

**Cervical cancer screening:
What will be the role of the cytotechnician
if primary HPV screening is introduced?
How will the colposcopist cope with
'screening by colposcopy'?**



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Guy's & St Thomas' NHS Foundation Trust
50th Anniversary of SFCC
22 November 2017**

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Je ne sais pas

et

Je ne sais pas



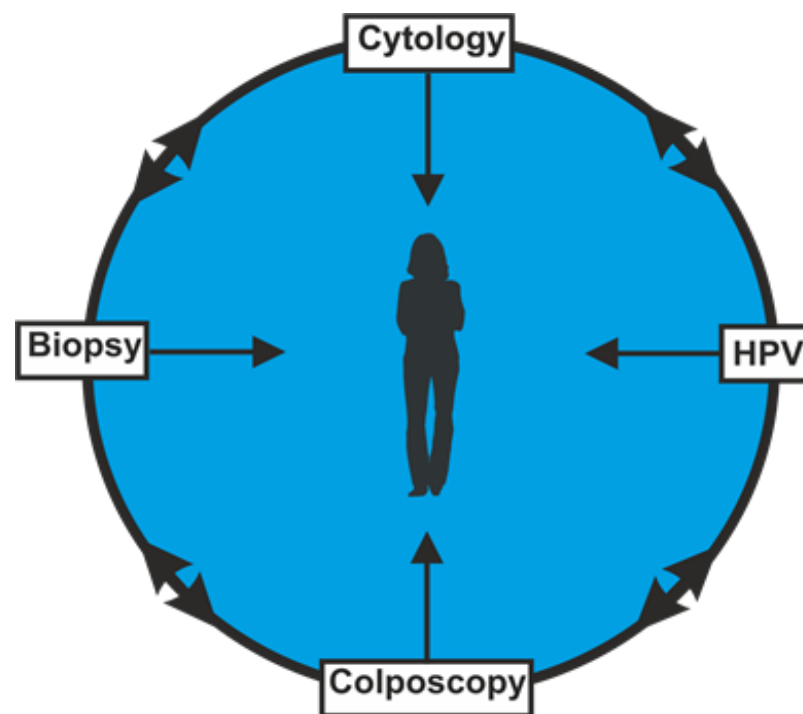
**Cervical cancer screening:
What will be the role of the cytotechnician
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'screening by colposcopy'?**

Les deux cas *devait être* comme ça



Cytologists, pathologists and colposcopists should work together as a multidisciplinary team

- Decisions on treatment and management require assessment of cytology, colposcopy findings, punch biopsies, clinical context, HPV status.....
- and a mutual understanding of certainties and pitfalls of each others' results



Cervical cancer screening:

What will be the role of the cytotechnician if primary HPV screening is introduced?

How will the colposcopist cope with 'screening by colposcopy'?

**The
cytotechnician/cytotechnologist/biomedical scientist/advanced practitioner and the pathologist depend on each other and should work together**

Cervical cancer screening:

What will be the role of the cytotechnician if primary HPV screening is introduced?

How will the colposcopist cope with 'screening by colposcopy'?

The colposcopist has to decide who to treat, who to follow up and who to return to routine screening - and should make decisions through a multidisciplinary team

Challenges for all disciplines

- Perception that HPV testing is 'better' than cytology although specificity is far worse (~15%) and sensitivity similar to cytology at its best (~85%)
- Vaccination will result in relatively fewer abnormalities, which will reduce specificity and sensitivity of cytology – and make it boring
- Fewer women will be screened even if (?three per lifetime) recommended in vaccinated women
- ~85% of women with ASC-US+/hrHPV+ results will not have CIN2+ and even fewer will have CIN3+

Challenges for all disciplines

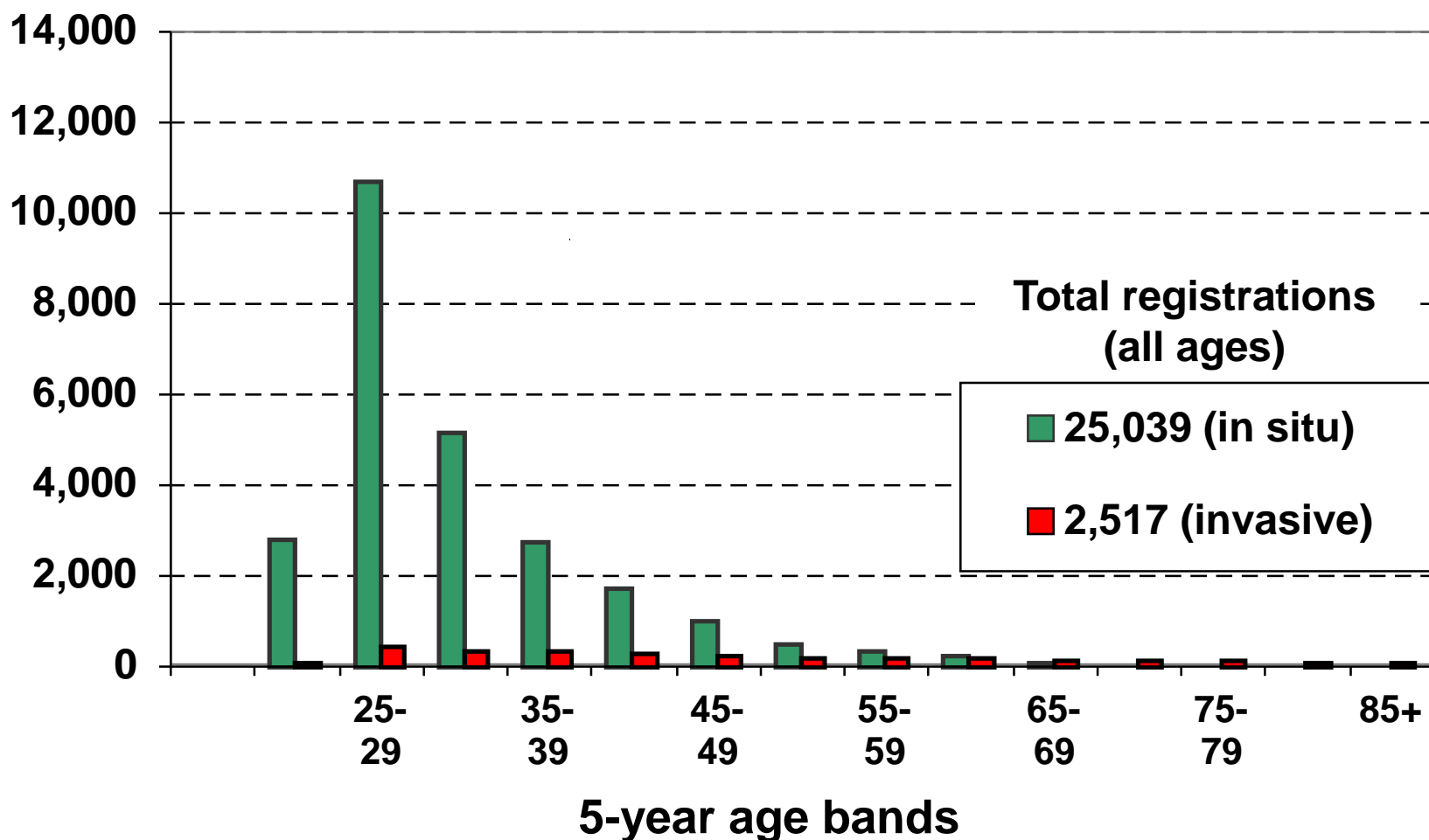
- Primary hrHPV testing will be introduced with or without cytology triage or co-testing
- Cytology workloads for cervical screening will inevitably decline especially with respect to 'primary screening'
- Cytologists should train, retrain or get more involved in non-gynaecological cytology and roles such as pre-screening and rapid onsite assessment
- **Diagnostic gynaecological cytopathology** should be recognised as an important topic for pathologists

