Cervical screening & the impact of COVID-19

Associate Professor Megan Smith
The Daffodil Centre, a joint venture between Cancer Council NSW and the University of Sydney

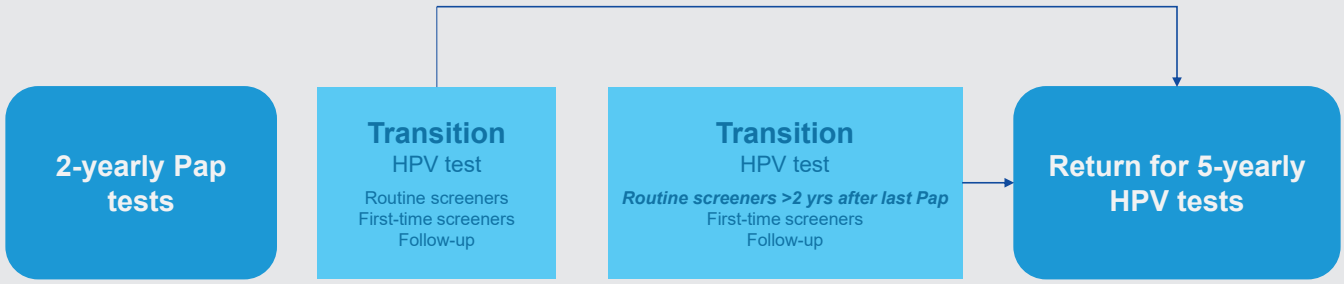
RACGP webinar: Updates on Australia's screening programs

Women's Health Week

Jean Hailes FOR WOMEN'S HEALTH

RACGP

Implications of longer NCSP interval



Adapted from: Australian Institute of Health and Welfare, *Cervical screening in Australia 2018*.

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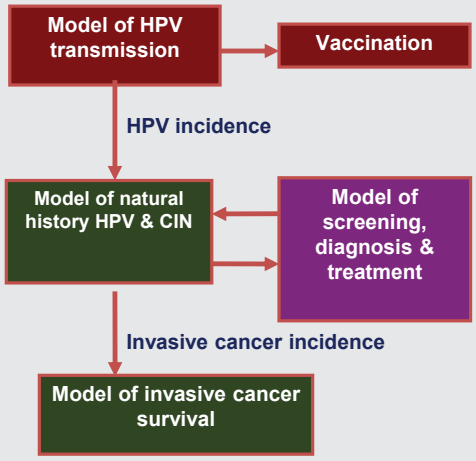
Policy1-Cervix model

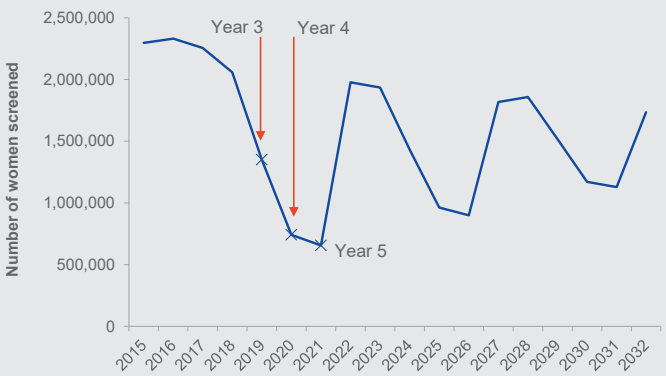
- Extensive experience modelling cervical cancer prevention, including vaccination and screening (eg formal evaluations of screening policy for government; evaluation of HPV9)
- A dynamic model of sexual behaviour, HPV transmission, vaccination, HPV type-specific natural history, precancer and cancer diagnosis/treatment[1-26]
- Explicitly models detailed screening management pathways including imperfect adherence to screening, test and diagnostic accuracy, imperfect precancer treatment (based on setting-specific data)
- Calibrated and validated across a range of settings, including Australia, New Zealand, England, rural/urban China, rural/urban Vietnam, rural India, and the USA, and has been used to directly inform policy in some of these settings.

