Improving Outcomes for Hospitalized Patients: Pre- and Post- COVID-19

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Hello, my name is Richard Hurtig. I am a Professor Emeritus in the Department of Communication Sciences & Disorders at The University of Iowa and the Chief Scientific Officer of Voxello, a biomedical device startup that has received funding from the National Institute of Nursing Research at the NIH. My talk today will present a description of my ongoing efforts to help patients overcome barriers to effective patient-provide communication.

Communication Barriers:
A Problem for Patients and Healthcare Systems

Of the **35.1M** hospitalized patients in the U.S., **3.6M** can't summon help or communicate with caregivers.

Studies reveal that between **33%** and **50%** of conscious ICU patients face communication barriers.

These patients are **three** times more likely to experience a preventable hospital acquired condition (**HAC**) that negatively impacts their outcome.

Imagine waking up in the intensive care unit. You are on a ventilator and you can't move. You want to know where you are and what is going on?

How would you get someone's attention and once you got their attention, how would you communicate with them.

Over 11% of patients in US hospitals are unable to communicate with their caregivers. For some the inability to communicate is short term while for others the loss will be permanent.
A study by Zubow & Hurtig (2013) found that as many as 33% of conscious ICU patients are unable to access the nurse call system or effectively communicate with their caregivers.
Similarly, Happ et al. (2015) found that 50% of their mechanically ventilated patients met their criteria for needing communication assistance.

The Bartlett et al. study (2008) reported that patients who experience communication barriers are at a heightened risk of experiencing a preventable adverse medical outcome.

Patients With Complex Communication Needs

- Acute and Emergent Conditions
  - Trauma
  - Disease (e.g., Covid-19, Guillain Barre, ALS)
- Pre-Existing Conditions
  - Cerebral Palsy
  - Muscular Dystrophy
  - Multiple Sclerosis
  - Para- and Quadriplegia
  - Parkinson's Disease
- Individuals with limited proficiency in the caregivers' language

There are a lot of hospitalized patients, who experience an inability to effectively communicate because of some trauma or illness that results in an acute care hospitalization.

For some the inability to communicate is short term while for others the loss will be permanent.

Patients with preexisting conditions are often unable to speak and may be unable to utilize the conventional nurse call system.

Finally, there are patients who are unable to effectively communicate because they are not proficient in the language used by the hospital staff.

Effective Patient-Provider Communication in Acute Care

Patient	Provider
• Summon help • Communicate needs • Participate in care & decision making • Maintain personal identity & personality	• Respond to summons for help • Understand patient needs • Engage patient in care & decision making • Treat patient, not only the disease

Historically patient-provider communication has been seen as a one directional exchange of information from the care provider to the patient.

This more paternalistic mode of communication has hopefully evolved into a more bidirectional one in order to have patients more actively engaged in their care and thereby achieve better outcomes.

Thus, the patients are becoming partners in care and providers shift from just treating diseases to treating the particular patient with the disease.

The Joint Commission's U.S. hospital accreditation standards mandate that hospitals address patients' communication barriers.

Of the communication protocols that are in place, many leave patients, who have limited use of their hands and who cannot speak, still facing barriers to communication.

Barriers to Patient-Provider Communication:
Negative Impacts on the Patient and the Caregivers

Patient Experience	Nurse/Caregiver Experience
• Frustration/Stress	• Frustration/Stress
• Risk of Adverse Events (HAC)	• Inability to see the patient and understand the patient's needs
• Risk of Delirium	• Potential for Errors in Cares (HAC)
• Increased LOS	• Extra cares
• Inability to maintain autonomy and personality	• Wasted time
• Perceived Value of Care	• Burnout
• Family Perception of Care	

The breakdown in patient-provider communication has negative impacts on both the patient and the caregivers.
Poor communication increases frustration and stress for both the patient and the caregiver.

Patients who can't effectively communicate are at a heightened risk of experiencing an HAC and delirium which can result in an increase length of stay.
When nurses can't understand their patients, there is a potential for errors in the care they provide which can result in needing to provide extra cares.

Allowing a patient to express anger and humor, while not directly tied to any particular bedside care, does effectively establish a critical rapport between the patient and the care provider.
Poor patient-provider communication has been shown to influence patient and family member perceptions of their care.
Nurses report that communication barriers result in wasted time and burnout.

While many of the traditional communication tools currently used in hospitals

focus on basic needs, they do little to allow the patient to be themselves and to allow the caregivers to see the patients as more than just a body that they are treating.

Incidence and Estimated Treatment Costs

Drug Reaction, Fall, Pressure Ulcer & Ventilator Associated Pneumonia
(U.S. Agency for Healthcare Research and Quality 2019)

Hospital-Acquired Condition Per 1000 Discharges	2014 Measured Baseline	Preliminary 2017 Normalized Count	2019 Goal (20% Reduction from Baseline)
Hospital Population	**64.7**	**55.8**	**51.7**
Avoidable Treatment Costs	**$21.9 Billion**	**$20.4 Billion**	**$17.5 Billion**
For Patients Facing Communication Barriers**	99.9	86.3	79.9
Additional Treatment Costs	$12 Billion	$11 Billion	$9.6 Billion

** Assumes 3X higher incidence, Bartlett et al. 2008

The incidence of preventable hospital acquired conditions had continued to be unacceptably high and add significantly to the cost of healthcare. When patients are unable to effectively summon help and communicate about symptoms, they are at greater risk of falling, developing pressure ulcers, experiencing adverse reactions to novel medications and blood products, and developing ventilator associated pneumonia. Bartlett et al. found that patients facing barriers to communication are at a 3 times higher risk of developing HACs.

Using the data from U.S. Agency for Healthcare Research and Quality for the hospital population at large, one can calculate the expected HAC incidence rates for patients facing barriers to communication. Even assuming the 20% reduction that AHRQ expected in 2019, patients facing communication barriers were still be expected to have an HAC rate of 79.9 per 1000 discharges and hospitals would face having to absorb an additional $9.6 billion in avoidable treatment costs.