Primary HPV testing

- Most clinical trials of primary HPV testing start at age 30, with cytological screening before that age
- Australia, NZ and UK (and ?the Netherlands) propose to start at age 25 with no cytology back up for hrHPV- tests
- Co-testing in the first two high prevalence rounds would optimise sensitivity while reducing the relative number of negative tests by about 50%
 - Herbert A. Primary HPV testing: a proposal for co-testing in the initial rounds..... *Cytopathology* 2017;28:5-19

Registrations of invasive and in-situ (CIN3/AIS) cervical carcinoma - England 2015 (ONS data, 2017)

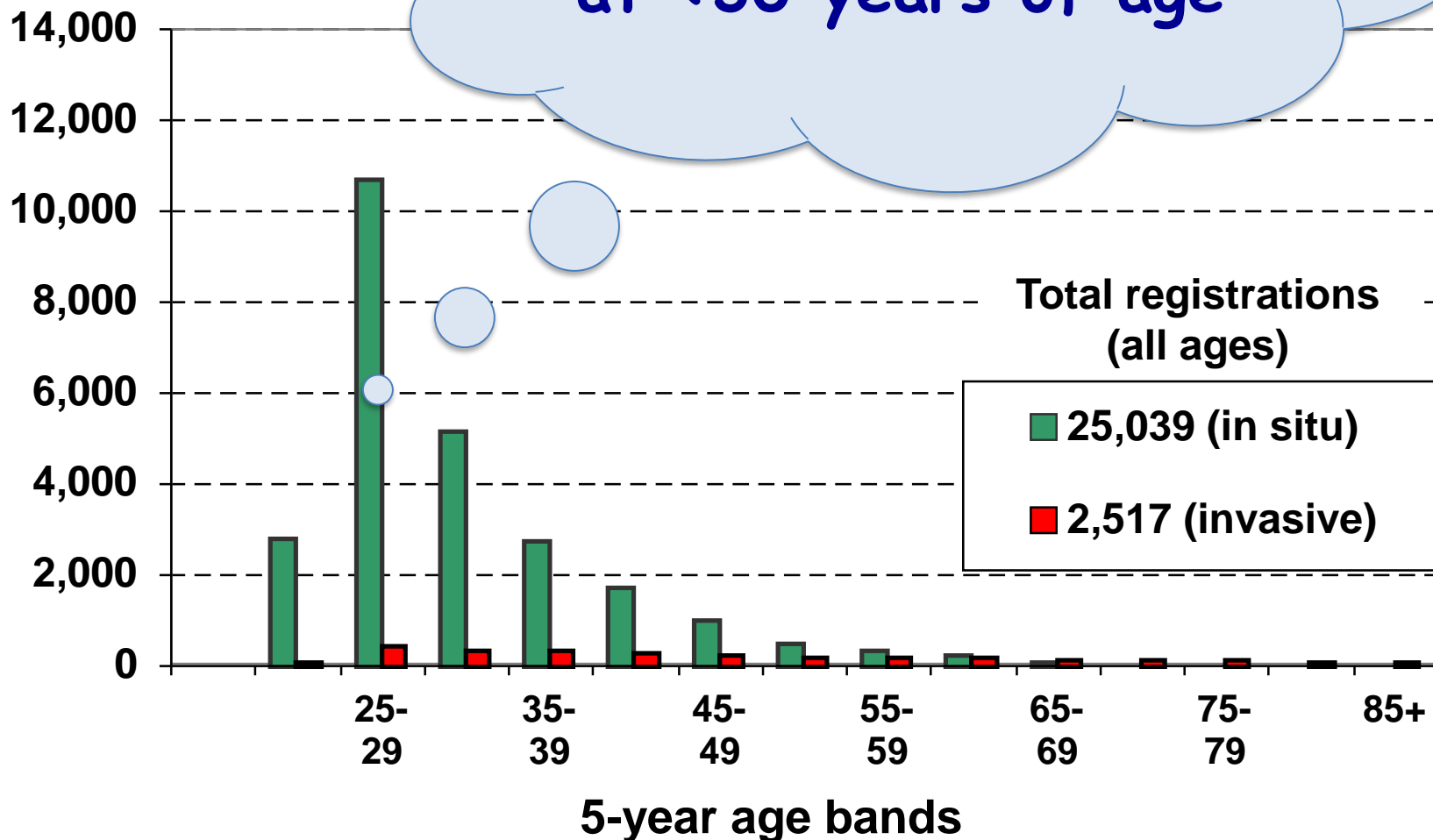
Registrations in each age band



Registrations of invasive cervical carcinoma

53% of CIN3 in England is detected at <30 years of age

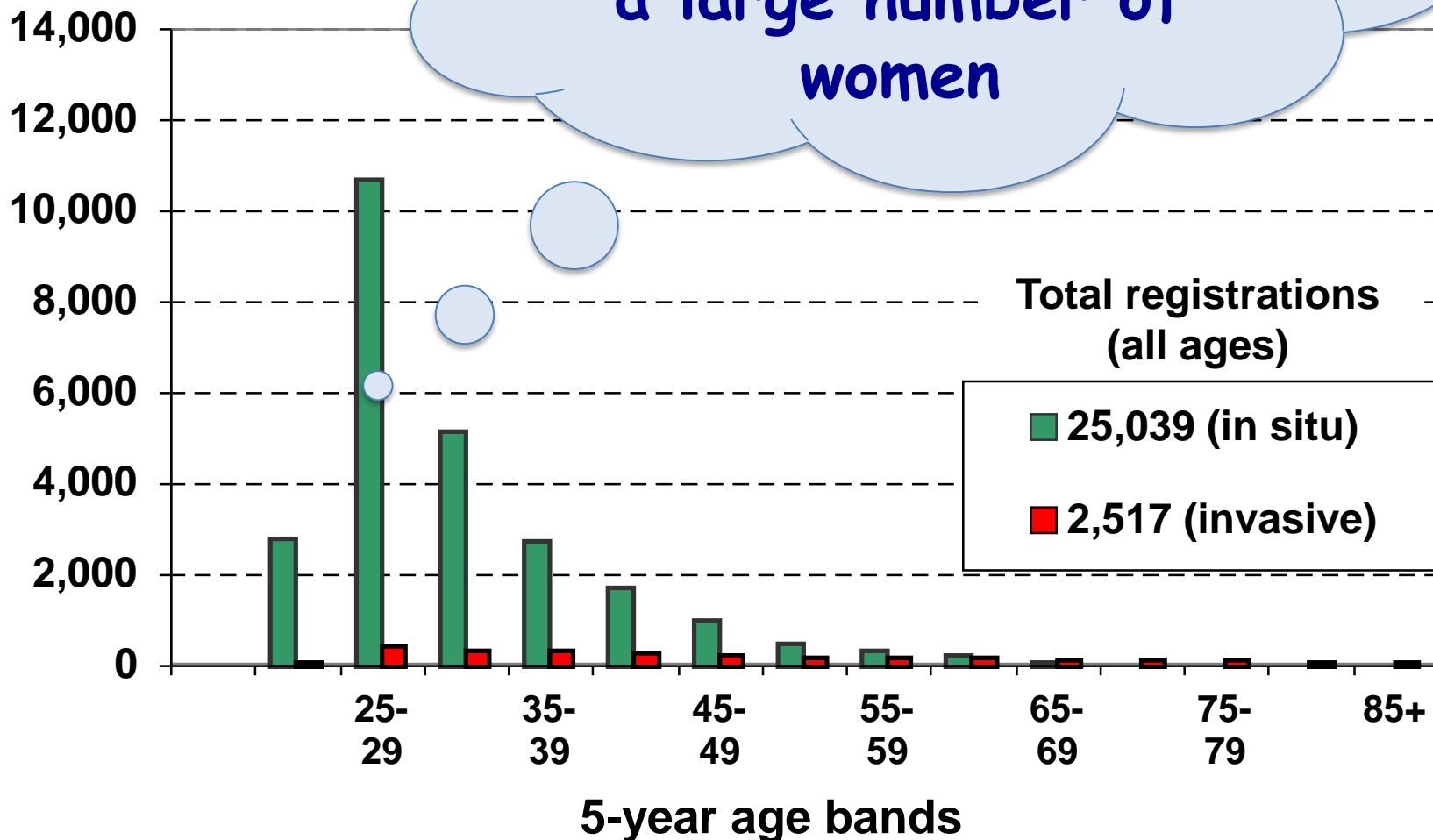
Registrations in each



Registrations of invasive cervical carcinoma

5-15% false negative
hrHPV would involve
