Cervical Cancer Screening

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PHN night

1/6/23

No conflicts of interest to declare

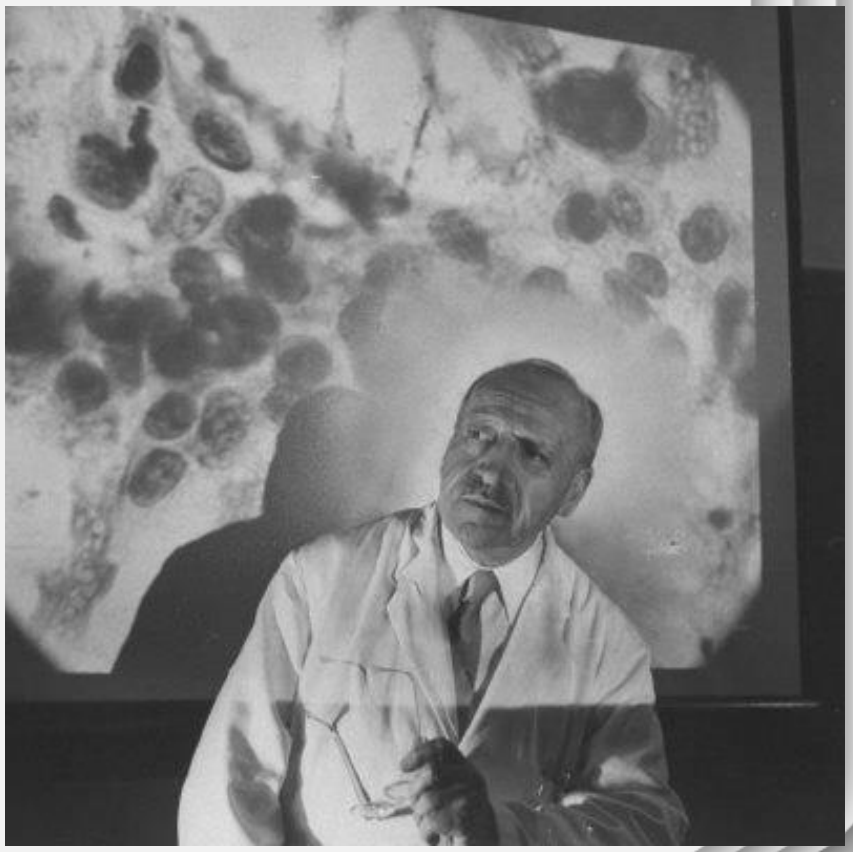
NSW GOVERNMENT Health
Central Coast
Local Health District

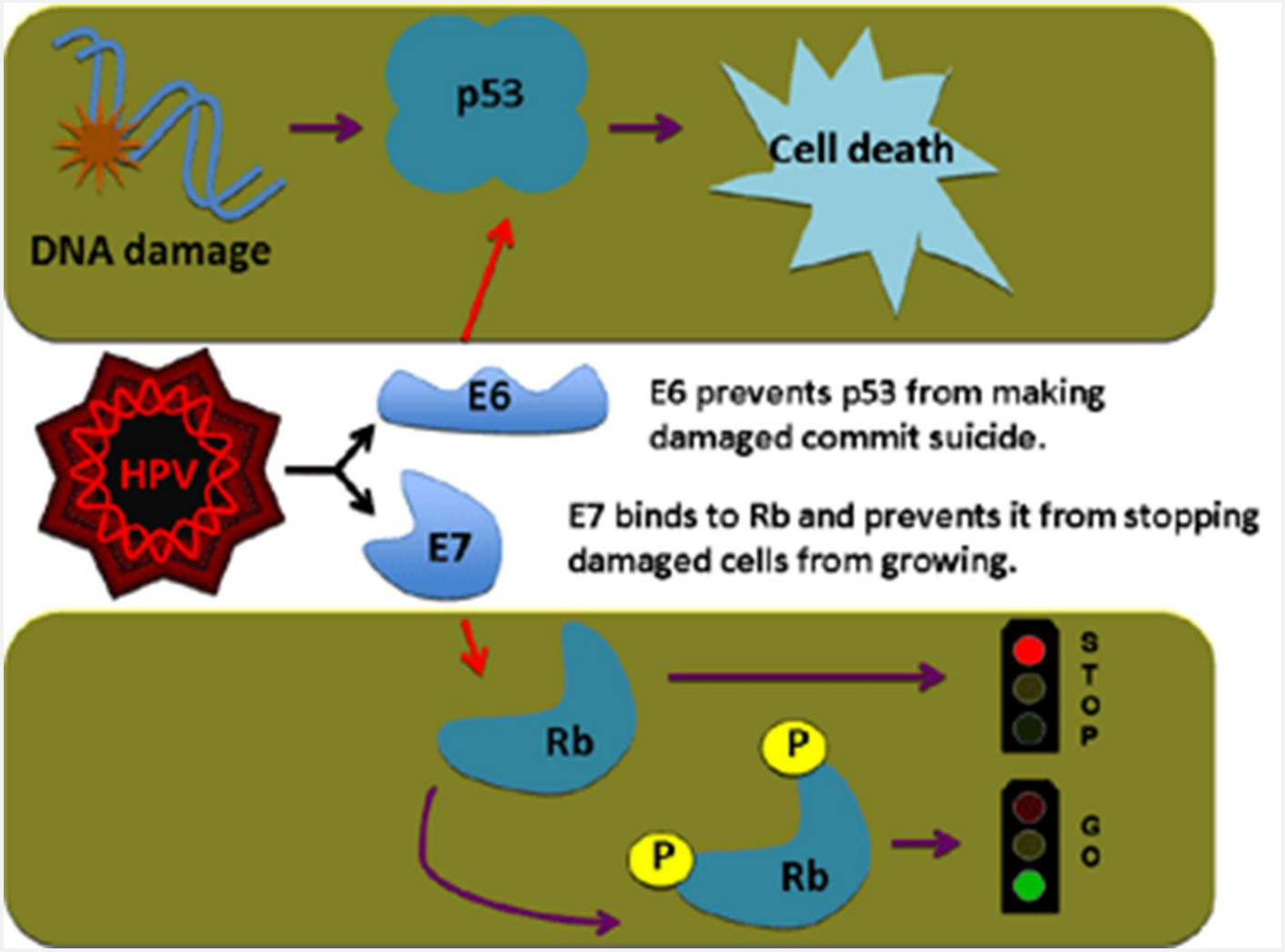
Overview:

