

HISO LOINC Stage 2 – March 2007 - Cytology & Histology

There are three tabs (sheets) in the “LOINC_S2_CyHis” spreadsheet. Please note the rows in tabs No.2 and No.3 are copied from the LOINC master database. Several columns are hidden to improve the readability of the sheets.

The **first thing** to consider in the **1st tab “S2_CyHis”** is the layout of a cervical cytology report.

General structure of a cervical cytology report in OBXs :
Specimen source / type / site = 19763-2
Preparation techniques = 19772-3
Statement of adequacy = 19764-0
General categories = 19762-4
Microscopic observation (1st) = 19765-7
. . .
Microscopic observation (6th) = 19765-7
Recommended follow-up = 19773-1
Cytologist = 19767-3
Reviewing Cytologist = 19768-1
Pathologist = 19769-9

Most of the rows except the last three are based on a typical report using the Bethesda system. See **2nd tab “Cyto_STAIN”** for the corresponding green-highlighted LOINC codes.

The following rows can be reported in OBXs:

- Cytologist = 19767-3
- Reviewing Cytologist = 19768-1
- Pathologist = 19769-9

They can also be reported in OBR-32 / 33 / 34 / OBX-16 same as other specialties to fulfil IANZ requirement of authorisation / verification ID.

OBR-32 Principal result interpreter

Definition: This field identifies the physician or other clinician who interpreted the observation and is responsible for the report content.

OBR-33 Assistant result interpreter

Definition: This field identifies the clinical observer who assisted with the interpretation of this study.

OBR-34 Technician

Definition: This field identifies the performing technician.

OBX-16 Responsible observer

Definition: When required, this field contains the identifier of the individual directly responsible for the observation (i.e., the person who either performed or verified it).

The improved HL7 V2.4 messaging standard can also be used for sending results to the NCSP instead of text files on diskette. The Bethesda codes can be reported in an OBX using a code similar to the Australian 44945-4 AUSTRALIAN CERVIX CYTOLOGY CODE IMP PT XXX NOM. A NZ code has to be created.

The above suggestions must be considered with respect to the NCSP Register Re-development Project being undertaken at NSU. Please see Section 14 (14.1 – 14.5) in “10008 Implementer guide NZ v3 4d”. The section contains a lot of technical requirements beyond routine cervical cytology e.g. cervical histology and HPV tests. While an attempt is made below to illustrate a simple way of reporting HPV test results based on a suggestion by email to NSU, other details in Section 14 are better explained by NCSP in a separate document or a workshop-like meeting later.

Example of HPV test report:

LAB 07PA1111E	LAW9210	SAM THE MAN	M 79	1 Feb 1927
Dr R L Spearing (Haem)	RLSPE		Arr 18Jan07	13:02
Systems and Programming	SYS2	ph81042	fax80521	Col 18Jan07
				12:00

Viral Nucleic Acid Testing

Number: U381

Specimen site: Cervical cells collected in SurePath media.

PAPILLOMAVIRUS PCR

Human papilloma virus DETECTED by DNA amplification.

This specimen has been tested using the AMPLICOR Human Papilloma Virus test which detects high risk HPV DNA genotypes 16,18,31,33,35,39,45,51,52,56,58,59, and 68.

Assuming the above example is derived from a real report, it means there could be many possible results depending on the HPV types detected. It could be a single positive among the 13 types in the panel. It could be any two in the panel positive, or any three positives, or any four positives, . . . Unless, you are using a screening panel without going into the specific types, then the possible results are much less e.g. detected, not detected, equivocal.

