

Australasian HIV&AIDS Conference 2025

Screening for Anal Cancer in PLHIV

Laboratory Aspects of Screening
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Financial Disclosure

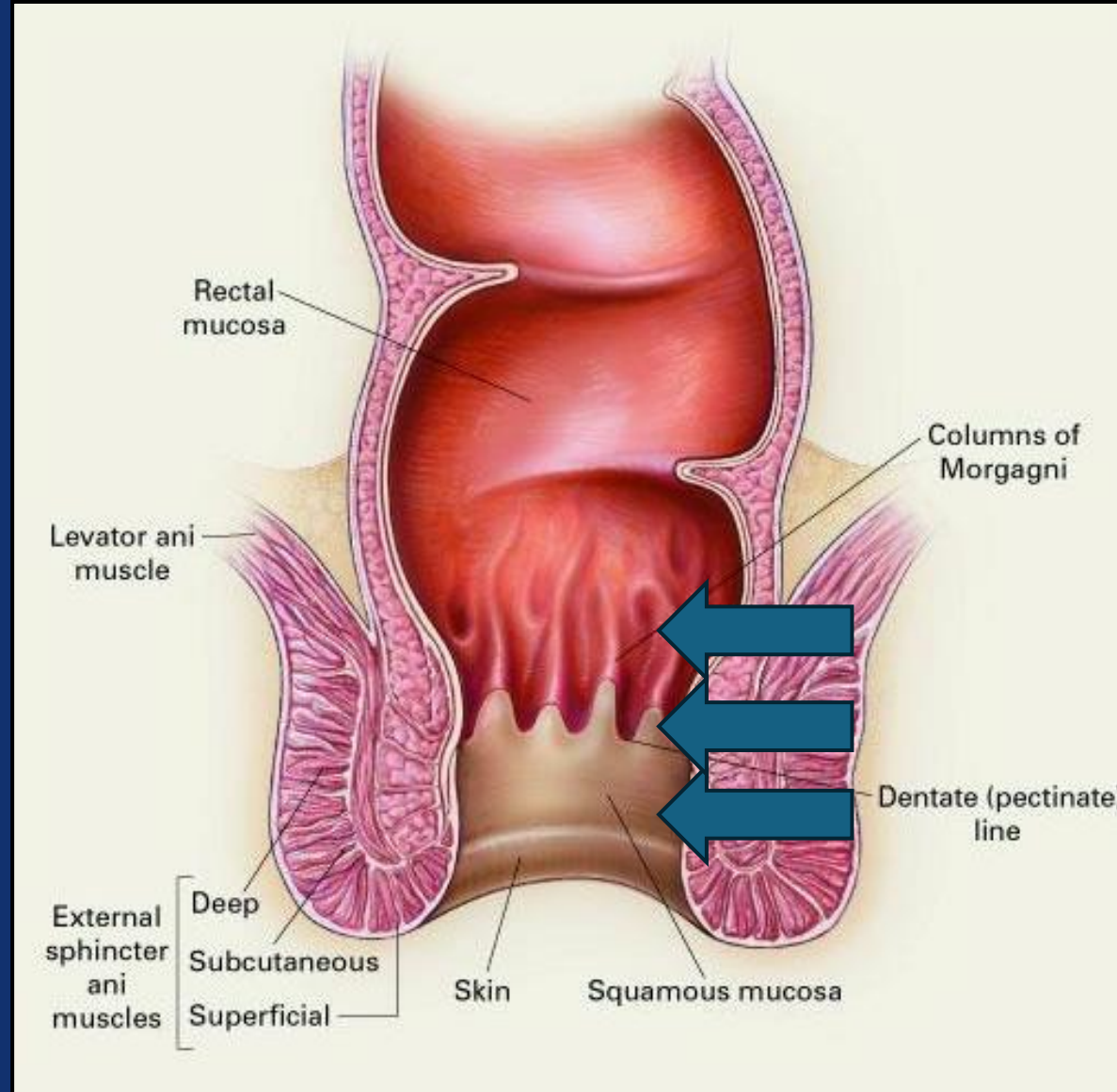
I am an employee of Douglass Hanly Moir Pathology, Sydney

