Quality Data Model: Background and Supporting Documentation

Appendix C: Comment Overview

June 2011

NQF

NATIONAL QUALITY FORUM

I. Appendix C

a. Introduction

A general summary of the comments is listed in the table below. The content of the comments is logically divided into seven categories of recommendations to NQF about how to improve and enhance the model. The table displays the breakdown of the 86 comments into each of these seven categories.

Evaluation of these comments is progressing with direct collaboration with the HIT Standards Committee (HITSC) and that committee's Clinical Quality Workgroup chaired by James Walker (Geisinger) and Karen Kmetik (AMA-PCPI) and the Vocabulary Task Force chaired by Betsy Humphries (NLM) and Jamie Ferguson (Kaiser). Some of those discussions have progressed significantly and continue at the time of this printing of the QDM comments (June 30, 2011). Comments were received from measure developers, providers (hospitals and ambulatory), health care informatics academic organizations, vendors, and the HITSC and its workgroups.

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General / Operational	8
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b. General / Operational

Several general issues provided valuable insight into how stakeholders expect to access and use the QDM as a usable model. These suggestions include:

i. Providing identifiers to each QDM element with a method to determine that element's version to assist measure developers and users to evaluate measures created using prior versions.
ii. Identifying use cases (examples) to explain how the QDM can be used to evaluate resource use and administrative processes and outcomes in addition to clinical processes and outcomes.
iii. Providing greater specificity and detail in the 'technical specification' to detail the content and transport standards used for each of the QDM elements.
iv. Detailing how QDM versioning will be incorporated into the Measure Authoring Tool and how versions of each will be coordinated.
v. Explaining how QDM can support both quality measures and clinical decision support to improve validity, usefulness and facilitate adoption.

Consistency with other healthcare information models

The comments indicated an awareness of the fact that the new version is more consistent with existing healthcare information models developed for information used in direct care delivery. Some suggestions include:

i. Continue to work with the HIT Standards Committee Clinical Quality Workgroup and Vocabulary Task Force to further detail the standards used for each QDM element.
ii. Consolidate concepts that are based on health IT standards into groupings to enhance understanding by non-IT clinicians. Examples include (a) combining allergy and intolerance into a general category "adverse effect" which has sub-categories of true allergy and non-allergy adverse effects, (b) combining procedures into a continuum of actions to improve health taken by a patient on one extreme to complex neurosurgical procedures on the other extreme. These and other examples will also help in the HIT Standards Committee Vocabulary Task Force evaluation of code sets (or vocabularies) to recommend for use with each QDM category.
iii. Modify some category terms such as changing "patient, clinical, and community characteristics" to "care delivery and population health characteristics."

c. Model / Categories

A number of comments addressed the 'readability' of the categories of information listed in the QDM. Some of these comments are also addressed in the prior section, "consistency with other healthcare information models." Each of these comments is currently under review and will be addressed in the next draft of the QDM with significant input from the HITSC and its workgroups.

i. Some of the changes from the prior version of QDM are questioned by those commenting. For example, the previous version identified family history as a context of a condition or diagnosis. The new model identifies family history as a separate category. Discussion in the HITSC Vocabulary Task Force seems to support the move to a separate category as there are specific models for family history that already exist. Some comments prefer the prior approach.
ii. A more standardize modeling approach for displaying the QDM is suggested, such as UML.
iii. Some have requested greater clarity in the definitions and the inclusion of examples.

d. States

The state is the context in which each category of information is expected by the measure developer. There are states of existence, or *being*, and states of *action* provided as available contexts. The QDM publication provided a mapping of specific states to individual concepts (or categories). These suggestions are very helpful in expanding and refining the model for the next draft.

i. Additional states are recommended by some comments.
ii. Specific mapping of states to concepts or categories are recommended by other comments.

iii. Some comments expressed the need for a more detailed mapping of each category to specific states but questioned the feasibility and likelihood of finding such information in a clinical record. For example, measure developers do need to determine that communication is acknowledged but there is no clear standard to capture and store such information in current EHRs or PHRs.

e. Care Coordination

Some comments addressed the significance of care coordination with respect to patient engagement, cross-continuum of care, and longitudinal management.

