HL7 CDA® R2 Implementation Guide: Supplemental QRDA Clinical Quality Data Sharing User Guide, Release 1

July 2018

HL7 Informative Document

Sponsored by: Clinical Quality Information Work Group
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<thead>
<tr>
<th>Terminology</th>
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<td>Current Procedures Terminology (CPT) code set</td>
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<td>SNOMED CT</td>
<td>SNOMED International</td>
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<td>Logical Observation Identifiers Names &amp; Codes (LOINC)</td>
<td>Regenstrief Institute</td>
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<td>International Classification of Diseases (ICD) codes</td>
<td>World Health Organization (WHO)</td>
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<td>NUCC Health Care Provider Taxonomy code set</td>
<td>American Medical Association. Please see <a href="http://www.nucc.org">www.nucc.org</a>. AMA licensing contact: 312-464-5022 (AMA IP services)</td>
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QRDA Exchange Whitepaper

Goals

The ONC (Office of the National Coordinator for Health IT) 2015 Edition Health IT Certification Program Final Rule ([https://www.federalregister.gov/documents/2015/10/16/2015-25597/2015-edition-health-information-technology-health-it-certification-criteria-2015-edition-base](https://www.federalregister.gov/documents/2015/10/16/2015-25597/2015-edition-health-information-technology-health-it-certification-criteria-2015-edition-base)) defines certification criteria for the record, import, export, and filtering of clinical quality measures via QRDA (Quality Reporting Document Architecture) documents. In the 2015 Edition, the criteria reference the ability to import files rather than using manual entry for all the test case criteria. Furthermore, it requires systems to allow users to export QRDA files on demand. The current QRDA Category I Implementation Guide Volume 1, Release 5 (http://www.hl7.org/implement/standards/product_brief.cfm?product_id=35) provides guidance on what a QRDA document should contain when being submitted for a measure report, for example for a program such as the CMS (Centers for Medicare and Medicaid Services) electronic clinical quality measurement programs. While this guidance doesn’t necessarily prohibit other use cases, it doesn't help the industry move forward in a standard way for cases outside of this limited case. The goal of this paper is to consider whether QRDA is a document type that can be and is used for exchange of clinical data used for clinical care activities and decision support and whether this use case should be more explicitly supported by the standard. Requirements and a discussion of using QRDA for data sharing are currently out of scope of the QRDA standard and its Implementation Guide, but if the community sees a need for modification or guidance to support this use case, it could be added.

Clinicians who report to quality programs have expressed a need to more successfully exchange (both send and receive) data for quality. This both allows providers to ensure that patient care is adhering to quality standards without repeating care activities inappropriately and to benefit from accurate assessment of the care they provide. CMS, the largest implementer of quality measurement programs, generally allows clinical activity from any provider to certify the appropriate application of the evidence-based criteria described in the measures as long as any provider has taken the appropriate action. Therefore, the more sharing of quality information there is, the more clinicians benefit with improved performance scores, the fewer unnecessary activities are repeated, and fewer clinically indicated activities should be missed. Thus, the quality use case can advance interoperability in this way. Quality measures seek to encourage or require providers to take responsibility to ensure that each patient’s care is adhering to recommended, evidence-based guidelines. However, they don’t generally ask each provider to take action; for example, one does not want each of five providers to order a different mammogram— they want the patient to have had one mammogram completed and resulted in the surveillance period. In this way, providers who share data obtain performance credit without taking additional action because they can show that other clinicians have taken the appropriate actions for their shared patients. The patient benefits because if the correct action wasn’t done, each provider has the opportunity and impetus to act to bring the patient’s care into alignment. Furthermore, making information available can inform the appropriate utilization of care resources, avoiding duplicate and unnecessary additional risk and cost.

