Te Whatu Ora
Health New Zealand

HPV Primary Screening: implications for histology laboratories

NCPTS update

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HPV Primary Screening

Presenting on behalf of NCPTS

- Current situation Histology reporting - NCSP Independent Monitoring Report for July-Dec 2019
- What changes are coming?
- Future predictions for Histology

Current Situation

- The NCSP Register collects histology results of samples taken from the cervix and vagina.
- Histology samples include diagnostic biopsies, treatment biopsies, cervical polyps and the cervical tissue of total hysterectomy specimens
- The information on the following slides is from the NCSP Independent Monitoring Report for July-Dec 2019

NCSP Independent Monitoring Report for July-Dec 2019

- 12,636 histology samples taken during this monitoring period.
- 478 (3.8%) were insufficient for diagnosis (samples were from 474 women)
- The remaining 12,158 samples were taken from 10,851 women

Table 1 - Histology results reporting by SNOMED category

SNOMED category	Women with that diagnosis	
	N	%
Negative/normal	3,436	31.7
Inflammation	773	7.1
Microglandular hyperplasia	17	0.16
Squamous metaplasia	300	2.8
Polyp	1,420	13.1
Other*	332	3.1
Atypia	53	0.49
Benign glandular atypia	-	-
HPV	599	5.5
Condyloma acuminatum	2	<0.05
CIN 1 (LSIL) or VAIN 1	1,602	14.8
Dysplasia/CIN NOS	32	0.29
Glandular dysplasia	2	<0.05
CIN 2 (HSIL) or VAIN 2	798	7.4
HSIL not otherwise specified	37	0.34
CIN 3 (HSIL) or VAIN 3	1,200	11.1
Adenocarcinoma in situ	73	0.67
Microinvasive squamous cell carcinoma	5	<0.05
Invasive squamous cell carcinoma	70	0.65
Adenocarcinoma endocervical type	18	0.17
Invasive adenocarcinoma (not endocervical type)	32	0.29
Adenosquamous carcinoma	1	<0.05
Undifferentiated carcinoma	2	<0.05
Sarcoma	-	-
Carcinosarcoma	4	<0.05
Choriocarcinoma	-	-
Miscellaneous primary tumour	3	<0.05
Metastatic tumour	25	0.23
Small cell carcinoma	-	-
Malignant tumour, small cell type	-	-
Melanoma	-	-
Other primary epithelial malignancy	15	0.14
Total	**10,851**	**100**

NOS = not otherwise specified; HSIL not otherwise specified = high-grade squamous intraepithelial lesion, not otherwise specified/ CIN 2/3 (SNOMED code M67017; see Appendix C)

** Other morphologic abnormality, not dysplastic or malignant.*

Note: the SNOMED codes that distinguish the two categories of adenocarcinoma have not been utilised consistently by some laboratories. Consequently, "invasive adenocarcinoma not endocervical type" may be over reported and "invasive adenocarcinoma endocervical type" under-reported in these laboratories.

