

Bowel Screening Messaging Implementation Guide

HISO 10072.2:2019

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1 Introduction

The National Bowel Screening Programme¹ (NBSP) is a free programme for men and women aged 60–74 years who are eligible for publicly funded health care. The primary objective of bowel screening is to reduce the mortality rate by diagnosing and treating bowel cancer at an earlier, more treatable stage. The introduction of the NBSP in New Zealand followed a successful six-year pilot.

The new NBSP information technology system is called the National Screening Solution (NSS). This system will enable easy management of the bowel screening pathway, support planning and management of participants, monitor safety and quality, and enable ongoing evaluation of the programme. The NSS is a long-term strategic solution that can be extended to support future population health initiatives.

1.1 Purpose

This implementation guide helps in the development of applications using messaging to report bowel screening histology data into the NSS. Also included in this guide is the structure of electronic messages using HL7[®] version 2.4 (HL7).

This implementation guide identifies and describes the messages that laboratories contracted to perform NBSP histology services need to send to the NSS. The data in these messages will support the monitoring, operation and quality of the NBSP and may also be used for research and education purposes. The purpose of this implementation guide is to ensure that consistent information is sent from various laboratories to the NSS in the same way.

1.2 Scope

This implementation guide presents guidelines for sending HL7 version 2.4 messages containing bowel screening histology data to the NSS. It uses definitions from the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

The messages covered are bowel screening information provided by laboratories and the response from the NSS. This guide does not cover pathology messages between district health boards and laboratories – those messages are instead covered by the HISO 10008 Pathology and Radiology Messaging Standard and Implementation Guide.

¹ www.timetoscreen.nz/bowel-screening/about-the-national-bowel-screening-programme

This guide covers the:

- specific use of message segments where there are alternative uses, and the enforcement of optional fields that are required for the NSS
- provision of all the technical information required for a health provider (or their system vendor) to make all the necessary system changes to support the NSS.

1.3 Legislation and regulations

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

- Health Act 1956
- Health and Disability Commissioner (Code of Health and Disability Services Consumers' Rights) Regulations 1996
- Health Information Privacy Code 1994
- Health Practitioners Competence Assurance Act 2003
- Privacy Act 1993 (revised 2008)
- Public Records Act 2005
- Health (Retention of Health Information) Regulations 1996.

Readers must consider other Acts and regulations and any amendments that are relevant to their own organisation when implementing or using the implementation guide.

1.4 Related specifications

Other specifications used in developing this implementation guide, or referenced in its operation, offer additional clarification if needed. These are:

- HISO 10072.1:2019 Bowel Screening Histology Data Standard
- HISO 10004 New Zealand Pathology Observation Code Set (NZPOCS)
- HISO 10008.2:2015 Pathology and Radiology Messaging Standard
- HISO 10008.1:2015 Pathology and Radiology Implementation Guide
- HISO 10029:2015 Health Information Security Framework
- HISO 10064:2017 Health Information Governance Guidelines
- HISO: 10005 Health Practitioner Index Data Set
- HISO: 10006 Health Practitioner Index Code Set
- HL7 Standard version 2.4 – An Application Protocol for Electronic Data Exchange in Healthcare Environments. Ann Arbor: Health Level Seven Inc
- SNZ HB 8169:2002. Health Network Code of Practice (Amendment 1 2006).

2 Business processes

2.1 Security requirements

Laboratories must ensure that data is kept confidential and protected from tampering when they are transmitting it over networks, including Connected Health. Laboratories exchanging data with the NSS must comply with the HISO 10029:2015 Health Information Security Framework (HISF).

Laboratories must encrypt sensitive information to secure it from outside and insider threats (HISF 15.1).

2.2 Screening message process

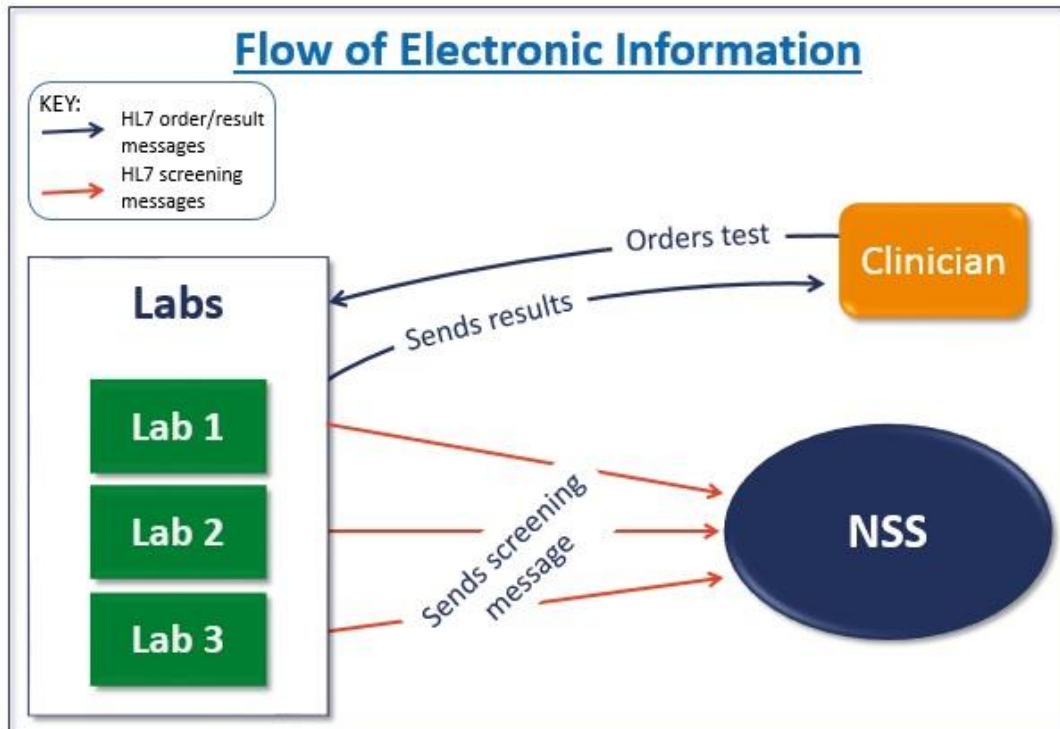
Laboratories with contracts to deliver histology services as part of the National Bowel Screening Programme must provide electronic histology messages in line with this implementation guide, or have a roadmap toward achieving this that they have agreed with the National Bowel Screening Programme. Laboratories cannot provide notification of histology information to the NSS through any other electronic or manual mechanism.

This implementation guide does not cover business processes for exchanging histology information between district health boards and laboratories.

2.3 Screening message data flow

Figure 1 provides a simplified view of the flow of electronic histology information in the National Bowel Screening Programme. This implementation guide covers only the HL7 notification messages that laboratories send to the NSS (in red). For simplicity, the diagram does not show acknowledgement and error messages that the NSS sends back to laboratory systems.

Figure 1: Flow of electronic histology information in the National Bowel Screening Programme



2.4 Correcting reports

It is important that the NSS has correct information to support robust NBSP quality assurance processes.

Laboratories can amend histology results and provide supplementary reports. Whenever a laboratory sends a supplementary or amended report back to a clinician relating to NBSP histology, if the data in the original screening message to the NSS has changed the laboratory **must** also send an amended report to the NSS. If nothing has changed, the laboratory **may** choose to resend the report.

