Evaluation of a New Concept in Hospital Communication Systems

Kindred Hospital San Diego

2015

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More than 5 million patients are admitted annually to ICUs in the United States. The primary ICU admission diagnosis is respiratory insufficiency/failure.-6 This population is among the multitude of hospitalized patients who are temporarily speech deprived due to intubation, tracheostomy, stroke, surgery or other causes.

"Sometimes, when the tank attached to my breathing machine would run out of oxygen, I would have to ring a little bell on my chest, get someone to read my lips and understand I meant 'oxygen.' Then they would have to unhook the tank, take it down the hall, get a new one and hook it up. During that time I had to breathe on my own…which I could barely do." ***(Spoken in 1969 by a Guillain Barre patient after coming off the ventilator.)*****-3**

What has changed in 46 years?

Certainly there are better ventilators and there is piped in oxygen to power them. But what has changed in helping these patients communicate their needs? In 1969 the use of alphabet boards, lip reading, eye blinks or hand squeezes for "yes" and "no" were the only tools available. Since 1969, the alphabet board has evolved to an alphabet/pictograph board.

A 2011 study by Mary Beth Happ, RN, PhD, states "…nurse-patient communication in the intensive care unit has not been systematically studied or measured."-4 She cites studies done 10 or more years earlier which showed that ICU patients primarily used head nods, gestures and mouthing words for communication. Writing was infrequent. In one study, "Relatively few interactions (34/217); 15.7%) were initiated by patients."-1

Happ's study 10 years later reveals the same situation: "Communication exchanges were most often (86.2%) initiated by nurses. Patients initiated 12%, and third parties initiated another 2%." The study concludes that there are significant areas for improvement, particularly "…in the use of assistive communication strategies and communication materials."-4

Current Systems Commonly Used for Temporarily Speech Deprived Patients in Hospitals Today

-Hand Squeezing or Eye Blinks for Yes and No

A 2012 blog by Michael Blumenfield, M.D., a psychiatrist, addresses this. He states that sometimes nurses would have time to try to find a means to

communicate with patients who could not speak or write due to injuries, oral surgery or a tube in their mouth. "More often than not, the patient was capable of squeezing your hand, twice for yes and once for no. You would be surprised how much information can be exchanged using this method."**-2**

Drawbacks of this method, however, are that it requires a caregiver's time at the bedside, relies on what the caregiver - not the patient - wants to say, and can be slow and frustrating for the patient. In addition, this method does not address what Michael Blumenfield, M.D. points out in his blog, "The patient could be fully conscious and desperately want to tell the doctors about pain or discomfort. They might have very clear views on various aspects of the contemplated treatment for them including surgery or continued life support."**-2**

-Alphabet/Pictograph Boards

It is interesting to note that in Happ's study of 5140 communication acts in 54 intensive beds in a large academic medical center, "No communication boards, alphabet boards or picture boards were observed in use during these video-recorded observations."-4 However, these boards are widely available in most hospitals. This method requires a substantial amount of a caregiver's time at the bedside and is slow and frustrating for the patient.

-Mouthing Words

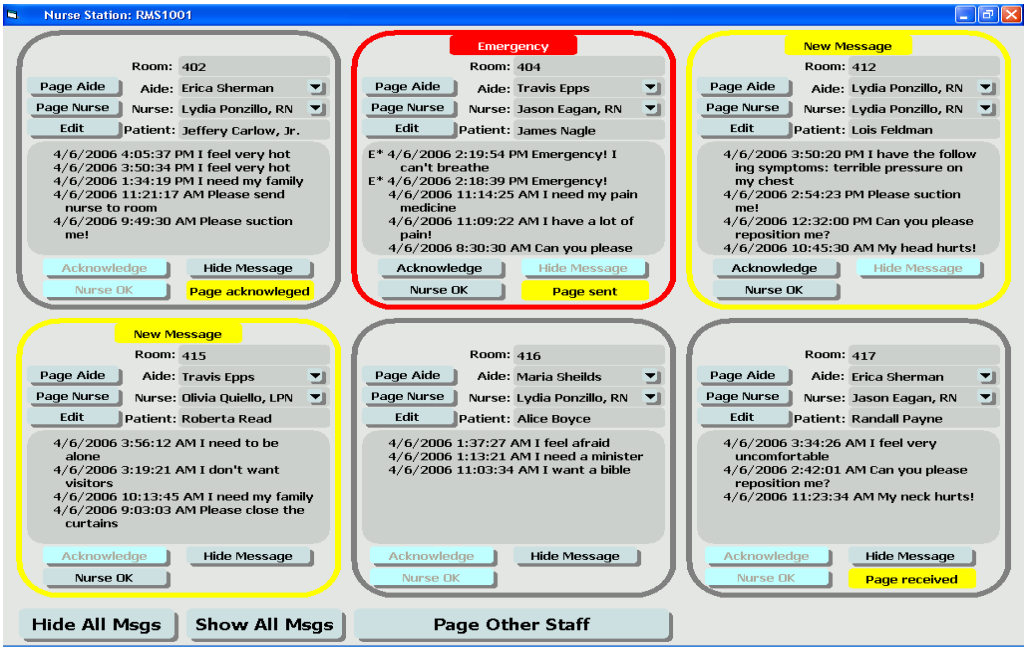
Mouthing words was used by patients less than 20% of the time in Happ's study. The vast majority of communications were nurse initiated, where the patient was prompted to use yes/no signaling.

