

## **06-EC-02**

**Committee:** Executive

**Title:** Setting a goal of implementing Health Level 7 version 2.5 (HL7 v2.5) for public health electronic reporting by January 1, 2008.

### **Statement of the Problem:**

Electronic reporting of public health information has become standard practice for state and local health departments, the Centers for Disease Control and Prevention (CDC), and other parties such as laboratories. The advantages of electronic information exchange include the rapid, accurate, and efficient reporting of reportable conditions and laboratory results and improved public health preparedness. A requirement for the electronic sharing of information is the use of commonly agreed-upon standards so that all partners can send and receive readable messages.

Health Level 7 (HL7) is the international messaging standard used to exchange health-related information as described at <http://www.hl7.org>. Currently, a variety of HL7 versions are in use or proposed as national public health standards. The use of different HL7 formats creates major problems, as for example in electronic laboratory reporting, where the laboratories need to report to different jurisdictions each with their own requirements and state/local health departments have to accept reports from laboratories in different formats. The lack of national agreement regarding which HL7 version to use is also creating delays in updating public health electronic information exchange. For example, one major national laboratory is willing to update their HL7 format, but is waiting for national consensus on which version to use so that the change is made once for the nation.

State and local health departments, the CDC, hospitals, and commercial and public health laboratories are all implementing electronic reporting, but there is wide variation in their stages of implementation. There are three major obstacles in successful implementation: standardizing formats for the exchange of information, standardizing coding (e.g., codes for laboratory test orders and results), and standardizing information transport mechanisms (FTP server, Dial-up, ebXML).

This Position Statement addresses the current problems associated with standardizing formats for the exchange of information between public health trading partners. At the current time there are a variety of formats being used and proposed for the exchange of information. As an example, the CDC/PHIN website shows a list of HL7 formats for public health use that includes at least three current standards (versions 2.3.1, 2.5, and 3.0). (Appendix)

There is general agreement among state public health departments and the CDC that one standard messaging version and a timeframe for implementing it would have the following benefits:

- Laboratories and other senders of information would no longer have to implement multiple versions of HL7 to meet differing messaging requirements;
- Receivers of information could implement one parser version of HL7 for multiple purposes;
- All parties could make more informed decisions about funding and developing new systems with more assurance that they would be able to readily communicate with their public health partners;
- Faster progress towards rapid, more complete and accurate, and cheaper information exchange could be accomplished since planners would not have to wait for further HL7 consensus;

**Statement of the desired action(s) to be taken:**

The proposal is to establish HL7 v2.5 by January 1, 2008, as the national standard for reporting by all state/local health departments, the CDC, laboratories, hospitals, and other parties that report to public health, for the exchange of inbound and outbound public health information messages. The intent is not to mandate that all parties use HL7 v2.6 by January 1, 2008, or to require a change in existing systems or reporting requirements, but rather to provide a common HL7 standard and timeframe as a goal for implementation. This will benefit all parties by allowing informed planning for implementing future public health electronic information exchange.

Two important corollaries to establishing HL7 v2.5 as the standard by January 1, 2008, are:

- 1) Public health information technology systems should be capable of receiving prior HL7 versions (backward compatibility); and
- 2) There is recognition that HL7 v2.5 is a temporary standard that undoubtedly will change at some point beyond 2008 as technological advances occur.

**Public Health Impact:**

Benefits:

- Provide a standard format for exchange of information.
- Provide a clear statement to public health partners encouraging them to migrate to a single specific format for electronic messaging. Deciding on one HL7 version will allow laboratories and other public health partners to confidently update their reporting format with the knowledge that there is general consensus.
- Encourage collaboration among public health partners to migrate to a standard format. Vendors of Laboratory Information Management Systems (LIMS) will get a clear and consistent message of where public health is going and where, therefore, vendors also need to go.

Costs:

- Some public health entities have already implemented systems and would need to expand or replace their current systems with upgraded capabilities. CDC is beginning to address some of these needs, with the negotiation of favorable licensing terms with makers of relevant software tools.

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## Appendix

Reference : [http://www.cdc.gov/phn/architecture/implementation\\_guides/index.html](http://www.cdc.gov/phn/architecture/implementation_guides/index.html)

Note: "Current" refers to the current proposal by CDC for new standards.  
"Prior" refers to the version that is currently in production.

