NHS
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# Colposcopy Update
# Gynae Oncology Symposium 2020

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# Outline

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- Cervical screening programme – Why, how and where we have got to.
- Colposcopy update

# Cervical Screening Programme

- **Regularly screens** women at risk via the NHS call and recall system
- Aims to reduce the number of women **who develop** invasive cervical cancer (incidence)
- Aims to reduce the number of women **who die from** invasive cervical cancer (mortality)

# History of Cervical Screening in the UK

- Cervical screening began in the UK in the mid 1960's
- By mid 1980's, many women were having regular tests, but concern that those at greatest risk were not tested, and those that had positive results were not being followed up and treated effectively
- NHSCSP was set up in 1988 –DOH instructed all Health Authorities to introduce computerised call and recall systems

# pHPV screening: How we got here…

- Cervical Smears-original Papanicolaou method
- Liquid based cytology introduced 2006
- Liquid based cytology with HPV triage of BNA/Low Grade smears fully implemented by 2014 followed by
- Test of Cure on post treatment patients starting with first post treatment smear then extending to all treated patients within preceding 10 years.
- Complete reversal now - HPV primary screen
  - There will be **NO CYTOLOGY SLIDE unless HR HPV positive** on primary screening.

# Elements to the Programme's Success

- Identification and invitation of all eligible women at appropriate screening intervals
- Achievement of at least 80% coverage of eligible women
- Information for women to help them make an informed choice
- Team approach to ensure continuity of care
- Protocols and QA processes

# Demographics

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- There are around **3,200 new cervical cancer** cases in the UK every year, that's nearly **9 every day** (2014-2016).
- In females in the UK, cervical cancer is the **14th most common** cancer
- Cervical cancer accounts for **2%** of all new cancer cases in females in the UK (2015).
- Incidence rates for cervical cancer in the UK are highest in females aged 25 to 29 (2014-2016).
- Since the early 1990s, cervical cancer incidence rates have decreased by around a quarter (24%) in the UK.
- Over the last decade, cervical cancer incidence rates have increased by 5% in the UK.

# Cervical Screening and Colposcopy referrals 2018-2019

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## 4.41 million women aged 25-64 invited for screening

A decrease of 1.0% on the previous year when 4.46 million women were invited.

## 3.43 million women aged 25-64 tested

An increase of 7.7% on the previous year when 3.18 million women were tested.

## Colposcopy

In 2018-19:

182,304 women were referred for colposcopy (all ages)

# Cervical Screening Programme Impact

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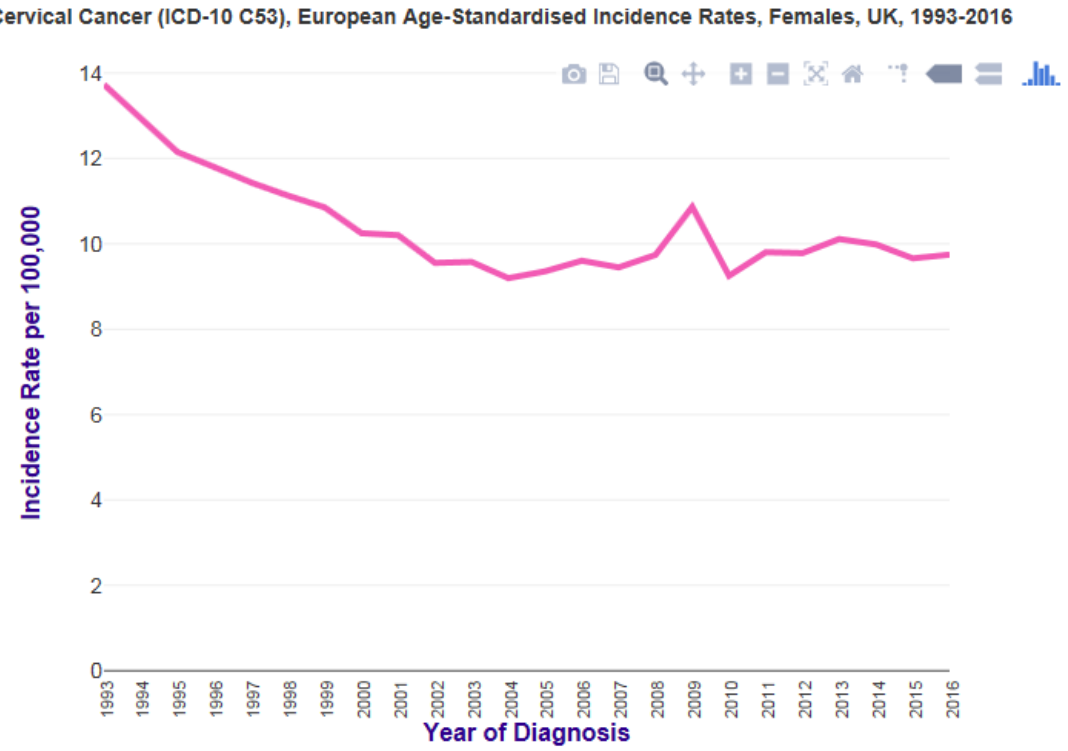
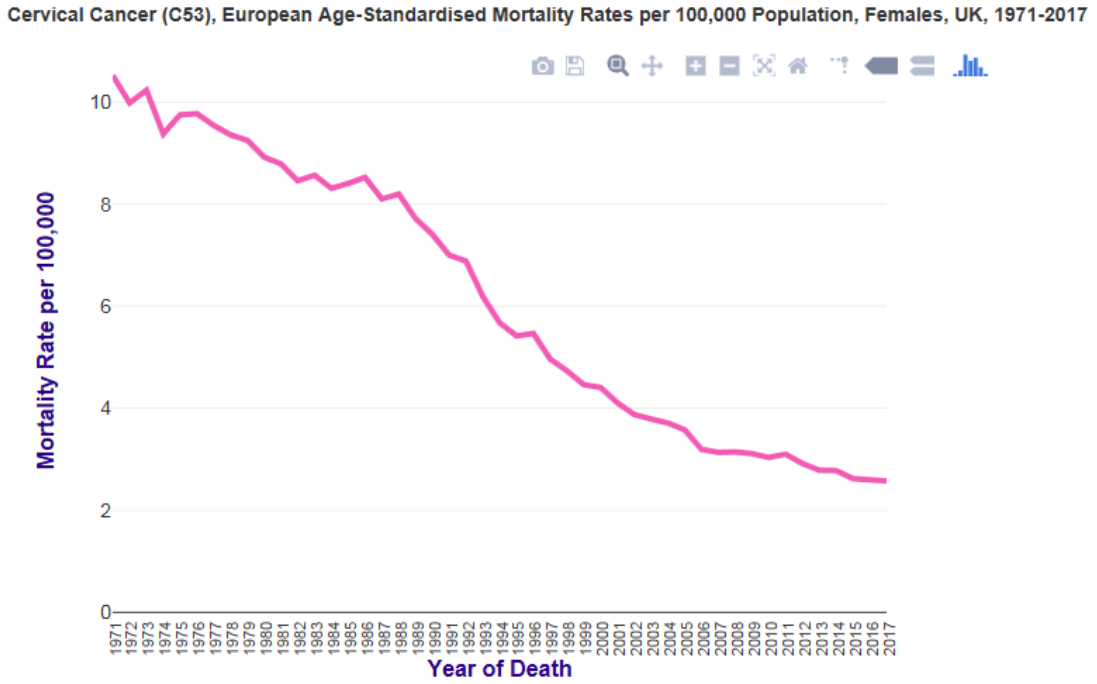
## 25% reduction in incidence since early 90's