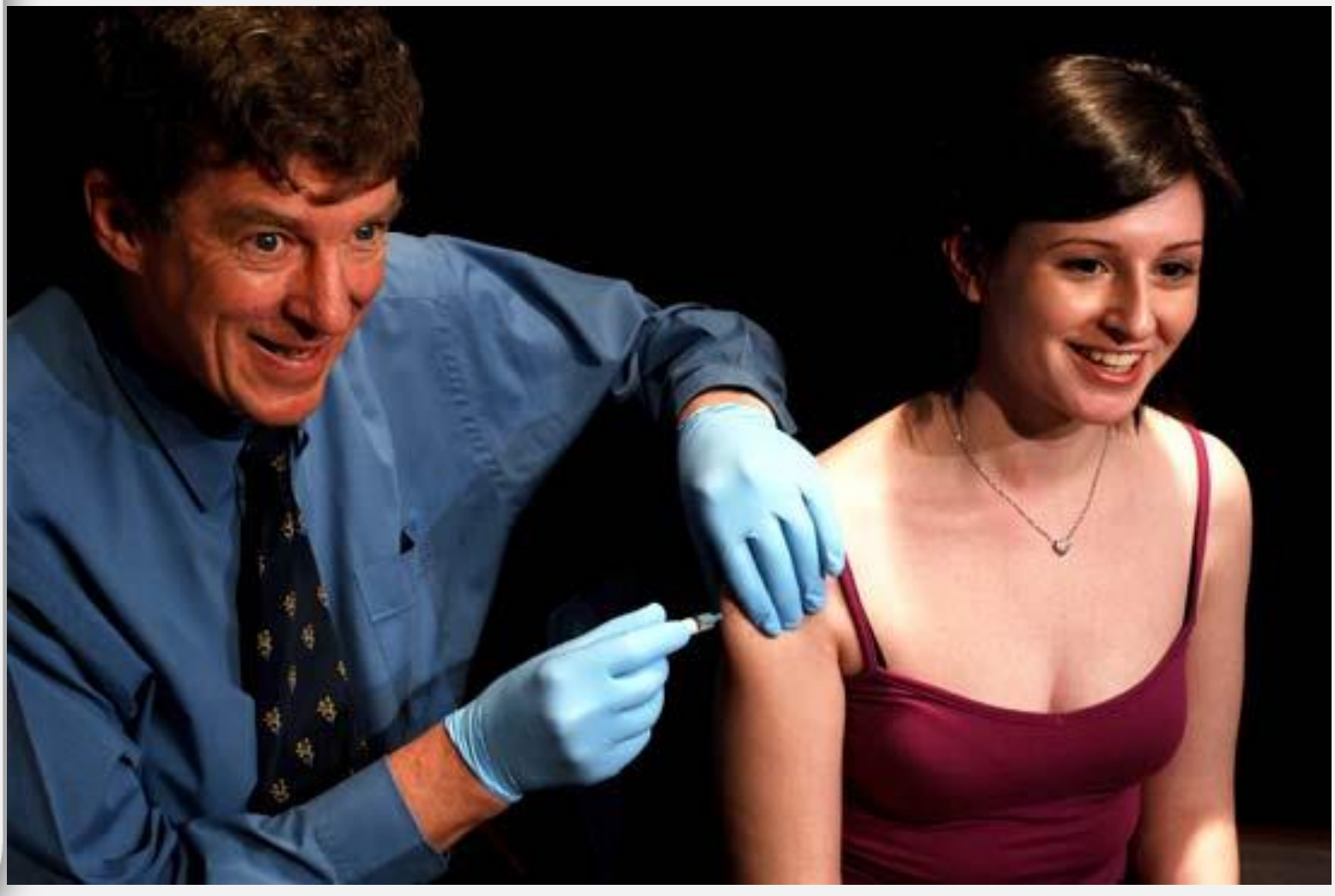
- A brief history of cervical cancer screening
- Where are we now, and why?
- Screening guidelines
- What happens next? (Colposcopy/treatment/follow up)
- Special circumstances
- Self collect
- Quit smoking


ΤΡΑΠΕΖΑ
ΤΗΣ
ΕΛΛΑΔΟΣ
ΔΡΑΧΜΕΣ
ΔΕΚΑ
ΧΙΛΙΑΔΕΣ
10000
10000
10000

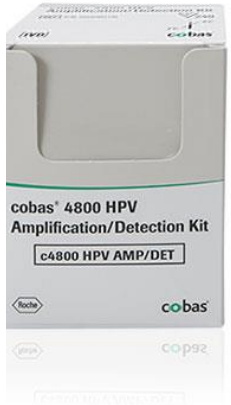

EARLY CANCER DETECTION
PAP
TEST
USA
13¢
Dr. George Papanicolaou

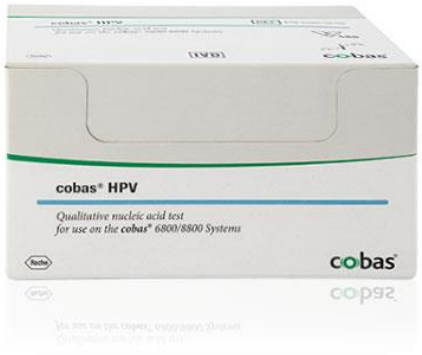



p53
Cell death
DNA damage
HPV
E6
E7
E6 prevents p53 from making damaged commit suicide.
E7 binds to Rb and prevents it from stopping damaged cells from growing.
Rb
P
P
Rb
STOP
GO



Association with cervical cancer[1]	Genotypes	Most likely clinical conditions
Low-risk	• Most common: 6 and 11 • 40, 42, 43, 44, 54, 61, 70, 72, 81 and CP6108	Condylomata acuminata
Probable high-risk	• 26, 53 and 66	Precancerous or cancerous lesions
High-risk	• Most common: 16, 18 • 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 73 and 82	Precancerous or cancerous lesions





12 pooled hrHPV

31	33	35	39	45	51
52	56	58	59	66	68

HPV16 HPV 18

Mayrand MH, et al., for the Canadian Cervical Cancer Screening Trial Study Group. Human papillomavirus DNA versus Papanicolaou screening tests for cervical cancer. N Engl J Med. October 18, 2007;357(16):1579–1588

- **10,151 women in Montreal**
- **30 – 69 years**
- **All received both tests**

	HPV DNA	Pap smear	Both
Sensitivity	94.6	55.4	100
Specificity	94.1	96.8	92.5

Naucler P, Ryd W, Törnberg S, et al. Human papillomavirus and Papanicolaou tests to screen for cervical cancer. N Engl J Med. 2007;357(16):1589–97.

