



CareDiscovery Electronic Quality Measures Real World Testing (RWT) – Results Report – Measurement Year 2023

January 2024

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General Information

1. **Plan Report ID Number:** [For ONC-Authorized Certification Body use only]
2. **Developer Name:** Virtusa Corporation
3. **Product Name(s):** CareDiscovery Electronic Quality Measures
4. **Version Number(s):** 3.3
5. **Certified Health IT Product List (CHPL) Product Number(s):**
15.04.04.3001.Care.03.03.1.230926
6. **Developer Real World Testing (RWT) Plan Page URL:**
<https://www.virtusa.com/solutions/clinical-quality-measures-reporting/carediscovery-electronic-quality-measures-cdeqm>
7. **Developer Real World Testing Results Report Page URL [if different from above]:**
Same as above

Changes to Original Plan

Summary of Change [Summarize each element that changed between the plan and actual execution of Real World Testing]	Reason [Describe the reason this change occurred]	Impact [Describe what impact this change had on the execution of your Real World Testing activities]
<p>RWT was performed on version 3.3 of the product instead of version 3.2.</p> <p>Version 3.2 was withdrawn after we certified v3.3 for the 4 new eQMs effective with CY2023 reporting period.</p>	<p>The product was updated to version 3.3 (September 2023) to incorporate the 4 new eQMs that became effective for the CY2023 reporting period. Being a web based product, only one version is available at any point in time.</p>	<p>The certification of the new eQMs allowed us to do RWT on them (if any clients selected those 4 new eQMs) along with the other previously certified 9 eQMs.</p>

Withdrawn Products

In September of 2023 we certified the 4 new eQMs (that became effective for CMS reporting with the CY2023 reporting period) within our product. This increased the version of the product from 3.2 to 3.3. Since ours is a web based product, we only have one version available at any one time. As such, we withdrew version 3.2 of our product after we certified version 3.3. RWT was conducted on version 3.3 of the product. The newly certified eQMs were eligible for RWT (clients had the option to select them for CMS reporting) along with the previously certified 9 eQMs that may have been selected for reporting by the clients.

Product Name	CareDiscovery Electronic Quality Measures
Version Number	3.2
CHPL Product Number	15.04.04.3001.Care.03.02.1.220906
Date Withdrawn	September 29, 2023
Inclusion of Data in Results Report	Data for RWT was not captured on the withdrawn product

Summary of Testing Methods and Key Findings

Real World Testing was performed on an ongoing basis during the second half of 2023. We offered our client hospitals the opportunity to participate in two early submissions to CMS, the results of which would contribute to the RWT activities. This allowed us to conduct the various phases of RWT from import of real client data into the product to calculations of eQMs to submission of exported files to CMS over multiple time periods.

As outlined in the metrics and outcomes section below, we were able to validate the effective functioning of the product using real patient data uploaded by the clients. We successfully imported, calculated, and submitted real patient data uploaded by the clients to CMS and verified the accuracy of the results between the product and the CMS system over multiple time periods.

With the increasing number and complexity of eQMs, we encountered some challenges in getting more clients to submit their real data earlier in the reporting cycle to participate in the early submissions. Towards this effort, we sent multiple communications to the clients reminding them and encouraging them to participate in the early submissions which would allow real world testing of the data in advance of the final CMS submission deadlines. We will continue to provide advance communications to the hospitals with the goal of encouraging more hospitals to participate in the early submissions.

Standard Updates (SVAP)

None were performed.

Care Setting (s)

The CareDiscovery Electronic Quality Measures supports eQMs only in the inpatient hospital care settings. As such, the testing was performed for the eQMs for the **inpatient care settings**.

Metrics and Outcomes

A total of 3 hospitals participated in the early submissions to CMS. Data was collected and analyzed for all 3 hospitals, and details are provided for these hospitals below.

The hospitals referenced are labeled as Hospital A, B, and C.

Measurement/Metric 1

Track the number of episodes uploaded by the client and the number of episodes recorded in the system.

This metric allows us to verify that data is being recorded as expected.

Associated Criterion(a)

170.315(c)(1)— Clinical Quality Measures - **record** and export.

Outcomes

Hospitals uploaded data to the product in the standardized file format provided by CMS/Virtusa for recording of data into the product.

Verified that 100% of the episodes/files uploaded by each of the hospitals was successfully recorded in the system. We reviewed any episodes/files that were rejected for data related errors and verified that all the rejections were as expected. All files not rejected were accepted as expected. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Details of the data collected and analyzed for this metric are provided below.