The use case for data sharing here is limited to QRDA Category I, which contains patient level data. QRDA Category III (QRDA-III) documents are aggregated and do not include patient level
data that would be helpful in furthering direct patient care activities, which is the focus of this whitepaper. It is not possible to aggregate multiple QRDA-III documents because that can lead to double counting clinical information or patients. It would theoretically be possible to perform data sharing with QRDA Category II documents, but the standard is not fully developed and at this time it will be considered out of scope.

Currently there are formats other than QRDA which are being used to transfer patient data around clinical quality and direct patient care use cases. C-CDA (Consolidated Clinical Document Architecture) and CCD (Continuity of Care Documents) may be used for these purposes; however, the QRDA is able to store and process clinical information in a structured way beyond what other formats are able to accommodate. Notably, concepts like negation and exceptions/exclusions are unique to QRDA documents in comparison to other document types. QRDA is not intended in this use case to replace traditional exchanges in transitions of care and messaging; but rather, to extend and enhance them. Similarly, emerging standards such as FHIR (Fast Healthcare Interoperability Resources) may be able to function even more efficiently at this functionality, but at the current time is not widely available as an export function to average users or within a majority of systems.

As other use cases gain importance (based on industry needs or regulation), there are situations where systems need to communicate information using QRDA documents, but the requirements defining how the documents are created can vary with each exchange. Information from this white paper will help the standards development organization (SDO) and the relevant workgroups (Clinical Quality Information, Structured Documents) determine what additional guidance on how QRDA documents should be constructed is needed in order to meet some of these common use cases, and if the QRDA Implementation Guide (IG) should be updated to reflect the recommendations.

**Quality Data Exchange Use Cases**

While not all potential use cases are covered, this paper suggests several potential applications where it may be useful and does not preclude further use cases that extend the principles outlined here. However, it is suggested that initially, an IG should further address some of the cases outlined below as the use of QRDA for data exchange is established.

1. Data sharing across providers for quality reporting to public programs (Using data from multiple systems to report to CMS, State Medicaid)

Providers need to share data to demonstrate that they are in compliance with measure criteria for reporting to programs and fueling quality improvement efforts. For example, a patient may transfer her primary care to another provider across town and that provider would want to transfer her quality data on all measures from the prior provider. The patient could approve this transfer and the old provider would create an export and send it securely. This file would therefore contain as much available information as is relevant to a set of measures.
2. Registry reporting (such as to a specialty registry)

Specialty registries and HIEs that help providers and sites to successfully assess and report on quality performance and outcomes often aggregate data and provide feedback. In the registry case, sites and providers would send intermittent quality reports to the registry as the patient presents for care. Then that data could be later formatted for measure reporting, but the individual reports would alone not likely be sufficient to satisfy the measure criteria.

3. Third party aggregate reporting for multiple functions (may be consumer-led or HIE-driven, for example)

EHRs are designed to act as the user interface for the point of care; they also provide administrative functions such as billing. However, they do not necessarily naturally meet or contain the quality reporting functions needed by many providers and systems. Given the additional cost of using the EHR for reporting and the challenges that may be present in integrating data from other sources and systems, a third party may be an ideal alternative to perform clinical quality reporting. Using QRDA files generated either as data is entered into the system for particular patients or using queries either on a time-limited basis or as needed, one can aggregate data from broader systems and sources in an HIE-like data warehouse and then filter and create reports from that resource. This can eliminate the responsibility for generating reports from the internal system and take advantage of improved measure performance attributable to pulling in more data that satisfies measure numerators, raising the performance score without any action at the local level. QRDA files sent to third parties can also be augmented by C-CDA and other types of files that can contribute to the larger aggregate dataset. However, it should be noted that most measures cannot be satisfied by C-CDA data alone because it does not represent all the datatypes and attributes needed for QRDA reports.