Assistive Technology in Acute Care Reduces HACs

www.voxello.com

AHRQ Report Comparison	Chi-Squared	p value
2019 Goal	5.6154	<0.02
2019 Higher Risk Estimate	8.9444	<0.03

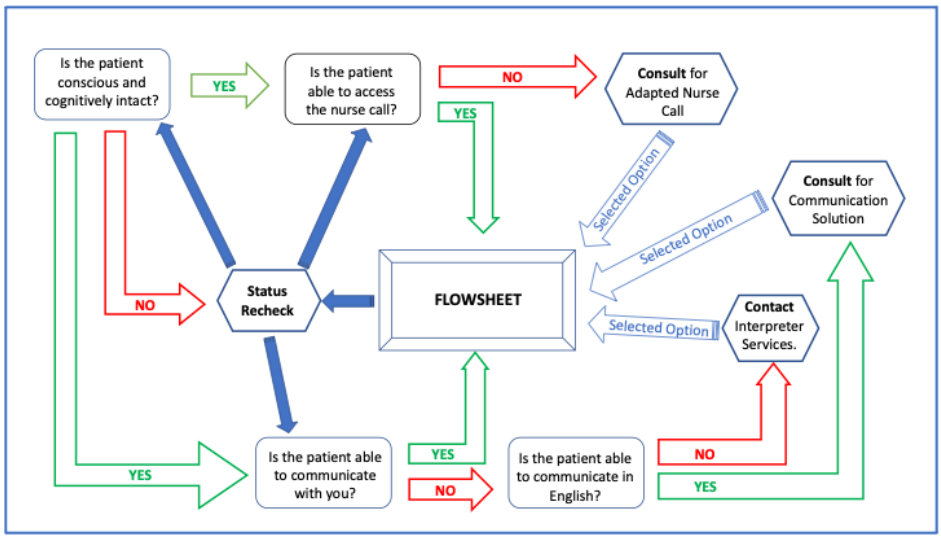
Hurtig, R.R., Alper, R., Altschuler, T., Gendreau, S., Gormley, J., Marshall, S., Santiago, R. & Scibilia, S. (2020) Improving Outcomes for Hospitalized Patients Pre- and Post-COVID-19. Perspectives of the ASHA Special Interest Groups Vol.5, 1577-1586. https://doi.org/10.1044/2020_PERSP-20-00144

To specifically address the access and communication needs of patients in acute care, Voxello developed the noddle smart switch that can detect small intentional gestures and enable patients to summon help and to control the noddle-chat communication device.

Voxello's NIH supported clinical trial revealed that the patients who received assistive technology did not experience any HACs during the course of their hospitalizations.

The comparisons of the clinically observed incidence with the AHRQ expected incidence for the population as a whole and for those facing communication barriers were statistically significant.

"Formalizing a Culture of Communication"



In order to address the range of barriers to effective patient-provider communication, it is essential that the bedside caregivers engage in dynamic assessment
of each patient's ability to summon help and to effectively communicate.

Working with the Department of Nursing at UIHC, we developed a way of building such a dynamic assessment into the clinical flowsheet
and trigger consults for patients who cannot use the nurse call system and/or are unable to use speech or writing to communicate with their nurses.

This dynamic assessment protocol also addresses the communication needs of patients with limited English Proficiency.

One of the reasons it was important to integrate the state of patient-provider communication into the flowsheet,
was the realization that there was a problem with getting adequate handoff from one nursing shift to another or when patients were transferred to another unit or to another facility.

This protocol was in part designed to address the specific Joint Commission standards that mandated on going assessment of communication barriers.

The success of implementing any program to address communication barriers will require a workflow that should include ”communication champions” among the professionals who have direct patient contact. Depending on how each institution is structured, the champions could be Speech-Language Pathologists, Nurses, Physicians, Physical Therapists, Occupational Therapists or even Respiratory Therapists.

No matter how skilled the champions may be at providing tools to overcome communication barriers, the successful implementation of communication tools and strategies will require a hospital wide engagement in ongoing =education, training & support of all hospital staff who will be working with patients.

Covid-19 Pandemic Related Barriers to Communication

Infection Control Practices		Limited equipment allowed in rooms. Need communication supports to be: • Disposable • For single-patient use • Easily sanitized.
Visitor Restrictions		Hospitals changed visitor policies. • Limited "FaceTime" connections with loved ones. • Care partners were not allowed at the bedside
Staffing and Workflow Changes		• Less frequent visits from nurses between cares. • Reduced access to in-person language interpreters. • Increased challenges with set-up or adjustment of communication materials.

The Covid-19 pandemic introduced more communication barriers on top of the already existing barriers.
Hospitals needed to impose more stringent infection control and visitor policies as well as make staffing and workflow changes that in sum left patients more isolated and unable to speak due to their need for mechanical ventilation.

This isolation made headlines in the media and was a major topic across the social media platforms.

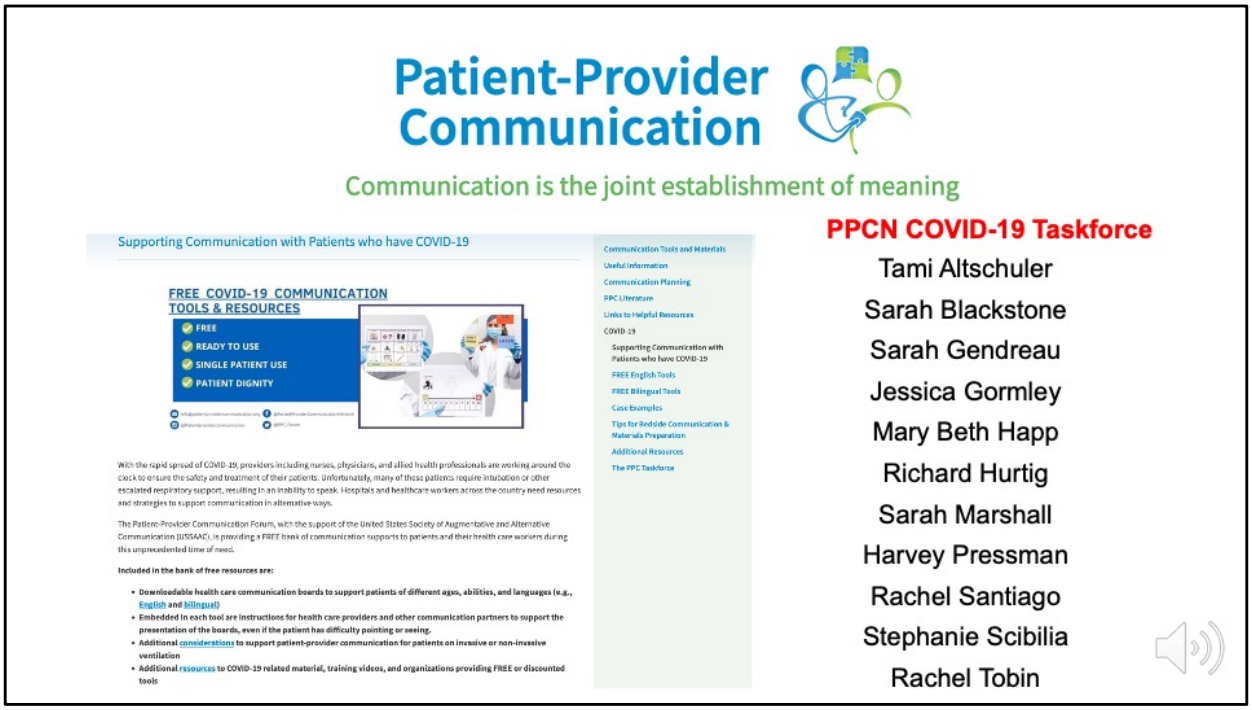
PPE a Barrier to Effective Communication