Hospital A

Hospital A uploaded 3 quarters of data for CY2023 (Q1, Q2 and Q3, 2023) to the product.

22,041 – total episodes uploaded.

9 - episodes rejected.

We reviewed the logs of the data uploads in the data quality reports for the types of errors causing rejections. We validated that the rejections were as expected based on the data submitted. Clients have access to data quality reports which provides them with the opportunity to review and correct errors and resubmit as applicable. The following were the categories of errors for the rejections -

- Discharge date not in the measurement period of CY2023

We verified in the logs and reports, that all the episodes not rejected were accepted as expected. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Hospital B

Hospital B uploaded 2 quarters of data for CY2023 (Q1 and Q2 2023) to the product.

27,720 – total episodes uploaded.

40 - episodes rejected.

We reviewed the logs of the data uploads in the data quality reports for the types of errors causing rejections. We validated that the rejections were as expected based on the data submitted. Clients have access to data quality reports which provides them with the opportunity to review and correct errors and resubmit as applicable. The following were the categories of errors for the rejections –

- Discharge date not in the measurement period of CY2023
- Problem with format of date

- Medication Order start date after end date

We verified in the logs and reports that all the episodes were accepted as expected. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Hospital C

Hospital C uploaded 2 quarters of data for CY2023 (Q1 and Q2 2023) to the product.

1,742 – total episodes uploaded.

0 - episodes rejected.

Hospital C had no critical errors causing the episode rejections.

We verified in the logs and other reports, that all the episodes not rejected were accepted as expected. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Challenges

Hospitals typically wait until later in the year to upload their data to the product. Ideally, we would like to have more hospitals participate in the early submissions and the RWT. Towards this effort, we sent multiple communications to the clients reminding them and encouraging them to participate in the early submissions which would allow RWT of the data in advance of the final CMS submission deadlines.

Measurement/Metric 2

Track the number of QRDA CAT I files successfully exported and submitted to the CMS Hospital Quality Reporting (HQR) system per client.

This metric allows us to verify that the system is exporting the QRDA CAT I files for reporting to CMS as expected.

Associated Criterion(a)

170.315(c)(1)— Clinical Quality Measures - record and **export**.

Outcomes

Verified for each of the hospitals that the system can export QRDA CAT I files for one and multiple patients. Verified that the count of the QRDA CAT I files exported from the product and submitted to CMS for each quarter matched the count of files received and accepted by CMS. There were no rejections.

The successful acceptance of all the QRDA CAT I files by CMS allows us to validate that the product can export the QRDA CAT I files in the format required by CMS and defined as part of certification.

Details of the data collected and analyzed for this metric is provided below.

Hospital A

Report Name	Create Date	Facility	HCO	CCN	MUQM Patient Count	File Count (the number of XML files extracted and zipped)	Report Type	Report period
1stDecEarlyExtracts20231214Q1	12/14/2023 10:42:37 AM	Hospital A			50	50	CMS QRDA Cat1 Report	Q1 2023
1stDecEarlyExtracts20231214Q2	12/14/2023 10:44:19 AM	Hospital A			58	58	CMS QRDA Cat1 Report	Q2 2023
1stDecEarlyExtracts20231214Q3	12/14/2023 10:51:39 AM	Hospital A			52	52	CMS QRDA Cat1 Report	Q3 2023

Q1 – 50 files exported and reported to CMS matches file count received and accepted by CMS.

Q2 – 58 files exported and reported to CMS matches file count received and accepted by CMS.

Q3 – 52 files exported and reported to CMS matches file count received and accepted by CMS.

Hospital B

Report Name	Create Date	Facility	HCO	CCN	MUQM Patient Count	File Count (the number of XML files extracted and zipped)	Report Type	Report period
1stDecEarlyExtracts20231214Q1	12/14/2023 10:42:37 AM	Hospital B			726	726	CMS QRDA Cat1 Report	Q1 2023
1stDecEarlyExtracts20231214Q2	12/14/2023 10:44:19 AM	Hospital B			695	695	CMS QRDA Cat1 Report	Q2 2023

Q1 – 726 files exported and reported to CMS matches file count received and accepted by CMS.

Q2 – 695 files exported and reported to CMS matches file count received and accepted by CMS.

Hospital C

Report Name	Create Date	Facility	HCO	CCN	MUQM Patient Count	File Count (the number of XML files extracted and zipped)	Report Type	Report period
1stDecEarlyExtracts20231214Q1	12/14/2023 10:42:37 AM	Hospital C			66	66	CMS QRDA Cat1 Report	Q1 2023
1stDecEarlyExtracts20231214Q2	12/14/2023 10:44:19 AM	Hospital C			58	58	CMS QRDA Cat1 Report	Q2 2023

Q1 – 66 files exported and reported to CMS matches file count received and accepted by CMS.