- 12,527 32 – 36 y.o women in Sweden

Design

- HPV + Pap (intervention) vs Pap alone (control)
- Colp if HPV+/ high grade OR persistent HPV on 12 month follow up
- Colp if high grade pap
- Double blind
- Followed for 8 years, 3 yearly screening

Result

- 50% more CIN2+ detected in the intervention group on the first round
- 42% less CIN2+ was detected in the intervention group on subsequent rounds

Conclusion

HPV increases the sensitivity of screening - Not simply overdiagnosis (lesions are treated that if untreated would not regress)

Ronco, G (et al). Efficacy of HPV-based screening for prevention of invasive cervical cancer: follow-up of four European randomised controlled trials. The Lancet. Volume 383, No. 9916, p524–532, 8 February 2014

- Meta analysis of 4 RCT's (Sweden, Netherlands, England, Italy)
- 176 464 women aged 20–64
- HPV versus conventional cytology
- Followed for 6.5 years
- End point = cervical cancer

Results:

- Detection of Ca equal in the first 2.5 years
- Significantly lower thereafter (rate ratio's)
  - Overall (0·45, 0·25–0·81)
  - Negative at entry (0·30, 0·15–0·60)
  - Glandular (0·31, 0·14–0·69) vs SCC (0·78, 0·49–1·25)
- **Conclusion: HPV = 60–70% greater protection against Ca**

Raising entry age to 25

- Ca is very rare <25
- No change following the introduction of screening programs
- 20 – 24 y.o's have the highest rate of abnormal Pap smear, and the 2nd highest rate of high grade histopathology
- High rates of clearance
- HPV vaccination will further reduce disease in under 25's

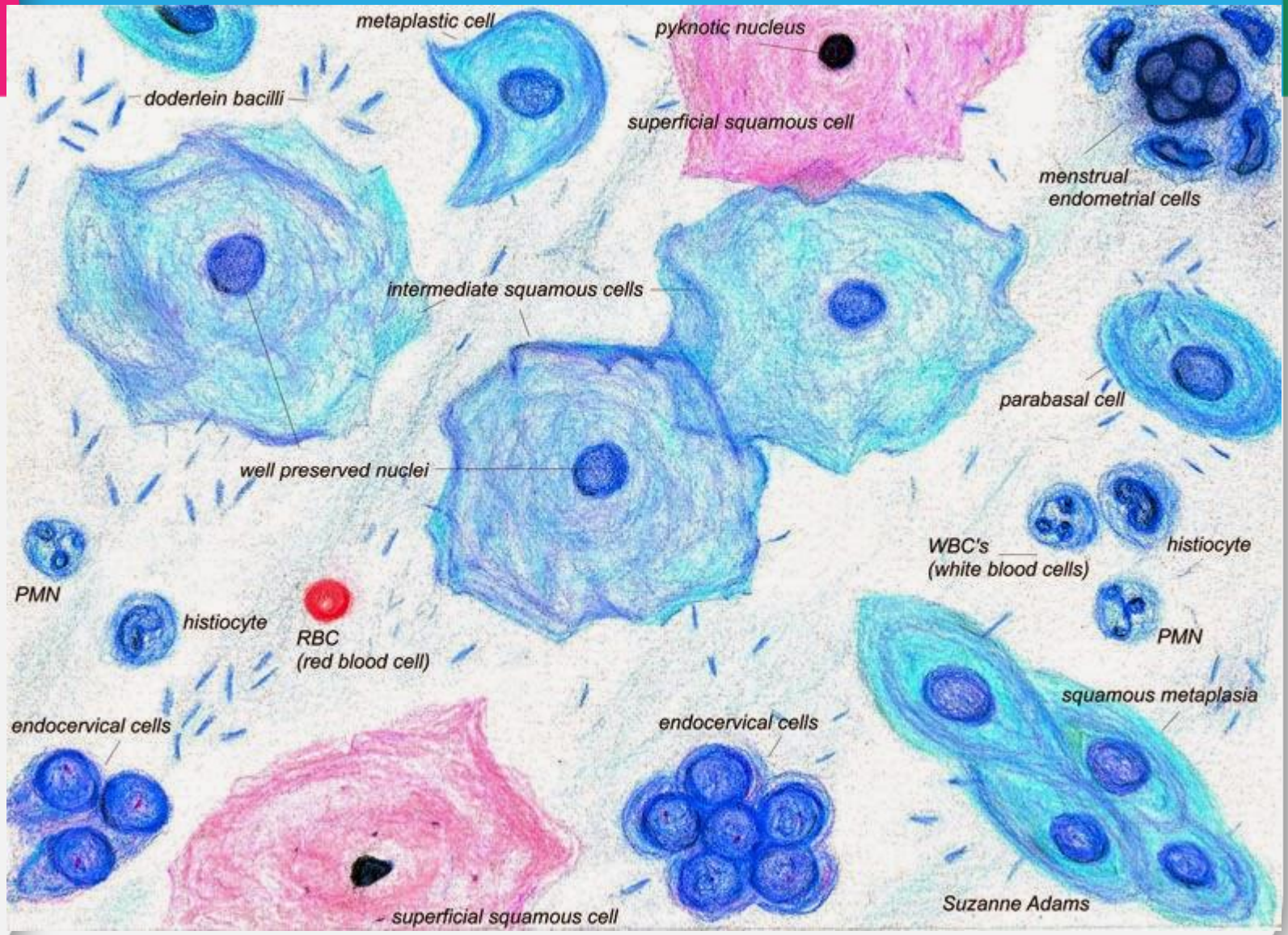
Smith, M. and Canfel, K. Impact of the Australian National Cervical Screening Program in women of different ages. Medical Journal of Australia. 2016; 205 (8): 359-364