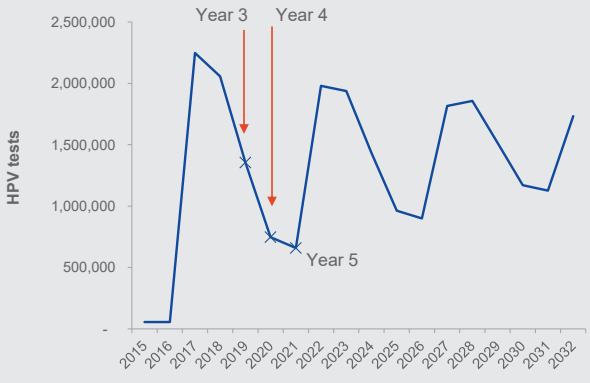


1. Canfell *et al*, Br J Cancer 2004
2. Barnabas *et al*, PLoS Med 2006
3. Smith *et al*, Int J Cancer 2008
4. Creighton *et al*, BMC PH 2010
5. Kitchener *et al*, HTA 2011
6. Shi *et al*, BMC Cancer 2011
7. Canfell *et al*, Vaccine 2011
8. Smith *et al*, Vaccine 2011
9. Walker *et al*, Stat Med 2012
10. Legood *et al*, BMJ, 2012
11. Lew *et al*, BMC HSR, 2012
12. Smith and Canfell, BMC RN 2014
13. Kitchener *et al*, HTA UK 2014
14. Smith and Canfell, PLoS One 2014
15. Smith *et al*, MJA 2016
16. Smith *et al*, BMC HSR 2016
17. Lew *et al*, PLoS One 2016
18. Simms *et al*, Int J Cancer 2016
19. Simms *et al*, Lancet PH 2016
20. Simms *et al*, PLoS One 2017
21. Lew/Simms *et al*, Lancet PH 2017
22. Velentzis *et al*, Int J Cancer 2017
23. Hall *et al*, PLoS One 2018
24. Hall *et al*, Lancet PH 2018
25. Smith *et al*, Vaccine 2018
26. Smith *et al*, CEBP 2021

Screening volumes

- Explicitly modelled varying screening and HPV vaccination exposure in individual birth cohorts
- Incorporated how a relatively rapid screening program switch in 2017 would affect both women attending for routine screening and those in surveillance following an abnormality
- Fluctuations expected as most women will attend within 2-3 years of their last Pap (lower volumes y3-5, especially y4 & 5)





Smith et al, BMC Health Services Research 2016 Available at https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-016-1375-9

Screening volumes

Year since transition	Year 2	Year 3	Year 4	Year 5
Approx calendar year	2019	2020	2021	2022
Expected total HPV tests (% of year 1)	91% (~same)	60% (40% lower)	33% (67% lower)	29% (71% lower)
Observed total HPV screening tests (% of year 1) - MBS	**98.4%**	**55.0% *(45.0% lower)***	**45.2% *(54.8% lower)***	**44.2%† *(55.8% lower)***
Observed routine screening tests* (% of year 1) – MBS	95.3%	40.5% *(59.5% lower)*	28.7% *(71.3% lower)*	28.2%† *(71.8% lower)*
Observed routine screening tests* (% of year 1) – AIHW/ NCSR	97.4%	42.0% *(58.0% lower)*	31.7% *(68.3% lower)*	30.2%† *(69.8% lower)*

* Does not include HPV tests in those with a recent abnormality/ recent HPV positive who are under-surveillance. The expected drop in primary screening tests in 2020-2022 likely exceeds the drop in all tests, because of the transition from a 2y to a 5y screening interval. Estimates of expected tests were made prior to the change in intermediate risk management.
† Comparison of tests in Jan-Mar 2022 with Jan-Mar 2018

Expected: Smith et al, BMC Health Services Research 2016. Available at https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-016-1375-9

Observed: MBS from: http://medicarestatistics.humanservices.gov.au/statistics

AIHW/ NCSR: Cancer screening programs: quarterly data. AIHW Jul 2022. Available at: https://www.aihw.gov.au/reports/cancer-screening/national-cancer-screening-programs-participation/data

Scenarios & outcome measures

Duration	Disruptions to:			
	Routine primary screening	Surveillance visits	Colposcopy/ precancer tx	Symptomatic detection
None				
12 months	100% ↓			
	100% ↓	100% ↓		
	100% ↓	100% ↓	100% ↓	
	100% ↓	100% ↓	100% ↓	100% ↓

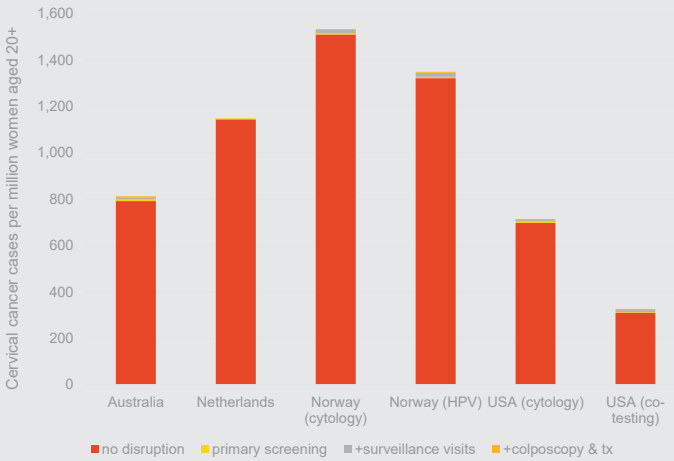
6 month disruption scenarios were also run. Full results presented in Smith *et al*, Prev Med 2021 Special issue: *From disruption to recovery: the Impact of the COVID-19 pandemic on cancer screening*

- Population outcomes over 2020-2030 inclusive
- Additional cancer diagnoses, cancers diagnosed at a later stage (upstaged)
- Predicted demand for resources (HPV tests, colposcopies)

What is the effect on cancer detection?

