SAFE PRACTICE 13: ORDER READ-BACK AND ABBREVIATIONS

The Objective

For verbal or telephone orders, or for telephonic reporting of critical test results, verify the complete order or test result by having the person who is receiving the information record and read back the complete order or test result.

The Problem

Communication quality, written or verbal, has been strongly linked to the frequency of the occurrence of medical errors and overall patient safety. Poor communication has been cited as the most frequent root cause of sentinel events, accounting for more than 60 percent of events between 2006 and 2008. [Brunetti, 2007; JCR, 2010b] For written communication, the use of easily misinterpreted nomenclature and abbreviations has been determined to be hazardous by The Joint Commission, especially with respect to medication and laboratory orders. A large study conducted by the United States Pharmacopeia collected medication error reports from 682 separate facilities; 643,151 errors were reported, with 29,974 (4.7 percent) of them attributable to abbreviation use. [Brunetti, 2007] Abbreviation errors have spurred The Joint Commission to create a list of “Do Not Use” abbreviations and nomenclatures. [TJC, 2005] Compliance with this list has been tracked, and, despite the list’s availability in 2004, noncompliance remains frequent (23 percent). Moreover, The Joint Commission survey results have demonstrated a decreasing trend from 2004 (75.2 percent) to 2006 (64.2 percent). [Brunetti, 2007; TJC 2006] Ineffective verbal communication, over the phone or in person, leads to errors that might be prevented by simply having the receiving person read back the information. An observational study of 822 telephone calls from 3 institutions detected 29 (3.5 percent) errors. The major categories of error were incorrect patient name, incorrect test result, incorrect specimen or test repeated, and refusal of recipient to repeat the message. [Barenfanger, 2008] A large survey of 1,264 hospitals conducted by the American Society of Health-System Pharmacists found that 78.7 percent of hospitals reported compliance with read-back protocol compared to 81.9 percent in 2004 and 31.4 percent in 2001. [Pedersen, 2008]

Adverse events associated with errors from written or verbal miscommunication can range in severity. Errors of medication names, dosage, frequency, and strength have the potential to gravely harm patients. [Levinson, 2008] Experts have estimated that 25 percent of medication errors involve similar medication names. [Hendrickson, 2007; ISMP, 2001; Waters, 1999] For written communication, the most common abbreviation resulting in a medication error was “QD” in place of “once daily,” accounting for 43.1 percent of errors. [Brunetti, 2007] Of all of the 29,974 errors reported by the United States Pharmacopeia program, only 0.3 percent were categorized by the National Coordinating Council for Medication Error Reporting and Prevention as indicating patient harm. [Brunetti, 2007; NCC MERP, 2007] Medical errors associated with miscommunicating critical laboratory values have been recognized in the literature, but to our knowledge, no studies have linked these types of errors to specific adverse events.

Two research studies have focused in part on the preventability of harm due to the read-back protocol. Of the 29 errors detected during the observational study of 822 telephone calls, each error was corrected by performing read-back. [Barenfanger, 2008] A study of critical lab-value reporting procedures found
100 percent compliance for read-back recommendations. [Saxena, 2005] Read-back of verbal orders in the operating room setting is particularly important, because providers wear masks. [Hendrickson, 2007] Written and verbal communication about drug information is prevalent, but is decreasing because of implementation of electronic drug information systems. Pharmacies’ most common means of receiving medication orders is still handwritten copies (38.3 percent), followed by some form of digital image capture (32.7 percent), faxes (23.7 percent), and then electronic receipt through computerized prescriber order entry (CPOE) systems (5.1 percent). [JCR, 2010a] Integrating CPOE into a comprehensive strategy to improve medication order/receipt practices is a recommended method of preventing errors, [Wakefield, 2009b; Ehringer, N.D.], but to date, only 10.4 percent of hospitals operate with them. [Pedersen, 2007] One hospital study revealed that after implementing a CPOE system, verbal order rates dropped from 23 percent to 10 percent of all orders, and unsigned verbal orders decreased from 43 percent to 9 percent. [Wakefield, 2008] Adding a pediatric medication quick-list to the CPOE system showed an improvement in lowering prescription errors by 89 percent. [Sard, 2008]

Costs associated with written and verbal communication compliance are difficult to outline. Applicable costs include those incurred by adverse patient events, as well as time and training costs associated with implementing and evaluating safe practices. Introducing information technology (e.g., CPOE) is an increasingly common method of preventing communication errors, but the costs are significant.