a large number of
women

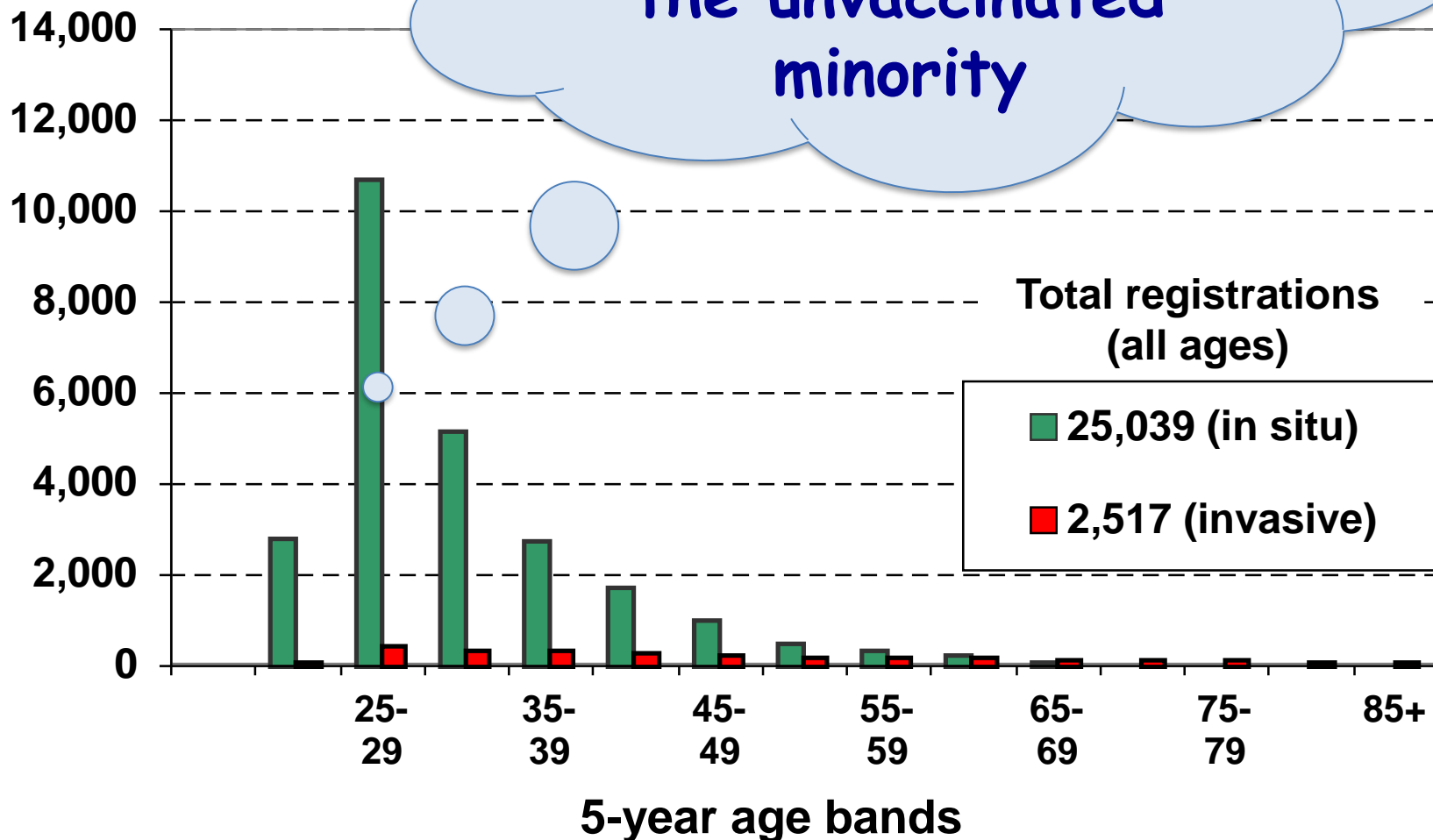
Registrations in each



Registrations of invasive cervical carcinoma

Far fewer from 2020
when it will affect
the unvaccinated
minority

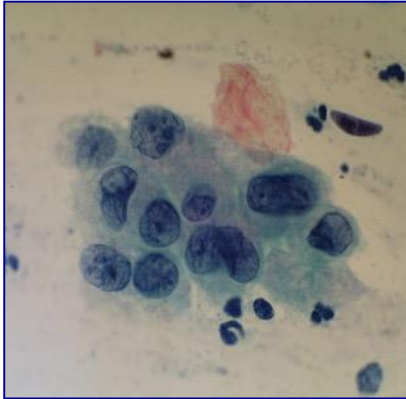
Registrations in each



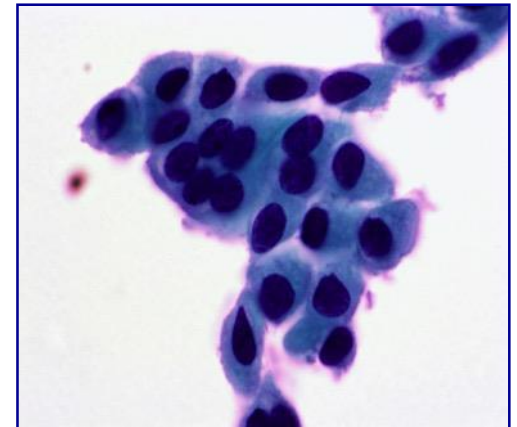
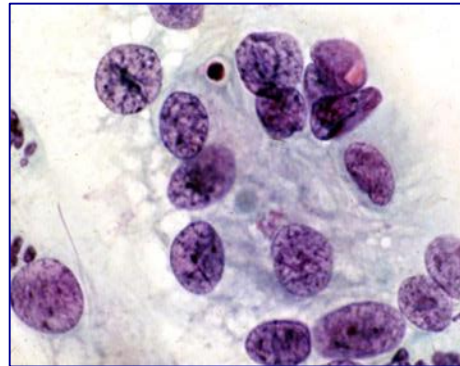
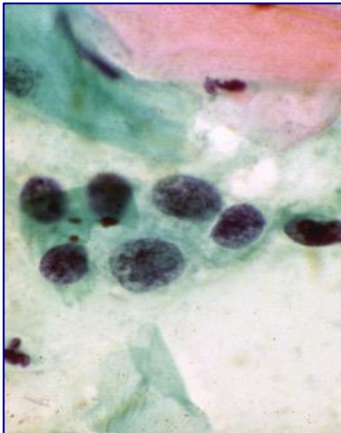
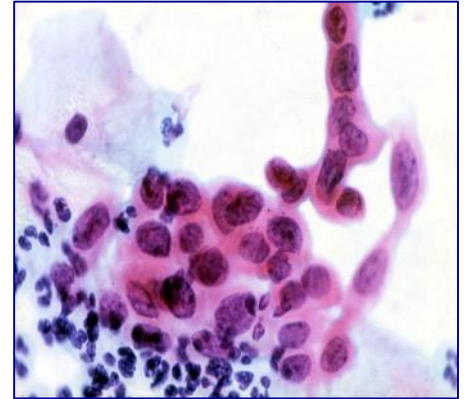
Challenge for cytologists