4. Quality reporting to alternate data receivers (such as NCQA, The Joint Commission) and the use of additional implementation guidance

The Joint Commission also uses QRDA files for quality reporting; however, TJC also includes analysis of raw data not currently required in CMS and other reporting programs. For some use cases including The Joint Commission, there may be minor differences such as requesting additional labels or metadata, whereas in others there may be more substantial changes including different IGs. Depending on the use case, it may be helpful to limit individual file sizes by deduplicating and combining data; however, limits on what data to send should be largely based on the time period requested (i.e. is the query open-ended or time limited) and the scope of the request. Some use cases may request more information than needed in order to process multiple metrics or even future queries. A “black box” tool could also be used to allow sites to take larger “raw” QRDA files and refine them to specific form and manner as well as smoking gun requirements—HIT developers have suggested this could relieve them from much of the burden of formatting QRDA files, particularly when there is a use case specific IG on top of the
HL7 IG. This would prevent issues with file rejections in reporting. In general, however, additional requirements in separate IGs should be discouraged when possible.

5. Others?

There certainly may be other use cases which would require or benefit from the sharing of clinical quality data. For example, there is a current need for ongoing quality and safety assessment within health systems to lead practice improvement activities, maintain high care standards, and perform surveillance. This could be performed using the functionality of a health IT system based on QRDA. Other regulatory agencies, such as the CDC (Centers for Disease Control), which does public health surveillance, or the FDA, (Food and Drug Administration) which monitors drug and device safety, could also utilize QRDA for their reporting purposes. There may be significant promise in the use of QRDA for public health reporting, as it can capture many more types of content. Furthermore, QRDA files have an advantage as they could be used to verify quality reports in a validation or audit process. However, in this paper we have chosen not to cover edge cases, but rather to provide some guidance that addresses the initial cases outlined here. We expect that over time, additional features and functions may be desired and addressed in the future.

Proposed Changes to Guidance

In the base QRDA guide, there are recommendations and conformance statements on when documents should be created and what data should be included in these documents. (See section 6.2 QDM (Quality Data Model)-Based QRDA Category I Construction Rules.) That being said, the real-world use of these recommendations is variable. These can be overridden by a program wanting to receive documents. Here we suggest that there should be more guidance and clarity as to when variability is appropriate and should be allowed and where it would lead to problems for data sender and receivers. Language should be clarified in the user guide to reflect this.

The main use for QRDA documents so far has been to the end of quality measures report submissions, and the recommendations in the IG fit within this use case. In the case of including multiple sources of quality data, such as when QRDA documents are imported, following the guidance as directed could lead to a different quality result than if the result were calculated with all quality data about the patient. Given that the 2015 Edition of ONC Certification makes on-demand export of QRDA available to users, it is expected that QRDA will increasingly become a mechanism for data exchange as users find their data to be more accessible and more shareable.

Generate a QRDA for Which Patients?

The base recommendation (section 6.2.2 of QRDA-I, R4) of the QRDA Introductory Material describes which patients should have a document created. The main problem lies in the following:

“A QRDA document should be created for each patient meeting at least one of the IPP criteria of the referenced electronic clinical quality measures (eCQMs). No QRDA document should be created for patients that fail to meet any of the IPP criteria.”
This can cause a problem with some eCQMs, where multiple data elements are required to be included in the Initial Patient Population (IPP). For example, if a patient’s data existed in two EHRs, both of which had a single “Encounter, performed” data element, neither EHR would generate a document for a measure requiring 2 instances of an Encounter, Performed data elements for the IPP. However, if all of this data lived in a single EHR, it would generate a quality document and should trigger the clinician to take action on the guideline for that patient.

The recommendation to fix this problem is to generate a document for all patients with data in the measurement period or reference period that have any QDM data elements either related to one or more measures or agnostic to any specific measure. This would allow multiple data criteria to be aggregated and then filtered. Certification testing is now available for filtering and deduplication functionalities in the ONC 2015 Edition of Certification and as such, this capability is expected to be more widespread in the field. It could also be possible to do some filtering in the request of documents if a patient could never meet the measure in question. An example of this would be if a patient has a data element related to a given measure in a certain time period, but could never be included based upon the age restriction of the measure.

