

eCR Process Task Notes

January 19, 2017

| Task ID | Task | Description | Notes |
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| 1 | Begin Patient Visit | Patient visits health care provider | |
| 2 | Review, Deliver and Document Patient Care | The Health Care Provider sees patient and delivers care, documents care in the patient's record in EHR. This pre-defined process is unique to each patient and provider encounter but could include documenting symptoms, history, diagnoses, ordering labs, performing procedures, prescribing medications, etc. | |
| 3 | Provider Initiated Electronic Case Report | The provider may manually invoke the creation of an electronic case report for patients they believe may have a reportable condition. | Target specification for electronic public health case report: HL7 CDA R2 Implementation Guide: Public Health Case Report, Release 2 - US Realm - the Electronic Initial Case Report (eICR) |
| 4 | Compare to Public Health Trigger Codes | The EHR executes a process to check for reportable condition trigger code matches in a patient encounter. Multiple places in the EHR would be examined for a match. There is a recursive relationship between charting and comparison (tasks 2 and 4). This would enable (but not require) EHR to "trigger" at each match or aggregate all matches to be sent at a single time. There will be continual input into step 2. | CSTE/CDC have developed the Reportable Conditions Trigger Code (RCTC) product for this task. It contains coded terms for lab orders, lab results, and diagnoses. Case reports triggered by the RCTC may or may not meet jurisdictional reporting criteria. The Decision Support intermediary is designed to filter out non-cases (i.e., false positives). RCTC is available from the Public Health Information Network Vocabulary Access and Distribution System (PHIN VADS; https://phinvads.cdc.gov/vads/SearchHome.action). |
| 5 | Match? | A check is done against the public health trigger codes. If no a match is found the process ends. If a match is made to a public health trigger code an electronic case report will | |

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| | | be created. | |
| 6 | Build Electronic Initial Case Report | An electronic case report is created according to the HL7 eICR Implementation Guide. | <p>Electronic case report contains Protected Health Information (PHI) and should only reflect current (i.e., not historical) conditions that are reportable to public health.</p> <p>Target specification for electronic public health case report: HL7 CDA R2 Implementation Guide: Public Health Case Report, Release 2 - US Realm - the Electronic Initial Case Report (eICR)</p> |
| 7 | Send Electronic Initial Case Report to Decision Support Intermediary | The electronic case report is sent to the decision support intermediary to determine if the case will be forwarded to one or more Public Health Agencies based on criteria established by Public Health Agencies. | <p>For eCR implementations partnered with Digital Bridge, the Decision Support Intermediary will be a distinct legal entity separate from the Health Care Provider and Public Health Agency.</p> <p>For every message sent between two entities, the sending entity will expect an acknowledgement message from the receiver.</p> |
| 8 | Document Activity Related to Case Report | The patient record is updated with information related to its status as a public health case, any transaction acknowledgment and error messages sent by the Decision Support Intermediary, and requests for information from Public Health Agencies. A copy of the electronic public health case report (or the information required to recreate it) and related transactions are stored for future reference or audit. | |
| 9 | Receive Electronic Case Report | The decision support intermediary receives the electronic public health case report. | <p>For eCR implementations partnered with Digital Bridge, the Decision Support Intermediary will be the APHL Informatics Messaging Services (AIMS; https://www.aphl.org/programs/informatics/Pages/aims_platform.aspx) platform which hosts the CSTE Reportable Conditions Knowledge Management System (RCKMS; http://www.cste.org/group/RCKMS).</p> |

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| | | | For every message sent between two entities, the sending entity will expect a system acknowledgement message from the receiver. |
| 10 | Valid Message/Document? | The decision support intermediary checks each incoming public health case report for valid structure and content. | Target specification for electronic public health case report: HL7 CDA R2 Implementation Guide: Public Health Case Report, Release 2 - US Realm - the Electronic Initial Case Report (eICR) |
| 11 | Build, Send Error Message | If the incoming public health case report has invalid structure or content, an error message is returned to the Health Care Provider for auditing and to allow for correction and resending. | Invalid eICRs that can still be discerned as attempts at an eICR are dispositioned (task 20) for potential storage per public health jurisdiction retention rules. Invalid eICRs that cannot be recognized as attempts at an eICR will not be dispositioned. |
| 12 | Determine Public Health Reportability | A valid electronic case report is compared to decision rules describing reporting specifications defined by Public Health Agencies. To determine public health reportability, case information will be compared to jurisdictional reporting criteria for the patient's residence, the provider's location, and the laboratory's location (if lab tests were run). A decision will be made to either 1) forward the case report to 1 or more Public Health Agencies, or 2) not forward the case report. A decision to forward the case report to 1 or more Public Health Agencies could reflect the case report meeting case definition criteria OR it could reflect a Public Health Agency's decision rule to receive a case report regardless of it meeting case definition criteria. | <p>This decision logic is provided by the CSTE Reportable Conditions Knowledge Management System (RCKMS); http://www.cste.org/group/RCKMS).</p> <p>Some Public Health Agencies may establish their reporting criteria so that they receive case reports that meet case definition criteria AND case reports that do not meet case definition criteria (i.e., potential cases or non-cases).</p> <p>Public Health Agencies will be able to specify their reporting criteria used by the Decision Support Intermediary. That criteria could result in:</p> <ol style="list-style-type: none"> 1) Public Health Agencies receiving electronic case reports meeting case definitions established by CDC/CSTE/State Public Health; 2) Public Health Agencies receiving electronic case reports that do not meet case definitions established by CDC/CSTE/State Public Health but do meet a Public Health Agency's criteria for receiving a report (e.g., at least one state legally receives case reports even if lab results were negative, other states may want the decision support intermediary to forward reports even if its reportability status could not be determined); 3) Public Health Agencies receiving electronic case reports where |