Learning Objectives

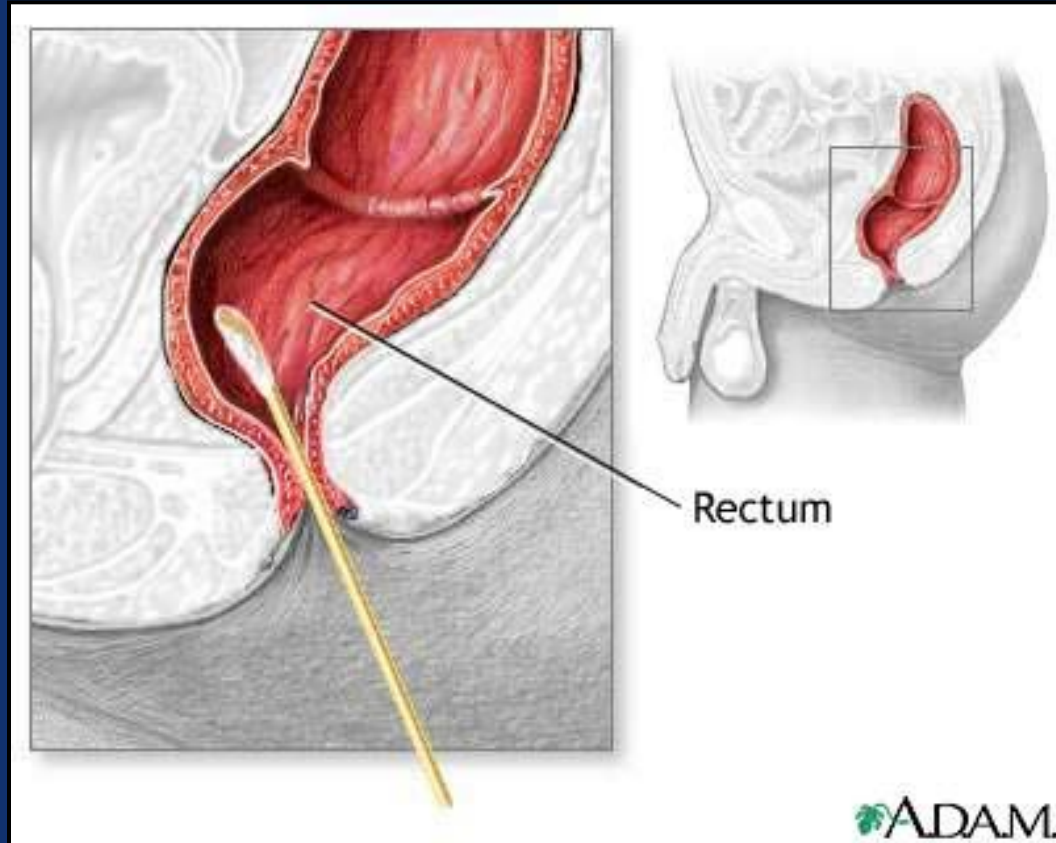
To understand:

- Basic anatomy of anal canal
- Principles of anal swab collection for anal neoplasia screening
- Fundamentals of HPV PCR testing and genotyping
- Fundamentals of liquid-based cytology
- Fundamentals of biopsy reporting
- Pitfalls in testing

Basic Anatomy of Anal Canal



Principles of Swab Collection



Screening Algorithm

Summary of Australian recommendations for anal cancer screening in PLHIV



1. Who to screen

People living with HIV (PLHIV) who are:

- Gay, bisexual and other men who have sex with men (GBM) and trans women (TW) over 35 years of age; or
- Women (not TW) and men (not GBM) over 45 years of age.

2. How to screen

Anal swab for HRHPV testing +

Perform DARE (annual)

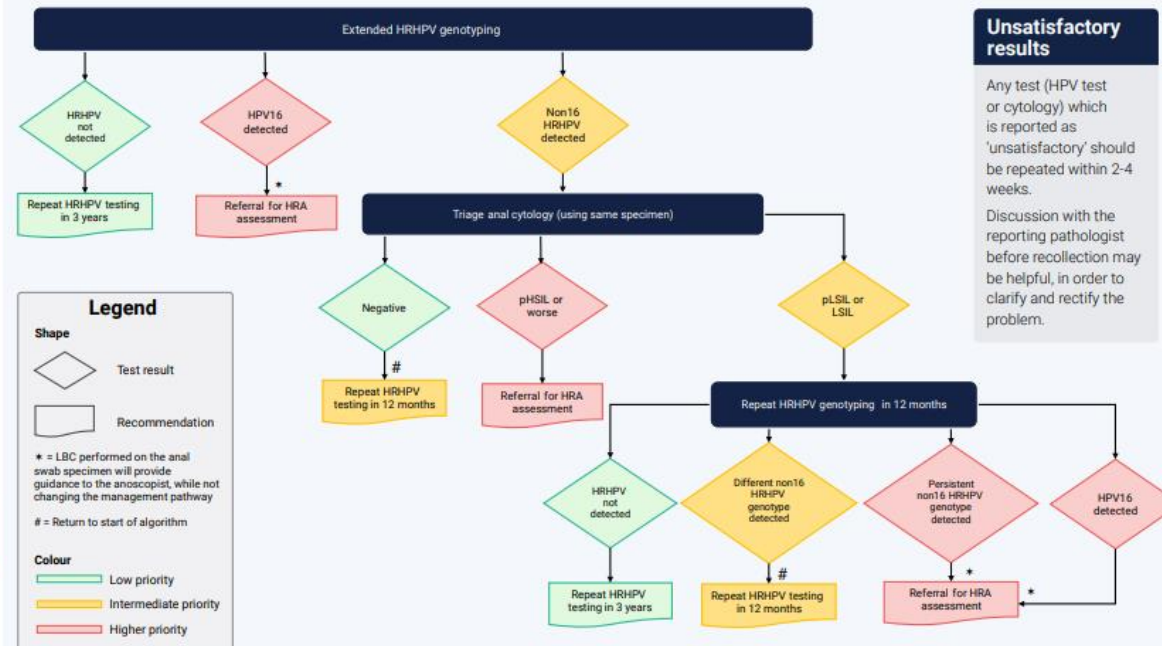
One clinician collected sample required to perform all screening tests -moistened flocked swab eluted into LBC vial prior to DARE.