In requesting data, it should also be possible to request that the sender filter the information sent to respond to a specific query, although it may be equally appropriate for the receiver to filter out the data it doesn’t want. A system might not require that all measures with data be sent at all times and this information could be transmitted in the initial request to send/receive QRDA data. We suggest the default mechanism for transfer, however, should be that a system sends all patients for which quality data is available within the requested time period unless the request is for a specific patient or set of patients. It should be noted that the potential availability of optional ONC 2015 Edition Certification (c)(4) functionality to filter and deduplicate QRDA data should also be helpful in offering an easy method to be more selective in selecting patient data and exporting it.

HQMF (Health Quality Measure Format) is the standard that is currently used with QDM to describe the query that comprises the quality measure. HQMF certainly could be used to specify the data requested in the QRDA. However, due to the burden of using QDM-based HQMF to specify queries and measures, we will also discuss free text and other queries. The most common initial query may in fact be asking for specific measure data, which could be done by measure ID or by referencing the HQMF. In this use case we are suggesting that these documents retain most of the conformance of the QRDA IG, but suggest that perhaps an addition to the IG might be needed to describe how to use systems that are able to send/receive QRDA to repurpose this functionality for data sharing/interoperability. It is possible to use HQMF with newer query languages, such as the Clinical Quality Language (CQL) and use is currently being deployed in the current cycle of quality measure programs in a migration towards next-generation standards.

**What Data Should be Included**

In Section 6.2.3, QRDA describes how the data in the document should follow the “smoking gun” approach. This is defined in the Introductory Material as the following:

“When the recipient of the instance has access to no other EHR data, it is important that the instance include data elements relevant to computing eCQM criteria, as well as the other data
elements defined in an eCQM— for stratification, for risk adjustment, etc. Every data element present in the EHR that is required by the referenced eCQM(s), not just those needed to compute criteria, shall be included in the QRDA document.

The EHR may have more data than are relevant to the referenced eCQM(s) and more data than are needed to compute the criteria. For instance, a patient who has been in the Intensive Care Unit undergoing continuous blood pressure monitoring will have reams of blood pressure observations. QDM-based QRDA adheres to a "smoking gun" philosophy where, at a minimum, the conclusive evidence needed to confirm that a criterion was met shall be included in the instance.

At the very least, the QRDA document should include:

- For each data element in each referenced eCQM, smoking gun data that offer confirmatory proof, where a patient has met the criterion—For disjunctive criteria (i.e., where a criterion can be satisfied by one of multiple data elements) include minimal smoking gun data for at least one data element.
- Stratification variables, supplemental data elements, risk adjustment variables, and any other data element specified in the referenced eCQM(s)

A QRDA document created for the intent of import to a clinical system should include all data that could be used to calculate a measure. In practice, this would be more of a naïve dump of data, or “anti-smoking gun”. This should override the smoking gun guidance in the Introductory Materials of QRDA.

An entity requesting information should be explicit as to what the goal of requesting this data is. If it will be used to generate quality reports, for example, the receiver may need all the data that might or might not be relevant to the measure. If a requester is asking for the complete relevant measure data for quality reporting, then it is expected that the sender includes all information relevant to that measure(s) for the entire reporting period.