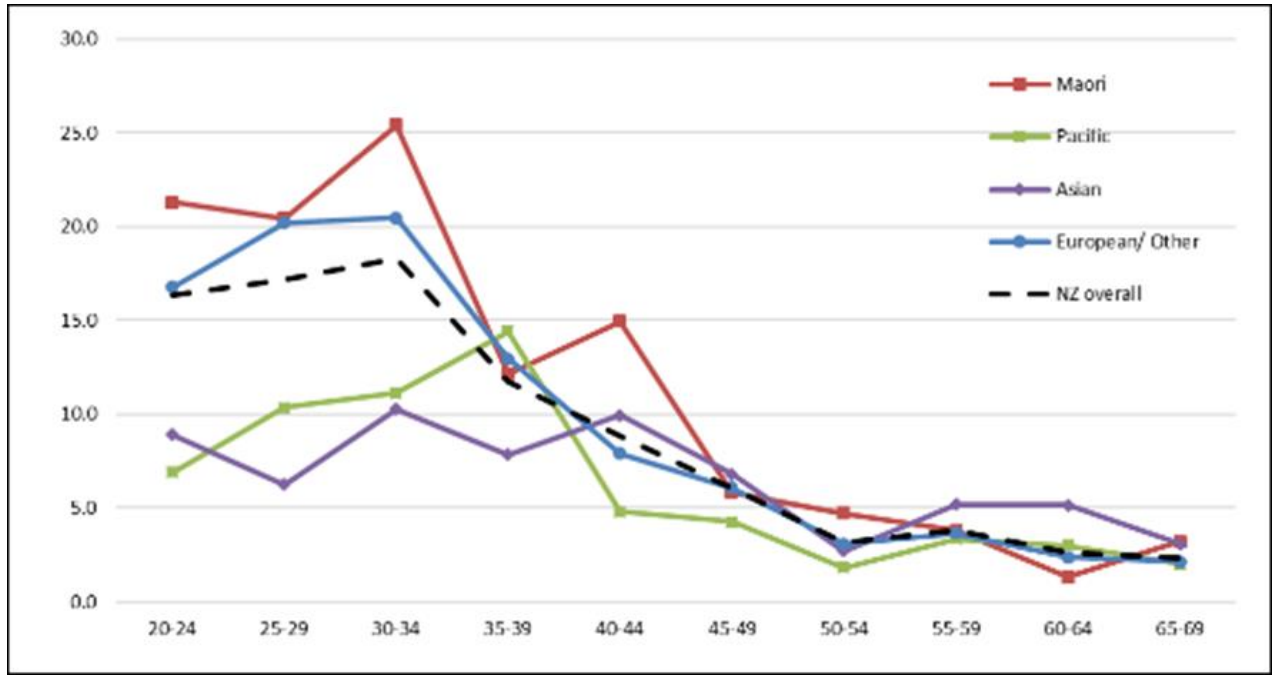
Histology results reporting by diagnostic category excluding samples from partial* or total hysterectomy specimens and where the result was negative/ benign.

Histology category	Women with that histology result	
	N	%
Negative/benign (non neoplastic)	4,011	46.7
HPV	601	7.0
CIN1	1,687	19.7
Glandular dysplasia	2	<0.05
CIN2	798	9.3
HSIL not otherwise specified	-	-
CIN3	1,200	14.0
Adenocarcinoma in situ	73	0.85
Microinvasive	5	0.06
Invasive squamous cell carcinoma	70	0.82
Adenocarcinoma endocervical type	18	0.21
Invasive adenocarcinoma (not endocervical type)	32	0.37
Adenosquamous carcinoma	1	<0.05
Other cancer	49	0.57
Total	**8,584**	**100.0**

Partial with cervical component. Details of mapping between SNOMED category and diagnostic category are included in Appendix C. HSIL not otherwise specified = high-grade squamous intraepithelial lesion, not otherwise specified/ CIN 2/3 (SNOMED code M67017; see Appendix C). Results differ from those in **Error! Reference source not found. due to the exclusion of negative/ benign results from partial/ total hysterectomy samples.*

Note: the SNOMED codes that distinguish the two categories of adenocarcinoma have not been utilised consistently by some laboratories. Consequently, "invasive adenocarcinoma not endocervical type" may be over reported and "invasive adenocarcinoma endocervical type" under-reported in these laboratories

- **Rate of women with CIN 2/3 per 1,000 women screened, by age and ethnicity for the period**