As well as altering or adding histology information, laboratories can issue a correction of non-result data – such as a change to the collector identifier. The NSS will store all of the information sent in the corrected message and will mark all information previously sent to the NSS as outdated and potentially incorrect. Laboratory systems can choose to mark all data elements as changed in a correct message (using OBX-11) when only some have changed. This will include data elements that were present in the initial message but not present in the corrected message.

If a report has been sent associated with the wrong patient, the laboratory must correct this error by sending a delete message.

The NSS will reject any unexpected screening messages that a laboratory sends for people who are not registered as participants in the National Bowel Screening Programme.

3 Information requirements

Laboratories providing NBSP histology services are required to conform to the programme's quality standards,² data definitions and elements. The National Screening Unit has developed these data definitions and data elements to enable clear and concise reporting and monitoring of the NBSP. These data definitions are based on:

- recognised population screening priorities
- consensus between represented stakeholders
- once-only data collection (and agreed responsibility)
- source data based on robust definitions
- acceptable impact or burden on services
- collection with appropriate frequency and timeliness.

This implementation guide is intended for use by those implementing messaging solutions. It details how to provide each of these elements using HL7 version 2.4 in a nationally consistent way. It also details where laboratories may provide additional information such as a participant's sex and address.

It is recommended that this document is read together with the HISO 10072.1:2019 Bowel Screening Histology Data Standard (data standard) for more information on these data elements. The data standard identifies and describes the data elements that laboratories contracted to perform NBSP histology services must capture. The HISO 10072.1:2019 Bowel Screening Histology Data Standard is part of the National Bowel Screening Programme's quality documentation.

² www.nsu.govt.nz/publications/national-bowel-screening-programme-interim-quality-standards

4 Privacy requirements

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

Additional security provided for through an electronic system, such as role-based security (ie, blocking certain information from general view), will be used to ensure individual privacy. For more guidance on privacy considerations, see the Health Information Governance Guidelines.³

³ www.health.govt.nz/publication/hiso-100642017-health-information-governance-guidelines

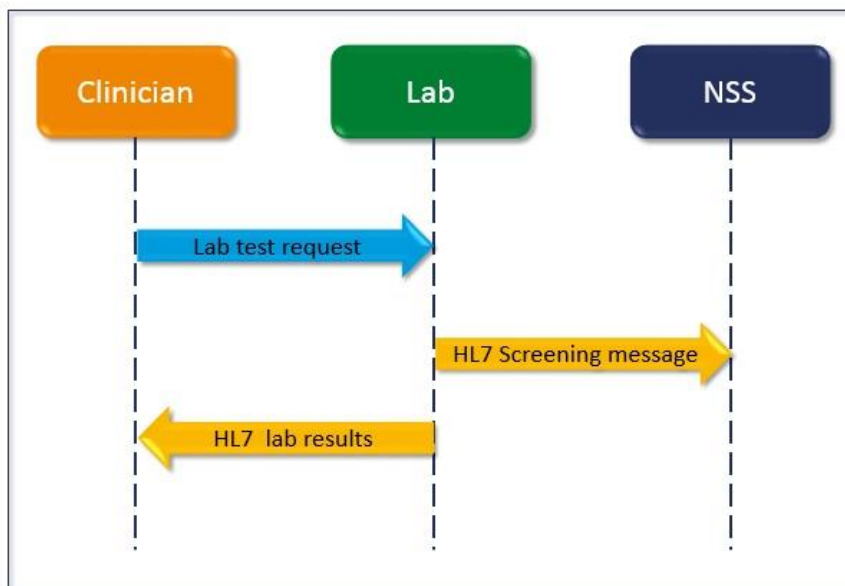
5 Transactions and message types

5.1 Exchanging information

HL7 version 2.4 is an international standard that is used globally and within New Zealand to manage the workflow and content involved when providers are exchanging clinical information about patients. The NSS has adopted HL7 version 2.4. Message specifications have been developed based on information requirements to support the monitoring, operation and quality of the National Bowel Screening Programme.

Figure 2 shows the standard electronic message and the steps involved with it. Each message has a corresponding acknowledgement message, but for simplicity the diagram does not include these.

Figure 2: Flow for standard notification



- Step 1.** The clinician performs a colonoscopy or other bowel screening procedure.
- Step 2.** The laboratory performs tests.
- Step 3.** The laboratory returns a test result to the clinician.
- Step 4.** The laboratory sends bowel screening information to the NSS.

5.2 Message conventions

Tables 1 and 2 below show the segments that are used and the responses. Items enclosed within square brackets [] are optional, and those within braces { } may be repeated multiple times. Section 5.5 sets out some general considerations for implementation.

5.3 ORU – Laboratory results message

Please note that these should be read together with the appropriate standard. While some items may be optional in HL7, they may be mandatory in this implementation and further restrictions may be applied that are not in the reference standard.

Table 1: ORU – Laboratory results message

Segment name	Description
MSH	Message header
PID	Patient identification
OBR	Order detail – observation request
{OBX}	Observation/result

5.4 ACK – Response message

Table 2: ACK – Response message

Segment name	Description
MSH	Message header
MSA	Message acknowledgement
[ERR]	Error

5.5 General considerations

The NSS accepts data as standard unsolicited results (ORU) but restricts some fields to specific ranges of values. Some optional fields are mandatory when sending data to the NSS.

The NSS does not support delimiters other than the default ones specified in the standard. It is essential to construct messages in segmented form.

Only segments MSH, MSA, ERR, PID, OBR and OBX will be processed; any others will be discarded.

Where multiple OBX occur with the same code in OBX-3, then it is necessary to use sub-IDs in OBX-4, starting at 1 and incrementing by 1 for each subsequent OBX in a set.

5.6 Specimen data

Every report will include data for one or more specimens. Specimen data is supplied in OBX segments. These OBX segments will be distinguished using sub-IDs in OBX-4.

For each specimen, there is :

- required data, which must always be provided
- conditional data, which must be provided in specific situations.

Up to five 'other pathological findings' can additionally be provided for each specimen.

Appendix A provides the allowable values for OBX-2 and OBX-3. It also gives a reference to the related section in the HISO 10072.1:2019 Bowel Screening Histology Data Standard, which describes when the data must be provided and the allowable values for OBX-5.

5.7 Data types

Table 3 lists the data types used in the definitions of segments. All of these are standard HL7 types. Consult HL7, Chapter two for further information.

Table 3: HL7 data types

Data type	Meaning	Comment
CM	Composite data type	This field is a combination of other data items. Where it occurs, the structure of the composite will be defined in field notes.
DT	Date	Always formatted as YYYYMMDD.
FT	Formatted text	Same as ST but allows embedded HL7 formatting characters.
HD	Hierarchic identifier	Treated the same as ST in this implementation as there is no name space specified.
ID	Coded value	The value in this field must be drawn from a table of HL7 defined values. The table of acceptable values will be found in the field notes.
IS	Coded value	The value in this field must be drawn from a table of user-defined values. The table of acceptable values will be found in the field notes.

Data type	Meaning	Comment
		If the table occurs more than once, it will be repeated in an appendix.
NM	Numeric data	A number value.
SI	Sequence ID	A non-negative integer.
ST	String data	A string of alphanumeric characters.
TS	Time stamp	Always formatted as YYYYMMDD[HHMM[SS]]. HL7 allows 4 additional fields of milliseconds. These are not used in this implementation.
TX	Text data	ST that allows some additional special characters.

5.8 Composite data types

These composites are used in the definitions of the segments. Where additional clarification is required, these tables may be repeated in the segment notes. The composites provided below are limited to those that this implementation guide uses.

5.8.1 CE – Coded element

The CE data type transmits codes, and the text associated with the code. The maximum length of this field is 250.

