Summary

This Real World Test (RWT) plan is intended to verify the adoption of mdTimeline, Version 2.0 certified functionality

The RWT plan will focus on certification criteria, represented as individual user stories for Ambulatory care settings.

User Story: Care Coordination
§ 170.315(b)(1) Transitions of care
§ 170.315(b)(2) Clinical information reconciliation and incorporation
§ 170.315(b)(3) Electronic prescribing
§ 170.315(b)(6) Data export
§ 170.315(c)(1) — record and export
§ 170.315(c)(2) — import and calculate
§ 170.315(c)(3) — report
§ 170.315(e)(1) View, download, and transmit to 3rd party
§ 170.315(f)(1) Transmission to immunization registries
§ 170.315(f)(2) Transmission to public health agencies — syndromic surveillance
§ 170.315(g)(7) Application access— patient selection
§ 170.315(g)(8) Application access— data category request
§ 170.315(g)(9) Application access— all data request
§ 170.315(h)(1) Direct Project

General Information

Developer Name: mdTimeline, LLC

Product Name: mdTimeline EHR

Version Number: 2.0

Certified Health IT Edition: 2015 Ed.

Product List (CHPL) ID: 15.04.04.3059.mdTi.02.00.1.191231

Real World Testing Public URL:

Background

The following elements are addressed for each User Story (listed above) for the Ambulatory care setting.

- Testing methodology:
  - demonstrate real world interoperability and conformance to the criterion requirements
  - include scenario and use case-focused testing
- Description:
  - of how the test is performed
  - of how conformance is demonstrated
- Schedule :
  - of key Real World Testing milestones;
- Expected Outcomes:
  - based on feature adoption in current year
- Measurement/ metric:
  - all measures used to validate criteria
- Justification for the Health IT Developer’s Real World Testing approach
  - description of how the measurements/metrics selected reflect the adoption rate of each required Real World Testing element

Introduction

The EHR analyzed in this Real World Test is mdTimeline EHR designed to present medical information to healthcare providers in Ambulatory healthcare settings The workflows in mdTimeline help users with Transitions of Care, Electronic prescribing, public health initiatives and patient engagement.

The purpose of this testing is to validate the adoption of the current user interface and EHR capabilities and to provide evidence of usability within mdTimeline v2.0. To this end, measures of real world utilization of interoperability features and functionality are captured during the testing.

Care Coordination

Passed		Passed	
☐	§ 170.315(b)(1) Transitions of care	☐	§ 170.315(b)(6) Data export
☐	§ 170.315(b)(2) Clinical information reconciliation and incorporation		
☐	§ 170.315(b)(3) Electronic prescribing		

Clinical Quality Measures

Passed		Passed	
☐	§ 170.315(c)(1) — record and export	☐	§ 170.315(e)(1) View, download, and transmit to 3rd party
☐	§ 170.315(c)(2) — import and calculate		
☐	§ 170.315(c)(3) — report		

Patient Engagement

Public Health

Passed	
☐	§ 170.315(f)(1) Transmission to immunization registries
☐	§ 170.315(f)(2) Transmission to public health agencies — syndromic surveillance

Electronic Exchange

Passed		Passed	
☐	§ 170.315(h)(1) Direct Project	☐	§ 170.315(g)(7) Application access— patient selection
		☐	§ 170.315(g)(8) Application access— data category request
		☐	§ 170.315(g)(9) Application access— all data request