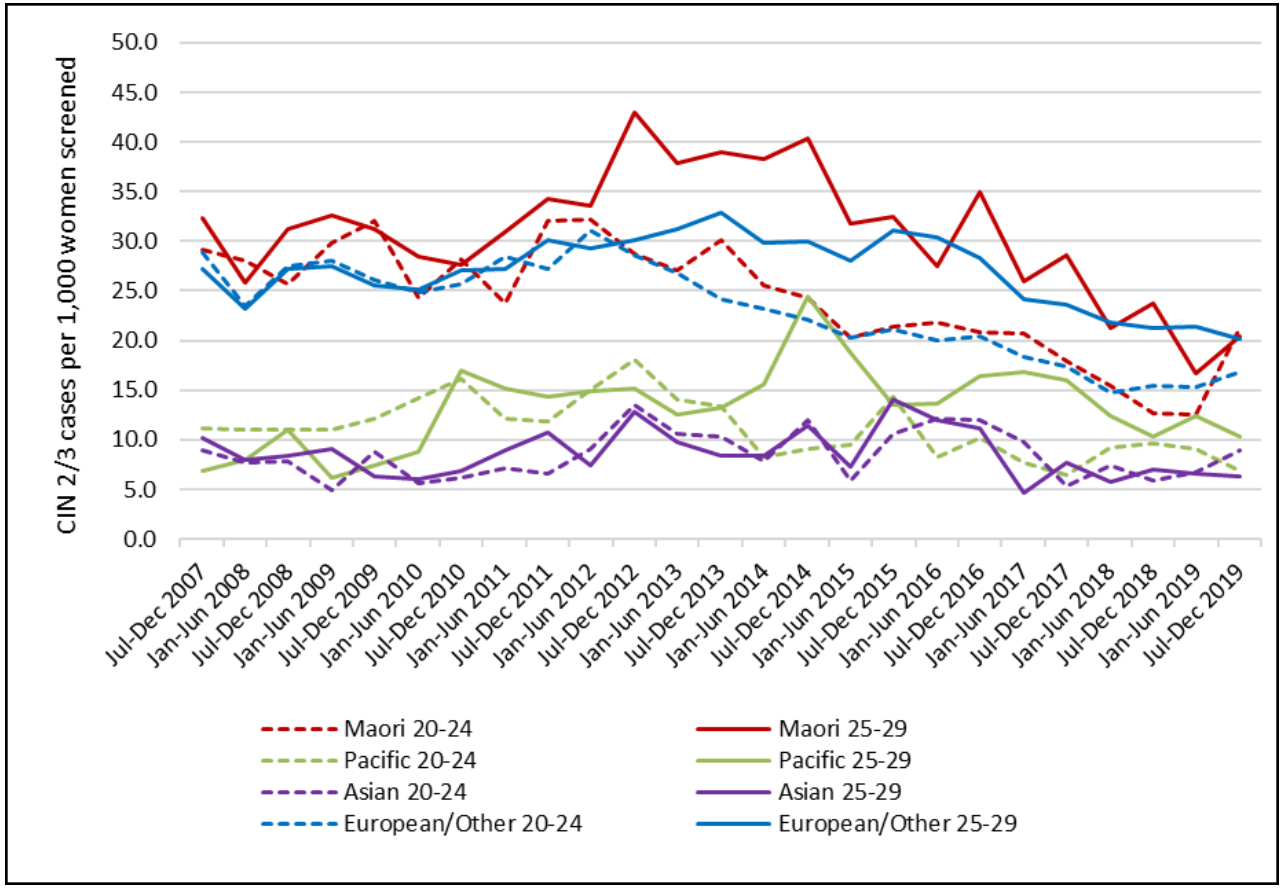
NCSP Independent Monitoring Report for July-Dec 2019

- Longer term trends show rates of CIN2/3 per 1,000 women screened have been decreasing in women aged 20-24 and 25-29, from the latter half of 2012 and early 2016
- cohorts offered vaccination would have been aged up to 29 in the current monitoring period

NCSP Independent Monitoring Report for July-Dec 2019

- However there has been an increase in the detection of CIN 2/3 per 1,000 women screened in 20-24 year old since the previous report. This may be a reflection of routine screening no longer being recommended for women aged less than 25 from November 2019

- Therefore there would likely be a bias to higher CIN2/3 detection rates in women aged 20-24 who continued to attend after the change, since women with a previous abnormality were generally recommended to continue to attend (for example, if they were under surveillance), whereas lower risk women in routine screening were no longer recommended to attend



- **Longer term trends in the rate of women with CIN 2/3 per 1,000 women screened, by ethnicity and selected ages**

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Key changes that are coming to the NCSP