**Safe Practice Statement**

Incorporate within your organization a safe, effective communication strategy, structures, and systems to include the following: [ISMP, 2007; JCR, 2010a; IHI, N.D.a; IHI, N.D.b]

- For verbal or telephone orders or for telephonic reporting of critical test results, verify the complete order or test result by having the person who is receiving the information record and “read-back” the complete order or test result. [JCR, 2010a]

- Standardize a list of “Do Not Use” abbreviations, acronyms, symbols, and dose designations that cannot be used throughout the organization.

**Additional Specifications**

- The process of verbal orders should be avoided except when it is impossible or impractical for the prescriber to write the order or enter it in the computer. [Baum, 2009] Explicit organizational policies and procedures on verbal and telephone orders should include, at a minimum:
  - strategies to minimize the use of verbal and telephone orders, [JCR, 2010a] and
  - the identification of items that cannot be ordered or reported verbally or by telephone.

- The receiver of verbal information writes down the complete order or test result or enters it into a computer.

- The receiver reads back the order or test result.

- The receiver receives confirmation from the individual who gave the order or test result.
Rigorously prohibit the use of terms known to lead to misinterpretation including, at a minimum, \textit{u, IU, qd, qod, trailing zero, absence of leading zero, MS, MSO}_4, MgSO}_4. At a minimum, prohibit terms known to lead to misinterpretation from all orders and other medication-related documentation when handwritten, entered as free text into a computer, or on preprinted forms. Use the metric system to express all doses on prescription orders, except for therapies that use standard units, such as insulin and vitamins. Trailing zeros may be used in nonmedication-related documentation when there is a clear need to demonstrate the level of precision, such as for laboratory values.

**Applicable Clinical Care Settings**

This practice is applicable to Centers for Medicare & Medicaid Services care settings, to include ambulatory, ambulatory surgical center, emergency room, dialysis facility, home care, home health services/agency, hospice, inpatient service/hospital, outpatient hospital, and skilled nursing facility.

**Example Implementation Approaches**

The Institute of Safe Medication Practices (ISMP) has conducted extensive research, based on what organizations have reported, on frequently misinterpreted abbreviations, particularly related to medication errors and subsequent harm to patients. Organizations are encouraged to consider incorporating ISMP’s List of Error-Prone Abbreviations, Symbols, and Dose Designations as part of their approved “do not use” list. [ISMP, 2007] This list has been cross-referenced with the minimum requirements established by The Joint Commission. [Wakefield, 2009b]

Organizations may choose to implement policies that verbal orders should never be used for chemotherapy orders, including initial orders or updates and modifications to previously handwritten or electronic orders. Order read-back and abbreviation training are ideal subject matter areas to be addressed in teamwork training (refer to Safe Practice 3).

**Strategies of Progressive Organizations**

New communication technology is emerging and in use to support the read-back process. Some organizations have focused on best practices in strategies for adoption of this practice, such as providing frequent feedback to the prescriber and providing de-identified examples of misinterpreted orders. [TJC, 2005]

**Opportunities for Patient and Family Involvement**

Encourage patients to ask questions if they do not understand abbreviations, especially on medication instructions. Consider including patients or families of patients who have experienced healthcare system communication-related adverse events to serve on appropriate patient safety or performance improvement committees.
Outcome, Process, Structure, and Patient-Centered Measures

These performance measures are suggested for consideration to support internal healthcare organization quality improvement efforts and may not necessarily address all external reporting needs.

- **Outcome Measures** include errors and near misses attributable to or associated with verbal or telephone orders, stratified by degree of harm or required intervention using a system such as the nine-category classification of the MedMarx reporting program. For example, clinical outcomes such as death, disability (permanent or temporary), or preventable harm requiring further treatment could be measured relative to implementation of the practice. Operational and financial outcomes relative to re-work that occurs when ineffective communication occurs may also be tracked. Monitor and trend adverse drug events attributed to inappropriate use of abbreviations.