Q2 – 58 files exported and reported to CMS matches file count received and accepted by CMS.

Challenges

We did not run into any challenges with this measurement this year. Last year, we had some issues with a hospital that had not provided us access to submit to CMS on their behalf and as a result during the first CMS submission their files were rejected. This year, we validated in advance that clients have provided us access to upload data to the CMS HQR system before we began uploading data to CMS on their behalf.

Measurement/Metric 3

Track the number of episodes uploaded by the client and the number of episodes imported into the system.

This metric allows us to verify that all data is being imported into the product as expected.

Associated Criterion(a)

170.315(c)(2)— Clinical Quality Measures - **import** and calculate.

Outcomes

Since the only way to record data into the product is through upload of files with patient data (no manual data entry is allowed in the product) this metric is similar to the metric for recording of data under the criteria 170.315(c)(1)— Clinical Quality Measures – record. Clients use the third-party product MOVEit (which is integrated with the product) to import patient data files into the product.

Using logs and data quality reports, we verified that all the files/episodes uploaded by the hospitals (and not rejected) were successfully imported into the system. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Details of the data collected and analyzed for this metric is provided below.

Hospital A

Hospital A uploaded 3 quarters of data for CY2023 (Q1, Q2 and Q3, 2023) to the product.

22,041 – total episodes uploaded.

9 - episodes rejected.

We reviewed the logs of the data uploads in the data quality reports for the types of errors causing rejections. We validated that the rejections were as expected based on the data submitted. Clients have access to data quality reports which provides them with the opportunity to review and correct errors and resubmit as applicable. The following were the categories of errors for the rejections -

- Discharge date not in the measurement period of CY2023

We verified in the logs and reports, that all the episodes not rejected were accepted as expected. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Hospital B

Hospital B uploaded 2 quarters of data for CY2023 (Q1 and Q2 2023) to the product.

27,720 – total episodes uploaded.

40 - episodes rejected.

We reviewed the logs of the data uploads in the data quality reports for the types of errors causing rejections. We validated that the rejections were as expected based on the data submitted. Clients have access to data quality reports which provides them with the opportunity to review and correct errors and resubmit as applicable. The following were the categories of errors for the rejections –

- Discharge date not in the measurement period of CY2023
- Problem with format of date
- Medication Order start date after end date

We verified in the logs and reports that all the episodes were accepted as expected. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Hospital C

Hospital C uploaded 2 quarters of data for CY2023 (Q1 and Q2 2023) to the product.

1,742 – total episodes uploaded.

0 - episodes rejected.

Hospital C had no critical error causing the episode rejections.

We verified in the logs and other reports, that all the episodes not rejected were accepted as expected. This allowed us to validate that the product is successfully importing and recording the data submitted by the clients.

Challenges

We did not have any specific challenges importing the data. The main challenge is to get hospitals to begin reporting their data earlier in the reporting cycle and participate in the early submissions to CMS.

Measurement/Metric 4

Track the number of episodes by eCQM by quarter where the measure outcomes match/do not match the measure outcomes generated by the CMS HQR system.

This metric allows us to validate the accuracy of the eCQM calculations within the product.

Associated Criterion(a)

170.315(c)(2)— Clinical Quality Measures - import and **calculate**.

Outcomes

We had a 100% match between the outcomes calculated by the product and those calculated by the CMS HQR system for all the eCQMs reported to CMS. This is across all quarters of CY2023 reported by clients for all the 3 hospitals reported. This allowed us to validate the accuracy of the calculation of the eCQMs within the product.

Details of the data collected and analyzed for this metric is provided below.

Hospital A

Verified 100% match for all the 4 eCQMs (OPI-1, STK-2, 5, 6 selected for reporting by the hospital) between the measure outcomes generated by the product and the CMS HQR system. This allowed us to validate the accuracy of the calculation of the eCQMs within the product.

eCQM performance for Q1,2023 are provided as a reference.

For OPI-1, there were 32 episodes in the initial population with an overall performance of 3.6%.

For STK-2, there were 21 episodes in the initial population with an overall performance of 78.9%.

For STK-5, there were 21 episodes in the initial population with an overall performance of 58.8%.

For STK-6, there were 21 episodes in the initial population with an overall performance of 89.5%.

