

Promising Practices in Overcoming Communication Barriers

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In a few hospitals around the world, communication specialists are pioneering new ways to overcome the communication barriers between patients and care providers--- barriers at the root of reduced patient safety, extended length of hospital stay, unnecessary exacerbation of pain, hospital caused injuries, avoidable deaths, and many other undesirable outcomes. In most other hospitals, these barriers are usually not addressed directly or with sufficient attention or energy.

The descriptions of promising practices that follow are an attempt to provide information about some of these pioneering efforts, in a uniform format that can make it as easy as possible for interested personnel in other hospitals to (1) obtain the kind of practical information most useful for adaptation purposes and (2) find out where to get additional information about the details of these innovative practices. It is our intention from time to time to add information about each example, and to add additional examples as they come to our attention.

I. Boulder (CO) Community Hospital:

1. Main players:

Juli Pearson, Speech-Language Pathologist, Boulder Community Hospital, and Debra McBride, Speech-Language Pathologist, Boulder Community Hospital, President, AACTechConnect, Inc.

2. Key strategies/ideas:

At Boulder Community Hospital, Juli Pearson and Debby McBride have developed a communication tool kit program to help overcome communication barriers due to language issues, ventilators, hearing issues, *etc.* in hospital settings. The *On the Spot Communication Toolkit* meets immediate basic communication needs and includes tools for vision, speech, hearing, language and cognition, as well as tools for non-English speakers. Materials include two tool kits (one for SLPs, one for nurses), a resource book, and a streamlined reordering system. Each nurses' unit at Boulder Community has its own tool kit for quick access.

The *On the Spot Communication Toolkit* includes: (1) word boards and picture boards (in various languages) (2) a modified call bell with "how to" instructions and easy to follow pictures, (3) a "pocket talker" amplifier (for people who have trouble hearing

in a noisy hospital environment), (4) writing boards (white boards or clip boards) complete with “Writing Strategies” that provide specific suggestions of how to help patients with physical and communication limitations use them, (5) a magnifying glass, (6) English-to-Spanish translation cards, and (6) other useful tools for patients and staff (*e.g.* a hearing aid trouble shooting guide).

Pearson and McBride based the development of the On The Spot tool kits and program on a hospital-wide needs assessment, review of research in the field, and current nation-wide Joint Commission hospital standards. They use three primary methods of getting communication access tools to patients: (1) addressing basic needs through the *On the Spot Communication Toolkit*, with simple, easy-to-use tools that all staff can access, (2) addressing complex communication needs through an AAC evaluation kit specially designed for the hospital population, and used by speech-language pathologists and (3) providing for ongoing communication needs through a communication access tool loan bank, and/or giving away low-cost communication access tools at patient discharge.

3. Problem(s) addressed:

(a.) In health care settings, communication breakdowns between patient and caregiver can have dire consequences: increased patient pain, misdiagnoses, drug treatment errors, unnecessary extensions in length of hospital stay, and even death. In a six-year (1997-2002) study of the root causes of “sentinel events” in hospitals, the Joint Commission in fact placed “communication” at the very top of the list of root causes. Although there now do exist a set of simple tools and strategies that can quickly and effectively improve communication between patients/family members and caregivers, these tools usually go unused and ignored in most health care settings. Useful information about these tools and strategies is, moreover, scattered among a variety of disparate sources and, in a few cases, not readily available or accessible.

Communication difficulties can, and often do, create huge barriers between patients and health care staff. Trouble communicating can be attributed to new or chronic speech and/ or comprehension difficulties, medical interventions and/or language barriers of non-native speakers. Patients regularly report instances in which communication barriers result in feelings of anxiety, fear, frustration, unrecognized pain, and overall loss of control.

(b.) When a patient leaves with a communication tool and the tool is no longer available for other patients to use. Thus there needs to be a loan/“give away” bank of tools for patients to use and take as needed

(c) Before the program was in place at Boulder Community Hospital, all communication tools and resources came from the Speech Therapy Department. This not only over-burdened the Speech Department budget, but also led to patients' needs slipping through the cracks.

(d) Ensuring that there are sufficient communication enhancement resources for all patients, and ways to replenish these resources. It is critical that the items are easily restockable. Communication tools such as these should be given priority as ongoing hospital-wide needs, the same way the hospital restocks other patient-use items such as bedpans, trach supplies, and toothbrushes.