Retrieved from Twitter, 4/8/20

Impact on Audibility of Provider Speech: • Added difficulty for Hearing Impaired Patients or Patients who use ASL.
Impact on Audibility of Patient Speech: • Occlusive Effect of PPE on Caregivers' Ability to Understand their Patients
Impact on Recognition of Caregivers by the Patient: • No identifiable facial features • No visible ID
Availability of PPE Limited the Number & Duration of Bedside Interactions

The need for staff to use PPE when treating Covid-19 patients has further complicated patient-provider communication.
PPE has made it harder for patients, particularly those with hearing impairment or who rely on sign language, to understand their care providers.
Likewise, the use of PPE has made it harder for staff to make out what the patient may be saying.

Especially early in the pandemic, the limited availability of PPE restricted the number and duration of bedside interactions. That together with, PPE obscuring the providers face and no visible ID added to great isolation of the patient. The picture on this slide shows a creative solution that some staff produced to help patients recognize who they were.



In early March of 2020 as the pandemic spread and it became apparent that hospitals could not implement many of the communication tools and strategies that had been part of standard practice.

I reached out to colleagues at the Patient-Provider Communication Network to see if we could quickly develop and distribute low-tech communication tools and strategies that could be used in hospitals treating Covid-19 patients.

The PPCN task force included clinicians from Boston Children's Hospital, Massachusetts General Hospital, NYU Langone Hospital, Ohio State University College of Nursing, Wisconsin Health- Waisman Center, the University of Nebraska Medical Center and my Voxello- University of Iowa Healthcare team.

The task force used their collective years of experience addressing the communication needs of pediatric and adult patients to develop a set of communication tools that could be quickly and easily deployed in Covid-19 ICUs.

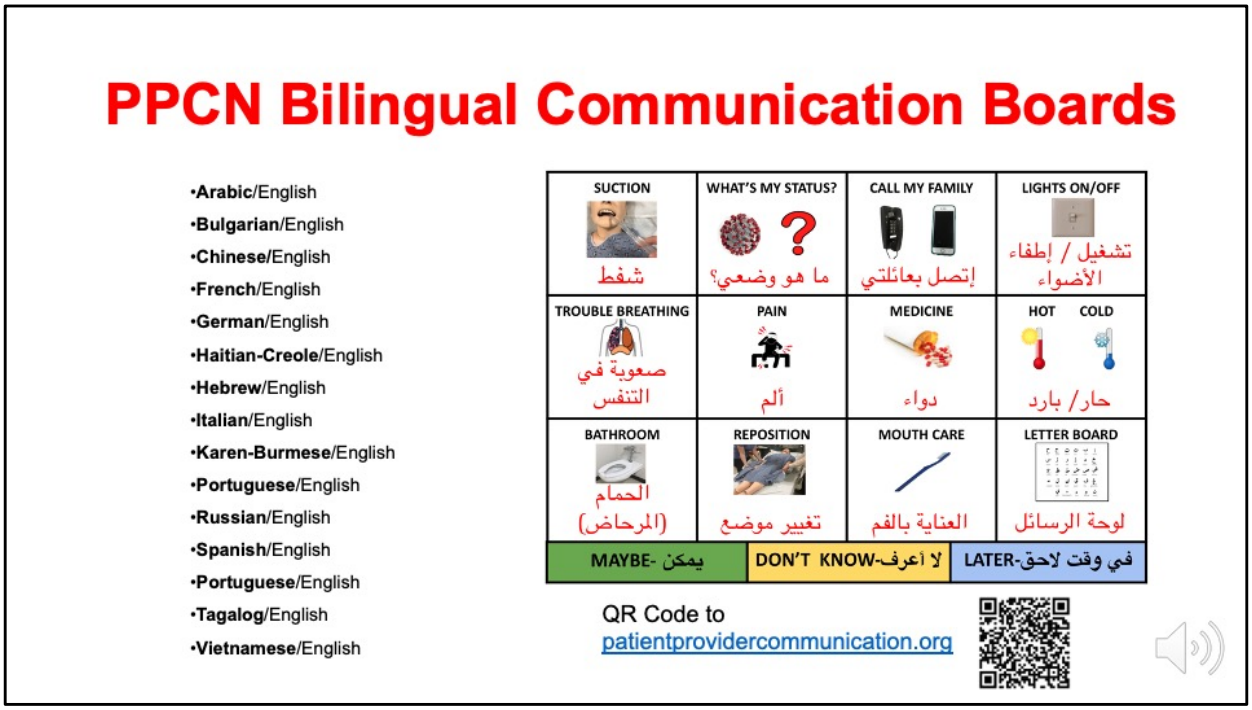
By later the third week of March, these tools were made available on the PPCN website and announcements were posted on social media and to various speech-language pathology and nursing listserves.

