NATIONAL QUALITY FORUM

Safe Practices for Better Healthcare 2006 Update

A CONSENSUS REPORT

NATIONAL QUALITY FORUM

Safe Practices for Better Healthcare—2006 Update

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Chapter 1—Summary, Background, and NQF-Endorsed™ Safe Practices

Introduction

In some ways little has changed since the National Quality Forum (NQF) endorsed the original set of 30 *Safe Practices for Better Healthcare* in 2003.[1] Adverse healthcare events continue to be a leading cause of death and injury in the United States, even though well-documented methods are available that could prevent their occurrence.[2,3,4] This report updates the original set of safe practices; it retains 4 practices without material change, subsumes 3 practices into other practices, adds 3 new practices, and materially updates the remaining 23 practices. As with the original set, these 30 safe practices should be universally utilized in applicable healthcare settings to reduce the risk of harm resulting from processes, systems, and environments of care.

This set of safe practices is not intended to capture all activities that might reduce adverse healthcare events. Rather, this report continues the focus on practices that:

- have strong evidence that they are effective in reducing the likelihood of harming a patient;
- are generalizable (i.e., they may be applied in multiple clinical care settings and/or for multiple types of patients);

[1] National Quality Forum (NQF), *Safe Practices for Better Healthcare: A Consensus Report*, Washington, DC: NQF; 2003.

[2] Institute of Medicine (IOM), *To Err Is Human: Building a Safer Health System*, Washington, DC: National Academy Press; 2000.

[3] Quality Interagency Coordination Task Force, *Doing What Counts for Patient Safety: Federal Action to Reduce Medical Errors and Their Impact, Report of the Quality Interagency Coordination Task Force (QuIC) to the President*, Washington, DC: U.S. Government Printing Office; February 2000.

[4] IOM, *Patient Safety: Achieving a New Standard for Care*, Washington, DC: National Academies Press; 2004.

- are likely to have a significant benefit to patient safety if fully implemented; and
- have knowledge about them that is usable by consumers, purchasers, providers, and researchers.

This report also identifies 24 practices that have great promise for reducing adverse events and should have priority for further investigation. A number of the practices on the 2003 list for further research have been removed from the list based on research that has either moved them into the specifications for the 2006 set of safe practices or demonstrated that they should not be moved forward.

Of note, this report does not represent the entire scope of NQF work pertinent to improving patient safety and healthcare quality; over the years since publication of the original set of safe practices, NQF has completed, has updated, and has under way a number of projects of direct or ancillary relevance to this report. In 2002, NQF endorsed 27 *Serious Reportable Events in Healthcare* that should be reported by all licensed healthcare facilities; the 2006 update adds one more event to the list.[5] In 2005, NQF endorsed the Patient Safety Event Taxonomy, a tool that enables information about the full scope of patient safety events to be organized and classified so that events can be analyzed and compared. Use of this tool can enable the U.S. healthcare industry to learn and improve safety systems. Additionally, other NQF-endorsed voluntary consensus standards relating to settings of care, healthcare conditions, and special concerns around healthcare literacy, language barriers, and minority populations are relevant and are outlined in a crosswalk of the safe practices with other NQF-endorsed consensus standards (appendix F).

Purpose

This revised set of 30 safe practices, like its predecessor, is a useful tool for assisting healthcare organizations in their efforts to ensure safe patient care. Although to date the central focus of the practices has been hospitals, other applicable

[5] NQF, *Serious Reportable Events in Healthcare: A Consensus Report*, Washington, DC: NQF; 2002; NQF, *Serious Reportable Events in Healthcare – 2006 Update: A Consensus Report*, Washington, DC: NQF; in press.

settings are identified and healthcare organizations are encouraged to extend the use of the practices to still other settings where practicable. The practices continue to serve as an "advance guard" for NQF efforts to promote awareness and encourage the universal implementation of practices that are known to improve patient safety. An important use of the set is to help healthcare providers assess the degree to which safe practices already have been implemented in their settings and the degree to which the practices provide tangible evidence of patient safety improvement in terms of reducing morbidity and mortality and increasing patient satisfaction and loyalty. Additionally, with this update, healthcare organization leaders and governance boards are explicitly called upon to proactively assess the safety of their organizations and to take action to continually improve the safety and thus the quality of the care they provide.

In presenting the practices and their specifications, this update adds elements that will assist those who are implementing the practices and measuring their success. At the same time, the practices are presented in a way that meets many of the expectations of standards-setting organizations through the following:

- the harmonization of practices and specifications with accrediting and certifying organizations as well as major national safety initiatives in order to achieve the organizational economies that are associated with aligning language to facilitate credit across organizations—that is, meeting the expectations of the safe practices while at the same time meeting the requirements or expectations of organizations such as the Joint Commission on Accreditation of Healthcare Organizations (now the Joint Commission), the Centers for Disease Control and Prevention (CDC), the Centers for Medicare and Medicaid Services (CMS), the Leapfrog Group, and the Institute for Healthcare Improvement (IHI) 100,000 Lives Campaign;
- the expansion of the implementation examples to provide additional suggestions (not requirements of the practice) either to help implement the practices or to otherwise improve them;
- suggested outcome, process, structure, and patient-centered measures that can be used in quality improvement efforts to gauge implementation success;
- setting-specific comments and suggestions, where applicable;
- pointers to other relevant safe practices; and
- an extensive set of references for use during implementation or for framing future research questions.

The NQF-Endorsed Set of Safe Practices

This set of safe practices encompasses 30 practices that have been demonstrated to be effective in reducing the occurrence of adverse healthcare events. The practices are organized into seven broad categories for improving patient safety by or through the following:

- creating and sustaining a healthcare culture of safety;
- informed consent, honoring patient wishes, and disclosure;
- matching healthcare needs with service delivery capability;

- information management and continuity of care;
- medication management;
- prevention of healthcare-associated infections; and
- condition- and site-specific practices.

This chapter summarizes the rationale and criteria used to identify the safe practices included in this set. It also identifies 24 practices that are recommended for further research, 18 of which are continued from the 2003 set. These practices are promising and should receive high priority for additional research. Chapters 2 through 8 are organized according to the seven categories presented above and provide additional background for each practice. For each of the 30 practices, the following are included:

- a summary of the problem the practice aims to improve;
- practice specifications;
- applicable clinical care settings;
- implementation examples;
- measures of success;
- settings of care considerations;
- new horizons and areas for research;
- other relevant safe practices; and
- selected references (appendix E).

Appendix D provides a commentary that includes the deliberations of the Consensus Standards Maintenance Committee and leading Member comments.

Criteria

The new and updated practices were evaluated based on the criteria used for the 2003 set (box A): specificity, benefit, evidence of effectiveness, generalizability, and readiness.

Furthermore, recommendations to modify the endorsed practices were evaluated based on specific criteria for modifying a practice or for withdrawing endorsement of a practice (box B).

The safe practices are not prioritized or weighted within or across categories. This is because all are viewed as important in improving patient safety and because no objective, evidence-based method of prioritizing the practices could be identified that would equitably apply across the current heterogeneous universe of healthcare organizations that have variably implemented many—and in some cases all—of these practices. For any given healthcare provider, the choice of priority practices for implementation will depend on the provider's circumstances, including which of the practices already have been implemented, the degree of success the provider has had with implementation, the availability of resources, environmental constraints, and other factors.

Table 1 presents the description of and specifications for the 30 safe practices, as well as the applicable clinical care settings in which the practices should be utilized. Because in general the changes to the 23 materially changed practices involve extensive additions as well as revisions of the prior language, no attempt was made

Box A – Criteria for Inclusion in the Set

To be included in the set, candidate safe practices were evaluated against the specific criteria from 2003 NQF-endorsed *Safe Practices for Better Healthcare: A Consensus Report,* which are as follows:

- **Specificity.** The practice must be a clearly and precisely defined process or manner of providing a healthcare service. All candidate safe practices were screened according to this threshold criterion. Candidate safe practices that met the threshold criterion of specificity were then rated against four additional criteria relating to the likelihood of the practice improving patient safety.
- **Benefit.** If the practice were more widely utilized, it would save lives endangered by healthcare delivery, reduce disability or other morbidity, or reduce the likelihood of a serious reportable event (e.g., an effective practice already in near universal use would lead to little new benefit to patients by being designated a safe practice).
- **Evidence of Effectiveness.** There must be clear evidence that the practice would be effective in reducing patient safety events. Such evidence may take various forms, including the following:
  - research studies showing a direct connection between improved clinical outcomes (e.g., reduced mortality or morbidity) and the practice;
  - experiential data (including broad expert agreement, widespread opinion, or professional consensus) showing the practice is "obviously beneficial" or self-evident (i.e., the practice absolutely constrains a potential problem or forces an improvement to occur, reduces reliance on memory, standardizes equipment or process steps, or promotes teamwork); or
  - research findings or experiential data from non-healthcare industries that should be substantially transferable to healthcare (e.g., repeat-back of verbal orders or standardizing abbreviations).
- **Generalizability.** The safe practice must be able to be utilized in multiple applicable clinical care settings (e.g., a variety of inpatient and/or outpatient settings) and/or for multiple types of patients.
- **Readiness.** The necessary technology and appropriately skilled staff must be available to most healthcare organizations.

Box B – Criteria for Changes to an NQF-Endorsed™ Safe Practice

Criteria for Modification of an NQF-Endorsed Safe Practice:

- Recommended modification(s) must be based upon and accompanied by the specific rationale for the recommended change (e.g., evidence supporting the practice has changed sufficiently that the practice warrants modification).
- The practice must continue to meet the criteria as outlined for new practices.
- To remain an endorsed practice, any recommended modification must make no material* change to the intent of the practice or the scope of the specifications.

Criteria for Withdrawing Endorsement of an NQF-Endorsed Safe Practice:

- The available evidence does not demonstrate the effectiveness of the practice in reducing the likelihood of a patient safety event.
- The practice has been overtaken or is subsumed by a recommended new or recommended modification to an endorsed safe practice.

*Recommendations involving material change are subject to NQF's Consensus Development Process. *Material* is defined as any modification that reasonably could be foreseen to affect the result or end product from use of the standard.

within the table to highlight specific changes from the 2003 report.[6] Endorsement is continued for what are now Safe Practices 3, 7, 28, and 30. Additionally, three new practices have been added and endorsement has been withdrawn for three practices that have been subsumed within other practices.

Practices for Which Endorsement Was Withdrawn

The three practices for which endorsement was withdrawn are as follows:

- Evaluate each patient upon admission, and regularly thereafter, for risk of malnutrition. Employ clinically appropriate strategies to prevent malnutrition. (This was Safe Practice 23 in the 2003 report; it has been subsumed by a specification of Safe Practice 1, Practice Element 4, in this report.)
- Whenever a pneumatic tourniquet is used, evaluate the patient for the risk of an ischemic and/or thrombotic complication, and utilize appropriate prophylactic measures. (This was Safe Practice 24 in the 2003 report; it has been subsumed by a specification of Safe Practice 1, Practice Element 4, in this report.)
- Keep workspaces where medications are prepared clean, orderly, well lit, and free of clutter, distraction, and noise. (This was Safe Practice 27 in the 2003 report; it has been subsumed by specifications of Safe Practice 15 in this report.)

[6] Appendix A provides a crosswalk from the 2003-endorsed safe practices to the 2006 update.