It could also be acceptable to filter some of the data for import, as long as there would be no change to the outcome when combined with data from another EHR. For example, a measure may only care if a data element exists during the reporting period. If the measure only needs a single instance of this data element and it never needs to be temporally related to another data element in the measure, sending one entry would be enough data for the receiving system. A more nuanced filtering like this would not be required but should still be allowed by a system that wants to export QRDA for the purpose of importing. When requesting information, it is reasonable to explicitly state that only required data is being requested. When receiving information, it is reasonable to ask for confirmation that the data sent was filtered or not. A label for describing whether or how data is filtered is not available currently in QRDA. This information might be needed to satisfy a measure downstream. For example, the fact that no flu shot is present does not mean one wasn’t done if the data has been filtered to the most recent 3 months and the flu shot was done 3.5 months ago. If not all of the data is included, the receiver is likely to want to know this, at least in some cases.
The scope of the QRDA being sent (i.e. what program one is reporting to, etc.) may be included in the initial query from the receiver but is not described here. It also could be addressed in future standards language describing how to send queries for QRDA files intended for data exchange; however, it would need to be determined in what cases the burden of processing a query would be worth the additional effort if it was not easily automated. The Clinical Quality Language may be a mechanism to specify such queries, particularly if it is already used in the system for other purposes.

This approach could both maximize and minimize data being sent. For example. If a provider is looking for colon cancer screening in the last 10 years for a patient, receiving a report just including the most recent colonoscopy is less data than a measure might require. If the requestor is trying to get complete data, the report might be larger, but if the query is to confirm a single quality action, such as a mammogram, then the only data populated may be a numerator value representing the date/time of the mammogram. Here the expectation is that the amount of data requested is the amount returned. Therefore, when a broad or comprehensive set of data is requested, the QRDA volume will be high. Users should send all of the data for a single patient in a single QRDA when possible rather than sending multiple documents per patient in a single exchange.

**Data Provenance or The Quality of Clinical Quality Data**

In order for quality data to be usable in downstream quality improvement or reporting use cases, it must maintain a certain level of consistency and quality. It is expected that poorly formulated QRDA documents may be discarded, and therefore that a QRDA document should be conformant to the base standard except where required data may be absent-- in these cases a system should determine what missing data they will not tolerate. It is a best practice to include metadata that includes the source of data; for example, the author and facility location data should be included with the quality data to allow a system to find the source of a particular piece of the data both for filtering, as in a group reporting context, and to verify the source for audit or accuracy.

**Privacy and Security Considerations**

The context of using QRDA for data sharing is not to expose this data to anyone other than a qualified provider who uses appropriate security and privacy protocols. It is expected this data sharing is between providers requesting data to use for clinical care and quality reporting purposes. Thus, the sender/receiver explicitly requested the identified data. The expectation is that the sender and receiver of these documents are both covered entities that are HIPAA compliant and that both meet the security and privacy requirements of the standard and institution at a minimum. They should be labeled at the patient level to be useful for data sharing for clinical care and quality reporting. It is expected that if no quality data is relevant to the measure or clinical care of the patient as defined by the scope of the query then no data would be sent. If the sender and receiver are not covered entities, it is expected that there would need to be a consent agreement from the patient endorsing the exchanges. In the future, there may be a desire for documents in which the header contains no personal health information (PHI) but the rest of the transmission does. In general, the sharing of deidentified data is not a use case in scope of this document.
**Duration of QRDA Reporting Period**

Most measure reports have a defined measurement period, often a year; however, in using QRDA for data exchange, we expect that the duration of data sent and received will vary. In the QRDA, reporting timing is referenced in the “Reporting Parameters Section” (5.2). It should be noted that QRDAs that contain shorter durations of data than the measurement period requires may not be able to be used to calculate a measure result due to insufficient data. The approach to this situation should be to populate the QRDA file with the data available rather than omit the partial data, as aggregated data from multiple sources on the patient may facilitate the calculation of the measure or the appropriate treatment of the patient in the future. At the current time, we do not recommend that the QRDA Reporting Period in the file should itself be changed to reflect the actual dates of the recorded data being sent, although in the future receivers may desire to have a way to represent and request additional information. For example, the receiver may want data on the patient for a specific time period, or the sender may specify “this patient data extends from [startdate] to [enddate]”. In part, this is to avoid issues with having partial data when you are trying to send information on multiple measures in the same file. Some queries will likely contain a request for data from a defined period and senders should ensure that QRDA files for data exchange include all the relevant information from that period to avoid confusion on the part of receivers.