Patient-Provider Communication Network
Covid-19 Communication Tools

- Pain scales
- Yes/no
- Letter Boards
- General Needs - Adults
- General Needs - Pediatrics
- Medical Decision Making
- Serious Illness
- Create Your Own
- How to use instructions

Use QR code to access
patientprovidercommunication.org

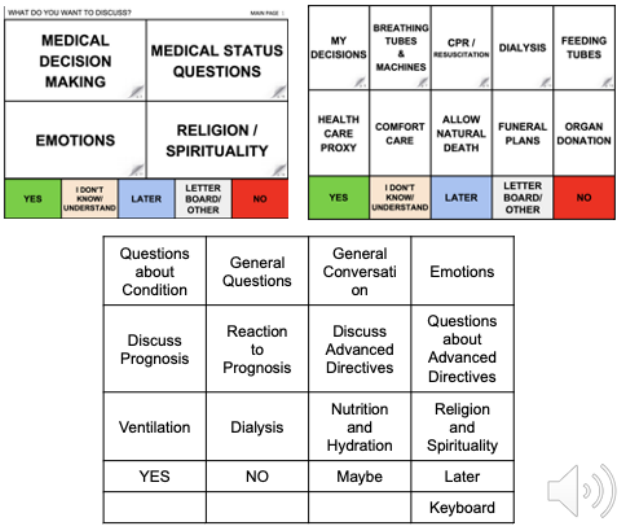
The free Covid-19 communication tools were designed to be downloaded and used right in the ICUs. These included a range of tools from simple pain scales and yes/no response options to tools that allowed patients to make their needs known and participate in medical decision making. In addition, the task force also created simple instructions on how to use and implement the communication tools.



Many of the Covid-19 infection protocols limited who could be at a patient's bedside. This left patients who had limited English proficiency even more isolated and unable to participate in their care. While the use of remote interpreter services were made available at some facilities, the interpreters could support the provider-to-patient communication. But for intubated patients, there was no way for the patient's intentions to be communicated to the providers. At Voxello, I had developed a bilingual version of the noddle-chat communication device to support bidirectional communication for patients with Limited English Proficiency. I worked with the taskforce to produce low tech communication boards that would allow the ICU staff and non-English speaking patients to effectively communicate. We are grateful to the U.S. Society for Augmentative and Alternative Communication for the funding to have certified interpreters translate all of the words and phrases used.

Supporting Medical Decision Making

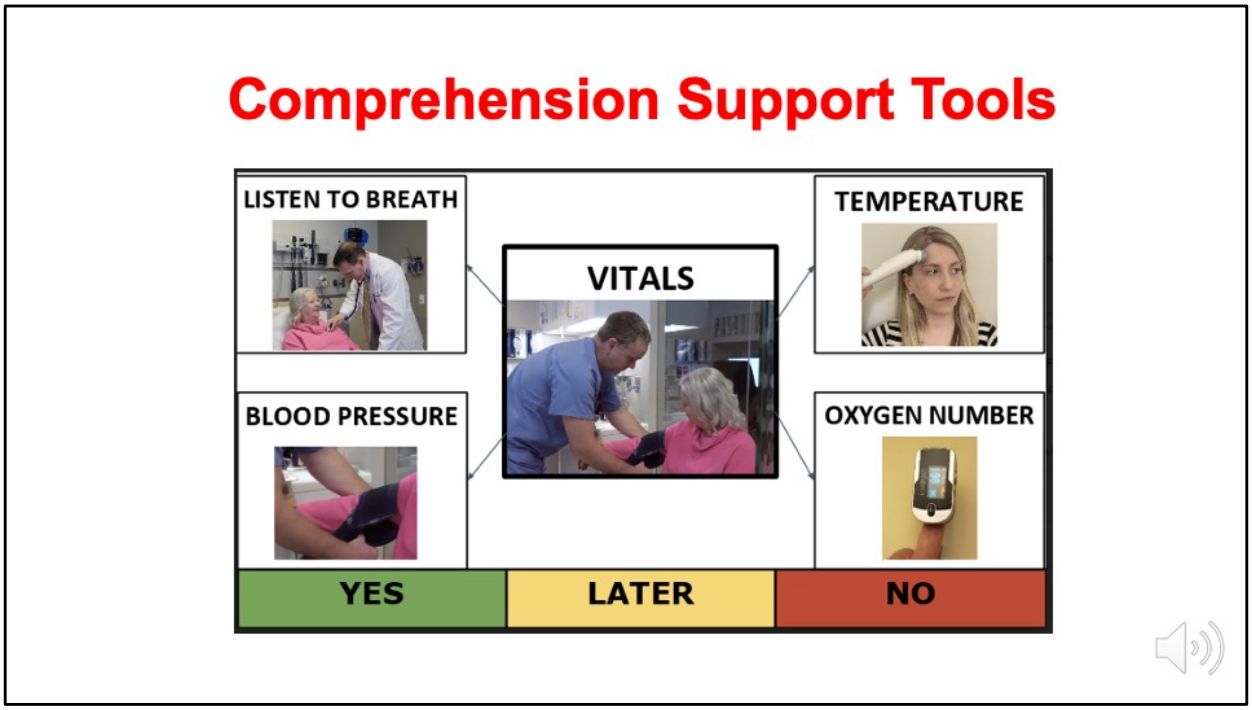
- Have a range of communication templates for the patient to indicate their preferences and solicit information a particular treatment.
- Make it easy for patients to demonstrate an understanding of the consequences of certain decisions about their care.
- Ensure that their expressed wishes on medical and spiritual issues are as unambiguous as possible.



Part of my lab's and Voxello's efforts with funding from NIH/NINR have been directed to creating communication tools to allow patients to be actively engaged in medical decision making.
Part of that involves providing a tool that would support extended conversations that not only allow the patient to solicit information but to also make informed decisions.
To achieve this, we;

1) Provided communication templates so that a patient could indicate preferences and solicit information for a particular treatment
2) Made it easy for patients to demonstrate and understanding of the consequences of certain decisions about their care
3) Ensured that the patient's expressed wishes on medical and spiritual issues are as unambiguous as possible.

It is often difficult for non-speaking patients to demonstrate that they are competent and can participate in medical decision making.
The tools we developed enabled patients to demonstrate that they understand and can make decisions about their care.



Our clinicians appreciated that communication tools can also be used to support patients' comprehension of what they are being told. Visual aids have been found to be effective for patients with limited health literacy and limited proficiency in the language of the caregiver as well as with patients with transient or chronic comprehension deficits.