In either case, a free-text style as shown in the example gives you the flexibility to cover all these possibilities. As for the LOINC coding, you can use:

A **site non-specific** and method non-specific code:

11481-9 HUMAN PAPILLOMA VIRUS IDENTIFIED PRID PT XXX NOM MICRO

A **site specific** but method non-specific code:

11083-3 HUMAN PAPILLOMA VIRUS IDENTIFIED PRID PT CVX NOM MICRO

A **method specific** but site non-specific code:

16280-0 HUMAN PAPILLOMA VIRUS DNA ACNC PT XXX ORD PROBE.AMP MICRO

A **method not so specific** but site specific code

44550-2 HUMAN PAPILLOMA VIRUS DNA ACNC PT CVX ORD PROBE MICRO

Of course, you can create a new LOINC code for use in NZ i.e. site specific and method specific. However, be aware that a site and method non-specific code has the benefit that you can continue to use the code if you include new sample types e.g. male genital or change test method later.

For any of the four codes above, the site details are reported in OBX|0001. The method details are reported in segment #17 (observation method) of OBX|0002 or in a NTE segment following OBX|0002.

The OBXs then appear as:

OBX|0001|FT|19763-2^Specimen source / type / site^LOINC||Cervical cells collected in SurePath media.|||||F^

OBX|0002|FT|11481-9^Human papilloma virus identified^LOINC||Human papilloma virus DETECTED.|||||(segment #17)DNA amplification|||||F^

NTE|0001|FT|This specimen has been tested using the AMPLICOR Human Papilloma Virus test which detects high risk HPV DNA genotypes 16,18,31,33,35,39,45,51,52,56,58,59, and 68.|||||F^

The **second thing** to consider in the **1st tab "S2_CyHis"** is the layout of a non-gynae cytology report. The suggestion is to format it similar to a histology report but many NZ codes have to be created.

See **2nd tab "Cyto_STAIN"** for "Microscopic observation". The suggestion is to use the green-highlighted 32785-8 non-specific XXX codes.

General structure of a **non-gynae cytology report** in OBXs:

Relevant Hx = To create
Site of origin = 31208-2
Gross observation = To create
Microscopic observation = 32785-8
Comments = To create
Final diagnosis = To create
Supplemental reports = To create
Addendum = To create

The **third thing** to consider in the **1st tab "S2_CyHis"** is the layout of a histology report.

General structure of a **histology report** in OBXs :

Relevant Hx = 22636-5
Site of origin = 22633-2
Gross observation = 22634-0
Microscopic observation = 22635-7
Comments = 22638-1
Final diagnosis = 22637-3
Supplemental reports = 22639-9
Addendum = 35265-8

A histology report is similar to a microbiology report but more complicated for the lack of predictability in the content and hence the structure. The above structure is that of a typical (but simplest) example with one clinical history, one specimen, one gross description, one microscopic description, one comment (optional), one diagnosis, one SNOMED code. In real life, all these can happen in various combinations. For example, a patient may have three specimens taken in one operation, three gross description, one microscopic description, no comment, two diagnoses, five SNOMED codes.

The addition of supplemental report and / or addendum increases the complexity. The parent/child mechanism described in HISO HL7 V2.4 technical specification "10008 Ballot draft V1 240107" for association of bacterial culture results with antibiotic susceptibility tests can be used. Please read the following sections in the specification:

- P.65 OBR-26 Parent result
- P.66 OBR-29 Parent

The reporting of histological findings as separate items in OBXs is new to many laboratories in NZ. Some overseas centres have used the itemised approach for the reporting of colorectal and breast cancers i.e. a proforma or checklist approach e.g. using 33723-8 for SPECIMEN LENGTH LEN PT SPECIMEN QN CAP CANCER PROTOCOLS PATH.PROTOCOLS.GENER in cancer reporting by CDC, USA.

Lastly, see [3rd tab "Hist_STAIN"](#) for a long list of 200+ tinctorial and immunochemical stains. There are two options:

- 1) The findings are embedded without coding in 22635-7 MICROSCOPIC OBSERVATION, 22639-9 SUPPLEMENTAL REPORTS and / or 35265-8 ADDENDUM.
- 2) The findings are reported separately in OBXs using some of the 200+ specific codes.