British HIV Association
BHIVA

Professor Henry Kitchener

University of Manchester

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COMPETING INTEREST OF FINANCIAL VALUE ≥ £1,000:	
Speaker Name	**Statement**
Professor Henry Kitchener	None
Date	**October 2014**

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Success of Cervical Screening. Lessons for Anal Screening

Professor Henry Kitchener
Institute of Cancer Sciences
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Cervical Cancer Screening

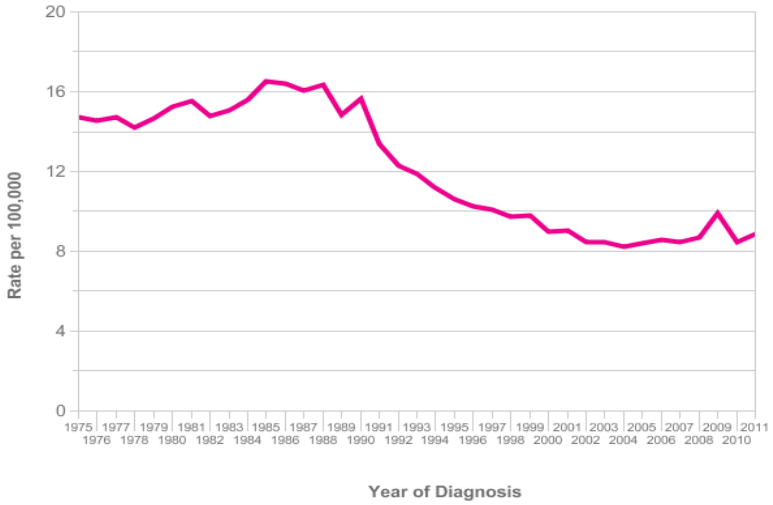
Ad hoc screening since the 1960's

- Ineffective due to inadequate coverage and lack of QA

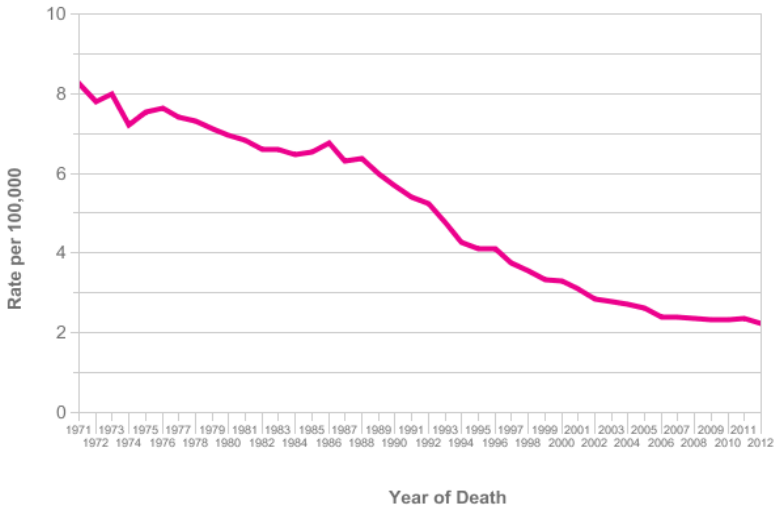
National programme introduced in 1988

- High coverage, QA and fall in incidence and deaths

Cervical Cancer (C53): 1975-2011
European Age-Standardised Incidence Rates per 100,000 Population, Females, Great Britain