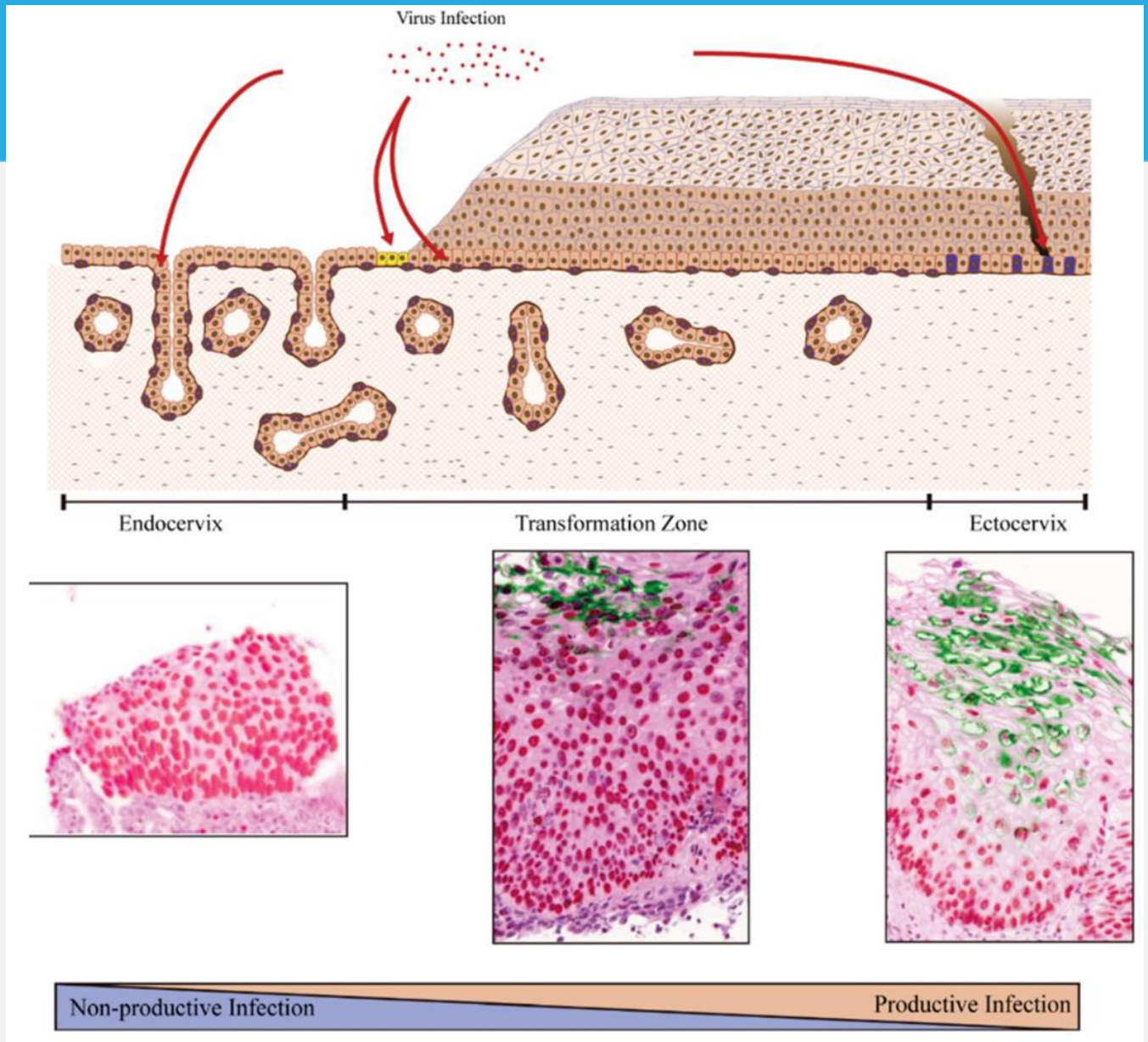
- Retrospective cohort study
- 1988 – 1990 compared to 2008 – 20 10 (pre to post NCSP)
- Incidence of cervical cancer in age brackets

Findings:

- Overall reduction in cervical cancer
- Except in 20 to 24 years

	Old	New
Test	Pap smear	HPV
Age range	18 – 69	25 -75
Interval	2 years	5 years
Triage	LGSIL/pLGSIL	Reflex LBC testing
Exit	2 normals in 5 years (65 – 69)	HPV test (70 - 74)
Self test	No	Yes
Invitation/recall	Overdue reminder	Yes


metaplastic cell
pyknotic nucleus
doderlein bacilli
superficial squamous cell
menstrual
endometrial cells
intermediate squamous cells
parabasal cell
well preserved nuclei
WBC's
(white blood cells)
histiocyte
PMN
histiocyte
RBC
(red blood cell)
PMN
squamous metaplasia
endocervical cells
endocervical cells
superficial squamous cell
Suzanne Adams


Virus Infection
Endocervix
Transformation Zone
Ectocervix
Non-productive Infection
Productive Infection

