



# Patient Safety:

## Implementing Checklists

Blue Cross Blue Shield of Michigan Foundation  
**Request for Proposals**



Blue Cross  
Blue Shield  
Blue Care Network  
of Michigan



[bcbsm.com/foundation](http://bcbsm.com/foundation)

## Vision

To make a significant contribution to health care knowledge and its application to improve health by supporting research and effective demonstration and evaluation projects; and developing innovative and socially responsive community oriented health initiatives.

## Mission

The Blue Cross Blue Shield of Michigan Foundation is dedicated to improving the health of Michigan residents through the support of research and innovative programs.

## Core Values

- Commitment to quality performance
- Honesty, integrity, collaboration and team work
- Effective and efficient use of resources
- Excellence in programs, grants and communications

**T**he BCBSM Foundation is the philanthropic affiliate of Blue Cross Blue Shield of Michigan — and is a 501(c)(3) nonprofit, incorporated separately from BCBSM. The BCBSM Foundation is an independent licensee of the Blue Cross and Blue Shield Association. BCBSM Foundation grant programs are conducted in Michigan, by Michigan researchers and non-profit organizations to address the quality and costs of care; access to care; and community health.

The Blue Cross Blue Shield of Michigan Foundation is dedicated to improving the health of Michigan residents through the support of research and innovative programs. The BCBSM Foundation's vision is to make a significant contribution to health care knowledge and its application to improve health by sponsoring research and effective demonstrations and evaluations and by developing innovative and socially responsive initiatives.

None of the BCBSM Foundation's grant-making resources come from BCBSM customer premium payments. The BCBSM Foundation was funded through an endowment from Michigan physicians in 1983 and from proceeds of an earlier prescription drug class action lawsuit settlement.

For more information about the BCBSM Foundation and its programs, go to [www.bcbsm.com/foundation](http://www.bcbsm.com/foundation).

## Background

The Blue Cross Blue Shield of Michigan Foundation (BCBSM Foundation) is issuing a Request for Proposals (RFP) from Michigan based physicians and researchers interested in improving patient safety by reducing errors in acute care hospital settings. The purpose of this RFP is to encourage demonstration projects and research to evaluate the outcomes of using patient safety checklists to improve patient safety. Physicians and researchers, in collaboration with hospitals, health systems and health plans, interested in patient safety are encouraged to apply.

## Costs of Medical/Surgical Errors

In 1999, the Institute of Medicine (IOM) published the report *To Err is Human: Building a Safer Health System* which highlighted the high rate of preventable medical errors in this country. It was estimated that between 44,000 and 98,000 people die each year, in hospitals, as the result of preventable errors (1). Many errors are not the result of individual mistakes, but rather due to the complexity of patient conditions in healthcare delivery and system problems. The IOM report recommended implementing well understood safety principles to prevent errors. Despite this report, many health care providers and hospitals are not using available and cost-effective tools to the fullest extent possible. Some have proposed the use of medical/surgical checklists as a cognitive tool to improve patient safety.

We know from the aviation industry that checklists are universally used to prevent human error. Anesthesiologists have used checklists for many years, but they have only slowly gained broad support in medicine, a field in which physicians work in a highly complex environment with variable patient conditions and illnesses such that two patients are rarely the same. However, in the context of this complexity and variability there are medical interventions common to all patients that if missed, can lead to catastrophic consequences. We have seen these types of errors when, for instance, patient drug allergy or blood type is not confirmed prior to administration of a treatment. For these mundane, yet essential tasks, a checklist may be a useful tool to guard against errors.

## Request for Proposals:

The purpose of this RFP is to encourage the development and expanded use of checklists in medicine and surgery to enhance patient safety. We are particularly interested in evidence based projects that will seamlessly integrate checklists into providers' work flow so that they will be readily adopted and utilized. It is hoped that checklists will become part of the culture of clinical medicine, not by mandate, but because of the power of the tool to prevent harm, and be used voluntarily by clinicians, with the support of clinical and executive hospital management, who by their nature and job description are interested in improving patient safety and quality.