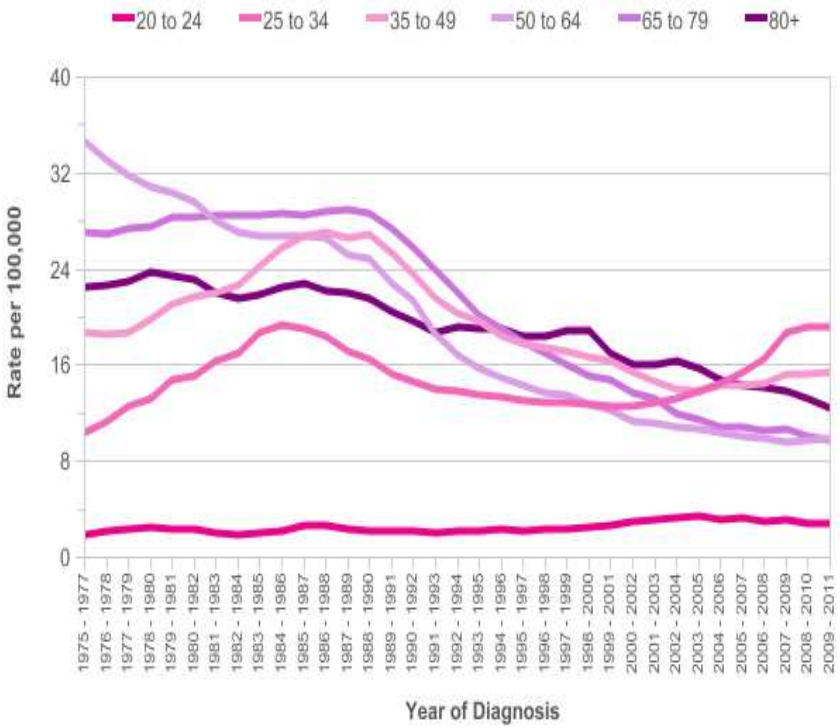


Cervical Cancer (C53): 1971-2012
European Age-Standardised Mortality Rates per 100,000 Population, Females, UK



Graph of Incidence and Death Over Time by Age Group

Cervical Cancer (C53): 1975-2011
European Age-Standardised Incidence Rates per 100,000 Population, by Age, Females, Great Britain



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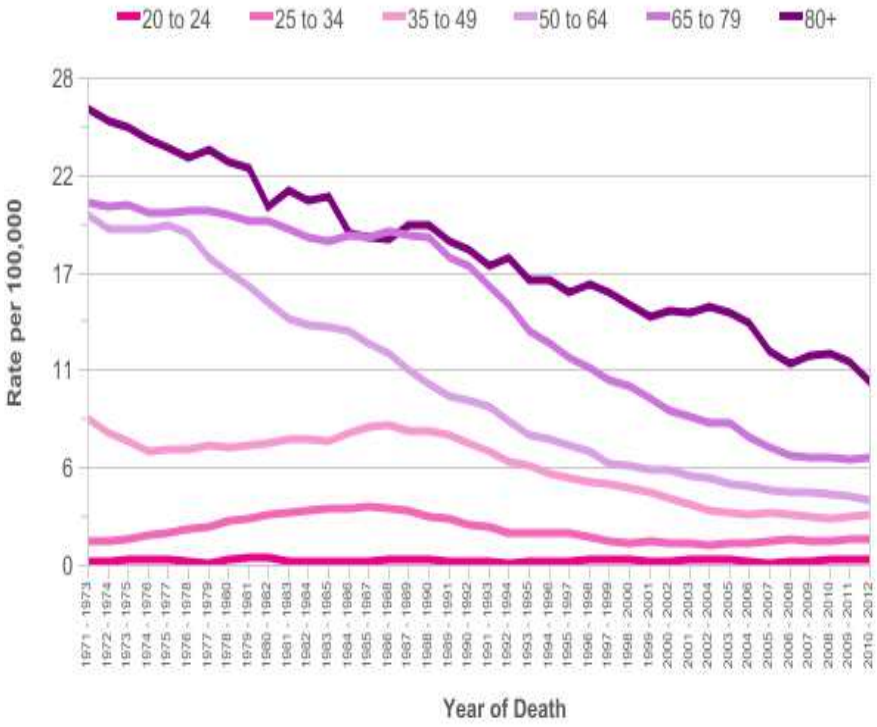