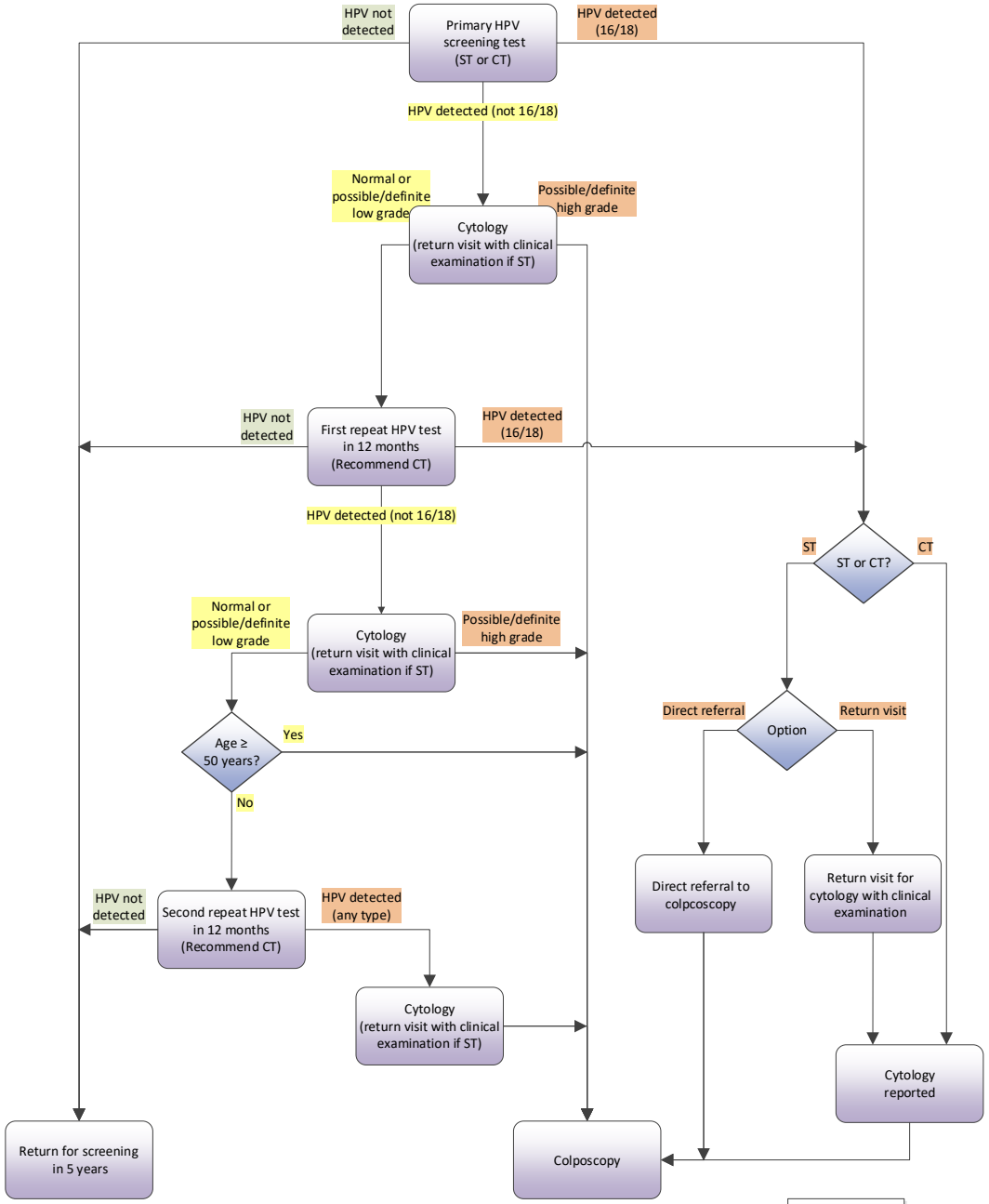
…And what will remain the same

Key changes

- **HPV Primary screening for asymptomatic participants**

1. The primary screening test will be an HPV test, not cytology

2. Cytology will be done on all those who are HPV positive, to sort out who needs further investigation or follow up



ST – Self-taken sample
CT – Clinician-taken sample

Histology providers

- Current histology providers to the NCSP will continue
  - laboratories who already report cervical histology to the NCSP will continue to report cervical histology
  - The contracts that cover cervical histology reporting services are with Te Whatu Ora services like Colposcopy Units (i.e. not directly with the NCSP)
- The current SNOMED coding will be replaced by SNOMED CT coding

