

Improving Cervical Cancer Elimination in Canada with Genotyping and Self-sampling



Presenter: Federica Inturrisi, PhD

- Epidemiologist
MSF Foundation (Doctors Without Borders)
- Affiliate Board Member
International Papillomavirus Society



Presenter: Teresa Norris

- President and CEO
HPV Global Action
- President
Coalition Priorité Cancer au Québec/ Quebec
Cancer Coalition



Moderator: Nancy Durand MDCM, FRCSC

- Associate Professor
Department of Obstetrics and Gynaecology
University of Toronto

This educational program is made possible through the support of **Waters™ Advanced Diagnostics (Formerly BD Diagnostic Solutions)**.
The opinions expressed in this webinar are those of the presenter and do not necessarily reflect the views of CIDC, HPV Global Action or their partners

Moderator



Nancy Durand MDCM, FRCSC

Associate Professor
Department of Obstetrics and Gynaecology
University of Toronto

Webinar Objectives

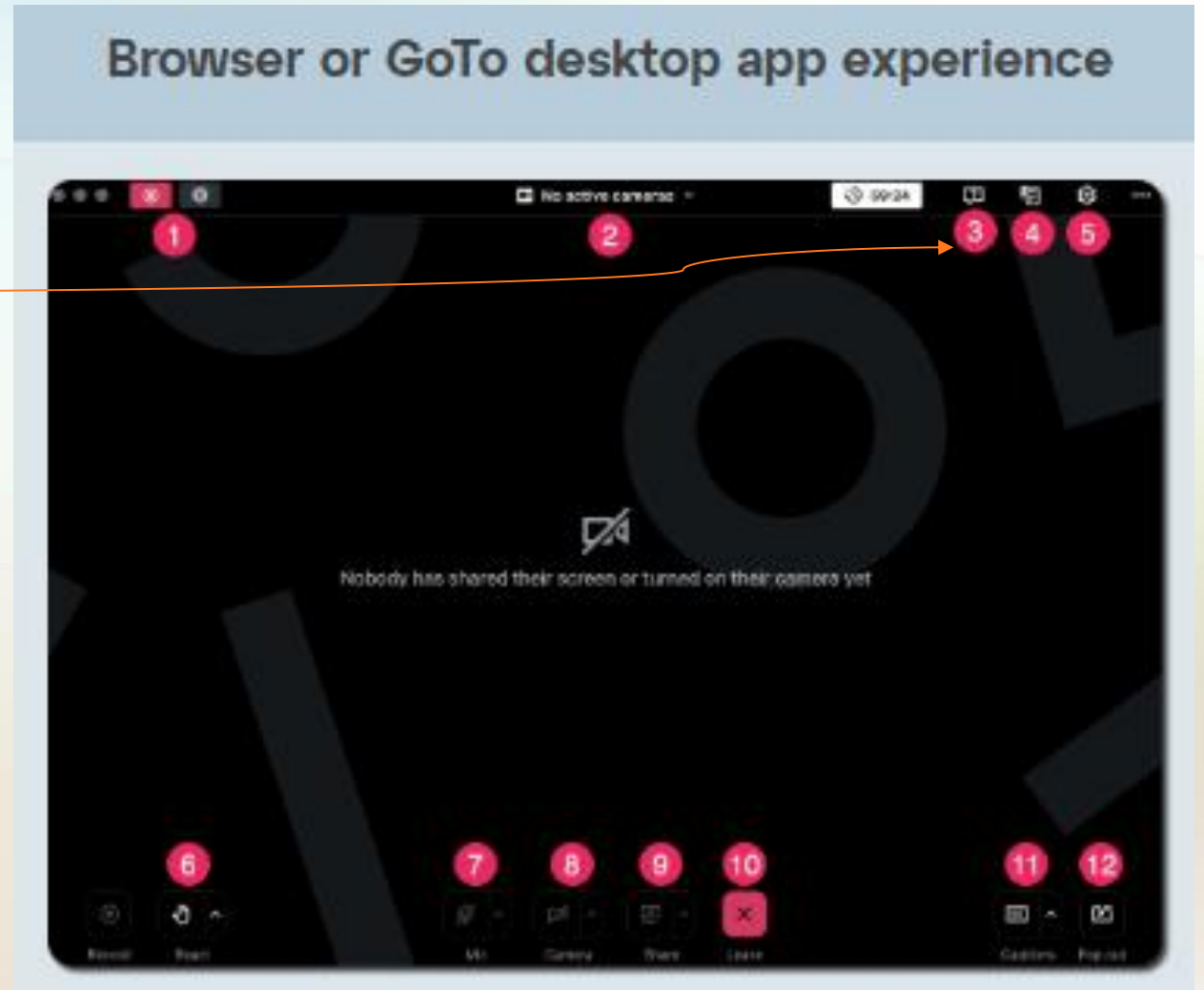
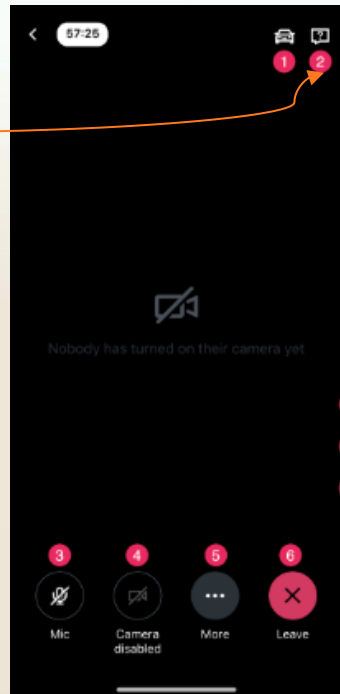
- Understand the clinical value of HPV extended genotyping in improving risk stratification and patient management beyond HPV 16/18.
- Evaluate the role of self-sampling in increasing screening participation among under- and never-screened populations across Canada.
- Apply practical communication approaches that support behaviour change and increase patient confidence in HPV testing and self-collection.

Administrative Information

- **Sound:** All participants have joined in “listen-only mode” and will hear the audio for today’s webinar via computer speakers
- **Question & Answer Period:** ask a question at any time
Questions will be answered at the end of the presentation

On a **computer**, submit your text question using the Questions Pane after clicking the icon (#3)

NOTE: On a **mobile device**, tap on the “?” (#2) to submit a question on the Questions Pane



Note: A recording of the presentation will be made available at www.CIDCgroup.org and hpvglobalaction.org

Evaluation

Complete the Evaluation Survey at:

<https://forms.gle/STSSuqPC7pksLvF86>

Completion of survey is requested to receive a certificate of participation

– all registered participants will receive an email with this link

Slides and Video Recording

The webinar **Slides and Recording** will be archived at:

hpvglobalaction.org

and

www.CIDCgroup.org

Presenter



Federica Inturrisi, PhD

- Epidemiologist
MSF Foundation (Doctors Without Borders)
- Affiliate Board Member
International Papillomavirus Society

Improving Cervical Cancer Elimination in Canada with Genotyping and Self-Sampling

Extended genotyping & self-sampling



LA FONDATION

Federica Inturrisi, PhD

Epidemiologist

HPV and Cervical Cancer Advisor

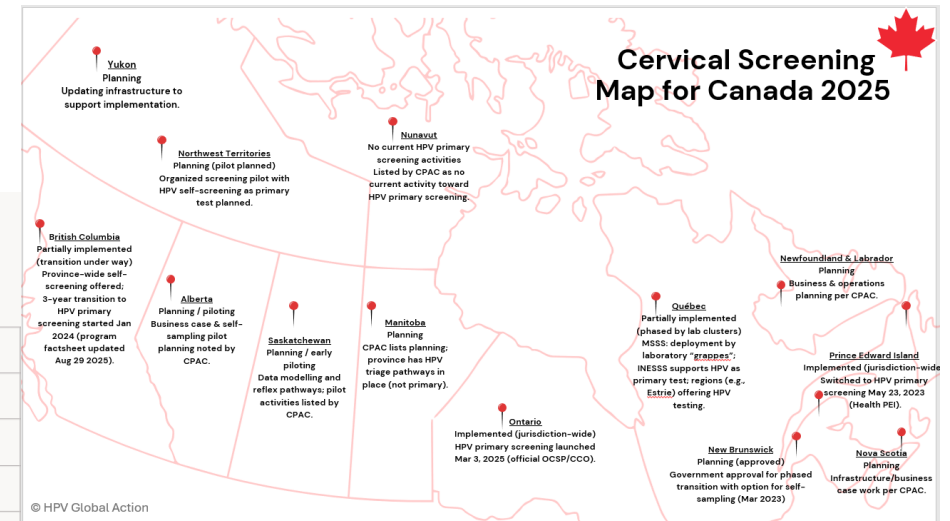
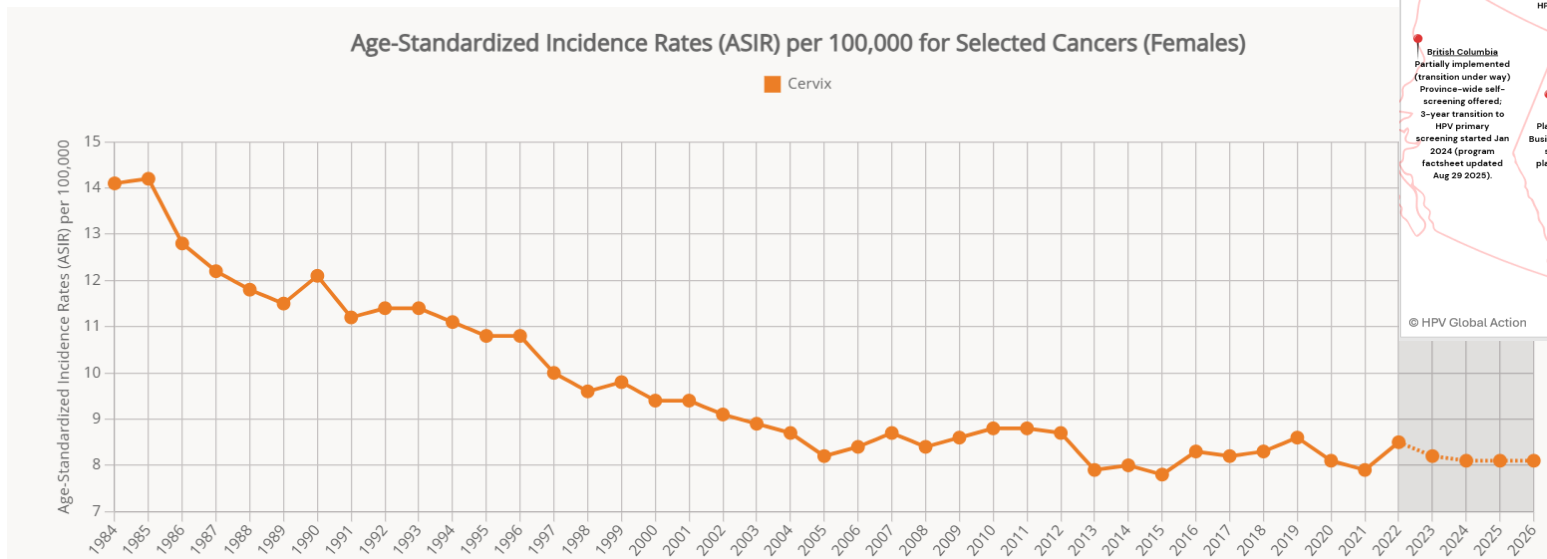
Doctors Without Borders (MSF Foundation)