Table 1 – Safe Practices, Care Settings, and Specifications*

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 1:** Leadership structures and systems must be established to ensure that there is organization-wide awareness of patient safety performance gaps, that there is direct accountability of leaders for those gaps, that an adequate investment is made in performance improvement abilities, and that actions are taken to assure the safe care of every patient served. **Applicable Clinical Care Settings:** All care settings.	**Leadership Structures and Systems** ■ **Awareness Structures and Systems:** Structures and systems should be in place to provide a continuous flow of information to leaders from multiple sources regarding the risks, hazards, and performance gaps that contribute to patient safety issues. ● ***Identification of Risks and Hazards:*** Governance boards and senior administrative leaders should be regularly and thoroughly briefed regarding the results of activities undertaken as defined by the Identification and Mitigation of Risks and Hazards element of this practice. ● ***Culture Measurement, Feedback, and Intervention:*** Governance boards and senior administrative leaders should be regularly and thoroughly briefed regarding the results of culture measurement and performance improvement initiatives addressed in the Culture Measurement, Feedback, and Intervention element of this practice. ● ***Direct Patient Input:*** A structure and system should be established to obtain direct feedback from patients regarding the performance of the organization. Information from satisfaction surveys is not enough—patients and/or patient families representing the population served should be included in the design of educational meetings or participate on formal committees that provide input to the leadership regarding the management of safety and quality issues within the organization. ● ***Governance Board and Senior Management Briefings/Meetings:*** Patient safety risks, hazards, and progress toward performance improvement objectives should be addressed at every board meeting and should be documented by meeting agendas and minutes. Such meetings and documentation systems should ensure that organizational leadership is kept knowledgeable about patient safety issues present within the organization and is continuously involved in processes to assure that the issues are appropriately addressed and that patient safety is improved. ■ **Accountability Structures and Systems:** Structures and systems should be established to ensure that there is direct accountability of the governance board, senior administrative management, midlevel management, physician leaders (those who are independent and those who are employed by the organization), and frontline caregivers for closing certain performance gaps and for adopting certain patient safety practices.[1] ● ***Patient Safety Program:*** An integrated patient safety program should be implemented throughout the healthcare organization.[2] This program should provide oversight, ensure the alignment of patient safety activities, and ensure that opportunities are available for all individuals who work in the organization to be educated and participate in safety and quality initiatives. Leaders should create an environment in which safety and quality issues are openly discussed. A just culture should be fostered in which frontline personnel feel comfortable disclosing errors—including their own—while maintaining professional accountability. ● ***Patient Safety Officer:*** The organization should appoint or employ a patient safety officer who is the primary point of contact for questions about patient safety and who coordinates patient safety for education and the deployment of system changes. Governance boards and senior administrative leaders should support leaders in patient safety to ensure that there is compliance with the specifications of all four elements of this safe practice. *(more)*

* Refer to the notes at the end of this table for important information regarding implementation recommendations and harmonization.

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 1:** Leadership structures and systems must be established to ensure that there is organization-wide awareness of patient safety performance gaps, that there is direct accountability of leaders for those gaps, that an adequate investment is made in performance improvement abilities, and that actions are taken to assure the safe care of every patient served. **Applicable Clinical Care Settings:** All care settings.	• ***Direct Organization-Wide Leadership Accountability:*** Governance and senior management should have direct accountability for safety in the organization, including setting patient safety goals, ensuring that resources are provided to address those goals, and monitoring progress toward their achievement. The patient safety officer should have direct and regular communication with governance leaders and senior administrative management. Senior administrative leaders and leaders of clinical service lines and units should be held accountable for closing patient safety performance gaps. Performance should be documented using processes/methods such as performance reviews and/or compensation incentives. • ***Interdisciplinary Patient Safety Committee:*** Leaders should establish and support an interdisciplinary patient safety improvement committee(s) or equivalent structure(s) that is (are) responsible for creating, implementing, and administering mechanisms to oversee the root cause analyses of every appropriate incident and provide feedback to frontline workers about lessons learned; disclose the organization's progress toward implementing safe practices; and provide professional training and practice in teamwork techniques (e.g., anesthesia crisis management, aviation-style crew resource management, medical team management).[3] See the Identification and Mitigation of Risks and Hazards and Teamwork Training and Skill Building practice elements for detailed specifications. • ***External Reporting Activities:*** Organizations should report adverse events to the appropriate external mandatory programs and voluntary programs as well as encourage voluntary practitioner reporting. Organizations should publicly disclose compliance with all National Quality Forum (NQF)-endorsed™ safe practices for public reporting that are applicable to the organization.[4] ■ **Structures- and Systems-Driving Ability:** Capacity, resources, and competency are critical to the ability of organizations to implement changes in their culture and patient safety performance. Systematic and regular assessment of resource allocations to key systems should be undertaken to ensure performance in patient safety.[5] On a regular, periodic basis determined by the organization, governance boards and senior administrative leaders should assess each of the following areas for the adequacy of funding and document the actions taken to adjust resource allocations to ensure that patient safety is adequately funded.[6] • ***Patient Safety Budgets:*** Specific budget allocations to initiatives that drive patient safety should be evaluated by governance boards and senior administrative leaders. Such evaluations should include the detailed context of information from the activities defined in the Identification and Mitigation of Risks and Hazards practice element. Designating a patient safety officer or someone else in charge of patient safety without providing the appropriate staffing infrastructure or budget is an example of inadequate resource allocation. • ***People Systems:*** Human resource issues should be addressed with direct input from the activities included in the Identification and Mitigation of Risks and Hazards practice element as well as those included in Safe Practices 5 and 6 relating to nurse staffing and direct caregiver staffing levels, competency, and training/orientation.[7] • ***Quality Systems:*** Quality systems and structures such as performance improvement programs and quality departments should be adequately funded, actively managed, and regularly evaluated for effectiveness and resource needs.[8] • ***Technology Systems:*** Budgets for technologies that can enable safe practices should be regularly evaluated to ensure that patient safety impact can be optimized.[9] *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 1:** Leadership structures and systems must be established to ensure that there is organization-wide awareness of patient safety performance gaps, that there is direct accountability of leaders for those gaps, that an adequate investment is made in performance improvement abilities, and that actions are taken to assure the safe care of every patient served. **Applicable Clinical Care Settings:** All care settings.	■ **Action Structures and Systems:** Structures and systems should be put in place to assure that leaders take direct and specific actions, including those below. ● ***Performance Improvement Programs:*** Leaders should document actions taken to verify that remedial activities that are identified through the analysis of reported patient safety events are implemented, are effective, and do not cause unintended adverse consequences. Leaders should establish patient safety priorities for performance improvement.[10] The direct participation of governance board members and senior administrative leaders should be documented as specified in the Identification and Mitigation of Risks and Hazards practice element in order to satisfy this requirement. ● ***Regular Actions of Governance:*** ◆ *Confirmation of Values:* Governance leaders should regularly confirm that senior administrative leadership is continuously ensuring that the values of the organization are mirrored by the behaviors of the staff and caregivers and that those values drive safety and performance improvement in the organization. At least annually, the board should document that it has confirmed the degree to which the behaviors of the organization related to quality and safety mirror its values with respect to patient safety.[11] ◆ *Basic Teamwork Training and Interventions Briefings:* Governance board members should receive a dedicated period of basic training in teamwork, communication, and patient safety per board member per year as determined by the board and as documented by agendas and attendance records.[12] ◆ *Governance Board Competency in Patient Safety:* The governance board should take a systematic approach to ensure that board members' command of patient safety knowledge is adequate to support the organization. At least annually, the board should discuss its own competency and document its strategy for ensuring that all existing and new board members are well versed in patient safety. ● ***Regular Actions of Senior Administrative Leadership:*** The actions of the chief executive officer (CEO) and senior leaders have a critical impact on patient safety in their organization. ◆ *Time Commitment to Patient Safety:* The CEO and senior administrative leaders should systematically designate a certain amount of time for patient safety activities; for example, engaging in weekly walking rounds and holding regular patient safety-related sessions at executive staff and governance meetings. Leaders should establish the structures and systems needed to ensure they are personally reinforcing the principles of patient safety regularly and continuously to staff at all levels of the organization. Leaders should provide feedback to frontline healthcare providers about lessons learned regarding patient safety from outside sources and from within the organization. ◆ *Culture Measurement, Feedback, and Interventions:* The CEO and senior administrative leaders should be directly involved in the application of the knowledge that has been generated through the measurement of culture, as defined in the specifications of the Culture Measurement, Feedback, and Intervention practice element. ◆ *Basic Teamwork Training and Skill Building:* The CEO and senior administrative leaders should be directly involved in ensuring that the organization implements the activities detailed in the specifications of the Teamwork Training and Skill Building practice element. This includes participating in the defined basic training program. *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 1:** Leadership structures and systems must be established to ensure that there is organization-wide awareness of patient safety performance gaps, that there is direct accountability of leaders for those gaps, that an adequate investment is made in performance improvement abilities, and that actions are taken to assure the safe care of every patient served. **Applicable Clinical Care Settings:** All care settings.	◆ *Identification and Mitigation of Risks and Hazards:* The CEO and senior administrative leaders should be continuously engaged in the activities addressed in the specifications of the Identification and Mitigation of Risks and Hazards practice element. The actions taken to mitigate risks and hazards must be championed by senior administrative leaders with the support of the governance board. Such actions are vital to creating and sustaining a culture of patient safety. ● ***Regular Actions of Unit, Service Line, Departmental, and Midlevel Management Leaders:*** The entire leadership structure of an organization should be fully engaged in the patient safety activities that are addressed in the four practice elements of Safe Practice 1, Create and Sustain a Culture of Patient Safety. Leaders at all levels and in all clinical areas, including employed clinicians, should be continuously and actively engaged in the pursuit of patient safety. The CEO and senior administrative management should ensure that all leaders have the opportunity to lead and support patient safety activities.[13] ● ***Regular Actions Regarding Independent Medical Leaders:*** Governance and senior administrative leaders should establish the systems and structures needed for ensuring that medical leaders in independent practice as well as those employed by the organization have regular and frequent opportunities to provide direct input to patient safety programs.[14]
1. Create and sustain a healthcare culture of safety. **Practice Element 2:** Healthcare organizations must measure their culture, provide feedback to the leadership and staff, and undertake interventions that will reduce patient safety risk.[15] **Applicable Clinical Care Settings:** All care settings.	**Culture Measurement, Feedback, and Intervention** ■ At least annually, leaders should assess the organization's safety and quality culture using a survey tool that is selected with consideration of validity, consistency, and reliability in that setting. The survey should be one that has been conceptualized around domains that apply to performance improvement initiatives/efforts such as teamwork, leadership, communication, and openness to reporting. ● Conduct the survey on a sample of units or service areas that in aggregate deliver care to more than 50 percent of the patients who are receiving care.[16] ● Measure service lines or units in which there is a high patient safety risk. ● Identify and prioritize culture performance improvement targets; provide adequate resources to address performance gaps over a specified period. ● Survey a valid sample to allow unit-level analysis and facilitate improvement. ■ Critical care areas and services and high-volume and high-risk areas should be surveyed (e.g., emergency departments, outpatient surgical services, diagnostic centers) and should include, in the aggregate, ambulatory totals to determine which of these areas should be targeted initially. ■ The results of the culture survey process should be documented and disseminated widely across the organization systematically and frequently. The interventions component of this practice element will be satisfied if the survey findings are documented and have been used to monitor and guide performance improvement interventions. ■ The organization should document that the results of the survey process, as defined in the Leadership and Systems practice element and the Identification and Mitigation of Risks and Hazards practice element, and by the activities defined in the Teamwork Training and Skill Building practice element, have been provided to governance and senior medical leaders. *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 3:** Healthcare organizations must establish a proactive, systematic, and organization-wide approach to developing team-based care through teamwork training, skill building, and team led performance improvement interventions that reduce preventable harm to patients. **Applicable Clinical Care Settings:** All care settings.	**Teamwork Training and Skill Building** ■ **Effective Team Leadership:** Training programs should systematically address and apply the principles of effective team leadership and team formation. Leadership at all levels of an organization should be fostered. ■ **Effective Teamwork Training:** Every organization should provide teamwork and communication training through basic and detailed programs. ● ***Basic Teamwork Training:*** Basic training should be provided annually to governance board members, senior administrative leaders, medical staff (both those who are independent and those who are employed by the organization), midlevel management, and frontline nurses. The subject matter should include sources of communication failures, hand-offs, and team failures that lead to patient harm. The length and modality of training should be established by the organization. Participation should be documented to verify compliance. ● ***Detailed Teamwork Training:*** All clinical staff and licensed independent practitioners should receive detailed training consisting of the best available teamwork knowledge; however, those who are working in clinical areas that are deemed to be at high risk for patient safety issues should receive such training first. The clinical areas that are prioritized should focus on specific patient safety risks. Training subject matter should include the principles of high reliability, human factors as applied to real-world care processes, interpersonal team dynamics, hand-offs, and specific communication methods. There should be a focus on the development and application of structured tools. Detailed training should be set and documented by organization leadership and include a specified period of combined instruction and interactive dialogue regarding the application of the knowledge.[17] If all staff members cannot be trained within one year, a goal should be set to train all clinical service area staff and caregivers over multiple years. ● ***Effective Teamwork Skill Building:*** To develop effective and coherent teams, individuals need to build their teamwork and communication skills. These include establishing a shared mental model, using structured language and critical language, understanding communication hand-off methods, and using effective assertion behaviors such as "stop-the-line"[18] methods. Individuals and teams also should develop the skills necessary to monitor team performance continuously over time. Organizations should employ methods to verify the demonstration of teamwork skills. A specified number of care units or service line areas and length of training should be set and documented by organization leadership each year through initiatives for building and measuring teamwork skills.[19] ■ **Effective Team-Centered Interventions:** In order to generate the greatest impact, team-centered performance improvement initiatives or projects should target the work "we do every day." The units and service lines selected should be prioritized based on the risk to patients, which in turn should be based on the prevalence and severity of targeted adverse events. The interventions should address the frequency, complexity, and nature of teamwork and communication failures that occur in the selected areas. Annually, every organization should identify a specific number of teamwork-centered intervention projects that it will undertake, such as those cited below.[20] Ideally, team-centered interventions should be undertaken in all areas of care, such as those cited below and in the implementation approaches section in chapter 2. ● ***Specific Team Performance Improvement Projects:*** Organizations should select high-risk areas for performance improvement projects; these include areas such as emergency *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 3:** Healthcare organizations must establish a proactive, systematic, and organization-wide approach to developing team-based care through teamwork training, skill building, and team led performance improvement interventions that reduce preventable harm to patients. **Applicable Clinical Care Settings:** All care settings.	departments, labor and delivery, intensive care units, operating rooms, ambulatory care, and other procedural care units. Performance targets should be identified and strategies for closing known performance gaps set. Such performance improvement initiatives should have the components of education, skill building, measurement, reporting, and process improvement. • ***Rapid Response Assessment:*** Annually, organizations should formally evaluate the opportunity for using rapid response systems to address the issues of deteriorating patients (across the organization). • ***Internal and External Reporting:*** The performance improvement that is generated by team-centered interventions should be reported to governance boards and senior administrative management. Depending on the projects selected, the organization should submit the information to the appropriate external reporting organizations. ■ **Minimum Requirements of Practice Element 3:** To meet the minimum requirements of this practice element, an organization can satisfy the Detailed Teamwork Training, Effective Teamwork Skill Building, and Effective Team-Centered Interventions practice elements defined earlier by targeting a number of units or service lines initially (to be determined by the organization) and by targeting additional new units each year if the Effective Team-Centered Intervention requirements are satisfied, since it is expected that those involved would receive the required training and skill-building experiences. The requirements of the interventions component of the Culture Measurement, Feedback, and Intervention practice element also will be met if the improvement of culture survey scores is an aim of the specific performance improvement projects that are undertaken.[21]
1. Create and sustain a healthcare culture of safety. **Practice Element 4:** Healthcare organizations must systematically identify and mitigate patient safety risks and hazards with an integrated approach in order to continuously drive down preventable patient harm. **Applicable Clinical Care Settings:** All care settings.	**Identification and Mitigation of Risks and Hazards** ■ **Risk and Hazard Identification Activities:** Risks and hazards should be identified on an ongoing basis from multiple sources, including independent retrospective, near-real-time and real-time, and prospective reviews. The risk and hazard analysis should integrate the information gained from multiple sources to provide organization-wide context.[22,23] • ***Retrospective Identification:*** Organizations should use a number of retrospective measures and indicators to identify risk and contributing factors from historical data. Specific steps should be taken to ensure that the lessons learned are communicated across the organization and that they are applied in other care settings, where applicable. Some retrospective identification and analysis activities are triggered by adverse events; however, ideally the retrospective identification of risks and hazards should occur regularly, and progress reports should be generated as frequently as they are needed within each year.[24] At least annually, a summary of progress based on an evaluation of the effectiveness of all of the relevant retrospective identification activities/tools listed below should be documented. ◆ *Sentinel Event Reporting and Analysis.*[25] Processes for identifying and managing sentinel events should be defined and implemented for every such event.[26] ◆ *Event Reporting.* A systematic approach to the assessment of adverse events should be undertaken to identify patterns and opportunities for improvement. Such events may include the NQF-endorsed serious reportable events.[27] ◆ *Root Cause Analysis.* The root cause analysis process for identifying the causal factors for events, including sentinel events, should be undertaken.

