

Measure Harmonization



Guidance for Measure Harmonization

A CONSENSUS REPORT

The National Quality Forum (NQF) operates under a three-part mission to improve the quality of American healthcare by:

- building consensus on national priorities and goals for performance improvement and working in partnership to achieve them;
- endorsing national consensus standards for measuring and publicly reporting on performance; and
- promoting the attainment of national goals through education and outreach programs.

This project is funded under NQF's contract with the Department of Health and Human Services, Consensus-based Entities Regarding Healthcare Performance Measurement.

Recommended Citation: National Quality Forum (NQF), *Guidance for Measure Harmonization: A Consensus Report*, Washington, DC: NQF; 2010.

© 2010. *National Quality Forum*
All rights reserved

ISBN 978-0-9828421-4-0

No part of this report may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means electronic, mechanical, photocopying, recording, or otherwise, without prior permission of the National Quality Forum. Requests for permission to reprint or make copies should be directed to:

Permissions
National Quality Forum
601 13th Street NW
Suite 500 North
Washington, DC 20005
Fax 202-783-3434
www.qualityforum.org

Guidance for Measure Harmonization: A Consensus Report

Table of Contents

Introduction	1
Purpose	1
Scope	1
Background	2
Past Efforts on Measure Harmonization	2
Table 1: Related versus Competing Measure	3
Lack of Measure Harmonization Encountered in NQF Projects.....	3
Recommendations	4
Principles	5
I. Recommendations for Measure Development	5
Table 2: Opportunities for Measure Harmonization During Measure Development and Endorsement	6
Conceptual and Technical Measure Specifications	11
Standardized Definitions for Measure Specifications.....	11
Table 3: Level of Measure Harmonization.....	12
II. Recommendations for Evaluating Harmonization	12
Figure 1: Addressing Harmonization of Measures in the NQF Evaluation Process ..	13
Considerations in Evaluating Harmonization.....	14
Table 4: Sample Considerations to Justify Lack of Measure Harmonization	15
III. Recommendations for Modifications to the NQF Evaluation Criteria.....	16
Table 5: Current and Modified Measure Evaluation Criteria Related to Measure Harmonization.....	16
IV. Recommendations for Measure Submission.....	18
Table 6: Current and Modified Measure Submission Items	18
Appendix A—Suggested Standard Conventions for Measure Specifications.....	A-1
Appendix B—Steering Committee.....	B-1
Appendix C—Sample Notification for a Measure in Development	C-1

Guidance for Measure Harmonization: A Consensus Report

Introduction

THE NATIONAL QUALITY FORUM (NQF) IS A VOLUNTARY consensus standards-setting organization. NQF endorses quality performance measures that are intended for use in both public reporting and quality improvement. The current quality landscape includes many quality reporting initiatives and a proliferation of measures, although important gaps in measurement still exist. Duplicative or overlapping measures can result when separate quality initiatives focus on different settings or patient populations and when measure developers specialize in one setting or data type (e.g., claims, medical records, Nursing Home Minimum Data Set) but address the same measure concepts. Conceptually duplicative or overlapping measures with disparate specifications can create confusion with interpreting measure performance results across settings or patient populations and choosing measures for implementation. These measures can also increase data collection burden. Conflicting results that may occur due to differences in measure specifications may be confusing to consumers making decisions about selecting healthcare providers and providers of healthcare services making decisions about quality improvement efforts. A parsimonious and harmonized portfolio of NQF-endorsed[®] quality performance measures, which can be used across settings, patient populations, and episodes of care, will help advance the quality agenda.

Purpose

The purpose of this project is twofold: 1) to develop practical guidance for identifying measure overlap and achieving appropriate levels of measure harmonization within NQF consensus projects and 2) to support NQF endorsement of global and harmonized measures that can be applied across settings (e.g., nursing home, outpatient), patient populations (e.g., pediatric, patients with diabetes), and episodes of care.

Scope

The NQF Measure Harmonization Steering Committee's (the Steering Committee) task was to develop operational guidance for achieving measure harmonization in all NQF consensus projects that involve endorsing measures as voluntary consensus standards

intended for use in both public reporting and quality improvement. The guidance should be useful both to project steering committees when evaluating measures for endorsement and to measure developers when developing and maintaining measures.

Specifically, the Steering Committee was asked to:

- analyze the causes of lack of measure harmonization and identify potential solutions; and
- propose guidance and provide specific recommendations for evaluating measure harmonization and achieving greater harmonization of NQF-endorsed measures across settings, patient populations, and episodes of care.

Background

Measure harmonization is currently included in the NQF measure evaluation criteria under the major criterion of *Usability*. Because there is no specific guidance on evaluating harmonization, finding an effective way to evaluate and resolve harmonization issues is a challenge. The definition of measure harmonization in the evaluation criteria (Table 5, Footnote 15) was slightly modified as:

*the standardization of specifications for related measures with the same measure focus (e.g., **influenza immunization** of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for **patients with diabetes**), or definitions applicable to many measures (e.g., age designation for children) so that they are*

uniform or compatible, unless differences are justified (e.g., dictated by the evidence). The dimensions of harmonization can include numerator, denominator, exclusions, calculation, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Measure harmonization should be considered when measures are intended to address either the same measure focus—the target process, condition, event, outcome (e.g., numerator)—*or* the same target population (e.g., denominator). These are referred to as “related” measures, for example, two measures focused on influenza immunization, or two measures focused on patients with diabetes. ***Measures that are intended to address both the same focus and the same target population are considered “competing” measures; they are not addressed in this guidance.*** See Table 1 for distinctions between related and competing measures. In the case of either related or competing measures, there may be justification for differences in measure specifications or endorsing multiple measures, respectively.

Past Efforts on Measure Harmonization

Measure harmonization has been discussed and studied for some time. In 2006, NQF’s Pulmonary Consensus Standards Maintenance Committee reviewed previously endorsed immunization measures and noted that the hospital and nursing home measures were not aligned. The Steering Committee suggested that the measure developers work collaboratively to harmonize measures with the current

Table 1: Related versus Competing Measures

	Same measure focus—target process, condition, event, outcome (numerator)	Different measure focus—target process, condition, event, outcome (numerator)
Same target population (denominator)	Competing measures— Select best measure from competing measures or justify endorsement of additional measures.	Related measures—Harmonize on target population or justify differences.
Different target population (denominator)	Related measures—Harmonize on measure focus or justify differences; or possibly combine into one measure with expanded target population.	Neither harmonization nor competing measure issue

Advisory Committee on Immunization Practices (ACIP) guidelines. In January 2007, the Quality Alliance Steering Committee Harmonization Workgroup also recommended that developers of vaccination measures construct common denominator populations and common numerator inclusions for all vaccination measures by reconciling the various approaches for exclusions. Although measure developers expressed support for harmonization, the measure specifications remained unaligned.