Disclaimer

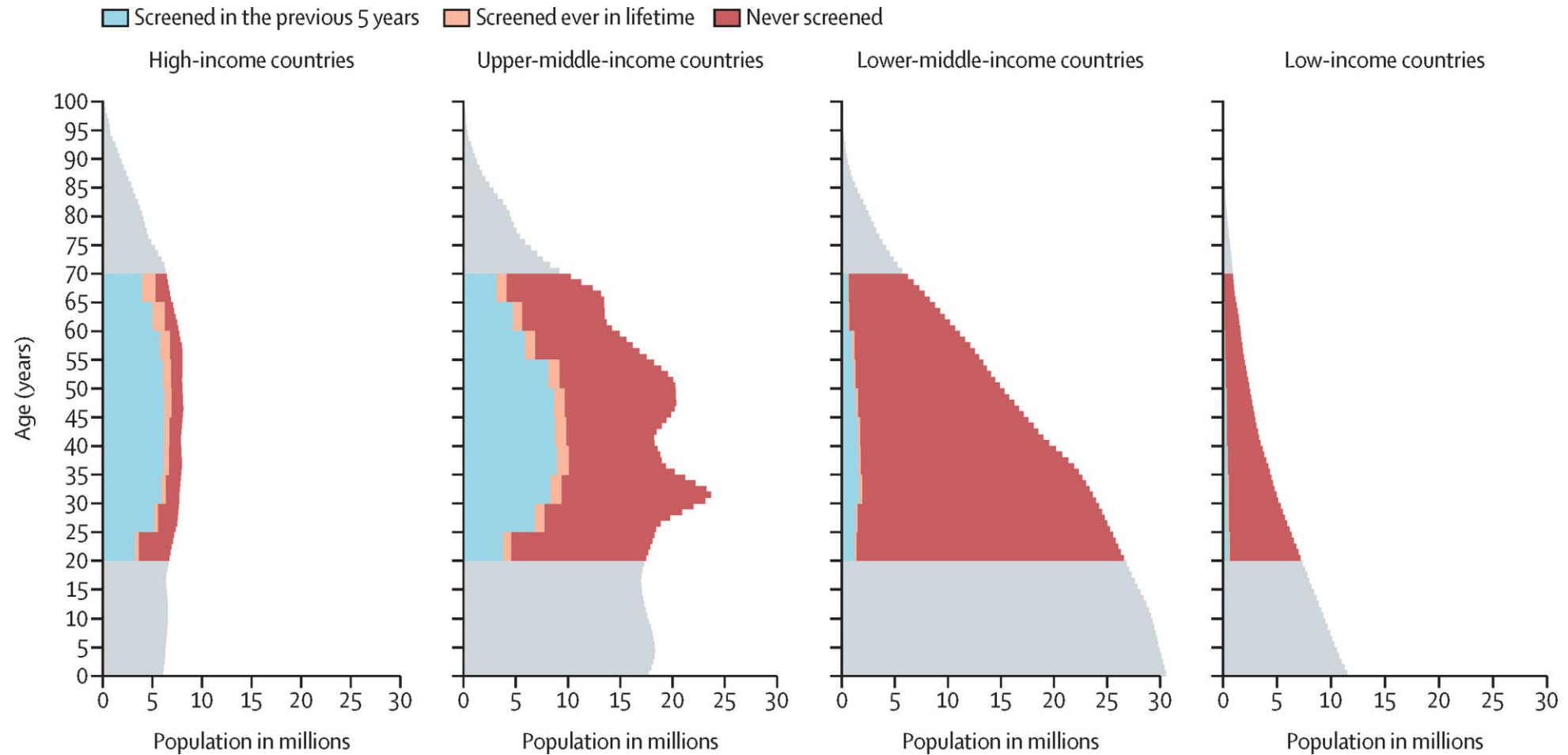
- No conflicts of interest to declare

Cervical cancer in Canada: decrease-plateau-increase?

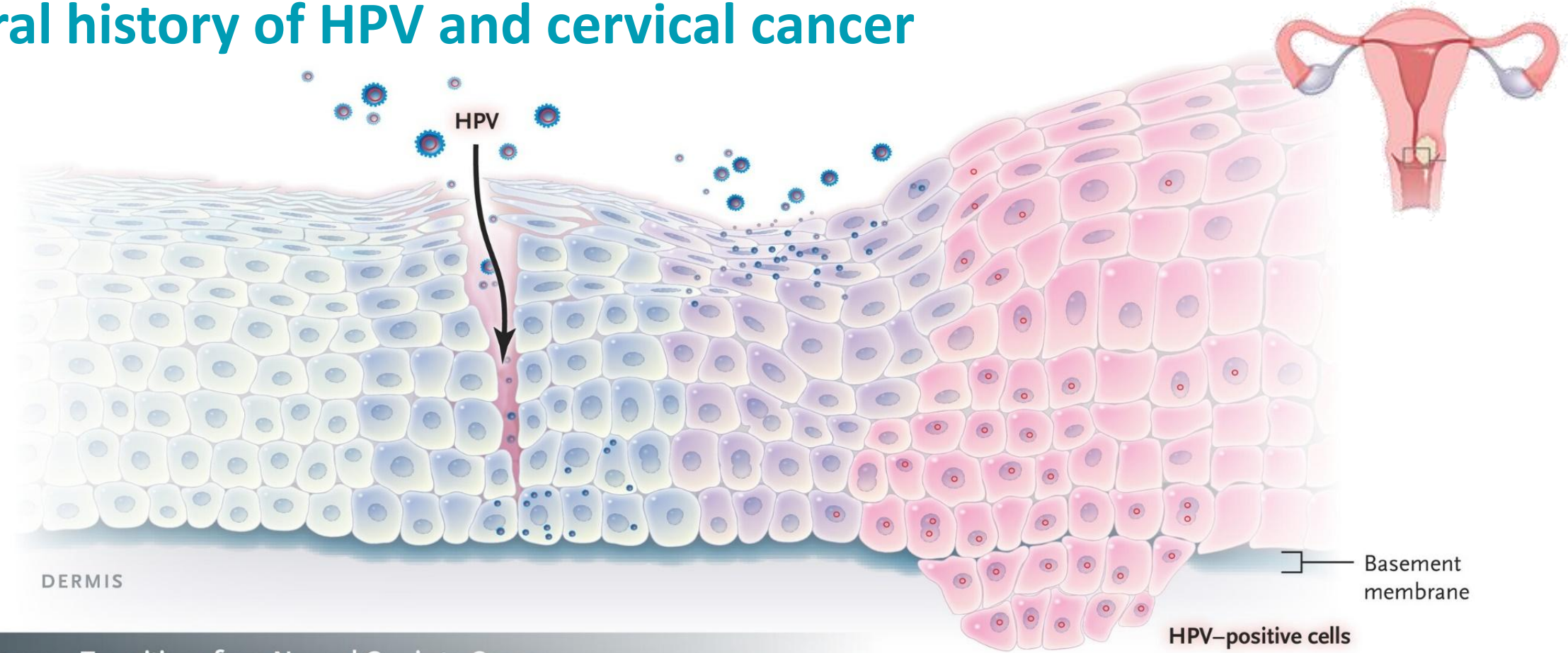
- Pap testing for over 60 years as primary screening method >> decreasing incidence until 2005
- Then unstable rates with increase in some years >> overall plateau since 2005
- Most rapidly increasing cancer as of 2023
- Ongoing shift from Pap testing to HPV testing



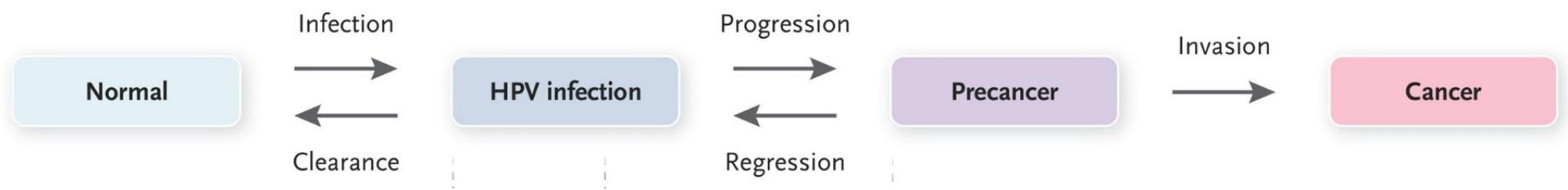
Never/under-screened women is a critical target



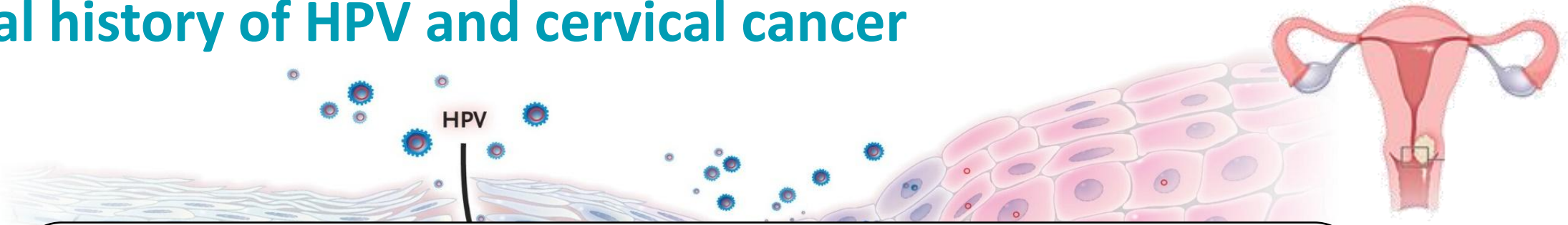
Natural history of HPV and cervical cancer