There are two primary purposes to this RFP: 1) To implement patient safety checklists, and 2) To evaluate the impact of the adoption of a checklist on error prevention and patient outcomes in acute care hospital settings. The BCBSM Foundation will provide ten (10) \$50,000 adoption/implementation and evaluation grants. The hospitals that receive an implementation grant must agree to implement medical/surgical checklists, hospital-wide, for selected physicians or selected procedures and collect and analyze the data. The pilot/implementation grants will require a 15% matching grant from the selected hospitals (in-kind matching grants are acceptable).

Checklists have mostly been used in surgical settings. This RFP encourages the use of checklists in surgical settings – and also encourages the use of checklists for various medical procedures. The BCBSM Foundation expects to provide up to ten (10) \$50,000 grants to develop, implement and evaluate the effectiveness of using checklists to prevent medical and surgical errors in acute care hospital settings.

Successful proposals are expected to implement and evaluate the effectiveness of using checklists to reduce errors and improve the outcomes of care, reduce costs and improve safety. Different physicians and different hospitals may develop their own checklists, use previously developed checklists – or modify existing checklists.

There should be both an outcome and process evaluation of the checklist. In the outcome evaluation, investigators should use a basic set of outcome measures including but not limited to: morbidity, mortality, infection and length of stay. In the process evaluation, measures specific to the checklist should reflect the extent to which physicians complied with activities on the checklist and the effectiveness of implementation.

After grantee selection, the BCBSM Foundation will assess the proposed outcome data of individual grantees. The Foundation will likely work with each grantee to ensure that specific project data can be aggregated

for a macro analysis of overall project outcomes at the end of the study. Applicants must agree to cooperate with the BCBSM Foundation and their efforts to conduct an overall analysis of the effectiveness of this initiative. Each grantee, however, will be expected to collect, analyze and report the findings specific to their individual project. We encourage grantees to submit their findings for possible publication.

## Introduction

In his popular book, *The Checklist Manifesto: How to Get Things Right*, Atul Gawande reports on remarkable improvements in patient safety and error reduction through the implementation of surgical safety checklists. These checklists involve one health care provider reading a list of tasks and another verifying that these tasks have been completed prior to proceeding with a surgical intervention. Similarly, in recent studies, medical checklists have been validated with striking results.

Through the Keystone ICU project, the use of a five-item checklist in 100 Michigan ICUs was associated with a nearly 70% reduction in central-line associated blood stream infections (2). In the World Health Organization's *Safe Surgery Saves Lives* program, a surgical safety checklist was implemented at critical junctures, before anesthesia, at the time of incision and when the patient leaves the operative room (OR). In this globally and economically diverse study population, there was a decrease in mortality from 1.5% before to 0.8% after implementation of the checklist (3). These reductions have been shown to be sustainable (4) and cost effective (5, 6). As an example, Table 1 provides the elements of a surgical checklist used by Gawande et al., in their World Health Organization (WHO) study.

Given the dramatic improvements in patient safety seen in these studies, one would expect universal adoption of checklists. Unfortunately, these tools are not used as frequently or as broadly as they could be. One could speculate about why this is, but clearly, the everyday demands and time constraints of our health care system make any additional task potentially onerous, cost ineffective and a distraction from patient care.

For checklists to take hold they must be well designed, be evidence based and show measurable improvements in safety. They must also include users in their design and they must fit seamlessly into the clinicians' work flow (5). With these principles in mind, checklists could be beneficial outside of the procedural specialties of the ICU and operating room. Other critical periods in patient care include admission, clinical handoffs, and discharge. Improvements in patient safety at these times may also be made with the use of checklists.