For National Bowel Screening messages, this is used within OBR-4 – ‘Universal service ID’, OBR-46 – Placer supplemental service information, and OBR-47 – Filler facility code.

Table 4 shows the CE data type components.

Table 4: CE – Coded element

Component	Len	Type	Opt	Notes
<identifier>	10	ST	R	
<text>	30	ST	R	
<name of coding system>	10	IS	R	
<alternate identifier>				<i>Not used.</i>
<alternate text>				<i>Not used.</i>
<name of alternate coding system>				<i>Not used.</i>

The coded element for the National Bowel Screening Programme should include the identifier (NBSP), text (National Bowel Screening Prog) and the name of the coding system (L).

Examples:

OBR-4 'Universal service ID':

OBR|8642753100012^LIS||NBSP^National Bowel Screening Prog^L|...

OBR-46 Placer supplemental service information:

... 20190305||F|||||12ABCD^^^HI |||||2|||||||F08099-F^HPI Facility ID^HF |F12345-F^HPI Facility ID^HF

OBR-47 Filler facility code:

... 20190305||F|||||12ABCD^^^HI |||||2|||||||F08099-F^HPI Facility ID^HF |F12345-F^HPI Facility ID^HF

5.8.2 CWE – Coded with exceptions

There is no requirement to use the CWE composite data type in an NBSP histology message. For laboratory IT stakeholders that prefer the relevant details in the OBX-6 units segment, refer to Section 5.1.6.6 CWE – Coded with Exceptions in the HISO 10008.2:2015 Pathology and Radiology Messaging Standard.

5.8.3 CX – Extended composite ID with check digit components

The CX type is used for a participant's National Health Index (NHI) identifier in PID-3.

Table 5: CX – Extended composite ID with check digit components

Sub component	Type	Notes
<ID>	ST	The value of the identifier itself.
<check digit>		<i>Not used.</i>
<code identifying the check digit scheme employed>		<i>Not used.</i>
<assigning authority>	HD	'NZLMOH'
<identifier type code>	ID	A code corresponding to the type of identifier. This will always be 'NHI' for the National Health Index identifier.

Example:

PID|1||ZBS0001^^^NZLMOH^NHI||Testparticipant^John||19600122|M|...

5.8.4 EI – Entity identifier

The entity identifier defines a given entity within a specified series of identifiers. This guide uses this composite data type in only one field: OBR-2 – Placer order number. Table 6 shows the EI components.

Table 6: EI – entity identifier components

Sub-component	Type	Notes
<entity identifier>	ST	This is usually defined to be unique within the series of identifiers created by the <assigning authority>, defined by a hierarchic designator.
<namespace ID>	SI	Used as the HL7 identifier for the user-defined table of values for this component.
<universal ID>	ST	Is a string formatted according to the scheme defined by the <universal ID type>.
<universal ID type>	ID	L, LN, SCT

5.8.5 XAD – Extended address

There is no requirement for laboratories to send patient address details in an NBSP histology message to the NSS as this information will be obtained from other sources. For laboratory IT stakeholders that prefer to send patient address details to the NSS, these details must be provided in XAD format within PID11. For further information on XAD, see Section 5.1.6.26 XAD – Extended Address in HISO 10008.2:2015 Pathology and Radiology Messaging Standard.

5.8.6 XCN – Extended composite ID number

The XCN type is used in a number of places within the NBSP histology message to contain a clinician's HPI CPN and, where required, an HPI Facility ID in each use case.

Table 7: XCN – Extended composite ID number

Component	Type	Notes
1 <Entity identifier> ^	ST	This must contain a HPI_CPN.
2 <family name> ^	FN	Use is optional but not required.
3 <given name> ^	ST	Use is optional but not required.
4 <middle initial or name> ^	ST	Use is optional but not required.
5 <suffix (eg, JR or III) ^	ST	Use is optional but not required.
6 <prefix (eg, DR)> ^	ST	Use is optional but not required.
7 <degree (eg, MD)> ^	IS	Use is optional but not required.

Component	Type	Notes
8 <source table> ^		Not used.
9 <assigning authority> ^	HD	This should contain 'NZLMOH'.
10 <name type code> ^		Not used.
11 <identifier check digit> ^		Not used.
12 <code identifying the check digit scheme employed> ^		Not used.
13 <identifier type code> ^	IS	This should contain 'HI' (to represent HPI CPN).
14 <assigning facility (HD)>	HD	
15 <name representation code> ^	ID	
16 <name context> ^	CE	An HPI Facility ID must be provided here when the XCN is used in OBR-28 Result copied to. For other uses, providing an HPI Facility ID is optional. When provided, it must be in CE format, eg, F01234-F&HPI Facility ID&HF .
17 <name validity range> ^	DR	Not used.
18 <name assembly order> ^	ID	Not used.

Note: The HPI Facility ID is mandatory in OBR-28 Result copies to.

The XCN type is used in:

- [OBR-10 – Collector identifier](#) to contain the HPI CPN of the clinician who collected the samples
- [OBR-16 – Ordering provider](#) to contain the HPI CPN of the clinician who ordered the histology tests
- [OBR-28 – Result copies to](#) and contains the HPI CPN of the clinician who the histology results have been sent to and the HPI Facility ID of the facility the histology results are sent to. Note that the results message sent to clinicians is in a different format to this screening message
- [OBR-32 – Principal result interpreter](#) to contain the HPI CPN of the histologist who is responsible for the histology tests.

5.8.7 XPN – Patient name

This composite is used for the name of any patients identified in the message.

Table 8: PN – Patient name composite

Component	Type	Notes
<Family name> ^	ST	Limited to 25 characters.
<Given name> ^	ST	Limited to 20 characters.

Note: The field length limits align with the HISO 10008.2:2015 Pathology and Radiology Messaging Standard.

Example:

The patient name in PID-5:

PID|1||ZBS0001^^^NZLMOH^NHI||Testparticipant^John||19600122|M|...

5.9 Interpreting 'optionality' and 'required for'

Table 9 sets out the way to interpret the column headings and values identified in Sections 5.10–5.15.

Table 9: Interpreting 'optionality' and 'required for'

Len (Length)	Defines the total length of the field.	
Opt (Optionality)	R (Required)	This field must always contain data.
	O (Optional)	This field does not have to contain data.
	C (Conditional)	This field must contain data in certain situations as described in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

5.10 MSH – Message header segment

Table 10: MSH – Message header segment

Data element	Field	Len	Type	Opt	Comments
Field separator	MSH-1	1	ST	R	The field separator character will be ' '. .
Encoding	MSH-2	4	ST	R	To ensure messaging consistency, the following encoding characters must be used: ^ – component separator ~ – repetition separator \ – escape character & – sub-component separator
Sending application	MSH-3	180	HD	R	The sending application that generated the message.
Sending facility	MSH-4	180	HD	R	This field contains the sending facility. The preference is that this contains an HPI Facility ID. If the message is routed via a commercial service and a different ID is required

Data element	Field	Len	Type	Opt	Comments
					in order for the NSS to return ERR, ACK and NAK messages, then that different ID can be provided here.
Receiving application	MSH-5	180	HD	R	The value must be 'PHNZBS'.
Receiving facility	MSH-6	180	HD	R	Component 1 (IS) 'NZLMOH' Component 2 (ST) 'F02099-J' Component 3 (ID) 'HF'
Date/time of message	MSH-7	26	TS	R	Format: YYYY[MM[DD[HHMM[SS[S[S[S[S]]]]]]]]][+/-ZZZZ]
Security	MSH-8				<i>Not used.</i>
Message type	MSH-9	15	CM	R	Minimum requirement is the text 'ORU' or 'ACK'. The field can optionally extend to the trigger event and message structure components in the following format: ORU^R01^ORU_R01 ACK^R01^ACK_R01
Message control ID	MSH-10	20	ST	R	Number or other identifier generated by the sending application that uniquely identifies a message.
Processing ID	MSH-11	3	PT	R	The following values must be used: P – normal processing D – debugging T – training. P is the default.
Version ID	MSH-12	60	VID	R	Format: '2.4' HL7 version 2.4 format can optionally extend to the 'Internationalisation Code' and 'International Version ID' components allowed by HL7.