i. The QDM must address requirements for management of plans of care including goals or expected outcomes. In addition to defining plans of care, specific examples are suggested.
ii. Greater clarity in definitions is required.

f. Attributes

Each category of information and its context of use (state) requires additional information (*metadata, or attributes*) to allow measure developers to indicate the specificity required in a clear, consistent manner. The comments regarding attributes generally recommended greater clarity in definition of each attribute and attention to consumer as well as clinician issues.

g. Relative Timings, Function Operators

The section of the QDM on relative timings and function operators explains how to apply simple logic connecting each QDM element to other elements. Comments addressed the benefits of including such information and identified the need for more examples and an even deeper method to express logic. Based on the comments, this new section of the QDM opens the door to more fully expressing measures as implementable queries into clinical information systems.

i. The logic elements provided provide part of the information an implementer needs to write a query into an EHR. By adding standard query language to each of the elements, a vendor could create a standard script to coordinate the logic with the model of information within the software delivered to customers.
ii. Comments request more and clearer examples of how logic elements should be used.
iii. Some additional operators are recommended by some.

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
General / Operational	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	PCPI recommends that NQF assign identifiers to the QDM elements in Version 3.0 and in prior versions of the QDM. This will assist measure developers who have specified measures using previous versions of the QDM in version control of the measure specifications and in transitioning to future versions of the QDM.	
General / Operational	Dana Alexander	GE Healthcare Information Technologies	The acronym IFMC is not explicitly written out. Providing the full name will enhance the understanding of the relationship between QDM and the Measure Authoring Tool. Data from administrative and financial applications are essential to evaluating NQF endorsed measures in addition to information from clinical systems (e.g. nurse staffing). The addition of financial and administrative applications to the specifications will more adequately reflect and support NQF endorsed measures. Patient, clinical and community characteristics should be changed to; care delivery; and population health characteristics broadening consideration of all aspects of care delivery to include the social and economic well-being of populations aligning with the National Priorities Partnership.'	
General / Operational	Janet Leiker	American Academy of Family Physicians	Thank you for the opportunity to comment on this version of the QDS; QDM. We are pleased to see fundamental informatics improvements and hope that subsequent versions will continue toward a usable model. AAFP Center for Health IT	
General / Operational	Michelle Spetman	Baylor Health Care System	'Overall, more examples are needed to help clarify/interpret the concepts included in the QDM.'	
General / Operational	Rachel Nelson	Georgetown Law	This updated version of the QDM represents a useful advancement. The model itself is immensely important as a facilitator for quality measurement and feedback automation, as well as bridging communities (such as clinical decision support and quality) that should not be so separate as they currently are. The specification document seems to me less ;technical; than simply ;specification;, but perhaps as someone from the non-IT side I am too accustomed to local terms of are where ;technical; specifications definitionally identify content/transport standards or even specific value sets. Other than that, I would observe that the introductory narrative sections on pages 3 and 4 could use a bit of refinement and clarification before standing as the final record. (The content and apparently intended spirit, however, I would support.)'	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
General / Operational	Sharon Sprenger	The Joint Commission	We have several concerns based on the statement in the QDM overview document that updates to the QDM will be made as needed. At the same time, it is noted that the measure-authoring tool (MAT) will be available in Fall 2011. It would be our expectation that the MAT must reflect the most current version of the QDM. This is necessary since the QDM underwent important changes from prior versions that will have a significant impact on measure retooling. At this time, we are not aware that there is a clear update schedule to the QDM or how it will be integrated into the MAT. As a measure developer, we are concerned that without a regular update schedule clearly defined to the QDM and MAT we cannot plan accordingly. The lack of a schedule and timely version release will also potentially result in rework of already retooled measures.'	
General / Operational	Ted Shortliffe / Rosemary Kennedy	AMIA	the QDM is intended to enable automation of data contained in Electronic Health Records (EHRs), Personal Health Records (PHRs), and clinical applications. However, data from administrative and financial applications are also critical to evaluating NQF-endorsed measures related to nurse staffing. Specifically, data from these systems are instrumental in calculating the percentage of productive nursing hours worked by registered nurse (RN) staff with direct patient care responsibilities. AMIA believes that the addition of administrative and financial applications to the specification will more adequately reflect existing NQF-endorsed measures. *The QDM needs to support both clinical and administrative concepts associated with performance measurement and improvement.*	
General / Operational	Ted Shortliffe / Rosemary Kennedy	AMIA	We suggest that NQF provide examples of how the QDM will work with CDS standards to improve validity, usefulness, and facilitate adoption.	
Consistency with other healthcare information models	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	The PCPI offers a general comment regarding value sets in that we recommend using the terms *value set* and *subset,* rather than *value set* and *child value sets* for consistency with terms being used in discussions taking place at the HIT Clinical Vocabulary Work Group of the ONC HIT Standards Committee.	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
Consistency with other healthcare information models	Jim Walker	Standards Committee Clinical Quality Workgroup	Functional Status should be subdivided into “General” and “Disease-specific”.	
Consistency with other healthcare information models	Jim Walker	Standards Committee Clinical Quality Workgroup	Is the omission of medication prescription from “Interventions” intentional?	
Consistency with other healthcare information models	Jim Walker	Standards Committee Clinical Quality Workgroup	The distinction between “adverse event” and “adverse effect” is logically unclear and does not conform to natural or clinical English.	
Consistency with other healthcare information models	Jim Walker	Standards Committee Clinical Quality Workgroup	Not true clinically: “Medication adverse effects are distinct from medication allergy and intolerance.”	
Consistency with other healthcare information models	Jim Walker	Standards Committee Clinical Quality Workgroup	? meaning – “Also, subjective of disease perceived by the patient.[1]”	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
Consistency with other healthcare information models	Ted Shortliffe / Rosemary Kennedy	AMIA	the "QDM is a model of information used to express patient, clinical, and community characteristics." However, QDM's vision is to support measurement and improvement efforts across all aspects of health and healthcare delivery. For this reason, *AMIA believes that the patient, clinical, and community characteristics should be changed to "care delivery and population health characteristics,"* taking into consideration all aspects of care delivery including the social and economic wellbeing of the population. This is an important aspect of QDM's evolution and is aligned with the NQF National Priorities Partnership.	
Consistency with other healthcare information models	Ted Shortliffe / Rosemary Kennedy	AMIA	Within the QDM specification, there are repeated references to "clinical" concepts. *A definition of clinical concepts should be added to eliminate any ambiguity in interpretation and use of the QDM.* This is important because performance measurement involves the "person being measured" as well as the "healthcare delivery provided." As we suggest above, healthcare delivery is not restricted to "clinical" concepts; it also involves administrative and financial concepts related to the operational management of care.	
Model / Categories	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	It is unclear if two concepts can be used together	
Model / Categories	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	We do not support the addition of the QDM concept Family History. From a clinical model perspective, it provides context to a condition/diagnosis/problem. Rather Family History should be defined as a State of being within QDM 3.0.	
Model / Categories	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	However there is still a gap between concepts and states in the Quality Data Model and how the corresponding information is stored in an EHR. For example, expressing a data element used in a performance measure using the QDM does not automatically identify how to collect information in an EHR. This gap needs to be addressed. We believe it is premature to rely on the QDM for automated structured data capture until the QDM concepts and states are congruent with EHR capability	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
Model / Categories	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	The updates to the NQF Quality Data Model are significant and demonstrate progress toward a useable and understandable model. However, the model is still flat and non relational. The PCPI recommends that a standardized methodology is used for modeling such as UML be adopted. We recommend that the QDM be expressed with graphical notation techniques to create a visual model of the QDM and its contents and relationships.	
Model / Categories	Dana Alexander	GE Healthcare Information Technologies	Further define ;clinical concepts; to eliminate any potential ambiguity. Performance measurement involves both the person being measured as well as healthcare delivery provided. Healthcare delivery is not restricted to clinical concepts alone but includes administrative and financial concepts related to the management of care. Further define how concepts;transfer; and;discharge; are defined within the QDM model to support care coordinationPlanning; Providing care: the concept of goals should be structured discretely to support future measures related to planning and care coordination. Communication and monitoring of goals should be defined as discrete concept along with the QDM concepts of condition/diagnosis/problem and intervention.Care Coordination: references to;physicians; should be expanded to include provider or healthcare professional to reflect key stakeholders of the care delivery team.	
Model / Categories	Diana Jolles	American College of Nurse-Midwives	I appreciate your consideration of our previous concern with the lack of structure for the concept of ;overuse; within your model. We would once again like to urge you to consider ;OVERUSE; as concept #24. Without this level of structure, the concept will continue to be marginalized rather than central to the framework. With maternity and end of life care as two examples, overuse; should be central and most certainly one of the CONCEPTS included within QDM.	
Model / Categories	Jim Walker	Standards Committee Clinical Quality Workgroup	Problem List Categories (designed to be comprehensive, mutually exclusive, understandable to clinicians and patients) 1. Needs active management. 2. Needs monitoring (e.g., breast cancer in remission for less than X years). 3. Does not need management or monitoring--but still belongs on the Problem List (e.g., breast cancer in remission for more than X years). 4. Resolved--and for that reason belongs on the Medical History.	