Best Practice Recommendations

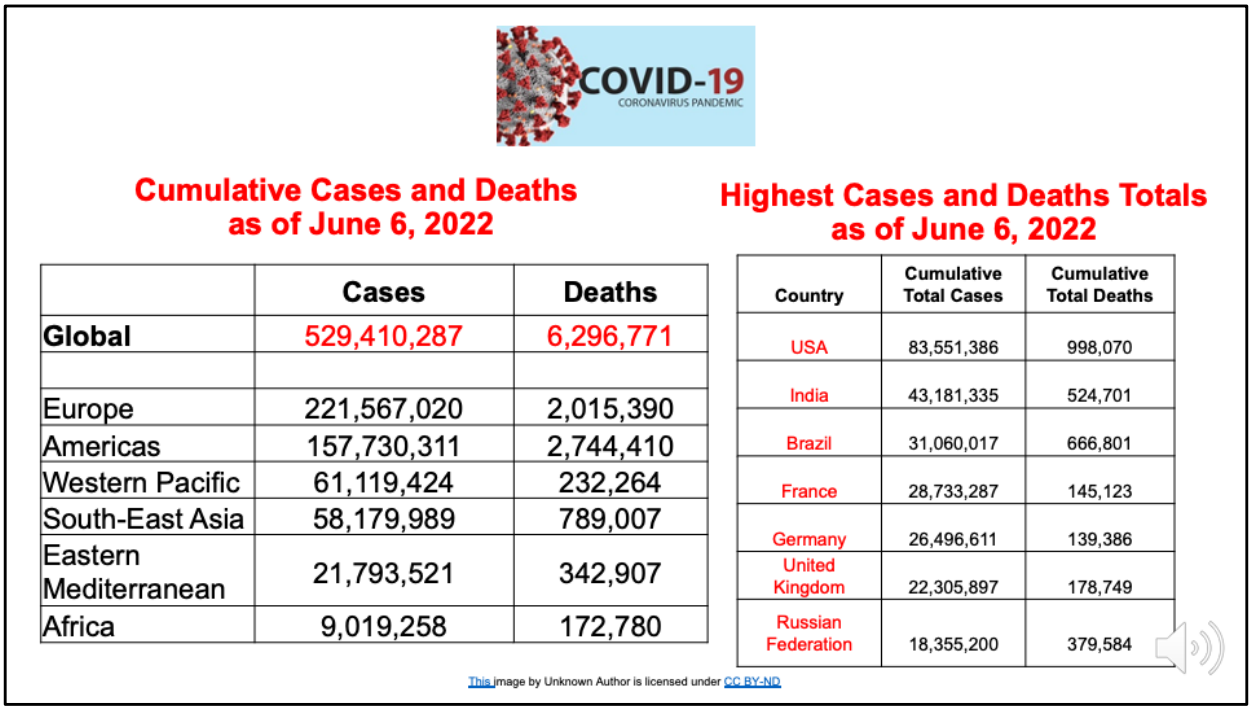
Communication Partner Training  	• Provide “tips for bedside communication” • “On the spot” training with bedside staff • Bedside signage • Virtual training with family/loved ones • Partner Assisted Scanning Instructions • Handouts with QR codes which may direct providers to video demos
Emergency Preparedness  	• Identify patient-provider communication champions (RNs, MDs, RTs, etc.) • Ongoing education/training with staff on communication access • Create your own “ready-made” context specific communication tools

Our collective experience in supporting bedside communication in Covid-19 ICUs leads is to make some practice recommendations.
No matter how simple the communication tool is, getting a high-fidelity implementation will require communication partner training.
We recommend:

- Provide “tips for bedside communication”
- “On the spot” training with bedside staff
- Bedside signage
- Virtual training with family/loved ones
- Partner Assisted Scanning Instructions
- Handouts with QR codes which may direct providers to video demos

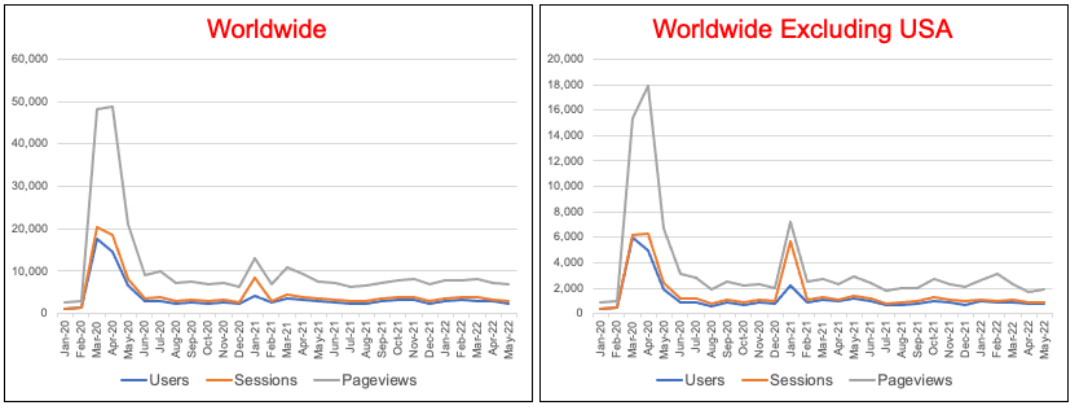
The Covid-19 pandemic and the evolving protocols have highlighted the importance emergency preparedness. If a hospital has established a “culture of communication” it will be easier to:

- Identify patient-provider communication champions (RNs, MDs, RTs, etc.)
- Ongoing education/training with staff on communication access
- Create your own “ready-made” context specific communication tools



It is more than evident that the pandemic has put a huge strain on healthcare around the world. As of early June, over ½ billion people have contracted the Sars-Cov2 virus and well over 6 million have perished.

PPCN Website Usage Over Time

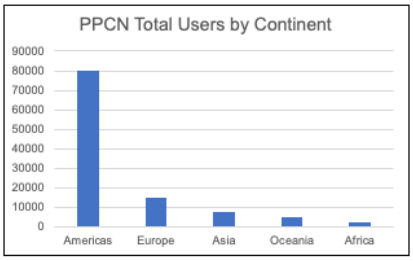


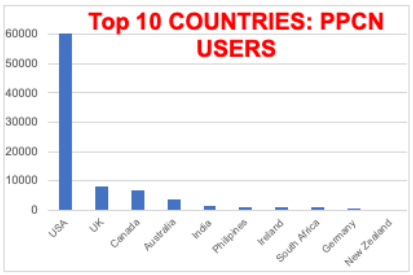
As of June 5, 2022,
105,233 unique users from 191 countries accessed the PPNC website for a total of 316,236 pageviews.