In 2007-2008, the Centers for Medicare & Medicaid Services funded an NQF *project on influenza and pneumococcal immunization* with an emphasis on measure harmonization. To promote harmonization across the large number of immunization measures created by different developers, the Immunization Steering Committee identified a set of standard measure specifications using evidence-based guidelines that could be applied to all relevant populations and settings. Three new measures were endorsed. A review of existing endorsed

immunization measures resulted in recommendations that they be aligned with the new standard specifications when the measures undergo maintenance review.

Lack of Measure Harmonization Encountered in NQF Projects

Lack of measure harmonization has been identified throughout the measure development lifecycle and across NQF consensus development projects. Examples of variation in measure specifications that may benefit from harmonization include:

- Variation in specifications for the target population (denominator):
 - patients included in the measure (e.g., all patients indicated by the evidence versus only a portion of the indicated population);
 - definitions or coding to identify the target population (e.g., diagnosis codes or diagnosis codes plus prescribed medications);

- age definitions—pediatric (e.g., <18, <21), elders (e.g., 65-74, 65+), age strata;
- operationalization of age specifications in relation to the measurement period (e.g., age at start of measurement period or some time during the measurement period)—**also identified with electronic health record (EHR) measures**;
- if there are no defined admission/discharge dates as may occur with ambulatory care, when to include patients (e.g., number and timing of encounters during and prior to the measurement period); and
- specifications for patients excluded (general versus specific; provider-determined versus precise specifications; different definitions or codes).
- Variation in specifications for the target process, condition, event, outcome (numerator)
 - for process measures, proximity to the desired outcome (e.g., assessment versus treatment intervention); and
 - definitions or coding to identify whether a patient is counted in the numerator (e.g., medication prescribed versus medication taken).
- Variation in specifications for exclusions: NQF evaluation criteria provide explicit guidance on exclusions (criterion 2d, footnotes 11, 12, and 13); however, exclusions continue to be an area of considerable controversy and are problematic for measure harmonization.
 - specifications for patients excluded (e.g., general and provider determined, such as “medical reason” versus precise specifications, such as “history of Guillain-Barre Syndrome within six weeks after a previous influenza vaccination”);

- scoring algorithm/logic (e.g., exclusions removed from the denominator first versus identified only if the numerator condition is not met, then removed from denominator)—**also identified with EHR measures**; and
- use of the term “exception” rather than “exclusion”—**also identified with EHR measures**.

Measure harmonization is not different for EHR measures; however, the experience of structuring measures for EHRs has highlighted specific areas in need of harmonization, such as:

- coding (e.g., taxonomies and codes within code sets);
- exclusions and exceptions; and
- the point in the measurement period at which age is calculated.

The consequences of lack of measure harmonization can range from minor inconvenience to more problematic issues such as confusion about the interpretation of measure results, inability to compare results across settings or populations, increased data collection burden, and even an adverse effect on the validity of a measure.

Recommendations

The following recommendations are based on the recognition that measure harmonization will require a collaborative effort among multiple parties. These recommendations are offered as guidance to NQF, NQF steering committees, and measure developers who seek NQF endorsement of their measures. The recommendations pertain to all types of measures (e.g., process, outcome), patient populations (e.g., pediatric, adult), and settings (e.g., home

health, hospital). Evaluation of competing measures, as identified in Table 1, was not addressed in this project. The Steering Committee advised that the implementation of these recommendations be monitored to identify impact, any unintended consequences, need for clarifications, or feasibility issues.

Principles

The Steering Committee developed the following principles during its discussion of harmonization.

- Harmonization should not stifle innovation in measure development and use.
- Harmonization should ideally be addressed *before* measures are submitted to NQF.
- Harmonization should not result in inferior measures—measures should be based on the best measure concepts and ways to measure those concepts. There is no pre-supposition that an endorsed measure is better than a new measure.
- Conceptual harmonization (i.e., whether the measures are intended to address the same focus and target population) should be determined before harmonization of technical measure specifications (i.e., definitions, codes, algorithms) is considered.
- Harmonization should eliminate *unintended* differences among related measures. There are circumstances where differences in measures should be expected: conceptually (e.g., difference in evidence for different patient populations) or technically (e.g., implementation in different settings with different data).
- When there is a decision not to harmonize measures, the value of the different conceptualizations and technical specifications must outweigh the burden imposed.
- Availability of standardized definitions and specifications that can be used across

measures is a desired goal, but they often cannot be established a priori. Measure harmonization efforts will facilitate achieving standard definitions and specifications.

I. Recommendations for Measure Development

The Steering Committee determined that a primary reason for lack of harmonization was simply a lack of awareness of the need for harmonization. The Committee thought that measure developers would be willing to harmonize measures if they could do so during development. Harmonizing measure specifications during measure development is more efficient than after measures are submitted to NQF for consideration for potential endorsement. By the time of submission to NQF, measure developers have already invested time and resources into a measure as specified and have tested the measure as specified. Table 2 includes actions that can be taken at various stages of measure development and NQF review to achieve measure harmonization.

The Steering Committee recommended that efforts to address harmonization be required for consideration for NQF endorsement. That is, a measure will not be accepted for review and evaluation unless the measure developer states that harmonization issues have been considered and addressed, as appropriate. If this condition is met and a measure is accepted for consideration, it will be evaluated individually on all four evaluation criteria before it is compared to related measures to assess harmonization. That is, a measure should be considered suitable to recommend for endorsement before time and effort are devoted to comparing it to related measures.

