Test Instruction & Scenarios:
PHA - Surveillance Integration

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Overview

The purpose of this test package is to confirm that Electronic Initial Case Reports (eICRs) and Reportability Responses (RRs) are correctly ingested and routed into Public Health Agency (PHA) surveillance system(s). PHA partners can use this test package throughout the integration process. It includes various eICR/RR samples designed to test Routing, Deduplication and Case Creation, and Data Mapping.

Instructions

- **System Pre-Conditions** - The only pre-conditions are establishing the functionality these test resources are intended to confirm.
- **Preparing Test Resources** - The provided Electronic Case Report (eCR) document test resources (eICR and RR pairs) contain generalized jurisdiction and location information, and therefore will not reference your jurisdiction specifically. If your system, or your test scripts, require test resources to be jurisdiction specific, please see section "*Updating eICR & RR Test Resources*" below for instructions on how to update them.
- **Completing the Tests** - Each Test Scenario listed in the next section corresponds to a specific surveillance integration function. The resources provided for each were created specifically to test those functions.
    1. *Routing* - This refers specifically to condition-based routing. The test resources provided contain different reportable conditions to test your routing logic.
        - *Note on Location-based Routing -* If your system additionally, or solely, routs cases based on facility or patient location, please see section "*Updating eICR & RR Test Resources*" below for instructions on how to update provided resources in order to test that routing logic.
    2. *Deduplication & Case Creation* - Due to the nature of eCR triggering on the clinical side, it is common to receive multiple eICRs for a single event. The test resources provided mimic a real-world scenario with multiple eICRs relating to a single event within a limited timeframe.
    3. *Data Mapping* - The test resources provided to help confirm mapping are designed to include large amounts of data (most likely more than will be received in production) in order to confirm all the individual data mappings have been implemented correctly.

Test Scenarios

The following table provides the objectives for each test case included in this Test Package.

Test Scenario	Applicable Test Resources	Testing Notes
Routing	eICR_TC-Routing_STI.xml eICR_TC-Routing_STI-RR.xml eICR_TC-Routing_VPD.xml eICR_TC-Routing_VPD-RR.xml	These are the XML files for 2 eICRs and their corresponding RRs used to represent 2 types of diseases that may need to be routed to different surveillance systems/program.
Deduplication & Case Creation	eICR_TC-DeDup1_Lab_Order.xml eICR_TC-DeDup1_Lab_Order-RR.xml eICR_TC-DeDup2_Lab_Result.xml eICR_TC-DeDup2_Lab_Result-RR.xml	This scenario is to simulate a 2nd eICR triggered related to the same encounter and PHAs will have to match, de-duplicate or update from the previous eICR sent. These are the XML files for 2 eICRs and their corresponding RRs.
Data Mapping	eICR_TC-DataMapping.xml eICR_TC-DataMapping-RR.xml	XML for eICR and corresponding RR which has most fields filled in to assist in mapping data fields.

Updating eICR & RR Test Resources

The following outlines how to update the provided eICR and RR Test Resources to associate Patient and Facility Location with your jurisdiction

Each eCR document is provided in XML format. In order to update them, you will need an XML editor, or other XML-compatible text editor.

Facility Location - To update facility location information make the following updates:

- eICR Updates - The Facility address can be found at the following location within the eICR:
  <componentOf><encompassingEncounter><location><healthCareFacility><location><addr>
  - See Vol 1 generally, and section 1.1 of Vol 2 specifically of the **eICR Implementation Guide** for more details. HL7 CDA® R2 Implementation Guide: Public Health Case Report, Release 2: the Electronic Initial Case Report (eICR), Release 1, STU Release 1.1 - US Realm, available for download here on the HL7 Website.

```xml
<componentOf>
  <encompassingEncounter>
    <!--encounter ID -->
    <id extension="9937012" root="2.16.840.1.113883.19" />
    <!--CPT-4 E/M codes - granular-->
    <code code="99213" codeSystem="2.16.840.1.113883.6.12" codeSystemName="CPT-
    <effectiveTime>
    <!-- provider in charge of care when case reported -->
    <responsibleParty>
    <!-- Information about facility where care was provided when case reported-
    <location>
      <healthCareFacility>
        <!-- Facility ID Number -->
        <id extension="77777777777" root="2.16.840.1.113883.4.6" />
        <!-- Facility Type -->
        <code code="OF" codeSystem="2.16.840.1.113883.5.111" displayName="Outpa
        <location>
          <!-- Facility Addr     -->
          <addr>
            <streetAddressLine>Clinic Bldg A, 4444 Healthcare Drive</streetAddr
            <city>Ann Arbor</city>
            <state>MI</state>
            <postalCode>99999</postalCode>
            <country>US</country>
          </addr>
        </location>
        <!-- Facility Name -->
        <serviceProviderOrganization>
          <name>Level Seven Healthcare, Inc.</name>
          <!-- Facility Phone -->
          <telecom use="WP" value="tel:+1(555)555-3001" />
          <addr>
            <streetAddressLine>Clinic Bldg A, 4444 Healthcare Drive</streetAddr
            <city>Ann Arbor</city>
            <state>MI</state>
            <postalCode>99999</postalCode>
            <country>US</country>
          </addr>
```