## Mortality from Cervical cancer more than halved since introduction of CSP



# Risk Factors for Cervical Cancer

- “High Risk” human papilloma virus –HPV16 and HPV18 found in >99% cervical cancers
- Women with many sexual partners or whose partners have had many sexual partners – more likely to be exposed to HPV
- Immunosuppressed women –solid organ transplant/HIV+ve
- Women who smoke – twice as likely to develop cervical cancer than non smokers
- Long term ocp increases risk but benefits far outweigh risks for the majority of women

# Risk Factors for Cervical Cancer

- Screening is one of the best defences against cervical cancer
- Many who develop cancer **have never been screened**
- The biggest risk factor is non-attendance for screening

# Limitations of Cervical Screening

- Detection of minor abnormalities in cells which may have cleared on their own – thus risk of overtreatment
- Anxiety
- Not a diagnostic test – does not pick up on every abnormality
- Can prevent around 75% cervical cancers developing, not every case
- Cervical sampling can be perceived as an unpleasant experience

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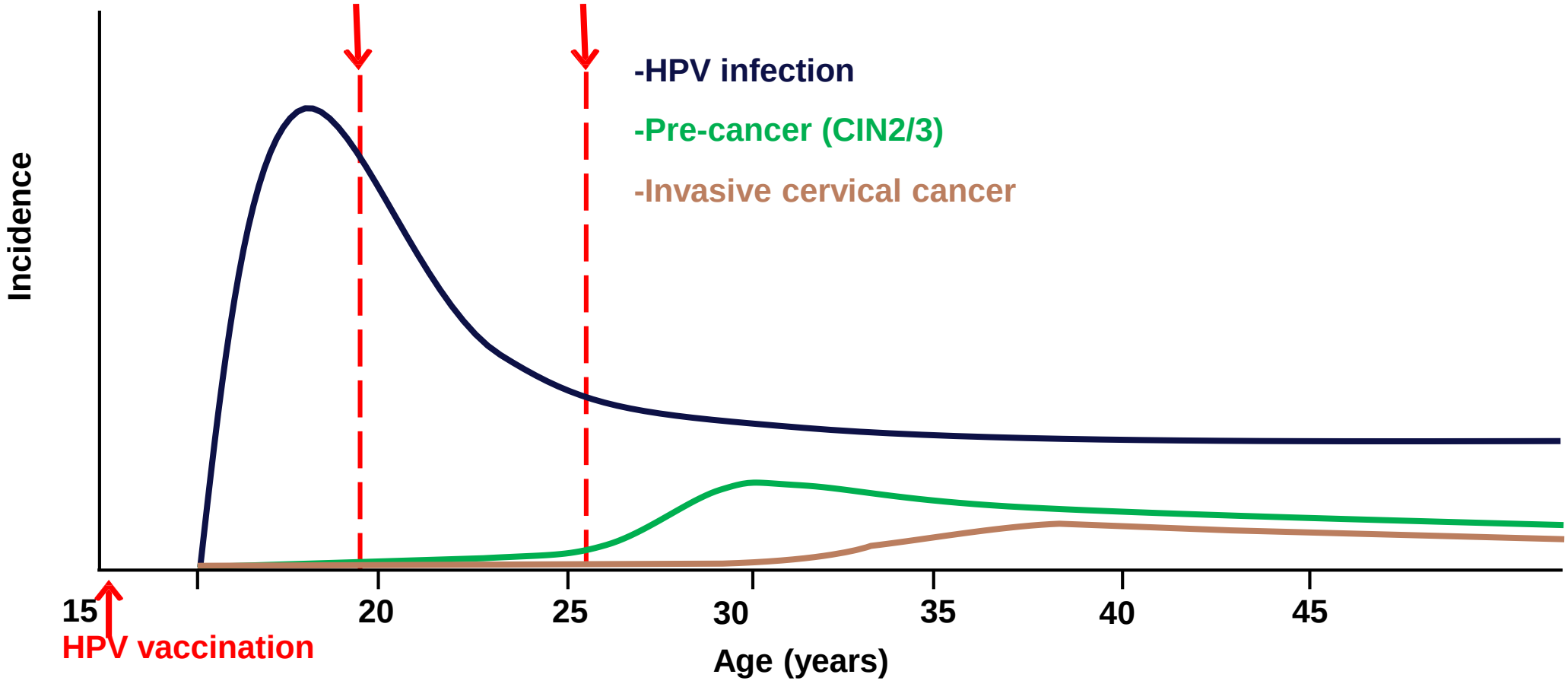
# Screening Intervals

| **Age group** | **Frequency of Screening** |
|---|---|
| 25 | First Invitation sent at 24.5 |
| 25 - 49 | 3 yearly |
| 50 - 64 | 5 yearly |
| 65+ | Only screen those who have not been screened since age 50 or have had recent abnormal tests |