4. Adaptable features:

Boulder (CO) Community Hospital has developed a program focused on low cost and easy to use tools that speech therapists and other health providers can use to evaluate patients and provide individualized communication options for those who are communication vulnerable and/or have more complex communication needs. Recognizing that communication tools utilized in health care settings must be functional, user-friendly, accessible and easy to acquire, they have developed two different communication tool kits (One for nurses, one for speech language pathologists), a "How-To" book, and an ordering system that assures that supplies are renewed

To gain administrative support within a hospital, Pearson and McBride found the following steps beneficial:

- Collaborate with a Patient Care Representative who mediates Joint Commission standards, patient feedback, and advocates for patient rights and communication
- Incorporate access to communication tools as a policy standard vs. a "gold star" (e.g., Joint Commission standards, meeting the needs of non-English speakers, patients who are hard-of-hearing, etc.)
- Conduct a needs assessment with staff and representatives of each clinical department (nurses, therapists, interpreters, etc.)
- Solicit patient feedback

Concerning the problem of ensuring there are enough resources for each patient, Boulder Community Hospital was able to find funding for tools through an annual grant from its foundation or auxiliary board by applying for a simple grant and presenting the idea. They have subsequently received funds from several grants which allow them to restock the items periodically.

5. Adaptations:

While many of the individual components in their kits are available for purchase, there are no comprehensive, easy-to-order tool kits market such as the ones Boulder Community Hospital has developed currently on the market. Pearson and McBride are now expanding these tool kits, related trainings and other resources and making them available to other hospitals nationwide under the name “On the Spot Communication” tools. (For more information, visit www.aactechconnect.com)

Efforts to adapt and utilize the ideas and materials that Pearson and McBride have developed at Boulder Community are already taking place in a number of other areas. In Biloxi, Mississippi, Katy Gift, a nurse who serves as staff developer at the Community Living Center of the Veterans Administration’s Gulf Coast Health Care System, is utilizing the On the Spot communication tools both in service training of new hires and throughout the nursing service. Gift has also demonstrated the On the Spot kit at several nurses’ conferences in her state.

At Tulane Medical Center in New Orleans, Jenifer Sudkamp and her colleagues in the Speech-Language Pathology Department are working with the nursing staff in the ICU to adapt the materials that Boulder is using to their particular situation. The Speech Pathology [ST] and specialized nursing departments (*e.g.*, ENT; Child Life; Stroke ICU; SICU) have participated in a one-day orientation provided by Debby McBride pertaining to the contents and use of a communication toolkit, and the ST department is now spearheading the development of appropriate augmentative and alternative communication [AAC] assessment(s) for the acute care setting and other settings along the continuum of care, and collaborating with the nursing departments to initiate use of various AAC interventions. The ST department is also developing an evaluation/survey to assess 1) frequency of intervention use; 2) need for additional equipment to facilitate communication; and 3) barriers for equipment/technique use among specified departments. In addition, the ST department is collaborating with the Tulane University Hospital & Clinic/HCA administrators to obtain funding to maintain and expand AAC resources at Tulane Medical Center. and is working with the SICU nursing team to implement a system for the unit to "own and replenish" the communication toolkit.

At Denver Children’s Hospital, Lisa Martin, an Augmentative Communication Program Specialist and her colleagues are exploring ways in which the methods and materials that have been adopted at Boulder Community can be adapted to a large children’s hospital. With the help of Pearson and McBride, they are not only ordering several On the Spot kits, but are also conducting interviews with parents and staff that will hopefully lead to the adoption of similar ordering and financial support procedures modeled after the Boulder demonstration. In order to document the need for the tool kits (and thus to get ongoing funding), they are now gathering data from nursing staff and families, via a simple survey for both nursing staff and families to complete, and are attempting to get funding to purchase an initial set of toolkits

through their hospital foundation, with the end goal being having nursing departments include the maintenance cost in their annual budgets.

6. Frequently unanswered questions:

- What initial obstacles did Pearson and McBride have to circumvent before they could create a viable model at Boulder Community?