- Per million women aged 20+
  - 0-27 additional cancers (up to 5.3%↑)
  - 0-10 upstaged cancers
  - 0-16 additional deaths longer term due to these additional and upstaged cancers
- Higher *relative* increase when disruptions extended throughout the clinical pathway, and in places where the absolute burden was lower (incl HPV screening)
- Additional cases sometimes higher with HPV screening than cytology – BUT disrupted HPV was more effective than undisrupted cytology

Cervical cancer cases (per million women 20+), 2020-2030



Smith *et al*, Prev Med 2021; 151:106623

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Smith *et al*, Prev Med 2021; 151:106623

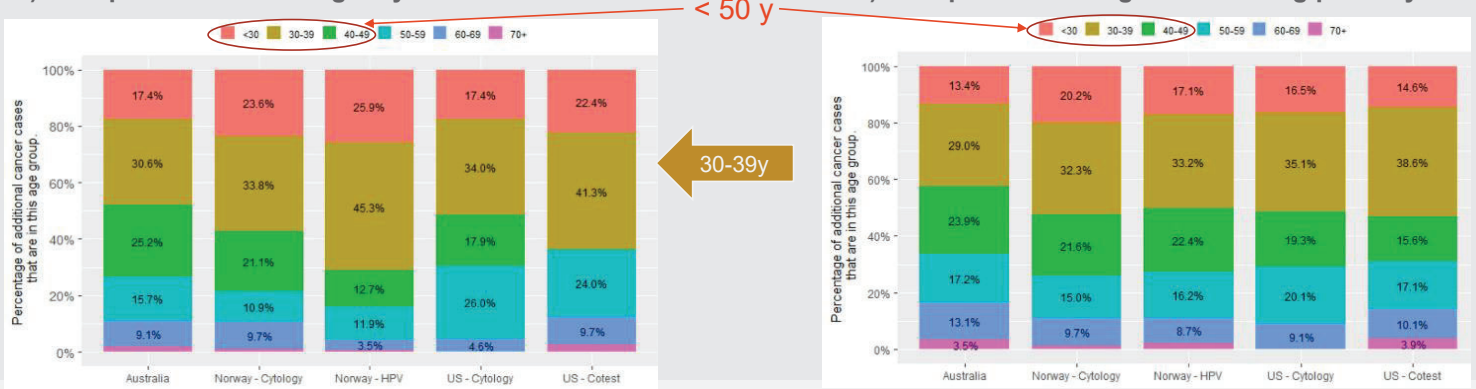
Which groups are most affected?

- Additional cancers mostly (64-84%) in women aged less than 50, especially 30-39y (29-45% of all additional cases)

Proportion of additional cancers in age group

a) disruptions to screening only

b) disruptions to along full screening pathway



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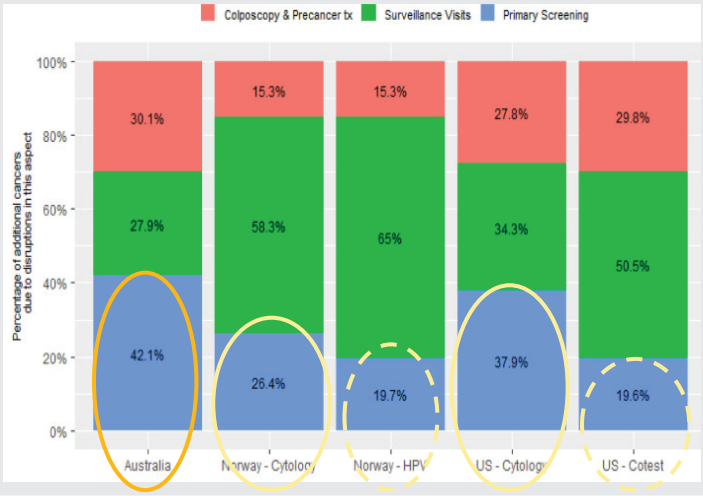
Which groups are most affected?

- ~15-30% additional cancers due to disruptions to colposcopy and precancer treatment
- % due to disruptions to primary screening and surveillance visits more variable – and generally larger
  - Disruptions to primary screening are more critical when the last test women who missed screening had was cytology (Nor, USA, Au) or when women are overdue (Au)
  - Surveillance visits more critical for HPV-based compared to cytology-based screening

Proportion of additional cancers due to disruption of aspects of the clinical pathway



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Smith *et al*, Prev Med 2021; 151:106623
Values for surveillance, colposcopy & tx disruptions were not available from the Netherlands model

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How does this help?

- **Which test**: benefits of maintaining targeted services
- **Age**:
  - Accessible *(screening history may not be)*
  - Enables better targeting and content design for digital/ media campaigns
- **Overdue/ underscreened**[1]

Content design	Visual content: faces included, setting, colours Language style
Social/ media channels	Focus on media outlets and social channels that appeal to younger women, rather than 50+
Priority languages for translation	Eg Australian cervical campaign prioritised Vietnamese over Greek (used for bowel, breast campaigns; older population). Mandarin & Arabic used across all three.