# Advisory Committee on Cervical Screening Recommendations June 2009

- Unanimous agreement for no change in the screening age
- Guidance on managing young women with gynae symptoms
- Audit of young women diagnosed with cervical cancer + symptoms before
- Awareness campaign for GP's PN's
- Expansion of work to increase uptake of screening in women aged 25-34.

# Cervical disease by age




Adapted from Lowry & Schiller, J Clin Invest,116:1167 (2006)

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# Human papillomavirus (HPV)

- High risk (HR) HPV is associated with cervical intraepithelial neoplasia (CIN) and is found in 99.7%* of cervical cancer cases
- Persistent infection with HR-HPV is a necessary but insufficient cause of cervical cancer
- Persistent HR-HPV infection increases the risk of women developing cervical cancer
- Transient HR-HPV infection is common

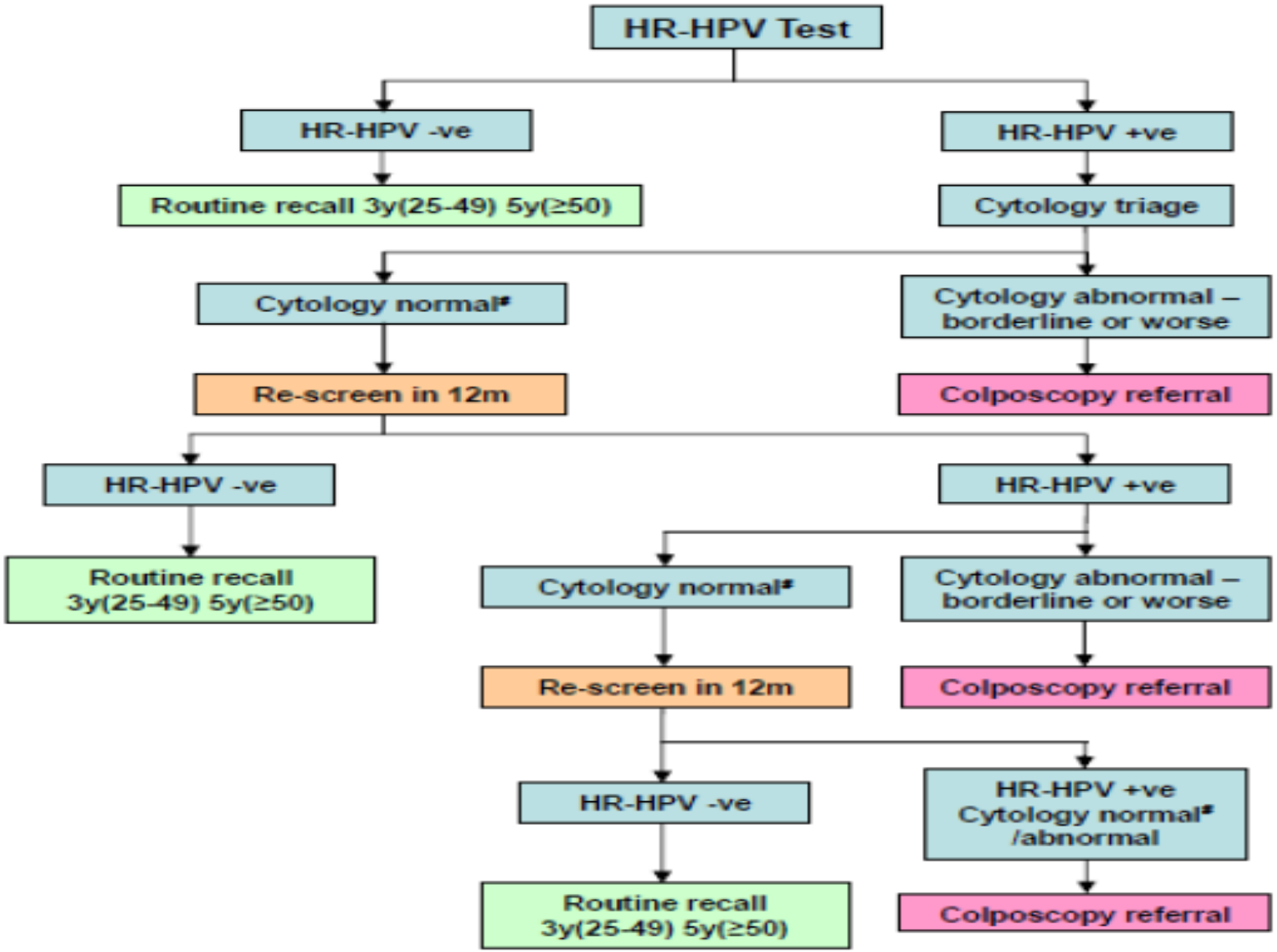
•* Walboomers JM(1), Jacobs MV, Manos MM, Bosch FX. J Pathol. 1999 Sep;189(1):12-9. Human papillomavirus is a necessary cause of invasive cervical cancer worldwide.

# HPV in cervical screening

- HR-HPV testing picks up more cervical abnormalities (more sensitive) than cytology, but more women without abnormalities test positive for HR-HPV (not as specific)
- Women who test negative for HR-HPV have no significant cervical abnormalities (CIN2+) in 99.8%* of cases
- Potential to increase screening intervals in the future for hrHPV negative women – under review by UK NSC

- *Kitchener et al. Lancet Oncol 2009, Ronco et al. Lancet Oncol 2006, Ronco et al. JNCI 2006, Rijkaart et al. Lancet Oncol 2012.