Necessary Transitions from Normal Cervix to Cancer



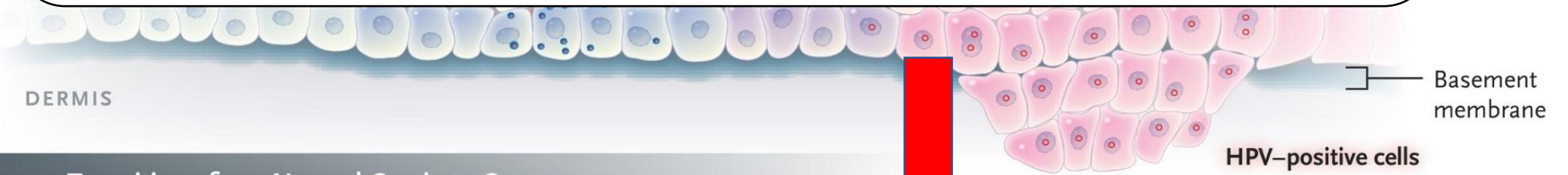
Natural history of HPV and cervical cancer



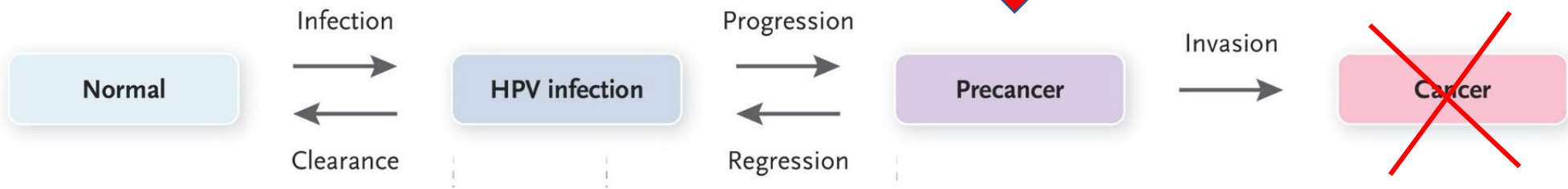
Cervical screening

Primary Objective: To find women with cervical neoplasia as “precancer” (while in situ) permitting treatment of the lesion and susceptible transformation zone

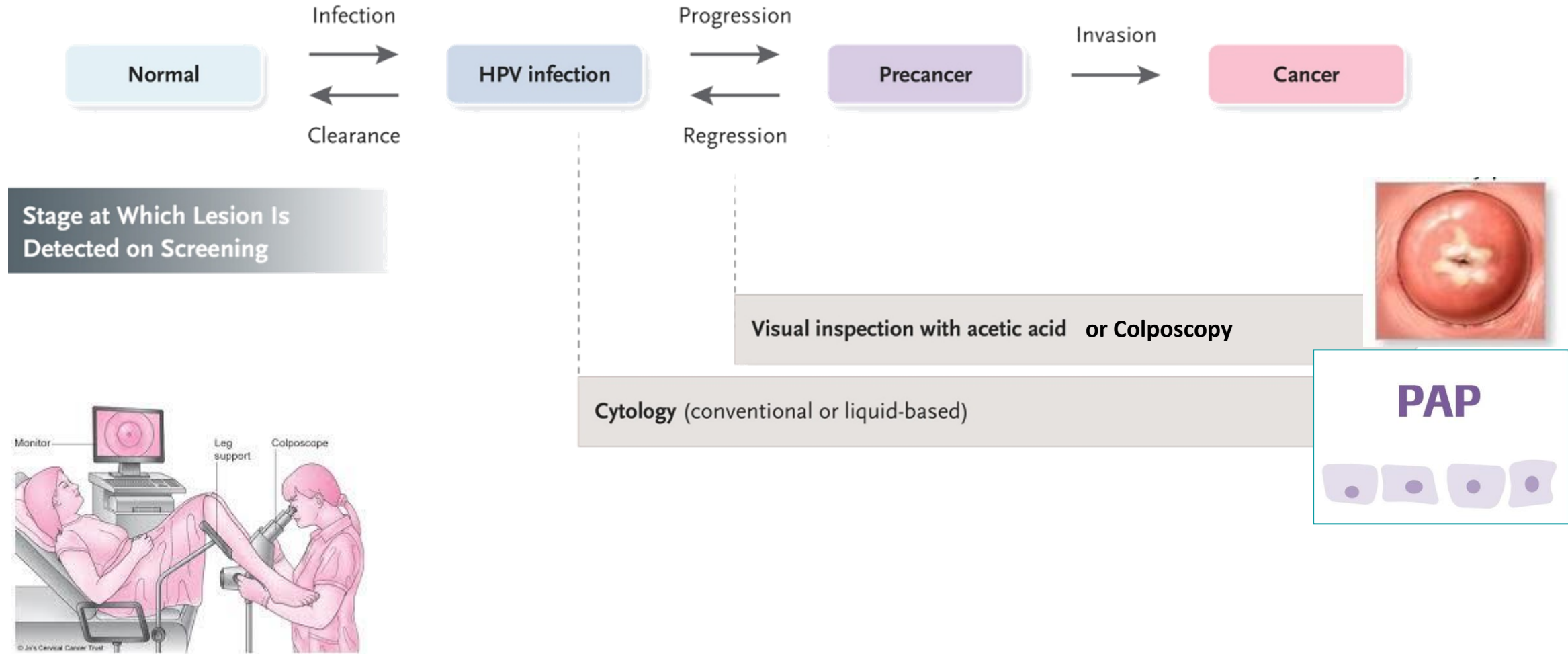
Secondary Objective: To minimize unnecessary interventions



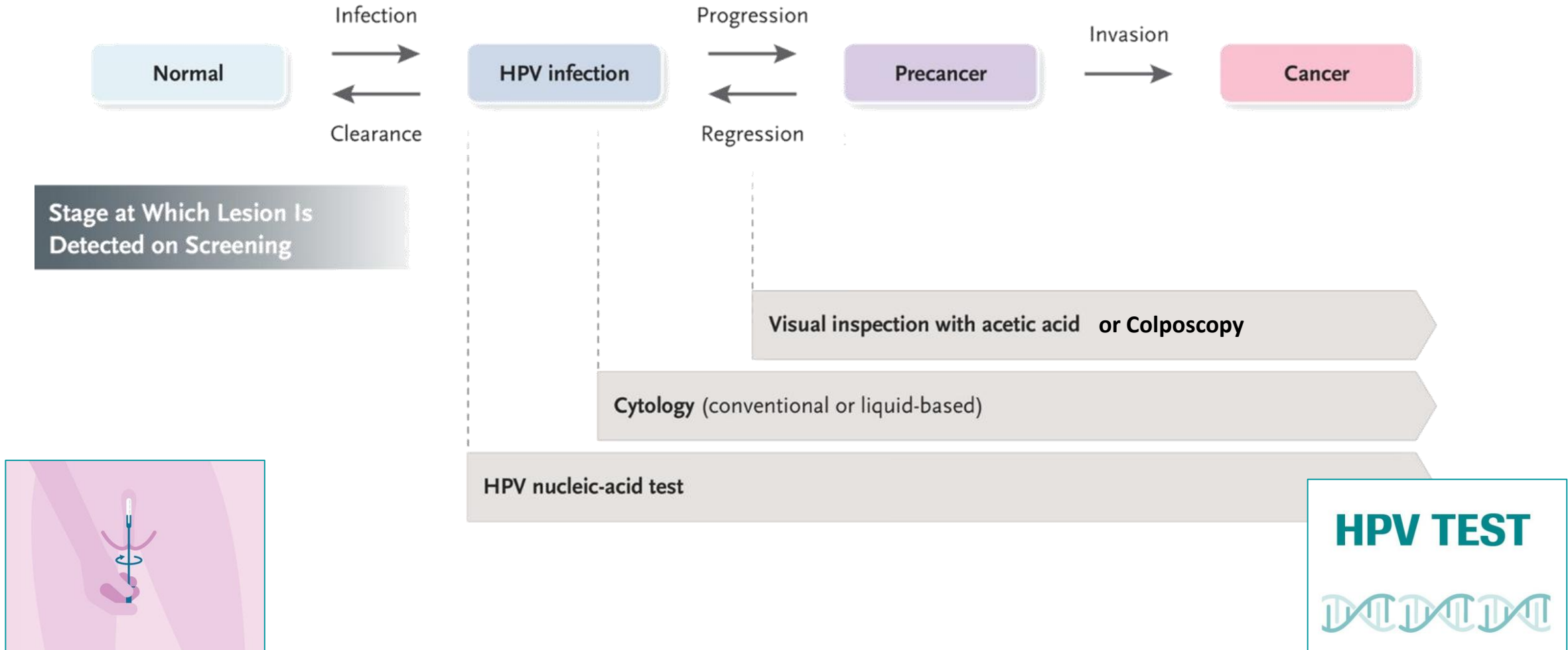
Necessary Transitions from Normal Cervix to Cancer



Cervical screening methods - visual



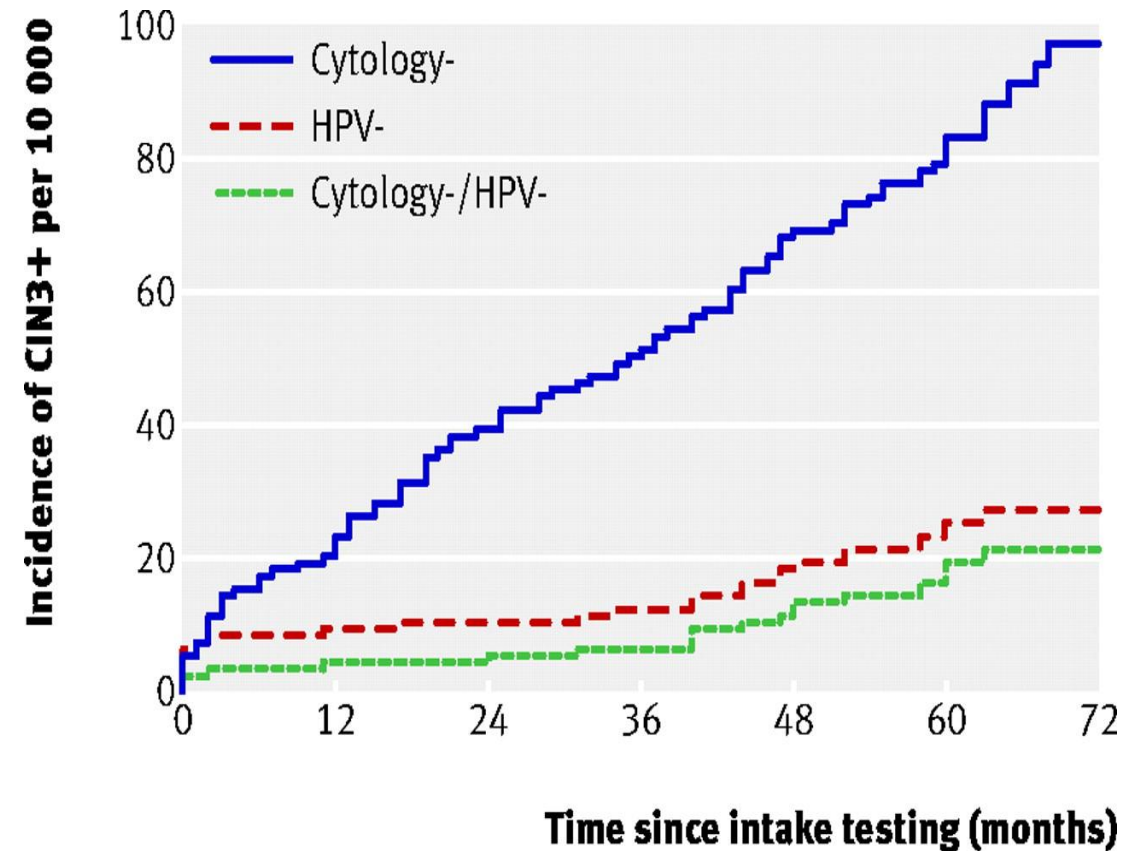
Cervical screening methods - molecular



Benefits of HPV testing: better protection

- Recommended by WHO in preference to cytology and visual inspection with acetic acid (VIA)
- Objective testing
- > 90% sensitivity for detecting cervical precancer/cancer
- A negative HPV result provides long-term reassurance