5.10.1 MSH-1 – Field separator

The field separator character will be '|'.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.2 MSH-2 – Encoding characters

This field contains the separator characters for component, repeat and the escape character and sub-components, respectively. This field must contain '^~\&'.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-  
J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.3 MSH-3 – Sending application

This field must be filled in with the name of the sending application.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-  
J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.4 MSH-4 – Sending facility

This field must uniquely identify the facility that sends the message. The preference is for this to contain an HPI Facility ID, and to provide it in the same format as MSH-6 – Receiving facility, eg, NZLMOH^F02099-J^HF.

If the message is routed via a commercial service and a different ID is required for the NSS to return ERR, ACK and NAK messages, then that different ID can be provided here.

Note: This is a variance to HL7 and is a required field for bowel screening messaging.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-  
J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.5 MSH-5 – Receiving application

This field identifies the receiving application. As these messages are being sent to the NSS, this field should contain 'PHNZBS' (for Population Health New Zealand Bowel Screening).

Note: This is a required field for messages sent to the NSS.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-  
J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.6 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 11.

Table 11: MSH-6 – Receiving facility

Component	Type	Notes
<namespace ID>^	IS	NZLMOH (for Ministry of Health)
<universal ID>^	ST	'F02099-J' (the HPI Facility ID for the National Screening Unit)
<universal ID type>^	ID	'HF' (to identify that this is a Facility ID)

Note: This is a required field in a message being sent to the NSS.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-  
J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.7 MSH-7 – Date/time of message

This field identifies the date and time that the sending system created the message. It is strongly recommended that it be completed absolutely precisely at all times.

Note: This is a required field in a message being sent to the NSS.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-  
J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.8 MSH-9 – Message type

This field identifies the message type. It should always contain ORU^R01 for laboratory result messages and ACK^R01 for acknowledgement messages.

Example:

```
This is an ORU^R01 event message:  
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-  
J^HF|201903131532||ORU^R01|3629|P|2.4
```

5.10.9 MSH-10 – Message control ID

This field is a number or another identifier that uniquely identifies a message from a particular sender. Each sender is responsible for ensuring that the message control IDs from their facility are unique.

Example:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY| PHNZBS|NZLMOH^F02099-J^HF  
|201903131532||ORU^R01|3629|P|2.4
```

5.10.10 MSH-11 – Processing ID

This field tells how a receiving system should process this message.

Table 12: MSH-11 – Processing ID

Value	Meaning
P	Process this message as normal.
D	This message is being used for debugging purposes. It should be properly acknowledged, but the data should be ignored.
T	Training.

Example:

This message should be processed as normal:

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|NSS|NBSP|201903131532||ORU^  
R01|ABC1234|P|2.4
```

5.10.11 MSH-12 – Version ID

This field contains the HL7 version number of this message with further optional clarification components.

Example:

This message subscribes to HL7 version 2.4.

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY| PHNZBS|NZLMOH^F02099-J^HF  
|201903131532||ORU^R01|ABC1234|P|2.4
```

5.11 MSA – Message acknowledgement segment

The MSA segment contains information to be sent when replying to or acknowledging another message.

Table 13: MSA – Message acknowledgement segment

Data element	Field	Len	Opt	Required for	Comments
Acknowledgement code	MSA-1	2	R	BusProc	Values are AA, AE, AR.
Message control ID	MSA-2	20	R	BusProc	This ensures matching of response to original message.

5.11.1 MSA-1 – Acknowledgement code

This field provides information about the processing of the message to which this message is a response. This field will always be present, and must contain one of the values listed in Table 14.

Table 14: MSA-1 – Acknowledgement code

Value	Meaning	Comment
AA	Application accept	The message was processed successfully. In an ORU message, this field will always have this value.
AE	Application error	The message had semantic difficulties.
AR	Application reject	The message contained errors such as required fields missing or fields too long. This may also be generated if a serious error has been caused by processing the original message.

Example:

The message that this message is replying to was processed correctly:

MSA|AA|ABC1234

5.11.2 MSA-2 – Message control ID

This field contains the message control ID of the message from the sending system that this message is responding to. Thus the systems can keep a record of those messages that have been responded to and those that have not. As all the messages to the NSS that are covered in this implementation guide are unsolicited ORU messages, the value in this field is the same as that in MSH-10 – Message control ID.

Example:

The message to which this message is responding was processed correctly:
MSA|AA|ABC1234

5.12 ERR – Error segment

The ERR segment is used to add error comments to acknowledgement messages.

Table 15: ERR – Error segment

Data element	Field	Len	Opt	Comments
Error code	ERR-1	80	R	

5.12.1 ERR-1 – Error code and location

This field identifies an erroneous segment in another message. It should be completed as much as possible. It is composed of the components listed in Table 16.

Table 16: ERR-1 – Error code and location

Component	Len	Type	Notes
<Segment ID> ^	3	ST	Name of segment (eg, OBR).
<Set ID>	4	NM	The set ID of the offending segment.
<Field position> ^			<i>Not used.</i>
<Text>	51	ST	Text describing the error.

Example:

This shows that the required field OBR-2 in the first occurrence of the OBR segment in the message was missing:

ERR|OBR^1^2^^Required field missing

5.13 PID – Patient identification

Table 17: PID – Patient identification

Data element	Field	Len	Type	Opt	Required for	Comments
Set ID	PID-1	4	SI	R	BusProc	
Patient identifier list	PID-3	250	CX	R	BusProc	The participant's NHI identifier.
Patient name	PID-5	250	XPN	R	BusProc	
Date of birth	PID-7	26	TS	R	BusProc	Date of birth only required.
Sex	PID-8	1	IS	O	Not required	
Address	PID-11	250	XAD	O	Not required	

5.13.1 PID-1 – Set ID

This field uniquely identifies each repeat of the PID segment. The value is 1 for the first PID segment in the message and increases incrementally for each subsequent PID segment.

Note: This is a variance to HL7 and is a required field in a message being sent to the NSS.

Example:

This is the first PID segment in this message:

```
PID|1||ZBS0001^^^ NZLMOH^NHI||Testparticipant^John||19600122|M|||133  
Molesworth Street, Thorndon, Wellington
```

5.13.2 PID-3 – Patient identifier list

This field contains the patient's NHI identifier and the assigning authority using the composite data type CX.

This is referred to as the 'Patient identifier' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Example:

```
PID|1||ZBS0001^^^ NZLMOH^NHI||Testparticipant^John||19600122|M|||133  
Molesworth Street, Thorndon, Wellington
```

5.13.3 PID-5 – Patient name

This field contains the patient's name using the XPN data type.

This is referred to as the 'Patient name' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Note: This is a required field in a message being sent to the NSS.

Example:

```
PID|1||ZBS0001^^^NZLMOH^NHI||Testparticipant^John||19600122|M|||133  
Molesworth Street, Thorndon, Wellington
```

5.13.4 PID-7 – Date of birth

This field contains the patient’s date of birth and (optionally) the time of birth. This is referred to as the ‘Patient date of birth’ in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Example:

```
PID|1||ZBS0001^^^NZLMOH^NHI||Testparticipant^John||19600122|M|||133  
Molesworth Street, Thorndon, Wellington
```

5.13.5 PID-8 – Sex

This field contains the patient’s sex. The NSS does not require this information from laboratories; providing it is optional. Table 18 gives the PID-8 values.

Table 18: HL7 User Defined Table 0001 – administrative sex

Value	Description
F	Female
M	Male
I	Indeterminate
U	Unknown

Example:

```
PID|1||ZBS0001^^^NZLMOH^NHI||Testparticipant^John||19600122|M|||133  
Molesworth Street, Thorndon, Wellington
```

5.13.6 PID-11 – Address

This field contains the address information of the patient. The NSS does not require this information from laboratories as participant address is obtained from other sources.

For laboratory IT stakeholders that would prefer to send patient address details to the NSS, they must do so using the XAD data type. For further details, refer to Section 5.1.6.26 XAD – Extended Address of HISO 10008.2:2015 Pathology and Radiology Messaging Standard.

If a laboratory provides the patient address, it must always send the mailing address. If the first address is not the mailing address, then a repeat delimiter should be sent to indicate an empty mailing address.

5.14 OBR – Observation request

Table 19: OBR –Observation request message

Data element	Field	Len	Type	Opt	Comments
Placer order number	OBR-2	50	EI	R	
Universal service ID	OBR-4	250	CE	R	This field is used to indicate that this result is being sent to the NSS as it is part of the NBSP.
Requested date/time	OBR-6	26	TS	R	Date of order.
Collector identifier	OBR-10	250	XCN	R	This includes the HPI CPN of the endoscopist who collected the samples, and the HPI Facility ID of the endoscopy clinic or hospital at which the samples were collected.
Relevant clinical information	OBR-13	300	ST	O	Clinical information on patient or specimen.
Specimen received date/time	OBR-14	26	TS	R	Date and time specimen was received at laboratory.
Ordering provider	OBR-16	250	XCN	R	
Results report/status change date/time	OBR-22	26	TS	R	Required for result corrections.
Observation result status	OBR-25	1	ID	R	F, C and X only.
Result copies to	OBR-28	250	XCN	R	
Principal result interpreter	OBR-32	200	CM	R	This field contains the HPI CPN for the pathologist who was responsible for interpreting the results in the report.
Number of specimens received	OBR-37	4	NM	R	
Placer supplemental service information	OBR-46	250	CE	R	Placer facility code.
Filler supplemental service information	OBR-47	250	CE	R	Filler facility code.

5.14.1 OBR-2 – Placer order number

This field is the unique number that the placer application has assigned to this order. This uniqueness shall persist over time.

This is referred to as the 'Laboratory report identifier' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Example:

```
OBR|20809880170^LCS||NBSP^National Bowel Screening
Prog^L||201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility
ID&HF|||This is some example data that the endoscopist
recorded.|201903011130|56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility
ID&HF|||201903011432||F||56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI
Facility ID&HF|||12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F12345-F&HPI Facility
ID&HF|||2|||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF
```

5.14.2 OBR-4 – Universal service ID

This field is used to indicate that this result is being sent to the NSS as it is part of the NBSP.

This is referred to as the 'Programme identifier' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Table 20: OBR-4 – Universal service ID

Component	Len	Type	Opt	Notes
<Code> ^	10	ST	R	This must be 'NBSP'.
<Description > ^	30	ST	R	This must be 'National Bowel Screening Prog'.
<Coding system>	10	ST	R	This must be 'L'.

Example:

```
OBR|20809880170^LCS||NBSP^National Bowel Screening
Prog^L||201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility
ID&HF|||This is some example data that the endoscopist
recorded.|201903011130|56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility
ID&HF|||201903011432||F||56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI
Facility ID&HF|||12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F12345-F&HPI Facility
ID&HF|||2|||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF
```

5.14.3 OBR-6 – Requested date/time

This field contains the clinically relevant date and time of the observation. This is the date and time the samples or specimens were collected. This should be provided to the laboratory by the endoscopy clinic on the paper histology request form or in an order message. If this is not provided, the laboratory must contact the clinic that provided the samples and request it.

This is referred to as 'When specimens collected' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Example:

The specimen was collected on 1 March 2019 at 9:10 am.
OBR|20809880170^LCS||NBSP^National Bowel Screening
Prog^L|201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI Facility
ID&HF|||This is some example data that the endoscopist
recorded.|201903011130|56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI Facility
ID&HF|||201903011432||F||56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI
Facility ID&HF|||12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F12345-F&HPI Facility
ID&HF|||2|||||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF

5.14.4 OBR-10 – Collector identifier

This field contains the identifier for the clinician who collected the samples. This is referred to as the 'Pathologist identifier' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

It is optional for this field to also contain the HPI Facility ID for the facility where the samples were collected. If this is provided, it must be the same as the HPI Facility ID provided in the required OBR-16 – Ordering provider.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Examples:

With the HPI Facility ID provided:
OBR|20809880170^LCS||NBSP^National Bowel Screening
Prog^L|201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI Facility
ID&HF|||This is some example data that the endoscopist
recorded.|201903011130|56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI Facility
ID&HF|||201903011432||F||56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI
Facility ID&HF|||12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F12345-F&HPI Facility
ID&HF|||2|||||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF

Without the HPI Facility ID provided:
OBR|8642753100012^LIS||NBSP^National Bowel Screening
Prog^L|201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^^HI|||This is some example
data that the endoscopist recorded.|
201903011130|56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI Facility
ID&HF|||201903011432||F||56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI
Facility ID&HF|||12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^F12345-F&HPI Facility
ID&HF|||2|||||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF

5.14.5 OBR-13 – Relevant clinical information

This field contains additional clinical information the clinician provided on a paper histology request form or via an electronic order.

This is referred to as 'Clinical details' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Example:

```
OBR| |20809880170^LCS| |NBSP^National Bowel Screening  
Prog^L| |201903010910| | |34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | |This is some example data that the endoscopist  
recorded. |201903011130| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | | |201903011432| |F| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI  
Facility ID&HF| | |12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F12345-F&HPI Facility  
ID&HF| | | |2| | | | | | | |F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF
```

5.14.6 OBR-14 – Specimen received date/time

This is the date and time the laboratory received the specimen to perform the test. In many cases, this is the same as the observation date and time. HL7 requires the use of this field.

This is referred to as ‘When specimens received’ in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Example:

```
OBR| |20809880170^LCS| |NBSP^National Bowel Screening  
Prog^L| |201903010910| | |34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | |This is some example data that the endoscopist  
recorded. |201903011130| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | | |201903011432| |F| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI  
Facility ID&HF| | |12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F12345-F&HPI Facility  
ID&HF| | | |2| | | | | | | |F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF
```

5.14.7 OBR-16 – Ordering provider

This XCN field contains the HPI CPN of the clinician responsible for ordering the test. This may be the same as the clinician details that are provided in OBR-10 but may differ in some situations. Providing the facility information is optional.

This is referred to as the ‘Requesting clinician identifier’ in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Examples:

With the HPI Facility ID provided:

```
OBR| |20809880170^LCS| |NBSP^National Bowel Screening  
Prog^L| |201903010910| | |34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | |This is some example data that the endoscopist  
recorded. |201903011130| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | | |201903011432| |F| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI  
Facility ID&HF| | |12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F12345-F&HPI Facility  
ID&HF| | | |2| | | | | | | |F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF
```

Without the HPI Facility ID provided:

```
OBR||8642753100012^LIS||NBSP^National Bowel Screening  
Prog^L||201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^HI|||This is some example  
data that the endoscopist  
recorded.|201903011130||56ABCD^^^^^^^^^NZLMOH^^^^HI|||201903011432|||F|||  
56ABCD^^^^^^^^^HF^NZLMOH^^^^HI^^F08099-F&HPI Facility  
ID&HF|||12ABCD^^^^^^^^^HF^NZLMOH^^^^HI^^ F12345-F&HPI Facility  
ID&HF|||2|||F08099-F^HPI Facility ID^HF |F12345-F^HPI Facility ID^HF
```

5.14.8 OBR 22 – Results report/status change date/time

This field contains the date and time on which the laboratory report was issued.

This is referred to as ‘When report released’ in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Example:

The laboratory report was released on 1 March 2019 at 14:32 am.