Table 2: Opportunities for Measure Harmonization During Measure Development and Endorsement

STEPS IN MEASURE DEVELOPMENT/ENDORSEMENT	ACTIONS ACHIEVE MEASURE HARMONIZATION
MEASURE DEVELOPMENT	
<p>Explore idea for new quality measure and decide whether to develop a measure</p>	<p>Measure Developer</p> <ul style="list-style-type: none"> ● Review literature to determine if a proposed measure will meet the NQF criterion <i>Importance to Measure and Report</i>. <ul style="list-style-type: none"> ○ Impact ○ Opportunity for improvement ○ Evidence ● Conduct an environmental scan to determine if there is a measure already in existence or related measures, i.e., either the same measure focus (numerator) or the same target population (denominator). <ul style="list-style-type: none"> ○ NQF-endorsed measures directory ○ National Quality Measures Clearinghouse ○ List of measures under development (<i>when available on NQF website</i>) ● Contact other measure developers if there is a potential for duplication or lack of harmonization with an NQF-endorsed measure. <ul style="list-style-type: none"> ○ Obtain detailed specifications. ○ If the new measure has the same focus as the existing measure for a new patient population (e.g., pediatric), can the existing measure be expanded to add the new population? Discuss IP ownership, maintenance, and testing issues. ● Respond to NQF request for information on measures in development. <p>NQF</p> <ul style="list-style-type: none"> ● Make detailed specifications for NQF-endorsed measures publicly available. ● Periodically, ask for information on measures in development and make it publicly available (sample document in Appendix C). <ul style="list-style-type: none"> ○ Ask if the developer needs assistance making contact with other developers to address related or competing measures and include a link to the harmonization guidance. ○ In addition to the items included in Appendix C, ask what data types will be used in the measure. ● Facilitate contacts between measure developers as requested.

more

Table 2: Opportunities for Measure Harmonization During Measure Development and Endorsement

STEPS IN MEASURE DEVELOPMENT/ENDORSEMENT	ACTIONS ACHIEVE MEASURE HARMONIZATION
MEASURE DEVELOPMENT <i>(continued)</i>	
<p>Develop measure specifications (requires some initial assessment of feasibility regarding data availability)</p>	<p>Measure Developer</p> <ul style="list-style-type: none"> ● Search the NQF database for related measures, i.e., either the same measure focus (numerator) or the same target population (denominator). ● Compare conceptual descriptions and definitions and harmonize with those to the extent possible; then harmonize with the technical specifications. ● Contact other measure developers of similar or related measures if there is a potential for lack of harmonization. <ul style="list-style-type: none"> ○ Obtain detailed specifications. ○ Request references/evidence to substantiate conceptual or technical specifications. ○ Clarify questions. ● Develop measures with the broadest applicability supported by the evidence (e.g., settings, patient populations) to minimize the need for additional narrowly specified measures. ● Explicitly track and provide the rationale for any intentional differences in conceptual and technical measure specifications (e.g., at the technical level of codes because the data type is different or the existing codes are incorrect; at the conceptual level because evidence is different, etc.) <p>NQF</p> <ul style="list-style-type: none"> ● Facilitate contacts between measure developers as requested. ● Provide technical assistance on NQF process—explain criteria, measure submission form, and review process; provide a list of organizations that could give assistance during measure development. ● Provide NQF conventions for specifying measures. ● Communicate NQF criteria and consequences for lack of harmonization.
<p>Empirically test scientific acceptability of measure properties (e.g., reliability, validity, etc.)</p>	<p>Measure Developer</p> <p>After the measure is fully specified, test the measure to demonstrate scientific acceptability of measure properties.</p>

more

Table 2: Opportunities for Measure Harmonization During Measure Development and Endorsement

STEPS IN MEASURE DEVELOPMENT/ENDORSEMENT	ACTIONS ACHIEVE MEASURE HARMONIZATION
MEASURE DEVELOPMENT <i>(continued)</i>	
Assess usability of the performance measure scores (e.g., for quality improvement or selection)	<p>Measure Developer When addressing usability, specifically discuss any lack of harmonization and the impact on understanding and meaningfulness.</p>
Assess feasibility (during testing—ability to implement, missing data, burden, etc.)	<p>Measure Developer When discussing feasibility, specifically address any lack of harmonization and any impact on feasibility.</p>
INITIAL NQF ENDORSEMENT	
NQF call for intent to submit measures for a specific project (2-4 wks prior to official call for measures)	<p>NQF</p> <ul style="list-style-type: none"> • Remind and ask about harmonization in the call for intent. • Facilitate contacts between measure developers as requested. <p>Measure Developer</p> <ul style="list-style-type: none"> • Respond to NQF call for intent to submit a measure for a particular project. • Indicate consideration of harmonization.
NQF 30-day call for measures for a specific project (at the beginning of a project)	<p>Measure Developer</p> <ul style="list-style-type: none"> • Submit a measure to NQF for consideration as a voluntary consensus standard in response to a specific call for measures. • Attest that harmonization issues have been considered and addressed, as appropriate. • Respond completely to questions regarding similar and/or related NQF-endorsed measures. • Make sure that the submission includes justification for any lack of measure harmonization. <p>NQF</p> <ul style="list-style-type: none"> • Request information regarding review of existing endorsed measures and harmonization on the measure submission form. • Do not accept measures if a review of related endorsed measures for potential harmonization was not undertaken—make harmonization a condition for consideration. • Determine if there are similar and/or related new measures being submitted. • Identify measures for which harmonization should be examined.

more

Table 2: Opportunities for Measure Harmonization During Measure Development and Endorsement

STEPS IN MEASURE DEVELOPMENT/ENDORSEMENT	ACTIONS ACHIEVE MEASURE HARMONIZATION
INITIAL NQF ENDORSEMENT <i>(continued)</i>	
Measure evaluation according to NQF criteria	<p>NQF Steering Committee/Technical Advisory Panel (TAP)</p> <ul style="list-style-type: none"> ● Once a measure is accepted for consideration, evaluate it individually on all four evaluation criteria before comparing to related measures. ● If a measure meets the NQF evaluation criteria, then compare it to related measures: <ul style="list-style-type: none"> ○ Evaluate whether measure specifications should be and are harmonized. ○ In some situations, recommend existing standard definitions and specifications be applied to the measure. <p>Steering committee options for measures that are not harmonized:</p> <ul style="list-style-type: none"> ● Recommend for endorsement only if it is harmonized (harmonization must be accomplished before the measure is recommended for endorsement). ● Do not recommend for endorsement. ● Accept the lack of harmonization because it is justified (see Table 4) and recommend the measure for endorsement. <p>Measure Developer</p> <ul style="list-style-type: none"> ● Respond to questions and recommendations to harmonize measure specifications.

more

Table 2: Opportunities for Measure Harmonization During Measure Development and Endorsement

STEPS IN MEASURE DEVELOPMENT/ENDORSEMENT	ACTIONS ACHIEVE MEASURE HARMONIZATION
NQF ENDORSEMENT MAINTENANCE	
Endorsement Maintenance	<p>Measure Developer</p> <ul style="list-style-type: none"> • Search NQF database for related measures (i.e., either the same measure focus [numerator] or the same target population [denominator]). • Contact other measure developers of related measures to discuss measure harmonization and harmonize specifications or identify rationale and impact for intentional differences in measure specifications. • Respond to steering committee questions and recommendations to harmonize measure specifications. <p>NQF</p> <ul style="list-style-type: none"> • Make proposed schedule and measures for endorsement cycle topics publicly available. • Identify measures for which harmonization should be examined. • Facilitate contacts between measure developers as requested. • Do not consider a measure for continued endorsement if a review of related endorsed measures for potential harmonization was not undertaken—make harmonization a condition for consideration • Steering committee/TAP evaluates measures as noted above. • Steering committee options for measures that are not harmonized as noted above: <ul style="list-style-type: none"> ◦ Recommend for endorsement only if it is harmonized (harmonization must be accomplished before the measure is recommended for endorsement). ◦ Do not recommend for endorsement. ◦ Accept the lack of harmonization because it is justified (see Table 4) and recommend the measure for endorsement. <p>Measure Developer</p> <ul style="list-style-type: none"> • Respond to questions and recommendations to harmonize measure specifications.