- Critical decision is abnormal versus normal (more difficult if all hrHPV- tests are excluded)
- ASC-US/LSIL versus HSIL+/ASC-H does matter (HSIL+ will not have hrHPV triage)
- Moderate/ASC-H versus severe dyskaryosis/dysplasia does matter – specificity and PPV are different, which is helpful to the colposcopist
- Glandular abnormalities (AGC) do matter: AIS and adenocarcinoma is more difficult at colposcopy

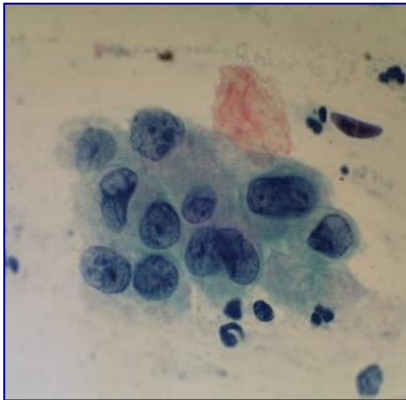
Critical distinctions on cytology



**Immature metaplasia
versus HSIL (usually
moderate, sometimes
ASC-H)**

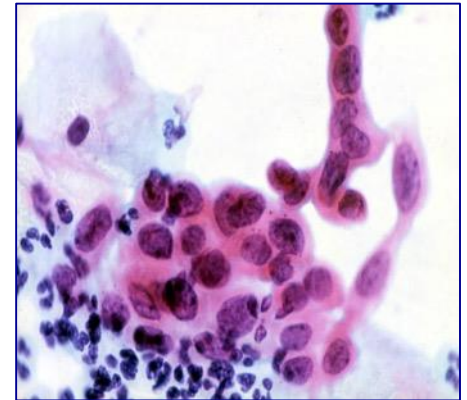


Critical distinctions on cytology

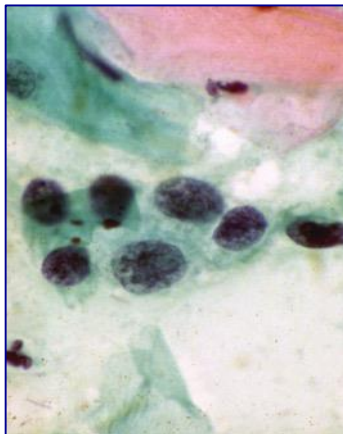


**Immature
metaplasia
with TV**