Application Programming Interfaces

Criteria	Care Setting	Measurement Period			Date		Key Milestones
Care Coordination							
§ 170.315(b)(1) Transitions of care § 170.315(b)(2) Clinical information reconciliation and incorporation § 170.315(h)(1) Direct Project: from the Electronic Exchange Category	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	• Confirm Trading Partner • Confirm ability to send and receive clinical documents • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment
					August, 2022	☐	• Care provider selects recipient from directory of Direct addresses and initiates sending of Clinical Document. The user is able to create a C-CDA Release 2.1 that also includes the reason for referral, and the referring or transitioning provider's name and office contact information. • C-CDA Care Referral or Referral Note is triggered to send via Direct Protocol • Care provider reviews the Direct Status screen (under Direct Outgoing menu choice) to ensure Clinical Document was successfully transmitted.
					August, 2022	☐	Recipient uses scorecard to grade C-CDA
					September, 2022	☐	• Tester uses Document Center to locate Clinical Document. • Care provider reviews the Direct Status screen (under Direct Outgoing menu choice). • Recipient validates that Social History section of C-CDA is flagged as restricted
					September, 2022	☐	Calculate and compile metrics.
§ 170.315(b)(3) Electronic prescribing	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	• Confirm Trading Partner • Confirm ability to send and receive electronic prescriptions • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment
					August, 2022	☐	Prescription for non-controlled substance is shown in patient's record.
					September, 2022	☐	Calculate and compile metrics.
§ 170.315(b)(6) Data export	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	• Date and time ranges can be configurable via the UI • Targeted Practices can be configurable via the UI • Patients exported can be configurable via the UI
					August, 2022	☐	Use the Edge Test Tool to check validity of output file
					September, 2022	☐	Export summary was created and completed successfully
					September, 2022	☐	Calculate and compile metrics.
Clinical Quality Measures							
§ 170.315(c)(1)—record and export § 170.315(c)(2)—import and calculate § 170.315(c)(3)—report	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	• Confirm Trading Partner • Confirm ability to calculate and report eCQMs • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment
					July, 2022	☐	The file should upload and be accepted by the environment without error.
					July, 2022	☐	All populations of all measures should match.
					September, 2022	☐	Calculate and compile metrics.
Patient Engagement							
§ 170.315(e)(1) View, download, and transmit to 3rd party	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	• Confirm Trading Partner • Confirm ability to provide patients timely access to their ePHI • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment
					August, 2022	☐	• Ensure patient received activation email or • provide patient with Username and Password
					August, 2022	☐	Record validation in the audit log that patient has transmitted the C-CDA via DIRECT or email
					September, 2022	☐	• Run Timely Access report in ConnectEHR and compare to patient visit report from EHR to determine percentage of patients who had access within 24 hours. • Calculate average of survey responses.
Public Health							
§ 170.315(f)(1) Transmission to immunization registries	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	• Has a state immunization registry that is enabled for bi-directional send/receive of immunization data. • Already has a functional bi-directional immunization interface or would like to implement one to their registry. • If we are unable to find a Client that meets these criteria, we will use the Alternate Test Procedure (see below).
					August, 2022	☐	Validate that immunization interface is functioning as expected
					September, 2022	☐	Verify immunization data was received in registry for patient A
					September, 2022	☐	Verify immunization data was received in EHR for patient B
					September, 2022	☐	See above
§ 170.315(f)(2) Transmission to public health agencies — syndromic surveillance	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	Syndromic surveillance messages are successfully received and processed by public health agency. • If we are unable to find a Client that meets these criteria, we will use the Alternate Test Procedure (see below).
					August, 2022	☐	Functioning HL7 2.5.1 interface to public health agency
					September, 2022	☐	Calculate and compile metrics.
Application Programming Interfaces							
§ 170.315(g)(7) Application access— patient selection § 170.315(g)(8) Application access— data category request § 170.315(g)(9) Application access— all data request	Ambulatory	5/1/2022	-	8/31/2022	July, 2022	☐	• Partner with PHR or identify existing PHR that can receive patient clinical data as described in this RWT plan. • Ensure that PHR has functionality to access the Dynamic FHIR API, as described here. • Partner with EHR that is integrated with the Dynamic FHIR API and Patient Portal modules of ConnectEHR.
					August, 2022	☐	Encounter is created and visually confirmed
					September, 2022	☐	• Dynamic FHIR API has transformed C-CDA into FHIR resources. • PHR app consumes FHIR resources to populate EHR data
					September, 2022	☐	Visually validate Assessment, Plan of Treatment and Health Concerns narrative text
					September, 2022	☐	Calculate and compile metrics.

Electronic Exchange

§ 170.315(h)(1) Direct Project (Included with (b)(1),(b)(2) in the Care Coordination Category)	Ambulatory	5/1/2022	-	8/31/2022	SEE CARE COORDINATION		SEE CARE COORDINATION

Table of Contents Link	**Associated Certification Criteria:** **§ 170.315(b)(1) Transition of Care (Cures Update)** **§ 170.315(b)(2) Clinical information reconciliation and incorporation** **§ 170.315(h)(1) Direct Project**		
	Measure Description: **Send and receive Transition of Care (TOC) messages with other providers to close the referral loop. The patient's ePHI will be exchanged using a C-CDA 2.1 Care Referral or Referral Note and DIRECT secure messaging for data transport.**	**Justification:** **We chose to concentrate on the aspects of this criterion that would:** **1) eliminate as much risk of data entry errors as possible by transmitting patient data securely and electronically rather than relying on manual data entry for referrals** **2) reduce the overall time burden of manual data entry** **3) ensure private and secure transmission of patients' PHI** **4) result in increased interoperability between disparate HIT systems.**	
	Metric Description: **Denominator: number of CCDs sent for patients being referred or transferred during the measurement period.** **Numerator: number of CCDs successfully received by 3rd party.** **Metric: Numerator/Denominator = percentage of ToCs successfully completed.**		**Standards Implemented:** **• CCDS (Common Clinical Data Set)** **• Applicability Statement for Secure Health Transport, Version 1.2, August 2015 (Direct)** **• HL7 C-CDA R2.1 Implementation Guide, October 2019. CDAR2_IG_C-CDAA_CLINNOTES_R1_DSTU2. 1_2015AUG_2019JUNwith_errata** **•HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 1 - Introductory Material, Release 2.1, August 2015** **•HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 2 - Templates and Supporting Material, Release 2.1, August 2015** **•HL7 Implementation Guide for CDA® Release 2: IHE Health Story Consolidation, DSTU Release 1.1 (US Realm) Draft Standard for Trial Use July 2012** **•ONC Implementation Guide for Direct Edge Protocols, Version 1.1, June 25, 2014** **• HL7® CDA R2 Implementation Guide: C-CDA Templates for Clinical Notes R2.1 Companion Guide, Release 2-US Realm, October 2019**
	Developer Info: **MDTIMELINE, LLC** **466 Ave. Hostos** **Hato Rey, PR 00918, US** **787.275.5120** **Ambulatory Care Setting:** **Ambulatory**	**Product Info:** **Product Name: MDTIMELINE** **Product Version: 2.0** **CHPL ID:** **15.04.04.3059.mdTi.02.00.1.191231**	**Methods Use to Demonstrate Interoperability:** **1) HISP via Direct Protocol (SMTP)** **2) HIE exchange** **3) HTTPS via secure provider portal**

