

The Constraints of Culture

The Case*:

An 1100 gram baby boy was delivered at 37 weeks via C-Section with [Apgar Scores](#) of 4 at one minute and 6 at five minutes. He was admitted to a Neonatal Intensive Care Unit and given positive pressure ventilation until regular respiratory effort was established. He was placed on nasal continuous positive airway pressure +5. The saturations were within normal limits without supplemental oxygen. IV fluids were started and labs drawn.

The following morning, the attending physician ordered placement of a PICC (peripherally inserted central catheter) and morphine sulfate 0.06mg prior to the procedure. The initial attempt to place the line failed and the attending physician asked the neonatal nurse practitioner (NNP) to attempt line placement 'when you have time' (*quotes in this account are paraphrased*). Later that afternoon the NNP, dressed in sterile gown [for the PICC placement], indicated she was ready to do the procedure and verbally told an RN to give the 'same dose as before' [referring to the pre-procedural morphine sulfate]. Concerned that she respond quickly and not keep the NNP waiting, the RN inquired, 'Point six?' based on her recall of previous order and the NNP responded affirmatively. The RN drew up 0.6 mg without obtaining the baby's chart. She requested assistance from another RN who verified the amount based on primary RN's verbalization of same. The primary RN administered the medication and immediately realized and reported the overdose. The baby had a respiratory arrest and his heart rate slowed to 50 beats/minute. CPR was initiated, Narcan ([naloxone](#)) administered, and the baby recovered rapidly without apparent ill effects.

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Comment

At first, this case seems clearly an issue of skill and/or rule-based errors¹. A skill-based error (a memory lapse), occurred when the first RN recalled the medication dose, but misplaced the decimal point. This mistake is so common as to have a name: "the darned decimal." Rule-based errors occurred when staff did not apply standard medication procedures at several points.

* Minor changes have been made to assure patient anonymity and to clarify certain aspects of the situation.

First the RN relied on memory of the medication order rather than looking at the chart. Second, the NNP relied on a previously-written morphine order and, third, the second RN confirmed what she heard rather than verifying the written order. Three highly skilled and knowledgeable professionals made errors that came together, resulting in a medication overdose. Underlying these errors, however, are cultural factors that prompted the actions leading to the errors which caused this adverse event.

An analysis of the cultural aspects in this case yields a somewhat different description of the errors and pinpoints what might have fostered the slips and lapses. The normal sense of urgency in the unit was heightened when the NNP arrived already in a sterile gown and asked the RN to administer the pre-procedure medication. The RN, valuing quick response to such requests, verbally checked the dose with the NNP from memory, which the NNP confirmed, each trusting the other's knowledge. The second RN, assuming the expertise of her colleague, corroborates what she had heard the RN state as the medication dose. All of which resulted in the medication error.

In this case, several aspects of culture that we typically define as virtues have interacted in ways that hampered the hospital's ability to provide safe and effective care:

- ◆ A culture of urgency
- ◆ A culture of provider service
- ◆ A culture of expertise
- ◆ A culture of trust

We often talk about organizational culture as if it were an easily understood concept. In fact [culture](#) is one of the most difficult aspects of patient safety and hospitals struggle with developing and sustaining a [culture of safety](#). Culture refers to the shared assumptions, values, and beliefs that underlie the actions of everyone in an organization, from those in the executive suite, through department directors, medical staff, staff in patient care units, and ancillary staff. While there is an overall hospital culture, each unit and discipline also has a culture which may be significantly different, even among similar units, such as intensive care units². These shared assumptions, values, and beliefs within the hospital or unit are often tacit – unspoken, perhaps unrecognized, but guide the actions of individuals as they go about their work. Culture provides the common understandings that allow interactions to proceed smoothly. However, as happened here, values, assumptions, and automatic patterns of practice may interfere with safe care.

A heightened sense of urgency - An intensive care unit, particularly one in which vulnerable newborns are cared for, operates day to day with a sense of urgency. These tiny neonates are extremely ill and can have significant worsening of their condition in minutes, requiring high levels of alertness from the staff and rapid responses. When there is a sense of urgency or the

need to move quickly, the patient safety tipping point is liable to be pushed back, allowing shortcuts that are assumed necessary for an effective response³. One study of pediatric intensive care units noted the hectic environment as being an obstacle to performance and raised questions regarding impact upon both quality and safety.⁴ Sooner or later this continued sense of urgency leads to a decreased sensitivity to risk, and the belief that if nothing bad has happened before, it won't happen this time.