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1. Burger *et al*, Health impacts of COVID-19 disruptions to primary cervical screening by time since last screen: A model-based analysis for current and future disruptions (submitted July 2022)

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Conclusions

- Disruptions to cervical screening appear to have been relatively small in Australia
- **But** – those who missed screening were already overdue

Key groups to focus on catching up
- Overdue/ never-screened
- Those under surveillance/ recommended to attend colposcopy or treatment
- Women in their 30s and 40s

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The challenge of getting screening rates back on track: the role of the GP

Prof Deborah Bateson

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Women's Health Week

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GPs: playing a pivotal role in cervical screening

- Recognising which patients are more likely to be under-screened in your practice
- Using the National Cancer Screening Register Healthcare Provider Portal
- Considering a practice audit to identify those who:
  - have fallen behind/never been screened
    - are overdue for follow-up/referral
- Continuing opportunistic screening
  - adding in self-collection as a patient choice
    - using the NCSP practitioner Toolkit

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Which patients are more likely to be under-screened?

- Currently approx. 62% participation in NCSP
- Under-screened groups:
  - Aboriginal and/or Torres Strait Islander
  - CALD communities
  - LGBTIQ+
  - Living with disability
  - History of sexual trauma
  - Previous negative screening experiences
  - Low SE background; homeless people

72% of those diagnosed with invasive cervical cancer under-screened or never screened

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www.aihw.gov.au/reports/cancer-screening/

Polling Question 1:

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Using the NCSR Healthcare Provider Portal

NATIONAL CANCER SCREENING REGISTER

- Access a patient's cervical and bowel screening results and histories online in real-time
  - view next screening action
- Submit program forms electronically
- Manage patients details and preferences
- Order bowel screening tests

Currently registered:
14,500 providers and delegates
1269 practices

Access the portal via:
- PRODA
- Integrated clinical software (currently MedicalDirector Clinical, Best Practice Premier, Communicare)

Quick tip: check out your own screening history!

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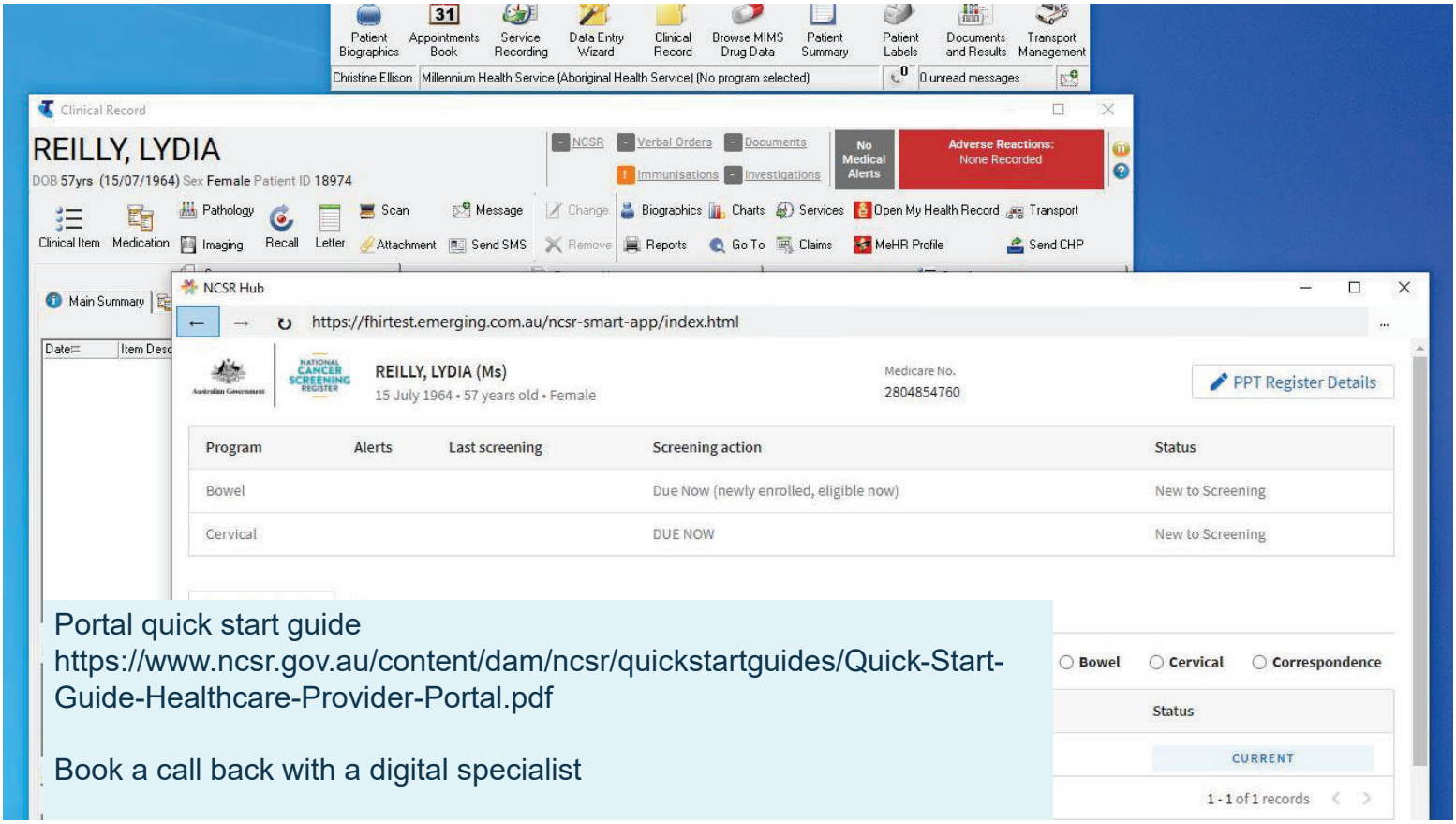
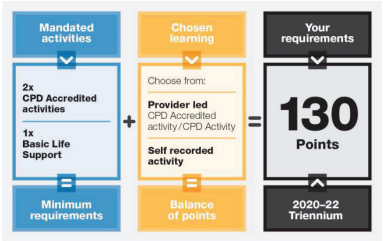