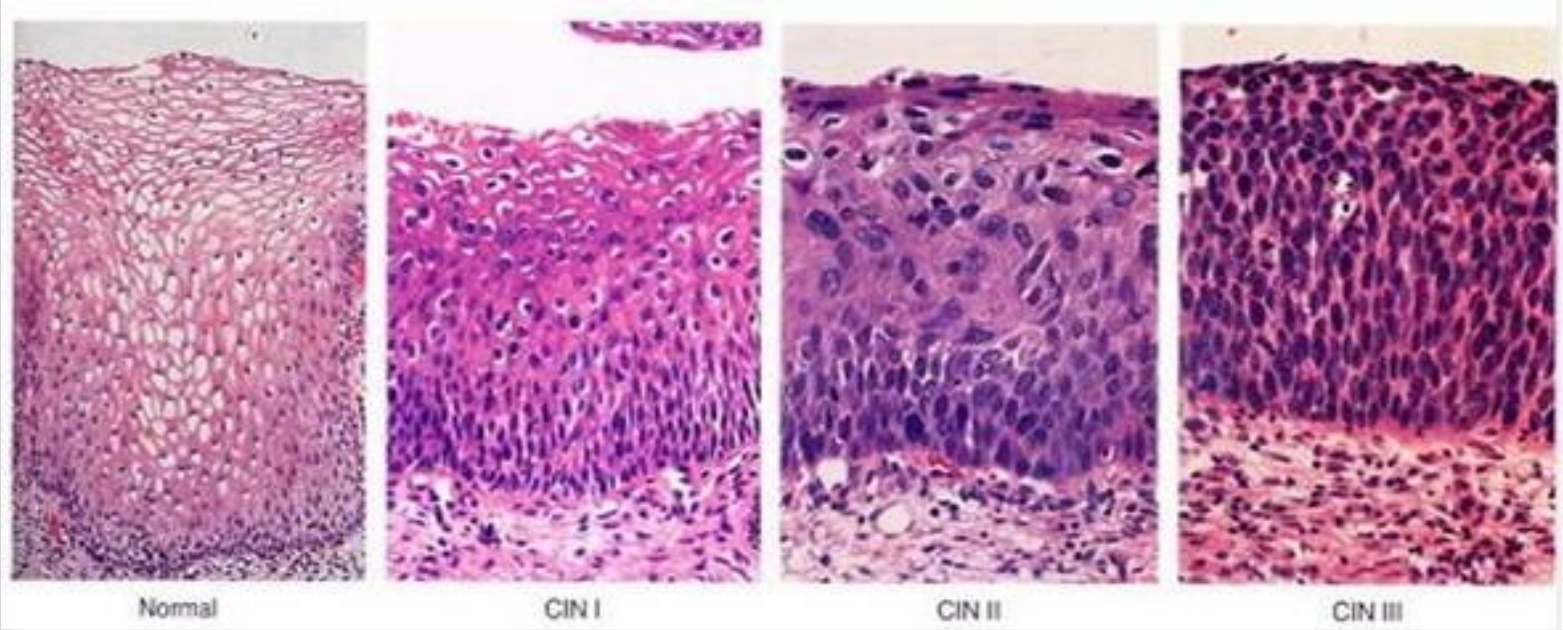
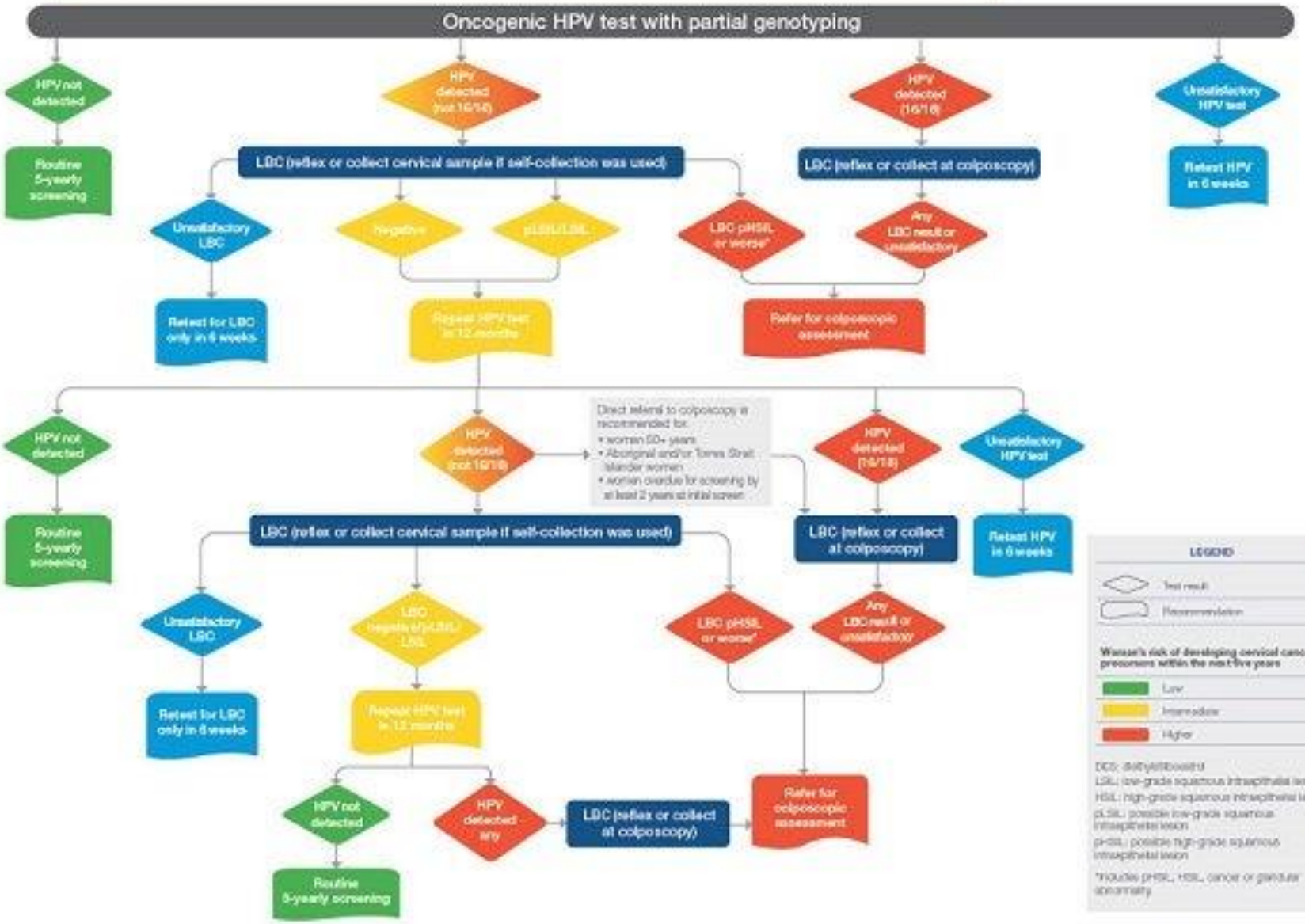

Normal
CIN I
CIN II
CIN III

Table 2.3: Regression, persistence and progression probabilities of CIN

CIN category	Regression	Persistence	Progression to CIN 3	Progression to invasive cancer
CIN 1	57%	32%	11%	1%
CIN 2	43%	35%	22%	1.5%
CIN 3	32%	56%	-	12%

CERVICAL SCREENING PATHWAY (CLINICIAN COLLECTED OR SELF-COLLECTED)