**Messages asking for QRDA**

This paper does not go into detail as to how to format queries based upon specific measures, patients and timing; however, this does not preclude the use of such information in requests for measure data. In the current use of QRDA, the messaging about the query, or HQMF, is not described in the QRDA itself, but the QRDA is the response to the query, which is the measure as defined in the measure specification.

It may be possible to send documents using transmission methods such as Direct, assuming it was communicated which patients to include and on what measures information is being requested. Other than using Direct, it is unclear how one might structure targeted queries of this type. IHE’s XDSb profile may be able to be used for this context; however, at the current time, we choose not to specify a method for transmitting queries. It may also be adequate to contact provider offices directly using traditional methods such as email and fax to specify the patient identifiers and scope.

Some users may choose to push measure data over to other systems based on a patient relationship with the provider, which may not require a query. For example, registries may accept all relevant data from providers at a specific time frame or when the patient is seen. The measure context would still need to be established at the outset.

When reporting information related to one or more measures in response to a query, it is expected that all of those measures which are supported by the system would be referenced in the Measure Section (5.1) even if no information is available. If the measure information requested is not supported by a system, however, then that measure should not be referenced in the Measure Section as information may be available but not codeable into the QRDA.

Possible query criteria:
- Site, Tax Identification Number (TIN), National Provider Identifier (NPI), specific patient identifiers
  - Note: every system does have at least provider-level data

- Timing
- Measure set, measure identifiers
- Non-measure data
  - Specifiable in HQMF
  - Not specifiable in HQMF

Current HL7 standards do not contain a method for transmitting this level of information electronically in the measure context but an IG could and should address the form and manner of queries.

**Out of Scope (Items for future consideration)**

There are other use cases of quality data exchange where QRDA could be enhanced or additional guidance could be provided. Other use cases, including those listed below, were considered, but were not included for various reasons from poor feasibility to a sense that the examples were not prevalent enough to address at the current time.

**Documents with delta updates**

Addressing what information is new to a system is a more complex problem. For example, there is no way to say that you want only the data elements that are new and request to omit the data elements from a previously sent document. For the time being, the expectation is that receivers would take on the responsibility for deduplicating multiple QRDA files sent over time. It may be possible to engineer queries to reduce duplicate data, but we will not for the time being consider additional labeling or changing the QRDA for this purpose.

**QRDA Header Changes**

At the current time, there are not defined sections or labels that identify a complete measure report and/or differentiate a complete report from a partial one or overburdened one. It may be possible in the future that the community identifies a need for a label that indicates the document is intended for exchange and not direct reporting. Precision medicine initiatives have this requirement and are currently developing the standards and guidance for these use cases. In the future, we may need to add discrete labels to describe the completeness or type of report that was generated for the QRDA document and would rely on the guidance in development for that functionality.

**Information not relevant to an HQMF-based measure**

QRDA is still inherently a quality measure document. For certain registries, non-measure level information may also be requested and included in some current examples. Guidance on this approach is not included here, because this guidance would be dependent on a specific query or process that meets a specific use case between the exporting systems and the registry. For
example, some ophthalmology registries request and are sent additional clinical data not currently present in shared HQMF-based measures; however, this registry’s approach is not formulated using a standards-based approach. Thus, at this time it does not seem that there is a general approach by which everyone could format these templates. If registries can demonstrate this case is needed, an IG could address this issue downstream. If a requestor is asking for patient data which is not within scope of the clinical quality use case (QDM), it would not presumably be sent using QRDA unless they were to specify it using an HQMF-based measure.

Messages asking for QRDA
This paper does not go into detail as to how to format queries based upon specific measures, patients and timing; however, this does not preclude the use of such information in requests for measure data. In the current use of QRDA, the messaging about the query, or HQMF, is not described in the QRDA itself, but the QRDA is the response to the query, which is the measure as defined in the measure specification.

