

# QMS11

## Nonconforming Event Management

Grounded in the principles of quality management, risk management, and patient safety, this guideline provides an outline and content for developing a program to manage a laboratory's nonconforming events.

A guideline for global application developed through the Clinical and Laboratory Standards Institute consensus process.

---

## Nonconforming Event Management

Anne T. Daley, MS, CMQOE(ASQ), CSSBB, CLC(AMT),  
MT(ASCP)DLM  
Laura McClannan, MS, MT(ASCP)SBB  
Kathryn Connolly, CQA (ASQ), MT(ASCP)  
Christine M. Gryko, MT(ASCP)  
Nichole Korpi-Steiner, PhD, DABCC, FACB  
Betty Lim

Coleen McAloney, RT, BGS  
Jennifer Nosbisch  
Renee Rosa, BSMT H(ASCP)  
Andreas Rothstein, MS  
Joe C. Rutledge, MD  
Ann F. Stankiewicz, PhD  
Kimberly Zohner, MT(ASCP)

---

### Abstract

Clinical and Laboratory Standards Institute document QMS11—*Nonconforming Event Management* provides a suggested outline and content for a program to manage a laboratory's nonconforming events. Such a program is a fundamental component of a QMS and patient safety.

Clinical and Laboratory Standards Institute (CLSI). *Nonconforming Event Management*. 2nd ed. CLSI guideline QMS11 (ISBN 1-56238-909-2 [Print]; ISBN 1-56238-910-6 [Electronic]). Clinical and Laboratory Standards Institute, 950 West Valley Road, Suite 2500, Wayne, Pennsylvania 19087 USA, 2015.

The Clinical and Laboratory Standards Institute consensus process, which is the mechanism for moving a document through two or more levels of review by the health care community, is an ongoing process. Users should expect revised editions of any given document. Because rapid changes in technology may affect the procedures, methods, and protocols in a standard or guideline, users should replace outdated editions with the current editions of CLSI documents. Current editions are listed in the CLSI catalog and posted on our website at [www.clsi.org](http://www.clsi.org).

**If you or your organization is not a member and would like to become one, and to request a copy of the catalog, contact us at:**

**P:** 610.688.0100 **F:** 610.688.0700 **E:** [customerservice@clsi.org](mailto:customerservice@clsi.org) **W:** [www.clsi.org](http://www.clsi.org)

Copyright ©2015 Clinical and Laboratory Standards Institute. Except as stated below, any reproduction of content from a CLSI copyrighted standard, guideline, companion product, or other material requires express written consent from CLSI. All rights reserved. Interested parties may send permission requests to [permissions@clsi.org](mailto:permissions@clsi.org).

CLSI hereby grants permission to each individual member or purchaser to make a single reproduction of this publication for use in its laboratory procedure manual at a single site. To request permission to use this publication in any other manner, e-mail [permissions@clsi.org](mailto:permissions@clsi.org).

## Suggested Citation

CLSI. *Nonconforming Event Management*. 2nd ed. CLSI guideline QMS11. Wayne, PA: Clinical and Laboratory Standards Institute; 2015.

### Previous Edition:

November 2007

### Reaffirmed:

September 2019

SAMPLE

ISBN 1-56238-909-2 (Print)

ISBN 1-56238-910-6 (Electronic)

ISSN 1558-6502 (Print)

ISSN 2162-2914 (Electronic)