Portal quick start guide
https://www.ncsr.gov.au/content/dam/ncsr/quickstartguides/Quick-Start-Guide-Healthcare-Provider-Portal.pdf

Book a call back with a digital specialist

Consider a clinical audit



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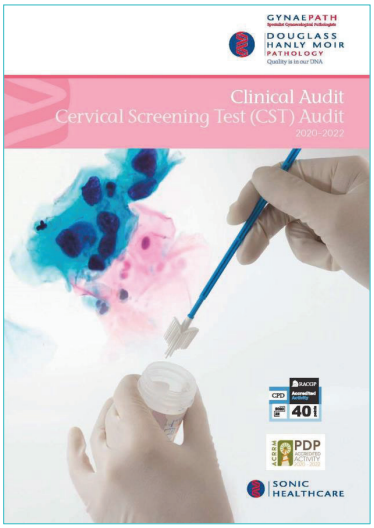
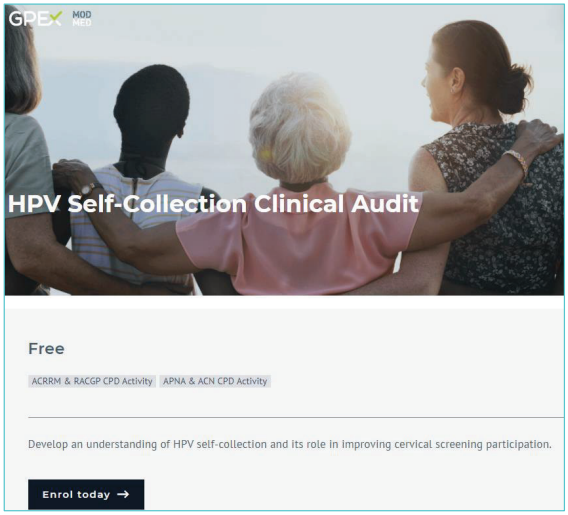
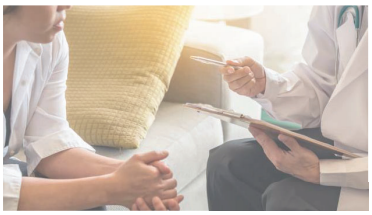
Royal Australian College *of* General Practitioners







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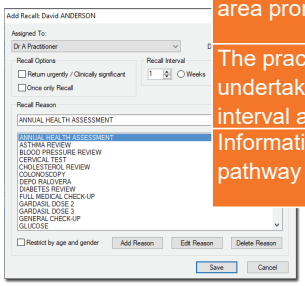
Consider a practice audit and quality improvement activity

Reception staff routinely update preferred contact details for all patients.	☐ Definitely ☐ Room for improvement ☐ Not at all
Your practice has an environment that is culturally safe and welcoming to diverse community groups.	☐ Definitely ☐ Room for improvement ☐ Not at all
GPs and Practice Nurses in your practice are registered to use the NCSR Health Care Provider Portal.	☐ Definitely ☐ Room for improvement ☐ Not at all
The practice accurately identifies underscreened patients using data extraction tools.	☐ Definitely ☐ Room for improvement ☐ Not at all
The practice routinely enters cervical screening results in the dedicated area of the patient's record.	☐ Definitely ☐ Room for improvement ☐ Not at all
The practice has a recall system in place for the follow up of positive and negative cervical screening results; to ensure all abnormal results are communicated to the patient.	☐ Definitely ☐ Room for improvement ☐ Not at all
There are posters and pamphlets displayed in the waiting area promoting cervical screening.	☐ Definitely ☐ Room for improvement ☐ Not at all
The practice proactively identifies patients who have not undertaken cervical screening within the recommended interval and invites them to participate.	☐ Definitely ☐ Room for improvement ☐ Not at all
Information promoting the alternative self-collection pathway is available.	☐ Definitely ☐ Room for improvement ☐ Not at all