## Notification

|             | Name                                                                                                                                                                                                                                                                                                                                                                                | Type                                                | Status    |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------|
| current:    | <a href="#">PHIN NCRN - Generic Investigation</a>                                                                                                                                                                                                                                                                                                                                   | HL7 Interaction: PORR_IN100001;<br>HL7 Version: 3.0 | Available |
| prior:      | <a href="#">Prior NCRN Messages</a>                                                                                                                                                                                                                                                                                                                                                 |                                                     |           |
| short desc. | Message used for transmitting the core information related to Notifiable Condition Report Notification (NCRN). All PHIN NCRN V3 messages utilize this generic investigation implementation guide in addition to their disease condition specific extensions. The PHIN NCRN - Generic can be used independently to report disease conditions that do not require extended data sets. |                                                     |           |
| <hr/>       |                                                                                                                                                                                                                                                                                                                                                                                     |                                                     |           |
| current:    | <a href="#">PHIN NCRN - Bacterial Meningitis &amp; Invasive Diseases</a>                                                                                                                                                                                                                                                                                                            | HL7 Interaction: PORR_IN100001;<br>HL7 Version: 3.0 | Available |
| prior:      | <a href="#">Prior NCRN Messages</a>                                                                                                                                                                                                                                                                                                                                                 |                                                     |           |
| short desc. | Message used for transmitting extended case information related to the following Notifiable Condition Report Notification (NCRN) disease conditions: BMIRD Generic, <i>Haemophilus influenzae</i> , <i>Neisseria meningitidis</i> , Streptococcus Group A, <i>Streptococcus pneumoniae</i> .                                                                                        |                                                     |           |
| <hr/>       |                                                                                                                                                                                                                                                                                                                                                                                     |                                                     |           |
| current:    | <a href="#">PHIN NCRN - Hepatitis 1</a>                                                                                                                                                                                                                                                                                                                                             | HL7 Interaction: PORR_IN100001;<br>HL7 Version: 3.0 | Available |
| prior:      | <a href="#">Prior NCRN Messages</a>                                                                                                                                                                                                                                                                                                                                                 |                                                     |           |
| short desc. | Message used for transmitting extended case information related to the following Notifiable Condition Report Notification (NCRN) disease conditions: Hepatitis Generic, Hepatitis A Acute, Hepatitis B Acute, Hepatitis Non-ABC, Chronic Hepatitis B.                                                                                                                               |                                                     |           |
| <hr/>       |                                                                                                                                                                                                                                                                                                                                                                                     |                                                     |           |
| current:    | <a href="#">PHIN NCRN - Hepatitis 2</a>                                                                                                                                                                                                                                                                                                                                             | HL7 Interaction: PORR_IN100001;<br>HL7 Version: 3.0 | Available |
| prior:      | <a href="#">Prior NCRN Messages</a>                                                                                                                                                                                                                                                                                                                                                 |                                                     |           |
| short desc. | Message used for transmitting extended case information related to the following Notifiable Condition Report Notification (NCRN) disease conditions: Hepatitis C Acute, Hepatitis C Virus Infection Chronic or Resolved, Perinatal Hepatitis B.                                                                                                                                     |                                                     |           |
| <hr/>       |                                                                                                                                                                                                                                                                                                                                                                                     |                                                     |           |
| current:    | <a href="#">PHIN NCRN - Vaccine Preventable 1</a>                                                                                                                                                                                                                                                                                                                                   | HL7 Interaction: PORR_IN100001;<br>HL7 Version: 3.0 | Available |
| prior:      | <a href="#">Prior NCRN Messages</a>                                                                                                                                                                                                                                                                                                                                                 |                                                     |           |
| short desc. | Message used for transmitting extended case information related to the following Notifiable Condition Report Notification (NCRN) disease conditions: Measles, Mumps, Rubella, Tetanus.                                                                                                                                                                                              |                                                     |           |

|          |                                                    |                                                  |           |
|----------|----------------------------------------------------|--------------------------------------------------|-----------|
| current: | <a href="#">FHIR NCRN - Vaccines Preventable 2</a> | HL7 Interaction PORR_IN100001<br>HL7 Version 3.0 | Available |
|----------|----------------------------------------------------|--------------------------------------------------|-----------|

exit  [Prior NCRN Messages](#)

short  
desc. Message used for transmitting extended case information related to the following Notifiable Condition Report Notification (NCRN) disease conditions: Animal Rabies, Congenital Rubella Syndrome, Pertussis.

|          |                                                           |                                                  |                                              |
|----------|-----------------------------------------------------------|--------------------------------------------------|----------------------------------------------|
| current: | <a href="#">FHIR Case Notification - Outbreak General</a> | HL7 Interaction PORR_IN100001<br>HL7 Version 3.0 | Available for Public Health Review - 7/15/05 |
|----------|-----------------------------------------------------------|--------------------------------------------------|----------------------------------------------|

short  
desc. SARS Case Report XML Legacy

short  
desc. Message used for transmitting notification of confirmed, probable and suspect cases associated with a disease outbreak.

|          |                                                              |                                                  |                                              |
|----------|--------------------------------------------------------------|--------------------------------------------------|----------------------------------------------|
| current: | <a href="#">FHIR Investigation and Exposure Notification</a> | HL7 Interaction PORR_IN100001<br>HL7 Version 3.0 | Available for Public Health Review - 7/15/05 |
|----------|--------------------------------------------------------------|--------------------------------------------------|----------------------------------------------|

short  
desc. Message used for transmitting investigation and exposure notifications associated with a disease outbreak.