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Comment Category	Representatives' Name	Organization	Comment	NQF response
Model / Categories	Serafina Versaggi		The definitions of Intervention and Procedure does not help to distinguish between the two: why there is a need for two distinct concepts, nor why within the context of Quality Measures reimbursement (discussed in both concept definitions) is referenced unless it helps to distinguish between the terms'	
Model / Categories	Suzanne Pope	American Urological Association	The American Urological Association appreciates NQFs continuing modification of the Quality Data Model. The detailed information provided for each data element in this version is very useful. However, some of the "concepts" in the QDM still require further clarification. Specifically, the concepts of procedure and intervention are not conceptually distinct from each other. The problem is that procedure and intervention are at the same hierarchical level as;concepts,; yet intervention is conceptualized as an action that includes treatment, procedures, or activity. Intervention or procedure cannot be distinct from each other if procedure is subsumed under intervention. We would appreciate clarification on how exactly interventions and procedures differ.'	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Allergy: suggest adding the following states of action: - review - acknowledge - reminder - alert	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Characteristics: suggest adding the following states of action: - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Communication: suggest adding the following states of action: - alert - review - perform	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Device: suggest adding the following states of action: - alert - order - discontinue - communicate - discuss	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Diagnostic Study: suggest adding the following states of action: - review - plan - transmit	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Encounter: suggest adding the following states of action: - request - review - document - plan	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Experience: suggest adding the following states of action: - decline	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Functional Status: suggest adding the following states of action: - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Intervention: suggest adding the following states of action: - decline - discontinue - document - plan - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Intolerance: suggest adding the following states of action: - alert - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Laboratory Test: suggest adding the following states of action: - alert - calculate - discontinue - review	