Conceptual and Technical Measure Specifications

Harmonization may be a concern for any aspect of the measure specifications. As stated under the principles, conceptual harmonization relates to whether the measures are intended to address the same focus or target population and should be addressed before the technical specifications. Measure specifications generally include both *conceptual* descriptions of the concepts or constructs being addressed in a measure (e.g., numerator and denominator statements) and *technical* details of how to operationalize or implement the conceptual intent of the measure (e.g., specific data elements, code sets, and code values). The conceptual specifications generally contain narrative descriptions. The technical specifications include specific codes, detailed definitions, measure logic (e.g., if-then, and, or), and sequencing of operations.

For purposes of this guidance document, the various aspects of measure information and specifications requested in the NQF measure submission that are subject to measure harmonization were identified as either conceptual or technical as indicated in Table 3. The level at which harmonization can and should be achieved may vary depending on the evidence, the extent of comparability in measure score results that is desired, and the availability of comparable data for use in the measure.

Statistical risk adjustment, risk stratification, and statistical methods for estimating measure results are currently not recommended for measure harmonization. The Steering Committee noted that harmonization of such methods would be much more complex than the basic measure specifications (e.g., measure focus/numerator, target population/denominator,

calculation) and need to be evaluated with the relevant evaluation criteria. It also would be impractical for developers to identify and review all measure methods for potential harmonization.

Using standard approaches for describing and specifying measures could help facilitate comparisons to identify harmonization opportunities more easily. Table A-1 in Appendix A lists the various aspects of measure specifications with descriptions about constructing the specification, a suggested format, and examples.

Standardized Definitions for Measure Specifications

Currently there is no agreed-upon set of standardized definitions to use in constructing measure specifications. Although such a tool could drive measure harmonization, it would be difficult to assemble a comprehensive set of standardized definitions/specifications. Measure harmonization is an alternative approach to achieving and improving standardized specifications. Through the iterative process of measure developers consulting and agreeing on specifications in conjunction with the NQF consensus development process, there will be fewer variations in the specifications for NQF-endorsed measures.

The *Quality Data Model (QDM)* that NQF has developed for EHR-based measures allows for re-use of defined concepts from other measures. The QDM in and of itself does not require harmonization; however, it facilitates measure harmonization and also highlight specifications that are not harmonized.

Table 3: Level of Measure Harmonization

MEASURE INFORMATION/SPECIFICATION (submission form item number in parentheses) See Table A-1 for suggested format	LEVEL OF HARMONIZATION
Summary of body of evidence supporting the measure focus (1c.4)	Conceptual
Measure Title (De.1)	Conceptual
Brief Description of Measure (De.2)	Conceptual
Measure Focus/Numerator Statement (2a.1). Time Window (2a.2)	Conceptual
Measure Focus/Numerator Details (2a.3)	Technical
Target Population/Denominator Statement (2a.6). Time Window (2a.7)	Conceptual
Target Population/Denominator Details (2a.8)	Technical
Exclusions from Target Population/Denominator (2a.9)	Conceptual
Exclusion Details (2a.10)	Technical
Stratification Details/Variables (2a.11)	Technical
Calculation Algorithm (2a.21)	Technical
Sampling (Survey) Methodology (2a.23)	Technical
Data Type (2a.24)	Conceptual
Data Source or Collection Instrument (2a.25)	Technical
Data Dictionary or Code Table (2a.29)	Technical
Level of Analysis (2a.32)	Conceptual

II. Recommendations for Evaluating Harmonization

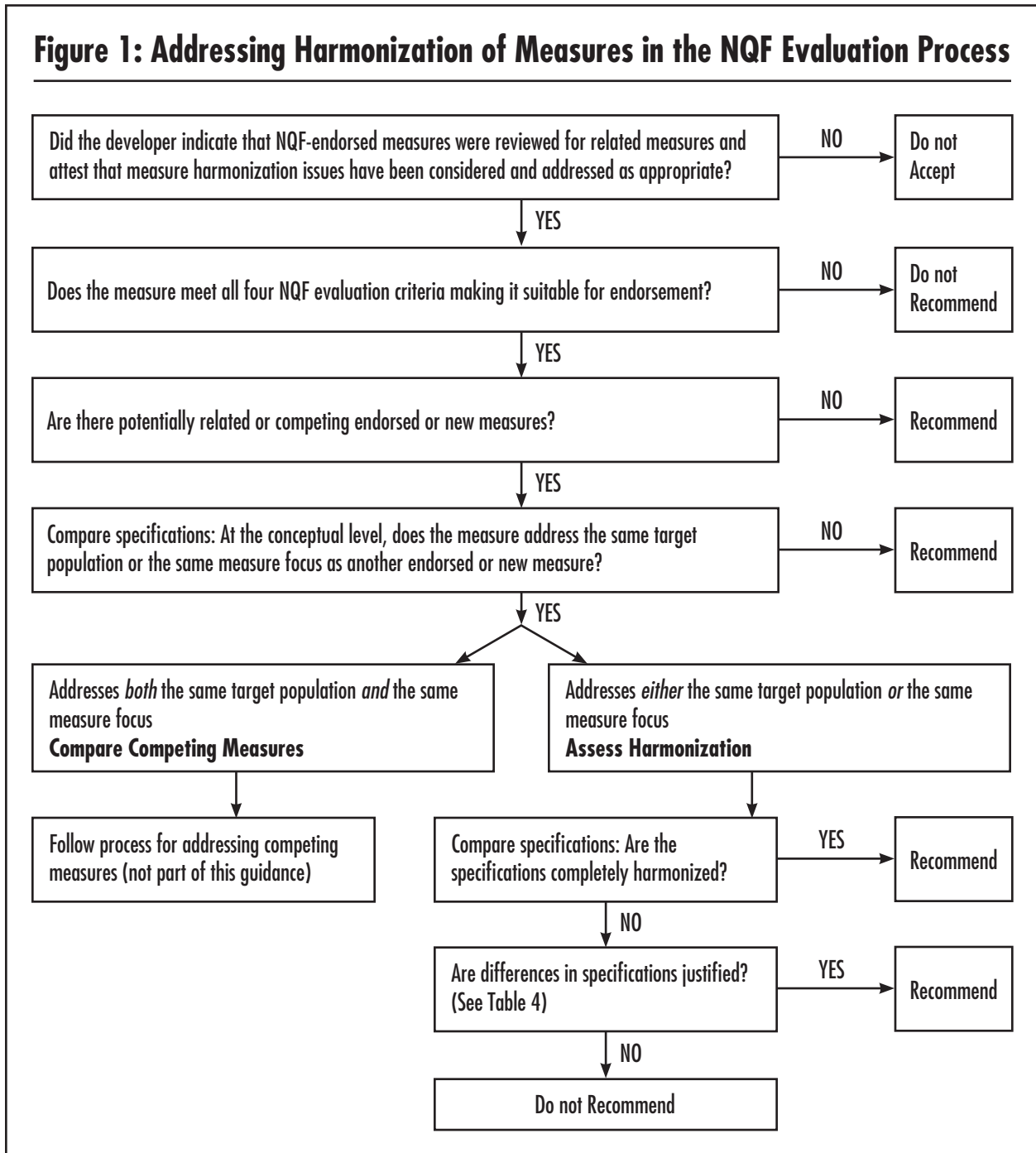
Harmonization is expected for NQF endorsement, and a decision not to harmonize needs to be justified. As noted previously, the Measure Harmonization Steering Committee recommended that a measure developer must address harmonization as a condition for consideration before a measure is accepted and evaluated. Once a measure is accepted