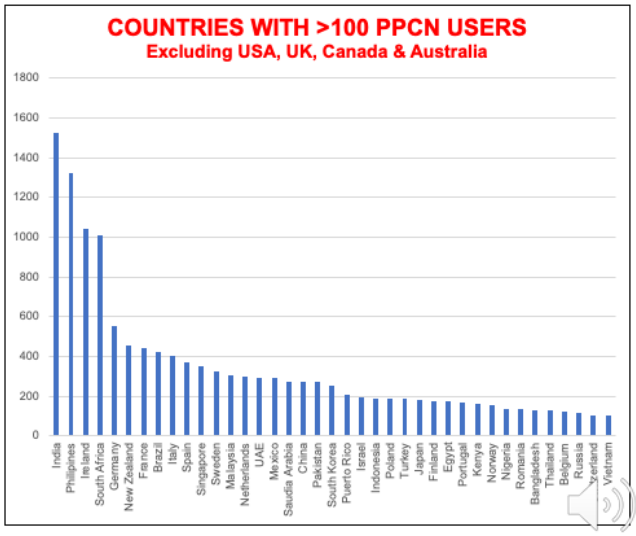
As I mentioned earlier the Patient Provider Communication Network posted communication tools in late March of 2020.
The figure on the left shows the number of worldwide users, sessions and pageviews by months from January 2020 through the end May 2022. You can see that the website usage dramatically increased once the Covid-19 tools were made available. It is worth noting that the website continued to attract new users each month at rates significantly higher than those seen pracademic.
The figure on the right presents the website usage data excluding access from the USA. It is worth noting that a similar usage pattern is seen with a more pronounced second peak seen in January 2021.

As of June 5, 2022, 105,233 unique users from 191 countries accessed the PPNC website for a total of 316,236 pageviews.

Worldwide PPCN Website Access



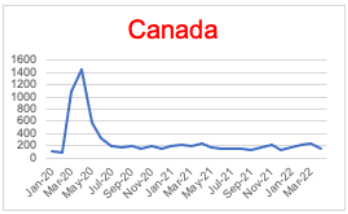


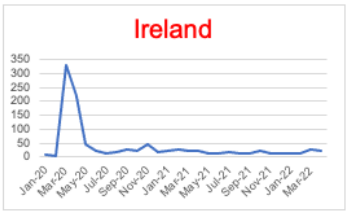


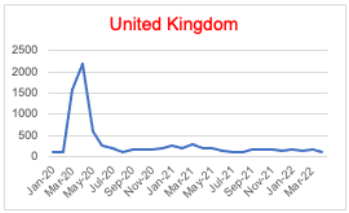
As of June 5, 2022, 65% of the 105,233 website users came from the USA. The figure on the upper left of the slide shows the website usage by continent. The figure on the lower left presents the user data for the countries with the top 10 website usage rates; The USA had approximately 60,000 unique users while New Zealand had 454. The figure on the right presents the usage data for all countries that had more than 100 unique user excluding the USA , United Kingdom, Canada & Australia. The number of users ranged from 1527 for India to 100 for Vietnam.

Exemplar PPCN Website Usage Pattern

Single Peak



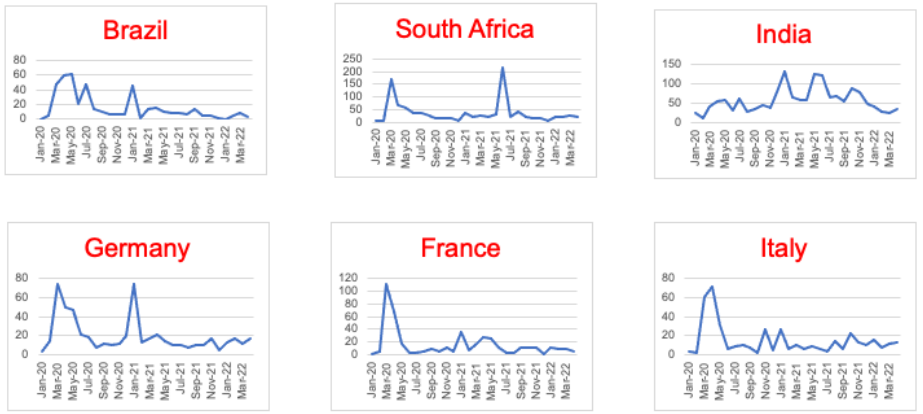




This slide illustrates one pattern of website usage rate that showed a significant single peak shortly after the communication tools were posted and then a fairly steady usage rate through May of 2022.

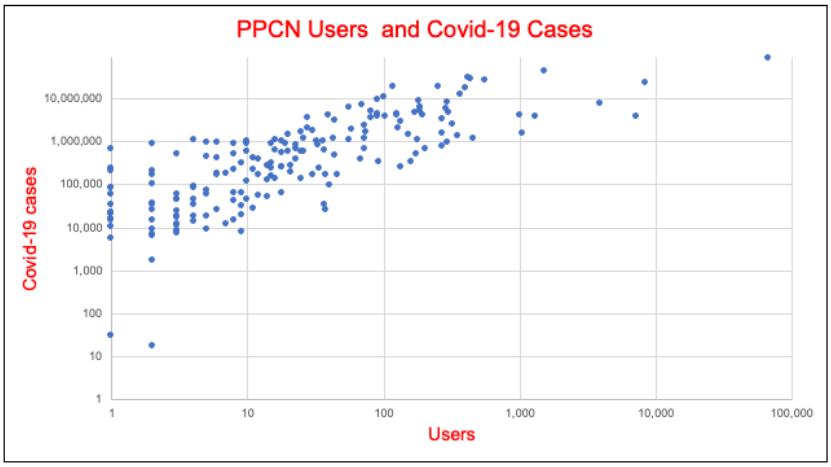
Exemplar PPCN Website Usage Pattern

Multiple Peaks



BY contrast some countries showed multiple peaks that seemed to correspond to cases surges attributed to variant strains of the virus. Unlike most countries that had their highest peak of website usage at the onset of the pandemic, India which had the fifth highest website usage did not reach its highest usage peak until 2021.

Worldwide Covid-19 Case Rates and PPCN Website Usage



Cases from 185 countries: Multiple R= 0.76, F=245, p<.0001

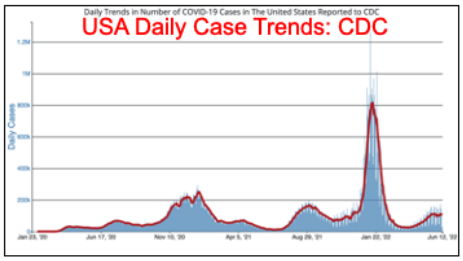
Cases from 43 countries with > 100 users: Multiple R= 0.78, F=62, p<.0001

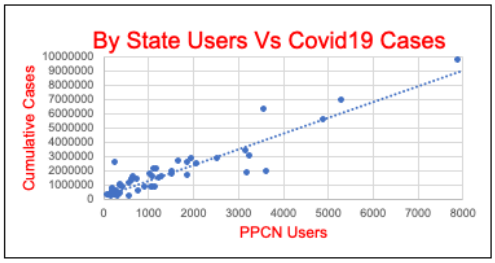
We were interested in the relationship between covid-190 case rates and utilization of the PPCN website. This slide plots PPCN users against the WHO reported covid-19 case rates..