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| | | | it is unclear if any case definition is met (e.g., a Public Health Agency could configure decision rules for its jurisdiction so as to receive cases the Decision Support Intermediary could not clearly adjudicate due to missing information or other factors). |
| 13 | Report to Public Health? | <p>Case report will be sent to Public Health or not per reporting criteria established in "I. Manage Public Health Reporting Criteria" process.</p> <p>Criteria for sending report to Public Health may or may not equate to public health reporting criteria (i.e. some Public Health Agencies may set their criteria to receive all case reports for their jurisdiction).</p> <p>If no, the Reportability Response will indicate the case was not reported to public health.</p> <p>If yes, determine public health routing.</p> | |
| 14 | Determine Public Health Routing (for eCR) | <p>Route to receiving Public Health Agency is determined.</p> <p>Electronic case report may be routed to more than one Public Health Agency.</p> | |
| 15 | Need Supplemental Information? | <p>Future implementations of electronic case reporting will provide for the ability to request supplemental information from the health care provider that sent a case report. That supplemental information may be condition-specific, incident-specific, or public health jurisdiction specific.</p> | <p>Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture (http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture) .</p> |
| 16 | Build Supplemental Information Request | <p>If supplemental information is desired, an electronic information request is built and included in the Reportability Response.</p> | <p>Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture</p> |

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| | | | <p>(http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture)</p> |
| 17 | Build Reportability Response | <p>The Reportability Response is used to communicate information about the case report to the Health Care Provider and Public Health Agency. This allows the conveyance of information related to the case report without altering the case report itself. A Reportability Response will be generated and returned to the Health Care Provider for every valid eICR received. Depending on configurable public health jurisdictional rules, the Public Health Agency will also receive Reportability Responses associated with eICRs.</p> <p>The Reportability Response itself will not contain personally identifiable information (PII), however it can be linked to its accompanying eICR which does contain PII.</p> <p>The Reportability Response can include:</p> <ul style="list-style-type: none"> *Reportability Determination (reportable, not reportable, indeterminate due to missing information or other factors) *Request for missing information (data that was expected in electronic case report but not provided) *Routing Determination (sent to Public Health Agency(ies), not sent to a Public Health Agency) *Links to external resources (e.g., | <p>HL7 is currently developing specifications for a Reportability Response for balloting in May 2017. In the meantime, a non-standard C-CDA Reportability Response should soon be available for demonstration purposes.</p> |

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| | | <p>treatment guidelines, intervention protocols).</p> <p>*Request for supplemental information (data not expected in the electronic case report but desired by public health; planned for future implementations)</p> | |
| 18 | Send Reportability Response | <p>The Reportability Response is sent back to the Health Care Provider. The Reportability Response may also be sent to one or more Public Health Agencies as indicated by the reportability and routing determinations.</p> <p>To support a requirement that the Public Health Agency send an acknowledgement of receipt of a case report to the originating Health Care Provider, the Reportability Response may include that information. Detailed guidance will be provided to implementers partnered with the Digital Bridge collaborative.</p> | <p>A Reportability Response sent to a Public Health Agency should be delivered at the same time as its accompanying electronic initial case report.</p> <p>It is possible that a Reportability Response received by a Public Health Agency will not have an accompanying electronic case report (e.g., case report was determined to be not reportable, Reportability Response communicating this determination was sent to Public Health Agency).</p> <p>For every message sent between two entities, the sending entity will expect an acknowledgement message from the receiver.</p> |
| 19 | Send Electronic Initial Case Report | <p>The electronic initial case report is sent to one or more Public Health Agencies as indicated by the reportability and routing determinations above.</p> | <p>An electronic initial case report sent to a Public Health Agency should be delivered at the same time as its accompanying Reportability Response.</p> <p>For every message sent between two entities, the sending entity will expect an acknowledgement message from the receiver.</p> |
| 20 | Disposition Initial Electronic Case Report | <p>Electronic case reports are dispositioned according to rules established for their retention. Retention rules will be specific to Public Health Agency jurisdictions and will specify when an electronic case report will be deleted from the Decision Support Intermediary.</p> | <p>It will likely be necessary for the Decision Support Intermediary to retain electronic case reports for a specified time period to allow for functions such as error handling or requesting missing or supplemental information from Health Care Providers.</p> |