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Cervical Cancer Screening

Intervention will improve outcome

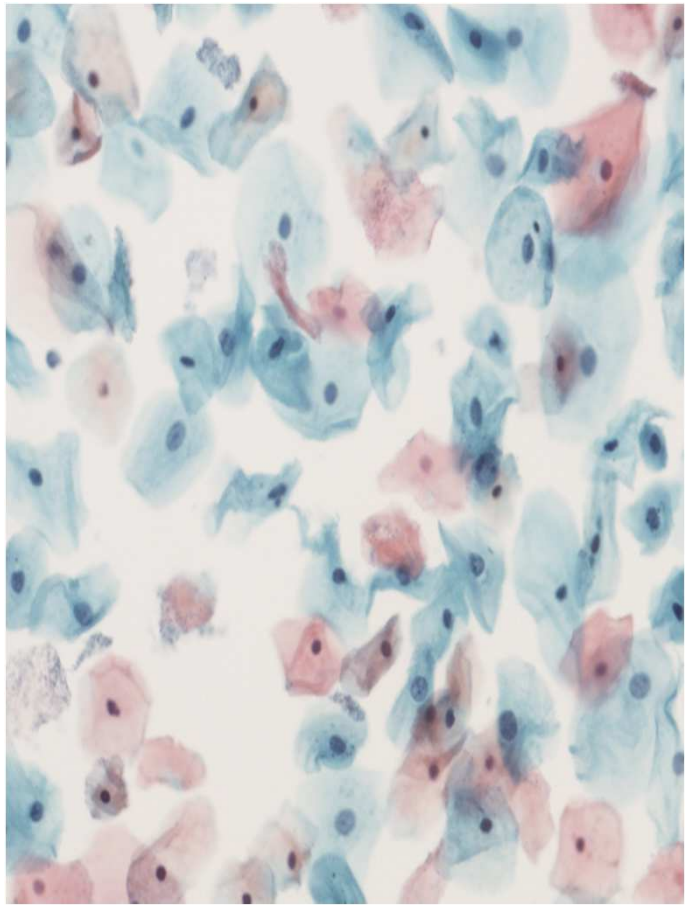
- 3000 cases/ >1000 deaths prevented annually

Convenient acceptable screening test

- Cervical cytology meets this, but;
  - Requires speculum examination
  - Labour intensive process
  - Requires expertise/ training/ complex infrastructure

Test performance is adequate

- Sensitivity 80% ; specificity > 90%
- Around 6% of results are ambiguous, requiring triage
- 1-2% of tests are inadequate requiring repeat
- Screening intervals of 3 years (5 years > age 50)



Normal squamous cell

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Cervical Cancer Screening

Convenient and acceptable means of diagnosis

- Colposcopy and biopsy as an outpatient

Effective and straightforward treatment

- Excision/ ablation of the lesion as an outpatient
- 95% effective with one treatment

Benefits outweigh harm

- Many deaths prevented
- Anxiety and increased risk of premature labour

Cost effective

- >1000 deaths and 3000 cancer treatments avoided
- £150M spent annually

Moderate dyskaryosis; AIN 2

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The Cervical Screening Programme

- Enjoys strong backing from women, the Government and health professionals
- Strong professional leadership to ensure evidence based guidance and quality assurance
  - ACCS, BSCCP, BSCC, QA Directors
- UK Cervical Screening is respected worldwide

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The Cervical Screening Programme

HPV testing is moving to centre stage

- HPV causes cervical cancer
- HPV DNA tests are very sensitive
- High negative predictive value
- Less specific especially in younger women
- High throughput testing; automated with positive/negative results

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HPV Testing in NHS Cervical Screening Programme

- Established for triage of low grade cytology
- Established for test of cure
  - these enable rapid return to routine recall
- Ongoing large pilot for primary screening
- Offers a strategy for self sampling
  - will enable extension of screening intervals to 5 years
- Requires reflex cytology for HPV positive results

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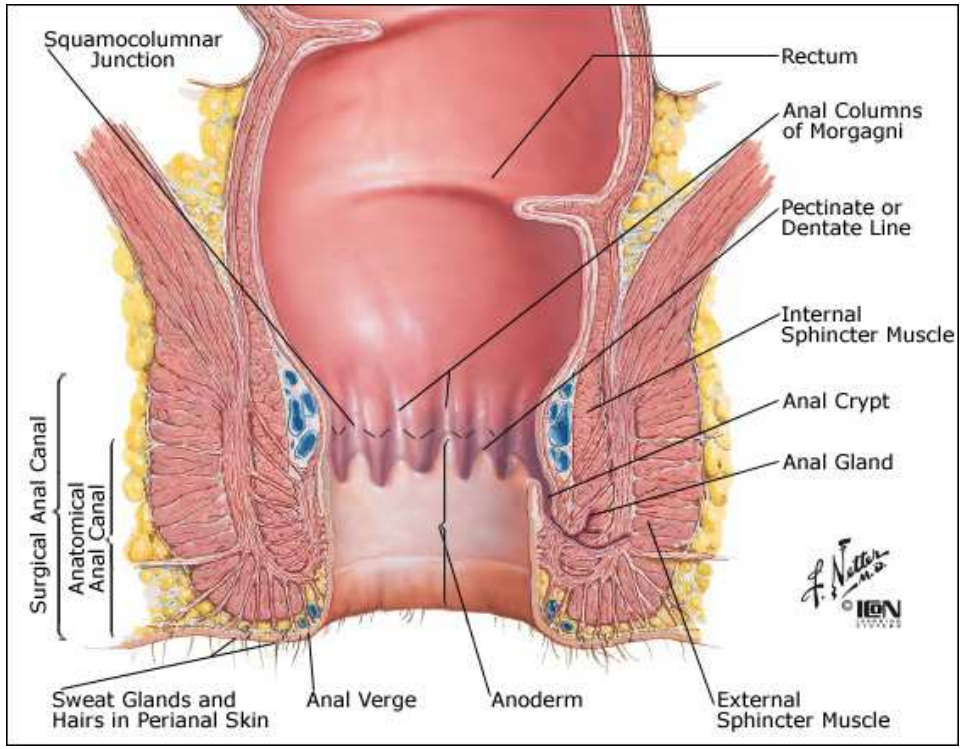
So, what about anal screening?