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States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Medication: suggest adding the following states of action: - alert - discontinue - reconcile - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Physical Exam: suggest adding the following states of action: - alert - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Preference: suggest adding the following states of action: - update	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Procedure: suggest adding the following states of action: - discontinue - plan - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Risk Evaluation: suggest adding the following states of action: - calculate - document - order - plan - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Substance: suggest adding the following states of action: - discontinue - dispense - receive - recommend - review	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Symptom: suggest adding the following states of action: - document - review	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
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States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of System Resources: suggest adding the following states of action: - request - transmit - update	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Concept of Transfer: suggest adding the following states of action: - decline - plan - record - request	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	Suggest adding the concept of Care Plan (former standard category in version 2.1). Suggest the following states of action for Care Plan: - created - documented - implemented - recommended - recorded - reviewed - transmitted - updated - discussed with patient (new proposed state of action)	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	It is unclear why states of action need to be in the present tense	
States	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	For the “states of being” please provide further clarity on the difference between “inactive” and “resolved”. Could a diagnosis be both “resolved” and “inactive”?	
States	Dana Alexander	GE Healthcare Information Technologies	Suggest to add state of to QDM states of action	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
States	Janet Leiker	American Academy of Family Physicians	(AAFP--part 2 of 3) The more complex the "syntax" the less likely it is to be used consistently. We are very interested in any validation NQF has undertaken particularly in regard to trained but independent measure developers/encoders "deconstructing" the same measure into substantially different representations in the QDM syntax. Also, we are concerned with the "QDM Mapping of Concept to States" tables as several QDM "attributes" have additional "states" that are logical but absent from the tables. For example, an "allergy" can certainly be "Accessed", "Acknowledged", "Alerted", "Assessed", "Created", "Discontinued", "Documented", "Notified", "Reconciled", "Recorded", "Reported", etc. Part of the ambiguity lies in whether these "states of action" or "behaviors" treat the attributes as the subject (what's doing it) or the object (what's getting it done to it).'	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
States	Mark Antman	American Medical Association-Physician Consortium for Performance Improvement	It is unclear why states of action need to be in the present tense. (p. 5 of overview document) Suggest adding the following states to the QDM version 3.0: Allergy Discussed (could be applicable to the following concepts: condition/diagnosis/problem, device, diagnostic study, medication, preference, and procedure). Communicated We support the addition of the QDM state Decline. For the "states of+Table2[[#This Row],[Comment]] being" please provide further clarity on the difference between "inactive" and "resolved". Could a diagnosis be both "resolved" and "inactive"? States of Action Technical Specification Document, Page 38 to 40 Recommend further definition to differentiate between the following States of Action: - Record versus Document - Order versus request	
States	Sharon Sprenger	The Joint Commission	There seems to be an overlap in meaning for the states of action "record", and "document". They require further definition to ensure consistency of use. The definition as provided, in fact seem circular: To record is to register or preserve data in some form of log or documentation To document is to create a recordof facts, events, symptoms or findings. According to these definitions, one could argue that the concept communication is an event, and therefore could be associated with the state of action "document". However, it is linked to the state of action "record". Similarly, a "characteristic" could, according to the definition, be associated with "record", but the QDM only allows the mapping to the state of action "document".'	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
States	Sharon Sprenger	The Joint Commission	Some concept-state mappings are focused on the action of documenting (e.g., allergy), while others portray the action itself (e.g., medication), and others do both (e.g., communication). Most states of action rely on documentation without explicitly representing on the act of documenting. For instance, the concept "medication" associated with the state of action "administer" will ultimately translate into the documentation of such an administration. However, a concept such as "communication" cannot be linked to a state of action that actually portrays the action, but rather is mapped to the act of recording ("record"). This creates confusion regarding what is being captured: is it the action, or the documentation of the action? In addition, it is not clear why for some concepts it is acceptable to capture the action, but not its documentation, while for others it is only possible to capture the documentation. There is no clear justification provided for this differential approach across concepts.'	
States	Sharon Sprenger	The Joint Commission	When attempting to model physician-patient education using the concept "communication", the only state that can capture the action is "acknowledge." This state relies on the confirmation of receipt of the information by the patient. This might not be aligned with the representation of the concept in a taxonomy, which most likely will be focused on the provision of information to the patient by the clinician, rather than the explicit acknowledgement of receipt of information by the patient.'	