Note – CMS HQR reports round the performance, so 3.6% is rounded up to 4.0%, 78.9% is rounded up to 79% and so on. Our product does not perform rounding at this level.

Hospital B

Verified 100% match for all the 4 eCQMs (OPI-1, STK-2, 5, 6 selected for reporting by the client) between the measure outcomes generated by the product and the CMS HQR system. This allowed us to validate the accuracy of the calculation of the eCQMs within the product.

eCQM performance for Q1,2023 are provided as a reference.

For OPI-1, there were 788 episodes in the initial population with an overall performance of 13.9%.

For STK-2, there were 35 episodes in the initial population with an overall performance of 96.6%.

For STK-5, there were 35 episodes in the initial population with an overall performance of 92.6%.

For STK-6, there were 35 episodes in the initial population with an overall performance of 100%.

Hospital C

Verified 100% match for all the 6 eQMs (OPI-1, STK-2, 3, 5, 6 and VTE-1 selected for reporting by the client) between the measure outcomes generated by the product and the CMS HQR system. This validates the accuracy of the calculation of the eQMs within the product.

eQm performance for Q2,2023 are provided as a reference.

For OPI-1, there were 21 episodes in the initial population with an overall performance of 23.8%.

For STK-2, there was 1 episode in the initial population with an overall performance of 100%.

For STK-3, there was 1 episode in the initial population with an overall performance of 0.

For STK-5, there was 1 episode in the initial population with an overall performance of 100%.

For STK-6, there was 1 episode in the initial population with an overall performance of 100%.

For VTE-1, there were 74 episodes in the initial population with an overall performance of 75%.

Challenges

This is an extremely useful step to verify the accuracy of the calculation of the eQm algorithms, however it can be time consuming. In case there are discrepancies, we download various reports provided by the CMS HQR system to try and understand the root cause. If we cannot identify the root cause, we create a ticket with the CMS HQR Product Support and provide the details of the discrepancy. This can take time. We therefore encourage more hospitals to participate in the early submissions, allowing us to address any issues with eQm calculations earlier in the reporting life cycle. Additionally, if more hospitals participate in the early submissions, we could get a greater coverage of the eQMs selected by the hospitals to cover as many available eQMs as possible as part of the RWT.

Measurement/Metric 5

Track the number of QRDA CAT I files exported from the product per quarter per client and verify they are successfully reported to CMS.

This metric allows us to verify that the product can export and report the QRDA CAT I files in the format required by CMS and defined as part of certification.

Associated Criterion(a)

170.315(c)(3)— Clinical Quality Measures – **report**.

Outcomes

Verified that 100% of the QRDA CAT I files exported from the product and reported to CMS for each quarter were accepted by CMS. The successful acceptance of all the QRDA CAT I files by CMS allows us to validate that the product can export and report the QRDA CAT I files in the format required by CMS and defined as part of certification.

Details of the data collected and analyzed for this metric is provided below.

Hospital A

Report Name	Create Date	Facility	HCO	CCN	MUQM Patient Count	File Count (the number of XML files extracted and zipped)	Report Type	Report period
1stDecEarlyExtracts20231214Q1	12/14/2023 10:42:37 AM	Hospital A			50	50	CMS QRDA Cat1 Report	Q1 2023
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1stDecEarlyExtracts20231214Q3	12/14/2023 10:51:39 AM	Hospital A			52	52	CMS QRDA Cat1 Report	Q3 2023

Q1 – 50 files exported and reported to CMS matches file count received and accepted by CMS.

Q2 – 58 files exported and reported to CMS matches file count received and accepted by CMS.

Q3 – 52 files exported and reported to CMS matches file count received and accepted by CMS.

Hospital B

Report Name	Create Date	Facility	HCO	CCN	MUQM Patient Count	File Count (the number of XML files extracted and zipped)	Report Type	Report period
1stDecEarlyExtracts20231214Q1	12/14/2023 10:42:37 AM	Hospital B			726	726	CMS QRDA Cat1 Report	Q1 2023
1stDecEarlyExtracts20231214Q2	12/14/2023 10:44:19 AM	Hospital B			695	695	CMS QRDA Cat1 Report	Q2 2023

Q1 – 726 files exported and reported to CMS matches file count received and accepted by CMS.

Q2 – 695 files exported and reported to CMS matches file count received and accepted by CMS.