for review, evaluation of the measure would proceed through the hierarchy of criteria— *Importance to Measure and Report, Scientific Acceptability of Measure Properties, Usability, and Feasibility*. As with competing measures, harmonization should be evaluated after the other criteria have been determined to be sufficiently met and a measure is deemed suitable to recommend for endorsement. If a measure is not considered an important, scientifically acceptable, usable, and feasible measure, then harmonization need not be

addressed. It also is important to distinguish whether the issue is harmonization of related measures or choosing the best measure from

among competing measures (Table 1). Figure 1 shows the steps and decision points related to measure harmonization.

Figure 1: Addressing Harmonization of Measures in the NQF Evaluation Process



Ultimately, if a measure is not harmonized, a steering committee has three options: 1) recommend a measure for endorsement only if it is harmonized, 2) do not recommend the measure for endorsement, or 3) accept the lack of harmonization because it is justified and recommend the measure. Measure developers are given an opportunity to respond to steering committee recommendations related to measure harmonization and ultimately must agree to requested changes in measure specifications. However, it is the purview of steering committees to decide whether to recommend measures for endorsement.

When the measure developer has not harmonized the measure and there is a specific need for standardization, steering committees may determine the preferred specifications among the related measures or identify existing standardized definitions and specifications to which measures should be harmonized. Steering committees should recognize when harmonization of specifications would change a measure to such an extent that the measure testing would be invalidated.

The Measure Harmonization Steering Committee agreed that all aspects of measure specifications should be harmonized when appropriate and possible. Therefore, there are many possibilities for differences to occur. The Steering Committee considered developing a scale to rate harmonization but decided that, ultimately, either a measure is harmonized or it is not, a determination that leads into an assessment of whether the differences in specifications are justified.

Considerations in Evaluating Harmonization

When measures are intended to address either the same target population or the same

measure focus and differences are identified in the specifications, added value and burden must be considered; that is, do the differences in measure specifications add enough value to offset any potential negative impact?

• **Value**

- Are the differences in specifications *necessary*?
 - differences in the evidence (e.g., differences in interventions or lab value by target population); or
 - differences in implementation conditions (e.g., the data type available in a particular setting)
- Are the differences in specifications *unnecessary*?
 - unintentional errors (e.g., missing codes);
 - possibility of incorporating an additional target population into another measure (e.g., pediatric patients could be included in a global measure of influenza immunization); or
 - unique developer interests, perspectives, or preferences

• **Burden**

- Do the differences in specifications affect interpretability across measures?
- Do the differences in specifications affect data collection burden?

Value and burden considerations are useful in assessing if there is a justification for endorsing measures that are not harmonized, as reflected in Table 4. (At this point in the process, the measures already have been evaluated individually as to whether the criteria are met and determined suitable to recommend for endorsement.)

Table 4: Sample Considerations to Justify Lack of Measure Harmonization

RELATED MEASURES	LACK OF HARMONIZATION	ASSESS JUSTIFICATION FOR CONCEPTUAL DIFFERENCES	ASSESS JUSTIFICATION FOR TECHNICAL DIFFERENCES
Same measure focus (numerator); different target population (denominator)	Inconsistent measure focus (numerator)	The evidence for the measure focus is different for the different target population so that one measure cannot accommodate both target populations. Evidence should always guide measure specifications.	<ul style="list-style-type: none"> • Differences in the available data drive differences in the technical specifications for the measure focus. • Effort has been made to reconcile the differences across measures, but important differences remain.
Same target population (denominator); different measure focus (numerator)	Inconsistent target population (denominator) and/or exclusions	The evidence for the different measure focus necessitates a change in the target population and/or exclusions. Evidence should always guide measure specifications.	<ul style="list-style-type: none"> • Differences in the available data drive differences in technical specifications for the target population. • Effort has been made to reconcile the differences across measures, but important differences remain.
For any related measures	Inconsistent scoring/computation	<p>The difference does not affect interpretability or burden of data collection.</p> <p>If it does, it adds value that outweighs any concern regarding interpretability or burden of data collection.</p>	<p>The difference does not affect interpretability or burden of data collection.</p> <p>If it does, it adds value that outweighs any concern regarding interpretability or burden of data collection.</p>

III. Recommendations for Modifications to the NQF Evaluation Criteria

The modifications to the pertinent measure evaluation criteria included in Table 5 are based on the preceding recommendations.

Some members of the Steering Committee suggested that measures intended only for

quality improvement may result in differences in specifications. However, NQF currently endorses only measures that are intended for both public reporting and quality improvement, so that issue was not addressed in these recommendations. The Committee members requested that NQF consider endorsing measures intended only for quality improvement.