# Primary HPV Pilot Screening Protocol Algorithm



# Possible results

- HR-HPV not detected: return to normal recall (3 or 5 years)
- HR-HPV detected, cytology negative (no abnormal cells): recall 12 months
- HR-HPV detected, cytology positive (abnormal cells found): refer for colposcopy
- Inadequate result: repeat in 3 months

- HR-HPV 16/18 – 4 Pilot sites – ?quicker referral

# Colposcopy Referrals

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| Category/Indication | 2017/2018 | % | 2019 | % |
|---|---|---|---|---|
| Inadequate x3 | 10 | 0.6 | 1 | 0.04 |
| BNA HR HPV positive | 255 | 16 | 364 | 16.7 |
| Low Grade Dyskaryosis + HR HPV positive | 334 | 21 | 528 | 24.3 |
| High Grade Dyskaryosis (moderate) | 87 | 5 | 145 | 6.6 |
| High Grade Dyskaryosis (Severe) | 137 | 9 | 157 | 7.2 |
| Severe Dyskaryosis ?Invasive | 8 | 0.5 | 8 | 0.3 |
| ?Glandular Neoplasia | 6 | 0.4 | 8 | 0.3 |
| Clinical indications | 719 | 45 | 783 | 36.3 |
| Other | 45 | 3 | 179 | 8.2 |
| **Totals** | 1601 | 100 | 2173 | 100 |

# pHPV results June – October 2018

Number of samples tested = 38297

Number of positive tests = 4056(slides made)

**HPV positivity rate = 10.6%**

Cytology results of HPV +ve tests:

| | | |
|---|---|---|
| 55.0% | Cyto negative | (12/12 repeat advised; refer on 3rd HPV+/Cyto neg test) |
| 1.9% | inadequate | |
| 15.2% | borderline squamous | |
| 0.4% | borderline endocervical cells | |
| 16.7% | mild dyskaryosis | |
| 4.5% | moderate dyskaryosis | |
| 5.7% | severe dyskaryosis | |
| 0.3% | ? Inv squamous carcinoma | |
| 0.3% | ? Glandular neoplasia/ CGIN | |

No cases of non-cervical abnormality have been detected.

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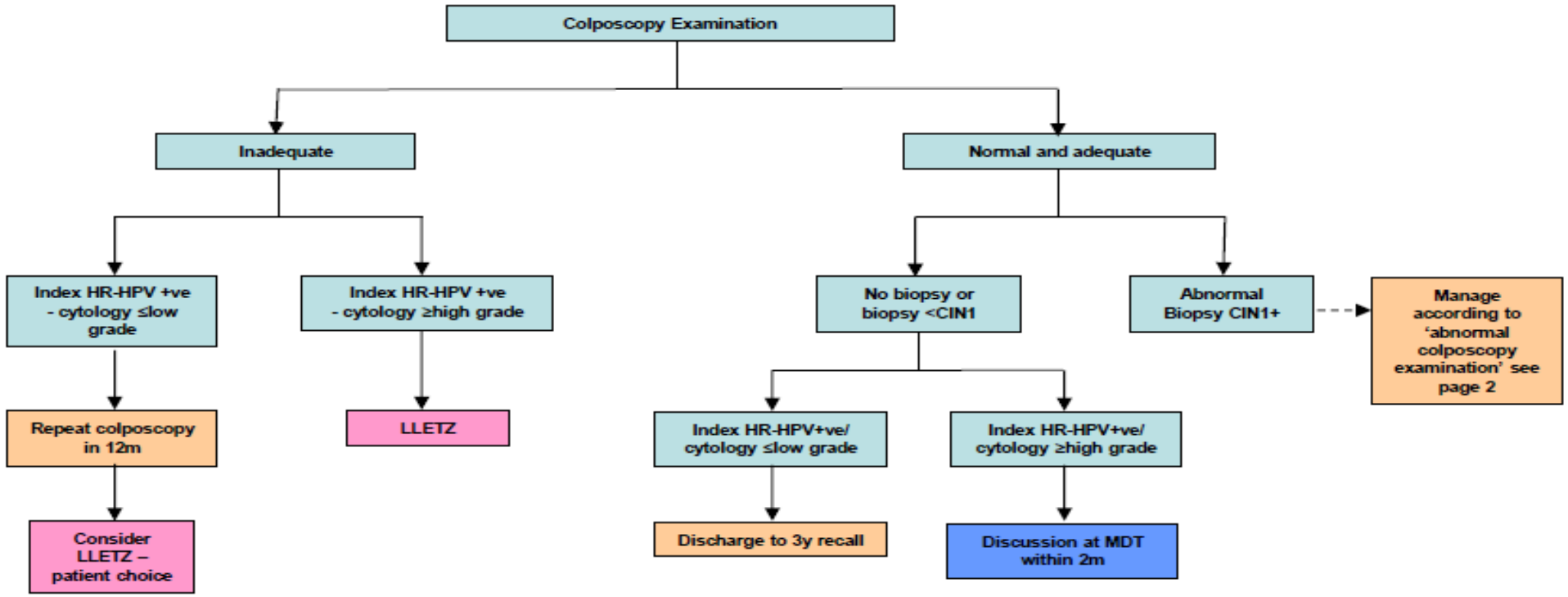
# Primary HR-HPV testing algorithms

- The current versions of the NHSCSP HPV primary screening protocol and colposcopy management recommendations algorithms can be found on the GOV.UK website.
- **HPV primary screening protocol algorithm**
- https://www.gov.uk/government/publications/human-papillomavirus-hpv-primary-screening-protocol
- **HPV primary screening pilot: colposcopy management recommendations algorithm**
- https://www.gov.uk/government/publications/human-papillomavirus-hpv-primary-screening-colposcopy-management