In most cases, nurses controlled how and what was discussed leaving the patient with little say in their care.

"More than one quarter of the nurse-patient communication exchanges that obligated a response were either partially understood, abandoned or entirely ignored." And, "nearly 40% of patients' responses rated communication with the nurse as somewhat to extremely difficult…" -4

A Game Changing Concept

Recently, a new product was introduced at Kindred Hospital San Diego, designed to address the problem of temporary speech deprivation in the acute care setting. Rose Medical Systems, Inc. created the Instant Voice System, a computerized system that allows a ventilated or otherwise speech disabled patient to communicate to the nurse station in his/her own words and language.



Nurse Station Module

Patient Module

The system consists of a bedside medical grade touch screen computer and a nurse station module connected wirelessly. The system has software to translate from the native language of the patient to English, so that an English speaking caregiver can understand what is said at the bedside and at the nurse station.

In a 3 month trial at Kindred Hospital, nine patients consecutively were given the bedside unit and taught how to operate the system. Initial training time for patients lasted from 10 to 30 minutes. Additional training for visitors was similar. Staff training was held in 1 hour sessions for the Respiratory Care staff who would be spending significant time in the rooms of the ventilated patients. Nurses were invited to the training and were oriented at change of shift as needed.

For the evaluation, one receiving module was set up on a tray table with a C-arm which allows the computer easily to be positioned in view of the patient. The nurse station module was located at the nearby station. Over the course of the trial, the nurse station module was moved to 3 different nursing units to accommodate the locations of the subject patients.

Many patients would not be able to use the touch screen, due to being restrained or other handicaps. Different levels of handicap switches were used to accommodate the various disabilities of the patients. Some used the touch screen, some used a joystick, and some used a simple finger switch held between a thumb and forefinger. One patient even used an eye blink sensor. All of these adaptations come with the Instant Voice System.

Building a message in the Instant Voice System is very easy because of pre-programmed words and phrases. The software is programmable so caregivers could add phrases and requests most often used by any particular patient. The patient could create questions, to be stored and retrieved, for the doctor or nurse, such as: How did my surgery go? How long will I be on the ventilator? How long will I be in the ICU? Will I need additional surgery?

All requests sent to the nurse station were answered promptly. To the delight of the patients and visitors the device gave immediate feedback when the message was received at the nurse station module and again when it was acknowledged by a caregiver. Nurses reported they liked knowing what the patient wanted before going to the room. An outside observer noted that the staff responded more quickly to the Instant Voice than to a call bell. Once, a patient accidentally activated the EMERGENCY message on his screen and several staff came running to the room. The patient and family member present in the room later expressed this gave them a feeling of safety and confidence.

Messages sent included toileting needs, requests for pain medicine, repositioning, ice chips, and others. Conversations at the bedside included questions for the doctor, family conversations and discussions about final wishes.

Questionnaires were conducted with patients, visitors and staff after each patient's use. Patients reported a significant reduction in frustration levels in trying to communicate with the staff, physicians and family. Families reported an increase in the kinds of things the patient was able to talk about. Nurses reported that the advantage of knowing what was needed before entering the room was definitely a time-saver, making them more efficient and able to provide better patient care. For example, knowing the pain level, the nurse could obtain the correct pain medications prior to entering the room, thus eliminating the need to travel to the room twice and gown and glove twice. If the patient requested toileting needs, repositioning or ice chips, the desk clerk could send another member of the team to the room.