Table 5: Current and Modified Measure Evaluation Criteria Related to Measure Harmonization

MEASURE EVALUATION CRITERIA 12/2009	MODIFIED MEASURE EVALUATION CRITERIA
<p>Conditions for Consideration</p> <p>3. Usability: Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decisionmaking.</p> <p>3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for <i>both</i> public reporting (e.g., focus group, cognitive testing) <i>and</i> informing quality improvement (e.g., quality improvement initiatives).^a An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.</p> <p>3b. The measure specifications are harmonized^b with other measures, and are applicable to multiple levels and settings.</p>	<p>Conditions for Consideration</p> <p>Add: The measure developer/steward attests that harmonization issues have been considered and addressed, as appropriate.</p> <p>3. Usability: Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decisionmaking.</p> <p>3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for <i>both</i> public reporting (e.g., focus group, cognitive testing) <i>and</i> informing quality improvement (e.g., quality improvement initiatives).^a An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.</p> <p>[Note: Moved 3b to 5a.]</p> <p>[Note: Additive value refers to related or competing measures addressed in 5.]</p>

more

Table 5: Current and Modified Measure Evaluation Criteria Related to Measure Harmonization (continued)

MEASURE EVALUATION CRITERIA 12/2009	MODIFIED MEASURE EVALUATION CRITERIA
<p>3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare).</p> <p>If a measure meets the above criteria <i>and</i> there are competing measures (either endorsed measures or other new submissions that also meet the criteria), compare measures on: Scientific acceptability of measure properties, Usability, and Feasibility to determine best-in-class.</p> <p>5. Demonstration that the measure is superior to competing measures—new submissions and/or endorsed measures (e.g., is a more valid or efficient way to measure).</p> <p>Footnotes</p> <p>^a Public reporting and quality improvement are not limited to provider-level measures—community and population measures also are relevant for reporting and improvement.</p> <p>^b Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., <i>influenza immunization</i> of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for <i>patients with diabetes</i>), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.</p>	<p>5. Comparison to Similar and Related Measures</p> <p>If a measure meets the above criteria <i>and</i> there are related or competing measures (either endorsed measures or other new submissions that also meet the criteria), the measure meets requirements for harmonization or selection of the best measure.</p> <p>5a. The measure specifications are harmonized^b with related measures, OR the differences in specifications are justified.</p> <p>5b. The measure is superior to competing measures (e.g., is a more valid or efficient way to measure, OR multiple measures are justified).</p> <p>Footnotes</p> <p>^a Public reporting and quality improvement are not limited to provider-level measures—community and population measures also are relevant for reporting and improvement.</p> <p>^b Measure harmonization refers to the standardization of specifications for related measures with the same measure focus (e.g., <i>influenza immunization</i> of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for <i>patients with diabetes</i>), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are justified (e.g., dictated by the evidence). The dimensions of harmonization can include numerator, denominator, exclusions, calculation, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.</p>

IV. Recommendations for Measure Submission

The modifications to the pertinent measure submission items laid out in Table 6 are based on the preceding recommendations.

Table 6: Current and Modified Measure Submission Items

CURRENT MEASURE SUBMISSION ITEMS	MODIFIED MEASURE SUBMISSION ITEMS
<p>Conditions for Consideration</p> <p>Have NQF-endorsed measures been reviewed to identify if there are similar or related measures? (Measure evaluation criterion 3b) Yes/No If there are similar or related measures, be sure to address those items in the Usability tab.</p> <p>Relation to Other NQF-endorsed Measures (Measure evaluation criteria 3b, 3c)</p> <p>3b.1. NQF # and Title of Similar or Related Measures: <i>(Leave blank if none.)</i></p> <p>3c.1. Describe the distinctive or additive value this measure provides to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare)</p> <p>Harmonization (Measure evaluation criterion 3b)</p> <p>3b.2. If this measure is related to measure(s) already endorsed by NQF <i>(e.g., same topic but different target population, care setting, or data source, or different topic but same target population):</i> Are the measure specifications harmonized or if not, why? If not, why?</p> <p>Measure Specifications</p>	<p>Conditions for Consideration</p> <p>Have NQF-endorsed measures been reviewed to identify if there are competing or related measures? Yes/No</p> <p>Do you attest that measure harmonization issues have been considered and addressed as appropriate? Yes/No</p> <p>5. If there are competing or related measures, identify the NQF # and Title.</p> <p>Harmonization (Measure evaluation criterion 5a)</p> <p>5a.1 If this measure is related to measure(s) already endorsed by NQF <i>(e.g., same measure focus but different target population, care setting, or data type, or different focus but same target population):</i> Are the measure specifications completely harmonized? Yes/No</p> <p>If not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.</p> <p>Measure Specifications The recommendations in this report did not indicate specific changes to the submission items soliciting measure specifications. A few suggestions were made as indicated below.</p>

more

Table 6: Current and Modified Measure Submission Items *(continued)*

CURRENT MEASURE SUBMISSION ITEMS	MODIFIED MEASURE SUBMISSION ITEMS
<p>Measure Specifications (Measure evaluation criterion 2a)</p> <p>2a.1. Numerator Statement <i>(Brief text description of the numerator—what is being measured about the target population, e.g., target condition, event, or outcome)</i></p> <p>2a.2. Numerator Time Window <i>(The time period in which cases are eligible for inclusion in the numerator)</i></p> <p>2a.3. Numerator Details <i>(All information required to collect or calculate the numerator, including all codes, logic, and definitions)</i></p> <p>2a.4. Denominator Statement <i>(Brief text description of the denominator—target population being measured)</i></p> <p>2a.7. Denominator Time Window <i>(The time period in which cases are eligible for inclusion in the denominator)</i></p> <p>2a.8. Denominator Details <i>(All information required to collect or calculate the denominator—the target population being measured—including all codes, logic, and definitions)</i></p> <p>2a.9. Denominator Exclusions <i>(Brief text description of exclusions from the target population)</i></p> <p>2a.10. Denominator Exclusion Details <i>(All information required to collect exclusions to the denominator, including all codes, logic, and definitions)</i></p> <p>2a.14. Risk-Adjustment Methodology/Variables <i>(List risk-adjustment variables and describe conceptual models, statistical models, or other aspects of model or method.)</i></p> <p>2a.21. Calculation Algorithm <i>(Describe the calculation of the measure as a flowchart or series of steps.)</i></p>	<p>Measure Specifications (Measure evaluation criterion 2a)</p> <p>2a.1. Measure Focus/Numerator Statement <i>(Brief text description of what is being measured about the target population, e.g., target process, condition, event, or outcome)</i></p> <p>2a.2. Measure Focus/Numerator Time Window <i>(The time period in which cases are eligible for inclusion in the numerator)</i></p> <p>2a.3. Measure Focus/Numerator Details <i>(All information required to collect or calculate the target process, condition, event, or outcome/numerator, including all codes, logic, and definitions)</i></p> <p>2a.4. Target Population/Denominator Statement <i>(Brief text description of the target population being measured)</i></p> <p>2a.7. Target Population/Denominator Time Window <i>(The time period in which cases are eligible for inclusion in the denominator)</i></p> <p>2a.8. Target Population/Denominator Details <i>(All information required to collect or calculate the denominator—the target population being measured—including all codes, logic, and definitions)</i></p> <p>2a.9. Exclusions from Target Population <i>(Brief text description of exclusions from the target population)</i></p> <p>2a.10. Exclusion Details <i>(All information required to identify exclusions to the denominator, including all codes, logic, and definitions)</i></p> <p>2a.14. Risk-Adjustment Method/Variables <i>(List risk-adjustment method and variables.)</i></p> <p>2a.21. Calculation Algorithm <i>(Describe the calculation of the measure as an ordered sequence of steps for identifying the target population; identifying cases meeting the target process, condition, event, outcome; aggregating data.)</i></p>