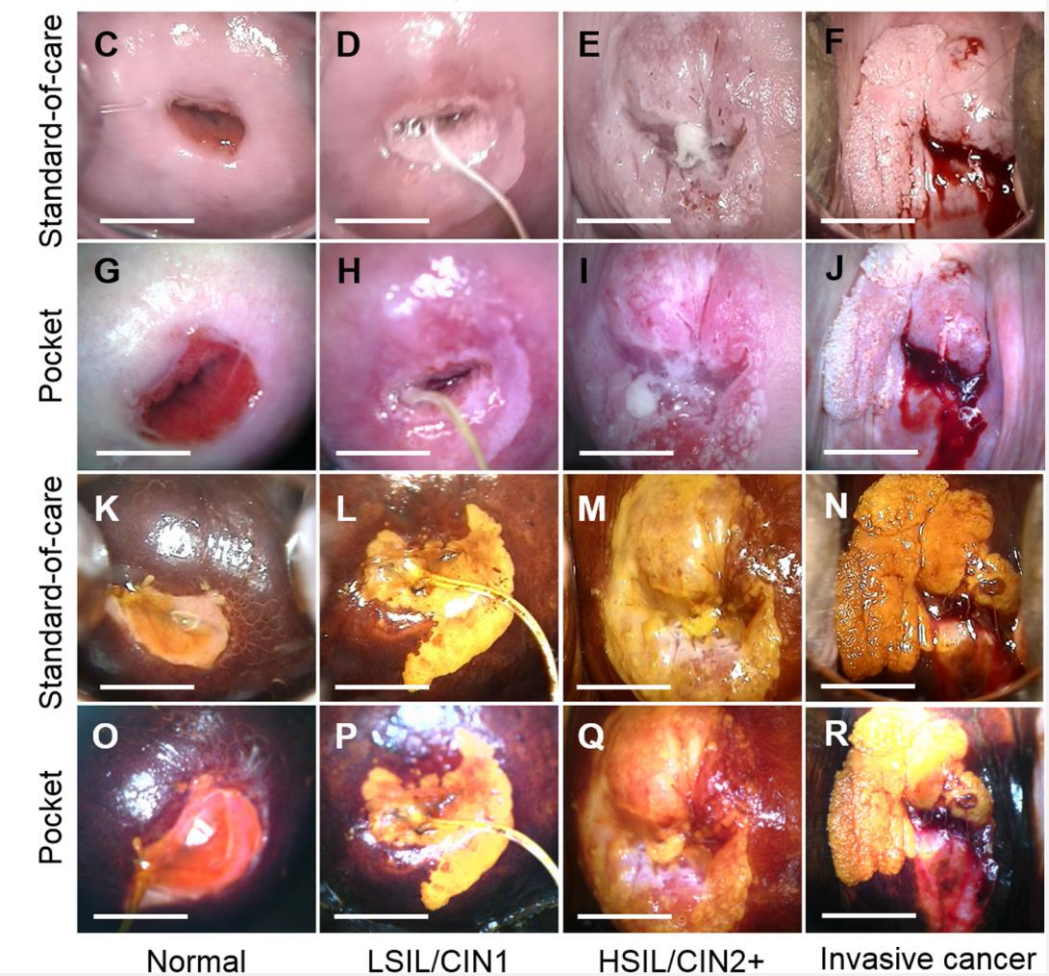
Suggested citation: Cancer Council Australia Cervical Cancer Screening Working Party. Clinical pathway: Cervical screening pathway. National Cervical Screening Program Guidelines for the management of screen detected abnormalities, screening in specific populations and investigation of colorectal vaginal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

NATIONAL CERVICAL SCREENING PROGRAM

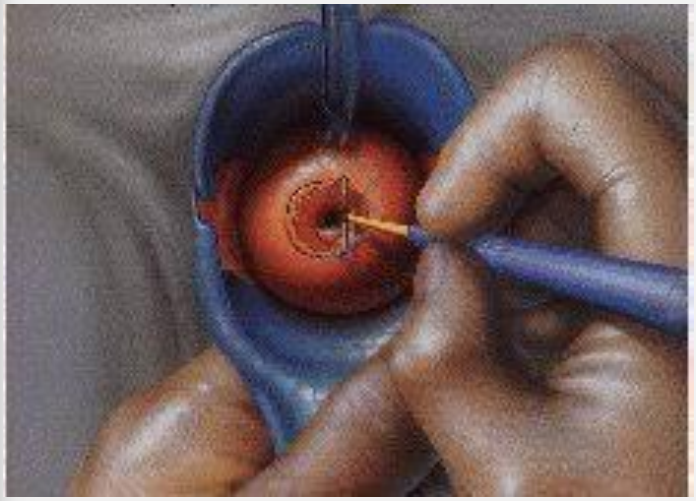
Australian Government Department of Health

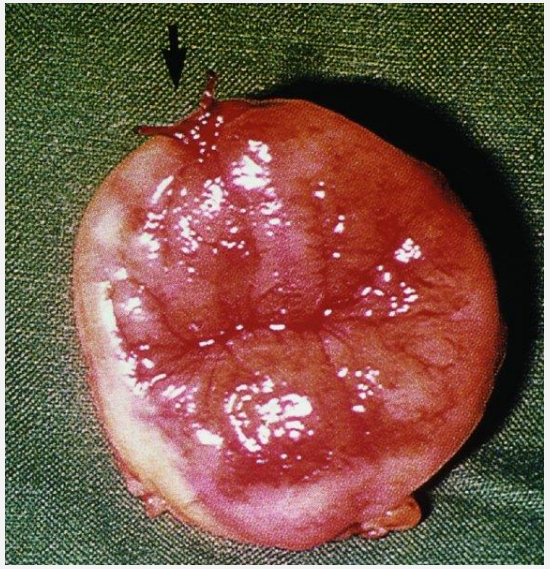
Cancer Council

Then what?