## Table 1, Elements of the Surgical Safety Checklist\*

### Sign in

Before induction of anesthesia, members of the team (at least the nurse and an anesthesia professional) orally confirm that:

- The patient has verified his or her identity, the surgical site and procedure, and consent
- The surgical site is marked or site marking is not applicable
- The pulse oximeter is on the patient and functioning
- All members of the team are aware of whether the patient has a known allergy
- The patient's airway and risk of aspiration have been evaluated and appropriate equipment and assistance are available
- If there is a risk of blood loss of at least 500ml (or 7 ml/kg of body weight, in children), appropriate access and fluids are available

### Time out

Before skin incision, the entire team (nurses, surgeons, anesthesia professionals, and any others participating in the care of the patient) orally:

- Confirms that all team members have been introduced by name and role
- Confirms the patient's identity, surgical site, and procedure
- Reviews the anticipated critical events
- Surgeon reviews critical and unexpected steps, operative duration, and anticipated blood loss
- Anesthesia staff review concerns specific to the patient
- Nursing staff review confirmation of sterility, equipment availability, and other concerns
- Confirms that prophylactic antibiotics have been administered 60 min before incision is made or that antibiotics are not indicated
- Confirms that all essential imaging results for the correct patient are displayed in the operating room

### Sign out

Before the patient leaves the operating room:

- Nurse reviews items aloud with the team
  - Name of the procedure as recorded
  - That the needle, sponge, and instrument counts are complete (or not applicable)
  - That the specimen (if any) is correctly labeled, including with the patient's name
  - Whether there are any issues with equipment to be addressed
- The surgeon, nurse, and anesthesia professional review aloud the key concerns for the recovery and care of the patient

\*The checklist is based on the first edition of the WHO Guidelines for Safe Surgery. For the complete checklist, see the Supplementary Appendix.

## Summary

The BCBSM Foundation is providing support for ten (10) \$50,000 projects in support of demonstration and evaluation programs to develop, adopt and adapt a checklist to improve the quality of care and reduce related medical errors.

## Project Expectations

The purpose of this project is to encourage the development and expanded use of checklists in hospital medicine or surgery. Applicants should determine what area of medicine or surgery the proposed checklist will address. Applicants should describe the problem and provide rationale for using particular checklists to address the stated problem.

Proposals should contain a detailed description of the plan to implement a checklist, including the history of checklist use among hospital staff. Proposals should delineate and describe all dependent outcome and independent measures used in the evaluation.

## Eligibility

The BCBSM Foundation seeks proposals from Michigan based physicians (clinicians and surgeons) and doctoral level (e.g., Ph.D., Dr.PH) researchers from Michigan universities, academic medical centers, community hospitals, health systems and health plans to implement medical/surgical checklists and to evaluate the effectiveness of using checklists at the demonstration sites.

## Program Funds

The BCBSM Foundation has made \$500,000 available for multi-year projects to implement medical/surgical checklists to reduce errors and improve the quality of care and to evaluate the effectiveness of checklists to reduce medical errors in ten (10) demonstration sites. Support is available for salary, supplies and office operations, as well as limited staff travel and consultant fees for Michigan clinicians and surgeons and health services researchers to improve quality and reduce medical/surgical errors in acute care, inpatient hospital settings.

The BCBSM Foundation will provide grants of up to \$50,000 to each of ten (10) demonstration sites interested in implementing and evaluating medical/surgical safety checklists. The hospital or health system that applies for demonstration site support is required to provide a matching grant in the amount of \$15,000 (which may be an in-kind match to support the project).

Applicants must provide letters of support from the medical/surgical team(s) that will participate and their willingness to participate in the project. The Chief of Surgery, Chief of Medicine and hospital CEO must similarly provide letters of their willingness to participate in the project. Applicants must agree to develop, adopt, implement and evaluate medical/surgical checklist.

## Inquiries

For questions, contact Dr. Nora Maloy, Senior Program Officer & Grant Program Manager via email at [Nmaloy@BCBSM.com](mailto:Nmaloy@BCBSM.com).

## Application Instructions

Proposals are due by Friday February 25th, 2012. No hand deliveries will be accepted. Five unbound copies of the original and a cover letter should be mailed to:

Patient Safety  
Dr. Nora Maloy  
Blue Cross Blue Shield of Michigan Foundation\*  
600 Lafayette East, X520  
Detroit, Michigan 48226.