Transport
It is possible to send QRDA documents using Direct, assuming that information about the address to send content to, which patients to include, and measures (with the default being all measures) are being requested. Another approach would be to utilize an API to send and receive QRDA data. An API would require a structure for targeted queries if used. IHE’s XDSb profile may be able to be used for this context; however, at the current time, we choose not to specify a method for transmitting queries. It may initially be adequate to use direct contact with provider offices to specify the patient identifiers and scope.

Some users may choose to push measure data over to other systems based on a patient relationship with the provider, which may not require a query. For example, registries may accept all relevant data from providers at a specific time frame or when the patient is seen. The measure context would still need to be established at the outset.

When reporting information related to one or more measures in response to a query, it is expected that all of those measures which are supported by the system would be referenced in the Measure Section (5.1) even if no information is available. If the measure information requested is not supported by a system, however, then that measure should not be referenced in the Measure Section as information may be available but not codeable into the QRDA.

Patient Matching
This whitepaper introduces a new use case for QRDA I - namely, the provision of QRDA I files from multiple systems to a single measure engine that can use the data from the disparate reports to score a quality measure(s) for a patient. However, one of the major challenges involved in implementing this use case is patient identification and matching. Patient identification and matching can be very subjective. For one, there are multiple ways that patient identification and matching can be performed. Not all systems handle patient matching in the same way. In large part, this is due to data quality issues. To support this use case, there needs to be a standardized list of data elements that are used for patient identification and matching, and that data needs to be required in a QRDA I file. Any additional guidance to support QRDA for data sharing should include a discussion of patient matching and the defined information needed to perform it.
Closing Thoughts and Room for Improvement

In conclusion, there are now more potential use cases for QRDA than were originally envisioned when the standard was created. Furthermore, additional federal requirements make QRDA export and import available to end users of all systems certified for quality measurement. This document suggests that it may be time to consider modifications to the QRDA standard to make it usable in settings for data exchange. Further updates to the IG would need to address QRDA headers, filtering, patient matching, HQMF or other query approaches, and potential exchange standards to facilitate an end to end consideration of QRDA for data exchange.

Figure 1.: Examples of possible QRDA exchanges.
In this figure, we propose three mechanisms for data exchange with QRDA. One, a patient is transferred to a new practice and signs a consent at new office asking for all quality data for the year and includes a Direct address. The initial site’s office manager exports the QRDA using the on demand user export function available in their 2015 Edition Certified EHR and sends via Direct. In the second, a system sends a query via an CQL to a data warehouse and receives a filtered file via an API. In the third, a system is set up to automatically generate a QRDA file when a relevant encounter occurs to the local HIE and does so via a web interface.
Appendix 1: Sample QRDAs for Data Exchange

Sample 1: Partial Measure Information

Patient Amanda Elliott has a checkup visit with her primary care provider, who refers her to an imaging clinic to have a mammogram performed. The mammogram is performed, however no corresponding office visit consistent with the measure’s face to face requirement is performed at the imaging clinic. A quality measure requires an office visit for the patient to get into the IPP, and a mammography to get into the numerator. Therefore, looking across both clinics this patient is in the numerator, however looking at just the primary care clinic she is only in the IPP (since no mammography result is in the system there yet) and looking only at the imaging clinic she has no measure results (since there is no office visit in the imaging clinic’s system).

Staff at the imaging clinic create one QRDA for Data Exchange: at the primary care clinic it will be received and a new QRDA will be created that contains the office visit information, and the mammography information that was sent by the imaging clinic. This new QRDA file is able to correctly calculate the quality measure for the patient and provide credit to the provider appropriately. The sample below includes a QRDA in which the file does not contain an encounter that qualifies the patient for the measure, but it does contain the information that would qualify the patient for the numerator; which, when combined with the information from the primary care visit, would be complete for reporting purposes.