Is it rational?

Is it feasible?

Is it acceptable?

Is it practicable?



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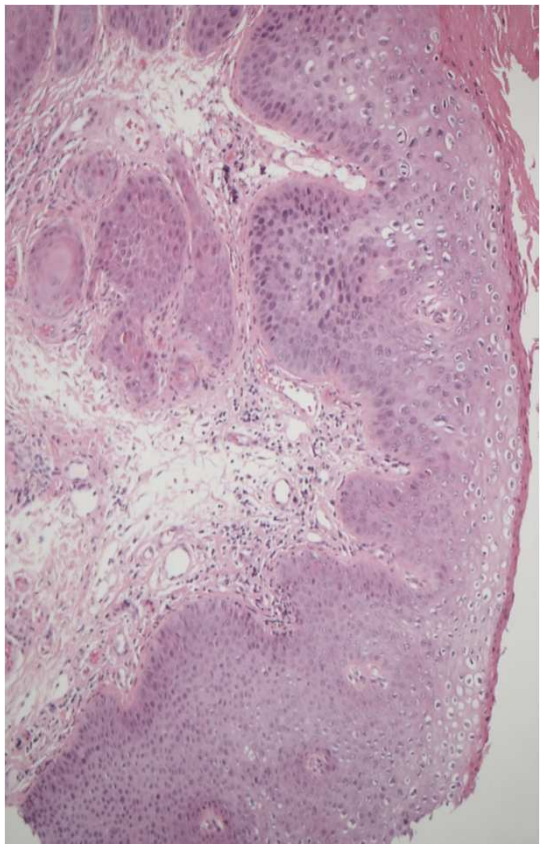
Is anal cancer screening rational, feasible, acceptable and practicable?

- Like cervical cancer there is a lengthy pre invasive phase enabling secondary prevention
- HPV is a critical aetiological factor
- The anus is relatively easy to access for inspection, biopsy, and sampling for cytology
- Pre invasive lesions can be treated surgically
- High risk groups can be identified
- Clinical experience suggests that patient find screening acceptable



AIN 3 & Invasive Cancer

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ANALOGY

Screening individuals at high risk for anal cancer

A Schofield, J Patnick, A Sukthankar, S Higgins, J Hill, R McMahon, M Desai, L Sadler, A Sargent, HC Kitchener

