, if available. Provide AAC resources, as needed, to help during treatment.”

Patients may have hearing or visual needs... 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.”

Examples of communication needs include the need for personal devices such as hearing aids or glasses, language interpreters, communication boards and devices...”
We (ASHA) MUST be prepared and MUST prepare future SLPs to meet the needs of patients who are communication vulnerable OR institutions will look elsewhere.

- Communication vulnerable patients are at increased risk for:
  - Serious medical events (Cohen et al., 2006)
  - Sentinel events (The Joint Commission, 2007)
  - Poor medication compliance/adherence (Andrus et al., 2002; Flores et al., 2003)

Shannon’s story
The presence of physical communication problems was significantly associated with an increased risk of experiencing a preventable adverse event.

We found that patients with communication problems were three times more likely to experience preventable adverse events than patients without such problems.

Figure 3: Odds ratios (ORs) and 95% confidence intervals (CIs) for factors associated with preventable adverse events, adjusted for age, sex, Charlson Comorbidity Index score, admission status and type of hospital.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted OR (95% CI)</th>
<th>Decreased risk of preventable adverse event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical communication problem</td>
<td>1.96 (1.05-3.69)</td>
<td></td>
</tr>
<tr>
<td>Psychiatric disorder</td>
<td>2.35 (1.05-5.30)</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic problem</td>
<td>1.94 (0.92-4.10)</td>
<td></td>
</tr>
<tr>
<td>Charlson Comorbidity Index score &gt; 1</td>
<td>1.46 (1.00-2.11)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.49 (0.96-2.32)</td>
<td></td>
</tr>
<tr>
<td>Age &gt; 65 yrs</td>
<td>1.29 (0.64-2.59)</td>
<td></td>
</tr>
<tr>
<td>Urgent admission</td>
<td>1.84 (1.07-3.19)</td>
<td></td>
</tr>
<tr>
<td>Teaching hospital</td>
<td>1.60 (0.86-2.95)</td>
<td></td>
</tr>
</tbody>
</table>

Risk for Serious Medical Events (TIC)

Communication-vulnerable patients are:
- Twice more likely to experience medical physical harm
- Increased risk of non-adherence to medication
- Misreported abuse
- Decreased access to medical care
- Decreased use of medical care
- Increased diagnosis of psychopathology
- More likely to leave hospital against medical advice
- Asthmatics more likely to receive intubation
- Less likely to return for follow-up appointments after Emergency Room visits
• Communication-vulnerable patients are:
  • Higher rates of hospitalization
  • Higher rates of drug complications
  • Highest use of resources to provide care
  • Lowest levels of satisfaction with care
  • Increased risk of delayed care
  • Increased failure to treat and prevent devastating disease states and death
  • Increased risk of malpractice
  • Increased length of hospital stay

No standardized system in place to identify communication needs
• Lack of supporting resources, training, and time needed effectively communicate
• Limited evidence and awareness of best practice

• Patients taught to use communication tools such as picture boards, word boards or simple communication devices, reported improved satisfaction and comfort when compared to care without communication support.
  (Brady, Aue, & Dismukes, 2004; Costello, 2000)
• Communication boards can also significantly reduce patient frustration.
  (Frasca et al., 2002, 2004)
• Provision of professional interpreter services is associated with improved clinical care and increased quality of care to LEP patients.
  (Karher et al., 2006)
Experience pain but can not always identify the source or location

‘Magical thinking’ may lead child to believe their pain is punishment for real or imagined misbehavior...they believe the pain is someone’s fault.

Communication needs:
At this stage, children may view procedures as punishment for bad behavior

This makes it particularly important to communicate: fear, anxiety and solicit parents and loved ones for comfort, explanation and protection.
• Can tell the location of pain
• Know that illness is caused by germs and believe that staff’s response depends on how well they express pain

Brewster, Arlene B. Chronically Ill Hospitalized Children’s Concepts of Their Illness. PEDIATRICS Vol. 69 No. 3 March 1982, pp. 355-362

Communication Needs:

Children need to be able to effectively communicate matters of comfort and pain.