#### Earlier Versions of Notifiable Condition Report Notification (NCRN) Messages (May 2003)

|                |                                                               |                                                  |        |
|----------------|---------------------------------------------------------------|--------------------------------------------------|--------|
| short<br>desc. | NCRN Messaging Basic Description, Schemas and Sample Messages | HL7 Interaction PORR_IN100001<br>HL7 Version 3.0 | Legacy |
|----------------|---------------------------------------------------------------|--------------------------------------------------|--------|

short  
desc. Provides an overview to the May 2003 version of the Notifiable Condition Report Notification messages. Also included are XML schemas and sample message instances.

|                |                                                       |                                                  |        |
|----------------|-------------------------------------------------------|--------------------------------------------------|--------|
| short<br>desc. | NCRN Disease Specific Implementation Guides -- Part 1 | HL7 Interaction PORR_IN100001<br>HL7 Version 3.0 | Legacy |
|----------------|-------------------------------------------------------|--------------------------------------------------|--------|

short  
desc. Message used for transmitting information related to the following Notifiable Condition Report Notification (NCRN) disease conditions: Hepatitis A, Hepatitis B (Perinatal), Hepatitis B (Acute), Hepatitis C (Chronic or Resolved), Group A Streptococcus, Group B Streptococcus, *Haemophilus influenzae*, CRS and a generic guide.

|                |                                                       |                                                  |        |
|----------------|-------------------------------------------------------|--------------------------------------------------|--------|
| short<br>desc. | NCRN Disease Specific Implementation Guides -- Part 2 | HL7 Interaction PORR_IN100001<br>HL7 Version 3.0 | Legacy |
|----------------|-------------------------------------------------------|--------------------------------------------------|--------|

short  
desc. Message used for transmitting information related to the following Notifiable Condition Report Notification (NCRN) disease conditions: Other Invasive Strep Diseases and Bacterial Meningitis, Hepatitis Non-ABC, Chronic Hepatitis B, Measles, *Neisseria meningitidis*, Hepatitis C (Acute), Pertussis, Rubella, *Streptococcus pneumoniae*, Summary Notification Message.

#### Laboratory

| Name                                                | Type                                 | Status                  |
|-----------------------------------------------------|--------------------------------------|-------------------------|
| current: <a href="#">FHIR Laboratory Test Order</a> | HL7 Message OML'021, HL7 Version 2.5 | In Public Health Review |

|             |                                                                                                                                                                                                                                                                                                                                                               |                                        |                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------|
| prior       | PHIN Laboratory Order                                                                                                                                                                                                                                                                                                                                         | HL7 Message ORM^O01, HL7 Version 2.3.1 | Legacy                  |
| short desc. | Message used for transmitting laboratory orders to a performing Public Health Laboratory or for reporting laboratory activity for the purposes of early event detection.                                                                                                                                                                                      |                                        |                         |
| current     | PHIN Laboratory Test Order Response                                                                                                                                                                                                                                                                                                                           | HL7 Message ORU^R22, HL7 Version 2.5   | In Public Health Review |
| short desc. | Message used for transmitting application-level acknowledgement of a PHIN Laboratory Test Order confirming receipt of an order and intention to fulfill requested laboratory testing.                                                                                                                                                                         |                                        |                         |
| current     | PHIN Laboratory Result - General                                                                                                                                                                                                                                                                                                                              | HL7 Message OUL^R22, HL7 Version 2.5   | In Public Health Review |
| prior       | PHIN Laboratory Result - Microbiology                                                                                                                                                                                                                                                                                                                         | HL7 Message ORU^R01, HL7 Version 2.3.1 | Legacy                  |
| short desc. | Message used for transmitting laboratory results. The upgrade to an HL7 laboratory observation unsolicited (OUL) v2.5 supports a specimen-centric message for human, environmental and food testing of a biochemical nature including microbiology.                                                                                                           |                                        |                         |
| current     | PHIN Laboratory Result - Bioterrorism Assay                                                                                                                                                                                                                                                                                                                   | HL7 Message OUL^R22, HL7 Version 2.5   | In Public Health Review |
| prior       | Bioterrorism Laboratory Result                                                                                                                                                                                                                                                                                                                                | HL7 Message ORU^R01, HL7 Version 2.4z  | Legacy                  |
| short desc. | Message used for transmitting laboratory results of Laboratory Response Network specific assays. This message supports the BioWatch program in addition to other bioterrorism related testing. The upgrade to an HL7 laboratory observation unsolicited (OUL) v2.5 supports specimen-centric information previously handled by non-standard HL7 "2" segments. |                                        |                         |
| current     | PHIN Laboratory Result - ELIS                                                                                                                                                                                                                                                                                                                                 | HL7 Message ORU^R01, HL7 Version 2.3.1 | Current                 |
| short desc. | Message used for transmitting laboratory-reportable findings to public health.                                                                                                                                                                                                                                                                                |                                        |                         |