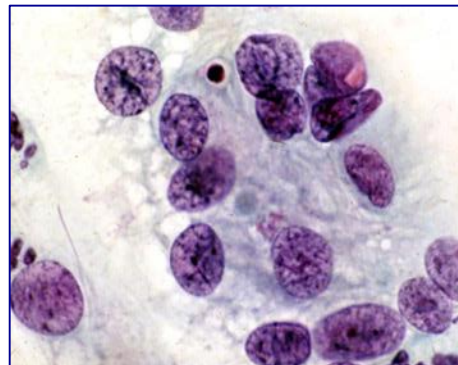
**Reported
as HSIL
(moderate)**



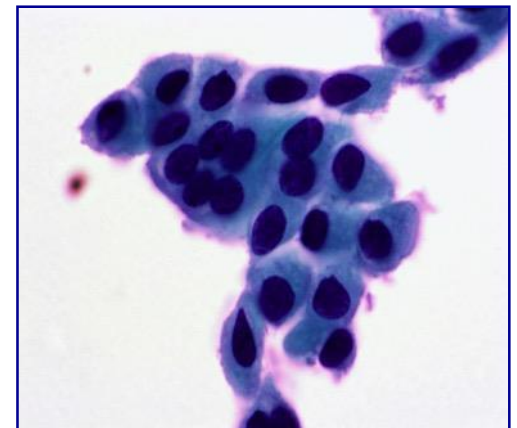
Tubal metaplasia



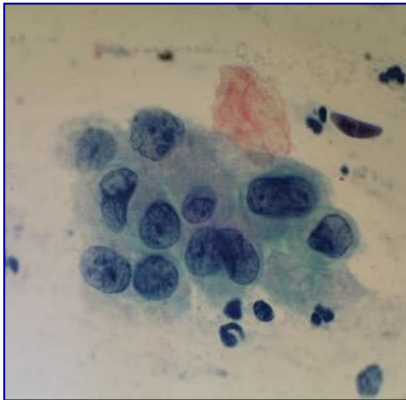
**Large pale cell
HSIL (CIN3)**



**Immature metaplasia
(ThinPrep)**

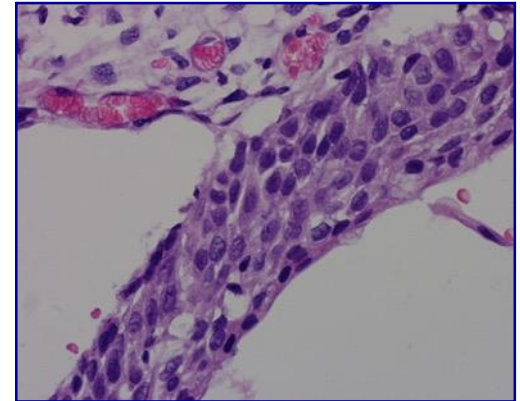


Critical distinctions on cytology

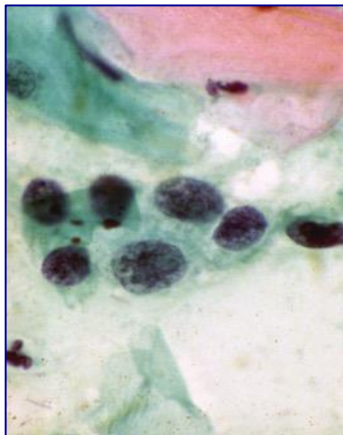


**Immature
metaplasia
with TV**

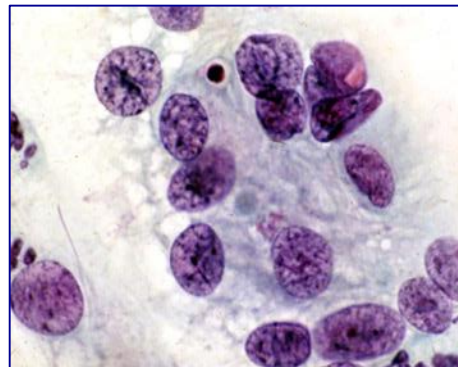
**Reported
as CIN2
But is it?**



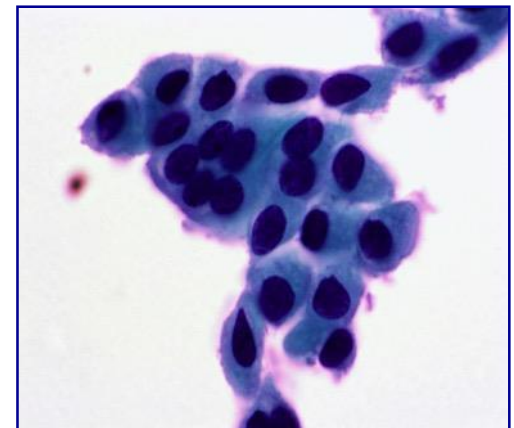
Tubal metaplasia



**Large pale cell
HSIL (CIN3)**



**Immature metaplasia
(ThinPrep)**



HSIL: moderate versus severe does help

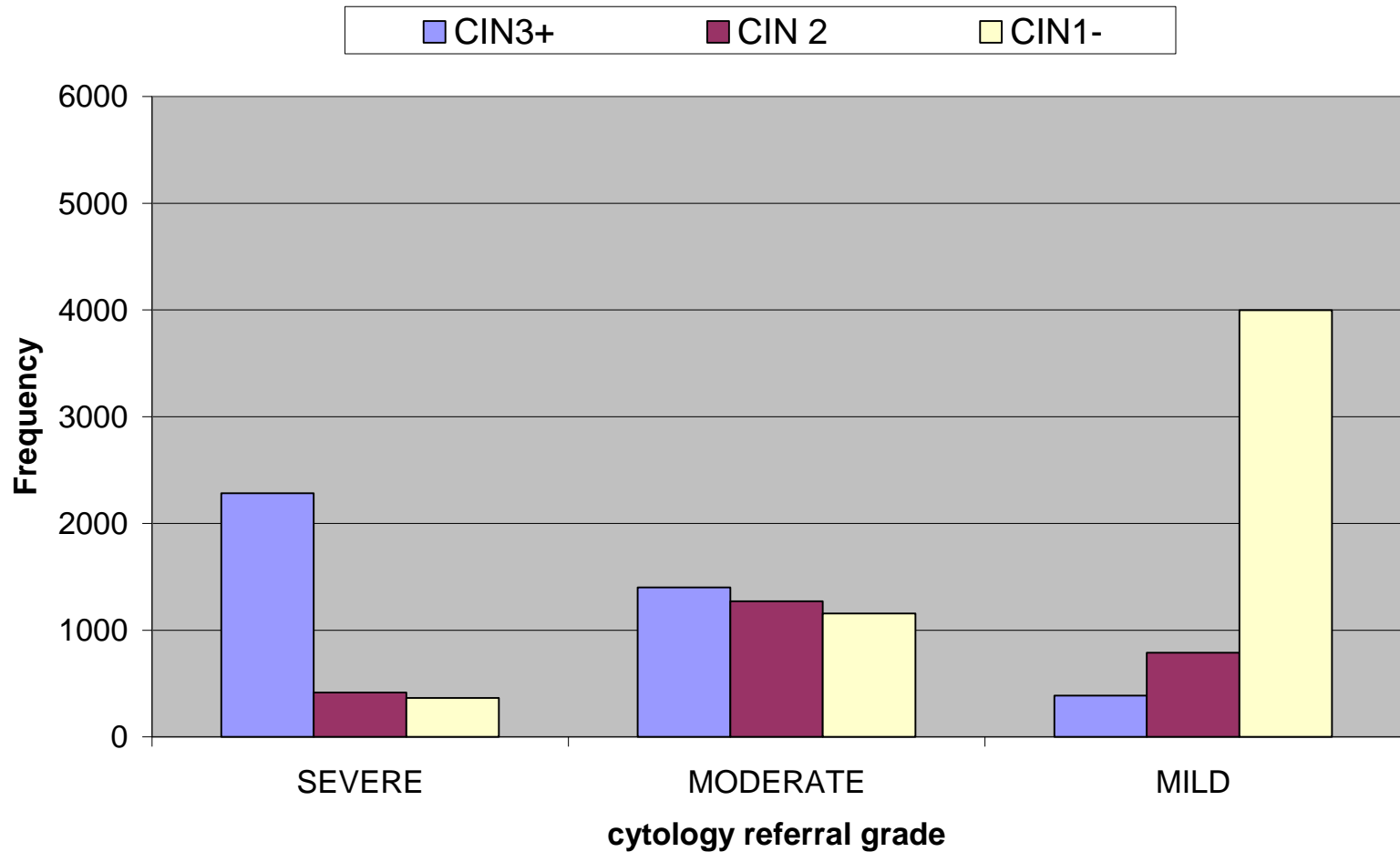
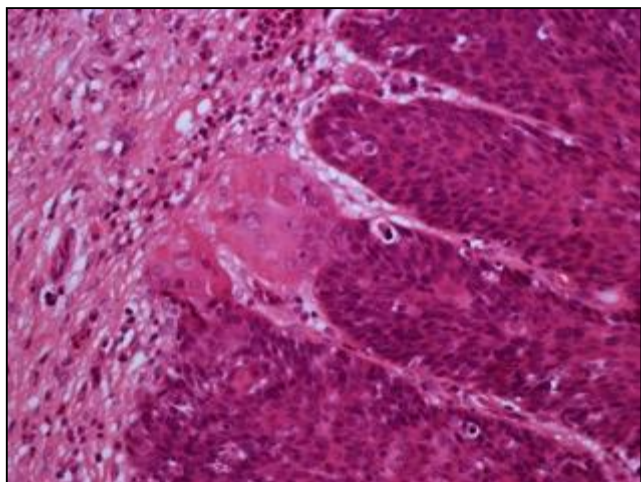