States	Sharon Sprenger	The Joint Commission	The "transmit" state of action can only be coupled with the concepts of "communication" and "health record component." Since the state is defined as "to communicate a message, information, or news", and the concept of "transmission" is traditionally associated with electronic data, together the state and concept are confusing. The confusion results because the state seems to have a different meaning depending on which concept it is used with.'	
States	Sharon Sprenger	The Joint Commission	It is awkward to think of the concept "communication" associated with the state "transmit." According to the provided definitions, the connection of the concept and state would literally mean communication communicated or transmission transmitted.'	
States	Sharon Sprenger	The Joint Commission	The state of being "resolved" is mapped to the concept "symptoms," but not to the concept "condition/diagnosis/problem." However, when defining the state "resolve", there is an example that refers to the concept "condition/diagnosis/problem". Taking into account the broadness of this concept, we would include "resolved" as an allowable state of being for the	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
			concept “condition/diagnosis/problem.”'	
Care Coordination	Michelle Spetman	Baylor Health Care System	Transfer; Like Location, Transfer needs clarification to specifically designate transfers between locations versus level of care. In addition, it is unclear what the relationship is between Discharge Status, Status, and Transfer.'	
Care Coordination	Ted Shortliffe / Rosemary Kennedy	AMIA	There is a QDM concept labeled transfer to support continuity and coordination ofcare. In addition to transfer, care coordination functions typically involve a discharge from one location (hospital) and an admission to another location (home care agency). It is not clear how these concepts are handled within the QDM.	
Care Coordination	Ted Shortliffe / Rosemary Kennedy	AMIA	We believe that when planning and providing care, the concepts of “goal” or “expected outcome” are critical factors. Defining and monitoring goals are essential in preventing potential problems, resolving a currently existing problem, or maintaining or enhancing a present status or level of functional ability. Goals are subsumed within the QDM concept “characteristics.” Given the critical importance of defining and monitoring goals within care delivery, AMIA believes that goals should be structured discretely to support future measures related to the planning and coordination of care. Clear, concise communication and monitoring of goals is essential to the plan of care and should be defined as a discrete concept along with the QDM concepts of condition/diagnosis/problem and intervention	
Attributes	Dana Alexander	GE Healthcare Information Technologies	The term actor; needs to specify data derived and recorded by consumers to reflect aspects of care delivery and self care management	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
Attributes	Janet Leiker	American Academy of Family Physicians	(AAFP- Part 3 of 3) We have previously expressed a concern about the ambiguity and perceived overlap of several "attributes" in the model. Specifically, "Diagnostic study", "Intervention", "Laboratory test", and "Procedure" have partial, but not complete disambiguation in this version. Environmental location and Facility location also present a degree of foundational overlap that may be unnecessary. Usability and consistency of the model depend on the definition and application of distinct "attributes". Additionally, we are concerned about significant limitations in the "Actor" construct, particularly in regard to establishing the provenance of a data element. Often in a health care setting, someone might "record" a data element that is subsequently validated or confirmed by another - Device-Patient-Nurse-Physician, for example. The current Actor construct does not appear to allow for such a treatment. Two attributes triggered a particular level of discomfort - the concepts of a "Health Record Field" and its related "Health Record Component". This introduces a level of model fudge-factor that is likely to be abused and render measures incalculable. Please carefully consider the unintended consequences of these concepts in the model.'	
Attributes	Mark Antman	American Medical Association-Physician Consortium for Performance Improvement	It is unclear how attributes are to apply to the entire QDM element. It seems that attributes should be able to be applied to individual components of the QDM element, such as to a QDM concept. For example, it would seem that the attribute "result" could apply to several QDM concepts, such as "diagnostic study" or "laboratory test"; so that it would be "diagnostic study result and the state could be "reviewed". It does not make sense to apply the attribute to the entire QDM element.'	
Attributes	Michelle Spetman	Baylor Health Care System	Dosage and Result ; To optimize data analysis, these fields should not be "free form" text fields. Both Dosage and Result could be separated into 3 separate fields to enable analysis of (1) value, (2) units, and (3) operator/direction.'	
Attributes	Michelle Spetman	Baylor Health Care System	Laterality; There is no concept-specific attribute for anything other than left/right. Is left/right the only distinction necessary? What about anterior/posterior? Superior/inferior?	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
Attributes	Michelle Spetman	Baylor Health Care System	Location; Should the term “particular location” be changed to “functional location;” (or similar) to distinguish between a “venue” (such as Med/Surg 5 West) and a function (such as ICU)? The term “location” could refer to (1) physical location (such as 3rd floor, etc), (2) functional location (such as ICU, telemetry, etc), or (3) level of care. A combination of these “locations” is needed to provide the granularity of detail necessary for an effective unit analysis. It’s not unusual to have a level of care that does not align with the usual level of care for a particular “venue/location.” A universal bed is a good example of this. It’s unclear which field might reflect “level of care” versus “patient location.”'	