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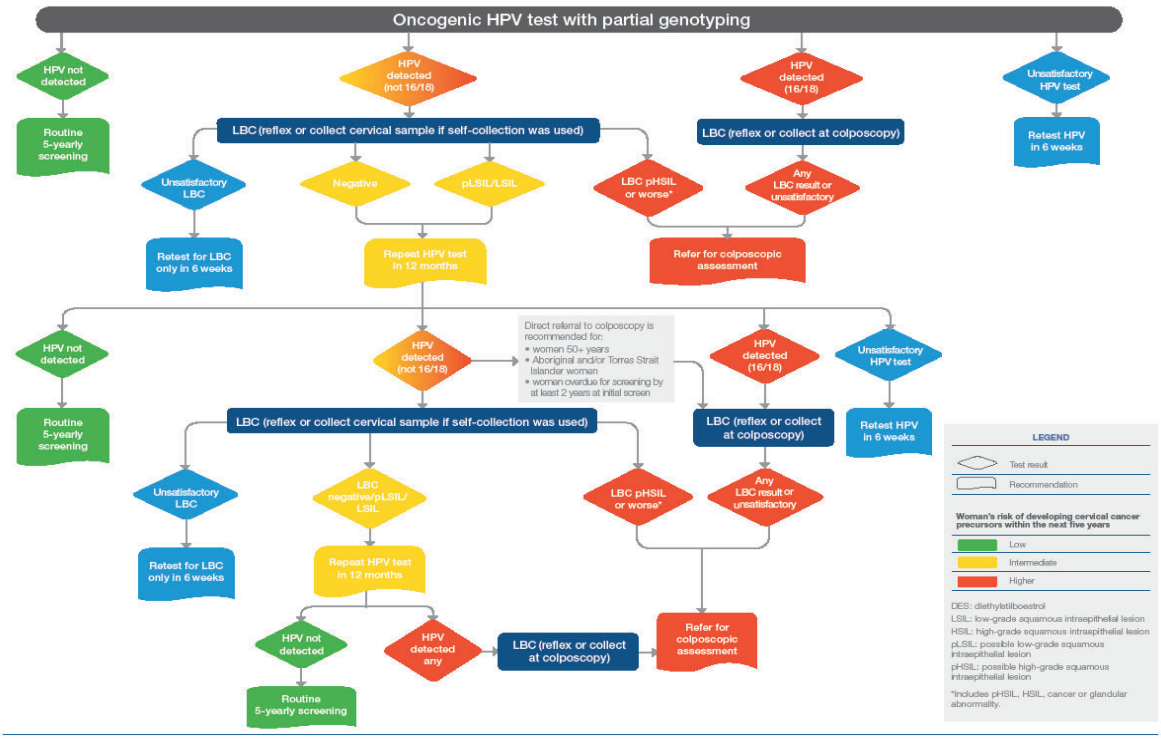
CERVICAL SCREENING PATHWAY (CLINICIAN COLLECTED OR SELF-COLLECTED)



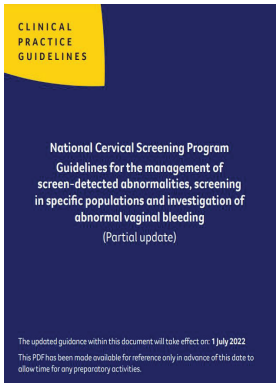
Suggested citation: Cancer Council Australia Cervical Cancer Screening Working Party. Clinical pathway: Cervical screening pathway. National Cervical Screening Program: Guidelines for the management of screen detected abnormalities, screening in specific populations and investigation of abnormal vaginal bleeding. CCA 2016. Accessible from http://wiki.cancer.org.au/australia/Guidelines:Cervical_cancer/Screening. Updated Dec 2020.

NATIONAL CERVICAL SCREENING PROGRAM

Australian Government Department of Health

Cancer Council

Take a look at the updated Clinical Guidelines



www.cancer.org.au/clinical-guidelines/cervical-cancer-screening

Polling Question 2:

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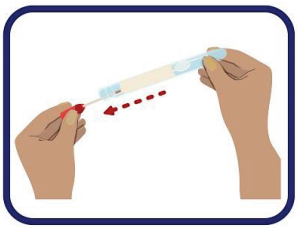
Opportunistically offering screening: self-collection makes it easy!

- Have a swab on hand at all times!
  - if not today…next visit
- While preferable in a clinic, self-collection can potentially occur in any setting you believe appropriate
  - consider setting up telehealth pathways
    - responsibility for ensuring correct sampling devices, informing patients of their results and any follow-up
- You can also collect the vaginal sample using a self-collection swab for patients with difficulties (e.g. low vision, tremor) (still classified as self-collection on pathology request form)



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Working with patients who face specific barriers

Check out the NCSP Healthcare Provider Toolkit

https://www.health.gov.au/initiatives-and-programs/ncsp-healthcare-provider-toolkit

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The emerging global strategy

VISION: A World Free of Cervical Cancer

THRESHOLD: < 4 cases of cervical cancer per 100,000 woman-years

2030 CONTROL TARGETS

90%	70%	90%
of girls fully vaccinated with HPV vaccine by 15 years of age	of women screened with an HPV test at 35 and 45 years of age	of women identified with cervical disease receive treatment for precancerous lesions or invasive cancer

SDG 2030: Target 3.4 – 30% reduction in mortality from cervical cancer

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cervical cancer: a disease of inequity

Australia is on track to be the first country to eliminate cervical cancer – GPs play a pivotal role!!