Figure 1a from Blanks and Kelly: Cytopathology 2010; 21:368-73.

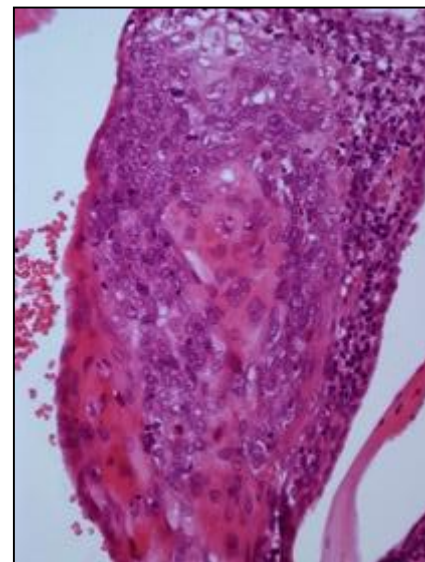
Challenge for pathologists

- Critical decision is abnormal versus normal
- CIN1 versus CIN2 is also critical, is highly subjective and may require immunos (p16/MIB1)
- CIN2 versus CIN3 does matter – 50% of CIN2 is reversible and may not require treatment in young women (how young? 53% are <30 years of age)
- CIN3 is the most robust diagnosis – but early stromal invasion may occasionally be missed

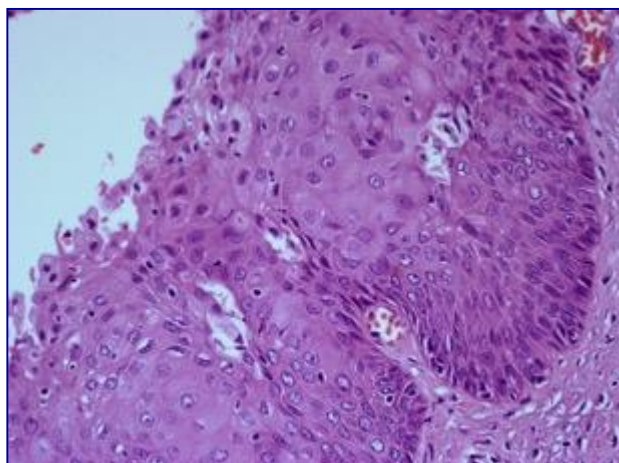
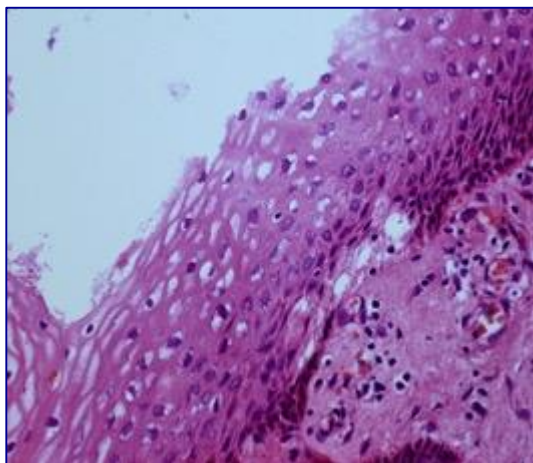
Challenge for pathologists



**Early stromal invasion
on review of LLETZ
reported as CIN3**



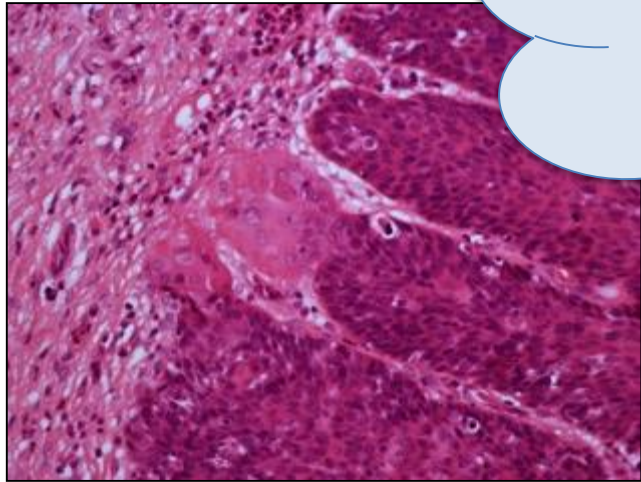
**Single focus of
?invasive SCC
on review of
LLETZ reported
as no CIN**