Initially, Pearson and McBride felt that speech pathologists should be involved with all patients who were experiencing communication difficulties. They were having difficulty getting these consults on a consistent basis; thus, patients were falling through the cracks. They were concerned that if they put some basic tools in the hands of nurses, that this would be an unwanted burden, inappropriate tools would be used, and/or the speech department wouldn't receive consults for patients with more complex communication needs. When they performed their needs assessment, they found that nurses had needs that arise immediately, and in the middle of the night or on off hours when speech specialists were not available. They found that the category of "communication difficulties" was much more encompassing than the patients they would typically see. Ultimately, they found that empowering staff with tools to meet basic communication needs strengthened their communication, met patient's needs, and has since increased the number of appropriate referrals to speech pathology.

- What if a patient does not suffer from disabilities, complications from medical interventions or language barriers? Can these tools be used to meet other communication needs?

Absolutely. The On the Spot Communication Toolkit can be used to meet all communication needs, including those related to vision, speech, hearing, language and cognition. The resource can be adapted in different medical settings to meet the unique needs of diverse patient populations.

- Are these tools appropriate for patients with low health literacy?

Yes, patients with low health literacy can benefit from word and picture communication boards, which are available in a variety of languages. These boards use simple words and images to help patients communicate their questions, needs and concerns to care givers.

- How much does the On the Spot Communication Toolkit cost?

One can order a complete toolkit in a plastic storage box online for \$699 at <http://www.aactechconnect.com/onthespot.cfm>.

The company also offers discounts for large-quantity purchases. Items available for purchase include: (1) A toolkit for speech pathologists, (2) a resource book with pre-made materials and assessment suggestions and (3) a toolkit for medical personnel (*i.e.* nurses stations, *etc.*).

7. References:

- AAC TechConnect website: <http://www.aactechconnect.com/onthespot.cfm>
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- McBride, Debby & Pearson, Juli. *AAC in Acute Care: Keeping it Simple, Meeting the Needs* [PowerPoint slides]. Retrieved from: <http://www.aactechconnect.com/events/files/acutepresentation.pdf>

8. Contact(s)

For more information about the Boulder Community Hospital project please contact: Juli Pearson @ JuliTPearson@hotmail.com or Debby McBride: @ Debby@AACTechConnect.com

For additional information about the ways in which the Veterans Administration's Gulf Coast Health Care System in Biloxi is adapting these resources, please contact: Katy Gift at kathryn.gift@va.gov.

For more information about the ongoing work at the Tulane University Medical Center, please contact: Jenifer Sudkamp at jenifer_juengling@yahoo.com and/or Meher Banajee at mбанaj@lsuhsc.edu.

For more information about the work at Denver Children's Hospital, please contact: Lisa Martin at Martin.Lisa@tchden.org.

To order the *On the Spot Toolkit* or to find out more information about this resource, please visit www.aactechconnect.com or call 866-482-2279.

II. University of Iowa Hospitals and Clinics

1. Main players:

Dr. Richard Hurtig, Ph.D. Professor/Starch Faculty Fellow, Department of Communication Sciences & Disorders at the University of Iowa; Debora Downey, M.A., CCC-SLP, Ph.D. Candidate, University of Iowa; Lauren Zubow, M.A., CCC-SLP, Ph.D. Candidate University of Iowa.

2. Key strategies/ideas:

Richard Hurtig and doctoral students Debora Downey and Lauren Zubow are conducting research at the University of Iowa Hospitals and Clinics, a medical facility with over five hundred beds. The project began in 2000 and the team has studied over 200 cases to date. Phase 1 of the project involved development of a hardware and software implementation protocol and Iowa content templates. Phase 2 of the project focused on obtaining qualitative data on patient views about augmentative and alternative communication (AAC) use. It also examined the relationship between AAC use and medical outcomes. Currently, researchers involved in the University of Iowa Hospitals and Clinics project are undertaking the following activities:

- Downey is developing and testing an online introductory tutorial for nurses and other healthcare providers. The tutorial introduces them to ways in which they can provide communication supports to patients.
- Zubow is identifying professional and institutional barriers to the delivery of communication supports in hospitals by conducting initial interviews with target groups. From these, she will develop a survey, administer it nationally and analyze the results.
- Hurtig, Downey & Zubow have been working with hospital administrators to embed questions about patient communication in hospital-wide electronic charting protocols. Sample questions include: Can the patient communicate effectively and efficiently? Does the patient require use of glasses? Hearing aids? Does the patient use any assistive technology? Can the patient use a call button? Because this is part of a hospital-wide database, the Speech Language Pathologists can then identify patients who have difficulty communicating throughout the hospital at any time.
- Another related project involves the evaluation and use of the Iowa AAC Protocol. The aim is to enhance patient-caregiver communication for all non-oral patients and patients who do not speak the language of healthcare providers. Goals of the Iowa Protocol are to put communication solutions quickly in place at the patients' bedsides and to train speech-language pathologists and other providers to use communication enhancement strategies with patients. Typical interventions include call button modifications, environmental controls and communication templates designed for specific in-patient units.

3.Problem(s) addressed:

Hurtig and his colleagues are especially concerned with utilization of a range of low and high tech assistive technology tools to improve communication in acute care settings, as well as the challenges patients who don't speak English or who have temporary or permanent communication impairments face across the entire continuum of care

4.Adaptable features:

Richard Hurtig is working to standardize and institutionalize hospital-wide electronic charting protocols to account for patient communication vulnerabilities. This

methodology can be adapted by any medical facility serving patients with communication complications. Standardization of electronic patient charts will make it easier for providers to prepare for appointments with patients with complex communication needs, thereby improving the quality of care.

Debra Downey is developing an online introductory tutorial for nurses and other healthcare providers to educate them about ways in which they can provide communication supports to patients. Her communication tutorial can be imitated and adapted to serve the needs of health care personnel in all kinds of medical settings, including pediatric offices, emergency rooms, veterans' homes, nursing homes, *etc.*

Health care providers can use Lauren Zubow's interview techniques to identify professional and institutional barriers to the delivery of communication supports in various medical settings. This information will allow health care facilities to minimize these barriers, thereby improving patient-provider communication.

Another project the team is undertaking involves use of the Iowa AAC Protocol for providing bedside communication tools to patients in need and training speech-language pathologists and other providers to use communication enhancement strategies. They hope these methods can be adapted to any medical setting and will help providers assess patients' alertness level, orientation, cognitive status, motor status, visual status, language abilities, and reading and spelling abilities.

To start up an effective communication enhancement strategy in acute care settings, Hurtig and Downey suggest the following steps:

- a) Identify multi-disciplinary team members
- b) Secure range of low-high tech communication systems
- c) Secure range of switches
- d) Secure alternative mounting options
- e) Develop referral system
- f) Provide in-service training for medical, nursing and other professionals
- g) Put a *McGiver Kit together or find your local McGiver

* The Iowa McGiver Kit includes: a tool kit, velcro, tape, ties, loc-line components, switches, switch cords and connectors, and switch mounts.

5. Adaptations:

Institutions that are considering emulating this strategy of improving patient-provider communication include Elmhurst Memorial Hospital in Chicago, and the University of Utah Hospital

6. Frequently unanswered questions:

- Can all health care facilities adopt this model to effect similar results, or is it designed specifically for hospitals and acute care settings?

Communication tools can be used in any health care facility to support patient-provider communication and they are effective for patients who are both temporarily and permanently communication vulnerable. Once providers are trained to properly use communication strategies and tools, they can utilize them to better understand and more effectively communicate with any patient.

- Where can I access manufacturers of reliable communication tools and equipment such as those used for augmentative and alternative communication (AAC)?

There are helpful lists of resources for major AAC system manufacturers, switch vendors, other technology websites, and helpful AAC links in a Powerpoint presentation by Hurtig and Downey called “The Use Of Augmentative & Alternative Communication In Acute Care Settings: ISHA October 2006.” This information can be accessed on slides 102 to 105 at:

<http://www.uiowa.edu/~comsci/research/speechlab/powerpoints/Implementing.pdf>.

See also Appendix B & C in Hurtig & Downey (2009), cited below.

- What are some of the salient features of the tutorial that Debora Downey is developing for nurses?

The tutorial targets five areas of AAC implementation for patients with complex communication needs:

- Developing a yes/no response
- Identifying effective communication strategies
- Candidacy for AAC/AT
- Introduction to low-high tech solutions
- Troubleshooting and referral

7. References:

- Hurtig, R. and Downey, D. (2009), *AAC in Acute and Critical Care Settings*, Plural Publishing Inc.
- Blackstone, Sarah W. (2009, August). University & Research. *Augmentative Communication News (ACN)*: 21(2) 11-12.