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| 21 | Receive Electronic Initial Case Report | The Public Health Agency receives the electronic initial case report. The case report is an input into the "Manage Case Information" process (which includes a broad range of activities including: classifying case reports, correlating case reports with ELRs, de-duplicating case reports, deleting erroneous case reports, append additional or supplemental information, etc.). | For every message sent between two entities, the sending entity will expect an acknowledgement message from the receiver. |
| 22 | Need Supplemental Information? | Future implementations of electronic case reporting will provide for the ability to request supplemental information from the health care provider that sent a case report. That supplemental information may be condition-specific, incident-specific, or public health jurisdiction specific. These requests could be facilitated by technology hosted on the decision support intermediary. | Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture (http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture) . |
| 23 | Receive Reportability Response | Public Health Agency receives same Reportability Response sent to Health Care Provider. Reportability Response may indicate a need for information from Health Care Provider. Reportability Response is an input into the "Manage Case Information" process. | For every message sent between two entities, the sending entity will expect an acknowledgement message from the receiver. |
| 24 | Provide Supplemental Information (if requested) | Future implementations of electronic case reporting will provide for the ability to request supplemental information from the health care provider that sent a case report. | Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture (http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture) . |

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| | | Health Care Provider gathers information requested. | |
| 25 | Create Supplemental Information Report | <p>Future implementations of electronic case reporting will provide for the ability to request supplemental information from the health care provider that sent a case report.</p> <p>Health Care Provider prepares information for electronic submission.</p> | <p>Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture (http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture)</p> <p>.</p> |
| 26 | Send Supplemental Information Report | <p>Future implementations of electronic case reporting will provide for the ability to request supplemental information from the health care provider that sent a case report.</p> <p>Health Care Provider sends information via electronic submission.</p> | <p>Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture (http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture)</p> <p>.</p> |
| 27 | Determine Public Health Routing for Supplemental Information | <p>Future implementations of electronic case reporting will provide for the ability to request supplemental information from the health care provider that sent a case report.</p> <p>Route to receiving Public Health Agency is determined.</p> <p>Information may be routed to more than one Public Health Agency.</p> | <p>Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture (http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture)</p> <p>.</p> |
| 28 | Receive Supplemental Information | Future implementations of electronic case reporting will provide for the ability to request supplemental information from the health care provider that sent a case report. | <p>Technologies that may be used to request supplemental information include Structured Data Capture (http://www.hl7.org/fhir/sdc/sdc.html) and IHE Retrieve Form for Data Capture (http://wiki.ihe.net/index.php/Retrieve_Form_for_Data_Capture)</p> <p>.</p> |

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| | | Public Health Agency receives information. Information is an input into the "Manage Case Information" process (includes a broad range of activities including: correlating eICRs with ELRs, de-duplicating eICRs, deleting erroneous eICRs, append additional or supplemental information, etc.). | |

eCR External Process Notes

January 19, 2017

| Process ID | Roman ID | Name | Description | Notes |
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| 1 | I | Manage Public Health Reporting Criteria | Public Health Agency users log in and define reporting criteria; Export reporting criteria for use by external systems (e.g. EHRs); Enable receipt of query to receive updated version of reporting criteria by an EHR; Update could be 1) complete replacement of reporting criteria, 2) updates since last requested update, or 3) both. | |
| 2 | II | Load Trigger Codes | Establish query to Decision Support to get reporting criteria. Manage receipt of response to query for reporting criteria. Provide EHR-specific mapping and translation of the reporting criteria to internal EHR data structures. | |
| 3 | III | Load Reporting Criteria | Decision Support converts reporting criteria authored by Public Health Agencies into jurisdiction-specific business rules for case reporting. | |
| 4 | IV | Load Routing Criteria | Decision Support converts routing criteria authored by Public Health Agencies into jurisdiction-specific business rules for case report routing (i.e., determination of which Public Health Agency(ies) receive a given case report). | |
| 5 | V | Public Health Electronic Lab Reporting | Public Health Agencies currently receive electronic lab reports (ELRs) and import them into their electronic disease surveillance systems. ELRs often lack patient information, electronic case reporting is intended to address this gap. | |
| 6 | VI | Manage Case Information | Public Health Agency imports electronic case reports into its electronic disease surveillance system. Within electronic disease surveillance system, case reports are de-duplicated, correlated with ELRs and other case information, and classified (i.e., suspect, probable, confirmed). | |