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcomes:	Comments:
1	Identify Trading Partner (TP) and coordinate with TP for sending/receiving clinical documents using production data as described in this RWT plan.	• Confirm Trading Partner • Confirm ability to send and receive clinical documents • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment	July, 2022	☐		
2	Patient A has encounter with TP care provider and data is captured in EHR	• CCDS data elements captured in EHR (system under test) • Care provider selects Clinical Document to be transmitted. • Care provider is able to create a C-CDA Release 2.1 that also includes the reason for referral, and the referring or transitioning provider's name and office contact information. • Care provider flags the document as restricted and subject to restrictions on re-disclosure.				

3	Care provider initiates TOC to TP EHR in EHR by clicking "Create C-CDA" during the encounter si	• Care provider selects recipient from directory of Direct addresses and initiates sending of Clinical Document. The user is able to create a C-CDA Release 2.1 that also includes the reason for referral, and the referring or transitioning provider's name and office contact information. • C-CDA Care Referral or Referral Note is triggered to send via Direct Protocol • Care provider reviews the Direct Status screen (under Direct Outgoing menu choice) to ensure Clinical Document was successfully transmitted.	August, 2022	☐		
4	Validate in Connect EHR that C-CDA for Patient A contains CCDS data elements.	Recipient uses scorecard to grade C-CDA	August, 2022	☐		
5	Trading partner refers Patient B from TP EHR to system under test by generating C-CDA Clinical Document or Referral Note.	• Care provider flags Social History section of C-CDA as restricted. • Care provider selects recipient from directory of Direct addresses and initiates sending of Clinical Document.				
6	In system under test, tester acknowledges receipt of valid Clinical Document.	• Tester uses Document Center to locate Clinical Document. • Care provider reviews the Direct Status screen (under Direct Outgoing menu choice). • Recipient validates that Social History section of C-CDA is flagged as restricted	September, 2022	☐		
7	Calculate and compile metrics		September, 2022	☐		

Table of Contents	§ 170.315(b)(3) Electronic prescribing		
	Measure Description: **Prescription-related electronic transaction:** **Create, Change, Cancel, Renew, Fill Status, Errors, and Verification.**	**Justification:** **We chose to concentrate on the aspects of this criterion that would demonstrate the importance of the electronic prescription process in terms of patient care.** **Managing prescriptions electronically helps to ensure medications are accurate and not in conflict with each other by reducing the possibility of human error.**	
	Metric Description: **Denominator: total number of all prescriptions sent, whether electronically or written.** **Numerator: number of prescriptions sent electronically.** **Metric: Numerator/Denominator = percentage of prescriptions ePrescribed.**		**Standards Implemented:** **• § 170.205(b)(1) NCPDP SCRIPT Standard, Implementation Guide, Version 2017071** **• § 170.207(d)(3) RxNorm, September 8, 2015 Full Release Update**
	Developer Info: **MDTIMELINE, LLC** **466 Ave. Hostos** **Hato Rey, PR 00918, US** **787.275.5120** **Ambulatory Care Setting:** **Ambulatory**	**Product Info:** **Product Name: MDTIMELINE** **Product Version: 2.0** **CHPL ID:** **15.04.04.3059.mdTi.02.00.1.191231**	**Methods Use to Demonstrate Interoperability:**