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 4:** Healthcare organizations must systematically identify and mitigate patient safety risks and hazards with an integrated approach in order to continuously drive down preventable patient harm. **Applicable Clinical Care Settings:** All care settings.	◆ *Closed Claims Analysis* should be undertaken.[28] ◆ *Enterprise Systems Failures.* People systems, technology systems, and quality systems failures beyond those resulting in adverse outcomes should be evaluated.[29] ◆ *Patient Safety Indicators.* Patient safety indicators should be used to generate hypotheses and guide deeper investigation.[30] ◆ *Retrospective Trigger Tools.* Such tools should be used retrospectively through chart review and near-real-time or real-time reviews as mentioned below.[31] ◆ *External Reporting Source Input.* Such information should be an input to risk assessment activities.[32] ● ***Real-Time and Near-Real-Time Identification:*** Organizations should evaluate near-real-time or real-time tools at least annually for their value in risk identification for the areas identified as high risk for the organization. A concise, thorough assessment of tools such as those noted below and others that become available to the organization should be documented. ◆ Trigger tools, manually or technology enabled. ◆ Observational tools, permitting direct observation of processes in high-risk areas.[33] ◆ Technology tools such as electronic health records.[34] ◆ Real-Time Risk Identification Behaviors. Organizations should support the frontline behaviors of real-time risk identification, including workflow design, that enable the early identification of patient risks and hazards and that inspire "stop-the-line" actions that can prevent patient harm.[35] ● ***Prospective Identification:*** A structured proactive risk assessment should be undertaken by certain care units to identify risks and hazards in order to prevent harm and error. At least annually, an organization should evaluate the prospective or proactive tools and methods, such as the two listed below, in order to identify risks. At a minimum, one prospective analysis should be conducted per year.[36] Specific steps should be taken to ensure that lessons learned are communicated across the organization and that they are applied in other care settings, where applicable.[37] ◆ Failure Modes and Effects Analysis – FMEA.[38] ◆ Probabilistic Risk Assessment – PRA.[39,40] ● ***Integrated Organization-Wide Risk Assessment:*** The continuous, systematic integration of the information regarding risks and hazards across the organization should be undertaken to optimally prevent systems failures. Information regarding risks and hazards from multiple sources should be evaluated in an integrated way in order to identify patterns, systems failures, and contributing factors involving discrete service lines and units. The organization should integrate the information from the sources or activities noted below, ensure that it is provided to those designing mitigation strategies and that it is documented and disseminated widely across the organization systematically and frequently, and ensure that the results of mitigation activities are made available to all who were involved in providing source information. Frequent progress reports should be generated on an ongoing basis, and a summary of such reports should be produced at least annually. ◆ Risk Management (Claims Management) Services.[41] ◆ Complaints and Customer Services Participation.[42] ◆ Disclosure Support System.[43] (See the disclosure practice included in this report.) *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 4:** Healthcare organizations must systematically identify and mitigate patient safety risks and hazards with an integrated approach in order to continuously drive down preventable patient harm. **Applicable Clinical Care Settings:** All care settings.	◆ Culture Measurement, Feedback, and Intervention.[44] (See the Culture Measurement, Feedback, and Intervention element of this safe practice.) ◆ Retrospective, Near-Real-Time and Real-Time, and Prospective Information Integration.[45] This organization-wide risk assessment information should be provided to the governance board and senior administrative leadership continuously. The output of the activities of this element should be provided as an input to the activities articulated in the Leadership Structures and Systems element of this safe practice. ● ***Risk Mitigation Activities:*** Every organization has a unique risk profile and should carefully design performance improvement projects that target prioritized risk areas. An ongoing, proactive program for identifying and reducing unanticipated adverse events and safety risks to patients should be defined, documented, and implemented. ● ***Performance Improvement Programs:*** The organization should provide documentation of performance improvement programs that bear evidence of the actions taken to close patient safety gaps identified in the risks and hazards identification section of this practice element, described earlier. Such performance improvement programs should include education, skill building, measurement, reporting, and process improvement. ◆ *Targeted Performance Improvement Projects:* Specific patient safety risks and hazards identified by the activities described above should be targeted with performance improvement projects. Every organization should document the outcome, process, structure, and patient-centered measures of these projects. Organizations should document the projects' patient safety aims and regularly chart progress toward those aims. Such progress should be reported regularly to governance board members and senior administrative leaders as addressed in the Leadership Structures and Systems practice element.[46] ◆ *Systems Solutions:* Products, services, and technologies that enable the use of best practices in people systems, technology systems, and quality/safety systems should be considered in order to reduce the potential for patient harm.[47] Performance improvement projects targeting these systems should be documented, and the progress of such projects should be charted and regularly reported to and through senior administrative leaders to governance board members. ◆ *Senior Leadership and Governance Engagement:* The direct participation of governance board and senior, midlevel, and line managers in monitoring the progress of all patient safety performance improvement programs should be documented.[48] Tools such as summary reports, dashboards,[49] or scorecards should be used to ensure that the most important messages are made as clear as possible and that information overload is minimized. Senior administrative leaders and governance board members should be involved in the selection of these monitoring tools for the organization. ● ***Specific Risk Assessment and Mitigation Activities:*** The organization should provide documentation that bears evidence of high performance or of actions taken to close common patient safety gaps for the patient safety risk areas listed below. ◆ *Falls:* The organization should monitor the effectiveness of fall reduction programs, including risk reduction strategies, inservices, patient/family education, and environment of care redesign.[50] *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
1. Create and sustain a healthcare culture of safety. **Practice Element 4:** Healthcare organizations must systematically identify and mitigate patient safety risks and hazards with an integrated approach in order to continuously drive down preventable patient harm. **Applicable Clinical Care Settings:** All care settings.	◆ *Malnutrition:* The organization should monitor its effectiveness in identifying malnutrition and taking actions to reduce the potential adverse events that can result from malnutrition.[51] For example, each patient should be evaluated upon admission, and periodically thereafter, for the risk of malnutrition. Clinically appropriate strategies should be employed to prevent malnutrition. ◆ *Pneumatic Tourniquets:* The organization should monitor its effectiveness in reducing the harm that can accompany high-risk procedures, including the use of pneumatic tourniquets (if they are used in the organization). For example, whenever a pneumatic tourniquet is used, the patient should be evaluated for risk of ischemia and/or thrombotic complication and the appropriate prophylactic measures should be utilized. ◆ *Aspiration:* Upon admission and regularly thereafter each patient should be screened for the risk of aspiration. An aspiration risk and prevention plan should be documented in the patient's record. ◆ *Workforce Fatigue:* Because workforce fatigue can have a direct impact on patient safety, every organization should be cognizant of the issue and should include aspects of precursors and alleviation in an annual review of patient safety risk in the organization.
2. Ask each patient or legal surrogate to "teach back" in his or her own words key information about the proposed treatments or procedures for which he or she is being asked to provide informed consent. **Applicable Clinical Care Settings:** All care settings.	■ At a minimum, patients should be able to explain, in their everyday words, the diagnosis/health problem for which they need care; the name/type/general nature of the treatment, service, or procedure, including what receiving it will entail; and its primary risks, benefits, and alternatives. This practice includes all of the following elements: ● Informed consent documents for use with the patient should be written at or below the 5th-grade level and in the primary language of the patient. ● The patient, and as appropriate the family and other decisionmakers, should be engaged in a dialogue about the nature and scope of the procedure for which consent is being sought. ● A qualified medical interpreter or reader should be provided to assist patients with limited English proficiency, limited health literacy, and visual or hearing impairments. ● The risk that is associated with high-risk elective cardiac procedures and high-risk procedures with the strongest volume-outcomes relationship as defined in Safe Practice 24 should be conveyed when such procedures are planned.
3. Ensure that written documentation of the patient's preferences for life-sustaining treatments is prominently displayed in his or her chart. **Applicable Clinical Care Settings:** All care settings.	■ Organization policies, consistent with applicable law and regulation, should be in place and should address patient preference for life-sustaining treatment and withholding resuscitation.[52]