Information

- High Resolution Anoscopy (HRA) – limited capacity in Australia
- No HRA available locally – screening remains annual DARE + symptom awareness**
- Screening services should prioritise + current smoker / nadir CD4<200 / older age / anal symptoms/ additional immunosuppressive agents

** people with anal lumps suggestive of cancer require immediate referral to surgeon.

3. Screening algorithm



Unsatisfactory results

Any test (HPV test or cytology) which is reported as 'unsatisfactory' should be repeated within 2-4 weeks.

Discussion with the reporting pathologist before recollection may be helpful, in order to clarify and rectify the problem.

Definitions

HIV = human immunodeficiency virus, HPV = human papillomavirus, HRA = high-resolution anoscopy, HSIL = high-grade squamous intraepithelial lesion, HRHPV = high-risk human papillomavirus, LBC = liquid-based cytology, LSIL = low-grade squamous intraepithelial lesion, GBM = Gay, bisexual and other men who have sex with men, MSW = men who have sex with women, PLHIV = People living with HIV, pLSIL = possible low-grade squamous intraepithelial lesion, TW = trans women

HPV testing and genotyping

- Partial genotyping
 - HPV16, HPV18 (or 18/45), HR-HPV non16/18 (as panel of 12 'other')
- Extended genotyping
 - HPV16,18,31,33,35,39,45,51,52,56,58,59,66,68
- Extreme genotyping
 - above + 26, 53, 69, 73, 82 + 9 LR types

The problem with partial genotyping

3 tests over 2 years – all “High risk, other” (non16/18)



HPV45



HPV33



HPV58

Managed as a persistent infection

The utility of extended genotyping assays

EACH of the 14 high-risk HPV types is reported separately:
(16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68)

3 incident infections, **NOT** a persistent HR-HPV infection



HPV45




HPV33




HPV58

Liquid-based cytology (LBC)

- 2 products available in Australia
- Cytomorphology very similar to cervical cytology
- Australian Modified Bethesda System
 - Different definition of 'unsatisfactory'
 - Role of transformation zone cells



AMBS Reporting Categories
Negative
Possible LSIL
LSIL
Possible HSIL
HSIL
Squamous cell carcinoma



Anal Screening Report

Specimen	Anal - ThinPrep
HPV result	HPV16 detected
LBC result	LSIL
Recommendation	HRA indicated

Specimen	Anal - SurePath
HPV result	HPV33 detected
LBC result	Negative
Recommendation	Repeat testing in 1 year

Biopsy Reporting

- Lower Anogenital Squamous Terminology (LAST) 2012
- Same terminology for HPV-associated lesions across the lower anogenital tract
- Endorsed by WHO and RCPA
- Reflects biology of HPV infections
 - Low-grade lesion – productive infection
 - High-grade squamous lesion – transforming/neoplastic infection
- Further subcategorization of LSIL and HSIL
- Use of p16

Pitfalls in testing

- Inhibition in HPV testing
 - Lubricant
 - High viral load
- Unsatisfactory LBC
- Cyto/anoscopy/histo discrepancies
 - HSIL/PHSIL LBC with 'normal' HRA or negative biopsy

Future Steps

- Validation of extended genotyping assays
- Cytologist and pathologist training
 - Cytology
 - Histopathology - Lower Anogenital Squamous Terminology (LAST)
- Quality assurance metrics
 - Monitoring of unsatisfactory rates
 - Positive predictive values of cytological predictions