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcomes:	Comments:
1	Identify Trading Partner (TP) and coordinate with TP for sending/receiving electronic prescriptions using production data as described in this RWT plan.	• Confirm Trading Partner • Confirm ability to send and receive electronic prescriptions • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment	July, 2022	☐		
2	In a patient's chart, open a progress note and add a prescription order for a non-controlled substance, including diagnoses.	Prescription for non-controlled substance is shown in patient's record.	August, 2022	☐		
3	Click the eRx to preview the prescription electronically	eRx preview window is shown with the correct prescription information shown in the preview				
4	Search and select a pharmacy to receive the prescription. Send prescription.	Pharmacy confirms receipt of prescription electronically. Diagnoses are shown with prescription.				
5	Check the status of the prescription order from within EHR.	EHR successfully receives fill status.				
6	Pharmacy requests a renewal.	Care provider receives renewal request.				
7	Provider answer "approved with changes" and changing "refills approved"	Pharmacy shows modified prescription record.				
8	Provider sends prescription cancelation from chronology log.	Pharmacy shows cancelation received.				
9	Calculate and compile metrics		September, 2022	☐		

Table of Contents	**Associated Certification Criteria:** **§ 170.315(b)(6) - Data export**		
	Measure Description: **Export all available data elements from the Common Clinical Dataset (CCDS) for a population of patients for use in a different health information technology product or a third party system. This export can be used for many purposes, including data portability when a physician practice switches to a new EHR platform.**	**Justification:** **We chose to concentrate on the aspects of this criterion that would:** **1) demonstrate ConnectEHR's ability to export batches of patient data in a straightforward fashion** **2) facilitate interoperability by providing the exported data in the form of valid CCD files that conform to the HL7 standards as described in the HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm).**	
	Metric Description: **Denominator: number of patients selected for export.** **Numerator: number of CCDs generated in exported batch.** **Metric: Numerator/Denominator = percentage of patients successfully included in exported batch.**		**Standards Implemented:** **• HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 1 - Introductory Material, Release 2.1, August 2015** **•HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 2 - Templates and Supporting Material, Release 2.1, August 2015**
	Developer Info: **MDTIMELINE, LLC** **466 Ave. Hostos** **Hato Rey, PR 00918, US** **787.275.5120** **Ambulatory Care Setting:** **Ambulatory**	**Product Info:** **Product Name: MDTIMELINE** **Product Version: 2.0** **CHPL ID:** **15.04.04.3059.mdTi.02.00.1.191231**	**Methods Use to Demonstrate Interoperability:** **1) Visual validation/counting** **2) Test output file with C-CDA scorecard to ensure correct format/contents.**

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcomes:	Comment(s):
1	Using production data in an actual live environment or copy of live environment, demonstrate the ability to configure data export configurations for Timeframe and Location	• Date and time ranges can be configurable via the UI • Targeted Practices can be configurable via the UI • Patients exported can be configurable via the UI	July, 2022	☐		
2	Demonstrate the ability to limit the set of users who can create export summaries	Logging in as a VendorAdmin will allow access to the export functionality				
3	Confirm users roles that have been denied export summary access cannot create export summaries	Logging in as a non-VendorAdmin will not allow access to the export functionality				
4	Create and validate an export for a single patient	Use the Edge Test Tool to check validity of output file	August, 2022	☐		
5	Create an export summary for data within a entered date and time range	• Data was available for the entered date and time range • The export summary contained data only within that date and time range				
6	Create an export summary in real time	Export summary was created and completed successfully	September, 2022	☐		
7	Create an export summary based on a relative date and time (Ex. Every first of every month @ 7 AM)	The scheduled export summary would be display and be visually validated				
8	Create an export summary for a specific date/time (Ex. 07/16/2021 @ 3:30 PM)	• The scheduled export summary was created successfully • The specific date/time would be in the near future so the export could be confirmed				
9	Save the export summary to a preferred location at the time of export.	• Saving to a preferred location is allowed • Visually confirming the export after save is performed and successful				
10	Calculate and compile metrics		September, 2022	☐		