Volume 35, Number 13

# Contents

Abstract	i
Committee Membership	iii
Foreword	vii
<b>Chapter 1: Introduction</b>	<b>1</b>
1.1 Scope	2
1.2 Background	2
1.3 Terminology	3
<b>Chapter 2: Nonconforming Event Management</b>	<b>9</b>
2.1 Nonconforming Event Management Program Overview	12
2.2 Individual Nonconforming Event Process	17
2.3 Collective Nonconforming Event Data Assessment Process	37
2.4 Management Review Process	45
2.5 Continual Improvement Process	49
<b>Chapter 3: Path of Workflow and Quality System Essentials</b>	<b>53</b>
3.1 Path of Workflow	54
3.2 Quality System Essentials	56
3.3 Path of Workflow and Quality System Essentials Summary	59
<b>Chapter 4: Conclusion</b>	<b>61</b>
<b>Chapter 5: Supplemental Information</b>	<b>63</b>
<b>References</b>	64
<b>Appendix A1. Data Collection Tools</b>	67
<b>Appendix A2. Investigation and Data Reporting Tools</b>	68
<b>Appendix B. Potential Components of an Internal Nonconforming Event Report</b>	72
<b>Appendix C1. Nonconforming Event Report Form (Example 1)</b>	73
<b>Appendix C2. Nonconforming Event Report Form (Example 2)</b>	74
<b>Appendix C3. Nonconforming Event Report Form (Example 3)</b>	76
<b>Appendix C4. Nonconforming Event Report Form (Example 4)</b>	78
<b>Appendix D. Risk Classification Example</b>	81
<b>Appendix E. Information to Consider When Conducting Root Cause Analysis</b>	84
<b>Appendix F1. Root Cause Analysis Process (Example 1)</b>	85
<b>Appendix F2. Root Cause Analysis Process (Example 2)</b>	86

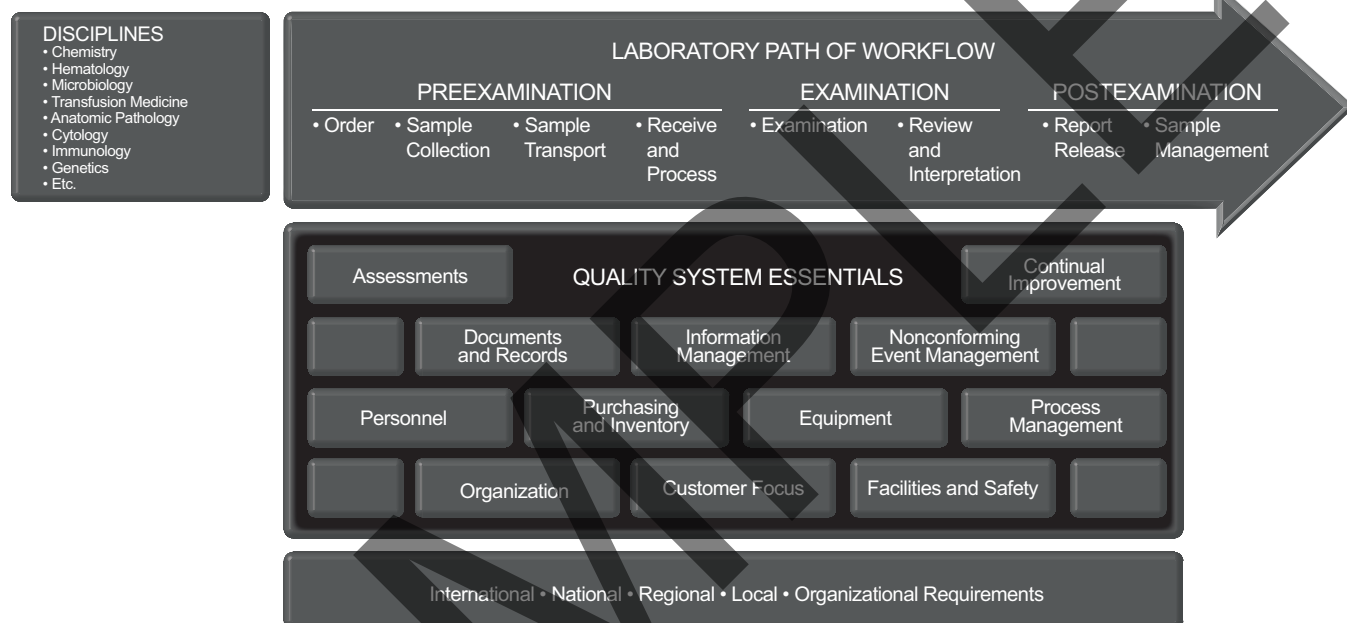
## Contents (Continued)