```
OBR||20809880170^LCS||NBSP^National Bowel Screening  
Prog^L||201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^HI^^F08099-F&HPI Facility  
ID&HF|||This is some example data that the endoscopist  
recorded.|201903011130||56ABCD^^^^^^^^^NZLMOH^^^^HI^^F08099-F&HPI Facility  
ID&HF|||201903011432|||F|||56ABCD^^^^^^^^^NZLMOH^^^^HI^^F08099-F&HPI  
Facility ID&HF|||12ABCD^^^^^^^^^NZLMOH^^^^HI^^F12345-F&HPI Facility  
ID&HF|||2|||F08099-F^HPI Facility ID^HF |F12345-F^HPI Facility ID^HF
```

5.14.9 OBR-25 – Observation result status

This field provides information about the status of the result. In almost all messages in this implementation, the results are final and verified; therefore ‘F’ should be used. Other acceptable values are ‘C’ for a corrected result, or ‘X’ for deleting a result sent in error.

Example:

```
OBR||20809880170^LCS||NBSP^National Bowel Screening  
Prog^L||201903010910|||34ABCD^^^^^^^^^NZLMOH^^^^HI^^F08099-F&HPI Facility  
ID&HF|||This is some example data that the endoscopist  
recorded.|201903011130||56ABCD^^^^^^^^^NZLMOH^^^^HI^^F08099-F&HPI Facility  
ID&HF|||201903011432|||F|||56ABCD^^^^^^^^^NZLMOH^^^^HI^^F08099-F&HPI  
Facility ID&HF|||12ABCD^^^^^^^^^NZLMOH^^^^HI^^F12345-F&HPI Facility  
ID&HF|||2|||F08099-F^HPI Facility ID^HF |F12345-F^HPI Facility ID^HF
```

5.14.10 OBR 28 – Result copies to

This XCN field provides information about which clinicians the separate histology results message was sent to.

The 'OBR 28 – Result copies to' field can be repeated if the result was sent to multiple clinicians. Both the HPI CPN of the clinician and the HPI Facility ID of the facility that the results message was sent to are required.

Example:

```
OBR| |20809880170^LCS| |NBSP^National Bowel Screening  
Prog^L| |201903010910| | |34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | |This is some example data that the endoscopist  
recorded.|201903011130| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | | |201903011432| |F| | |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI  
Facility ID&HF| | | |12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F12345-F&HPI Facility  
ID&HF| | | |2| | | | | | | |F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF
```

5.14.11 OBR-32 – Principal result interpreter

This field identifies the pathologist responsible for interpreting the results in the report, and can optionally contain the HPI Facility ID for the laboratory in which they interpreted the results. If the HPI Facility ID is provided, it must be the same as the facility provided in OBR-47 – Filler facility code and may be the same as the sending facility provided in MSH-4. However, it may differ from MSH-4 where messages are sent from a different facility to the one in which the results were interpreted.

This field must contain details for the lead pathologist (the 'final signer'). This is referred to as the 'Pathologist identifier' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Example:

```
OBR| |20809880170^LCS| |NBSP^National Bowel Screening  
Prog^L| |201903010910| | |34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | |This is some example data that the endoscopist  
recorded.|201903011130| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | | |201903011432| |F| | |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI  
Facility ID&HF| | | |12ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F12345-F&HPI Facility  
ID&HF| | | |2| | | | | | | |F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF
```

5.14.12 OBR-37 – Number of specimens received

This field contains the number of specimens received by the laboratory.

This is referred to as the 'Number of specimens received' in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Example:

```
OBR| |20809880170^LCS| |NBSP^National Bowel Screening  
Prog^L| |201903010910| | |34ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility  
ID&HF| | |This is some example data that the endoscopist  
recorded.|201903011130| |56ABCD^^^^^^^^^NZLMOH^^^^^HI^^^^F08099-F&HPI Facility
```

ID&HF|||||201903011432|||F|||56ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI
 Facility ID&HF|||||12ABCD^^^^^^^NZLMOH^^^^HI^^^F12345-F&HPI Facility
 ID&HF|||||2|||||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF

5.14.13 OBR-46 – Placer supplemental service information

For the purposes of the NBSP histology messages, this field contains supplemental service information – that is, the placer facility code (HPI Facility ID) of the endoscopy unit or hospital placing the order.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Example:

OBR| |20809880170^LCS| |NBSP^National Bowel Screening
 Prog^L| |201903010910| | |34ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI Facility
 ID&HF| |This is some example data that the endoscopist
 recorded.|201903011130| |56ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI Facility
 ID&HF|||||201903011432|||F|||56ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI
 Facility ID&HF|||||12ABCD^^^^^^^NZLMOH^^^^HI^^^F12345-F&HPI Facility
 ID&HF|||||2|||||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF

5.14.14 OBR-47 – Filler supplemental service information

For the purposes of the NBSP histology messages, this field contains supplemental service information – that is, the filler facility code (HPI Facility ID) of the laboratory processing the order.

This is referred to as the ‘Laboratory facility identifier’ in the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Example:

OBR| |20809880170^LCS| |NBSP^National Bowel Screening
 Prog^L| |201903010910| | |34ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI Facility
 ID&HF| |This is some example data that the endoscopist
 recorded.|201903011130| |56ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI Facility
 ID&HF|||||201903011432|||F|||56ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI
 Facility ID&HF|||||12ABCD^^^^^^^NZLMOH^^^^HI^^^F12345-F&HPI Facility
 ID&HF|||||2|||||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility ID^HF

5.15 OBX – Observation result

The OBX segment is used to transmit a single observation or observation fragment. Table 21 details the OBS attributes.

Table 21: OBX – Observation result message segment

Data element	Field	Len	Type	Opt	Required for:	Comments
Set ID	OBX-1	4	SI	C	BusProc	Identifier for repeats.
Value type	OBX-2	2	ID	R	BusProc	Refer to Table 26.
Observation identifier	OBX-3	250	CE	R	BusProc	LOINC or NZPOCS codes to be used where available. Local codes to be used when LOINC and NZPOCS are not available.
Observation sub-ID	OBX-4	20	ST	R	BusProc	Specimen ID
Observation value	OBX-5	65536		R	BusProc	
Units	OBX-6	250	CE	O	Not required	
Observation result status	OBX-11	1	ID	R	BusProc	

Note: LOINC = Logical Observation Identifiers Names and Codes; NZPOCS = New Zealand Pathology Observation Code Set.

5.15.1 OBX-1 – Set ID

This field is used to number OBX segments in the message.

Example:

Standard set IDs:

```
OBX|1|ST|89873-4^Specimen identifier^LN|1|123456AB|||||F
OBX|2|IS|33725-3^Site^LN|1|32713005^Caecum structure^SCT|||||C
OBX|3|NM|33748-5^Distance from anal verge^LN|1|8|||||F
```

5.15.2 OBX-2 – Value type

This field contains the format of the observation value in the OBX (field 5) and should always be filled. It can contain any value supported by the HISO 10072.1:2019 Bowel Screening Histology Data Standard.

Table 22: OBX-2 – Value type

Value	Meaning
ST	OBX-5 contains an HL7 string. This is the default.

TX	OBX-5 contains HL7 text, which is a string intended for user display.
FT	OBX-5 contains HL7 text, including formatting characters. Please see HL7 version 2.4, Section 2.4.6, for information on the use of escape sequences and formatting characters.
CE	See detail in OBX-3 below.

Example:

```
OBX|2|IS|33725-3^Site^LN|1|32713005^Caecum structure^SCT|||||F
```

5.15.3 OBX-3 – Observation identifier

This field contains a unique identifier for the specific observation this result reports.

This may be the same as OBR-4 universal service ID if there is only one result to report for that test.

Table 23: OBX-3 – Observation identifiers

Component	Len	Type	Opt	Notes
<Code> ^	10	ST	R	In some cases, the value is obvious and can be omitted; for example, when the source is one HL7 table specified in the standard. If the coding system is local, use 'L' in this field; otherwise use the name of the coding system (ie, 'LN' for LOINC).
<Description> ^	30	ST	R	
<Coding system>	10	ST	R	

For the list of allowable observation identifiers, see Appendix A.

Example:

```
OBX|3|NM|33748-5^Distance from anal verge^LN|1|8|||||F
```

5.15.4 OBX-4 – Observation sub-ID

This field is used to distinguish between multiple OBX segments with the same observation ID organised under one OBR. This is the specimen ID for the pottle.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Example:

```
OBX|12|CN|84882-0^Main Diagnosis^LN |1|30389008^Normal^SCT|||||F
```

5.15.5 OBX-5 – Observation value

This field contains the value observed. This field can repeat. This may be as simple as a numerical value; it may contain detailed text describing the outcome; or the observation value can be returned as a coded value and term as shown in Table 24.

Note: This is a variance to the HISO 10008.2:2015 Pathology and Radiology Messaging Standard as it is a required field for this implementation.

Table 24: OBX-5 – Observation value

Component	Len	Type	Opt	Notes
<Code> ^	10	ST	R	
<Description> ^	30	ST	O	
<Coding system>	10	ST	O	

Example 1:

Simple observation value

OBX|5|NM|84883-8^Depth of invasion^LN|1|4|mm||||F

Example 2:

SNOMED CT observation value

OBX|12|CN|84882-0^Main Diagnosis^LN|1|30389008^Normal^SCT||||F

5.15.6 OBX 6 – Units

This optional CE field can be used for units of measurement. If used, the units sent must match those specified for the data element in the HISO 10072.1:2019 Bowel Screening Histology Data Standard. OBX 6 – units has been included in the implementation guide as laboratory IT stakeholders have requested having the option of providing it.

Example:

OBX|5|NM|84883-8^Depth of invasion^LN|1|4|mm||||F

5.15.7 OBX-11 – Observation result status

This field provides information about the status of the result for the test described in OBX-3. In almost all messages in this implementation, the results are final and verified; therefore F should be used. Other acceptable values are listed in Table 25.

Table 25: OBX-11 – Observation result status

Value	Meaning
C	Correction; replaces final result.
D	Delete, currently held result with same ID. (Note: The complete OBR should be deleted with an X and the remaining correct results re-sent.)
F	Final result.

The NSS will accept correction messages where every element is marked as C, and messages where only the element that is changed is marked as C.

If a screening message has been sent with errors that are not result related (eg, wrong patient or clinician, or incorrect date/time information), then the laboratory can correct this error by sending a delete message, then sending a new final result message.

Example:

This result is a correction:

```
OBX|12|CN|84882-0^Main Diagnosis^LN|1|87737001^Signet ring cell  
carcinoma^SCT|||||C
```

Table 26: OBX specimen data guide

OBX-2 – Value type	OBX-3 – Observation identifier			HISO 10072.1:2019 Bowel Screening Histology Data Standard section reference
	Code	LOINC name	Coding system	
ST	89873-4	Unique identifier	LN	2.2.1 Specimen identifier
IS	33725-3	Tumour site	LN	2.2.2 Site
NM	33748-5	Distance from anal verge	LN	2.2.3 Distance from anal verge
IS	29300-1	Procedure type	LN	2.2.4 Sample procedure
NM	33723-8	Specimen length	LN	2.2.5 Size
IS	84882-0	Histologic type	LN	2.2.6 Main diagnosis
IS	XNZ5459	Dysplasia	NZ	2.2.7 Dysplasia
IS	81169-5	Residual tumour Postop Imp Cancer	LN	2.2.8 Margin – polypectomy
IS	33732-9	Histological grade	LN	2.2.9 Histological grade (tumour differentiation)
IS	XNZ5460	Poor / undifferentiated tumour	NZ	2.2.10 Poor / undifferentiated tumour
IS	33739-4	Lymphatic.small vessel.invasion	LN	2.2.11 Lymphatic invasion
IS	XNZ5461	Venous invasion	NZ	2.2.12 Venous invasion
NM	85291-3	Surgical margin tumour involvement.deep	LN	2.2.13 Deep margin status
NM	XNZ5462	Peripheral margin status	NZ	2.2.14 Peripheral margin status
NM	84883-8	Deepest extent of tumour invasion	LN	2.2.15 Depth of invasion
NM	33728-7	Size.max.dim Tumour	LN	2.2.16 Width of tumour
IS	XNZ5463	Haggitt level	NZ	2.2.17 Haggitt level
IS	XNZ5464	Kikuchi level	NZ	2.2.18 Kikuchi level
IS	33741-0	Perineural invasion	LN	2.2.19 Perineural invasion
IS	81691-8	MMR prot Mlh1 Ca spec Ql ImStn	LN	2.2.20 Nuclear expression of MLH1
IS	81692-6	MMR prot Msh2 Ca spec Ql ImStn	LN	2.2.21 Nuclear expression of MSH2
IS	81693-4	MMR prot Msh6 Ca spec Ql ImStn	LN	2.2.22 Nuclear expression of MSH6
IS	81694-2	MMR endo PMS2 Ca spec Ql ImStn	LN	2.2.23 Nuclear expression of PMS2

OBX-2 – Value type	OBX-3 – Observation identifier			HISO 10072.1:2019 Bowel Screening Histology Data Standard section reference
	Code	LOINC name	Coding system	
IS	85299-6	BRAF V600E Ca spec Ql ImStn	LN	2.2.24 BRAFV600E mutation status
IS	XNZ5465	BRAF method of testing	NZ	2.2.25 BRAF method of testing
IS	58416-9	MLH1 gene methylation Tiss Ql	LN	2.2.26 MLH1 Promoter Methylation Testing
IS	81317-0	Additional pathological findings	LN	2.3.1 Other pathological finding

Appendix B: Example message

Here is an example message containing one specimen. All data in this example message is completely fictitious.