- **Process Measures** include periodic audits of compliance with policies and procedures for the receipt of verbal and telephone orders and critical test results, or intermittent observational studies of a representative sample of care units and shifts to assess the process of receiving, recording, and reading back orders and critical test results.
  - Also included are evaluation of compliance with the organization’s “do not use” list, and periodic audits of samples of medical records, medication administration records (MARs), and other patient-specific documentation for the presence of “do not use” terms. Compliance is calculated using as the denominator the number of times that terms that should not be abbreviated are used (whether in full form or abbreviated), and the numerator is the number of times such terms are not abbreviated.

- **Structure Measures** include the verification of periodic review and updating of relevant policies and procedures, such as those related to the receipt, recording, and read-back of orders and critical test results. (This should include the organization’s definitions of “critical test results.”)
  - Also included are verification of periodic review and update of policies and procedures relating to the use of abbreviations included in the organization’s “do not use” list.

- **Patient-Centered Measures** include assessment of read-back and “teach-back” use, and confirmation of patient understanding. Patient-centered measures are not applicable with respect to abbreviations.

Settings of Care Considerations

- **Rural Healthcare Settings:** All requirements of the practice are applicable to rural healthcare settings.

- **Children’s Healthcare Settings:** All requirements of the practice are applicable to children’s healthcare settings.

- **Specialty Healthcare Settings:** All requirements of the practice are applicable to specialty healthcare settings.

New Horizons and Areas for Research

Technologies may hold new opportunities to reduce risk, such as the adoption of CPOE systems in which the opportunity is provided to omit dangerous abbreviations through the use of a forcing function. [Wakefield, 2009a]
Communication between caregivers and patients requires further research to attain accurate and sustainable best practices. [Krimsky, 2009; Wakefield, 2009b]

**Other Relevant Safe Practices**

Refer to Safe Practice 1: Leadership Structures and Systems; Safe Practice 2: Culture Measurement, Feedback, and Intervention; Safe Practice 3: Teamwork Training and Skill Building; and Safe Practice 4: Identification and Mitigation of Risks and Hazards. Other relevant practices include Safe Practice 12: Patient Care Information; Safe Practice 14: Labeling of Diagnostic Studies; and Safe Practice 15: Discharge Systems. Also relevant are the practices related to medication management, including Safe Practice 17: Medication Reconciliation and Safe Practice 18: Pharmacist Leadership Structures and Systems.

**Notes**


June 1, 2010

Dear Healthcare Leader:

We are delighted to announce that the National Quality Forum has graciously given us permission to distribute copies of the *NQF Safe Practices for Better Healthcare – 2010 Update*. This section has been provided to you in the interest of helping you implement, and/or educate others to adopt the suggestions and implementation examples into your safe practices.

The National Quality Forum is dedicated to providing evidence-based practices as ready-to-use tools to improve safety. The practices in the *NQF Safe Practices for Better Healthcare – 2010 Update* have been evaluated, assessed and endorsed to guide large and small healthcare systems in providing the safest care in every area of patient safety. We give our highest recommendation for them as a valuable resource toward patient safety from hospital bedside to boardroom. It is in the fulfillment of this mission that NQF makes the gift of this to you in your pursuit of your quality journey.

We hope that you will recommend that others purchase the report from NQF. The homepage of the National Quality Forum can be accessed at the following link: [http://www.qualityforum.org/](http://www.qualityforum.org/) and an abridged report of the *NQF Safe Practices for Better Healthcare—2010 Update* can be downloaded free online at: [http://www.qualityforum.org/Publications/2010/04/Safe_Practices_for_Better_Healthcare___2010_Update.aspx](http://www.qualityforum.org/Publications/2010/04/Safe_Practices_for_Better_Healthcare___2010_Update.aspx). To obtain the full report for a cost of $29.99, please contact NQF by phone during business hours at 202-783-1300 or via e-mail at info@qualityforum.org and their staff will contact you for payment details.

If you want to have a free copy of the entire set of practices, you may receive one if you fill out a web-based survey that may be filled out at [http://www.safetyleaders.org/2010nqfResearchStudy/index.jsp](http://www.safetyleaders.org/2010nqfResearchStudy/index.jsp).

We want to acknowledge you and your institution for your current efforts in patient safety. We hope you enjoy this important information and find it useful in your future work.

Sincerely,

Charles R. Denham, M.D.
Chairman