Guidance for Measure Harmonization: A Consensus Report

Appendix A Suggested Standard Conventions for Measure Specifications

STANDARD APPROACHES FOR describing and specifying measures could help facilitate comparisons to identify harmonization opportunities more easily. Table A-1 lists the various aspects of measure specifications with descriptions about constructing the specification, a suggested format, and examples. *The examples are intended only to illustrate the suggested format and do not represent a fully specified measure.*

Table A-1: Measure Specifications, Suggested Format, and Level of Harmonization

MEASURE SPECIFICATION (submission item)	CONSTRUCTION OF MEASURE SPECIFICATIONS	SUGGESTED FORMAT AND EXAMPLE <i>(intended only to illustrate the suggested format, not a fully specified measure)</i>	LEVEL OF HARMONIZATION
Measure Title (De.1)	Briefly convey as much information as possible about the measure focus and target population—abbreviated description	[target population] who received/had [measure] <i>Patients with diabetes who received an eye exam</i>	Conceptual
Brief Description of Measure (De.2)	Briefly describe the type of score (e.g., percentage, proportion, number) and the target population and focus of measurement	[type of score] of [target population] who received/had [measure focus] <i>Percentage of adult patients with diabetes who received a foot exam (including visual inspection, sensory exam with monofilament, or pulse exam)</i>	Conceptual

more

Table A-1: Measure Specifications, Suggested Format, and Level of Harmonization *(continued)*

MEASURE SPECIFICATION (submission item)	CONSTRUCTION OF MEASURE SPECIFICATIONS	SUGGESTED FORMAT AND EXAMPLE <i>(intended only to illustrate the suggested format, not a fully specified measure)</i>	LEVEL OF HARMONIZATION
Measure Focus/ Numerator Statement (2a.1) Time Window (2a.2)	Describe the measure focus—cases from the target population with the target process, condition, event, or outcome based on the evidence. If the time frame is different than for identifying the target population, it should be specified.	Patients in the target population who received/had [measure focus] {during [time frame] if different than for target population} <i>Patients in the target population who received a foot exam including visual inspection, sensory exam with monofilament, or pulse exam</i>	Conceptual
Measure Focus/ Numerator Details (2a.3)	<p>Codes: For measures based on a coded data set, identify the code set, specific codes, and descriptors for the codes.</p> <p>Details: Definitions and instructions as needed</p> <p>As a starting point, use specifications that exist in the NQF-endorsed measures database or Quality Data Module (QDM) when available</p>	<p>Codes: [concept] [code set] [number or range of numbers]</p> <p><i>Reintubation procedure ICD-9-CM: 96.04 Insertion of endotracheal tube OR 96.70 Invasive mechanical ventilation: Unspecified duration OR 96.71 Less than 96 hours OR 96.72 For 96 hr or more</i></p> <p>Details: [concept] definition or instruction</p> <p><i>Reintubation procedure ICD-9-CM 96.04 IF one or more days after the major operating room procedure code 96.70 or 96.71 IF two or more days after the major operating room procedure code 96.72 IF zero or more days after the major operating room procedure code</i></p>	Technical

more

Table A-1: Measure Specifications, Suggested Format, and Level of Harmonization *(continued)*

MEASURE SPECIFICATION (submission item)	CONSTRUCTION OF MEASURE SPECIFICATIONS	SUGGESTED FORMAT AND EXAMPLE <i>(intended only to illustrate the suggested format, not a fully specified measure)</i>	LEVEL OF HARMONIZATION
Target Population/ Denominator Statement (2a.6) Time Window (2a.7)	Designate the broadest population based on the evidence for which the target process, condition, event, and outcome is applicable. The target population should indicate age, setting, and time frame for identifying the target population.	Patients [age] with [condition] in [setting] during [time frame] <i>Patients (age 18-75) with diabetes in ambulatory care during a measurement year</i>	Conceptual
Target Population/ Denominator Details (2a.8)	<p>Codes: For measures based on a coded data set, identify the code set, the specific codes, and descriptors for the codes</p> <p>Details: Definitions and instructions as needed</p> <p>As a starting point, use specifications that exist in the NQF-endorsed measures database or QDM when available</p>	<p>Codes: [concept] [code set] [number or range of numbers]</p> <p><i>Heart failure ICD-9-CM codes: 402.01 Malignant hypertensive heart disease with congestive heart failure (CHF)</i></p> <p>Details: [concept] definition or instruction <i>For chart abstraction, identify patients with a diagnosis of heart failure on the problem list</i></p>	Technical
Exclusions from Target Population/ Denominator (2a.9)	Identify patients who are in the target population but who should not receive the process or are not eligible for the outcome for some other reason, particularly where their inclusion may bias results. Exclusions should be evidence-based.	Patients in the [target population] who [have some additional characteristic, condition, procedure] <i>Patients with diabetes who have gestational or steroid-induced diabetes</i>	Conceptual

more

Table A-1: Measure Specifications, Suggested Format, and Level of Harmonization *(continued)*