## Healthcare Related

|             | Name                                                                                                       | Type                                   | Status                  |
|-------------|------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------|
| current     | PHIN Laboratory, Pharmacy and Supply Orders                                                                | HL7 Message ORM^O01, HL7 Version 2.3.1 | Current                 |
| short desc. | Message used for transmitting laboratory, pharmacy and supply order data to support early event detection. |                                        |                         |
| current     | PHIN Healthcare Encounter: Chief Complaint                                                                 | HL7 Message ADT^A04, HL7 Version 2.5   | In Public Health Review |
| prior       | PHIN Healthcare Encounter: Chief Complaint                                                                 | HL7 Message ADT^A04, HL7 Version 2.3.1 | Legacy                  |
| short desc. | Message used for transmitting healthcare encounter chief complaint data to support early event detection.  |                                        |                         |

|                |                                                                                                     |                                            |                            |
|----------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------|
| current:       | <u>PHIN Healthcare Encounter<br/>Diagnosis</u>                                                      | HL7 Message ORU^R01, HL7<br>Version 2.5    | In Public Health<br>Review |
| prior:         | PHIN Ambulatory Care Diagnosis                                                                      | HL7 Message ADT^A08, HL7<br>Version 2.3.1. | Legacy                     |
| short<br>desc: | Message used for transmitting healthcare encounter diagnosis data to support early event detection. |                                            |                            |

## Response

|                | Name                                                                                                                                 | Type                                    | Status                     |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------|
| current:       | <u>PHIN Countermeasure<br/>Administration – Substance<br/>Administration</u>                                                         | HL7 Message RAS^O17, HL7<br>Version 2.5 | In Public Health<br>Review |
| prior:         | PHIN Smallpox Pre-Event<br>Vaccination                                                                                               | XML                                     | Legacy                     |
| short<br>desc: | Message used for transmitting information on the administration of vaccines and other substances given as a countermeasure response. |                                         |                            |

|                |                                                                                                                                  |                                         |                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------|
| current:       | <u>PHIN Countermeasure<br/>Administration – Follow-up</u>                                                                        | HL7 Message ORU^R01, HL7<br>Version 2.5 | In Public Health<br>Review |
| short<br>desc: | Message used for transmitting information on follow-up observations associated with countermeasure responses and administration. |                                         |                            |

|                |                                                                                                                                                           |                                         |                            |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------|
| current:       | <u>PHIN Countermeasure<br/>Administration – Other Treatment<br/>Orders</u>                                                                                | HL7 Message ORU^R01, HL7<br>Version 2.5 | In Public Health<br>Review |
| short<br>desc: | Message used for transmitting information on non-substance treatments or protocols (other treatment orders) associated with countermeasure administration |                                         |                            |

|                |                                                                                                                       |                                         |                            |
|----------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------|
| current:       | <u>PHIN Countermeasure<br/>Administration – Referral</u>                                                              | HL7 Message REF^M12, HL7<br>Version 2.5 | In Public Health<br>Review |
| short<br>desc: | Message used for transmitting interventions to be managed associated with countermeasure response and administration. |                                         |                            |

|                |                                                                                                                                                |                                         |                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------|
| current:       | <u>PHIN Countermeasure<br/>Administration – Adverse Event</u>                                                                                  | HL7 Message ORU^R01, HL7<br>Version 2.5 | In Public Health<br>Review |
| prior:         | PHIN Smallpox Vaccine Adverse<br>Event                                                                                                         | XML                                     | Legacy                     |
| short<br>desc: | Message used for transmitting adverse events identified during active surveillance associated with countermeasure response and administration. |                                         |                            |