Only HPV positives require follow-up



HPV can be tested on viral DNA or mRNA

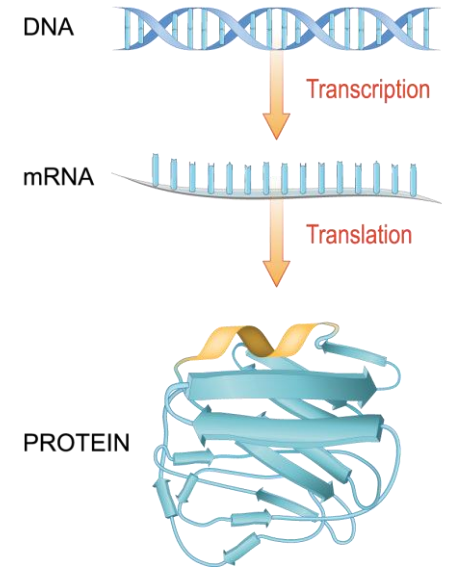
HPV testing detecting

- DNA primary nucleic acid: presence of HPV DNA
- mRNA for the expression of E6/E7 oncogenes: expression of oncoproteins

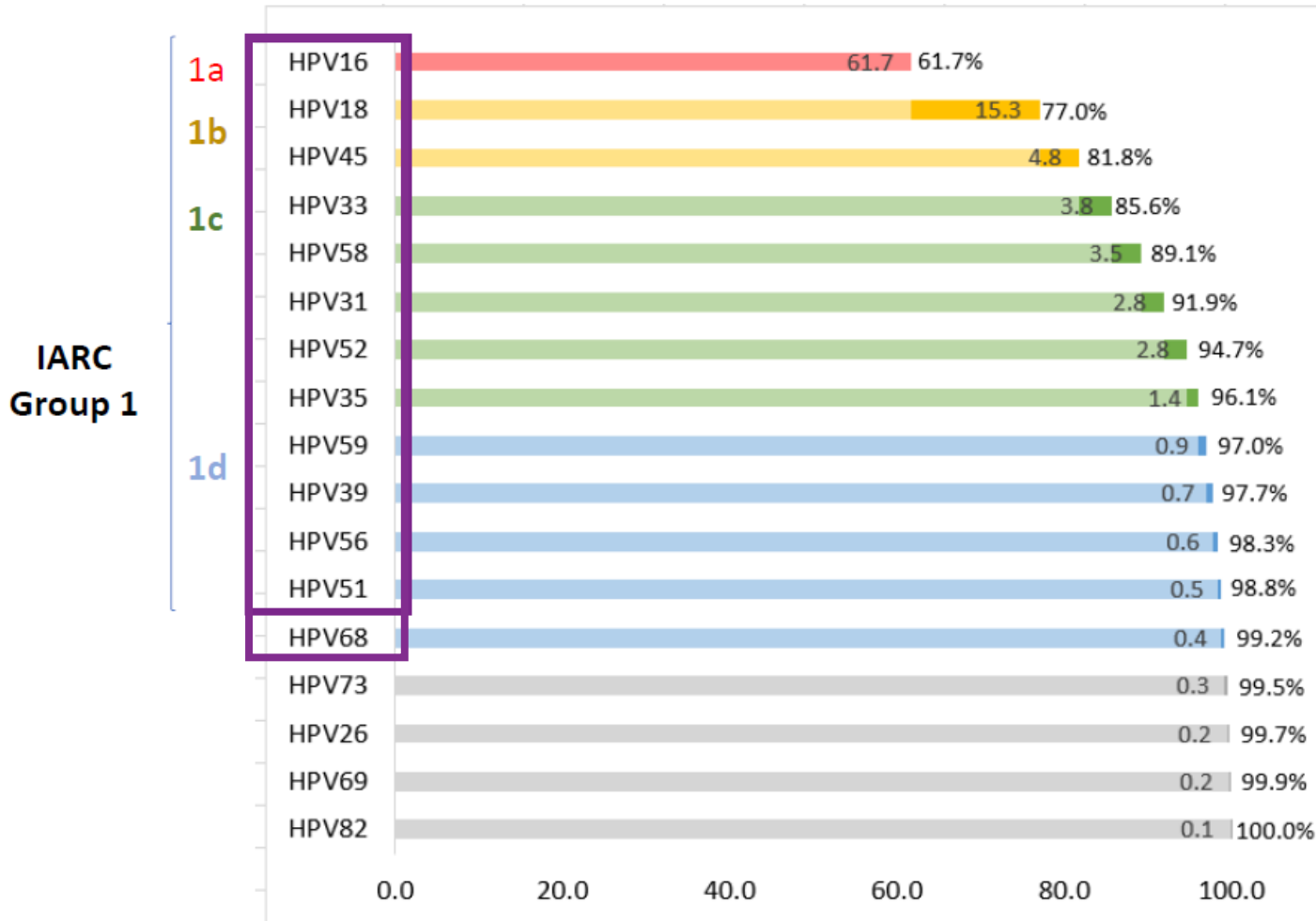
HPV mRNA testing found to have

- Similar overall accuracy as compared to HPV DNA testing on provider-collected samples
- Lower overall accuracy than HPV DNA testing on self-sampling

The WHO recommendation for primary screening is to use HPV DNA testing

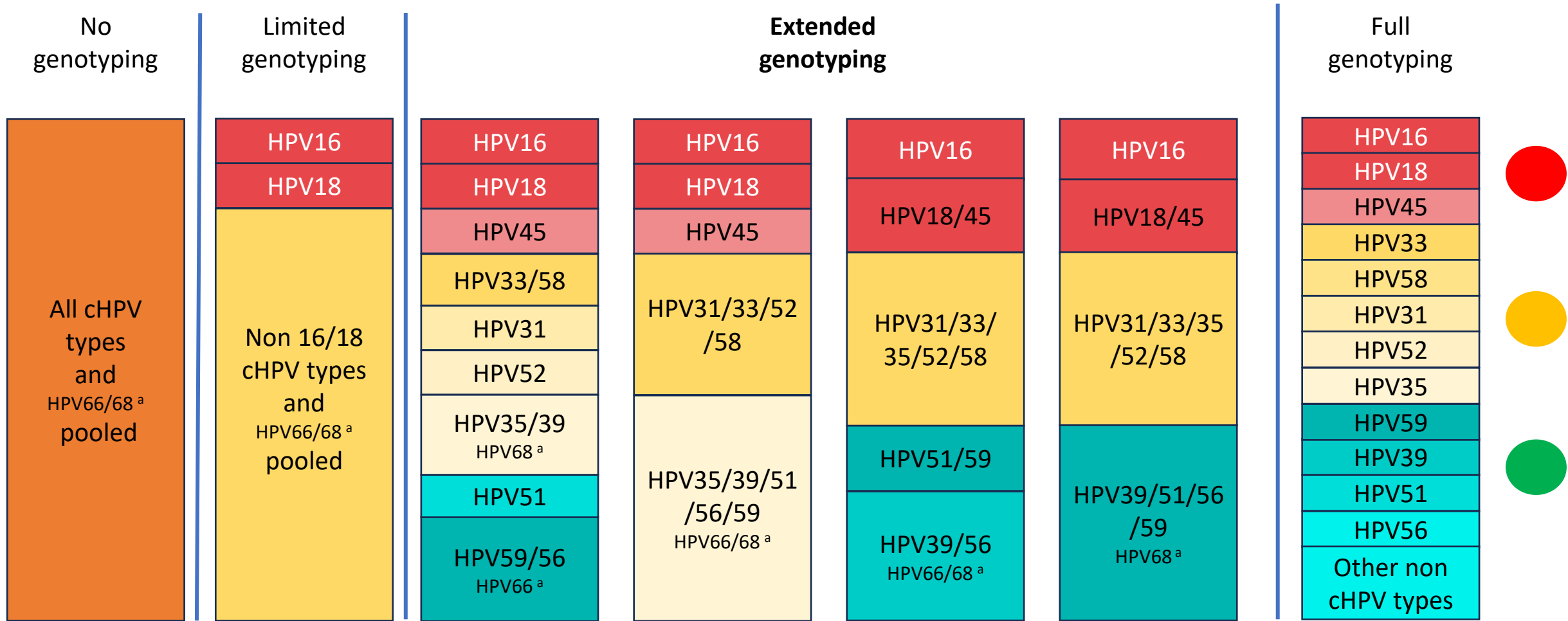


HPV type contribution in invasive cervical cancer (ICC)



- 1,174 studies
- 111,902 invasive cervical cancer cases
- **13 HPV types represent 99,2% of all cases**
- The first 12 are referred to as carcinogenic HPV (cHPV) types by WHO in four groups

HPV genotype configurations in different assays



^a HPV 68 (probably carcinogenic) and HPV 66 (possibly carcinogenic) are not part of the carcinogenic HPV types included in the WHO-TPPs 1a,1b,1c and 1d, but they are still included in some current HPV tests.

HPV type grouping following contribution to ICC

Extended genotyping:

Separately identifies HPV types in groups 1a and 1b and identifies different combinations of types in groups 1c and 1d

Risk-based grouping:

Grouping HPV types according to the cancer risks to allow for the stratification and prioritized management of HPV-positive women



HPV types by subgroup ^a	% HPV type prevalence in people with invasive cervical cancer	% HPV type prevalence in people with normal cervical cytology	Odds ratio ^b	% Attributable fraction ^c
Group 1a				
HPV16	55.8	2.6	47.6	62.4
Group 1b				
HPV18	14.3	1.0	15.7	15.3
HPV45	4.8	0.6	8.3	4.8
Group 1c				
HPV33	4.0	0.6	7.1	3.9
HPV58	4.0	0.8	5.1	3.7
HPV31	3.5	1.0	3.7	2.9
HPV52	3.2	1.0	3.3	2.6
HPV35	1.6	0.4	3.9	1.4
Group 1d				
HPV59	1.2	0.4	2.9	0.9
HPV39	1.3	0.6	2.0	0.8
HPV51	1.0	0.9	1.2	0.2
HPV56	0.8	0.6	1.3	0.2

HPV extended genotyping: Can it help clinical management?