- Hurtig, Richard & Downey, Debora. *The Use Of Augmentative & Alternative Communication In Acute Care Settings: ISHA October 2006* [Powerpoint slides]. Retrieved from <http://www.uiowa.edu/~comsci/research/speechlab/powerpoints/Implementing.pdf>
- Hurtig, Richard & Downey, Debora. *Implementing Augmentative & Alternative Communication In Acute Care Settings: Progress Report*. Powerpoint slides retrieved from: http://www.goeshow.com/atia/orlando/client_uploads/handouts/Hurtig_%20T1802_ATIA_2009_Orlando.pdf
- Hurtig, Richard & Downey, Debora, *et al.*, *Implementing Augmentative & Alternative Communication In Acute Care Settings* (2005) Powerpoint slides retrieved from: <http://www.uiowa.edu/~comsci/research/speechlab/powerpoints/Implementing%20AAC-ASHA2005.pdf>

8. Contact(s):

For more information about the University of Iowa Hospitals and Clinics AAC project please contact: Richard Hurtig at richard-hurtig@uiowa.edu

III. Children's Hospital of Boston

1. Main players:

John Costello, M.A. Speech-Language Pathologist at Children's Hospital of Boston and Director of Augmentative Communication Program

2. Key strategies/ideas:

At Boston Children's Hospital, John Costello has helped create one of the first dedicated augmentative and alternative communication (AAC) services in intensive care unit (ICU) and acute care services: an inpatient service established in 1992 (cf., Costello, J. "AAC intervention in the intensive care unit: The Children's Hospital Boston model", *Augmentative and Alternative Communication*, Volume 16, Issue 3, September 2000, pages 137-153). Costello provides leadership for efforts that focus on patients who are communication vulnerable in hospital settings. This includes people who may be congenitally or temporarily non-speaking, those who cannot speak English and those who cannot access available communication tools (standard or adapted), such as nurse call.

Boston Children's Hospital has a long history of using various communication interventions, including a pre-op model of voice and message banking. Its inpatient AAC service focuses on all patients who are communication vulnerable and has been internationally recognized as a ground-breaking service. Further, it is a featured service during intensive hospital wide show cases of best practices for national and international visiting medical center personnel who wish to duplicate the hospital's models of patient care and service delivery.

Due to increased demand for such services, Boston Children's Hospital is now dedicating an FTE to concentrate solely on inpatient AAC (prior to that, the full service was provided, but it was by an outpatient clinician who 'doubled up' and had a massive volume/productivity). The team has added a second dedicated AAC inpatient speech-language pathologist (SLP) with administrative support for more than a decade. The hospital has provided funds to purchase all inpatient devices, switches, printers, cartridges, laminations,*etc.* since 1994. The ICU alone has had a dedicated line item for AAC equipment since 1997. The Neurosurgery program has supported the use of AAC equipment since 1998. The anesthesiology department has worked with Costello to ensure its budget includes procurement of AAC switches, nurse call adaptations, mounting arms and a medical administration pump switch for more than a decade.

The hospital has also established an AAC program for working with people at the end of life, and since 2001, it has maintained a formal program with the Dana Farber Cancer Institute. Further, the hospital board of directors has recognized the need to allocate in-kind donations to directly support the purchase of materials ranging from printer cartridges to low and high tech AAC devices. Each year, Costello has received a generous capital budget approval for AAC devices, equipment, *etc.* Costello's focus has been on promoting institutional wide awareness about communication vulnerability and the ways in which it negatively impacts medical outcomes. Going hand in hand with this is a clearer picture of the value added by an SLP who can do an AAC feature match to patient needs, and then implement appropriate AAC strategies. Costello is also seeking to utilize a nurse teaching and assessment tool developed by Lance Patak that will focus on the meaning of communication vulnerability.