# HPV Primary Screening Pilot
# Colposcopy Management Recommendations Algorithm

Version 2.0 January 2015



Public Health England

NHS Cancer Screening Programmes

# HPV Primary Screening Pilot
# Colposcopy Management Recommendations Algorithm

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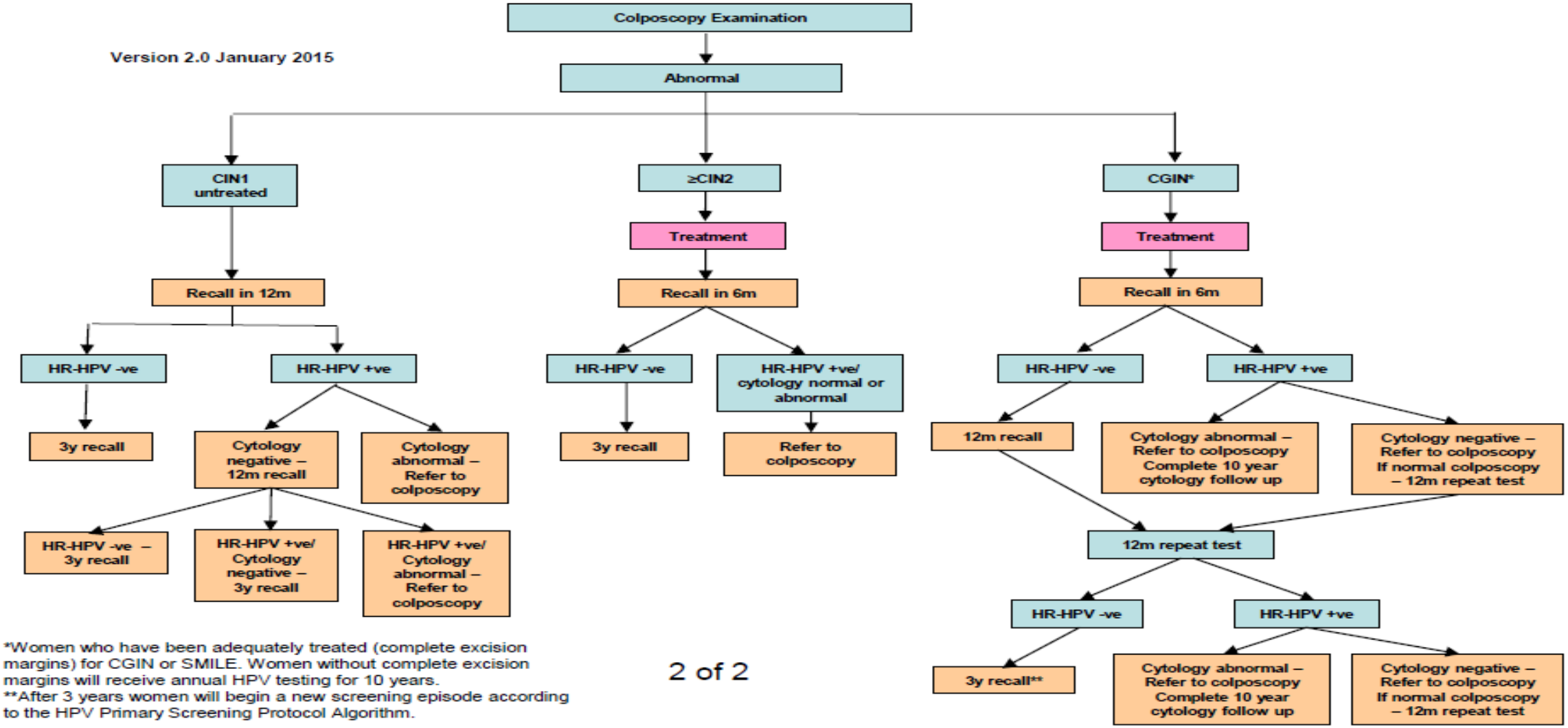



*Women who have been adequately treated (complete excision margins) for CGIN or SMILE. Women without complete excision margins will receive annual HPV testing for 10 years.
**After 3 years women will begin a new screening episode according to the HPV Primary Screening Protocol Algorithm.

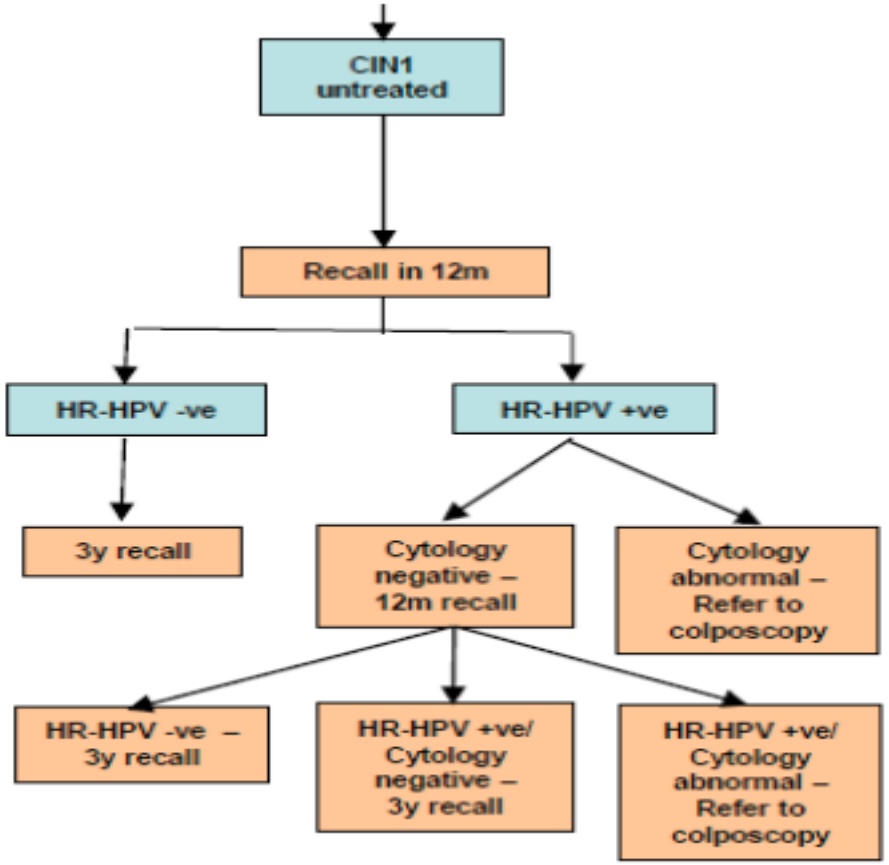
# Colposcopy management recommendations Untreated histologically confirmed CIN1