Funded by the NHS Cancer Screening Programmes, operated by Public Health England

Incidence of anal cancer in the UK

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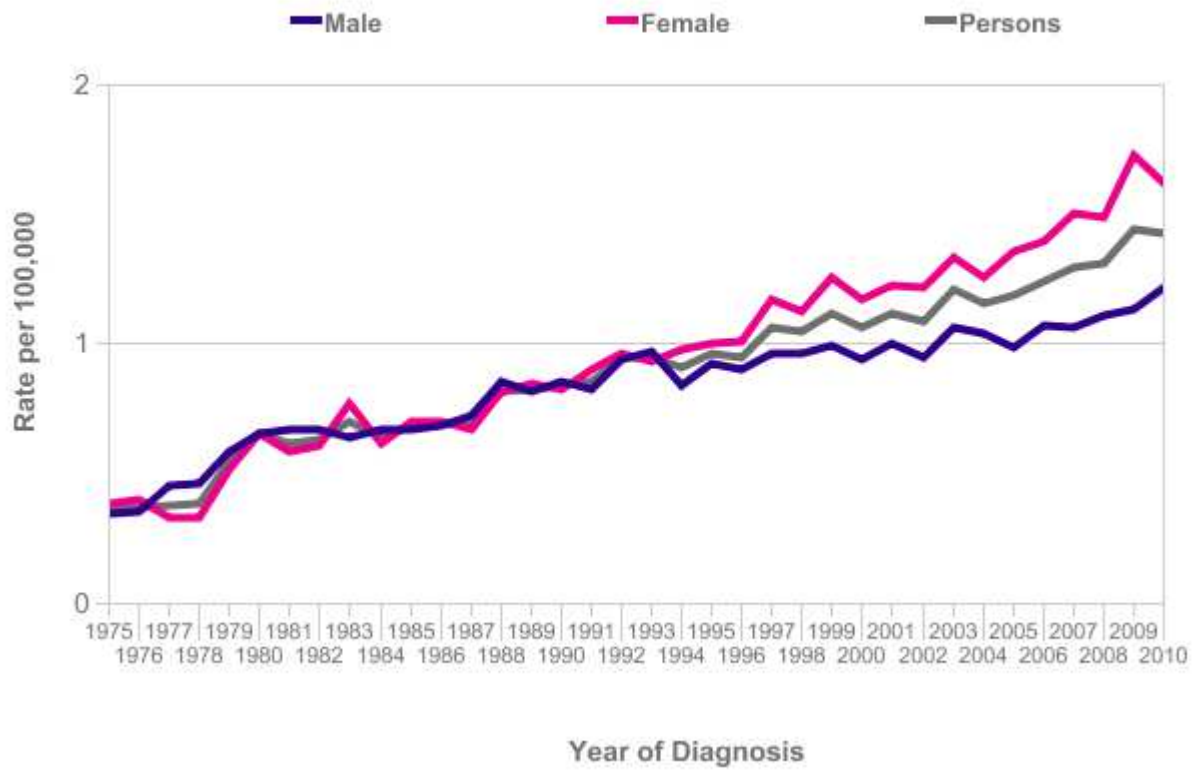
Anal Cancer (C21): 1975-2010

European Age-Standardised Incidence Rates per 100,000 Population, by Sex, Great Britain



From http://info.cancerresearchuk.org/cancerstats/faqs/#How

Prepared by Cancer Research UK

Original data sources:

1. Office for National Statistics. Cancer Statistics: Registrations Series MB1. http://www.statistics.gov.uk/statbase/Product.asp?vlnk=8843.
2. Welsh Cancer Intelligence and Surveillance Unit. http://www.wcisu.wales.nhs.uk.
3. Information Services Division Scotland. Cancer Information Programme. www.isdscotland.org/cancer.

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Incidence figures

Statistic	Male	Females	Persons
Number of new UK cases per year (2010)	437	673	1100
Incidence rate per 100,000 population	1.2	1.6	1.4
Number of UK deaths per year (2011)	113	186	299
Incidence rate per 100,000 population	0.3	0.4	0.3

- Incidence rates amongst HIV+ MSM are estimated to be more than 80 times higher than HIV uninfected men and women (Silverberg et al. 2012)