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<?xml version="1.0"?>
<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:hl7-org:v3"
xmlns:cda="urn:hl7-org:v3"
xmlns:sdtc="urn:hl7-org:sdtc">
<realmCode code="US"/>
<typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
<templateId root="2.16.840.1.113883.10.20.22.1.1" extension="2014-06-09"/>
<templateId root="2.16.840.1.113883.10.20.24.1.1" extension="2014-12-01"/>
<templateId root="2.16.840.1.113883.10.20.24.1.2" extension="2014-12-01"/>
<templateId root="2.16.840.1.113883.10.20.24.1.3" extension="2015-07-01"/>
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<code code="55182-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Quality Measure Report"/>
<title>NCQA QRDA Category I Test Data for Quality Measure: Breast Cancer Screening CMS125v6</title>
<effectiveTime value="20180303"/>
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<state>MA</state>
<postalCode>02110</postalCode>
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<country>US</country>
</addr>
<telecom value="tel:(721)544-4554" use="HP"/>
<patient>
<name>
<given>Amanda</given>
<family>Elliott</family>
</name>
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<ethnicGroupCode code="2135-2" codeSystem="2.16.840.1.113883.6.238"/>
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<languageCode code="en"/>
</languageCommunication>
</patient>
</recordTarget>
<author>
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<time value="20180303041656"/>
<assignedAuthor>
<id extension="1003002225" root="2.16.840.1.113883.4.6"/>
<code code="200000000X" codeSystem="2.16.840.1.113883.6.101" displayName="Allopathic &amp; Osteopathic Physicians"/>
<addr use="WP">
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<city>Washington</city>
<state>DC</state>
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</addr>
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<name>
<given>Henry</given>
<family>Seven</family>
</name>
</assignedPerson>
</assignedAuthor>
</author>

Measure Section for patient 95002

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<!- Diagnostic Study, Result template -->
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<text>Diagnostic Study, Result: Mammogram (Code List: 2.16.840.1.113883.3.464.1003.108.12.1018)</text>
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Sample 2: Provider use case

Patient Amanda Elliott is going to transfer her primary care from Henry Severn to another provider across town and the new provider wants a copy of all of her quality data so that they can provide the best care. When the new provider requests her record from the old primary care practice, staff create a QRDA for Data Exchange which includes all data that could be relevant to any measure in the system. The file references any measure for which the system can capture the complete measure data, as seen below. This file is imported by staff at the new clinic into their system and consolidated alongside existing information in the system. Data reported by the new clinic to Medicare at the end of the year will include information about the care which was provided at both clinics, giving the most complete picture of the patient’s care.

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<ClinicalDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:hl7-org:v3"
xlns:cda="urn:hl7-org:v3"
xlns:sdtc="urn:hl7-org:sdtc">
<realmCode code="US"/>
<typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>
<templateId root="2.16.840.1.113883.10.20.22.1.1" extension="2014-06-09"/>
<templateId root="2.16.840.1.113883.10.20.24.1.1" extension="2014-12-01"/>
<templateId root="2.16.840.1.113883.10.20.24.1.2" extension="2014-12-01"/>
<templateId root="2.16.840.1.113883.10.20.24.1.3" extension="2015-07-01"/>
<id root="2.16.840.1.113883.3.464.1005.1" extension="95002"/>
<code code="55182-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" display_name="Quality Measure Report"/>
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</addr>
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<family>Elliott</family>
</name>
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</patientRole>
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    <addr use="WP">
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      <city>Washington</city>
      <state>DC</state>
      <postalCode>20005</postalCode>
      <country>US</country>
    </addr>
    <telecom value="tel: 202-955-3500" use="WP"/>
  </assignedAuthor>
  <assignedPerson>
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      <family>Seven</family>
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  </assignedAuthor>
</author>
<custodian>
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    <!-- NCQA OID -->
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    <telecom value="tel: 202-955-3500" use="WP"/>
    <addr use="WP">
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      <state>DC</state>
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        <text>Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan</text>
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      </externalDocument>
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