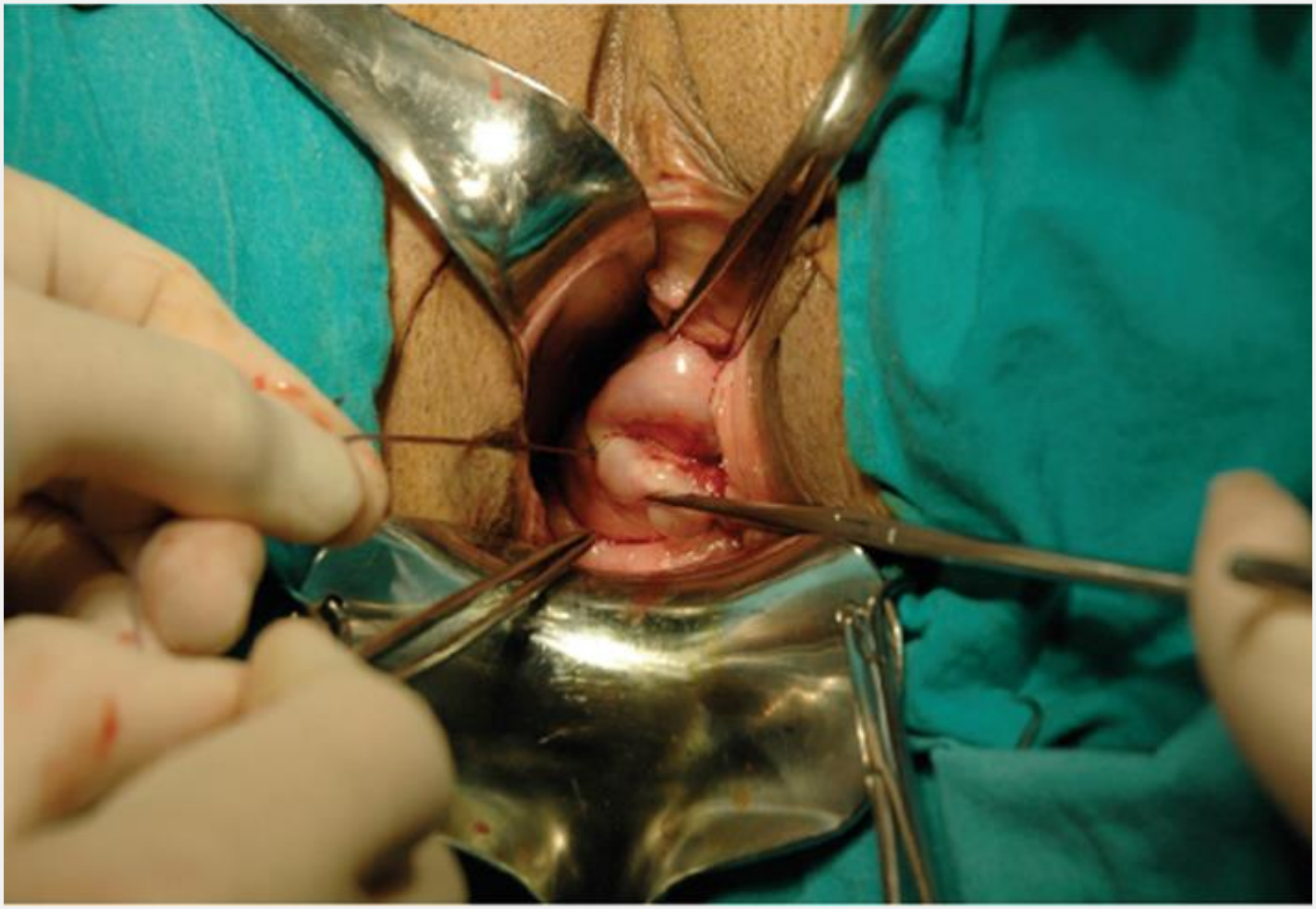

Standard-of-care
Pocket
Standard-of-care
Pocket
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
Normal
LSIL/CIN1
HSIL/CIN2+
Invasive cancer

Then what?





Then what?



Risks

- No increased risk of infertility, or 1st trimester loss
- Increased risk 2nd trimester: 0.4 vs 1.6% (RR 2.6)
- PTB <37/40 = 9.5 vs 5.4 % (RR 1.75)
- PTB 32 – 34/40 = 3.2 vs 1.4 % (RR 2.25)
- PTB < 28/40 = 0.7 vs 0.3 % (RR 2.23)
- PPROM =8.0 vs 3.4 % (RR 2.36)
- Cervical length screening

VS

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

- 56 studies
- Similar sensitivity of self vs clinician collect for detection of CIN 2 or 3
- PCR (not combared to PCR + LBC!)
- Specificity 2 – 4% lower
- Insufficient evidence