- From the supporting evidence: YES.
- Let's think of a woman at a screening age. First time screening
- If she is positive to HPV16 or 18/45 she is VERY likely to develop disease
- If she is positive to HPV 31,33,35,52,58 she is likely to develop disease
- If she is positive to HPV 39,51,56, 59 she is less likely to develop disease
- Thus, **red** and **orange** groups should be the priority.
- The **green** group may be reassured.

2026 WHO recommendations just out

Monday 11th May 2026

Launch of the WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention: **use of HPV DNA genotyping**



WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention

Use of human papillomavirus (HPV) DNA genotyping

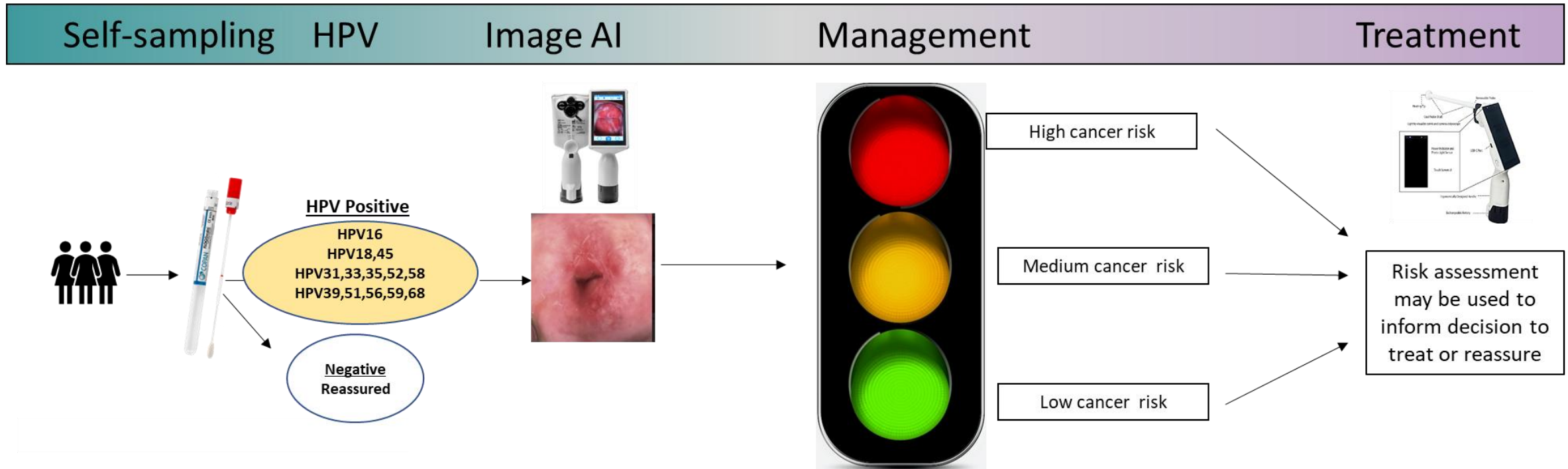


<https://iris.who.int/server/api/core/bitstreams/32214b73-0e95-4243-9e83-617948510dcd/content>

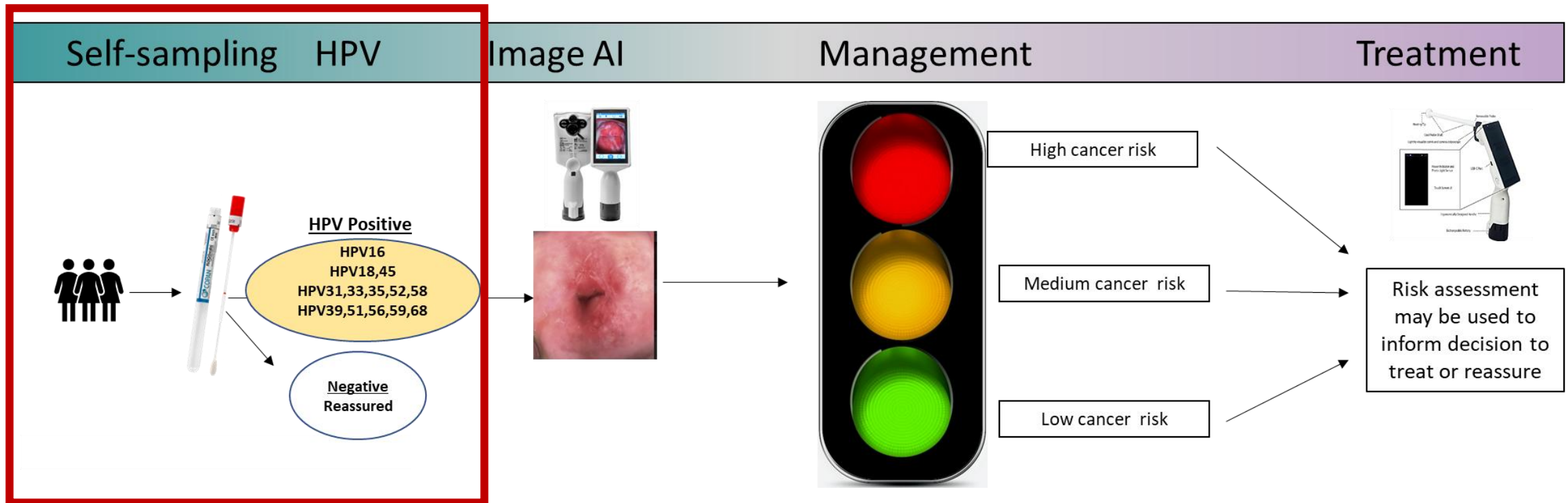
Risk stratification in the PAVE study

50,450 women screened in 9 countries.

Proposed screen-triage-treat strategy based on HPV extended genotyping and AI-aided visual evaluation of the cervix (AVE)

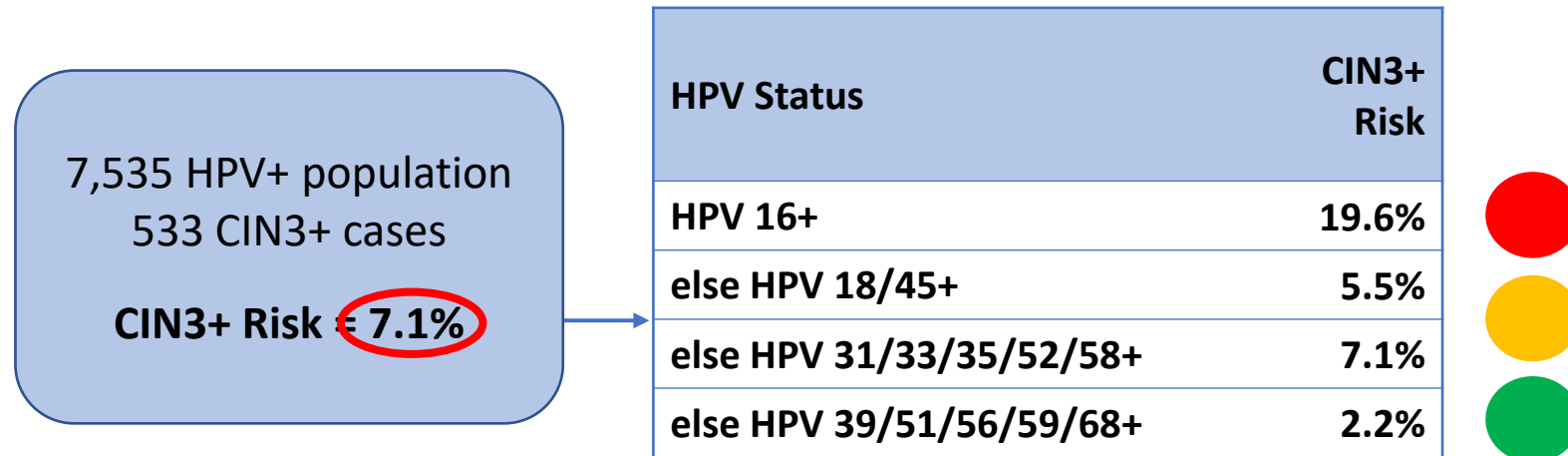


Risk stratification in the PAVE study



Risk stratification in the PAVE study (HPV only)

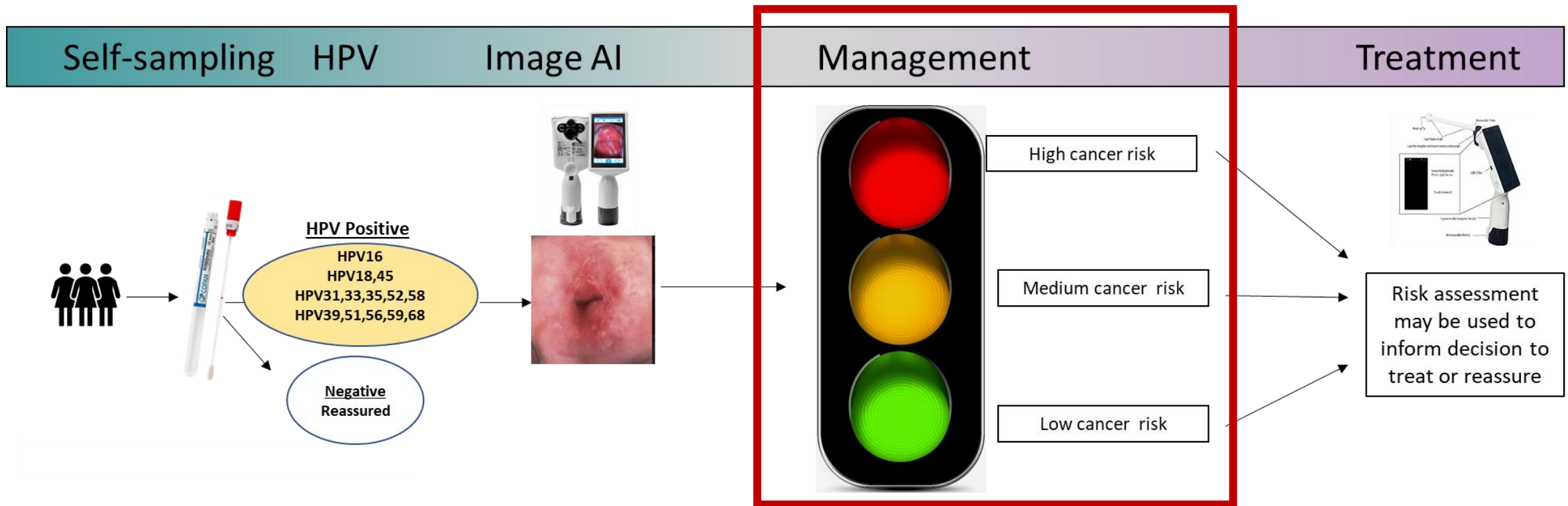
50,450 women screened in 9 countries.
28.5% overall HPV prevalence