```
MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-
J^HF|201903131532||ORU^R01|3629|P|2.4

PID|1||ZBS0001^^^ NZLMOH^NHI||Testparticipant^John||19600122|M|||133
Molesworth Street, Thorndon, Wellington

OBR||8642753100012^LIS||NBSP^National Bowel Screening
Prog^L||201903010910|||34ABCD^^^^^^^NZLMOH^^^^^HI|||This is some example data
that the endoscopist
recorded.|201903011130||56ABCD^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI Facility
ID&HF|||||201903011432|||F||56ABCD^^^^^^^NZLMOH^^^^^HI^^^F08099-F&HPI
Facility ID&HF||||12ABCD^^^^^^^NZLMOH^^^^^HI^^^F12345-F&HPI Facility
ID&HF||||1|||||F08099-F^HPI Facility ID^HF |F12345-F^HPI Facility ID^HF

OBX|1|ST|89873-4^Specimen identifier^LN|1|123456AB|||||F
OBX|2|IS|33725-3^Site^LN|1|32713005^Caecum^SCT|||||C
OBX|3|NM|33748-5^Distance from anal verge^LN|1|8|||||F
OBX|4|IS|29300-1^Sample procedure^LN|1|274025005^Polypectomy^SCT|||||C
OBX|5|NM|33723-8^Size^LN|1|3|||||F
OBX|6|IS|84882-0^Main diagnosis^LN|1|28899001^Squamous cell carcinoma^SCT|||||P
OBX|7|IS|XNZ5459^Dysplasia^NZ|1|55237006^Severe dysplasia^S|||||F
OBX|8|IS|81169-5^Margin - polypectomy^LN|1|8|||||F
OBX|9|IS|33732-9^Histological grade (tumour differentiation)^LN|1|395529007^Low
grade^SCT|||||F
OBX|10|IS|XNZ5460^Poor/undifferentiated tumour^NZ|1|52101004^Present^SCT|||||F
OBX|11|IS|33739-4^Lymphatic invasion^LN|1|395717001^Lymphatic (small vessel)
invasion by tumour present^SCT|||||F
OBX|12|IS|XNZ5461^Venous invasion^NZ|1|372287009^Vascular invasion by tumour
present^SCT|||||P
OBX|13|NM|85291-3^Deep margin status^LN|1|5|||||F
OBX|14|NM|XNZ5462^Peripheral margin status^NZ|1|6|||||F
OBX|15|NM|84883-8^Depth of invasion^LN|1|13|||||F
OBX|16|NM|33728-7^Width of Tumour^LN|1|24|||||F
OBX|17|IS|XNZ5463^Haggitt Level^NZ|1|1|||||P
OBX|18|IS|XNZ5464^Kikuchi Level^NZ|1|sm1|||||F
OBX|19|IS|81691-8^Nuclear expression of MLH1^LN|1|1|||||F
OBX|20|IS|81692-6^Nuclear expression of MSH2^LN|1|1|||||F
OBX|21|IS|81693-4^Nuclear expression of MSH6^LN|1|2|||||C
OBX|22|IS|81694-2^Nuclear expression of PMS2^LN|1|2|||||F
OBX|23|IS|85299-6^BRAFV600E mutation status^LN|1|2|||||F
OBX|24|IS|XNZ5465^BRAF method of testing^LN|1|117617002^Immunohistochemistry
procedure^SCT|||||F
OBX|25|IS|58416-9^MLH1 Promoter Methylation Testing^LN|1|3|||||F
OBX|26|IS|81317-0^Other pathological finding^LN|1|29696001^Prolapse^SCT|||||D
NTE|1|L|this is a comment
```

Here is an example message containing more than one specimen. All data in this example message is completely fictitious.

```

MSH|^~\&|SENDING_APPLICATION|SENDING_FACILITY|PHNZBS|NZLMOH^F02099-
J^HF|202001010001||ORU^R01|3629|P|2.4
PID|1||ZBS0001^^^^NHI||Testparticipant^John||19950506|M
OBR||8642753100012^LIS||NBSP^National Bowel Screening
Prog^L||201912310001|||34ABCD^^^^^^^NZLMOH^^^^HI||Test|201912310001||56
ABCD^^^^^^^NZLMOH^^^^HI^^^F08099-F&HPI Facility
ID&HF|||||189912300000||F|||||12ABCD^^^^^^^NZLMOH^^^^HI^^^F12345-
F&HPI Facility ID&HF|||||2|||||F08099-F^HPI Facility ID^HF|F12345-F^HPI Facility
ID^HF
OBX|1|ST|89873-4^Specimen identifier^LN|1|1|||||C
OBX|2|IS|33725-3^Site^LN|1|9040008^Ascending Colon^SCT|||||C
OBX|3|IS|29300-1^Sample procedure^LN|1|274025005^Polypectomy^SCT|||||C
OBX|4|NM|33723-8^Size^LN|1|1|||||C
OBX|5|IS|84882-0^Main diagnosis^LN|1|30389008^Normal ^SCT|||||C
OBX|6|IS|XNZ5459^Dysplasia^NZ|1|43185009^Low grade dysplasia^SCT|||||C
OBX|7|IS|81169-5^Margin - polypectomy^LN|1|1|||||C
OBX|8|ST|89873-4^Specimen identifier^LN|2|2|||||C
OBX|9|IS|33725-3^Site^LN|2|32713005^Caecum^SCT|||||C
OBX|10|IS|29300-1^Sample procedure^LN|2|274025005^Polypectomy^SCT|||||C
OBX|11|NM|33723-8^Size^LN|2|2|||||C
OBX|12|IS|84882-0^Main diagnosis^LN|2|128755003^Mesenchymal tumours -
Gastrointestinal stromal tumour^SCT|||||C
OBX|13|IS|XNZ5459^Dysplasia^NZ|2|25723000^Dysplasia (not further
specified)^SCT|||||C
OBX|14|IS|81169-5^Margin - polypectomy^LN|2|1|||||C
OBX|15|IS|33732-9^Histologic Grade^LN|2|395530002^High-grade (poorly differentiated
to undifferentiated)^SCT^|||||C
OBX|16|IS|XNZ5460^Poor/undifferentiated tumour^NZ|2|52101004^Present^SCT|||||C
OBX|17|IS|33739-4^Lymphatic Invasion^LN|2|395717001^Present^SCT|||||C
OBX|18|IS|XNZ5461^Venous Invasion^NZ|2|372287009^Present^SCT^|||||C
OBX|19|NM|85291-3^Deep margin status^LN|2|2|||||C
OBX|20|NM|XNZ5462^Peripheral margin status^NZ|2|1|||||C
OBX|21|NM|84883-8^Depth of Invasion^LN|2|1|||||C
OBX|22|NM|33728-7^Width of Tumour^LN|2|1|||||C
OBX|23|IS|XNZ5463^Haggitt level^NZ|2|1|||||C
OBX|23|IS|XNZ5464^Kikuchi level^NZ|2|sm2|||||C
OBX|23|IS|33741-0^Perineural invasion^LN|2|369731000^Present^SCT|||||C
OBX|23|IS|81691-8^Nuclear expression of MLH1^LN|2|2|||||C
OBX|24|IS|81692-6^Nuclear expression of MSH2^LN|2|2|||||C
OBX|25|IS|81693-4^Nuclear expression of MSH6^LN|2|4|||||C
OBX|26|IS|81694-2^Nuclear expression of PMS2^LN|2|3|||||C
OBX|27|IS|85299-6^BRAFV600E mutation status^LN|2|1|||||C
OBX|28|IS|XNZ5465^BRAF method of
testing^NZ|2|117617002^Immunohistochemistry^SCT|||||C
OBX|29|IS|58416-9^MLH1 Promoter Methylation Test^LN|2|1|||||C

```