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PAEREWA PĀRONGO HAUORA

COVID-19

Messaging Implementation Guide

HISO 10008.4:2020

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MANATŪ HAUORA

Contributors

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1 Introduction

This technical document provides details for using electronic messaging to submit COVID-19 laboratory results into the COVID-19 result repository. It is published as a draft standard and will be updated with new requirements, as they emerge.

1.1 Background

The COVID-19 result repository was established to receive and store results for all COVID-19 laboratory tests processed in New Zealand. Its main objective is to store all COVID-19-related laboratory results in one place, whether the results are positive or negative.

Copies of the data uploaded into the repository also provides summary level data to the National Contact Tracing Service and EpiSurv and statistical data to the Ministry of Health's COVID-19 Intelligence team.

1.2 Purpose

This guide helps in the development of applications that use electronic messaging to submit COVID-19 laboratory test results into the repository. This guide details the specific structure for electronic messages using the HL7® version 2.4 messaging standard (HL7 version 2.4).

HL7 version 2.4 is an international standard used globally and in New Zealand to manage the workflow and content when providers are exchanging clinical information about patients.

Using electronic messaging that follows this standard to submit COVID-19 laboratory test results will ensure information is provided in a structured and consistent way and can be easily stored and accessed by people using the data.

1.3 Scope

This guide shows the structure to use when sending HL7 version 2.4 messages containing COVID-19 laboratory test results to the repository.

This document covers the:

- specific use of message segments where there are alternative uses, and the enforcement of optional fields that are required when sending COVID-19 laboratory results to the repository
- technical information that is required to make the necessary system changes to support reporting into the repository.

This guide does not cover pathology messages between district health boards and laboratories, nor messages sent to the Electronic Notifiable Disease Messaging System (ENDMS). The relevant guides are HISO 10008 Pathology and Radiology Messaging Standard and Implementation Guide, and HISO 10008.3.2019 Notifiable Disease Messaging Implementation Guide.

1.4 Legislation and regulations

The following Acts of Parliament and regulations relevant to this implementation guide are:

- Health Act 1956
- Health and Disability Commissioner (Code of Health and Disability Services Consumers' Rights) Regulations 1996
- Health Information Privacy Code 1994
- Privacy Act 1993 (revised 2008).

1.5 Related specifications

The following documents used to develop or are referenced to in this standard are:

- **HISO 10004 New Zealand Pathology Observation Code Set (NZPOCS)**
- **HISO 10008 Pathology and Radiology Messaging Standard**
- **HISO 10008.1:2015 Pathology and Radiology Implementation Guide**
- **HISO 10008.3.2019 Notifiable Disease Messaging Implementation Guide**
- **HISO 10029:2015 Health Information Security Framework**
- **HISO 10064:2017 Health Information Governance Guidelines**
- HL7® version 2.4 standard: An Application Protocol for Electronic Data Exchange in Healthcare Environments. Ann Arbor: Health Level Seven Inc.

The current HISO Health Practitioner Index standards are listed below. These standards were published in 2008 and while they can provide guidance on the particular HPI values referred to in this standard, they are not suitable for any other purpose.

- **HISO 10005:2008 Health Practitioner Index (HPI) Data Set**
- **HISO 10006:2008 Health Practitioner Index (HPI) Code Set**

1.6 Definitions

Name	Definition
EpiSurv	A surveillance database that collates notifiable disease information in real time from public health services.
National Contact Tracing Service	A service provided by the Ministry of Health and district health boards to find people who may have been exposed to COVID-19 using a process called contact tracing.

2 Business processes

2.1 Privacy requirements

Information can only be used or disclosed in accordance with the Health Act 1956 and Health Information Privacy Code 1994.

Although notification of infectious diseases such as COVID-19 under the Health Act 1956 allows for named patient information to be shared to protect public health, all health-related information involving individuals must be adequately protected.

Additional security provided for through an electronic system, such as role-based security (ie, blocking certain information from general view) is used to ensure individual privacy. Access to patient-level data is restricted to designated staff at the local public health unit. All identifiable information is blocked from the view of 'national' users.

2.2 Security requirements

Access to the repository will require a login name and password. Public health units can view and report on their local data in detail, and view and report on national data at a summary level.

Laboratories submitting data into the repository must comply with the information security requirements of HISO 10029:2015 Health Information Security Framework.

3 Information requirements

Laboratories are required to submit results using HL7 version 2.4.

The following information must be submitted into the repository:

- demographic information
- relevant clinical information
- test results for COVID-19.

This document details:

- the required messages to use for submitting information into the repository
- which segments to use
- the required data elements and how to provide each of these elements.

Please note: This guide should be read in conjunction with HISO 10008.2 Pathology and Radiology Messaging Standard. While some items may be optional in HL7 version 2.4 or the Pathology and Radiology Messaging Standard, they may be mandatory here. Specific information required in COVID-19 laboratory result messages and further restrictions may be applied that are not in the referenced standards.

3.1 ORU – Laboratory results message

The table below shows the segments to use and the relevant responses. Items enclosed within square brackets [ ] are optional, and those within braces { } may be repeated.