Barriers

We found that among all clinical disciplines, numerous reasons were found to delay the use of technology for speech. The theme was – let's wait. Wait until the patient comes out of ICU. Wait until the patient is weaned enough to use a speaking valve. Wait until morning to let the patient speak, because the patient only uses the ventilator at night. Wait until the delirium lifts. Wait because it is not a good time. Wait because we think the patient is non-verbal anyway.

The Facts

There are sound clinical and time-saving benefits if the staff do NOT wait.

-Use in ICU

Happ states "Communication difficulty is the most commonly reported distressing symptom for ICU patients receiving mechanical ventilation 4-7 and is associated with anxiety, panic, anger, frustration, sleeplessness and distress."-4 One might add delirium to that list.

-Use at Night

Patients may need to communicate pain symptoms at night, at times when the speaking valve is not in place, during periods of delirium and every day up until discharge. Happ found it disturbing that "37.7% of communications about pain were unsuccessful…"-4

-Use of Lip Reading

The biggest drawback to lip reading and all other current methods of communication is that it takes two people. In ICU a nurse needs to go to the bedside and try to determine what is being said. As a result the conversation usually boils down to the nurse asking yes/no questions. What can be communicated using lip reading or alphabet boards is

only a small portion of what is available using the Instant Voice System. Often family members remain frustrated with the lip reading method. If one caregiver can read the patient's lips, it is not certain that all the caregivers, physicians and family can do so.

-Presence of Delirium

Without a good communication system, was delirium adequately assessed? Since communication difficulty leads to frustration, anger, distress and isolation, allowing a patient to speak might actually assist in the patient's recovery from delirium.

-Non-Verbal Patient

A way to test if the patient is non-verbal is to give the patient a voice. Twice during the study, patients who were judged to be non-verbal had much to say when someone spent time helping them speak.

-Not a Good Time

Time is always saved when the message reaches the right person quickly without intermediaries.

Consider this:

"One day, overcome with the dreariness of it all, I mouthed these words to a nurse who had just finished suctioning me. 'This place is so ugly!' It took her awhile to read my lips and she even had to get another person to read the word, ugly. It wasn't one of the usual things she could guess, like bedpan, suction, or turn me. But her perseverance in getting the message was very fortunate for me. All the nurses got a good laugh that I thought their little domain was ugly and teased me about my insulting comment.

Again, even this much give and take was therapeutic. Just to laugh about something other than bedpans and secretions was so much appreciated, warming, soothing."-3

Happ states, "Normal communication is more than yes-no answers or acknowledgements. Enabling a patient to add a brief explanation or a humorous comment to a yes-no answer can restore the patient's sense of self or personhood."-4

A New Paradigm Is Needed: Don't Wait

Technology is available. "Every ICU should have this," says Dr. Blumenfield, referring to a potential product like the Instant Voice System. Attempting to perform a psychiatric consult in the ICU, Dr. Blumenfield states, "It is understandable that patients might want to inquire about family members or say innumerable other things that were very important to them and were immensely frustrated by their inability to communicate."-2

Patients are waiting. In 46 years no advancements have been adopted by hospitals that could help the average ventilated or speech disabled patient to communicate. As an RRT for 36 of those years and a Director of Respiratory Care for 30 years, this former Guillain Barre patient

has never seen a communication system that works like the Instant Voice System. The feature of a direct line to the appropriate person saves time for the patient and the nurse. If a device like this were to be adopted as a standard of care in a hospital, the savings would be greatly multiplied, because even speaking patients would use it. The impact on family communications suggests applications in many other settings as well, such as nursing homes, subacute care, hospice and home care.

Conclusion

It's time to use the tools available. It's time to *prevent* some of the anxiety that leads to delirium in ICU. Patient/family satisfaction scores are high on the list of hospital managers. The HCAHPS questions are heavily weighted toward communication and respect. Recent data from Consumer Reports links patient safety with better communication and respect.-5 By making patients and families feel safe, secure, respected and heard, the Instant Voice System could make a significant impact on a hospital's HCAHPs scores.

Giving patients the full ability to communicate with their doctors, nurses, caregivers, family and friends, will lead to better patient care, make providing this care more efficient, and increase patient satisfaction.

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