Attributes	Serafina Versaggi		It is unclear how some attributes are used within the QDM syntax. The example measures section (starting p.19) indicate that attributes are in parenthesis but the attribute TIME does not match the example “Diagnosis active: hypertension (timing: onset time). There are also inconsistencies in how some attributes are used in the syntax examples and how they are defined in the Attribute table. E.g., in example A, Data Flow is followed by an Actor qualifier (source) which is similar to Data Flow qualifier Sender. In addition, for some, the definition in the Attribute table and the example syntax are inconsistent leading to confusion, e.g., Data Flow – description indicates that a sender and receiver are required, yet no example includes receiver at all, and the first syntax example in which Data Flow appears (on p.20) does not include the term attribute after Data Flow (where as it does on p.22 example) seems to imply that Data Flow properties are source, recorder and subject but they are properties of the attribute Actor; the Concept-specific attribute Environmental Location is referred to as environment: ambulatory office in an example.'	
Attributes	Sharon Sprenger	The Joint Commission	The QDM does not include any attributes or states that would allow for the processing of conflicting documentation. How will this be addressed?	
Attributes	Sharon Sprenger	The Joint Commission	When representing discharge medications, “medication order concurrent with encounter performed (discharge)” would seem adequate. However, the exact moment in which medication is prescribed will not necessarily match the moment of discharge. It will, almost certainly occur before discharge. Usually, one knows that a medication is a discharge medication either because the source is a specific health record component, or because it is “flagged” as such. Therefore, we feel that creating an attribute would better suit the modeling needs of discharge medications.'	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
Attributes	Sharon Sprenger	The Joint Commission	It is not clear what specific "time" attributes exist, and how they should be used. An inventory should be created that would allow for the identification of any existing gaps.'	
Attributes		Physician Consortium for Performance Improvement (PCPI)	It is unclear how attributes are to apply to the entire QDM element. It seems that attributes should be able to be applied to individual components of the QDM element, such as to a QDM concept. For example, it would seem that the attribute "result" could apply to several QDM concepts, such as "diagnostic study" or "laboratory test"; so that it would be "diagnostic study result and the state could be "reviewed". It does not make sense to apply the attribute to the entire QDM element.	
Relative Timings, Function Operators	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	The terms SOURCE ACT and TARGET ACT are used in the relative timing descriptions but are not defined in the QDS documentation. Definitions should be provided for these terms.	
Relative Timings, Function Operators	Bernard Rosof	Physician Consortium for Performance Improvement (PCPI)	The language used in the timing column should match the timing language as displayed in the "Example". This will be an important distinction if NQF intends that Measure Developers will use the Technical Specifications Document as a reference guide. Example: Timing column says, 'occurs during', recommend saying DURING Example: Timing column says, 'concurrent with', recommend saying CONCURRENT	
Relative Timings, Function Operators	Dana Alexander	GE Healthcare Information Technologies	Clarity between the definition of characteristics and condition/diagnosis/problems is suggested.The definition of condition/diagnosis/problems should take into consideration consumer and patient centered models. i.e.patient problems are recorded and monitored by providers and/or consumers. Clarify if facility location; is referencing care provision location	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
Comment Category	Representatives' Name	Organization	Comment	NQF response
Relative Timings, Function Operators	Janet Leiker	American Academy of Family Physicians	Comments from the AAFP Center for Heatlh IT We are pleased with the maturation of the "quality data" effort from NQF and are confident that the "concept" model is much more evidence-based than the initial "data element" approach. However, we are concerned about a number of elemental inconsistencies in the model that should not persist past a draft phase. These inconsistencies range from vocabulary ("Occurs during" becomes "DURING"), to grouping ("Linked to" is not a "relative timing" construct), to restrictions in the model borne out of current administrative process (could we only be interested in "FIRST" through "FIFTH" because a claim form doesn't have more slots for diagnosis codes?) (5010 has 12 ICD slots, by the way). A shared model of the basic building blocks of clinical quality/performance measures is essential for understandability and computability. As such, consistency and simplicity are critical success factors. The quasi-English "expression language" is complex in its relative infancy. No doubt, subsequent modification and additions will be required that are more likely to complicate it further rather than simplify it. (part 1 of 3)'	
Relative Timings, Function Operators	Mark Antman	American Medical Association-Physician Consortium for Performance Improvement	RELATIVE TIMINGS The terms SOURCE ACT and TARGET ACT are used in the relative timing descriptions but are not defined in the QDS documentation. Definitions should be provided for these terms. Technical Specifications Document, Page 5 through 7 The language used in the timing column should match the timing language as displayed in the "Example". This will be an important distinction if NQF intends that Measure Developers will use the Technical Specifications Document as a reference guide. Example: Timing column says, occurs during', recommend saying DURING Example: Timing column says, concurrent with', recommend saying CONCURRENT FUNCTIONS Suggest adding the following function: Average LOGICAL OPERATORS Suggest adding the following logical operators: AND NOT The functions "SUBTIME" AND "SUBDATE" are referenced in the math operators but are not defined or described. Please provide definitions for these terms.'	