Table of Contents	Associated Certification Criteria: § 170.315(c)(1) - Clinical quality measures (CQMs) — record and export § 170.315(c)(2) - Clinical quality measures (CQMs) — import and calculate § 170.315(c)(3) - Clinical quality measures (CQMs) — report					
	Measure Description: • Capture and record electronic clinical quality measure (eCQM) data in EHR (or trading partner's EHR) for calculating eCQMs. • Electronically create a data file for transmission of CQM data in accordance with the CMS QRDA Category III IG for ambulatory measures as adopted in § 170.205(k)(3).	**Justification:** We chose to concentrate on the aspects of this criterion that would closely follow the actual activities of Dynamic Health IT users with respect to eCQM calculation and output: 1) Run quality measure reports and display results on Dashboard to compare with industry-standard benchmarks and with prior/expected performance. 2) Generate eCQM output for MIPS (the most widely-used eCQM reporting program for ambulatory) and ensure that it can be successfully uploaded to the Quality Payment Program (QPP) website and/or the Cypress test tool. 3) Verify that CQMsolution is a product that can support MIPS participants in achieving an end-to-end reporting bonus.				
	Metric Description: **Denominator: number of QRDAIII files generated by CQMsolution and uploaded to QPP and/or the Cypress test tool.** **Numerator: number of uploaded QRDAIII files that were accepted by QPP and/or the Cypress test tool with no errors.** **Metric: Numerator/Denominator = percentage of submitted QRDAIII files that were accepted by QPP and/or the Cypress test tool with no errors.**		**Standards Implemented:** • HL7 CDA® R2 Implementation Guide: Quality Reporting Document Architecture - Category I (QRDA I); Release 1, DSTU Release 3 (US Realm), Volume 1 - Introductory Material, June 2015 • HL7 CDA R2 Implementation Guide: Quality Reporting Document Architecture - Category I (QRDA I); Release 1, DSTU Release 3 (US Realm), Volume 2 - Templates and Supporting Material, June 2015			
	Developer Info: **MDTIMELINE, LLC** **466 Ave. Hostos** **Hato Rey, PR 00918, US** **787.275.5120** **Ambulatory Care Setting:** **Ambulatory**	**Product Info:** **Product Name: MDTIMELINE** **Product Version: 2.0** **CHPL ID:** **15.04.04.3059.mdTi.02.00.1.191231**	**Methods Use to Demonstrate Interoperability:** • Matching of calculation results from CQMsolution to CMS • API Sandbox testing with CMS for file acceptance			

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcome:	Comment(s)
1	Identify Trading Partner (TP) and coordinate with TP for calculating and reporting electronic clinical quality measures (eCQMs) using production data as described in this RWT plan.	• Confirm Trading Partner • Confirm ability to calculate and report eCQMs • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment	July, 2022	☐		
2	Identify six EP (Eligible Professional) eCQMs for RWT.	Based on historical data, select the most popular eCQMs.				
3	Identify a one calendar year reporting period with adequate patient data for reporting.	Admins with sufficient familiarity with the physician practice's clinical activities should be able to choose a period with an appropriate amount of quality data.				
4	Capture and record clinical quality measure (CQM) data in Trading Partner's (TP) EHR. Since manual data entry for an adequate quantity of data would be onerous, we will use actual patient data. a. If TP is integrated with CQMsolution, CQMsolution will capture data through a SQL query, so that when a user runs a CQM report, CQMsolution pulls data directly from the TP's database. b. Alternative approach: Pull in data through QRDA I files in a .zip folder	Data ready for report generation.				
5	Correctly calculate numerator, denominator, exclusion and exception values for selected eCQMs.	The CQMsolution report should complete with no errors.				
6	Spot-check 10 patients for each measure, ensuring that some are in the denominator only, some are in the numerator and denominator and, if possible, some are exclusions or exceptions.	Use Patient List to check which categories Initial Patient Population (IPP), Denominator (Den), Exclusions (Excl), Numerator (Num) or Exceptions (Excp) each patient falls into. For each spot-check patient, use the drill-down to confirm that the patient data in CQMsolution (encounters, codes, demographics) matches the patient data in the EHR and that the patient is correctly categorized in CQMsolution.				
7	Upload the generated MIPS QRDA III file to QPP.	The file should upload and be accepted by the environment without error.	July, 2022	☐		
8	Check the submission environment's measure calculation results and compare them to CQMsolution's calculation results.	All populations of all measures should match.	July, 2022	☐		

9	Calculate and compile metrics		September, 2022	☐		

Table of Contents	Associated Certification Criteria: 170.315(e)(1) View, Download, and Transmit to 3rd Party					
	Measure Description: **Provide patient (and their authorized representatives) user friendly, secure Portal access to their PHI in C-CDA 2.1 HL7 Standard format. Allowing patient to download a summary in both a human readable format and using the CCD document template of the Consolidated CDA Release 2.1 containing:** **• The CCDS Data Elements** **• The provider's name and office contact information** **• Laboratory test report(s)** **• Diagnostic image report(s)**	Justification: **We chose to concentrate on the aspects of this criterion that would empower patients with timely electronic access to comprehensive, useful ePHI.**				
	Metric Description: **Denominator: number of unique patients with encounters in review period.** **Numerator: number of unique patients provided with timely access to their encounter information within 24 hours of their encounter.** **Metric: Numerator/Denominator = percentage of unique patients with encounters in the review period are provided timely access within 24 hours of their encounter information.**		Standards Implemented: **• CCDS (Common Clinical Data Set)** **• Web Content Accessibility Guidelines (WCAG) 2.0, December 11, 2008** **• Web Content Accessibility Guidelines (WCAG) 2.1, June 05, 2018 (Available 3/12/2021)** **• HL7 C-CDA R2.1 Implementation Guide, October 2019. CDAR2_IG_C-CDAA_CLINNOTES_R1_DSTU2.1_2015AUG_2019JUNwith_errata** **• HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 1 - Introductory Material, Release 2.1, August 2015** **• HL7® CDA R2 Implementation Guide: C-CDA Templates for Clinical Notes R2.1 Companion Guide, Release 2-US Realm, October 2019**			
	Developer Info: **MDTIMELINE, LLC** **466 Ave. Hostos** **Hato Rey, PR 00918, US** **787.275.5120** Ambulatory Care Setting: **Ambulatory**	Product Info: **Product Name: MDTIMELINE** **Product Version: 2.0** CHPL ID: **15.04.04.3059.mdTi.02.00.1.191231**	Methods Use to Demonstrate Interoperability: **1) Direct Protocol Send Functionality** **2) SMTP Email Send Functionality** **3) HTTPS via secure portal Access for patient from any browser** **4) Ability for Portal to be accessed via a Smartphone or Tablet**			