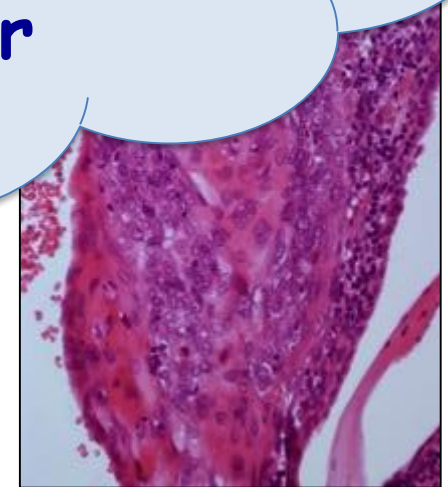
HPV-related, no CIN vs. CIN1; CIN1 vs. CIN2

Challenge

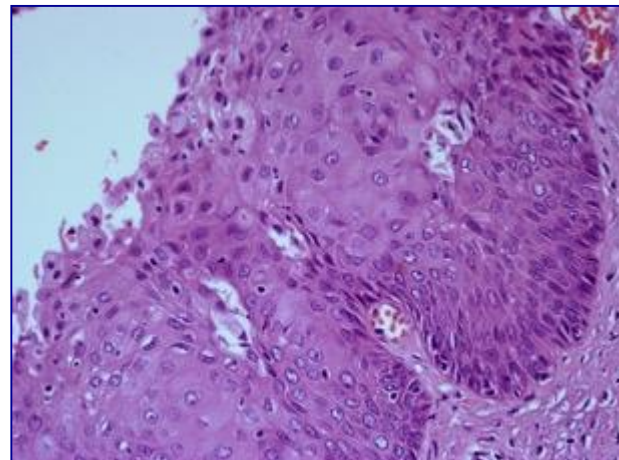
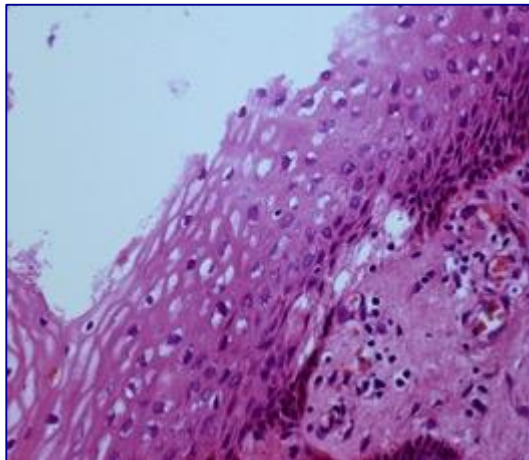
**All these women
developed invasive
cancer one to several
years later**



**on review of LLETZ
reported CIN3**



**Single focus of
?invasive SCC
on review of
LLETZ reported
as no CIN**



HPV-related, no CIN vs. CIN1; CIN1 vs. CIN2

Challenge for colposcopists

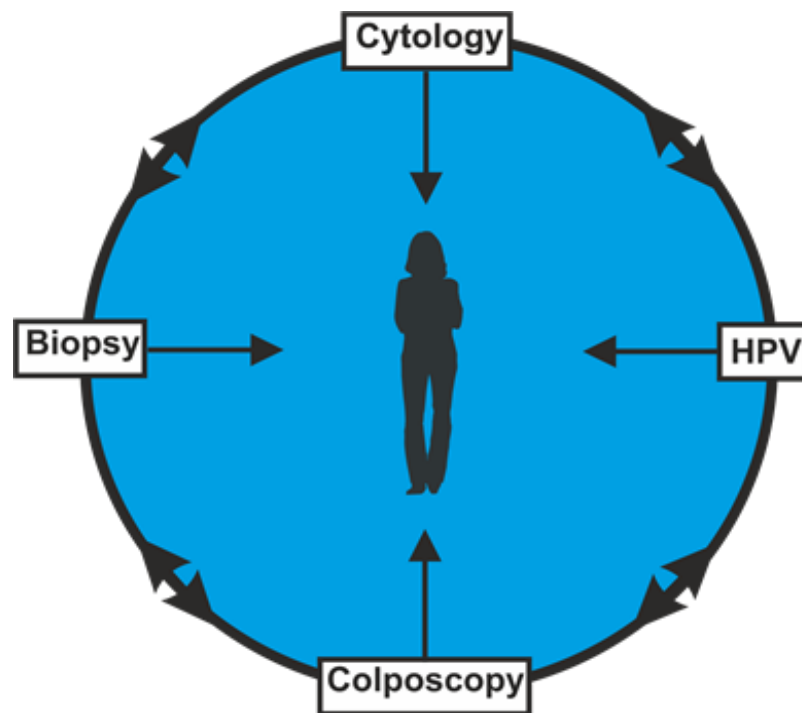
- Critical decision is \leq CIN1 versus CIN2+
- CIN2 versus CIN3+ matters: 'triple assessment' of colposcopic appearance along with cytology and biopsy would help
- Risk factors may be significant (duration of abnormalities, age of patient, previous treatment)
- Follow up is important: hrHPV positivity, ASC-US/LSIL/CIN1 are all risk factors for progression
- Glandular abnormalities are difficult to detect

Risk factors for post-treatment recurrence or cancer

- **Usually CIN3** rather than CIN2 at initial excision
- **Age at initial excision** (average 41 cf. 31 years)
- **Incomplete initial excision** (especially at endocervical or deep margin) – or residual CIN3 not treated
- **Depth of CIN3 more than 2mm**
- **Residual abnormalities on cytology, histology and colposcopy may be sparse or inconspicuous**
- **Review of histology is as important as cytology**
 - AH, GC, EMcL, AAK. Invasive cervical cancer after treatment of CIN: why does it happen? Study at Guy's & St Thomas' submitted for publication

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- and a mutual understanding of certainties and pitfalls of each others' results



Merci beaucoup
pour votre
attention et
pour m'avoir
invité à Paris!