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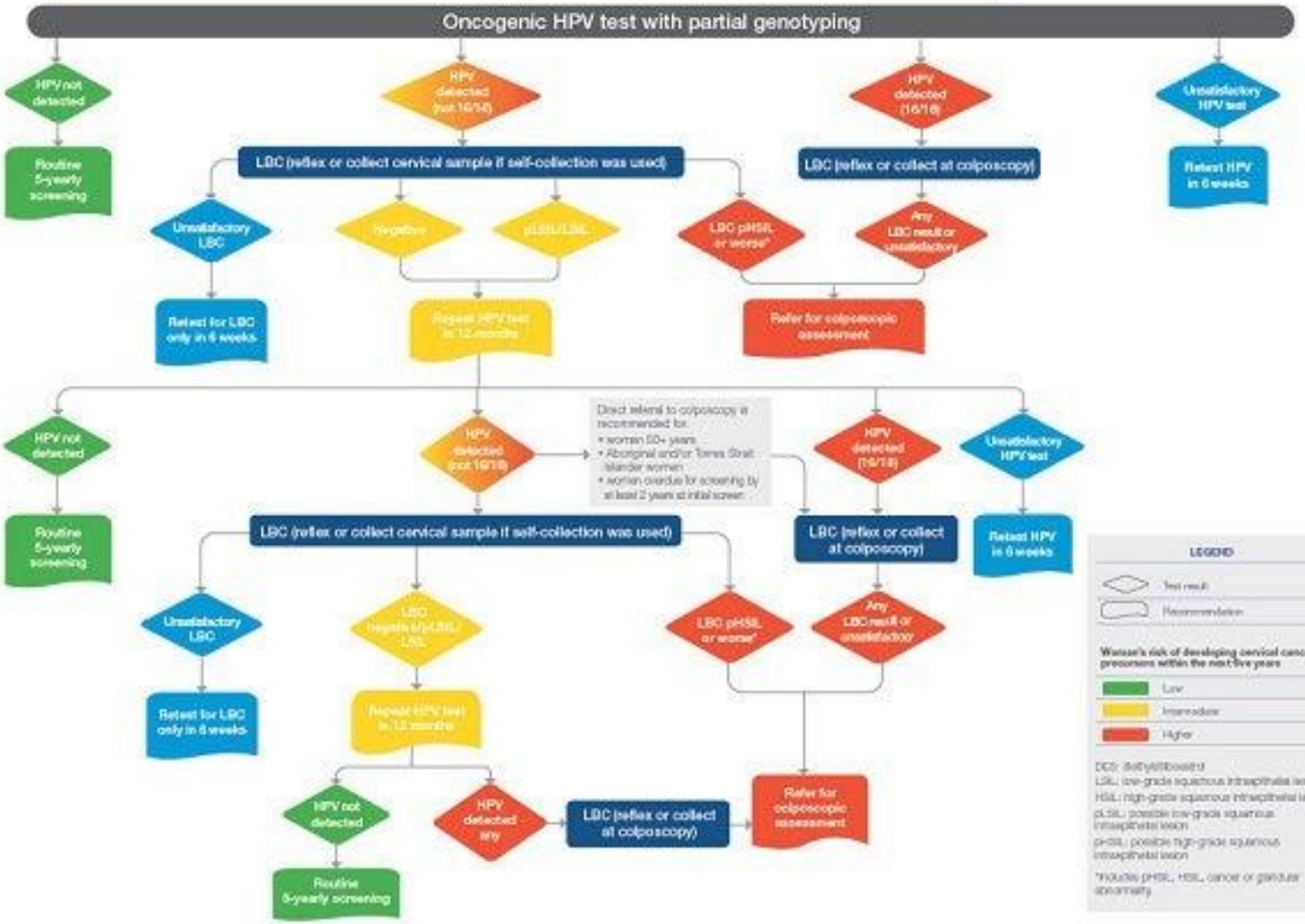

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NATIONAL CERVICAL SCREENING PROGRAM

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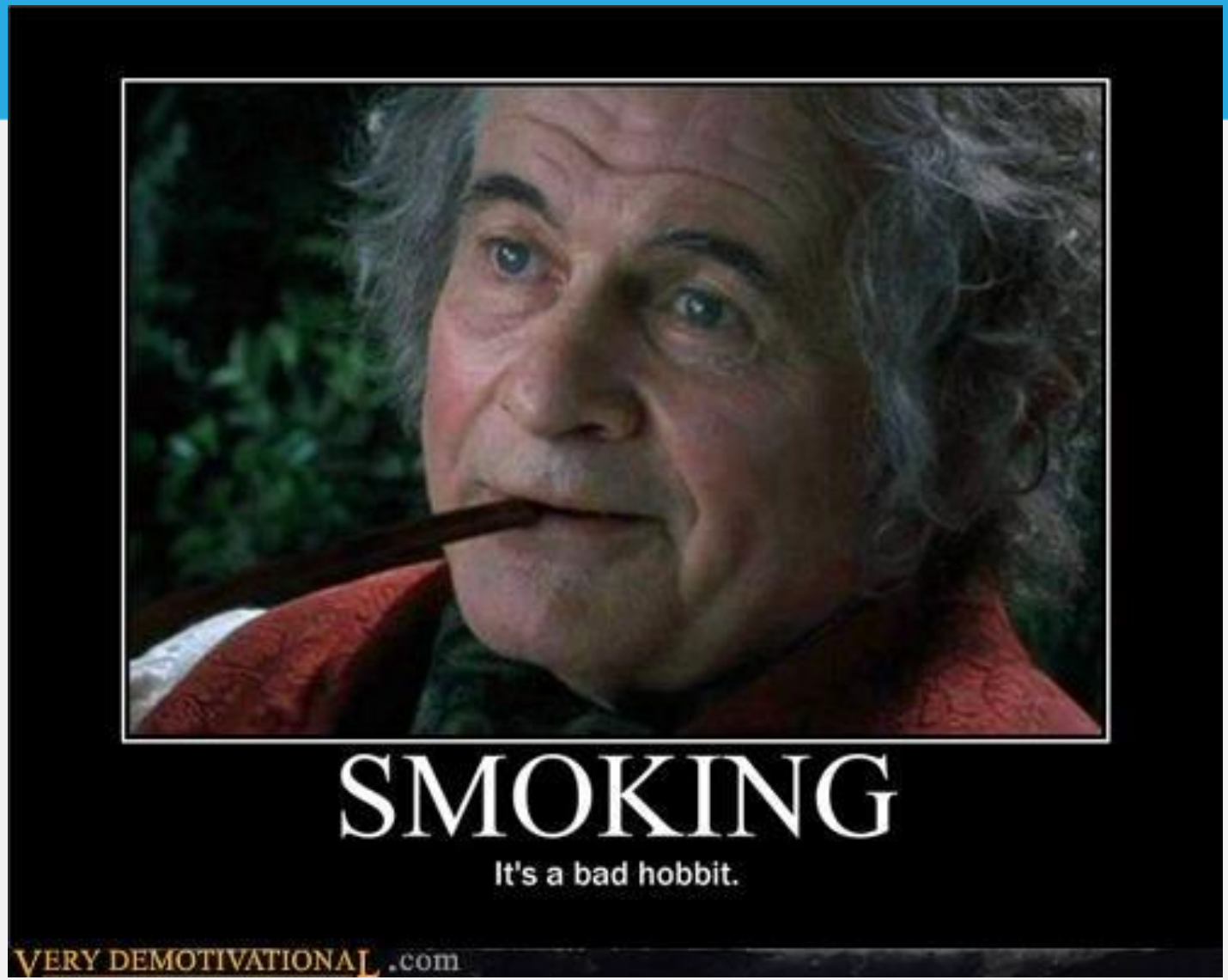
Special situations

- LSIL or HSIL found at hysterectomy expectedly or unexpectedly (eg's) > Co test (TOC) as with treatment

- Pregnancy > OK to screen, normal referral rules HOWEVER: we would rely more on colp impression than histopath


SMOKING
It's a bad hobbit.
VERY DEMOTIVATIONAL .com