Known expertise – In the words of one TAC member, critical care staff often believe that they are 'too smart' to let something like this happen. In a sense they are correct. Critical care nurses and other professionals highly skilled and knowledgeable in a specialty are less likely to make a knowledge-based mistake. However, the advanced knowledge does not protect them from other types of errors such as memory lapses, slips in attention, and rule-based mistakes. The belief that expertise can protect against human limitations often prevents health care workers from following procedures designed to prevent unnecessary harm.

Trust among colleagues – Another positive attribute, trust in one's colleagues' knowledge and competency is a key attribute in highly functioning teams. It has also been associated with staff satisfaction and retention.⁵ Nursing staff trust in the clinical competence of their colleagues has also been linked to a more productive work environment⁶. In a high trust environment, safety actions such as verifications may be incorrectly viewed as questioning a colleague's competency rather than appropriate backup in high risk situations.

Valuing service – The desire to be supportive and helpful to colleagues and others providing care is a positive attitude that can promote teamwork and high quality care. However, it can become a provider-centered value itself rather than remain simply a means to the delivery of high quality patient care. In a recent study of healthcare work environments and safety, acute care nurses in patient-centered units reported fewer medication errors and more comfort with reporting errors and near misses than those in other units⁷. Patient-centered care, according to the Agency for Healthcare Research and Quality, includes "...services designed to focus on [a patient's] individual needs and preferences⁸." In such an environment, an attitude of patient protection would supersede an attitude of helpfulness to a provider.

Take-Home Learnings:

1. Culture has a significant, often unrecognized, impact on patient care activities that is often missed when focusing on behavior and actions. It must be explicitly addressed in responding to patient safety incidents.
2. The culture of teamwork provides a definition of trust that allows questioning and brings more facts to the table without implying a lack of confidence in one's colleagues.

3. A trap is set when safety processes are bypassed and nothing bad happens. This increases the risk for all similar situations that follow.

Possible Actions:

1. Develop the habit of asking “Why?” Only a heightened sense of questioning will lead to the discovery of the assumptions and values that guided care and how they contributed to an adverse event.
2. Explicitly change language to reflect teamwork and shared responsibilities for safety by
 - a. Substituting the phrase “independent verification” for “double check”
 - b. Developing neutral phrases to indicate concerns, such as “I need some clarification.”
3. Increase understanding and use of human factors concepts. This will help staff recognize and acknowledge normal limitations and will reinforce in managers the need to develop systems and processes that take human factors into account.
4. Embark on plan to increase appropriate teamwork through trainings, managerial reinforcement, explicit staff identification, and acknowledgement of cultural barriers.

¹ Reason, J. (1997). *Managing the Risks of Organizational Accidents*. Chapter 4. The human contribution. (pp 72). Burlington, VT: Ashgate

² Huang, D.T., Clermont, G., Sexton, J.B, Karlo, C.A., Miller, R.G., Weissfeld, L.A., et al. (2007). Perceptions of safety culture vary across the intensive care units of a single institution. *Critical Care Medicine*, 35(1), 165-76. [\[go to PubMed\]](#)

³ This may be changing somewhat as read-backs and confirmations are increasingly seen as important in emergent situations. This is especially evident in the communication problems during resuscitation efforts. See Bergs, E. A., Rutten, F. L., Tadros, T., Krijnen, P., Schipper, I.B. (2005). Communication during trauma resuscitation: do we know what is happening? *Injury*, 36, 905-11. [\[go to PubMed\]](#)

⁴ Gurses, A. P, & Carayon, P. (2007). Performance obstacles of intensive care nurses. *Nursing Research*, 56, 185-94. [\[go to PubMed\]](#)

⁵ The 8 Essentials are: Support for education, Working with other nurses who are clinically competent, Positive nurse / physician relationships, Autonomous nursing practice, A culture that values concern for the patient, Control of and over nursing practice, Perceived adequacy of staffing, Nurse-management support. From: McClure, M.L. & Hinshaw, A.S. (2002). *Magnet Hospitals Revisited: Attraction and Retention of Professional Nurses* . American Nurses Publishing, Washington DC.

⁶ Schmalenberg, C. & Kramer, M. (2007). Types of intensive care units with the healthiest, most productive work environments. *American Journal of Critical Care*, 16, 458-68. [\[go to PubMed\]](#)

⁷ Rathert, C., & May, D.R. (2007). Health care work environments, employee satisfaction, and patient safety: Care provider perspectives. *Health Care Management Review*, 32(1), 2-11. [\[go to PubMed\]](#)

⁸ See Health Care Evolves Toward a Patient-Centered Model available at <http://www.ahrq.gov/qual/ptcareria.htm>