Quality Data Model: Background and Supporting Documentation: Comment Resolution Log				
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Relative Timings, Function Operators	Maureen Dailey	American Nurses Association	The timing metric of ;ends before or during; is confusing as it includes 2 options of before and during. Seems as if;ends before start of;ends during; and ends after end of; could describe that time sequencing related to clearly defined target acts. Status attribute needs to also include the capacity for describing pending; and on/off. This will enable checking about completion of plan of care actions and description of device operability levels. For example, on page 14 table the status column should be marked for device, diagnostic study, laboratory test, and medication.'	
Relative Timings, Function Operators	Michelle Spetman	Baylor Health Care System	Renaming the operator “TIMES” to “MULTIPLIED BY” would be more specific and in parallel with the usage of “DIVIDED BY”	
Relative Timings, Function Operators	Samson Tu	Stanford University	It would be very useful for us to know whether QDM comes with a formal syntax for writing Boolean expressions. In the SHARP 2C project, we are considering the use of the QDM as a standard data model for writing clinical decision support rules	
Relative Timings, Function Operators	Samson Tu	Stanford University	When is it necessary to specify a state, when is it not necessary? Is '<= duration' at the the end of a temporal comparison (<= 24, "hours") always interpreted as "within duration" of the time point referenced in the second QDM element ('start of [Encounter: encounter inpatient]')? Should ">= (24, "hours") be interpreted as (1) outside the time interval from the time point referenced in the second QDM element to 24 hours after, or (2) within the time interval from the time point referenced in the second QDM element to a time point more than 24 hours after? Without proper documentation, it's hard to interpret such expressions.	
Relative Timings, Function Operators	Samson Tu	Stanford University	SUM("Intervention perform: Physical Restraint (duration is present)" DURING "Measurement Period") > 5 HOURS --- (The syntax provided above would return "True" if and only if the summed overall durations of physical restraint were greater than 5 hours.) In this example, the "5 hours" is not written as (5, "hours"). Is that significant? How does "duration is present" signify that it's the durations of the intervention Physical Restraint that should be summed?	