Table 1: ORU – Laboratory results message

Segment name	Description
MSH	Message header
PID	Patient identification
OBR	Order detail – observation request
{OBX}	Observation/result (including specimen information)
[{NTE}]	Notes and comments on result information

The following sections identify the fields within a segment and the specific information to include. Refer to HISO 10008.2 Pathology and Radiology Messaging Standard for the structure of data types within the following segments.

See **www.health.govt.nz/publication/hiso-10008822015-pathology-and-radiology-messaging-standard**.

3.1.1 MSH – Message header segment

Table 2: MSH – Message header segment

Data element	Field	Len	Type	Opt	Comments
Receiving application	MSH-5	180	HD	R	The value must be 'ECLAIR'.
Receiving facility	MSH-6	180	HD	R	UAT and Production messages being sent through Healthlink should be sent to esrcdlab Component 1(IS) '' Component 2 (ST) 'esrcdlab' Component 3 (ID) ''

MSH-5 – Receiving application

This field identifies the receiving application. Since the receiving application is the COVID-19 Éclair Result Repository, this field should contain the text 'ECLAIR'.

Example:

MSH|^~\&|DELPHIC|ediaccnt|**ECLAIR**|^esrcdlab^|

MSH-6 – Receiving facility

This field identifies the receiving facility. This uses the HD data type and should contain the components set out in Table 3.

Table 3: MSH-6 – Receiving facility

Component	Type	Notes
<namespace ID>^	IS	''
<universal ID>^	ST	'**esrcdlab**'
<universal ID type>^	ID	''

Note: This is a required field in a message being sent to the Eclair Result Repository.

Example:

MSH|^~\&|DELPHIC|ediaccnt|ECLAIR|^**esrcdlab**^|

3.1.2 PID – Patient identification

Table 4: PID – Patient identification

Data element	Field	Len	Type	Opt	Comments
Patient identifier list	PID-3	250	CX	C	If available, the patient's NHI identifier. If the NHI is not available, can be left blank or an internal temporary code if the laboratory information management system uses one.
Patient name	PID-5	250	XPN	R	
Date of birth	PID-7	26	TS	R	
Sex	PID-8	1	IS	R	
Ethnicity	PID-10	250	CE	C	If available, the patient's ethnicity or ethnicities. There may be up to six repeats of this field.
Patient address	PID-11	250	XAD	R	If a patient is staying at a different address to their usual home address, both addresses may be submitted.

3.1.3 OBR – Observation request segment

Table 5: OBR – Observation request segment

Data element	Field	Len	Type	Opt	Comments
Placer order number	OBR-2	50	EI	C	The laboratory or accession number of the referring laboratory if the sample was referred. *Can be left blank if unknown.*
Filler order number	OBR-3	50	EI	C	The laboratory or accession number of the laboratory performing the test if the sample was referred.
Universal service ID	OBR-4	250	CE	R	This should include the relevant test name. Either use SARS-COV-2 or a Respiratory Panel.
Requested date/time	OBR-6	26	CE	R	
Observation date/time	OBR-7	26	TS	C	Date is required. Time is optional and should be provided if available.
Specimen received date/time	OBR-14	26	TX	C	
Ordering provider	OBR-16	250	XCN	R	Provide either a HPI CPN or NZMC number. If not available, include an internal laboratory system code.
Filler field 1	OBR-20	60	ST	O	The HPI Facility ID of the laboratory that received the sample. This may or may not be the same as the performing laboratory.
Results report/status chg – date/time	OBR-22	26	TS	C	
Placer supplemental service information	OBR-46	250	CE	O	The HPI Facility ID of the ordering clinician (eg, medical centre).
Filler supplemental service information	OBR-47	250	CE	O	The HPI Facility ID of the laboratory performing the test(s).

3.1.4 OBX – Observation result segment

The following details the fields to include for specimen information and specific COVID-19 results.

Specimen information OBX

Include specimen information in a standard result OBX segment.

Table 6: OBX – Specimen information

Data element	Field	Len	Type	Opt	Comments
Observation identifier	OBX-3	250	CE	R	(Specimen type LOINC) Must be populated with the LOINC code **66749-9** (Generic specimen type code).
Observation value	OBX-5	*	*	R	(Specimen type description) Must be populated with the specimen type (eg, Nasopharyngeal).

COVID-19 Result OBX

Include COVID-19-related laboratory result information in a standard result OBX segment.

Table 7: OBX – COVID-19 result information

Data element	Field	Len	Type	Opt	Comments
Observation identifier	OBX-3	250	CE	R	(COVID-19 Analyte LOINC) The preference is either to use a LOINC code or the NZPOC code of XNZ5466 for SARS-CoV-2. These codes can be found in the New Zealand Pathology Observation Code Set.[1] A local code may be used; however, this is not the preferred option.
Observation value	OBX-5	*	*	R	(COVID-19 Analyte Results) The preference is that individual OBX segments are used for each distinct result rather than all results in a formatted text result.
Associated comments					Associated comments may be included in either the OBX or NTE segments.

[1] **HISO 10004:2019 New Zealand Pathology Observation Code Set**