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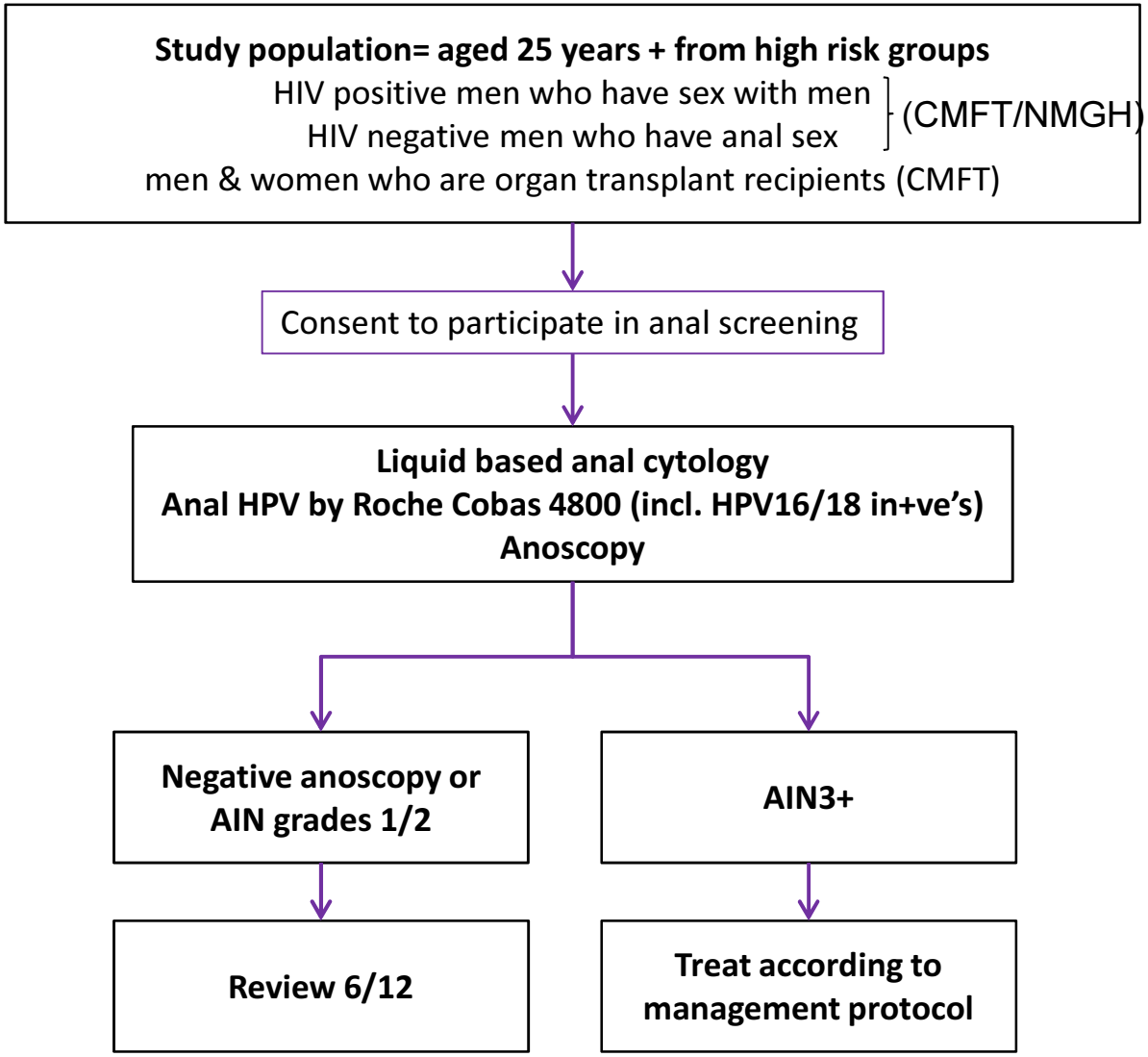
ANALOGY



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Recruitment by study group

Group	Number recruited
HIV+ MSM	178
HIV- MSM	61
Male transplant	52
Female transplant	38
TOTAL	329

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HPV data

High Risk (HR) HPV Type	MSM (n=227)		Total n (%)	TR (n=81)		Total n (%)
	HIV+ (n=170) n (%)	HIV- (n=57) n (%)		Male (n=49) n (%)	Female (n=34) n (%)	
HR non 16/18	70 (41.2)	20 (35.1)	90 (39.6)	4 (8.2)	6 (17.6)	10 (12.0)
16 and/or 18 only	2 (1.2)	2 (3.5)	4 (1.8)	1 (2.0)	2 (5.9)	3 (3.6)
HR 16 and/or 18 and/or other HR	75 (44.1)	24 (42.1)	99 (43.6)	0 (0.0)	1 (2.9)	1 (1.2)
Negative	20 (11.8)	11 (19.3)	31 (13.7)	43 (87.8)	25 (73.5)	68 (81.9)
Unsatisfactory	3 (1.8)	0 (0.0)	3 (1.3)	1 (2.0)	0 (0.0)	1 (1.2)
Total	**170**	**57**	**227**	**49**	**34**	**83**