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Comment Category	Representatives' Name	Organization	Comment	NQF response
Relative Timings, Function Operators	Samson Tu	Stanford University	The expressions are probably conforming to some syntactic rules of that spell out exactly what is allowed and what is not allowed. Has that syntax being formalized in to a grammar? Is the grammar informal, used to write expressions that are meaningful to humans, but not necessarily unambiguous and parsable by a computer program?	
Relative Timings, Function Operators	Samson Tu	Stanford University	If HL7 has documentation on the expression syntax, I would like to see it. Your technical document references HL7 Act Relationship types that define the temporal comparison operators (e.g., start before start of). However, it seems to me that the syntax you are using depends on the QDM data model (concept, state, instance, attributes, value set) that's different from the Acts of HL7 RIM. *Maybe you have HL7 documentation on the expression syntax (not just information on HL7 RIM and the Act Relationships)?*	
Relative Timings, Function Operators	Samson Tu	Stanford University	I also have problem reading the syntax related to the timing attribute. In most places, I can read the attribute name and what follows it (e.g., (value < 90 mm HG) as specifying a constraint on the value of the attribute. (e.g., " data flow source: blood pressure monitor" constraints the "data flow source attribute to have the value 'blood pressure monitor'… Ideally, one should be able to read an expression and understand its meaning without resorting to narrative explanatory text on that expression. *Having a well-defined syntax that allows a human to parse and interpret any expression would be really helpful.*	
Relative Timings, Function Operators	Serafina Versaggi		We are pleased that the enhancement to the QDM (version 3 technical specification) helps clarify the syntax used in the re-tooled eMeasures and moves toward the ability to automatically compute quality measures from data that is captured in the course of direct patient care. To further this goal, we respectfully suggest that eMeasures be resolved to a set of database queries, and that ideally, each eMeasure should provide sample SQL intended to work with a standard-based database schema.'	