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcomes:	Comment(s)
1	Identify Trading Partner (TP) and coordinate with TP for providing patients timely access to their ePHI using production data as described in this RWT plan.	• Confirm Trading Partner • Confirm ability to provide patients timely access to their ePHI • Confirm with TP that production data will be used, whether in an actual live environment or a copy of a live environment	July, 2022	☐		
2	For a period of time (1 month?), monitor the system as the below steps (3-12) take place continuously.	Many patient visits will occur during the period of time, generating a sufficient amount of data for calculating the metrics at the end of testing.				
3	Patient arrives for a visit	Patient demographics are captured in the EHR				
4	Provider Charts on the Patients health status	CCDS data elements are recorded in EHR				

5	Provider Signs note or patient checks out	Trigger is provided to create C-CDA or C-CDA is dropped to ConnectEHR				
6	EHR system generates CCD including all provided CCDS data	• Validate that a C-CDA has been triggered. • Ensure patient is mapped to the right provider and practice. • Visually verify CCDS data sections exist with accurate information • Validate code systems and format with ScoreCard or ETT tool for schema validation.				
7	Patient activates Portal	• Ensure patient received activation email or • provide patient with Username and Password	August, 2022	☐		
8	Patient or authorized representative logs into Portal	• URL is provided to patient in an email or • the Patient is provided the URL while in the physician's office. • Record validation in the audit log that URL is functional				
9	Patient or authorized representative views C-CDA or choses a date range of CCDs to view	• Record validation in the audit log that patient has viewed C-CDA • Validate NTP by comparing Portal timestamp with ConnectEHR timestamp				
10	Patient or authorized representative downloads C-CDA their choice of xml or pdf	Record validation in the audit log that patient has downloaded C-CDA				
11	Patient or authorized representative transmits:	Record validation in the audit log that patient has transmitted the C-CDA via DIRECT or email	August, 2022	☐		
a	C-CDA via Direct Protocol to a provider					
b	C-CDA via email to others					
12	Request survey response on Patient Portal ease of use and accessibility.	Patient or authorized representative provides a score from 1 (easy) to 5 (unable) on the following criteria: • accessing the portal • downloading and/or transmitting ePHI				
13	Calculate and compile metrics	• Run Timely Access report in ConnectEHR and compare to patient visit report from EHR to determine percentage of patients who had access within 24 hours. • Calculate average of survey responses.	September, 2022	☐		

Table of Contents	Associated Certification Criteria: §170.315(f)(1) Transmission to immunization registries				
	Measure Description: Create and transmit immunization information. Enable a user to request, access, and display a patient's evaluated immunization history and the immunization forecast from an immunization registry	Justification: We chose to concentrate on the aspects of this criterion that would provide the most patient care value in an actual setting. Immunization registries can be very helpful in directing and informing patient care and in cost control through identification of needed immunizations and elimination of redundant immunizations. In our experience, most immunization registries do not yet have the ability to handle a bi-directional query/response type of interface. That's why we offered the Alternate Test Approach.				
	Metric Description: Denominator 1: number of immunization records transmitted to registry. Numerator 1: number of immunization records confirmed successfully received by registry. Metric 1: Numerator 1/Denominator 1 = percentage of transmitted immunization records successfully received by registry. Denominator 2: number of requests for immunization history sent to registry by EHR. Numerator 2: number of immunization history records confirmed received in EHR. Metric 2: Numerator 2/Denominator 2 = percentage of requests for immunization history that were confirmed answered successfully in EHR.		Standards Implemented: (SVAP) • § 170.205(e)(4) HL7 2.5.1 Implementation Specifications. HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5, October 2014 • HL7 Version 2.5.1 Implementation Guide for Immunization Messaging (Release 1.5)—Addendum, July 2015§ 170.207(e)(3) HL7 Standard Code Set CVX— Vaccines Administered, updates through August 17, 2015 • § 170.207(e)(4) National Drug Code (NDC) Directory– Vaccine NDC Linker, updates through August 17, 2015		
	Developer Info: MDTIMELINE, LLC 466 Ave. Hostos Hato Rey, PR 00918, US 787.275.5120 Ambulatory Care Setting: Ambulatory	Product Info: Product Name: MDTIMELINE Product Version: 2.0 CHPL ID: 15.04.04.3059.mdTi.02.00.1.191231	Methods Use to Demonstrate Interoperability: 1) SFTP 2) TCP/IP 3) Webservice 4) HL7 Standard Code Set CVX – Vaccine AdministeredOID: 2.16.840.1.113883.12.292 5) National Drug Code Directory OID: 2.16.840.1.113883.6.69 6) SOAP-based standard for transport of immunization data			