Children’s reaction to pain
School age (6 - 12 years)

- Begin to understand that there are multiple causes of illness, that the body may respond to many different factors and illness is caused by physical weakness or susceptibility.

Children understand that different interventions may be needed to address illness and that staff act with necessary tolerance and empathy.

Percy, Ellen C., Gately P. Ross. There’s a Dress in Your Belly: Children’s Understanding of Illness. PEDIATRICS Vol. 47 No. 4 June 1971, pp. 449-450

Costello, J.M. Children’s Hospital
Boston 2011
Communication need:
At this more mature stage, a child may be particularly anxious to be able to ask questions, interact with staff and understand the intent of intervention (be a partner in care).

Impact of communication vulnerability: Impact on the patient
challenges and needs of patient
- Powerlessness
- Loss of Control
- Disconnection from loved ones
- Inability to participate in own care
- Inability to ask questions, express needs, fears, etc.

Stress of the nonspeaking condition reaches beyond the patient
Parents have expressed fear of their child’s inability to communicate basic needs.
Fear that child may feel abandoned and not be able to call for parents.
Parents feel helpless to assist child who is going through distress.

Stress for parents (Costello, 2000), fear child will feel abandoned as cannot solicit loved one and has no way of advocating for self.
(Hurtzig and Dowden 09) “parents, although completely exhausted, refuse to leave or sleep due to their concern that their child will require assistance and no one will be there to interpret child’s efforts to get help.”

The need to identify appropriate means to communicate with intubated/vent dependent patients identified as a high research priority.
Because of duties, medical staff must limit the time available to interpret.
Nurses have reported patients being angry and then abandoning attempt because of nurse inability to interpret.
<table>
<thead>
<tr>
<th>Nurse Video (nurse) When there is a communication board</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Saves the frustration of both the nurse and the patient and instead of the patient getting madder and madder…</td>
</tr>
<tr>
<td>- Patient gets what they want when they need it, instead of the nurse having to figure it out.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What strategies (if any) are used when a patient cannot speak?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Nurses rely on lip reading</td>
</tr>
<tr>
<td>- Have a familiar family member interpret</td>
</tr>
<tr>
<td>- Gestures</td>
</tr>
<tr>
<td>- Pen and paper</td>
</tr>
<tr>
<td>- Alphabet board</td>
</tr>
<tr>
<td>- Hand drawn pictures</td>
</tr>
<tr>
<td>- Medical staff ask yes/no questions*</td>
</tr>
</tbody>
</table>
Phase 1: Emerging from sedation
- Yes - no - I don’t know
- Call for nurse/modified nurse call
- Gain attention of loved ones/staff with simple voice output

Phase 2: Increased wakefulness
- Require all of phase 1 strategies
- Require more relevant vocabulary
- Picture boards
- Alphabet boards
  - ABC
  - QWERTY
- Multi-message voice output devices
- Digitally recorded messages ****
- Voice amplification

Phase 3: Need for broad and diverse communication access
* Not always static
Phase 3
Broad and Diverse Communication

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

Impact of AAC

Patients taught to use communication tools such as picture boards, word boards or simple communication devices, reported improved satisfaction and comfort when compared to care without communication support

(Patak et al, 2007; Costello 2000; Stoneley, Rudy, & Dragonette, 1988)

Referral source

- Craniofacial team
- Plastic surgery
- Tracheostomy team
- Organ transplant team
- Physicians
- Nurses
- Respiratory therapy
- Radiology
- Social work
- Child Life
- Psychiatry
- Pastoral care
- Pre-op clinic nurses
- ***
Putting the Assessment Pieces Together
Domain of Assessment

Cognitive

Cognitive status:

- Alertness
- Awareness
- Orientation
- Pre-morbid status

Cognitive Assessment considerations:

- Often status is first reported by bedside care providers
- Observe patient’s wakefulness and fatigue (impact participation and length of assessment)
- Patient’s ability to follow simple directions
- Patient’s ability to respond to simple questions (yes/no/don’t know response)
Cognitive Assessment considerations

• Potential presence of delirium
• Impact of medications (example Versed)
• Quality and quantity of sleep
• Potential presence of dementia

Feature match/intervention considerations

• Will determine if assessment happens over time, postponed or continued.
• May need to re-assess often and adjust recommendations frequently
• May require range of supports to be used at different times of day
• Will impact complexity of instructional language and strategies introduced
• May suggest selection of memory book or orientation strategies through visuals, visual schedule

Domain of Assessment

Sensory
Sensory domain:

- Vision
- Hearing
- Comparison to pre-morbid status?

Sensory Assessment considerations:

- Does s/he wear glasses? If yes, are they here?
- Does s/he have hearing aids? If yes, are they here?
- If physical status will not support glasses or hearing aids (swelling, incision site, etc.), what accommodations can be made?
- Have C.I.? Available?

Sensory Assessment considerations:

If using ventilation mask, what type of mask (impact on vision/binocularity and positioning of materials)
Feature match/intervention Considerations (sensory)

- F.M. trainer to provide focused auditory input
- Remove one or both arms of the glasses
- Ubi Duo for wireless provider text based communication

Feature match/intervention Considerations (sensory)

- Consideration for communication with family/friends via phone: http://ip-relay.com OR TTY
- Use of web cam/Skype video for sign communication with family/friends

Feature match/intervention Considerations (sensory)

- Use of voice output technology if minimal/no hearing
- Feedback loop of speech generating device
- Use of auditory scan component
- Use of tactile markers and keyguards*

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Feature match/intervention
Considerations (sensory)

- Symbol set/representation selection
- Characteristics of text
- Size of targets
- Color contrasts
- Complexity of layout
- Use of symbols versus text
- System that supports keyguard
- System that supports tactile markers

Background contrast
Horizontal layout
Spacing of targets
Size of targets

8X11
10X14
3X4

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Domain of Assessment

**Motor**

- Use of gestures/pantomime
- Control/access
- Physical positioning
- Direct selection (hand, eyes, other?)
- Ability to write/draw

**Motor Domain**

- Use of gestures/pantomime
- Control/access
- Physical positioning
- Direct selection (hand, eyes, other?)
- Ability to write/draw

**Assessment considerations**

- Ability to point with hand
- Ability to point with eyes
- Ability to point with head light
- Use of splints to support pointing
- Indirect access through scanning
- Indirect access through partner assist
- Access changed by positioning?
<table>
<thead>
<tr>
<th>Feature match/intervention Considerations (motor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inventory of natural gestures</td>
</tr>
<tr>
<td>• Basic sign language</td>
</tr>
<tr>
<td>• Adapted nurse call system</td>
</tr>
<tr>
<td>• Keyboard</td>
</tr>
<tr>
<td>• Paper and pen</td>
</tr>
<tr>
<td>• Use of keyguard</td>
</tr>
<tr>
<td>• Single switch access to technology</td>
</tr>
<tr>
<td>• Partner assisted scanning</td>
</tr>
<tr>
<td>• Eye gaze/Etran - Eye Linking</td>
</tr>
<tr>
<td>• Eye tracking</td>
</tr>
</tbody>
</table>

Fracture of third and fourth cervical vertebrae, leaving him paralyzed

- Feature matching consideration:
  - Meds 1

Partner assisted scanning spelling board
Megabee

Direct selection spelling board

communicating with nurse call

Step by Step From Ablenet, Inc
Eye gaze displays to participate in decision making

http://www.vidatak.com/
Cuff inflation may vary by positioning and impact need for AAC vs. ability to use speech.