A complete application must include the original and 4 unbound copies of the proposal/application and a signed copy of the BCBSM Foundation's Terms & Conditions (available for download on the BCBSM Foundation's website), including the items listed below, in the order listed:

## Application Instructions

The required Request for Project Support Form and the Terms and Conditions may be downloaded from our website at [bcbsm.com/foundation](http://bcbsm.com/foundation). The complete application must include the original (unbound) and 4 copies of the items listed below, in the order outlined.

- I. Signed Request for Project Support Form and the Terms and Conditions.
- II. One page project summary.
- III. Detailed budget, including details of other sources of funding, either existing or contemplated and budget justification for all line items.
- IV. Body of proposal (5-10 double-spaced pages) organized as follows:
  - A. Description of checklist implementation:
    1. Proposed Checklist or method of development of the checklist,
    2. Information on the significance of the medical or surgical problem addressed by checklist and expected clinical outcomes of implementation,
    3. Summary of similar or relevant work by the applicant and others, as reported in the medical and scientific literature or known to be in progress,
    4. Description of implementation plan including physician experience with checklists and efforts to encourage checklist utilization.
  - B. Evaluation:
    1. Description of data and data sources to be used in evaluation the project,
    2. Method(s) of assessing the effect of checklist implementation on primary outcome variable(s), as well as the quality of care,
    3. Detailed and specific analytical approach, including proposed statistical methods,
    4. How will pre-checklist implementation baseline data be collected?
  - C. Detailed work plan showing timeline for project activities, quarterly and final reports.
  - D. Consideration and evaluation of possible bias and conflict of interests.
  - E. Assessment of barriers which may impede widespread implementation of this intervention and how barriers might be overcome.
  - F. Discussion of the applied significance and possible implementation of the findings or results. How can the anticipated results impact clinical outcomes and hospital quality of care?
  - G. Discussion of the economic implications of the project on hospital costs.

V. A statement that all applicable requirements of the applicant's institution regarding research involving human subjects have been met or when expected.

VI. Resume of the principal investigators and other key personnel.

\* For more information about the BCBSM Foundation, please visit our website at **[BCBSM.com/foundation](http://BCBSM.com/foundation)**. For your reference, Terms & Conditions for this RFP grand program may be found on our website at [BCBSM.com/foundation](http://BCBSM.com/foundation).

## References

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2. Pronovost P, Needham D, Berenholtz S, Sinopoli D, Chu H, Cosgrove S, Sexton B, Hyzy R, Welsh R, Roth G, Bander J, Kepros J, Goeschel C. An intervention to decrease catheter-related bloodstream infections in the ICU. *N Engl J Med*. 2006 Dec 28;355(26):2725-32. Erratum in: *N Engl J Med*. 2007 Jun 21;356(25):2660.
3. Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat AH, Dellinger EP, Herbosa T, Joseph S, Kibatala PL, Lapitan MC, Merry AF, Moorthy K, Reznick RK, Taylor B, Gawande AA; Safe Surgery Saves Lives Study Group. A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med*. 2009 Jan 29;360(5):491-9. Epub 2009 Jan 14.
4. Pronovost PJ, Goeschel CA, Colantuoni E, et al. Sustaining reductions in catheter related bloodstream infections in Michigan intensive care units: Observational study. *BMJ*. 2010; 340:c309.
5. Winters BD, Gurses AP, Lehmann H, Sexton JB, Rampersad CJ, Pronovost PJ. Clinical review: checklists - translating evidence into practice. *Crit Care*. 2009;13(6):210. Epub 2009 Dec 31. Review.
6. Semel ME, Resch S, Haynes AB, Funk LM, Bader A, Berry WR, Weiser TG, Gawande AA. Adopting a surgical safety checklist could save money and improve the quality of care in U.S. hospitals. *Health Aff (Millwood)*. 2010 Sep;29(9):1593-9.



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