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcomes:	Comment(s)
1	Identify Trading Partner (TP) and coordinate with TP for transmitting immunization records using production data as described in this RWT plan.	• Has a state immunization registry that is enabled for bi-directional send/receive of immunization data. • Already has a functional bi-directional immunization interface or would like to implement one to their registry. • If we are unable to find a Client that meets these criteria, we will use the Alternate Test Procedure (see below).	July, 2022	☐		
2	Implement bi-directional immunization interface (if interface not already in place)	Validate that immunization interface is functioning as expected	August, 2022	☐		
3	Determine whether test or production interface will be used.	If production, determine whether an actual patient or a test patient will be used.				
4	Create a new immunization record	• Register a patient or create a new patient "A" in Client EHR and create a current patient encounter. • Record an immunization in Client EHR.				
5	Create a new query	• Select a patient or create a new patient "B" in Client EHR and create a current patient encounter. • Request immunization record in Client EHR.				
6	Run immunization process to send/receive from registry (assuming process is batch, rather than real-time).	Confirm send/received functionality				
7	Access registry to verify that immunization data was received for patient A.	Verify immunization data was received in registry for patient A	September, 2022	☐		
8	Access EHR to verify that immunization data was received for patient B.	Verify immunization data was received in EHR for patient B	September, 2022	☐		
9	Calculate and compile metrics	See above	September, 2022	☐		

Table of Contents	Associated Certification Criteria: §170.315(f)(2) Transmission to public health agencies — syndromic surveillance		
	Measure Description: **Create syndromic surveillance messages and transmit to public health agencies.**	Justification: **We chose to concentrate on the aspects of this criterion that would:** **1) Ensure all patients flagged will have health data sent for surveillance** **2) Allow for health threats to be reported faster.** **3) Provide information to the CDC or other registries to identify illness clusters early, before diagnoses are confirmed and reported to public health agencies, and to mobilize a rapid response, thereby reducing morbidity and mortality.**	
	Metric Description: **Denominator: number of HL7 syndromic surveillance messages sent to public health agency.** **Numerator: number of HL7 syndromic surveillance messages confirmed received and processed by public health agency.** **Metric: Numerator/Denominator = percentage of transmitted HL7 syndromic surveillance messages confirmed received and processed by public health agency.**		Standards Implemented: (SVAP) **• § 170.205(d)(4) HL7 2.5.1. Implementation specifications. PHIN Messaging Guide for Syndromic Surveillance: Emergency Department, Urgent, Care, Inpatient and Ambulatory Care, and Inpatient Settings Release 2.0, April 21, 2015** **• CDC PHIN Messaging Guide for Syndromic Surveillance: Emergency Department, Urgent Care, Inpatient and Ambulatory Care Settings, Release 2.0, April 21, 2015** **•Erratum to the CDC PHIN 2.0 Implementation Guide, August 2015; Erratum to the CDC PHIN 2.0 Messaging Guide, April 2015 Release for Syndromic Surveillance: Emergency Department, Urgent Care, Inpatient and Ambulatory Care Settings**
	Developer Info: **MDTIMELINE, LLC** **466 Ave. Hostos** **Hato Rey, PR 00918, US** **787.275.5120** Ambulatory Care Setting: **Ambulatory**	Product Info: **Product Name: MDTIMELINE** **Product Version: 2.0** CHPL ID: **15.04.04.3059.mdTi.02.00.1.191231**	Methods Use to Demonstrate Interoperability: **1) ICD-10-CM** **2) SNOMED CT®** **3) SFTP** **4) TCP/IP** **5) Webservice**