Access skill may change with physical positioning (in bed/in chair) and require different strategies or mounts.

Medical procedure may impact positioning which will impact feature match.

- spinal fusion/rod insertion
- reconstruction surgery with tissue grafting
Domain of Assessment

Language

Language Comprehension Domain

Native language?
Comprehension
Ability to follow directions
Able to answer yes/no questions
Health literacy

Feature match/intervention Considerations (language)

Post how patient indicates yes/no in obvious space in room

- Examples: thumbs up/down
- Squeeze eyes or blink eyes
- Squeeze hand once or twice
- Use of visuals (symbols, photos, text)
- Intervention may focus on simple single message output devices
- May focus on strategies to support control and impact on environment

* ALWAYS use QUALIFIED MEDICAL INTERPRETER services when patient does not speak English/uses ASL
* Use of digitally recorded communication aids for communication in native language and English (approved by qualified medical interpreter)

**iPad (or iTouch) and iASL**
Communication Boards with Language Translation

Feature match/intervention Considerations (language)

- Selection of tools/strategies with transparent organization versus requiring meta understanding of navigation/organization *
- May change rapidly with medical status change
- Selection of sophisticated tools and integrated features for environmental control, web access, etc.

Literacy Domain Feature Match considerations

- Use of written words
- Use of alphabet for generative communication
- Encoding strategies
- Use of keyboard based systems
- Keep pen and paper at bedside along with easily accessible strategy to request (simple voice output tool)
Use of cell phone/text messaging for communication
Use of letter cues/topic cues

***Note: good decoding skills and reading comprehension does not mean patient has good encoding skills
May be able to use canned text but not generate novel text.

Literacy Domain Feature Match
considerations

Feature Match:
QWERTY vs Alphabetical

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For Patient who Can write…

Boogie Board

Letter Cue board

THE WORD BEGINS WITH…..
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M Start again
br cr fr gr tr pl st
bl cl fl gl sw dw tw End
sl sc sk sn sn sp
sw squ spl spr scr

Topic Cue board

People Food Emotions
Places Colors Questions
Animals Entertainment Body
School Home Community
Speech Production

- Reduced volume?
- Tracheostomy
  - Why?
  - Type (cuffed/cuffless)?
  - Air leak?
- Changes with positioning?
- Candidate for speaking valve?
- Tolerance of valve?
- Vent

- Moderately compromised intelligibility?
- Severely compromised intelligibility?
- Type of intubation/ cannula?
- Impacted by cpap/bipap mask and type of mask?
- Impacted by fixation or other hardware?
• Patient needs
• Patient personality
• Patient’s developmental status
• Patient interest
• Address medical, personal and psychosocial needs
Domain of Assessment

Environment

• Lighting
• Noise (including noise from vent and other medical equipment)
• Available real estate/furniture for mounting/access
• Nurse route of access maintained

Electromagnetic Interference (EMI)

• Current evidence based data demonstrates Electromagnetic Interference (EMI) affects medical devices. Currently, types of wireless devices include but are not limited to:
  ✓ all cell phones
  ✓ hand held messaging devices (Blackberry, itouch, ipad, etc.)
  ✓ multi-communication devices that combine the use of Wi-Fi, Blue tooth and cellular capable computers (Kindle, blue tooth ear pieces, etc.)
  ✓ integrated SGD’s
The Emergency Care Research Institute (ECRI) addresses the issue of whether the use of cell phones should be restricted in health care facilities because of problems concerning EMI with medical devices.

**Recommended Practice:**
When using a wireless device, a minimum distance of at least 1 meter, an “arm’s length” from medical devices is recommended.

Cell phones should be prohibited in highly instrumented clinical areas and should be powered off by patients and visitors in these areas.

Electromagnetic Interference (EMI)

EMI events have included:
- loss of control of dialysis machines,
- ventilator malfunctions,
- infusion pump shutdowns and rate changes

Access to Communication Tool

Yvonne