3. Problems addressed:

Access to direct communication can be inhibited due to: hearing impairment, visual impairment, speech impairment, cognitive limitation, intubation, disease (ALS, stroke,*etc.*), language difficulties, cultural differences and misunderstandings, low health literacy, and health care proxy, meaning the patient is non-responsive. Many strategies to communicate with patients with complex communication needs, including lip reading, gestures, hand-drawn pictures, and asking yes and no questions, are inadequate to meet patients' diverse needs. When these insufficient strategies are employed, complications in and limitations to effective communication often follow. Examples include an increased potential for misunderstandings, confidentiality issues when a friend or family members serves as an interpreter, and limited patient ability to participate in his/her own care. Other obstacles to effective patient-provider communication involve deficient health care systems. Some of the major impediments

to patient-centered care include the lack of a standardized system to identify communication needs; lack of supportive resources, training, and time needed to effectively communicate; and limited evidence of and awareness about best practices.

4. Adaptable features:

Boston Children's Hospital presents a model for a preoperative augmentative and alternative communication (AAC) intervention for patients with planned admission to the intensive care unit following surgery that renders them temporarily unable to speak. Since John Costello and his partners established these AAC inpatient services in 1992, they have had many years to modify and improve their strategy. In order to effectively emulate Boston Children's Hospital's model, health care facilities must adopt a series of institutional revisions. First, they must improve clinical practice to incorporate a systematic and methodological approach to patient-provider communication. Second, they must optimize institutional availability and use of auxiliary services and increase the frequency of referrals to specialists for communication vulnerabilities. Third, they should educate health care providers and revise health care policy and standards to set performance expectations for them regarding patient-provider communication.

Once these revisions have been adopted, health care providers must take the initiative to use communication interventions to facilitate more meaningful communication with patients. They must begin with a needs assessment of all patients to identify their communication vulnerabilities (hearing, vision, speech, cognition,*etc.*). Then practitioners must introduce appropriate interventions based on patient needs (communication board, sign language interpreter, adaptive communication devices,*etc.*). The next step is to continually monitor the effectiveness of the chosen intervention to determine whether it is supporting patient-provider communication to the extent it should or whether another strategy would be more effective.

One of the most effective communication interventions used at Boston Children's Hospital includes a pre-op model of voice and message banking. This system can be adapted to other health care settings by __.

5. Adaptations:

Boston Children's Hospital's inpatient AAC service has been featured during intensive hospital wide show cases of best practices for national and international visiting medical center personnel who wish to duplicate its models of patient care and service delivery.

6. Frequently unanswered questions:

- Aren't communication tools expensive? How can medical facilities afford them in light of the global economic crisis?

Restructuring the budgets of certain departments to include a line item for communication devices is one way to ensure continual access to necessary equipment. Urging boards of directors to allocate in-kind donations to directly support the purchase of communication materials is another method to ensure their availability. Collaborating with partner institutions and foundations to share the burden of purchasing expensive equipment and to secure grants also makes communication tools more affordable.

- Is it possible to diagnose and manage all communication vulnerabilities in patients? Are there times when health care providers cannot meet the needs of patients?

If health care practitioners are unable to assist patients in addressing their communication needs, they can enlist the support of appropriate specialists as part of a functional care team. Such specialty services include interpreters, speech-language pathologists with augmentative communication expertise, audiologists, chaplains, etc.

7. References:

- Pressman, Harvey, Newman, Emily, Pearson, Juli. (2009, August 24). *Communication Access Within Healthcare Environments*. Patient-Provider Communication website. Retrieved from http://www.patientprovidercommunication.org/index.cfm/article_3.htm
- Wilson-Stronks, Amy, Patak, Lance & Costello, John. *Call to Action: Improving Care to Communication Vulnerable Patients* [Powerpoint slides]. Retrieved from <http://www.patientprovidercommunication.org/files/CommunicationVulnerableWebinar.pdf>
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- No author. *Meeting Patient Communication Needs With Evidence-Based Practice* [Powerpoint slides]. Retrieved from <http://vidatak.com/>

8. Contact(s):

For more information about the Boston Children's Hospital strategy please contact:

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IV. Ninewells Hospital, Dundee, Scotland

1. Main Players:

Annalu Waller – Senior Lecturer, School of Computing, University of Dundee, Scotland

Ian Ricketts – Chair of Assistive Systems and Healthcare Computing, University of Dundee Scotland

Andy Judson – Senior Software Engineer, Scottish Diabetes Research Network, University of Dundee, Scotland