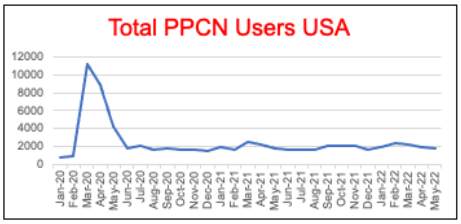
We performed a regression analysis on the data for 185 countries for whom we had both website usage data and WHO reported cases rates. W also performed a regression analysis for the 43 countries with 100 or more website users. Both analyses revealed significant positive relationships that accounted for 60 and 57 percent of the variance in the data.

Note: WHO does not report cases for Taiwan, Hong King and Macau so analysis is on. 185 countries that had PPCN users and cases reported to WHO

USA Covid-19 Cases and PPCN Usage







Cases Vs PPCN Users

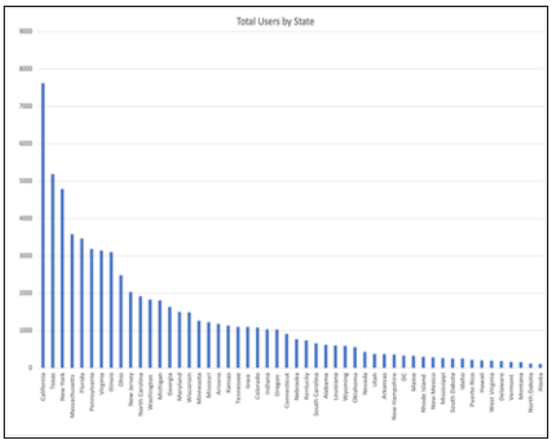
Multiple R= 0.92

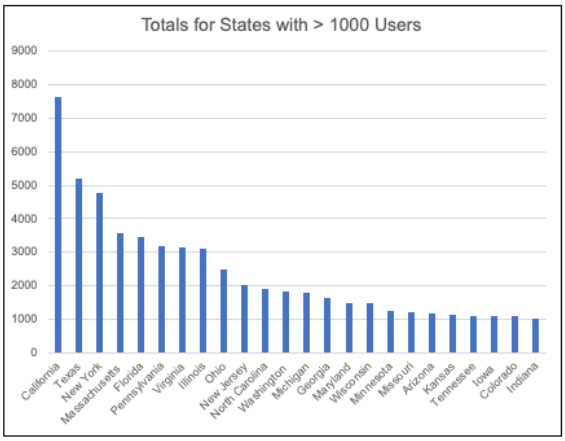
F=2.87.2 p<.0001

The two figures on the left of this slide illustrate the pattern of the daily case rates in the USA, as reported to the CDC and the monthly PPCN website usage. It is worth noting that approximately 2000 users accessed the site each month after the initial surge in March of 2020.

The figure on the right shows the relationship of PPCN users from the USA and the CDC Covid-19 case reports. The regression analysis revealed a string positive relationship that accounts for 85% of the variance.

U.S.A. PPCN Website Access: By State

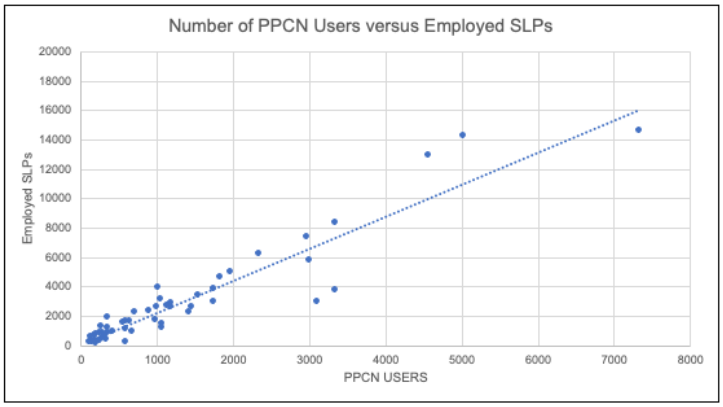




This slide shows the breakdown in PPCN usage by state. The figure on the left shows the number of PPCN users for all 50 states as well as Washington D.C. and Puerto Rico. The figure on the right shows the website user rates for the the states with >1000 users; ranging from a high of 7903 for California to 1062 for Indiana.

Number of PPCN Users versus Employed SLPs

By State (Including Washington DC & Puerto Rico)



Multiple R= 0.94

F=297.6, p<.0001

As the bulk of the PPCN participants are Speech-Language Pathologists we were interested in whether there was a relationship between the access to the website and the number of Speech-Language Pathologists employed in each state. The figure on this slide shows a plot of PPNC users by state employment data obtained from the US Bureau of Labor Statistics.

The regression analysis showed a strong positive relationship that accounts for 89% of the variance.

Conclusion: Prioritize Communication

Communication tools improve patient outcomes.

Communication tools can be implemented even during a time of crisis.

When working in Covid-19 care units:

- **Provide tools that allow patients to go beyond expressing basic needs and wants**
- **Minimize additional noise in environment**
- **Wear clear masks when able**
- **Use personal voice amplification**
- **Consider virtual visits as an alternative when possible**

Communication access is a legal and moral obligation

Our experiences working with critically ill patients both before the pandemic and during the pandemic have taught us many lessons.
We see better outcomes when we can effectively communicate with our patients. Both patient and staff stress is reduced when barriers to patient-provider communication are reduced or eliminated.
The added restrictions of working in Covid-19 care units have identified a number of strategies we should consider to support our critically ill patients. These include:

- Provide communication tools that allow patients to go beyond expressing basic needs and wants and allow patients to more actively participate in their care
- Minimize additional noise in environment in order to ensure that patients and providers can understand each other
- Use personal voice amplification to enhance audibility when using PPE
- Wear clear masks when able in order to promote better patient engagement and comprehension
- Consider virtual visits as an alternative when possible

We should never forget that it is our legal and moral obligation to help our patients

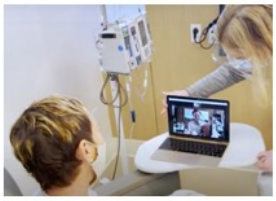
overcome barriers to communication.