Self-collection: Accuracy and Laboratory Requirements RACGP Webinar 23 Aug 2022

Professor Marion Saville AM, Executive Director, Australian Centre for the Prevention of Cervical Cancer

Australian Centre for the Prevention of Cervical Cancer | VCS Pathology | Population Health | Digital Health | compass | NHMRC Centre of Research Excellence in Cervical Cancer Control | ROSE

Corp-Mkt-Pub 154V2

Self-collection for cervical screening

What is the evidence?

What is the relative accuracy of self-collection, for detection of CIN2+, compared with clinician collected samples?

a) Somewhat less accurate, but better than no screening
b) Much less accurate and should be discouraged
c) Broadly equivalent
d) More accurate

Evidence for the accuracy of self-collection 2014

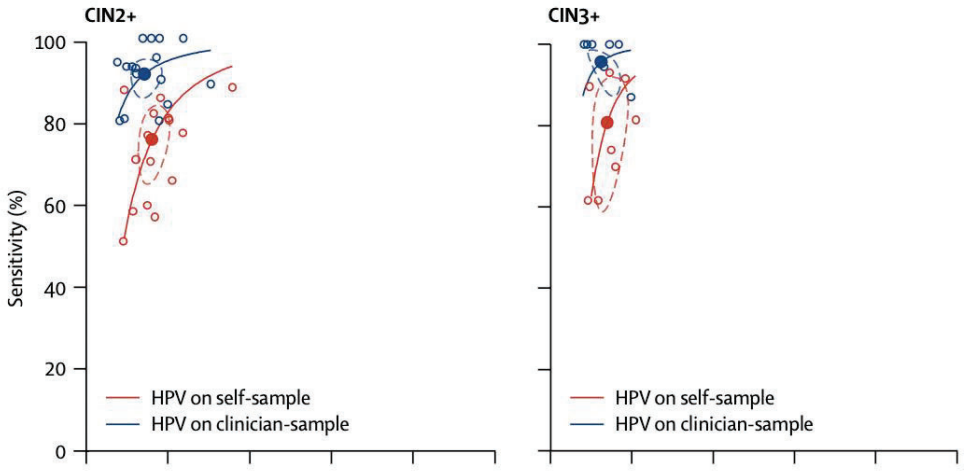

Figure 2: **The accuracy in primary cervical cancer screening, by collection method and grade of cervical intraepithelial neoplasia**

Arbyn et al thelancet.com/oncology Vol15 February2014

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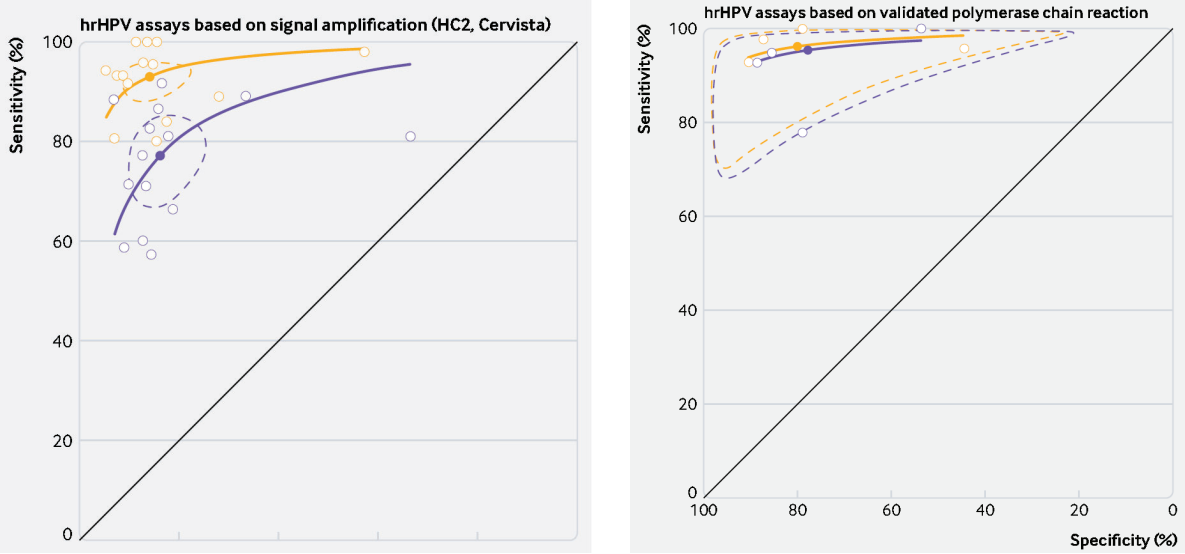
Meta-analysis of the accuracy of HPV assays in the prediction of CIN2+