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcomes:	Comment(s)
1	Identify DHIT Client who either: • Has a public health agency that can receive Syndromic Surveillance data • Already has a functional Syndromic Surveillance interface or would like to implement one to their public health agency and the agency willing to share metrics of syndromic surveillance messages successfully received.	Syndromic surveillance messages are successfully received and processed by public health agency. • If we are unable to find a Client that meets these criteria, we will use the Alternate Test Procedure (see below).	July, 2022	☐		
2	Implement send-only public health interface (if interface not already in place). • Determine whether test or production interface will be used • If production, determine whether an actual patient or a test patient will be used	Functioning HL7 2.5.1 interface to public health agency	August, 2022	☐		
3	Create a new patient encounter. • Register a patient or create a new patient “A” in Client EHR and create a current patient encounter • Enter one or more ICD-10 diagnosis codes present in the Trigger Events table that lists reportable Syndromic Surveillance diagnoses	Patient registered and queued for interface				
4	Run Syndromic Surveillance process to send to public health agency (assuming process is batch, rather than real-time).	• Ensure messages are de-identified per CDC PHIN Messaging Guide requirements • Messages sent to public health agency				
5	Check whether HL7 messages ACKed by agency	HL7 messages are successfully received and ACKed				
6	Query agency to verify that public health data was received for patient A.	Public health successfully processed by agency				
7	Calculate and compile metrics		September, 2022	☐		

Table of Contents	Associated Certification Criteria: § 170.315(g)(7) Application access— patient selection § 170.315(g)(8) Application access— data category request § 170.315(g)(9) Application access— all data request		
	Measure Description: **Enable a patient's to access their electronic health data through a Personal Health Record (PHR) app on their smartphone. They have had a healthcare encounter with a provider using an EHR that is integrated with the Dynamic FHIR API and Patient Portal modules of ConnectEHR. They would like to view the results from that encounter along with the rest of their electronic health record.**	Justification: **CMS has a focus on empowering patients by providing them with an electronic copy of their health record. We agree that this is very important for patient satisfaction and improving population health in general.**	
	Metric Description: **Denominator: number of unique patients with encounters in review period. Numerator: number of unique patients with the ability to access their health information via a PHR connected to the Dynamic FHIR API. Metric: Numerator/Denominator = percentage of unique patients with encounters in the review period with the ability to access their health information via a PHR connected to the Dynamic FHIR API.**		Standards Implemented: **• HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 1 - Introductory Material, Release 2.1, August 2015 • HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 2 - Templates and Supporting Material, Release 2.1, August 2015 • FHIR STU3**
	Developer Info: **MDTIMELINE, LLC 466 Ave. Hostos Hato Rey, PR 00918, US 787.275.5120** Ambulatory Care Setting: **Ambulatory**	Product Info: **Product Name: MDTIMELINE Product Version: 2.0** CHPL ID: **15.04.04.3059.mdTi.02.00.1.191231**	Methods Use to Demonstrate Interoperability: **1) HTTPS via secure portal 2) FHIR**

Test Step:	Testing Procedure:	Expected Outcomes:	Key Milestone Date:	Key Milestone:	Outcomes:	Comment(s)
1	Identify Trading Partner (TP) and coordinate with TP for providing patients timely access to their ePHI using production data as described in this RWT plan.	• Partner with PHR or identify existing PHR that can receive patient clinical data as described in this RWT plan. • Ensure that PHR has functionality to access the Dynamic FHIR API, as described here. • Partner with EHR that is integrated with the Dynamic FHIR API and Patient Portal modules of ConnectEHR.	July, 2022	☐		
2	Patient A has encounter with care provider who uses EHR described above.	Encounter is created and visually confirmed	August, 2022	☐		
3	Provider captures CCDS data elements in EHR	CCDS data elements are validated in the system				
4	Provider manually generates Care/Referral Summary C-CDA post-visit or ensures that the EHR generates one automatically.	C-CDA is confirmed for the specified patient				
5	Patient A uses Patient Portal login to view clinical information	• Patient Portal automatically sends email reminder that Patient A has a new clinical document available. • Email reminder has a URL/hyperlink to the patient portal. • If patient hasn't already activated their portal account, portal account can be activated via Welcome Email or by an Administrator user				
6	Patient A uses portal login credentials to log into PHR app	Specific patient ID and token are returned for authentication and data requests				
7	PHR app displays full set of data for all data categories	• Dynamic FHIR API has transformed C-CDA into FHIR resources. • PHR app consumes FHIR resources to populate EHR data	September, 2022	☐		

8	PHR app returns full set of data for a given category	PHR app will display and all data to be displayed for each data category				
9	PHR app returns data in a computable format using specified standards.	Data is confirmed to be in XML or JSON format				
10	PHR app returns full and accurate data for a specific date and specific date range	• Step 10 is optional, if PHR app has the capability to filter by date range • Filtering data by a specific date returns data accurately and as expected • Filtering data by a specific date range returns data accurately and as expected				
11	Via visual inspection of PHR app, the data is verified to include Assessment, Plan of Treatment and Health concerns are specified as narrative text	Visually validate Assessment, Plan of Treatment and Health Concerns narrative text	September, 2022	☐		
12	Calculate and compile metrics		September, 2022	☐		

Attestation: **This Real World Testing plan is complete with all required elements, including measures that address all certification criteria and care settings.** **All information in this plan is up to date and fully addresses the Health IT Developer's Real World Testing requirements.**	
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