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
4. Following serious unanticipated outcomes, including those that are clearly caused by systems failures, the patient and, as appropriate, the family should receive timely, transparent, and clear communication concerning what is known about the event. **Applicable Clinical Care Settings:** All care settings.	■ The types of serious unanticipated outcomes addressed by this practice include, at a minimum, a) sentinel events;[53] b) serious reportable events;[54] and c) any other unanticipated outcomes involving harm that require the provision of substantial additional care (such as diagnostic tests/therapeutic interventions or increased length of stay) or that cause the loss of limb or function lasting seven days or longer. ■ Organizations must have formal processes in place for disclosing unanticipated outcomes and for reporting events to those responsible for patient safety, including external organizations where applicable, and for identifying and mitigating risks and hazards. ■ The governance and administrative leadership should ensure that such information is systematically used for performance improvement by the organization. Policies and procedures should incorporate continuous quality improvement techniques and provide for annual reviews and updates. ■ Adherence to the practice and participation with the support system is expected and may be considered as part of credentialing. ■ Patient communication should include or be characterized by the following: ● the "facts"—an explicit statement about what happened that includes an explanation of the implications of the unanticipated outcome for the patient's future health, an explanation of why the event occurred, and information about measures taken for its preventability; ● empathic communication of the "facts," a skill that should be developed and practiced in healthcare organizations; ● an explicit and empathic expression of regret that the outcome was not as expected (e.g., "I am sorry that this has happened."); ● a commitment to investigate and as possible prevent future occurrences by collecting the facts about the event and providing them to the organization's patient safety leaders, including those in governance positions; ● feedback of the results of the investigation, including whether or not it resulted from an error or systems failure, provided in sufficient detail to support informed decisionmaking by the patient; ● "timeliness"—the initial conversation with the patient and/or family occurs within 24 hours, whenever possible. Early and subsequent follow-up conversations occur, both to maintain the relationship and to provide information as it becomes available;[55] ● an apology from the patient's licensed independent practitioner and/or an administrative leader if the investigation reveals that the adverse outcome clearly was caused by unambiguous errors or systems failures; ● emotional support for patients and their families provided by trained caregivers; and ● the establishment and maintenance of a disclosure and improvement support system to provide the following to caregivers and staff; ◆ emotional support for caregivers and administrators involved in such events by trained caregivers in the immediate postevent period that may extend for weeks afterward, ◆ education and skill building regarding the concepts, tools, and resources that produce optimal results from this practice, centered on systems improvement rather than blame and with a special emphasis on creating a just culture, and ◆ the 24-hour availability of advisory support to caregivers and staff to facilitate rapid responses to serious unanticipated outcomes, including the provision of "just-in-time" coaching and emotional support. *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
5. Implement critical components of a well-designed nursing workforce that mutually reinforce patient safeguards, including the following: ■ **a nurse staffing plan with evidence that it is adequately resourced and actively managed and that its effectiveness is regularly evaluated with respect to patient safety;**[56] ■ **senior administrative nursing leaders, such as a chief nursing officer, as part of the hospital senior management team;**[57] ■ **governance boards and senior administrative leaders that take accountability for reducing patient safety risks related to nurse staffing decisions and the provision of financial resources for nursing services;**[58] **and** ■ **the provision of budget resources to support nursing staff in the ongoing acquisition and maintenance of professional knowledge and skills.**[59] **Applicable Clinical Care Settings:** Acute care hospitals, nursing homes, and other healthcare institutions, except those excluded by the specifications.	■ Implement explicit organizational policies and procedures, with input from nurses at the unit level, regarding effective staffing targets that specify the number, competency, and skill mix of nursing staff needed to provide safe, direct care services.[60,61] ■ Ensure that the governance board and senior, midlevel, and line managers are educated regarding the impact of nursing on patient safety. ■ Conduct ongoing, organization-wide patient safety risk assessments to identify patient safety risks related to nurse staffing, nurse work hours, temporary nurse coverage, and other areas related to the prevention of patient harm.[62] This assessment must be reviewed by senior administrative management and the governance board at least annually to assure that resources are allocated and performance improvement programs are implemented. ■ Use the data collected and analyzed from the daily monitoring of actual unit-specific nurse staffing levels to identify and address potential patient safety-related staffing issues.[63] Such data should include, but not be limited to, nursing hours per patient day as defined in the NQF-endorsed *National Voluntary Consensus Standards for Nursing-Sensitive Care: An Initial Performance Measure Set*.[64,65] ■ Provide regular reports, at intervals determined by leadership, of unit-specific, potential patient safety-related staffing issues to senior nursing leadership, the governance board, and senior administrative leaders.[66] ■ Put in place and document performance improvement programs that include the elements of education, skill building, measurement, reporting, and process improvement, and provide evidence of the actions taken to close patient safety gaps related to nursing services. ■ At least annually, provide reports to the public through the appropriate organizations. ■ Ensure, through ongoing assessments by managers/leaders in the practice environment, that all nurses are oriented and are competent to provide safe care to the patients to whom they are assigned. This should include nurses who are new to the organization, temporary staff, float pool nurses, contract staff, and temporarily assigned nurses.[67] Ongoing education must be provided through inservices, training, and other activities aimed at maintaining and improving competencies that are specific to assigned duties and job responsibilities related to patient safety, infection control, and the population served.[68]

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
6. Ensure that non-nursing, direct care staffing levels are adequate, that the staff is competent, and that they have had adequate orientation, training, and education to perform their assigned direct care duties. **Applicable Clinical Care Settings:** Acute care hospitals, nursing homes, and other healthcare institutions.	■ Establish a staffing plan that is adequately resourced and actively managed and that has its effectiveness regularly evaluated with respect to patient safety. ■ Conduct ongoing patient safety risk assessments to identify patient safety risks related to non-nursing direct care worker staffing, work hours, temporary staff coverage, and other areas related to the prevention of patient harm.[69] This assessment must be reviewed by senior administrative management and the governance board at least annually to ensure that resources are allocated and performance improvement programs are implemented. ■ Senior administrative management and the governance board should ensure that resources are allocated and performance improvement programs are implemented based on their review of patient risk assessments related to non-nursing direct care worker staffing. Ideally, all non-nursing direct care staff areas are assessed; however, at a minimum assessment must occur for the categories of direct care staff that have direct contact with patients. ■ Establish and consistently implement explicit policies and procedures to ensure that effective staffing targets are met. These should specify the number, competency, and skill mix of staff related to safe care with input from frontline staff at the unit level. ■ Put in place and document performance improvement programs that include the elements of education, skill building, measurement, reporting, and process improvement and provide evidence of actions taken to close patient safety gaps related to non-nursing direct caregiver services. ■ At least annually, provide reports regarding the non-nursing direct caregiver impact on patient safety to the governance board and senior administrative leaders. ■ Through ongoing assessments by managers/leaders in the practice environment, ensure that all staff members are oriented and are competent to provide safe care to the patients to whom they are assigned.[70] This should include staff members who are new to the organization, temporary staff, float pool staff, contract staff, and those who are temporarily assigned. Ongoing education through the provision of inservices, training, and other activities should be provided to maintain and improve the competencies that are specific to assigned duties and job responsibilities related to patient safety, infection control, and the populations served.[71]

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
7. All patients in general intensive care units (ICUs) (both adult and pediatric) should be managed by physicians who have specific training and certification in critical care medicine ("critical care certified"). **Applicable Clinical Care Settings:** All adult and pediatric general ICUs, whether designated as a medical, surgical, or mixed ICU, although incremental implementation may be necessary in rural areas (as defined by the U.S. Census Bureau) and/or small community hospitals.	■ A "critical care certified" physician is one who has obtained critical care subspecialty certification by the American Board of Anesthesiology, the American Board of Internal Medicine, the American Board of Pediatrics, or the American Board of Surgery, or who completed training prior to the availability of subspecialty board certification in critical care in his or her specialty and is board certified in one of these four specialties and has provided at least six weeks of full-time ICU care annually since 1987. ■ Dedicated critical care certified physicians shall be present in the ICU during daytime hours, a minimum of 8 hours per day, 7 days per week, and provide clinical care exclusively in the ICU during this time. ■ When a critical care certified physician is not present in the ICU, such a physician shall provide telephone coverage to the ICU and return more than 95 percent of ICU pages within 5 minutes (excluding low-urgency pages, if the paging system can designate them). When not in the hospital, the critical care certified physician should be able to rely on an appropriately trained onsite clinician to reach ICU patients within 5 minutes in more than 95 percent of cases. ■ If it is not possible to have a dedicated critical care certified physician in the ICU 8 hours daily, an acceptable alternative is to provide exclusively dedicated around-the-clock ICU telemonitoring by a critical care certified physician, if the system allows real-time access to patient information that is identical to onsite presence (except manual physical examination).[72]
8. Ensure that care information is transmitted and appropriately documented in a timely manner and in a clearly understandable form to patients and to all of the patient's healthcare providers/ professionals, within and between care settings, who need that information in order to provide continued care.[73] **Applicable Clinical Care Settings:** All care settings.	■ Develop and make sure that resources are available for a performance improvement program to ensure the timely closure of information loops among caregivers and between patients and caregivers that includes the components of education, skill building, measurement, identification of performance gaps, reporting, process improvement, and accountability.[74] ■ Document the actions taken to close patient safety gaps related to critical information loops. This should include the provision of regular and direct reports to governance board leadership and senior administration based on risk assessments that include, at a minimum, imaging reports, laboratory/pathology reports, and other information that the organization deems to be critical to patient safety. ■ Ensure that critical abnormal results are communicated quickly to a licensed healthcare provider so that action can be taken.[75] Values defined as critical by the laboratory must be reported to the responsible licensed practitioner within timeframes established by the laboratory in cooperation with nursing and medical staff. ■ Ensure that patients have access to their medical records, which should include, but not be limited to, medical histories and consultations, test results, including laboratory reports and imaging (including copies of imaging studies), medication lists, advance directives, and procedural reports, within 24 hours of a written request that includes the appropriate release documentation.[76]
9. 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.[77] **Applicable Clinical Care Settings:** All care settings.	■ Following readback, a confirmation of accuracy should be received from the individual who gave the order or test result. ■ Explicit organizational policies and procedures regarding verbal and telephone orders should include, at a minimum: ● strategies to minimize the use of verbal and telephone orders,[78] and ● the identification of items that cannot be ordered or reported verbally or by telephone.