Colposcopy services

- Current colposcopy services will continue
- They will be very busy when HPV primary screening is introduced because more people are likely to be screened and because more people will be referred to colposcopy with positive HPV test results
- This will have a flow on effect to histology (increased numbers)

HPV immunisation

- The HPV immunisation programme has been impacted by COVID lockdowns but the programme will continue
- Increasing numbers of screened people will be immunised and the age at which the majority of women (and later men) are immunised, will gradually increase.
- There is considerable herd immunity with this vaccine and there was a catchup programme for women up to 20 years of age when HPV vaccination started
- immunisation is currently reducing disease rates in the 25-29 year group and will impact on the 30-34 year group over the next 5 years

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Predicting changes in histology that are likely to occur after the introduction of HPV primary screening

Prepared by Dr Margaret Sage, NCSP Clinical Lead

Factors that will increase histology volumes when HPV screening starts

1. **HPV primary screening** is a more sensitive test than cytology so more people who have cervical lesions will be detected the first time they have an HPV screening test

2. The **new NCSP Register** will be population based

- all those eligible for screening will be on the register, not just those who have had their first test.
- everyone eligible for screening will be sent a communication from the Register to notify them that they are due to be screened so currently unscreened or under-screened people may come in
- unscreened/under-screened people are likely to have a higher rate of cervical lesions than those already regularly screened by cytology

Factors that will increase histology volumes when HPV screening starts

3. **Self-testing** (self-sampling) for an HPV test using a vaginal swab instead of a speculum will be popular among some who are currently unscreened or underscreened so more people are very likely to be screened.

- as the speculum examination is a barrier for screening, being able to use a vaginal swab instead will encourage those who are currently unscreened or underscreened to be screened.

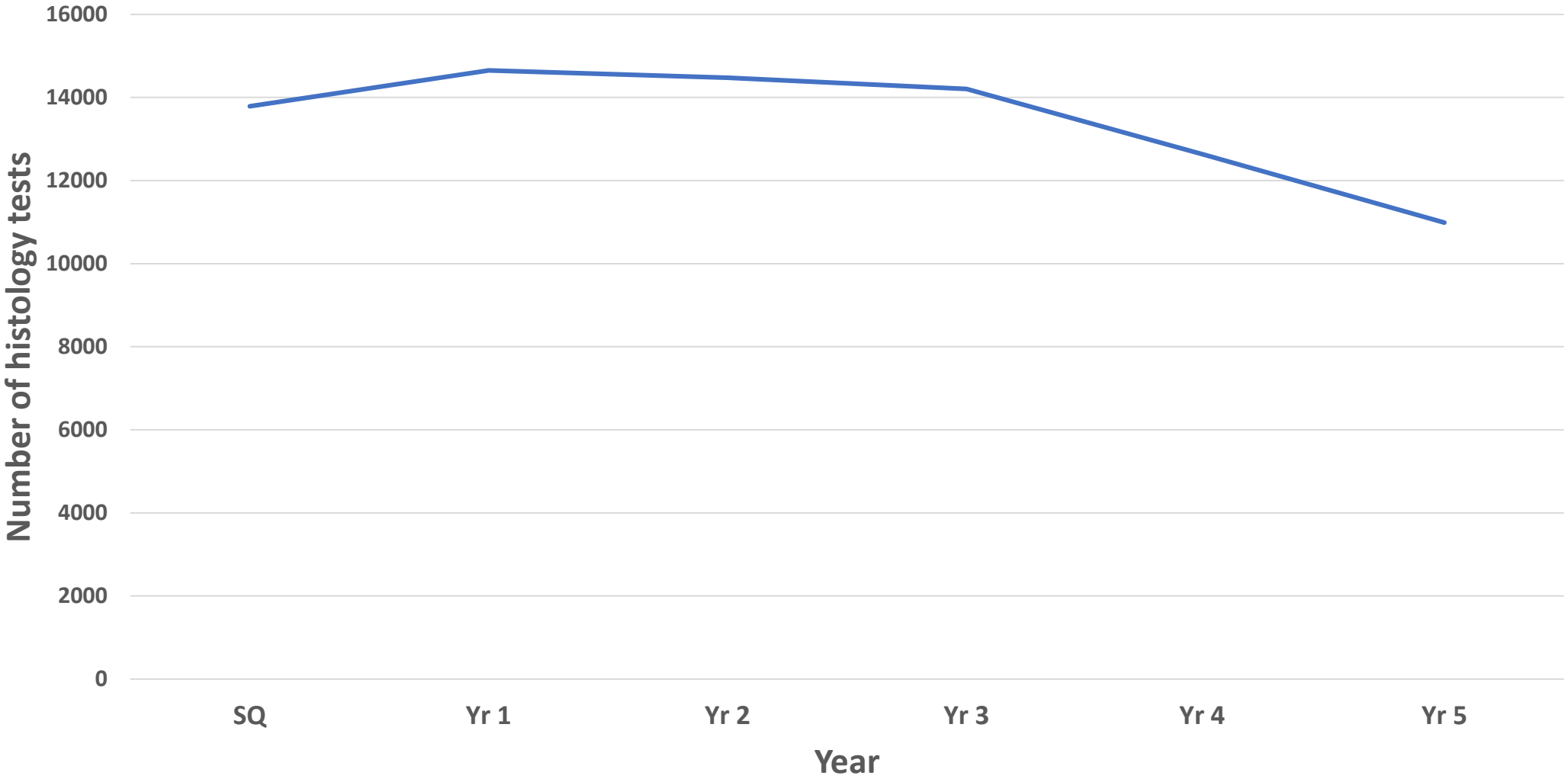
These factors will all increase the detection of cervical disease in the community and therefore will result in **more cervical punch biopsies and LLETZ and cone biopsy excisions**