MEASURE SPECIFICATION (submission item)	CONSTRUCTION OF MEASURE SPECIFICATIONS	SUGGESTED FORMAT AND EXAMPLE <i>(intended only to illustrate the suggested format, not a fully specified measure)</i>	LEVEL OF HARMONIZATION
Exclusion Details (2a.10)	<p>Codes: For measures based on a coded data set, identify the code set, specific codes, and descriptors for the codes</p> <p>Details: Definitions and instructions as needed</p> <p>As a starting point, use specifications that exist in the NQF-endorsed measures database or QDS when available</p>	<p>Codes: [concept] [code set] [number or range of numbers]</p> <p><i>Gestational diabetes ICD9-CM 648.8</i></p> <p>Details: [concept] definition or instruction</p>	Technical
Calculation Algorithm (2a.21)	Describe the calculation of the measure as a flowchart or series of steps	<ol style="list-style-type: none"> 1. <i>Identify all discharges for the calendar year (Jan 1-Dec 31)</i> 2. <i>Identify patients 18 and older at time of discharge (discharge date-birth date)</i> 3. <i>Identify patients with CHF (ICD-9 codes listed in denominator details)</i> 4. <i>Exclude patients if . . .</i> 	Technical
Technical Sampling (Survey) Methodology (2a.23)	If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey, and guidance on minimum sample size (response rate)	<i>For chart abstraction, select a random sample of 30 discharges per month</i>	Technical
Data type (2a.24) Level of analysis (2a.32)	Identify those for which the measure is completely specified and tested	Check the appropriate boxes	Technical

more

Table A-1: Measure Specifications, Suggested Format, and Level of Harmonization *(continued)*

MEASURE SPECIFICATION (submission item)	CONSTRUCTION OF MEASURE SPECIFICATIONS	SUGGESTED FORMAT AND EXAMPLE <i>(intended only to illustrate the suggested format, not a fully specified measure)</i>	LEVEL OF HARMONIZATION
Data Source or Collection Instrument (2a.25)	Identify the specific data source or data collection instrument (e.g. name of database, clinical registry, collection instrument, etc.)	<i>Outcome and Assessment Information Set (OASIS)</i> <i>MedPAR database</i>	
Data Dictionary or Code Table (2a.29)	Provide URL or attachment (if exceeds 2 pages); however, key definitions should be in the submission form numerator and denominator details		Technical
Stratification Details/ Variables (2a.11)	Provide instructions for calculating the measure by category (e.g., age) including the stratification variables, all codes, logic, and definitions	<i>Compute overall hospital score and also by race. Identify patients as white, black, Hispanic, and other and compute results for each group</i>	Technical If used to stratify by risk, not subject to harmonization
Risk-Adjustment Method/ Variables (2a.14)	Identify the method and variables/risk factors (not the details)	[method] [variables/risk factors] <i>Logistic regression model</i> <i>Risk Factors:</i> <i>Age</i> <i>Functional status</i> <i>Prior hospitalization</i> <i>Co-morbid conditions of diabetes, CHF, CAD</i>	Technical Not subject to harmonization
Detailed Risk Model (2a.15)	Provide risk model coefficients or equation to estimate each patient's probability for the outcome including coefficients for the variables/risk factors Provide the codes or definitions for each variable/risk factor Provide programming language (e.g., SAS code)	Intercept -9.50 Age/10 0.59 BMI/5 -0.07 Cerebrovascular disease 0.43 Chronic lung disease 0.38	Not subject to harmonization

Guidance for Measure Harmonization: A Consensus Report

Appendix B Steering Committee

Kristine Anderson, MBA (Co-Chair)

Booz Allen Hamilton
Rockville, MD

Barry Bershow, MD (Co-Chair)

Fairview Health Services
Chanhassen, MN

Eddy Bresnitz, MD, MS

Merck & Co., Inc.
West Point, PA

Nancy Donaldson, RN, DNSc

UCSF School of Nursing
San Francisco, CA

Scott Endsley, MD

Cleveland Clinic
Cleveland, OH

Lee Green, MD, MPH

University of Michigan
Ann Arbor, MI

Constance Hwang, MD, MPH

Resolution Health, Inc.
Columbia, MD

Karen Kmetik, PhD

American Medical Association-Physician
Consortium for Performance Improvement
Chicago, IL

Jacquelyn Kosh-Suber, BSN, MA

Centers for Medicare & Medicaid Services
Mitchellville, MD

Frances Margolin, MA

The Leapfrog Group
Washington, DC

Ramesh Sachdeva, JD, MD, PhD, DBA

American Academy of Pediatrics
Milwaukee, WI

Sarah Sampsel, MPH

WellPoint
Rio Rancho, NM

Charles Turkelson, PhD

American Academy of Orthopaedic Surgeons
Rosemont, IL

Project Staff

Helen Burstin, MD, MPH

Senior Vice President
Performance Measures

Karen Pace, PhD, BSN, MSN

Senior Program Director
Performance Measures

Lindsay Lang, MHSA, RN

Project Manager
Performance Measures

Jessica Weber, MPH

Research Analyst
Performance Measures

Guidance for Measure Harmonization: A Consensus Report

Appendix C Sample Notification for a Measure in Development

Note: This is under development.

THE STEERING COMMITTEE RECOMMENDED adding an item on the data types used in the measure, asking if the developer needs assistance making contact with other developers to address related or competing measures, and including a link to the harmonization guidance document.

Readiness to Submit

The screenshot shows a web form titled "Measure Development-Readiness To Submit". On the left is a dark green sidebar with a list of navigation items: "Consensus Development Process", "Consensus Development Projects", "Submitting Standards", "Measure Maintenance", "NQF-Endorsed Standards", and "Improving NQF Processes". The main form area has a green header with the title. It is divided into several sections:

- User Information**: Fields for "User Contact Name:" (Marvin Acme), "User Organization:" (Acme Corp.), "User Phone Number:" ((202) 555-1212), and "User Email:" (macmetest@mailinator.com).
- On Behalf Of**: Fields for "Name:", "Organization:", "Phone Number:", and "Email:".
- Preliminary Measure Information**: A "Type:" dropdown menu, a "Title:" text field, and a "Description:" text area.
- Status of Measure Development:** A list of five radio button options: "Measure remains under development", "Measure is fully developed and specified", "Measure testing initiated", "Measure testing completed", and "Measure is in use".

At the bottom right of the form are two buttons: "submit" with a checkmark icon and "cancel" with an X icon.

THE NATIONAL QUALITY FORUM (NQF) is a private, nonprofit, open membership, public benefit corporation whose mission is to improve the American healthcare system so that it can be counted on to provide safe, timely, compassionate, and accountable care using the best current knowledge. Established in 1999, NQF is a unique public-private partnership having broad participation from all parts of the healthcare industry. As a voluntary consensus standard-setting organization, NQF seeks to develop a common vision for healthcare quality improvement, create a foundation for standardized healthcare performance data collection and reporting, and identify a national strategy for healthcare quality improvement. NQF provides an equitable mechanism for addressing the disparate priorities of healthcare's many stakeholders.

NATIONAL QUALITY FORUM
601 13th Street NW
Suite 500 North
Washington, DC 20005
202-783-1300
www.qualityforum.org