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
10. Implement standardized policies, processes, and systems to ensure the accurate labeling of radiographs, laboratory specimens, or other diagnostic studies so that the right study is labeled for the right patient at the right time.[79] **Applicable Clinical Care Settings:** All care settings.	■ Laboratory specimen containers should be labeled at the time of use and in the presence of the patient. ■ The critical steps of identifying the individual and matching the intended service or treatment, including readback, to that individual should be taken to prevent miscommunication or inaccurate labeling. ■ At least two patient identifiers (neither of which should be the patient's room number or physical location) should be used when taking blood samples or other specimens for clinical testing, imaging, or providing any other treatments and procedures.[80] ■ X-ray imaging studies should be labeled with the correct patient information in the darkroom or close to the imaging device. ■ "Left" or "right" should be marked on each radiographic image in order to prevent misinterpretation. ■ Errors and harm related to mislabeling should be monitored and reported to the organization-wide risk assessment activity as part of a performance improvement program that addresses the mislabeling of specimens or diagnostic studies.[81]
11. A "discharge plan" must be prepared for each patient at the time of hospital discharge, and a concise discharge summary must be prepared for and relayed to the clinical caregiver accepting responsibility for postdischarge care in a timely manner. **Organizations must ensure that there is confirmation of the receipt of the discharge information by the independent licensed practitioner who will assume the responsibility for care after discharge.** **Applicable Clinical Care Settings:** All acute care settings.	■ Discharge policies and procedures should be established and resourced and should address the following:[82] ● the explicit delineation of roles and responsibilities regarding the discharge process; ● preparation for discharge, with documentation, occurring throughout the hospitalization;[83] ● reliable information flow from the primary care physician (PCP) or referring caregiver upon admission, to the hospital caregivers, and back to the PCP after discharge using standardized communication methods;[84] ● the completion of a discharge plan and discharge summaries before discharge; ● patient or, as appropriate, family perception of coordination of discharge care;[85] and ● benchmarking, measurement, and continuous quality improvement of discharge processes. ■ A written discharge plan must be provided to each patient at the time of discharge that is understandable to the patient and/or his or her family or guardian and appropriate to each individual's health literacy and English language proficiency.[86] At a minimum, the discharge plan must include the following: ● the reason for hospitalization; ● medications to be taken after discharge (including, as appropriate, the resumption of pre-admission medications), how to take them, and how to obtain them;[87] ● instructions on what a patient should do if his or her condition changes;[88] and ● coordination and planning for follow-up appointments that the patient can keep and follow-up of tests and studies for which confirmed results are not available at the time of discharge.[89] ■ A discharge summary must be provided to the clinical provider who accepts the patient's care after hospital discharge.[90] At a minimum, the discharge summary should include the following: ● the reason for hospitalization; ● significant findings; *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
11. A "discharge plan" must be prepared for each patient at the time of hospital discharge, and a concise discharge summary must be prepared for and relayed to the clinical caregiver accepting responsibility for postdischarge care in a timely manner. **Organizations must ensure that there is confirmation of the receipt of the discharge information by the independent licensed practitioner who will assume the responsibility for care after discharge.** **Applicable Clinical Care Settings:** All acute care settings.	● procedures performed and care, treatment, and services provided to the patient; ● the patient's condition at discharge; ● information provided to the patient and family; ● a comprehensive and reconciled medication list;[91] and ● a list of acute medical issues and tests and studies for which confirmed results were unavailable at the time of discharge that require follow-up. ■ Original source documents (e.g., laboratory or radiology reports or medication administration records) should be in the transcriber's immediate possession and should be visible when it is necessary to transcribe information from one document to another. ■ The organization should ensure and document the receipt of discharge information by caregivers who assume responsibility for postdischarge care. This confirmation may occur via telephone, fax, e-mail response, or other electronic response using health information technologies.
12. Implement a computerized prescriber order entry (CPOE) system built upon the requisite foundation of re-engineered evidence-based care, an assurance of healthcare organization staff and independent practitioner readiness, and an integrated information technology infrastructure. **Applicable Clinical Care Settings:** Acute care hospitals, although incremental implementation may be necessary in rural areas (as defined by the U.S. Census Bureau) and/or small community hospitals.	■ Providers enter orders using an integrated, electronic information management system that is based on a documented implementation plan that includes or provides for the following: ● Risks and hazards assessment to identify the performance gaps to be closed, including a lack of standardization of care; high-risk points in medication management systems such as at the point of order entry and at the point that the medication is administered; and the introduction of disruptive innovations. ● Prospective re-engineering of care processes and workflow.[92] ● Readiness of integrated clinical information systems that include, at a minimum, the following information and management systems: ◆ Admit Discharge and Transfer (ADT); ◆ laboratory with electronic microbiology output; ◆ pharmacy; ◆ orders; ◆ electronic medication administration record (including patient, staff, and medication identification) (eMAR); ◆ clinical data repository with clinical decision support capability; ◆ scheduling; ◆ radiology; and ◆ clinical documentation. ● Readiness of hospital governance, staff, and independent practitioners, including board governance, senior administrative management, frontline caregivers, and independent practitioners.[93]

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
12. Implement a computerized prescriber order entry (CPOE) system built upon the requisite foundation of re-engineered evidence-based care, an assurance of healthcare organization staff and independent practitioner readiness, and an integrated information technology infrastructure. **Applicable Clinical Care Settings:** Acute care hospitals, although incremental implementation may be necessary in rural areas (as defined by the U.S. Census Bureau) and/or small community hospitals.	● The following CPOE specifications: ◆ facilitates the medication reconciliation process; ◆ is part of an electronic health record information system or an existing clinical information system that is bidirectionally and tightly interfaced with, at a minimum, the pharmacy, the clinical documentation department (including medication administration records), and laboratory systems to facilitate the review of all orders from all providers; ◆ is linked to prescribing error prevention software with effective clinical decision support capability; ◆ requires prescribers to document the reasons for any override of an error prevention notice; ◆ enables and facilitates the timely display and review of all new orders by a pharmacist before the administration of the first dose of medication, except in cases in which a delay would cause harm to a patient; ◆ facilitates the review and/or display of all pertinent clinical information about the patient, including allergies, height and weight, medications, imaging, laboratory results, and a problem list—all in one place;[94] ◆ categorizes medications into therapeutic classes or categories (e.g., penicillin and its derivatives) to facilitate the checking of medications within classes and retains this information over time; and ◆ can check the medication ordered as part of providing effective clinical decision support for dose range, dosing, frequency, route of administration, allergies, drug-drug interactions, dose adjustment based on laboratory results, excessive cumulative dosing, and therapeutic duplication.
13. Standardize a list of "do not use" abbreviations, acronyms, symbols, and dose designations that cannot be used throughout the organization.[95] **Applicable Clinical Care Settings:** All care settings.	■ Rigorously prohibit the use of terms known to lead to misinterpretation, including, at a minimum, u, IU, qd, qod, trailing zero, absence of leading zero, MS, MSO4, and MgSO4. ■ At a minimum, prohibit these terms from all orders and other medication-related documentation when handwritten, entered as free text into a computer, or provided 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 non-medication-related documentation when there is a clear need to demonstrate level of precision, such as for laboratory values.

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
14. The healthcare organization must develop, reconcile, and communicate an accurate medication list throughout the continuum of care. **Applicable Clinical Care Settings:** Hospitals—including critical access hospitals—ambulatory care, assisted living, behavioral health care, disease-specific care, home care, long-term care, and office-based surgery centers.	■ A standardized process must be in place to obtain and document a complete list of each patient's current medications at the beginning of each episode of care at a facility, with the active involvement of the patient and, as appropriate, the family or caregiver.[96] ■ The list should include those medications prescribed by the organization's first provider of service and a comparison to those on the list of all of the medications the organization subsequently prescribes or administers.[97] ■ The complete list of the patient's medications must be communicated to the next provider of service, the patient, and, as appropriate, the family or caregiver when a patient is referred or transferred to another setting, service, practitioner, or level of care within or outside the facility.[98] ■ Providers receiving the patient in a transition of care should check the medication reconciliation list to make sure it is accurate and in concert with any new medications that are ordered/prescribed. ■ The list should include the full range of medications as defined by accrediting organizations such as the Joint Commission. At a minimum, the list should include the following: ● prescription medications; ● sample medications; ● vitamins; ● nutriceuticals; ● over-the-counter drugs; ● complementary and alternative medications; ● radioactive medications; ● respiratory therapy-related medications; ● parenteral nutrition; ● blood derivatives; ● intravenous solutions (plain or with additives); ● investigational agents; and ● any product designated by the Food and Drug Administration as a drug. ■ At a minimum, reconciliation must occur any time the organization requires that orders be rewritten and any time the patient changes service, setting, provider, or level of care and new medication orders are written. For transitions that do not involve new medications or the rewriting of orders, the organization should determine whether reconciliation must occur.

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
15. Pharmacists should actively participate in medication management systems by, at a minimum, working with other health professionals to select and maintain a formulary of medications chosen for safety and effectiveness,[99] being available for consultation with prescribers on medication ordering, interpretation and review of medication orders,[100] preparation of medications,[101] assurance of the safe storage and availability of medications,[102] dispensing of medications, and administration and monitoring of medications. **Applicable Clinical Care Settings:** All care settings.	■ Pharmacists should: ● provide medication safety recommendations and promote medication error prevention strategies throughout the organization; ● review all medication orders and patient medication profiles for appropriateness and completeness, address any problems and ensure that any changes needed are made, and document the actions taken before medications are dispensed or made available for administration, except in those instances when review would cause a medically unacceptable delay or when a licensed independent practitioner controls the ordering, preparation, and administration of the medication;[103] ● oversee the preparation of medications, including sterile products, and ensure that they are safely prepared;[104] ● work with others to identify and at least annually review a list of look-alike/sound-alike drugs used in the organization, and take action to prevent errors involving the interchange of these drugs;[105,106] ● work with others to provide a work environment that facilitates attention to detail, reduces distractions and interruptions, and promotes the accurate prescribing, dispensing, and administration of medication orders; and ● ensure that all medication storage areas are inspected periodically according to the institution's policy to make sure medications are stored properly[107] and in a manner that precludes confusion between systemic internal medications and other substances. ■ Institutionally based pharmacists should work with others to ensure that concentrated electrolytes are removed from care units, unless patient safety would be at risk if the concentrated electrolyte is not immediately available on a specific care unit or area. If concentrated electrolytes must stay in a care area, special precautions must be taken to prevent inadvertent administration.[108] (Potassium concentrates should never be stored in patient care areas except for areas where patients are undergoing open heart procedures.) ■ When a full-time pharmacist is not available onsite, a pharmacist is available by telephone or is accessible at another location that has 24-hour pharmacy services.
16. Standardize methods for the labeling and packaging of medications. **Applicable Clinical Care Settings:** All care settings.	■ Medications should be labeled in a standardized manner according to hospital policy, applicable law and regulation, and standards of practice.[109] At a minimum, all medications should be labeled with the following: ● drug name, strength, and amount; ● expiration date ("beyond use date," or the last date that the product should be used) when not used within 24 hours; ● expiration time if expiration occurs in less than 24 hours; and ● date prepared and diluent for all intravenous admixtures. ■ All medications, including medications and solutions both on and off the sterile field, should be labeled when transferred from the original package to another container, even if there is only one medication being used.[110] ■ To aid staff and standardize labeling, the institution—with the guidance of pharmacists—should provide appropriate labels for sterile procedure areas where the process of labeling containers is performed. ■ Limit and standardize parenteral drug concentrations,[111] and utilize ready-to-use products to the extent possible.[112] ■ Ensure compliance with the policies and procedures for medication labeling and packaging.