PROJECT: MUSIC HEALS US
Fight Patient Isolation: Utilizing Existing Telehealth Technology

VITAL SOUNDS INITIATIVE

VIRTUAL BEDSIDE CONCERTS

"There are very few things in this world [that can] transcend time and place, and [...] music is one of those things. It adds a level of humanity to a situation that I think this virus has taken away."



As of June 5, 2022
10,620 Individual Patient Concerts Given
https://www.pmhu.org/vital-sounds

The restrictions on who can be at the bedside of Covid-19 patients, limited who patients communicated with and exacerbated their feelings of isolation. These patients did not have visits from the wide range of staff who are responsible for all the “non-medical” aspects of their care.

Pre-pandemic, the non-profit organization PROJECT: MUSIC HEALS US (PMHU) provided inspiration, education and healing through live music performances and interactive programming to marginalized communities across the United States

As the pandemic progressed, many hospitals eventually began permitting patients to connect virtually with staff as well as with family and friends via smartphones and tablets. This opened things up for a wider range of activities from music therapy and pastoral care.

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In order to continue its mission amidst the pandemic, **PROJECT: MUSIC HEALS US** began offering its programming through their “Vital Sounds Initiative” in the form of one-on-one concerts via video livestream platforms to society's most isolated and vulnerable: patients hospitalized across the country.

From April 2020 to the beginning of June 2022, the Vital Sounds Initiative has given over 10,600 individual patient concerts. Feedback from clinicians has noted the positive impact of the music on both the physical and psychological state.

Postscript:
Responding Crisis Induced Communication Barriers

A listing of links to a range of bilingual tools can be found at:
https://www.patientprovidercommunication.org/ukraine-supports/communication-tools/

The experience of needing to develop and deploy free downloadable communication tools to meet the needs of patients with Covid-19, has made it possible to quickly pull together communication tools to address the linguistic barriers faced by pediatric and adult patients fleeing war torn Ukraine. Shortly after the war broke out many adult and pediatric patients in Ukrainian hospitals were being evacuated to hospitals in countries across Europe. While some of the patients were evacuated with family members who were fluent in the languages spoken at the host facilities, many, including children, found themselves alone and even more isolated by linguistic barriers.

While the carnage of Russia's war on Ukraine, has killed and maimed thousands of Ukrainian children and adults, the European medical community has stepped up to treat these victims of war. It is some solace that the bilingual communication tools have helped patient-provider communication in these cases.

References

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- **Altschuler T., Santiago, R., Gormley, J.** Ensuring communication access for all during the COVID-19 pandemic and beyond: supporting patients, providers, and caregivers in hospitals. *Augmentative and Alternative Communication*. 2021 Aug 2:1-13. doi: 10.1080/07434618.2021.1956584.
- **Happ, M. B., Seaman, J. B., Nilsen, M. L., Sciulli, A., Tate, J. A., Saul, M., & Barnato, A. E.** (2015). The number of mechanically ventilated ICU patients meeting communication criteria. Heart & Lung, 44, 45–49. https://doi.org/10.1016/j.hrtlng.2014.
- **Hurtig, R.R., Alper, R., Altschuler, T., Gendreau, S., Gormley, J., Marshall, S., Santiago, R. & Scibilia, S.** (2020) Improving Outcomes for Hospitalized Patients Pre- and Post-COVID-19. Perspectives of the ASHA Special Interest Groups Vol.5, 1577-1586. https://doi.org/10.1044/2020_PERSP-20-00144
- **Hurtig, R. R., Alper, R. M., & Berkowitz, B.** (2018). The cost of not addressing the communication barriers faced by hospitalized patients. *Perspectives of the ASHA special interest groups*, *3*(12), 99–112. https://doi.org/10.1044/persp3.SIG12.99
- **Hurtig, R.R., Alper, R.M., Bryant, K.N.T., Davidson, K.R, & Bilskemper, C.** (2019) Improving patient safety and patient-provider communication. *Perspectives of the ASHA Special Interest Groups Vol.4 1017-1027, October 2019.* doi.org/10.1044/2019_PERS-SIG12-2019-0021.
- **Hurtig, R., Czerniejewski, E., Bohnenkamp, L., & Na, J**. (2013). Meeting the Needs of Limited English Proficiency Patients. *Perspectives on Augmentative and Alternative Communication*, *22*(2), 91-101.

Thank you for taking the time to hear my presentation. This slide and the next provide you with a list of our publications related to today's talk, as well as my contact information.

References

- **Hurtig, R., Nilsen, M., Happ, E.B. & Blackstone, S.** (2015) Acute Care/Hospital/ICU-Adults. In Patient Provider Communication in Healthcare Settings: Roles for Speech-Language Pathologists and Other Professionals. Blackstone, S., Beukelman, D. & Yorkston, K (Eds.) Plural Publishing Inc. San Diego, California. https://www.pluralpublishing.com/publication_ppc.htm
- **Marshall, S. & Hurtig, R.R.** (2019) Developing a Culture of Successful Communication in Acute Care Settings: Part I Solving Patient Specific Issues. *Perspectives of the ASHA Special Interest, Vol.4, 1028-1026, October 2019.* doi.org/10.1044/2019_PERS-SIG12-2019-0015.
- **Marshall, S. & Hurtig, R.R.** (2019) Developing a Culture of Successful Communication in Acute Care Settings: Part II Solving Institutional Issues. *Perspectives of the ASHA Special Interest Groups Vol 4., 1037-1043, October 2019.* doi.org/10.1044/2019_PERS-SIG12-2019-0016.
- **Santiago, R., Altschuler, T., Howard, M., & Costello, J.** (2018, November 15–17). Bedside AAC service delivery by SLPs in acute care: Current practice and a call to action. [Paper Presentation]. American Speech-Language Hearing Association Conference, Boston, MA, United States.
- **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.
- **Zubow, L., & Hurtig, R.** (2013). A Demographic Study of AAC/AT Needs in Hospitalized Patients. *Perspectives on Augmentative and Alternative Communication*, *22*(2), 79-90.

I hope you have found the information in today's presentation useful.
Please, be well and stay safe.