



# **Economic studies in cervical cancer screening in Ireland**

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# What is Cerviva

- Multi-centre collaborative research programme on screening and prevention of cervical cancer
- Core funded by the Health Research Board but will significant other grants and funds
- Multidisciplinary
- Several of the studies include economic components
- The programme offers opportunities to work on economic issues around some of the cutting edge issues in screening, HPV and vaccination.



# Cerviva economic projects

- Manual versus automated screening (RCT)
- HPV DNA and mRNA testing in the Irish Screening Population (several studies)
- Possible projects around vaccination as evidence emerges from Cerviva and other studies
- Modelling work on the overall strategies for reducing the burden of cervical cancer.



# Manual versus automated screening (Systematic Review and RCT)

Two types of question – ‘industrial’ and ‘policy’

- What is the lowest cost technology?
- How do the different technologies compare in terms of true sensitivity and specificity?
- What is the best technology for use in screening programmes?



# Review Results 1 Productivity

- Few studies
- Laboratories on learning curve for TIS
- General picture of increased productivity.



# Review Results 2 – Sensitivity and specificity based on 2 studies

| Author   | Sensitivity Conventional | Sensitivity TIS | Specificity Conventional | Specificity TIS |
|----------|--------------------------|-----------------|--------------------------|-----------------|
| Bolger   | 92.84                    | 98.62           | 94.42                    | 98.77           |
| Biscotti | 82*<br>* ASCUS+          | 98*             | 75*                      | 98*             |



# Review Results 3 – impact on rates of CIN2+

Based on 5 most similar studies  
(Q statistic -5.12)

Effect size = 1.18 (1.28, 1.09)

Including the other two studies increases the effect size

TIS appears to increase the rate of CIN2+ that are picked up  
in screening



# Review Results 4 – impact on rates of ABN

Based on 5 most similar studies

(Q stat-1.87, indicating significant heterogeneity)

Effect size = 1.08 (1.06, 1.1)

TIS appears to increase the rate of ABN that are picked up in screening



# Review Results 5 – impact on Biopsy Confirmation following HSIL and ASC-H

HSIL Effect size = 0.88 (0.72, 1.09)

ASC-H Effect size 0.8 (0.65, 0.98)

- TIS may increase the rate of false positive results in screening, but numbers are small, and CI wide. ASC-H results is very sensitive to inclusion or non inclusion of studies.



# Review Results 6 – impact on inadequate slides reported

Based on 4 papers

Effect size = 0.67 (0.63, 0.71)

- TIS is shown to decrease the number of inadequate slides reported.



# HPV DNA and mRNA testing in the Irish Screening Population

In simple terms the questions are:

- Is HPV present?
- Is HPV active?
- The most appropriate strategies for managing women with positive smear test results will depend on these questions
- It may be possible to identify cases where is it cheaper and safe to watch and wait.



# Possible projects around vaccination as evidence emerges from Cerviva and other studies

- An existing HTA review has concluded that vaccination is effective and cost-effective
- More evidence in vaccination will emerge over the next few years
- The key issues are likely to be the rôle of screening in the context of a fully or partially vaccinated population.



# Wider Cerviva Agenda Includes

- Attitudes and knowledge of women
- Attitudes and knowledge of health professionals
- Quality assurance of cytology
- HPV and women with HIV
- New screening technologies
- New treatment technologies.

Some could have economic components.



END