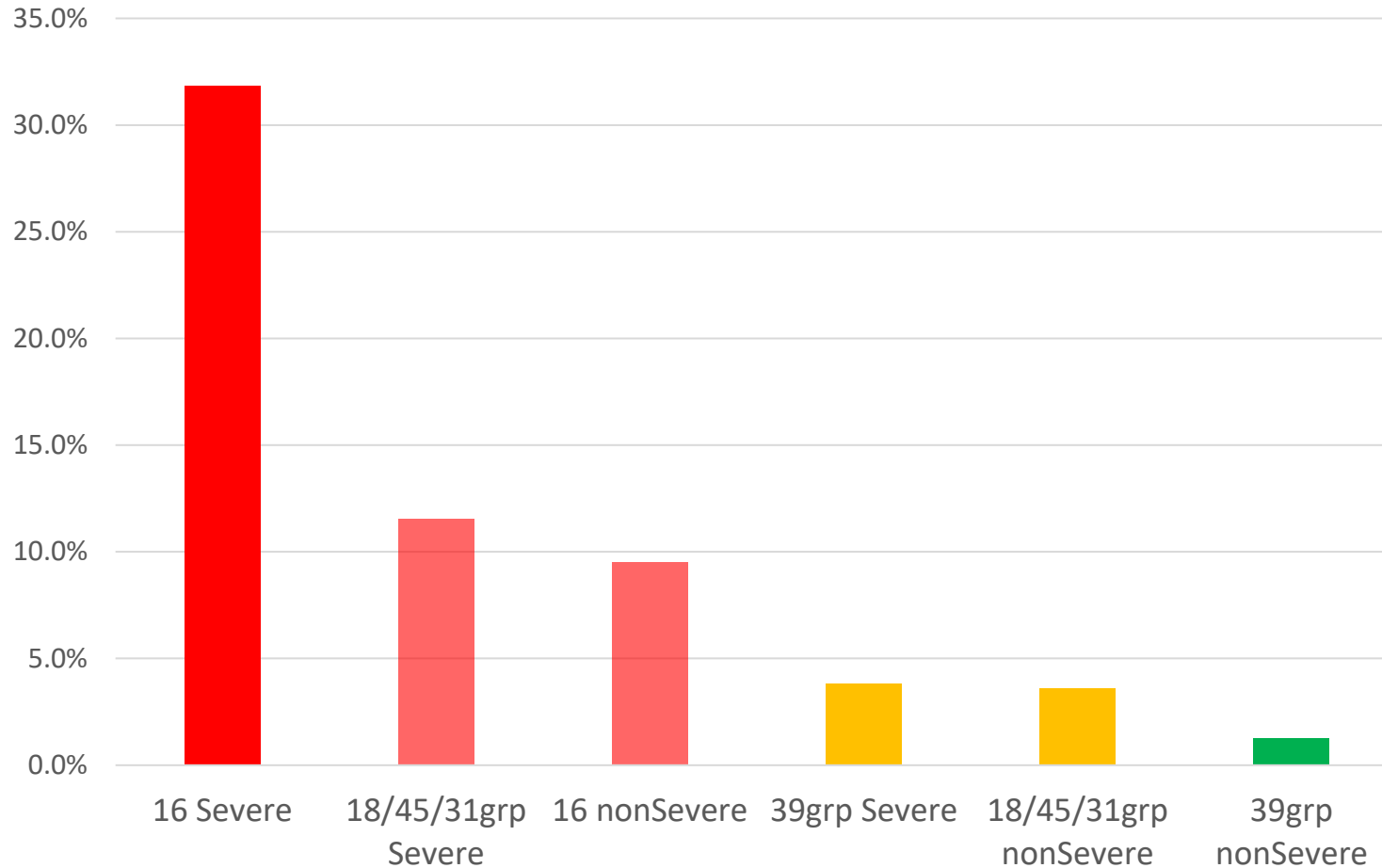
*HPV-negative individuals do not go through further testing so we cannot estimate their risk.
Assuming no cases among HPV-negatives, **precancer+ risk in “screening” population is 1.9%**

Risk stratification in the PAVE study

Based on combination of HPV and AVE



Risk stratification in the PAVE study (HPV+AVE)



CIN3+ yield within strata

Genotyping risk groups:

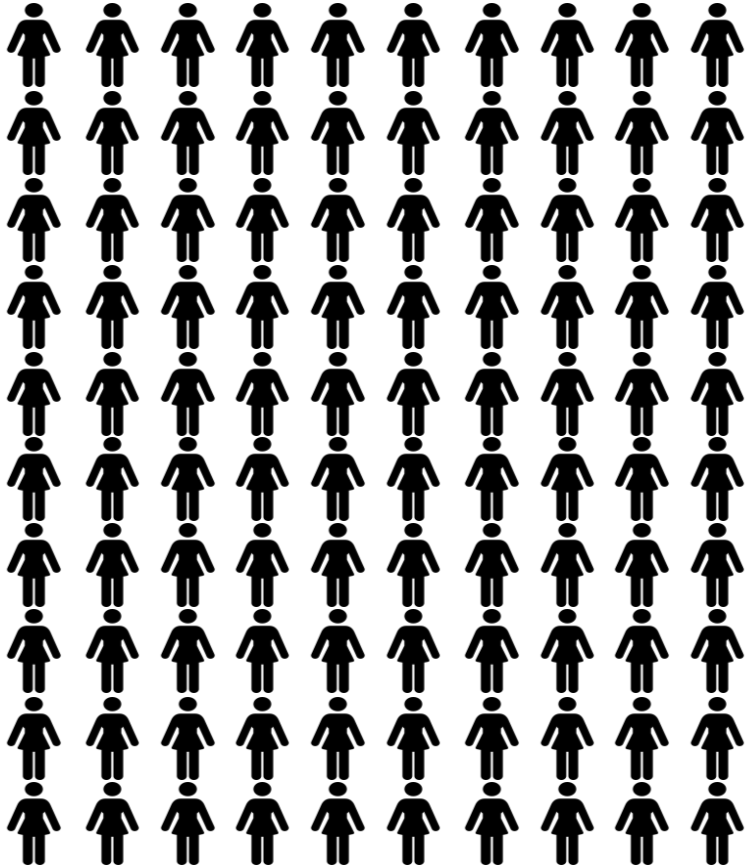
- Highest risk: HPV16
- Medium risk: HPV18/45/31/33/35/52/58
- Lower risk: HPV39/51/56/59/68

AVE risk groups:

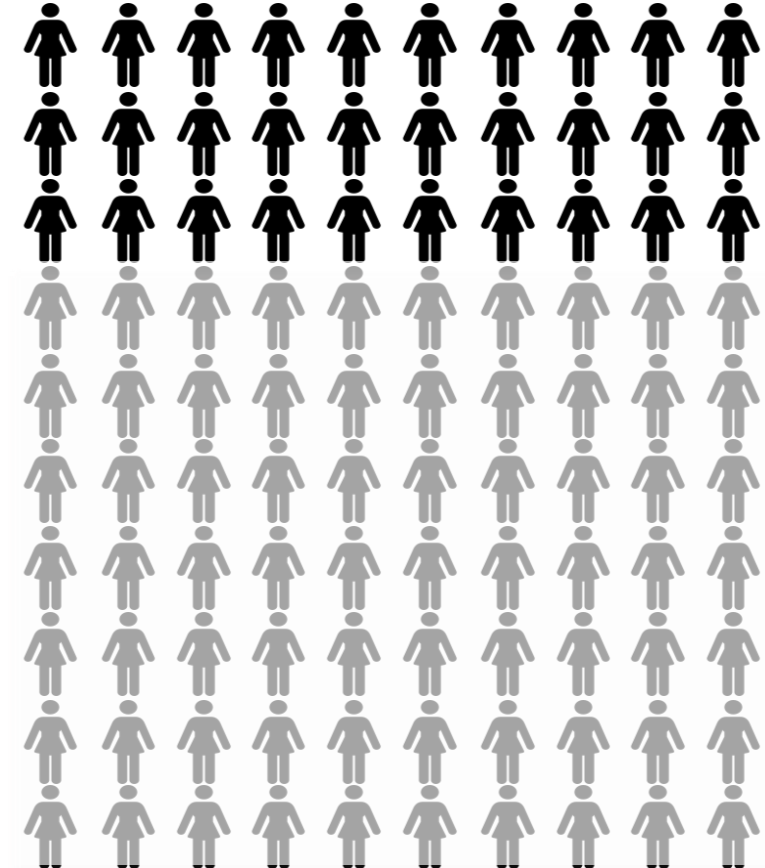
- Severe
- nonSevere (Indeterminate/Normal)

HPV self-collection saves resources, preferred by patients

Cytology, VIA or clinician-collected HPV: all screening participants require speculum exams



Self-sampled HPV: approx 15% of screening participants require speculum exams



Benefits of self-sampling with HPV testing

- **Acceptability** of the population and providers

Ping Teresa Yeh et al. *BMJ Global Health* 2019
Di Gennaro et al. *Front Public Health* 2022
Costa et al. *Br J Cancer* 2023

- **Accuracy** in detecting precancer/cancer

Arbyn et al. *BMJ* 2018
Inturrisi et al. *Lancet Reg Health Europe* 2021

- **Feasibility** of implementation and management of HPV+

Holme et al. *Prev Med* 2020
Mremi et al. *Acta OBGYN Scand* 2021
Woo et al. *Curr Oncol* 2022
Gottschlich et al. *Nature Medicine* 2023