- RR Updates - The Facility address can be found at the following location within the RR:
  <componentOf><encompassingEncounter><location><healthCareFacility><location><addr>
  - See Vol 1 generally, and section 1.1 of Vol 2 specifically of the **RR Implementation Guide** for more details. HL7 CDA® R2 Implementation Guide: Reportability Response, Release 1 STU Release 1 - US Realm, available for download here on the HL7 Website.

```
<componentOf>
  <encompassingEncounter>
    <!--eICR encounter ID - this is the id of the original encounter-->
    <id extension="9937012" root="2.16.840.1.113883.19" />
    <!--CPT-4 E/M codes - granular-->
    <code code="99213" codeSystem="2.16.840.1.113883.6.12" codeSystemName="CPT-4" disp
    <!-- eICR encompassingEncounter time - this is the time of the original encounter
    <effectiveTime>
    <!-- provider in charge of care when case reported -->
    <responsibleParty>
      <assignedEntity>
    </responsibleParty>
    <!-- Information about facility where care was provided when case reported-->
    <location>
      <healthCareFacility>
        <!-- Facility ID Number -->
        <id extension="77777777777" root="2.16.840.1.113883.4.6" />
        <!-- Facility Type -->
        <code code="OF" codeSystem="2.16.840.1.113883.5.111" displayName="Outpatient f
        <location>
          <!-- Facility Addr
          <addr>
            <streetAddressLine>Clinic Bldg A, 4444 Healthcare Drive</streetAddressLine
            <city>Ann Arbor</city>
            <state>MI</state>
            <postalCode>99999</postalCode>
            <country>US</country>
          </addr>
        </location>
        <!-- Facility Name --
        <serviceProviderOrganizati
          <name>Level Seven Healthcare, nc.</name>
          <!-- Facility Phone -->
          <telecom use="WP" value="tel:+1(555)555-2001" />
          <addr>
            <streetAddressLine>Clinic Bldg A, 4444 Healthcare Drive</streetAddressLine
            <city>Ann Arbor</city>
            <state>MI</state>
            <postalCode>99999</postalCode>
            <country>US</country>
          </addr>
        </serviceProviderOrganization>
      </healthCareFacility>
```

Patient Location - To update patient location information make the following updates:
- ● eICR Updates - The Patient address can be found at the following location within the eICR: <recordTarget><patientRole><addr>
  - ○ See Vol 1 generally, and section 1.1 of Vol 2 specifically of the **eICR Implementation Guide** for more detail. HL7 CDA® R2 Implementation Guide: Public Health Case Report, Release 2: the Electronic Initial Case Report (eICR), Release 1, STU Release 1.1 - US Realm, available for download here on the HL7 Website.

```xml
<recordTarget>
  <!-- Patient demographic information -->
  <patientRole>
    <!-- Fake root for sample -->
    <id extension="123453" root="2.16.840.1.113883.19.5" />
    <!--SSN-->
    <id extension="111-00-1234" root="2.16.840.1.113883.4.1" />
    <!--Could have multiple addresses-->
    <addr use="H">
      <streetAddressLine>2222 Home Street</streetAddressLine>
      <city>Ann Arbor</city>
      <state>MI</state>
      <postalCode>99999</postalCode>
      <!-- Although "county" is not explicitly specified in the US Realm Addres
           it is not precluded from use and for the purposes of this IG it is
           recommended to be included. -->
      <county>County</county>
      <country>US</country>
    </addr>
    <telecom use="HP" value="tel:+1-555-555-2003" />
    <patient>
      <name use="L">
        <given>Eve</given>
        <family>Everywoman</family>
      </name>
      <administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.5.1" />
      <birthTime value="19900420" />
      <!-- If sdtc:deceasedInd is true then sdtc:deceasedTime must be present -
      <sdtc:deceasedInd value="false" />
      <raceCode code="2106-3" codeSystem="2.16.840.1.113883.6.238" codeSystemNa
      <ethnicGroupCode code="2135-2" codeSystem="2.16.840.1.113883.6.238" codeS
        displayName="Hispanic or Latino" />
      <languageCommunication>
        <!-- Portuguese -->
        <languageCode code="pt" />
        <modeCode code="ESP" codeSystem="2.16.840.1.113883.5.60" codeSystemName
        <proficiencyLevelCode code="G" codeSystem="2.16.840.1.113883.5.61" code
        <!-- Preferred Language -->
        <preferenceInd value="true" />
      </languageCommunication>
    </patient>
  </patientRole>
</recordTarget>
```