Arbyn M. et al.
BMJ. 2018 Dec 5;363:k4823.
doi: 10.1136/bmj.k4823

Self-collection is accurate

2018 Detecting cervical precancer and reaching underscreened women by using HPV testing on self samples: updated meta-analyses
Arbyn et al, BMJ, 2018

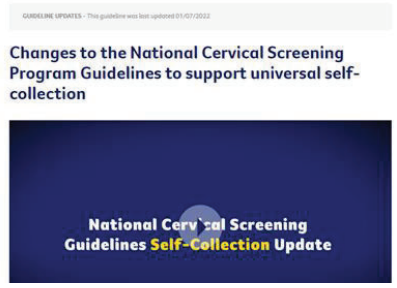
2020 Analytical performance of HPV assays on vaginal self-collected vs practitioner-collected cervical samples: the SCoPE study
Saville et all, Journal of Clinical Virology, 2020

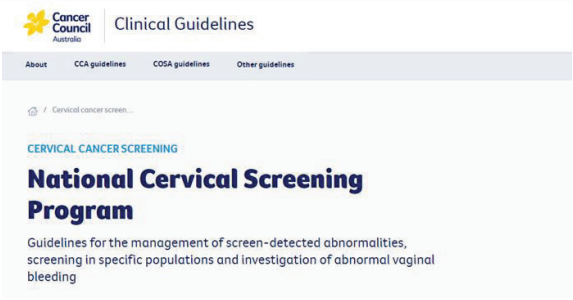
- For HPV assays based on polymerase chain reaction (PCR), testing on self samples was **similarly accurate** as on clinician samples.

<u>A valuable option to increase opportunities for engagement</u>

Updated NCSP clinical guidelines

- **ALL** women and people with a cervix, aged 25-74, who have ever had sexual contact, can choose to screen using either:
  - a clinician-collected cervical sample
  - a self-collected vaginal sample
- Whenever an HPV test is needed, self-collection should be an option
- Cervical screening will continue to be made available in primary care
- This change brings greater potential to address & reduce many known barriers





https://www.cancer.org.au/clinical-guidelines/cervical-cancer-screening

Laboratory Requirements

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Safety controls for HPV tests

Assay failure control

- Contaminants, such as blood, microbial infection or lubricant, may interfere with the PCR reaction and therefore the ability of an assay to detect HPV.
- Ensures that an inhibited PCR rection is not reported as a ‘negative’ result.

Cellularity control

- Ensures enough cellular material is present in the sample
- A self-collected swab with insufficient or absent cellular material is reported as unsatisfactory, rather than ‘negative’

Laboratory Processing

- Self-collection devices, methods, and handling instructions vary between labs
- Talk to your local pathology lab to:
  - find out if they process self-collected samples
  - ensure that you have the correct consumables and instructions for transportation
  - confirm that if they don’t process self-collected samples, they will send samples on to a lab that does.

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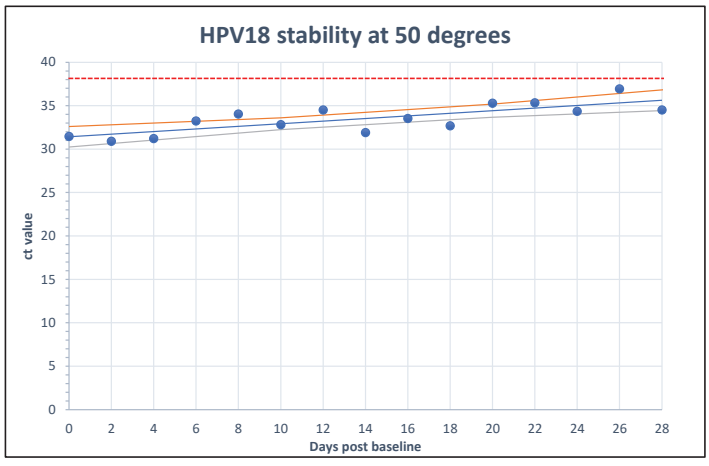
Laboratory Processing

- At VCS Pathology, we use the Copan FLOQSwab 552C or 552C.80 for collection and transport
- Self-collected samples have good stability and do not need refrigeration (stable up to 50ºC and 100% humidity)
- Self-collected samples have been validated by our lab as remaining stable for **28 days** from date of collection – **label the sample with the date of collection**

Validated swab stability using the cobas HPV test

- Stability Studies @ VCS Pathology
  - Copan FLOQSwabs loaded with low amounts (3 x LOD) of HPV
  - Placed at 50˚C (>90% RH) for 28 days
  - Two swabs removed every two days
    - Each dot is the mean of two swabs
    - Orange and grey are 95% CI limits
    - Red dashed line is the threshold of a positive result (no swabs gave a negative result)



Laboratory Processing

- There also are now two commercial HPV assays available for self-collection under the NCSP – one through BD and one through Roche.
- The Roche protocol requires the swab to be re-suspended into a ThinPrep vial at time of collection – **make sure you clearly indicate if the sample has been self-collected on the pathology request form**

Make sure you check with your lab!

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