Hospital C

Report Name	Create Date	Facility	HCO	CCN	MUQM Patient Count	File Count (the number of XML files extracted and zipped)	Report Type	Report period
1stDecEarlyExtracts20231214Q1	12/14/2023 10:42:37 AM	Hospital C			66	66	CMS QRDA Cat1 Report	Q1 2023
1stDecEarlyExtracts20231214Q2	12/14/2023 10:44:19 AM	Hospital C			58	58	CMS QRDA Cat1 Report	Q2 2023

Q1 – 66 files exported and reported to CMS matches file count received and accepted by CMS.

Q2 – 58 files exported and reported to CMS matches file count received and accepted by CMS.

Challenges

We did not run into any challenges with this measurement this year. Last year, we had some issues with a hospital that had not provided us access to submit to CMS On their behalf and as a result during the first CMS submission their files were rejected. This year, we validated in advance that clients have provided us access to upload data on their behalf to the CMS HQR system before we began uploading data to CMS on their behalf.

Metrics and Outcomes Summary

Measurement/Metric	Associated Criterion(a)	Relied Upon Software (if applicable)	Outcomes	Challenges Encountered (if applicable)
Track the number of episodes uploaded by the client and the number of episodes recorded in the system	170.315(c)(1) —record and export.	MOVEit Transfer	100% of the records (51,503) uploaded across 3 hospitals for 3 quarters in 2023 were recorded by the system.	A smaller number of hospitals participating in the early submissions (RWT) than expected.
Track the number of QRDA CAT I files successfully exported and submitted to the CMS Hospital Quality Reporting (HQR) system per client	170.315(c)(1) —record and export.		100% of the files (1,705) exported and reported to CMS across 5 hospitals for 3 quarters in 2023 matched the count of files received and accepted by CMS.	
Track the number of episodes uploaded in the files against the number of episodes imported (accepted/rejected) in the system.	170.315(c)(2) —import and calculate.	MOVEit Transfer	100% of the records (51,503) uploaded across 3 hospitals for 3 quarters in 2023 were imported by the system.	A smaller number of hospitals participating in the early submissions (RWT) than expected.
Track the number of episodes by eCQM by quarter where the measure outcomes match/do not match the measure outcomes generated by the CMS HQR system.	170.315(c)(2) —import and calculate.		We had a 100% match between the outcomes calculated by the product and those calculated by the CMS HQR system for all the eCQMs reported to CMS. This is across the quarters of CY2023 reported for all 3 hospitals.	
Track the number of QRDA CAT I files exported from the product per quarter per client and verify they are successfully reported to CMS.	170.315(c)(3) —report.		100% of the files (1,705) exported and reported to CMS across 5 hospitals for 3 quarters in 2023 matched the count of files received and accepted by CMS.	No challenges this year. Access issues seen last year were addressed by proactively verifying that clients have provided us access to upload data on their behalf to the CMS HQR system before we began uploading data to CMS.

Key Milestones

Key Milestones are as follows -

Key Milestone	Care Setting	Date/Timeframe
Communication of the Submission Calendar	Inpatient	September 2023
Communication for participation in first early submission to CMS	Inpatient	October 2023
Data Collection and analysis for first early submission to CMS	Inpatient	October – November 2023
First early submission to CMS	Inpatient	NA since no hospitals approved quarters in time for the first early submission to CMS.
Communication for participation in the second early submission to CMS	Inpatient	November 2023
Data collection and analysis for the second early submission to CMS	Inpatient	November 2023 – December 2023
Second early Submission to CMS	Inpatient	December 2023 / January 2024
RWT Results Report creation	Inpatient	January 2024
Submission of the RWT Results Report to Drummond	Inpatient	January 2024

Although we are reviewing data being uploaded to the product on an ongoing basis, we started formal RWT testing in October 2023.

Communication

The Submission Calendar for CY2023 submissions was shared with the clients on September 15, 2023.

Communication (reminder) for participation in the first early submissions to CMS (to be performed in November 2023) was sent to the clients on October 23, 2023.

Communication (reminder) for participation in the second early submissions to CMS (to be performed in December 2023) was sent to the clients on November 21, 2023.

Clients were encouraged to upload their data to the product as early as possible and participate in the early submissions to CMS. This would allow us access to more data to complete all the steps for the RWT.

Data Collection

Three hospitals uploaded and approved data for submissions to CMS during the early submissions. Data collection for RWT for these hospitals started in October 2023 and continued through January 2024.

Analysis

Measures for RWT were implemented and the collected data was analyzed from October 2023 through January 2024.

RWT Results Report Creation

Data from the RWT Analysis fed the results report which was prepared and finalized in January 2024.

Submission of the RWT Results Report to Drummond

RWT Results Report for Measurement Year 2023 was submitted to Drummond in January 2024 before the submission deadline.