2. **Key Strategies/Ideas:**

Annalu Waller and Doctoral students Kathleen Cummins and Suzanne Prior have been conducting research on patient-provider communication issues in hospitals. Previously Waller and Ian Ricketts supervised a three year funded research project that involved collaboration from the departments of Applied Computing and Nursing and Midwifery at Dundee University and the Speech and Language Therapy Department and the ICU at Ninewells Hospital, Dundee. By pooling knowledge from Andy Judson (developer), Norman Alm (computing), Alf Shearer (ICU consultant), Brian Gordon (nursing), Fiona MacAulay and Jan Brodie (speech therapists), Maria Etchels (ICU nurse) and Saqib Ashraf (PhD student) the research team developed and tested the ICU-Talk device. The ICU-Talk device used specially developed software, which allowed the patient to select a phrase or question from a pre-stored database using a touch screen, rather than rely on alphabet charts and picture boards which were slow and frustrating for patients and nurses alike. The database of phrases and questions was developed using expert testimony from ICU nurses, and observations of ICU patients communicating. Follow up research showed the ICU-Talk was easy enough to use, although not as widely utilized as hoped.

3. **Problem(s) Addressed:**

One of the problems faced in developing the ICU-Talk was creating hardware that could support a touch screen but also withstand disinfectant cleaning. In addition many nurses at the time felt the devices served no real purpose because they felt there was no real need for the patient to be able to communicate because the nurse did the communicating for them. After assessing these problems researchers concluded that the device would not make a good commercial product, and it was never mass-produced. The software for the ICU-Talk is available as an open source on the Oatsoft Portal. A lot of the publication from the assessment and study targeted improving nurses' attitudes towards patient communication and making them aware of the issues the lack of communication could cause.

Kathleen Cummins is continuing her research by studying the barriers in hospitals between nurses and people with complex communication needs (CCN) who use alternative and augmentative communication. Cummins has approached her research design by addressing the problem of lack of nurses training in dealing with communication barriers with patients. Developing online training modules for nurses will enable them to have access to basic training to better understand and address the communication needs and difficulties of their patients. She is interviewing AAC stakeholders and nurses to develop these modules and will evaluate their usefulness with trial runs in Scotland and Norway.

Suzanne Prior is conducting her research on creating “add on” items to electronic patient records of people with CCN, to include: basic care needs, cognitive levels and communication needs. Prior is addressing the problem of the difficulties and dangers that might arise when a doctor doesn’t know how to communicate with a patient with CCN and doesn’t have access to, or knowledge of, that patient’s medical history. To conduct her research she held a forum theatre session for newly qualified doctors, and had two professional actors along with two adult actors who rely on AAC, enact scenarios based on real life experiences. She then asked the audience what information would be needed in a patient’s electronic record and from this information is creating a software program for use in hospitals.

4. **Adaptable Features:**

One of the features that makes the ICUtalk so accessible and useful is the ability to tailor the ICUtalk database to hold specific information about a patients relatives, specific needs and commonly used phrases. This allows each patient to say what they want, and need to say without relying on a limited number of key phrases and words. Another adaptable feature is that patients can use it in different stages of recovery in the way that best suits them. Each style supports the use of touch screen, mouse emulation or single switch scanning.

5. **Adaptations:**

In 2005/early 2006 the ICUTalk was reintroduced at Ninewells Hospital. The software has grown and simplified since 2002, and there is also new, smaller but more powerful hardware options available for the system to run on. In addition the software is being offered as a free download, and there is a web portal with a user/support forum.

6. **Frequently Unanswered Questions:**

- What other problems got in the way of project implementation?

There was a problem of keeping the software very simple so it was easy to understand and use without training. Although patients were able to use the device with only five minutes of training, it was noted that the size of the device was a problem as well as patients' difficulty in accessing their desired vocabulary.

7. **References:**

<http://www.oatsoft.org/Software/icutalk> - Talks about the research used to develop the ICU talk and things to consider before attempting to use it. Also provides a link to download the latest release of ICU Talk.

http://www.computing.dundee.ac.uk/staff/ricketts/cv/preprints/Assets_2002_ICUTalk_preprint.pdf - Talks about the development about the device but then shows pictures of the interfaces and talks about how it can be used and personalized.

8. **Contacts:**

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