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
17. Identify all high alert drugs, and establish policies and processes to minimize the risks associated with the use of these drugs.[113] At a minimum, such drugs should include intravenous adrenergic agonists and antagonists, chemotherapy agents, anticoagulants and anti-thrombotics, concentrated parenteral electrolytes, general anesthetics, neuromuscular blockers, insulin and oral hypoglycemics, and opiates. **Applicable Clinical Care Settings:** All care settings.	■ Explicit organizational policies and procedures (such as for procuring, storing, ordering, transcribing, preparing, dispensing, administering, monitoring, and/or disposal) should be in place for the management of high alert drugs.[114] Such policies include ensuring that staff members have the appropriate qualifications or certifications to handle certain drugs such as anesthesia and chemotherapy medications. ■ A multidisciplinary team should be formed and utilized to identify and regularly review safeguards for all high alert drugs. ■ Designate, communicate, and make available to relevant caregivers a list of high alert drugs with explicit tools for optimizing their safe use, such as protocols, guidelines, dosing scales, and/or checklists for each high alert drug (e.g., nomograms for heparin, standardized order forms for antineoplastic drugs). ■ Implement a process to identify new medications for addition to the high alert list. ■ Implement processes to audit compliance with institutionally approved high alert protocols and guidelines. ■ Centralize or externalize (e.g., outsource), as appropriate, error-prone processes (e.g., intravenous admixture programs). ■ Evaluate and improve access to drug information regarding high alert medications at the point of care and in other areas where such medications pose a risk to patients or staff, as indicated.
18. Healthcare organizations should dispense medications, including parenterals, in unit-dose, or, when appropriate, in unit-of-use form, whenever possible. **Applicable Clinical Care Settings:** All care settings.	■ Medications, including parenterals, should be contained in unit-dose (single-unit) packages and should be maintained in this form until the time of administration. ■ Medication in patient care areas, including parenterals, should be maintained in the most ready-to-administer forms available from the manufacturer or, if feasible, in unit-doses that have been repackaged by the pharmacy or by a licensed repackager.[115] ■ Every unit-dose package label should contain a machine-readable code identifying the product name, strength, and manufacturer. ■ For most medications, no more than a 24-hour supply of doses should be delivered to, or be available at, the patient care area at any time. ■ There should be an established, ongoing organizational process to monitor the use of unit-dose medications. ■ The organization should consistently use a one-dose packaging system, or if more than one system is used, the organization should provide education about the use of all dose packaging system(s) employed to those who are using them.[116]
19. Action should be taken to prevent ventilator-associated pneumonia by implementing ventilator bundle intervention practices.[117] **Applicable Clinical Care Settings:** Acute care hospitals, nursing homes, and any other setting where ventilators are used.	■ Implement the following interventions for all ventilated patients: ● Adults (18 years of age and older): ◆ Elevate the head of the bed 30 degrees or greater (unless contraindicated).[118,119,120] ◆ Provide daily "sedation vacation" and daily assessment of readiness to extubate.[121] ◆ Institute peptic ulcer disease prophylaxis, also known as Stress Ulcer Prophylaxis.[122] ◆ Institute deep venous thrombosis (DVT) prophylaxis.[123,124] ● Pediatrics (less than 18 years of age): ◆ Elevate the airway opening between 15 to 30 degrees for neonates and 30 to 45 degrees for infants through pediatric ages, unless clinically inappropriate for the patient. ◆ Assess readiness to extubate daily. *(more)*

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
20. Adhere to effective methods of preventing central venous catheter-associated bloodstream infections, and specify the requirements in explicit policies and procedures. **Applicable Clinical Care Settings:** Acute care hospitals and all other settings where central venous catheters are used.	■ This practice should include all of the following elements:[125,126] ● Wash hands or use an alcohol-based hand rub prior to and after insertion or care of the central line.[127,128] ● Use maximal barrier precautions in preparation for line insertion, including each of the following: cap, mask, sterile gown, sterile gloves, and large sterile sheet.[129] ● Perform skin antisepsis, preferably using 2% chlorhexidine-based preparation prior to catheter insertion (see pediatric exception).[130] ● Select the optimal catheter site for each patient; for prevention of infection, the subclavian vein is the preferred site for non-tunneled catheters in adults.[131] ● Replace catheter site dressings as specified by Centers for Disease Control and Prevention (CDC) guidelines.[132] ● Perform daily assessment of central line necessity, and promptly remove unnecessary lines. ■ **Pediatric Specificity:** Chlorhexidine may be contraindicated for use in very low birth weight (VLBW) infants. Optimal catheter site selection is specific to the size of the infant or child, his or her condition, and accessibility factors.
21. Prevent surgical site infections (SSIs) by implementing four components of care:[133] ■ **appropriate use of antibiotics;** ■ **appropriate hair removal;** ■ **maintenance of postoperative glucose control for patients undergoing major cardiac surgery; and** ■ **establishment of postoperative normothermia for patients undergoing colorectal surgery.** **Applicable Clinical Care Settings:** Acute care hospitals and all other settings where invasive procedures are performed.	■ This practice should include all of the following elements: ● Implement explicit policies and procedures regarding prevention of SSIs, including the selection, timing, and discontinuation of antibiotics. ● Give antibiotics within one hour prior to surgical incision. (Because of the longer infusion time required for vancomycin, it is acceptable to start this antibiotic within two hours prior to incision.) ● Administer postoperative antibiotics only when indicated by the procedure, and discontinue their use within 24 hours after surgery, or 48 hours after cardiac surgery. ● Remove hair only when necessary and then by clipping or depilatory methods—not razors. ● Maintain postoperative glucose control, with an initial focus on cardiac/coronary artery bypass graft surgeries. ◆ Glucose control is defined as serum glucose levels below 200 mg/dl, collected once on each of the first two postoperative days. ◆ Tight glucose control (e.g., using an insulin drip) generally should be performed in an appropriately monitored setting. ● For patients undergoing colorectal surgery, establish postoperative normothermia (excludes patients for whom therapeutic hypothermia is being used).
22. Comply with current Centers for Disease Control and Prevention (CDC) Hand Hygiene guidelines.[134] **Applicable Clinical Care Settings:** All care settings.	■ At a minimum, this practice should include all of the following elements: ● Implement all CDC guidelines with category IA, IB, or IC evidence.[135] ● Encourage compliance with CDC guidelines with category II evidence. ● Ensure that all staff members know what is expected of them with regard to hand hygiene, and ensure compliance.[136]

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
23. Annually, immunize healthcare workers and patients who should be immunized against influenza.[137,138] **Applicable Clinical Care Settings:** All care settings, subject to the availability of vaccine.	■ *Immunize* can include the use of inactivated immunization or live attenuated immunization for appropriate patients and healthcare workers who can receive a live attenuated virus. ■ *Healthcare workers* are individuals currently employed in a healthcare occupation or in a healthcare-industry setting who come in direct contact with patients. Healthcare workers with contraindications to immunization or who refuse immunization are exempted. ■ Patients who should be immunized are specified by current CDC recommendations. ■ Explicit organizational policies and procedures as well as a robust voluntary healthcare worker and patient influenza immunization program should be in place. ■ Document the immunization status of all employees, subject to collective bargaining, labor law, and privacy law.
24. For high-risk elective cardiac procedures or other specified care, patients should be clearly informed of the likely reduced risk of an adverse outcome at treatment facilities that participate in clinical outcomes registries and that minimize the number of surgeons performing those procedures with the strongest volume-outcomes relationship. **Applicable Clinical Care Settings:** All care settings, except the following: ■ rural areas as defined by the U.S. Census Bureau (i.e., territory, population, and housing units not classified as urban); ■ emergency situations or patients who are too unstable for safe transfer; or ■ patients for whom the transfer of care violates the Emergency Medical Treatment and Active Labor Act.	■ Currently, *high-risk, elective cardiac procedures* include coronary artery bypass grafting and coronary artery angioplasty. ■ Currently, *other specified care* includes prenatal diagnosis of expected delivery with low birth weight (less than 1,500 grams), expected premature delivery (less than 32 weeks gestation), or delivery with correctable major congenital anomaly. ■ *Clearly informed* includes providing publicly available information about participation in clinical outcomes registries and, for those procedures with the strongest volume-outcomes relationship, it includes publishing the volumes and/or whether thresholds are exceeded. ■ *Clinical outcomes registries* are national or regional outcomes databases linked to local improvement programs (e.g., the American College of Cardiology National Cardiovascular Data Registry, the American College of Surgeons National Surgical Quality Improvement Program [NSQIP], the Society of Thoracic Surgeons National Database, and Vermont Oxford). ■ Currently, *procedures with the strongest volume-outcomes relationship* are elective abdominal aortic aneurysm repair, pancreatectomy, and esophageal cancer surgery.
25. Implement the Universal Protocol for Preventing Wrong Site, Wrong Procedure, Wrong Person Surgery™ for all invasive procedures. **Applicable Clinical Care Settings:** All care settings where surgical or other invasive procedures are performed.	**Specifications of the Universal Protocol:**[139] ■ Create and use a preoperative verification process to ensure that relevant preoperative tasks are completed and that information is available and correct. ■ Mark the surgical site and involve the patient in the marking process, at a minimum, for cases involving right/left distinction, multiple structures (e.g., fingers, toes) or multiple levels (e.g., spinal procedures). ■ Immediately before the start of any invasive procedure, conduct a "time out" to confirm the correct patient, procedure, site, and any required implants or special equipment.

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
26. Evaluate each patient undergoing elective surgery for his or her risk of an acute ischemic perioperative cardiac event, and consider prophylactic treatment with beta blockers for patients who either: **1. have required beta blockers to control symptoms of angina or have symptomatic arrhythmias or hypertension, or** **2. are at high cardiac risk owing to the finding of ischemia on preoperative testing and are undergoing vascular surgery.** **Applicable Clinical Care Settings:** Acute care hospitals and other settings performing these procedures.	■ *Vascular surgery* includes vascular repairs and reconstructions as well as amputations for peripheral vascular disease. ■ Document acute cardiac risk assessment and findings in the patient's record. ■ Explicit policies (that include guidelines) and procedures should be in place regarding the prevention of perioperative myocardial ischemia. ● Those policies must incorporate the use of clinical judgment in deciding whether beta blockade is appropriate and the timing of beta blockade.[140] They also must stress the importance of communication among members of the care team.
27. Evaluate each patient upon admission, and regularly thereafter, for the risk of developing pressure ulcers. This evaluation should be repeated at regular intervals during care. Clinically appropriate preventive methods should be implemented consequent to this evaluation. **Applicable Clinical Care Settings:** Acute care hospitals, nursing homes, rehabilitation facilities, or other settings caring for patients/residents older than 16 years of age or those who are younger if immobilized due to paralysis or an activity-based limitation.	■ Explicit organizational policies and procedures should be in place regarding the prevention of pressure ulcers. ■ Prevention programs should: ● identify individuals at risk of developing pressure ulcers and who require pressure ulcer prevention and the specific factors placing them at risk;[141] ● document the pressure ulcer risk assessment and prevention plan in the patient's record; ● assess and periodically reassess each patient's risk for developing a pressure ulcer, and take action to address any identified risks;[142] and ● perform quarterly prevalence studies to evaluate the effectiveness of the pressure ulcer prevention program, and implement a performance improvement initiative as indicated that includes the following elements: ◆ education regarding the pertinent pressure ulcer frequency and severity, ◆ skill building in use of pressure ulcer prevention interventions, ◆ implementation of process improvement interventions, ◆ measurement of process or outcome indicators, and ◆ reporting of performance outcomes.