- RR Updates - The Patient address can be found at the following location within the RR: <recordTarget><patientRole><addr>
  - See Vol 1 generally, and section 1.1 of Vol 2 specifically of the **RR Implementation Guide** for more detail. HL7 CDA® R2 Implementation Guide: Reportability Response, Release 1 STU Release 1 - US Realm, available for download [here on the HL7 Website](#).

```
<recordTarget>
  <!-- Patient demographic information -->
  <patientRole>
    <!-- Fake root for sample -->
    <id extension="123453" root="2.16.840.1.113883.19.5" />
    <!--SSN-->
    <id extension="111-00-1234" root="2.16.840.1.113883.4.1" />
    <!--Could have multiple addresses-->
    <addr use="H">
      <streetAddressLine>2222 Home Street</streetAddressLine>
      <city>Ann Arbor</city>
      <state>MI</state>
      <postalCode>99999</postalCode>
      <!-- Although "county" is not explicitly specified in the US Realm Address,
           it is not precluded from use and for the purposes of this IG it is
           recommended to be included. -->
      <county>County</county>
      <country>US</country>
    </addr>
    <telecom use="HP" value="tel:+1-555-555-2003" />
    <patient>
      <name use="L">
        <given>Eve</given>
        <family>Everywoman</family>
      </name>
      <administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.5.1" />
      <birthTime value="19900420" />
      <!-- If sdtc:deceasedInd is true then sdtc:deceasedTime must be present -->
      <sdtc:deceasedInd value="false" />
      <raceCode code="2106-3" codeSystem="2.16.840.1.113883.6.238" codeSystemName='
      <ethnicGroupCode code="2135-2" codeSystem="2.16.840.1.113883.6.238" codeSyste
```

Matching/De-duplicating eICR & RR Documents

The following outlines how to match, de-duplicate, or update an eICR and RR with a secondary eICR and RR received related to the same encounter. This secondary set of documents will contain more and updated patient data related to the same clinical encounter and should be used to replace the previously-received eICR and RR documents.

See below for more information on linking eICRs and RRs together as well as linking different eICRs together. This information comes from the HL7 CDA® R2 Implementation Guide: Reportability Response, Release 1, STU Release 1.0 - US Realm as part of Volume 3 Creator Guidance, available for download here on the HL7 Website.

Linking Reportability Responses to eICRs and linking eICRs to each other

Any given patient encounter may lead to the generation of more than one eICR and each eICR has a Reportability Response. Each Reportability Response can be linked to its associated eICR through the use of the eICR unique identifier. In the eICR it is identified as id and the same unique eICR identifier is found in ***Received eICR Information/eICR External Document Reference/id*** in the associated Reportability Response.

It is also important to be able to link eICRs and Reportability Responses for the same patient encounter. For these purposes, each eICR will have a ***parentDocument.setId*** and a ***parentDocument.versionNumber.*** The ***setID*** should be the same for each eICR that comes from the same patient encounter and the ***versionNumber*** should increment for each eICR that is generated from the same patient encounter. These can be helpful in linking eICRs and Reportability Responses for the same possible case. In general subsequent eICRs for the same patient encounter should be considered as replacements, rather than addenda, to the eICRs that preceded them for that patient encounter.

It is also important to understand that each Reportability Response will have its own ***unique id***, ***setId***, and ***versionNumber*** that is separate from those of the eICR. Because the Reportability Response is secondary to the eICR, we have emphasized the use of eICR identifiers. It should also be noted that different EHR vendors define encounters differently in the CDA and care should be taken to work around these variances.