REAL WORLD TESTING RESULTS REPORT – 2024

GENERAL INFORMATION

Plan Report ID Number: EMRDirect.InteropEngine.RWT.2024

Developer Name: EMR Direct

Product Name(s): Interoperability Engine

Version Number(s): 2023

Certified Health IT Product List (CHPL) Product Number(s): 15.04.04.1397.Inte.23.01.0.221216

Developer Real World Testing Page URL: https://www.interopengine.com/rwt

Developer Real World Testing Results Report Page URL: same as Testing Page URL

CHANGES TO ORIGINAL PLAN

None.

WITHDRAWN PRODUCTS

None.

SUMMARY OF TESTING METHODS AND KEY FINDINGS

EMR Direct's Direct Messaging software product helps our partners meet interoperability-related requirements. In approaching Real World Testing for our own products, we designed measures to demonstrate the continued capability of certified health IT to exchange applicable payloads as the transport standards and/or payload vocabulary standards advance.

In designing our testing approach, we leveraged the fact that the functionality of the applicable criteria subject to the RWT requirements for this software product result in discrete transactions (Direct messages), each of which can be classified as successful or not successful, allowing for straightforward measurement of functionality as the number of successful transactions as a percentage of the total transactions. Our approach to RWT was to leverage actual production data from our deployed software instances to best reflect the intent of RWT in the truest sense. To demonstrate ongoing conformance, rather than point-in-time conformance, data for each measure was collected over a period lasting at least 90 consecutive days.

We recognize that our testing methodology necessarily underestimates success rates due to confounding effects from other software products involved in each interoperability transaction. For example, in actual production settings, the transmission of a Direct message requires a sending edge system to communicate with the sending HISP software. Messages are then sent to a receiving HISP that is connected to a receiving edge system. Each of these software components is usually provided by a different vendor. This means that a true real-world interaction will usually involve 4 different vendors and at least 4 different software products. Any one of these may introduce an issue that causes a Direct message transmission to fail, e.g. the sending edge system transmits an non-conforming CCDA message.

Thus, in general, a successful end-to-end transaction requires all of the involved software products from all of these vendors to work correctly. Our RWT methodology is based on our observations while

operating our software as a service, that by aggregating across our deployed customer base, we avoid potentially negatively skewing of data by any one “other vendor” issue, as these tend to average out such that the overall aggregated success rate of transactions provides a lower bar on the conformity for each of the systems involved. Since our software is common to every transaction, aggregated measures thus also provide a lower bar on the real-world success rate attributed to our own software. We further refined this by designing measures that exclude transactions where one of the other actors can be readily identified to be the cause of the issue, e.g. expired Direct certificates, etc.

With respect to care settings, we note that the functional requirements for the certification criteria subject to RWT are identical for both the ambulatory and inpatient settings, justifying our decision to aggregate data across all care settings in our measures, as our software is setting-agnostic and operates identically in all settings.

Analysis of the collected data, summarized in the Outcomes section below, validated our ongoing real-world interoperability and conformance with the certification requirements, with successful interoperability demonstrated in the vast majority of transactions. Overall, Direct messaging success rates exceeded our pre-test expectations. Higher success rates for Direct transactions are consistent with the mature ecosystem that exists for Direct messaging.

STANDARDS UPDATES (INCLUDING STANDARDS VERSION ADVANCEMENT PROCESS (SVAP) AND UNITED STATES CORE DATA FOR INTEROPERABILITY (USCDI))

The tested product did not include these voluntary standards.

Care Setting(s)

Care Setting	Discussion
Ambulatory and Inpatient	Our software is marketed for integration with both hospital and ambulatory settings. However, as discussed above, we have aggregated measurement data across both care settings because the functional requirements for the criteria tested in the plan are identical for all care settings, i.e. our software operates identically regardless of care setting, such that we find no additional value in collecting separate measures for each setting.

Metrics

Measurement/Metric	Associated Criterion	Description
M24.1: Percentage of Direct messages sent that were successfully acknowledged by the receiving system	h.2	The % of Direct messages transmitted where an expected MDN acknowledgement was received. These measures will also be partitioned by the edge protocol used by the sending edge system.

M24.2: Percentage of Direct messages received where a non-failure acknowledgement was sent back to the sender.	h.2	The % of Direct messages received where the message could be successfully decrypted, the signature validated, and trust confirmed, and, when applicable, where no edge protocol errors were detected during final delivery. These measures will also be partitioned by the edge protocol used by the receiving edge system.

Outcomes

Measurement/Metric	Outcomes
M24.1: Percentage of Direct messages sent that were successfully acknowledged by the receiving system	Overall success rate: 96% By edge protocol: XDR: 95%, API: 96% Note: No outbound messages sent via SMTP edge during collection period.
M24.2: Percentage of Direct messages received where a non-failure acknowledgement was sent back to the sender.	Overall success rate: 99% By edge: XDR 96%, SMTP 100%, API=100%

No notable challenges were encountered in data collection or analysis.

KEY MILESTONES

Key Milestone	Care Setting	Date/Timeframe
Data collection started	All	August 2024
Data collection completed	All	October 2024