- **Effectiveness** in reducing disease burden in the population

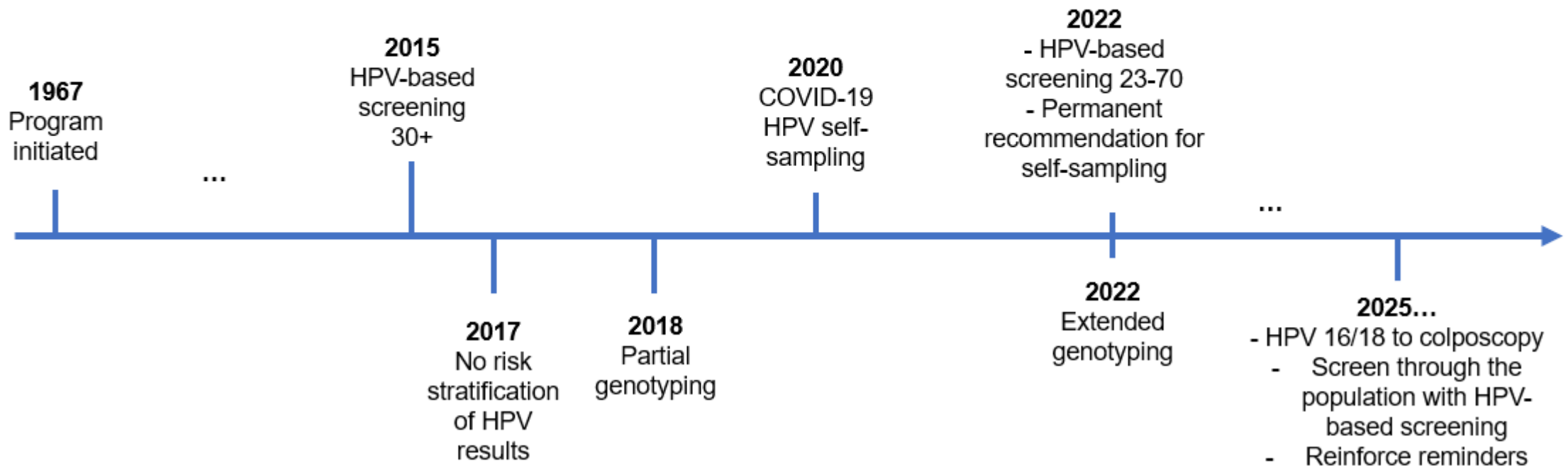
Mezei et al. *Int J Cancer* 2017
Mezei et al. *BMJ Open* 2018

The Swedish example with HPV extended genotyping

Increasingly rapid programmatic developments



Karolinska
Institutet



The Swedish example with HPV extended genotyping



Risk-stratified screening according to age and HPV type

Follow-up of HPV positivity is determined by age and type

- HPV 16, 18 direct to colposcopy, regardless of age and reflex cytology
- HPV 45 - reflex testing with cytology from age 23
 - Cytology positive to colposcopy
 - Cytology negative to repeat testing after 18 months
- HPV 31, 33, 52, 58 (medium oncogenicity, vaccine types) – reflex testing with cytology from age 23
 - Cytology positive to colposcopy
 - Cytology negative
 - Age <28 – new sample after 5 years
 - Age >28 – new sample after 3 years
- HPV 35, 39, 51, 56, 59, 66, 68 (low oncogenicity, non-vaccine types) – reflex testing with cytology from age 33
 - Cytology positive to colposcopy
 - Cytology negative to repeat testing after 5 years

You are not alone: Moving towards risk-based screening



Where are we headed?

- Risk-based programs over one-size-fits-all approaches
- Extended genotyping over partial genotyping
- Self-sampling as primary strategy over provider-collected
- Risk stratification accounting for HPV type, age, HPV vaccination status, past test results

What lies behind each decision?

- Robust scientific and clinical studies with decades-long evidence
- Continuous monitoring of real-life data to update national standard of care
- Focus on maximizing benefits to achieve faster elimination of CC, while minimizing potential harms

Take home messages

- HPV DNA testing is the recommended primary method for cervical cancer screening across all settings
- Self-sampling is preferred by women, saves resources and provides a key opportunity to increase coverage, particularly among under-screened women
- HPV genotype is strongly linked to the risk of invasive cervical cancer
- Extended genotyping adds information to improve management (risk stratification) and can be obtained in a single-step together with primary HPV DNA testing
- Risk-based extended genotyping will help determine high-risk patients who need prioritization of treatment

PAVE

HUMAN PAPILLOMAVIRUS AND
AUTOMATED VISUAL EVALUATION



LA FONDATION

THANK YOU

Federica Inturrisi, PhD

f.inturrisi@outlook.com /
federica.inturrisi-ext@paris.msf.org

Presenter



Teresa Norris

- President and CEO
HPV Global Action
- President
Coalition Priorité Cancer au Québec/ Quebec Cancer Coalition

Practical communication approaches that support behaviour change and increase patient confidence in **HPV testing and self-collection.**



Presented by Teresa Norris

President & CEO, HPV Global Action




President, Coalition Priorité Cancer au Québec

Disclosure Statement




- HPV Global Action receives funding and sponsorship support from multiple organizations, including pharmaceutical companies.
- Webinar content was developed independently by the organizers and speakers.

Objectives

Equip healthcare professionals with:

-  evidence-based communication strategies,
-  behavioural science insights,
-  and practical people-centered language

To improve:

-  cervical screening participation,
-  confidence in HPV testing,
-  acceptance of self-collection options

Why This Matters:

Cervical Cancer is PreventableBut Screening Gaps Persist

Cervical screening participation has a great impact on elimination timelines

Many patients still face barriers to traditional cervical screening



58%

delay
gynecological
visits due to
fear/discomfort



74%

would prefer
at-home
self-collection



83%

prefer less
invasive
screening
methods

Understanding Patient Barriers: Why People Avoid Cervical Screening



1

Discomfort
with pelvic
exams



2

Embarrassment
or fear



3

Past
trauma



4

Cultural or
religious
considerations



5

Access
challenges



6

Low perceived
personal risk



7

Lack of
understanding
about HPV

These are exactly the reasons why self-collection matters,
it creates additional pathways to participation

Self-Collection Expands Access:

It's About More Than Convenience

Self-collection helps reach individuals who are:

- under-screened
- never-screened
- hesitant
- marginalized
- unable to access traditional screening
- It also offers the option of cervical screening in clinical and non-clinical settings.

Potential examples:

- Rural communities
- Survivors of trauma
- Newcomers
- Busy parents, caregivers and people with competing responsibilities
- Immunocompromised individuals



Behavioural Science Principles:

Communication Approaches That Increase Participation

The 4 Pillars



Small changes in **language** can significantly influence **patient behaviour** and **cervical screening uptake**

Normalize HPV & call it Cervical Screening

KEY MESSAGES



HPV

is extremely common



Cervical screening

is routine preventive care



Early detection

dramatically improves outcomes



AVOID



Shame-based language



Fear-based framing



Stigmatizing terminology

Example of optimal HPV prevention language:

“HPV is one of the most common viruses, with 4 in 5 people exposed to it at some point in their lives ”

“Persistent HPV infection is the necessary cause of virtually all cervical cancers and that is why cervical screening is very important. It helps detect changes early so that they can be monitored or treated if needed.”

Empower Through Choice & Autonomy

Key messages:



**Self-collection
increases
patient control**



**Privacy and
convenience
matter**



**Options improve
participation**

“

Example language:

“Many people appreciate having a more private and comfortable cervical screening option.”

”

Simplify Complex Information

Topics to simplify:

- HPV and cervical cancer connection
- Difference between Pap testing and HPV testing
- Extended genotyping
- Follow-up pathways

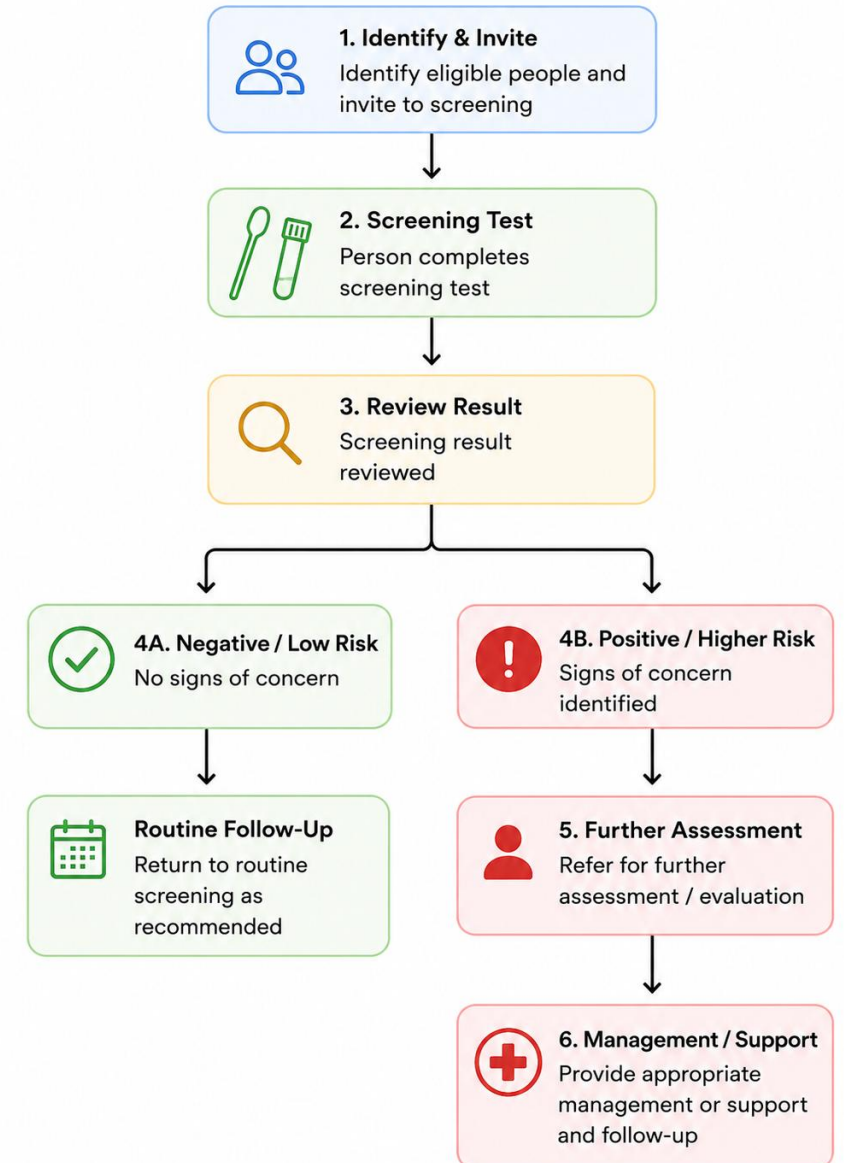


Example language:

“Newer cervical screening done with HPV testing can help identify specific virus types and better personalize follow-up care.”



Simple Screening Pathway



Reassure Patients About Self-Collection

Within available screening programs



Common concerns:

- “Will I do it correctly?”
- “Will it be accurate?”
- “What if I’m nervous?”



Key reassurance points:

- ✓ Self-collection is supported by strong evidence
- ✓ Instructions are simple
- ✓ Validated HPV testing is highly sensitive
- ✓ Many individuals find the process more comfortable and accessible



Research shows that HPV testing using self-collected samples performs very well and can be comparable to clinician-collected samples when validated testing methods are used.

Source: [Wentzensen et al. \(2025\), Journal of Lower Genital Tract Disease](#)



Example language:

“The self-collection process is simple, safe, and designed to be easy to do correctly.”