These factors will be particularly seen in the first round of HPV primary screening: particularly in the first year when many previously unscreened people start screening but also through the first 3 years as everyone gradually becomes due for their 3 yearly test screening test following their last cytology screen, and comes in for their first HPV screening test

Factors that will decrease histology numbers

- HPV vaccination significantly reduces the number of people who develop cervical lesions
- The age cohort first offered HPV vaccination are now about 30 years of age. As more and more vaccinated people grow up into the screening age, the number in that age range with cervical lesions will decline. This will reduce cervical histology over time
- As the peak volumes of CIN2/3 histology by age occurs in women in their early 30’s, the impact of vaccination to reduce histology volumes will happen in the next 5 years.
- This will be a more gradual long-term change over many years

Estimated histology volumes with HPV primary testing: NCSP modelling Status Quo to Year 5 after the introduction of HPV primary screening



Changes coming for histology with the next update to Section 5 (for HPV screening)

- A lot of work went in to updating the NCSP Policies and Standards Section 5: providing a laboratory service for the 2021 Update, so that as much as possible was already in place before the NCSP programme changes

- The RCPA macroscopic handling and reporting protocols have been very helpful as we can use those rather than writing a lot of detail in section 5 for histology

- The greatest change for histo scientists will be using the **new NCSP Register** interfaces: still to be developed.
- There is also potential to use the new register to generate some of the operational monitoring that laboratories do, either for your own purposes or for providing data to the NCSP

Other changes for Histoscientists

1. Sending slides overseas from those of Maori ethnicity: new documentation requirements are coming
2. Histopathologists will be using SNOMED-CT coding, not the current SNOMED codes

There will be further work with laboratories to discuss these issues over the next 12 months

Summary

- The main changes coming to the NCSP are:
  - changing the screening test (to HPV testing),
  - how the sample is taken (self-testing)
  - access to screening (population-based register with active notification, primary care initiatives to increase access to reduce ethnic inequalities)

Conclusion

- The amount of disease in the community remains the same
- Better detection will result in higher histology numbers initially
- These will then drop off as HPV immunisation rates rise

Thank you!

- Dr Margaret Sage, NCSP Clinical Lead

- Reference: **IMR 52 July – Dec 2019**
  Indicator 5.4 – Histology Reporting

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