<b>Appendix G1.</b> Nonconforming Event Case Study Example – The Process .....	87
<b>Appendix G2.</b> Nonconforming Event Case Study Example – The Report .....	88
<b>Appendix G3.</b> Nonconforming Event Case Study Example – The Process Map .....	90
<b>Appendix G4.</b> Nonconforming Event Case Study Example – The Cause and Effect Diagram and 5 Whys Analysis .....	91
<b>Appendix H.</b> Nonconforming Event Log .....	92
<b>Appendix I.</b> Application of Data Analysis: A Laboratory Example .....	93
<b>Appendix J.</b> Management Review Agenda Template .....	102
<b>Appendix K1.</b> Quality Report Example .....	103
<b>Appendix K2.</b> Quality Report by Quality System Essential .....	108
<b>The Quality Management System Approach</b> .....	112
<b>Related CLSI Reference Materials</b> .....	114

SAMPLE

## Foreword

Quality system essential (QSE) Nonconforming Event (NCE) Management is one of the 12 QSEs described in CLSI document QMS01,<sup>1</sup> which provides the necessary background information and guidance to develop and maintain a QMS. The QMS model depicted in Figure 1 demonstrates how each QSE, such as NCE Management, is a building block to quality and is necessary to support any laboratory's path of workflow from preexamination to examination to postexamination.



**Figure 1. The Quality Management System Model for Laboratory Services (see CLSI document QMS01<sup>1</sup>)**

QSEs are the foundational building blocks that function effectively to support the laboratory's path of workflow. If a QSE is missing or not well implemented, problems will occur in preexamination, examination, and postexamination laboratory activities. For example, when the laboratory lacks defined processes for properly installing, calibrating, and maintaining its analyzers so that they are working effectively, there will be problems in examination processes.

International guidance related to the QSEs and the laboratory's path of workflow is described in selected International Organization for Standardization (ISO) standards. ISO 9001<sup>2</sup> defines a process-based model for quality that any business should use to manage its operations—the information relates directly to the QSEs. ISO 17025<sup>3</sup> specifies requirements for both quality management and technical operations of testing and calibration laboratories. ISO 15189<sup>4</sup> defines standards for quality management and technical operations in the medical laboratory environment.

# Chapter 1

## Introduction

### This chapter includes:

- ▶ Document scope and applicable exclusions
- ▶ Background information pertinent to the document content
- ▶ “Note on Terminology” that highlights particular use and/or variation in use of terms and/or definitions
- ▶ Terms and definitions used in the document
- ▶ Abbreviations and acronyms used in the document



# Nonconforming Event Management

## IMPORTANT NOTE:

This guideline is intended to **supplement, but not replace**, an organization's established risk management or patient safety program.

## NOTE:

An NCE management program is based on principles of quality management, risk management, and patient safety.

## NOTE:

Removal of root causes of NCEs leads to improved quality, which leads to improved patient safety.

## 1 Introduction

### 1.1 Scope

This guideline is intended for use by individuals in a laboratory to facilitate establishment and maintenance of an internal nonconforming event (NCE) management program that includes:

- ▶ Responding to an event that does not conform to the laboratory's established policies, processes, and/or procedures
- ▶ Responding to an event that does not follow established QMS policies, processes, and/or procedures
- ▶ Monitoring events through the data assessment, management review, and continual improvement (CI) connected processes

This guideline is intended to **supplement, but not replace**, an organization's established risk management or patient safety program.

The guidance provided herein is perhaps best used within a medical laboratory; however, other types of laboratories may also find value in the concepts presented.

### 1.2 Background

An NCE management program is based on principles of quality management, risk management, and patient safety. The purpose of a program to manage NCEs is to identify and characterize problem-prone processes in a laboratory's path of workflow and within the supporting processes of the QMS so CI initiatives can be prioritized, resources allocated, and improvements implemented.

An NCE management program identifies systematic problems and gains management's commitment to removing the causes. As the words suggest, NCEs do not conform with the organization's established policies, processes, or procedures, or to applicable regulatory or accreditation requirements. NCEs also have the potential to affect patient safety or the efficiency and effectiveness of work operations.

NCE management is linked to the laboratory's and health care organization's risk management program because it provides information on systemic service problems that could pose legal or financial risk issues for the organization.

NCE management is also linked to quality management. Removal of root causes of NCEs leads to improved quality, which leads to improved patient safety.