(more)

Table 1 – Safe Practices, Care Settings, and Specifications (continued)

PRACTICE AND CARE SETTINGS	ADDITIONAL SPECIFICATIONS
28. Evaluate each patient upon admission, and regularly thereafter, for the risk of developing venous thromboembolism/deep vein thrombosis (VTE/DVT). Utilize clinically appropriate, evidence-based methods of thromboprophylaxis. **Applicable Clinical Care Settings:** Short and long-term acute care hospitals, long-term care facilities, and nursing homes.	■ Document the VTE risk assessment and prevention plan in the patient's record. ■ Explicit organizational policies and procedures should be in place for the prevention of VTE.
29. Every patient on long-term oral anticoagulants should be monitored by a qualified health professional using a careful strategy to ensure the appropriate intensity of supervision. **Applicable Clinical Care Settings:** All care settings.	■ Explicit organizational policies and procedures should be in place regarding anti-thrombotic services that include, at a minimum, documentation of the following: ● indication for long-term anticoagulation; ● target International Normalized Ratio (INR) range; ● duration of long-term anticoagulation and/or a review date; ● a longitudinal record of INR values and warfarin doses; and ● timing of the next INR appointment.
30. Utilize validated protocols to evaluate patients who are at risk for contrast media-induced renal failure, and utilize a clinically appropriate method for reducing the risk of renal injury based on the patient's kidney function evaluation. **Applicable Clinical Care Settings:** All care settings where contrast media is administered.	■ Explicit organizational policies and procedures should be in place regarding the prevention of contrast media-induced nephropathy. ■ Document the contrast media-induced renal failure risk assessment and renal function prevention plan in the patient's record.

Table 1 Notes

1. Centers for Medicare and Medicaid Services (CMS), *Interpretive Guidelines for the Medicare Hospital Conditions of Participation*, 42 CFR §482.21.
2. Harmonizes with Joint Commission on Accreditation of Healthcare Organizations (JCAHO) *Comprehensive Accreditation Manual for Hospitals (CAMH)* 2006 Standard LD.4.40.
3. Harmonizes with JCAHO 2006 Standard LD.4.40.
4. Such public reporting system opportunities include participation with the Leapfrog Group survey process and/or organizations may post their compliance process on a web site that consumers can access.
5. Harmonizes with JCAHO 2006 Standards LD.4.50; LD.4.60; LD.4.70.
6. It is recommended that such assessment be conducted quarterly.
7. *People systems* refers to those systems that support human resources and ensure the staffing levels, competency, and orientation of new and temporary staff.
8. *Quality systems* include those that ensure the quality of care beyond patient safety.
9. *Technology systems* include health information technologies, device systems, and other technologies that enable best or better practices.
10. Harmonizes with JCAHO 2006 Standards LD.4.70; PI.2.20.
11. An emphasis on financial performance, capital preservation, and liability avoidance prioritized over safe care would not be acceptable behaviors and would not be consistent with a culture of patient safety.
12. The subject matter and specifics of such training are specified in the Teamwork Training and Skill Building practice element.
13. This occurs only with direct action and example behaviors from the top down. Pharmacy and nursing leaders play critical roles in preventing systems failures, as addressed in specific National Quality Forum (NQF) safe practices.
14. This input is a very important source of information for the successful execution of the activities defined in the specifications of the Identification and Mitigation of Risks and Hazards practice element. Evidence of actions taken in response to such input drives trust and helps develop a culture of patient safety.
15. Harmonizes with JCAHO 2006 Standards PI.1.10; LD.4.50.
16. To meet the minimum requirements of this practice element, the organization, using an annual average daily census, determines total discharges and/or total encounters for ambulatory services for which 50 percent of all of the patients served received care. The culture survey is then conducted, at a minimum, in those specific care areas.
17. It is recommended that the period of such detailed training should be at least four hours.
18. As used here, *stop-the-line* means that anyone involved in the care process may call a halt to the action if he or she believes that unsafe conditions exist.
19. It is recommended that at least four hours of training be provided to two units each year; those involved in such initiatives should receive full credit for the requirement for detailed training.
20. It is recommended that at least two teamwork-centered interventions projects should be undertaken each year.
21. Teamwork training and skill building should be provided broadly across organizations; however, for flexibility of design and the application of the latest evidence, it is recommended that such training be conducted with a minimum of at least two units or service lines each year.
22. Use of multiple sources for the risk and hazard analysis allows triangulation opportunities to identify patterns and complex systems failures.
23. Institute of Medicine (IOM), *Patient Safety: Achieving a New Standard for Care*, Washington, DC: National Academies Press; 2004:500.
24. Progress reports should be generated quarterly.
25. Sentinel events are unexpected events involving serious physical or psychological injury or risk thereof.
26. Harmonizes with JCAHO 2006 Standards PI.2.30; PI.3.10.
27. Event reporting, including "near-miss" events and no-harm events, may help provide insights into events that cause harm.
28. Risk management services possess closed claims information that provides rich opportunities for risk reduction. A review of closed/settled claims can provide data about potential repeated system failures that place patients at risk.
29. See the definitions of *people systems, technology systems,* and *quality systems* provided in notes 7, 8, and 9.
30. The Agency for Healthcare Research and Quality Patient Safety Indicators derived from administrative data provide one example of such retrospective indicators.
31. The Adverse Drug Event trigger tool, developed in association with the Institute for Healthcare Improvement (IHI), is one example of a tool that can provide rapid access to information that can trigger the specific evaluation of adverse drug events.
32. One example of such input is pooled information from national or regional reporting organizations that allows for the identification of patterns of error, harm, and systems failures—patterns that organizations cannot find on their own because of the scale and power of the numbers involved.

33. Such tools provide rich diagnostic information and auditing opportunities to ensure that processes are being maintained.
34. As healthcare information technology matures, technologies such as electronic health records may be used to provide near-real-time information for identifying real-time and near-real-time error and harm prevention opportunities.
35. See the definition of *stop-the-line* provided in note 18.
36. The results may be used to guide the refinement of care processes and systems. Additional activities such as participation with external reporting organizations and the simple polling of staff members with questions such as, "what do you think will be our next safety disaster?" provide prospective input regarding patient safety risk.
37. Harmonizes with JCAHO 2006 Standard PI.3.20.
38. Such tools provide a systematic way of examining a design prospectively for possible ways in which failure could occur. The logic assumes that no matter how knowledgeable or careful people are, errors will occur in some situations and may even be likely to occur. The organization selects a high-risk process and identifies ways in which the process could break down or fail to perform as desired. With the implementation of process redesign, the effectiveness of efforts to prevent potential harm is evaluated.
39. IOM, *Patient Safety: Achieving a New Standard for Care*, Washington, DC: National Academies Press; 2004:500.
40. This tool builds on the development of the probabilities of process failures based on existing reported data, the analysis of basic engineering properties of systems, and expert opinions. A probability score is then generated for each potential problem identified. Efforts to reduce the risk of the potential problem occurring are then implemented.
41. Input from risk management activities such as closed claims information provides insights regarding opportunities for identifying patterns and making improvements.
42. Although patient and family complaints may not address harmful events or even near-miss information, they can provide rich opportunities for identifying trends and risk areas.
43. Systems that are established to assist caregivers in the process of the disclosure and investigation of unanticipated outcomes can help provide input regarding factors that contribute to the risk of patient harm.
44. The practice of measuring culture and implementing interventions for its improvement provides important information about perceptions that can impact risk.
45. Risk identification activities integrated into organization-wide analysis will allow for optimal pattern recognition and will present opportunities for systems improvement.
46. Such performance improvement projects include those defined in the specifications of other safe practices in this report, including but not limited to those addressing medication management, information management and continuity of care issues, healthcare-associated infections, and consent and disclosure.
47. See the definitions of *people systems, technology systems,* and *quality systems* provided in notes 7, 8, and 9.
48. Harmonizes with JCAHO 2006 Standards PI.3.20; LD.4.50; LD.4.70.
49. Dashboards have proved to be useful tools in many types of organizations. Their content is determined by the organization, and typically they contain an organization's key performance indicators or critical success factors displayed in a format that facilitates easy review. They help identify areas that are doing well and those that need improvement by providing trend lines, benchmarks, and targets. Throughout this document, a number of patient safety indicators are mentioned that could become part of such a tool.
50. Harmonizes with JCAHO 2006 National Patient Safety Goal (2006 NPSG:):9/9B.
51. In outpatient settings, the patient should be evaluated for the risk of malnutrition during each primary care provider visit.
52. Harmonizes with JCAHO 2006 Standard RI.2.80.
53. JCAHO defines a *sentinel event* as any unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Serious injuries specifically include a loss of limb or function. The phrase *or the risk thereof* includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.
54. In its 2002 publication *Serious Reportable Events in Healthcare*, NQF defines a *serious event* as one that results in death or loss of a body part, disability, or loss of bodily function lasting more than seven days or still present at the time of discharge from an inpatient healthcare facility or, when referring to other than an adverse event, an event the occurrence of which is not trivial.
55. Such conversations typically are led by the licensed independent practitioner responsible for the patient's care.
56. IOM, *Keeping Patients Safe: Transforming the Work Environment of Nurses*, Washington, DC: National Academies Press; 2004.
57. IOM, *Keeping Patients Safe: Transforming the Work Environment of Nurses*, Washington, DC: National Academies Press; 2004.
58. IOM, *Keeping Patients Safe: Transforming the Work Environment of Nurses*, Washington, DC: National Academies Press; 2004.
59. IOM, *Keeping Patients Safe: Transforming the Work Environment of Nurses*, Washington, DC: National Academies Press; 2004.
60. Consistent with, but more prescriptive than, JCAHO 2006 Standard HR.1.10.
61. CMS, *Interpretive Guidelines for the Medicare Hospital Conditions of Participation*, 42 CFR §482.34.
62. Consistent with, but more specific than, JCAHO 2006 Standards PI.1.10; PI.2.20.