- hrHPV test at 12 months
  - hrHPV Negative – 3 year recall[1]
  - hrHPV Positive – cytology
    - Abnormal – colposcopy
    - Normal – repeat 12m

- hrHPV test at 24 months
  - hrHPV Negative – 3 year recall
  - hrHPV Positive – cytology
    - Abnormal – colposcopy
    - Normal – 3 year recall[2]

[1] 1hrHPV negative – 3y Vs 2 x normal cytology – RR

[2] 2 x hrHPV positive/normal cytology – 3y recall

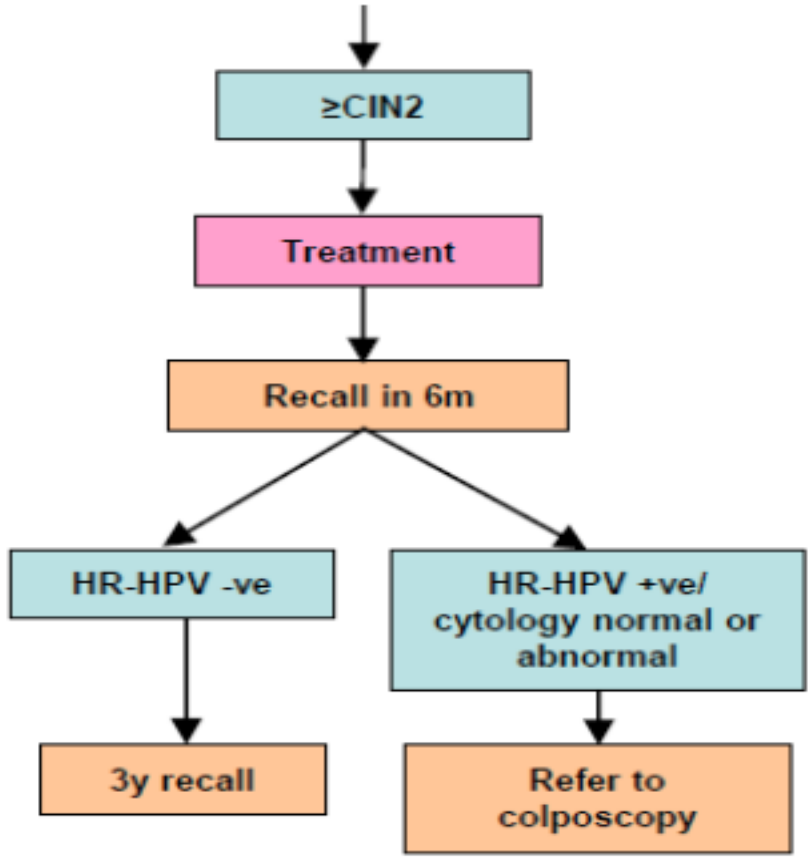


# Colposcopy management recommendations CIN2+

Treatment - HR-HPV test at 6 months

- hrHPV Negative – 3 year recall*
- hrHPV Positive – cytology
  - Abnormal – colposcopy
  - Normal – colposcopy

*no cytology



# Colposcopy management recommendations CIN2+

Treatment - HR-HPV test at 6 months

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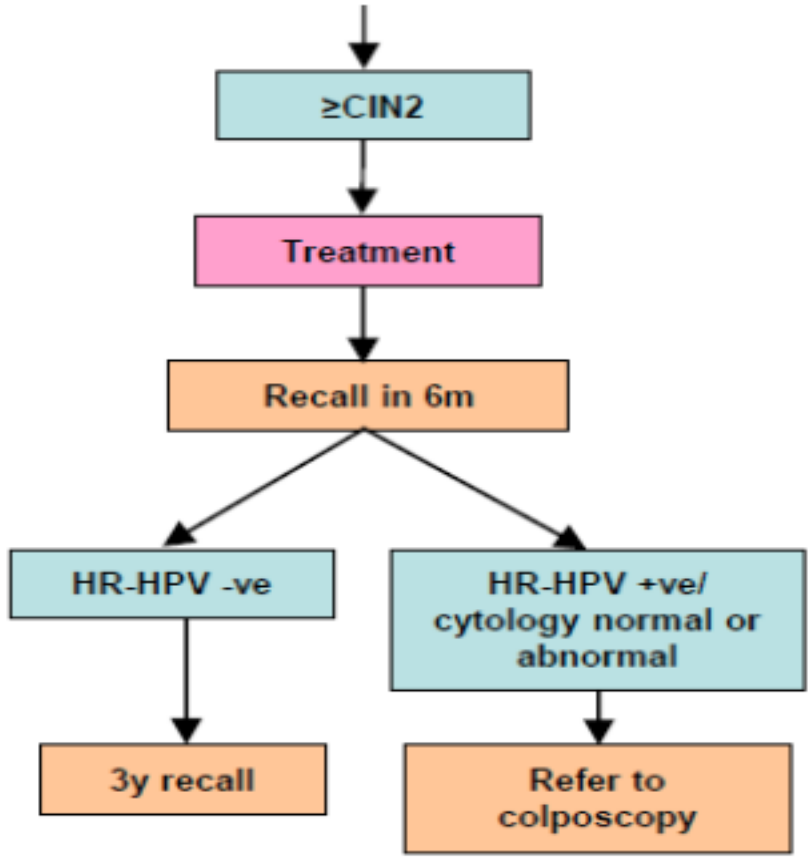
  - Normal – colposcopy