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Cytology data

Cytology Result	MSM (n=220)		Total n (%)	TR (n=82)		Total n (%)
	HIV+ (n=166) n (%)	HIV- (n=54) n (%)		Male (n=49) n (%)	Female (n=33) n (%)	
Unsatisfactory	4 (2.4)	1 (1.9)	5 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)
Negative	90 (54.2)	38 (70.4)	128 (58.2)	46 (93.9)	27 (81.1)	73 (89.0)
Low grade	55 (33.1)	10 (18.5)	65 (29.5)	2 (4.1)	2 (6.1)	4 (4.9)
High grade	16 (9.6)	5 (9.3)	21 (9.5)	1 (2.0)	4 (12.1)	5 (6.1)
Ungraded	1 (0.6)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)
Total	**166**	**54**	**220**	**49**	**33**	**82**

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Histopathology data

Biopsy Result	MSM (n=124)		Total n (%)	TR (n=22)		Total n (%)
	HIV+ (n=111) n (%)	HIV- (n=25) n (%)		Male (n=15) n (%)	Female (n=7) n (%)	
Negative (including inflammation)	10 (9.0)	3 (12.0)	13 (9.6)	2 (13.3)	0 (0.0)	2 (9.1)
HPV	21 (18.9)	1 (4.0)	22 (16.2)	4 (26.7)	2 (28.6)	6 (27.3)
AIN 1/2	54 (48.6)	15 (60.0)	69 (50.7)	7 (46.7)	3 (42.9)	10 (45.5)
AIN 3	8 (7.2)	3 (12.0)	11 (8.1)	0 (0.0)	1 (14.3)	1 (4.5)
Invasive Cancer	2 (1.8)	0 (0.0)	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0) 0
Ungraded	16 (14.4)	3 (12.0)	19 (14.0)	2 (13.3)	1 (14.3)	3 (13.6)
Total	111	25	136	15	7	22

202 patients have had a biopsy taken: results available for 158 patients

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Correlation between cytology and biopsy results

	Cytology Negative	Cytology borderline+	Total
	Total	Total	
Histology <AIN2	57	30	79
Histology AIN2+	29	39	63
Total	86	69	155

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Attitude of participants towards anal screening

	MSM		TR		TOTAL % (n)
	HIV+ % (n)	HIV- % (n)	Male % (n)	Female % (n)	
Study experience					
Very positive/ mostly positive	41 (100)	19 (100)	30 (100)	17 (100)	107 (100)
Mostly negative /very negative	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Future attendance					
Yes	37 (92.5)	17 (89.5)	29 (96.6)	17 (85)	100 (91.7)
No	0 (0)	1 (5.3)	0 (0)	1 (5)	2 (1.8)
Unsure	3 (7.5)	1 (5.3)	1 (3.3)	2 (10)	7 (6.4)

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‘Interim’ conclusions

- A higher prevalence of AIN amongst MSM compared with TR, and amongst HIV+ MSM compared with HIV- MSM.
- The very high prevalence of HPV amongst MSM, together with the ‘false negative’ cytology, would indicate that anoscopy should form the basis of screening MSM.
- It would appear that high risk groups find anal screening by anoscopy acceptable and would attend for screening.
- The challenges of treating detected AIN need to be considered when thinking about the practicability of anal screening.

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Criteria for an Effective Screening Programme

Intervention will improve health outcomes Cervix ✓ (Anus ✓)

Screening test is sufficiently sensitive and specific Cervix ✓ (Anus ✓)

Convenient and acceptable means of diagnosis Cervix ✓ (Anus ✓)

Effective and straightforward treatment Cervix ✓ (Anus ✓)

Benefits outweigh harms Cervix ✓ (Anus ?)

Screening should be cost effective and affordable Cervix ✓ (Anus ✓)

Define age range and screening interval Cervix ✓ (Anus ✘)

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Should women attending for routine colposcopy be tested for HIV?

- Cervical cancer is an HIV indicator disease
- Detecting HIV is a public health priority
- BHIVA and BASHH have both advocated for HIV testing for women with CIN grade 2 or worse
- Discussed at ACCS with some reticence expressed
- Prevalence reported from colposcopy varies
- Survey planned in collaboration with BSCCP
- ACCS will reconsider

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Summary

- Cervical cancer screening has been very successful
- Anal cancer shares similar aetiology and pathology
- Anal cancer screening for high risk groups is feasible and acceptable
- Management of AIN is not straightforward which requires careful consideration in the context of screening
- HIV testing for women at colposcopy remains under consideration