63. Harmonizes with JCAHO 2006 Standards HR.1.30.
64. This also would address the JCAHO requirement that hospitals use data on clinical/service screening indicators in combination with human resource screening indicators to assess staffing effectiveness.
65. Harmonizes with JCAHO 2006 Standard 1.30.
66. It is recommended that these reports be provided quarterly.
67. Harmonizes with JCAHO 2006 Standard HR.3.20.
68. Harmonizes with JCAHO 2006 Standards HR.2.10; HR.2.20; HR.2.30; HR.3.10.
69. Consistent with, but more specific than, JCAHO 2006 Standards PI.1.10; PI.2.20.
70. Harmonizes with JCAHO 2006 Standard HR.3.20.
71. Harmonizes with JCAHO 2006 Standards HR.2.10; HR.2.30; HR.3.10.
72. Rosenfeld B, Dorman T, Pronovost PJ, et al., Remote management improves ICU outcomes, *Crit Care Med*, 1999;27(1S):153A.
73. Massachusetts Coalition for the Prevention of Medical Errors at www.macoalition.org/initiatives.shtml.
74. Harmonizes with JCAHO 2006 NPSG: 2C.
75. Harmonizes with JCAHO 2006 NPSG: 2C and 2D Implementation Expectation.
76. Such records may be made available by fax or other electronic means or for patient pick up from the healthcare facility.
77. Harmonizes with JCAHO 2006 NPSG: 2A.
78. Harmonizes with JCAHO 2006 Standard MM 3.20.
79. Harmonizes with JCAHO 2006 NPSG: 1A Rationale.
80. Harmonizes with JCAHO 2006 NPSG: 1A.
81. This may be undertaken in concert with the activities addressed in the Identification and Mitigation of Risks and Hazards element of Safe Practice 1, Create and Sustain a Culture of Patient Safety.
82. Harmonizes with JCAHO 2006 Standard PC.15.10.
83. Harmonizes with JCAHO 2006 Standard PC.15.20.
84. Harmonizes with JCAHO 2006 Standard PC.15.30.
85. The NQF-endorsed™ 3-Item Care Transition Measure provides a tool for doing this. NQF, *National Voluntary Consensus Standards for Hospital Care: Additional Priority Areas – 2005-2006*, Washington, DC: NQF; 2006.
86. Harmonizes with JCAHO 2006 Standard PC.15.20.
87. Harmonizes with JCAHO 2006 Standard PC.6.10.
88. Harmonizes with JCAHO 2006 Standard PC.15.20.
89. Harmonizes with JCAHO 2006 Standard PC.15.20.
90. Harmonizes with JCAHO 2006 Standard IM.6.10.
91. Harmonizes with JCAHO 2006 NPSG: 8B.
92. Pharmacists, nurses, and prescribers need to be key players in the re-engineering of care and workflow, because they are accountable for proper use of the medication management systems and because of their knowledge of medication use throughout the organization.
93. The disruptive nature of health information technology that occurs with initial use creates risks and hazards that can be mitigated by aggressively addressing—for all staff and practitioners who are involved in the use of technology—issues involving its adoption. Clinical decision support systems must be designed in the context of a readiness assessment and must be coupled to care re-engineering and workflow strategies and plans to address patient safety risks.
94. The appropriateness of clinical studies/tests is a key issue for purchasers and quality organizations. Because of this, real-time evidence-based decision support that can be incorporated into computerized prescriber order entry solutions to reduce unnecessary or inappropriate studies/tests that can increase cost, delay diagnoses, and put patients at risk for preventable harm should be considered in any implementation plan.
95. Harmonizes with JCAHO 2006 NPSG: 2B.
96. Harmonizes with JCAHO 2006 Standards MM.1.10, NPSG: 8A.
97. Harmonizes with JCAHO 2006 NPSG: 8A.
98. Harmonizes with JCAHO 2006 NPSG: 8, Requirement 8B.
99. Harmonizes with JCAHO 2006 Standard MM.2.10.
100. Harmonizes with JCAHO 2006 Standard MM.4.10.
101. Harmonizes with JCAHO 2006 Standard MM.4.20.
102. Harmonizes with JCAHO 2006 Standard MM.2.20, 2.30, 4.10.
103. Harmonizes with JCAHO 2006 Standard MM.4.10.
104. Harmonizes with JCAHO 2006 Standard MM.4.20.

105. Harmonizes with JCAHO 2006 NPSG: 3C.
106. Harmonizes with JCAHO 2006 Standard MM 2.20.
107. Harmonizes with JCAHO 2006 Standard MM 2.20.
108. Harmonizes with JCAHO 2006 Standard MM 2.20.
109. Harmonizes with JCAHO 2006 Standard MM.4.30.
110. Harmonizes with JCAHO 2006 NPSG: 3D.
111. Harmonizes with JCAHO 2006 NPSG: 3B.
112. Harmonizes with JCAHO 2006 Standard MM:4.40.
113. Harmonizes with JCAHO 2006 Standard MM.7.10.
114. Harmonizes with JCAHO 2006 Standard MM.7.10.
115. Harmonizes with JCAHO 2006 Standard MM.4.40.
116. Harmonizes with JCAHO 2006 Standard MM.4.40.
117. Organizations that have not adopted the specified elements of the practice may get started by consulting the content provided by IHI and its 100,000 Lives Campaign, which provides references and resources supporting this practice.
118. Harmonizes with JCAHO ICU-1.
119. Surgical Care Improvement Project, 2005.
120. Drakulovic MB, Torres A, Bauer TT, et al., Supine body position as a risk factor for nosocomial pneumonia in mechanically ventilated patients: a randomized trial, *Lancet*, 1999;354(9193):1851-1858.
121. Kress JP, Pohlman AS, O'Connor MF, et al., Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation, *N Engl J Med*, 2000;342(20):1471-1477.
122. Harmonizes with JCAHO, ICU-2.
123. It is unclear if there is any association between prophylaxis for peptic ulcer disease or deep venous thrombosis and decreasing rates of ventilator-associated pneumonia (VAP); IHI has found that when prophylaxis is applied as part of a package of interventions, the rate of VAP decreases.
124. Harmonizes with JCAHO, ICU–3.
125. Centers for Disease Control and Prevention (CDC), Guidelines for the prevention of intravascular catheter-related infections, *MMWR*, August 9, 2002. Available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5110a1.htm. Last accessed July 2006.
126. As found in the IHI 100,000 Lives Campaign related to central-line infections.
127. See Safe Practice 22, Hand Hygiene.
128. Harmonizes with JCAHO 2006 NPSG: 7A.
129. CDC, Guidelines for the prevention of intravascular catheter-related infections, *MMWR*, August 9, 2002. Available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5110a1.htm. Last accessed July 2006.
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140. Patients on beta blockade should receive the dose with sips of fluid on the morning of surgery, notwithstanding NPO status.
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Practices Recommended for Further Research

A number of practices, both those endorsed in the 2003 set and among those evaluated with this set, met the threshold criterion of specificity, but failed to meet one or more of the additional criteria. The list of practices recommended for further research centers on the acute care setting and is not all-inclusive (see table 2), but it does include items that hold the promise of improving patient safety in the near term. Therefore, they should be given high priority for additional research before they are recommended for universal implementation.

Patient safety research should include, in addition to the specific items recommended in table 2, investigation of the following:

- methods to ascertain the success of implementation of the safe practices; and
- new, unintended concerns that may arise from the use of safe practices.

Because many strategies and performance measures for evaluating and auditing the degree of utilization of a practice in a healthcare institution are available and included in this report, the practice titled "the development of tools to evaluate the success of implementation" was removed from the research list; however, such research is always useful in both refining measures currently available and promulgating others.

Table 2 – Practices Recommended for Further Research*

RESEARCH TO DEMONSTRATE EFFECTIVENESS

A. The implementation of a fall reduction program and the effectiveness of such a program.
B. The use of machine-readable patient identification systems to replace conventional wristbands in order to reduce patient identification errors.**
C. The use of hand-held electronic prescribing devices to reduce medication errors.
D. The application of strategies to inform patients of clinically significant abnormal or questionably abnormal test results.**
E. The use of computerized reminders to improve primary care provider compliance with patient notification of abnormal results.**
F. The use of computerized prescriber order entry (CPOE) compared with verbal orders to reduce transcription errors.
G. The use of training programs to reduce fatigue-related preventable adverse events.**
H. The use of simulator-based training to reduce errors.**
I. Encourage each adult to designate a healthcare advocate; this is a person who 1) knows the patient's medical history and treatment preferences; 2) can speak for the patient when he or she is not able to speak for him- or herself; and 3) can otherwise help ensure that the patient understands his or her treatment and thus receives appropriate treatment.
J. The use of Rapid Response Teams/Systems for critical events, such as the early recognition of shock in non-trauma patients and the rapid resuscitation of those patients.
K. The development of safeguards to prevent adverse events associated with organ donation.
L. The provision of appropriately sized equipment/furniture for the care of all patients.
M. The use of standardized protocols to prevent infection in flexible endoscopy.

RESEARCH TO DEMONSTRATE THE LIKELY BENEFIT OF IMPLEMENTING THE SAFE PRACTICE
(HOW MUCH THE PRACTICE WOULD REDUCE MORBIDITY AND MORTALITY IF UNIVERSALLY IMPLEMENTED)

N. The use of antibiotic impregnated catheters (e.g., coated with minocycline and rifampin) instead of standard, non-coated catheters.**
O. The use of multidisciplinary teams (i.e., geriatrician, clinical nurse specialist, social worker, and specialists from such fields as occupational and physical therapy, nutrition, pharmacy, audiology, and psychology) in a dedicated geriatric unit.**
P. The use of specially designed endotracheal tubes for the continuous aspiration of subglottic secretions.**
Q. The use of perioperative oxygen supplementation to reduce infection rates.**
R. The use of standardized protocols to prevent surgical fires.

RESEARCH TO IMPROVE EXISTING SAFE PRACTICES

S. The utilization of high-volume referrals in rural settings for patients scheduled for high-risk, elective procedures or treatments.
T. The readiness of utilizing intensivists (who have specific training caring for the critically ill and who are board certified in critical care medicine) in rural settings to manage all patients in adult general medical and surgical intensive care units.
U. The identification and application of practices to improve patient safety for vulnerable populations.

RESEARCH TO DEVELOP STRATEGIES FOR IMPLEMENTATION, ASSESS THEIR EFFECTIVENESS, AND EVALUATE THE DEGREE OF UTILIZATION

V. The development of institutional incentives to implement the safe practices.
W. The development of strategies to involve consumers in the implementation of safe practices.
X. The development of tools to determine which implementation strategy is most effective in achieving the universal implementation of a practice.

* Table D-2 of the commentary (appendix D) details the rationale for each practice recommended for further research.

** Practices recommended for further research that are included in NQF's 2003 publication *Safe Practices for Better Healthcare* were derived from a report commissioned by the Agency for Healthcare Research and Quality and conducted by the Evidence-based Practice Center at the University of California San Francisco-Stanford University, *Making Health Care Safer: A Critical Analysis of Patient Safety Practices*. The report is available at www.ahrq.gov/clinic/epcindex.htm. Last accessed February 2006.

Additional Recommendations

NQF recommends that specific action should be undertaken in three areas: dissemination and implementation, measuring implementation, and updating and improving the set.

- **Dissemination and Implementation**

NQF Members should continue to be lead agents for disseminating and implementing these practices. The impact of the safe practices will depend on the broad array of NQF Members and others who build upon, coordinate, and systematically implement the practices within the context of their many quality improvement activities.

- **Measuring Implementation**

Successfully understanding and expanding the implementation of the safe practices rests on appreciating their value in the process of improving quality and safety in healthcare. A number of organizations have set goals to implement all of the practices, and a few have accomplished this. This set provides an array of strategies and tools to measure both implementation and its success. Nonetheless, it remains imperative that measures continue to be developed and refined to help in assessing practice implementation and the related improvements in quality and safety. Although a provider may be using some or all of the practices and may be seeing tangible improvement, this may not be apparent to other stakeholders, such as consumers, purchasers, and other providers whose patients could benefit from the practices. To assist providers with internal quality improvement and to facilitate consumer and purchaser choice, measures should continue to be developed, refined, and used for assessing and reporting the use of these safe practices.

- **Updating and Improving the Set**

As biomedical knowledge, diagnostic and treatment technology, and healthcare practices change, patient safety concerns and safe practices change as well. To promote stability and consistency in implementation, the 2003 set of safe practices remained unchanged for more than two years. This 2006 update marks the beginning of on ongoing cycle of review and updating that should reflect the changes that are occurring in the larger arena of quality and safety improvement. Future efforts will continue to focus on the state of the evidence; practices identified for further research that meet the criteria for inclusion in the set; and the evolution of new technologies that both enable and endanger the safety and quality of healthcare.

Appendix B
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