*no cytology



# Colposcopy management recommendations CGIN

Treatment

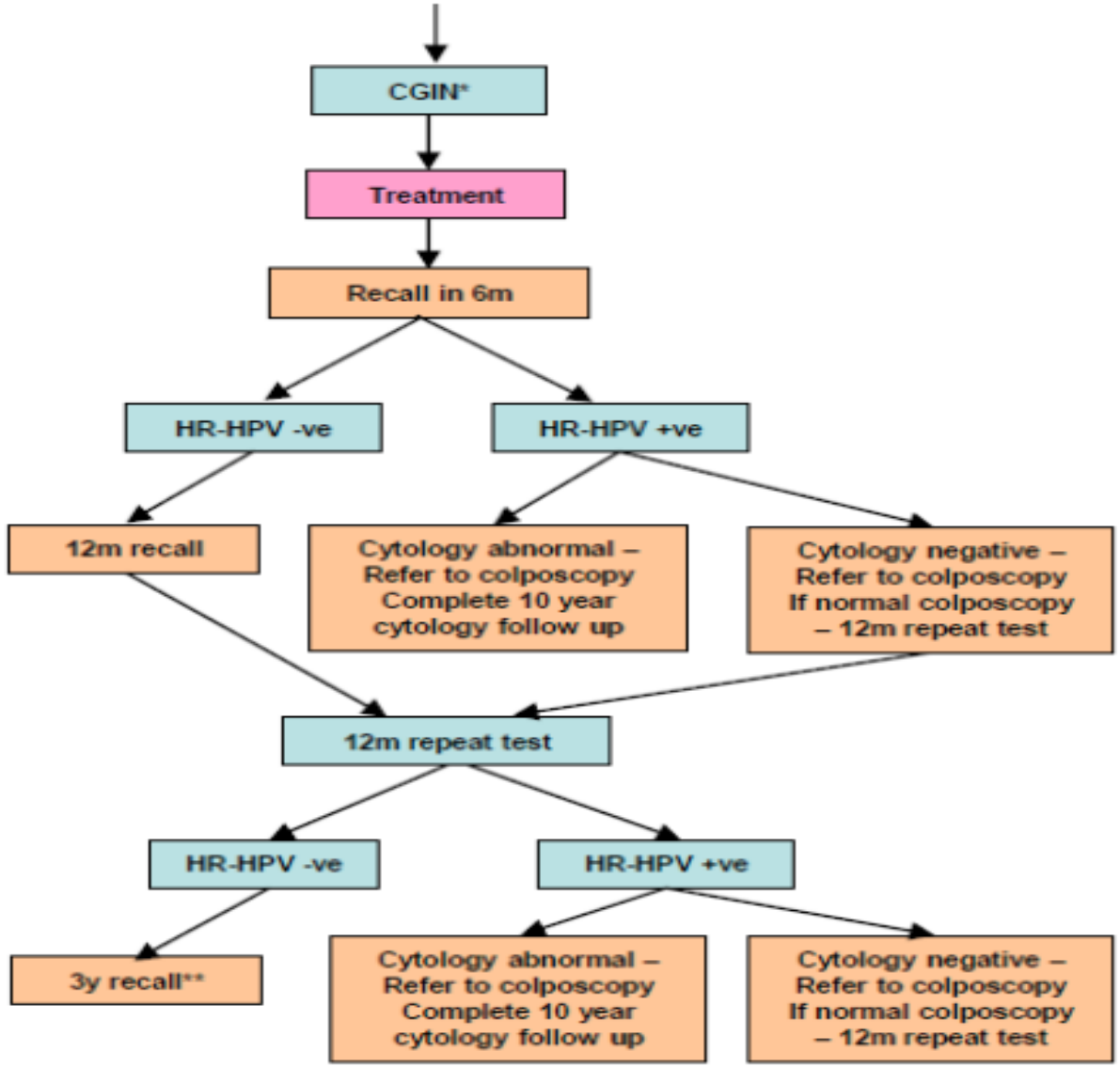
hr-HPV test at 6 months

- hrHPV Negative – 12m recall*
- hrHPV Positive – cytology
  - Abnormal – colposcopy
    - 10y if no further treatment
  - Normal - colposcopy
    - normal colposcopy – 12m repeat test

hrHPV test at 18 months

- hrHPV Negative – 3y recall*
- hrHPV Positive – cytology
  - Abnormal – colposcopy
    - 10y if no further treatment
  - Normal – colposcopy
    - normal colposcopy – 12m repeat test

*no cytology



# Invasive potential of CIN

- Progression from CIN3 to cancer is slow in most cases
- New Zealand experiment 1960's – Treated v untreated
- Progression of CIN3 to cancer

  16% at 10 years

  25% at 20 years

  31.3% at 30 years

# Adjunctive Technologies

- DYSIS- Spectral imaging technology to assess speed, intensity and duration of aceto-whitening.
  - ‘Shows promise and is recommended for assessing cervical abnormalities’
  - Research recommended on clinical and patient outcomes in a pHPV screening setting.
  - More sensitive but less specific; Greater accuracy for low/medium experience colposcopists
  - Most studies outside UK centres – colposcopy training less regulated and Quality Assured

- Zedscan1-hand held device electrical impedance spectroscopy.
  - Shows promise in assessing suspected abnormalities but not enough evidence to recommend routine adoption.
  - Research recommended on clinical and patient outcomes in a pHPV screening setting.