Practical Language Health Care Practitioners (HCPs) Can Use

Examples of Patient-Centered Communication:



Framing self-collection

“Cervical screening can now be done using a simple self-collected swab, which many people find more comfortable and convenient.”



Explaining extended genotyping


“Newer cervical screening can identify specific virus types, helping us better understand your personal level of risk.”









Encourage and congratulate participation-A Call to Action






Encourage your patients to spread the word about the importance of cervical screening and reiterate this is the best way to prevent cervical cancer.

Messaging Dos & Don'ts: Communication Best Practices

 **DO**

-  Normalize HPV
-  Use clear/simple language
-  Focus on prevention and empowerment
-  Validate patient concerns
-  Emphasize privacy and choice

 **DON'T**

-  Use fear-based messaging
-  Reinforce Myths
-  Overcomplicate medical terminology
-  Imply blame or stigma
-  Assume all patients face the same barriers

Role of Health Care Practitioners (HCPs) in Elimination Goals

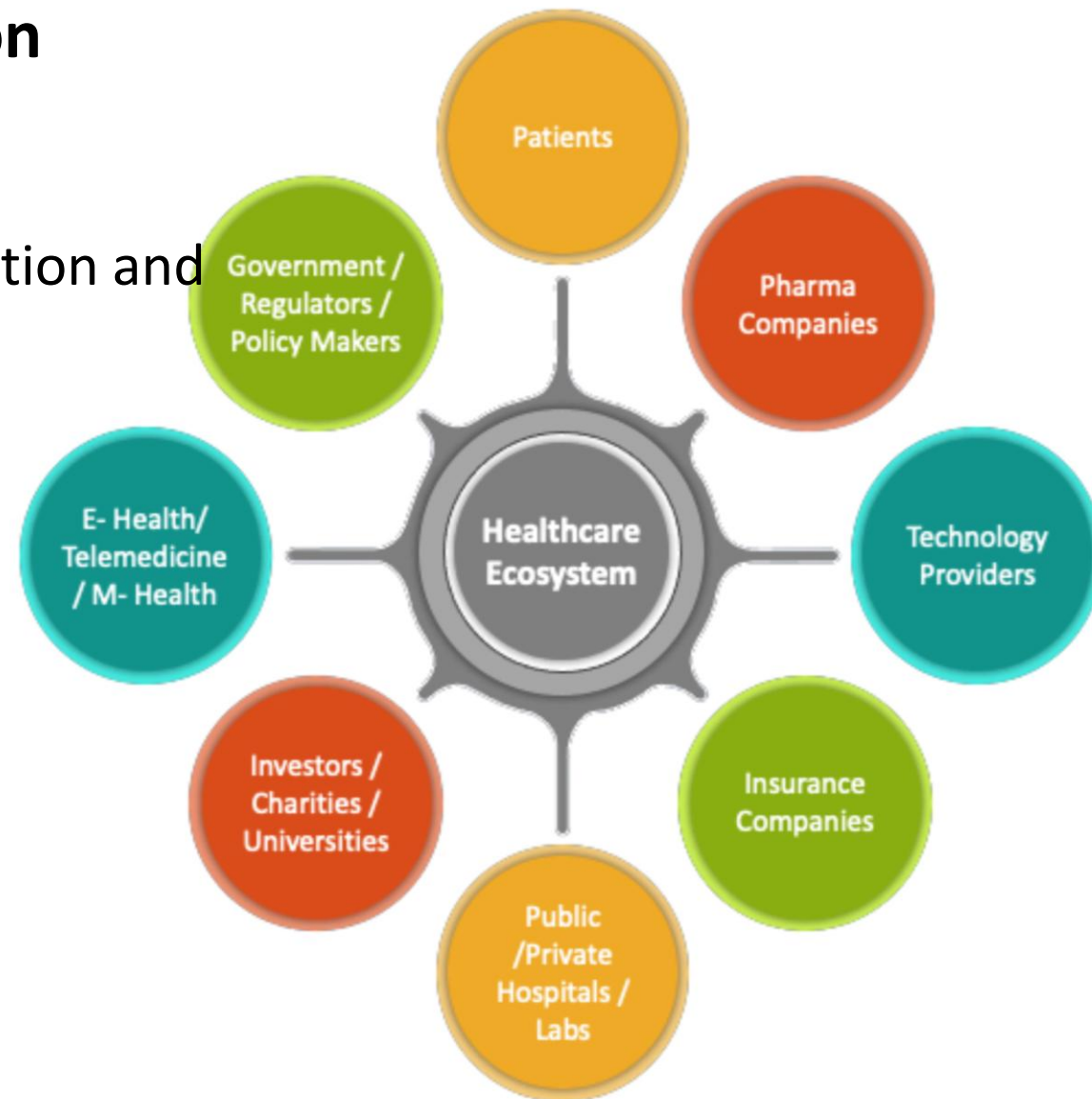
Healthcare Professionals Drive Participation

Key points:

- Healthcare professionals help drive participation and cervical screening uptake
- Consistent messaging matters
- Every healthcare interaction is an opportunity

Important settings:

- Primary care
- OB/GYN
- Public health
- Pharmacy
- Community health



Key Takeaways:



**Self-collection
helps remove
major
screening
barriers**

1



**Communication
strongly
influences
screening
participation**

2



**Patient-centered
language
improves
confidence and
participation**

3



**Consistent,
stigma-free
messaging is
essential**

4



**Expanding
screening
access supports
cervical cancer
elimination goals**

5

Thank You For Listening!



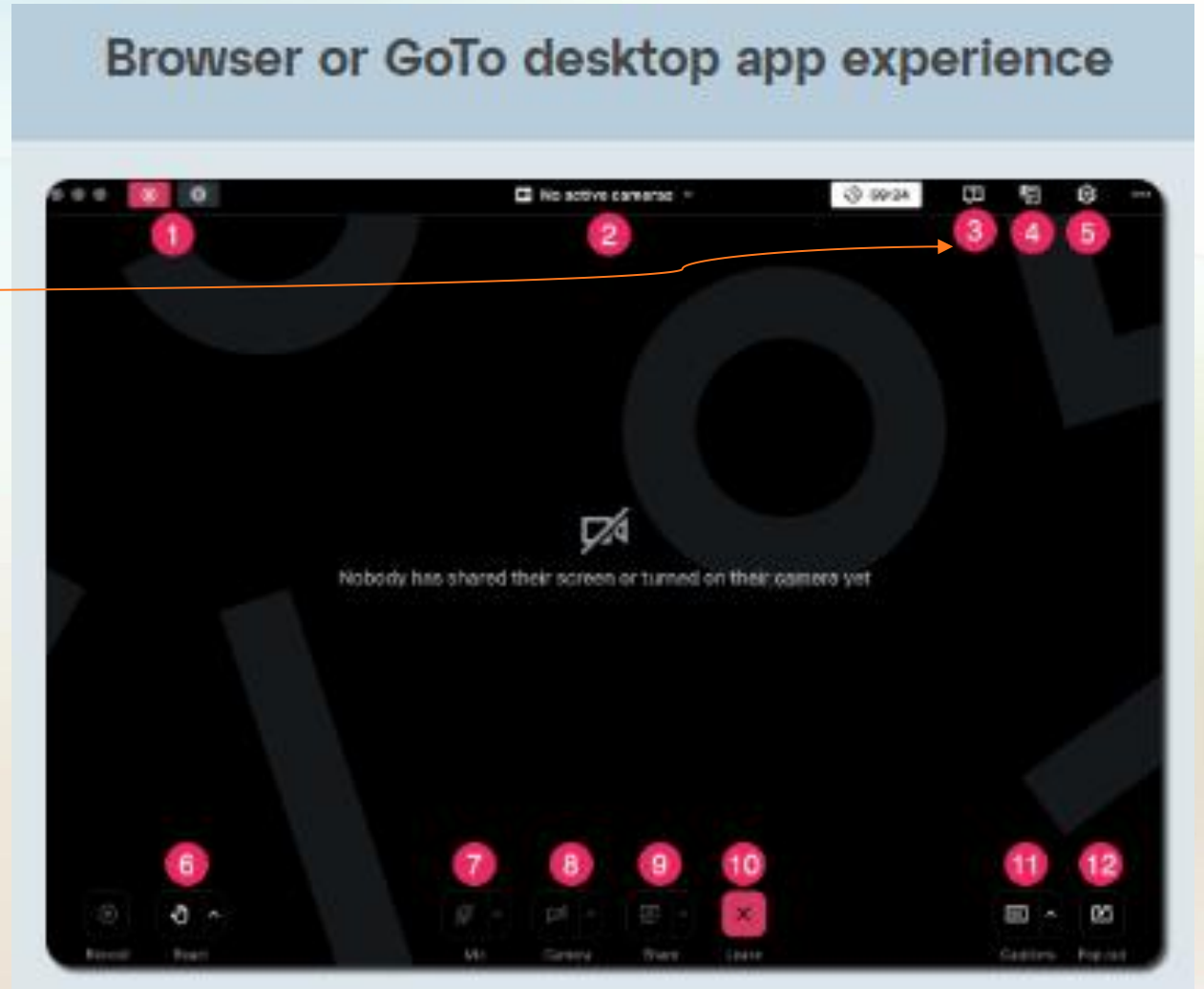
Teresa Norris

tnorris@hvpglobalaction.org

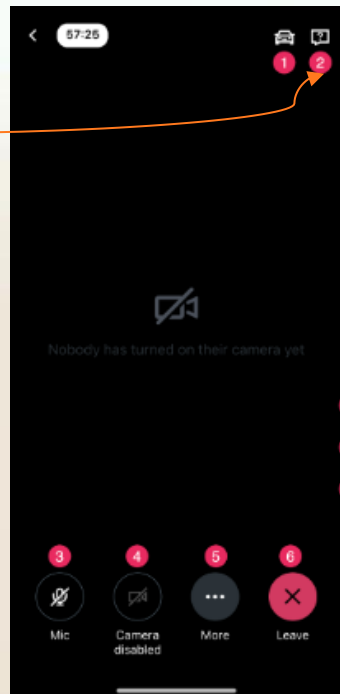


Question & Answer Period

On a **computer**, submit your text question using the Questions pane after clicking the icon (#3)



NOTE: On a **mobile device**, tap on the “?” (#2) to open the questions pane



Improving Cervical Cancer Elimination in Canada with Genotyping and Self-sampling

Evaluation: <https://forms.gle/STSSuqPC7pksLvF86>

Slide Set, Video recording, HPV documents at:
hpvglobalaction.org & www.CIDCgroup.org

Thank you for participating!

This educational program is made possible through the support of **Waters™ Advanced Diagnostics (Formerly BD Diagnostic Solutions)**.
The opinions expressed in this webinar are those of the presenter and do not necessarily reflect the views of CIDC, HPV Global Action or their partners