# The Quality Management System Approach

Clinical and Laboratory Standards Institute (CLSI) subscribes to a quality management system (QMS) approach in the development of standards and guidelines, which facilitates project management; defines a document structure using a template; and provides a process to identify needed documents. The QMS approach applies a core set of “quality system essentials” (QSEs), basic to any organization, to all operations in any health care service’s path of workflow (ie, operational aspects that define how a particular product or service is provided). The QSEs provide the framework for delivery of any type of product or service, serving as a manager’s guide. The QSEs are as follows:

Organization	Personnel	Process Management	Nonconforming Event Management
Customer Focus	Purchasing and Inventory	Documents and Records	Assessments
Facilities and Safety	Equipment	Information Management	Continual Improvement

QMS11 addresses the QSE indicated by an “X.” For a description of the other documents listed in the grid, please refer to the Related CLSI Reference Materials section on page 114.

Organization	Customer Focus	Facilities and Safety	Personnel	Purchasing and Inventory	Equipment	Process Management	Documents and Records	Information Management	Nonconforming Event Management	Assessments	Continual Improvement
									X		
QMS01	QMS01	QMS01	QMS01	QMS01	QMS01	QMS01	QMS01	QMS01	QMS01	QMS01	QMS01
											QMS06
										QMS12	
QMS14											
QMS20											

## Related CLSI Reference Materials\*

---

- QMS01**     **Quality Management System: A Model for Laboratory Services. 4th ed., 2011.** This document provides a model for medical laboratories that will assist with implementation and maintenance of an effective quality management system.
- QMS06**     **Quality Management System: Continual Improvement. 3rd ed., 2011.** This guideline considers continual improvement as an ongoing, systematic effort that is an essential component of a quality management system. A continual improvement program may consist of fundamental processes and common supporting elements described in this guideline.
- QMS12**     **Development and Use of Quality Indicators for Process Improvement and Monitoring of Laboratory Quality. 1st ed., 2010.** This document provides guidance on development of quality indicators and their use in the medical laboratory.
- QMS14**     **Quality Management System: Leadership and Management Roles and Responsibilities. 1st ed., 2012.** This guideline presents concepts and information intended to assist a laboratory in meeting leadership requirements for its quality management system. Guidance is provided for leaders to effectively design, implement, and maintain the cultural, structural, and functional aspects of their laboratory's organization that are critical to managing and sustaining quality.
- QMS20**     **Understanding the Cost of Quality in the Laboratory. 1st ed., 2014.** This report provides guidance to a laboratory in understanding and managing the different types of quality costs that affect processes, services, and financial well-being.

---

\* CLSI documents are continually reviewed and revised through the CLSI consensus process; therefore, readers should refer to the most current editions.

# Explore the Latest Offerings From CLSI!

As we continue to set the global standard for quality in laboratory testing, we are adding products and programs to bring even more value to our members and customers.



By becoming a CLSI member, your laboratory will join 1,600+ other influential organizations all working together to further CLSI's efforts to improve health care outcomes. You can play an active role in raising global laboratory testing standards—in your laboratory, and around the world.

Find out which membership option is best for you at [www.clsi.org/membership](http://www.clsi.org/membership).



Find what your laboratory needs to succeed! CLSI U provides convenient, cost-effective continuing education and training resources to help you advance your professional development. We have a variety of easy-to-use, online educational resources that make eLearning stress-free and convenient for you and your staff.

See our current educational offerings at [www.clsi.org/education](http://www.clsi.org/education).



When laboratory testing quality is critical, standards are needed and there is no time to waste. eCLIPSE™ Ultimate Access, our cloud-based online portal of the complete library of CLSI standards, makes it easy to quickly find the CLSI resources you need.

Learn more and purchase eCLIPSE at [clsi.org/eCLIPSE](http://clsi.org/eCLIPSE).

For more information, visit [www.clsi.org](http://www.clsi.org) today.

SAMPLE



CLINICAL AND  
LABORATORY  
STANDARDS  
INSTITUTE®

950 West Valley Road, Suite 2500, Wayne, PA 19087 USA

P: 610.688.0100 Toll Free (US): 877.447.1888 F: 610.688.0700

E: [customerservice@clsi.org](mailto:customerservice@clsi.org) [www.clsi.org](http://www.clsi.org)

PRINT ISBN 1-56238-909-2

ELECTRONIC ISBN 1-56238-910-6