# Borderline Changes in Endocervical Cells

- Challenging category as always walking a ‘tightrope’ between doing too little or too much
- May be as a result of LUS sampling, Tuboendothelial metaplasia or inflammation…
- ….But may harbour significant pathology (some invasive audits have shown such cells on retrospective review of smears originally called negative)
- Worth always discussing /reviewing at MDT with colposcopic and histological findings
- If colposcopy is incomplete and cytology review  does not downgrade the smear than probably diagnostic LLETZ would be sensible
- This category has been upgraded to 2 week colp requirement in Document 20 update of Feb 2020 alongside glandular and high grade smears

# MDT

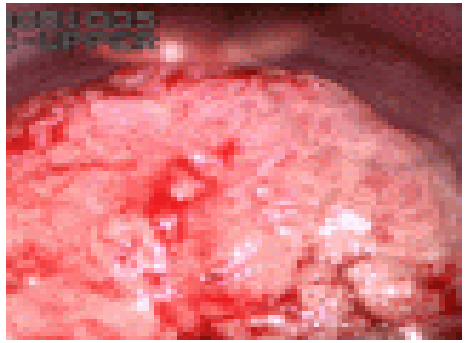
- Stops you going off-piste alone!
- Educational value for all concerned
- Newer colposcopists can learn from more experienced colleagues
- SQAS requirement
- Helps different disciplines discuss constructively what they require from each other…
- Should refer discrepancy/Invasive/BNA Endocervical/CGIN or SMILE/Conservative Tx of CIN2/Individuals with 2+ treatments

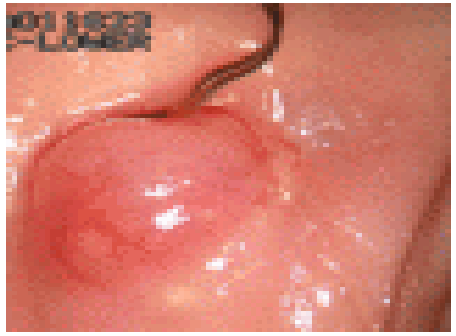
# Conservative Management of CIN2

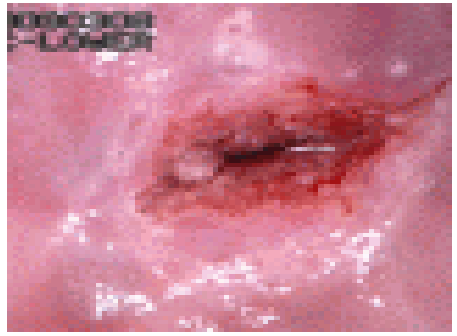
- Why bother?
  - Cervical incompetence/damage
  - May render subsequent colposcopic follow up harder
- Currently no formal ‘road map’ for conservative management
- Need to make individualized assessment
  - Colposcopy complete and excludes CIN3
  - Parity and desire for further pregnancy
  - Age
  - Risk factors- smoking, persistent HPV positivity, compliance with follow up etc
  - Characteristics of lesion ie size (< 2 quadrants), upper limit seen
  - Must involve MDT review as review of histology and cytology may alter decision
  - Careful Follow up probably for 2 years post untreated CIN2- if develops CIN3 or persistent at 24 months then treat.

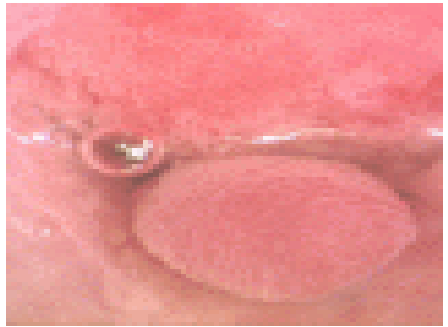
# Follow up After Hysterectomy

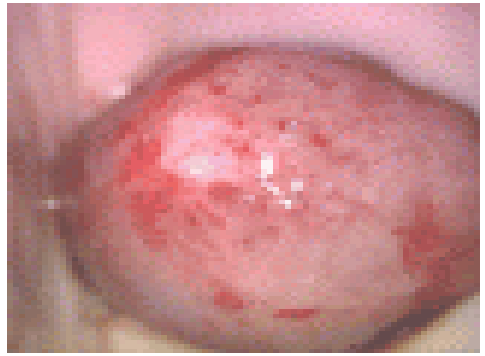
- On routine recall and no CIN in hysterectomy specimen – no further cytology
- NOT on routine recall and no CIN in hysterectomy specimen – vault cytology at 6 months. If HPV positive then colposcopy referral. If no VAIN then discharge.
- Complete excision of CIN in hysterectomy specimen – vault cytology at 6 and 18 months
- Incompletely excised CIN in hysterectomy specimen – CIN1 – vault cytology at 6 ,12 and 24 months or CIN2/3 vault cytology for 6, 12 months and annual for 9 years
- Management outside of the NHSCSP – responsibility of gynaecologist
- Subtotal hysterectomy – still have cervix and remain within NHSCSP

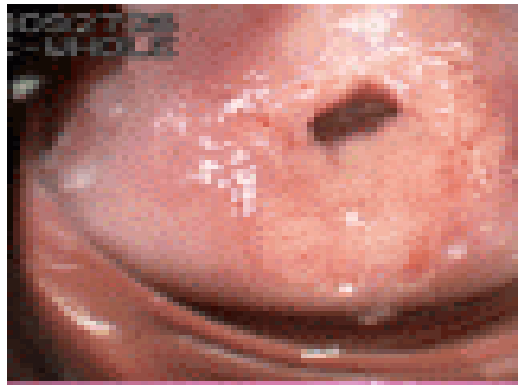


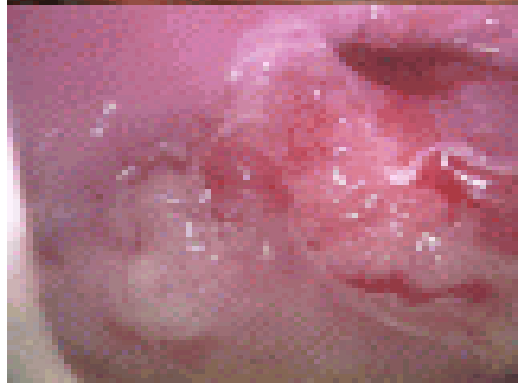












# Any questions?