

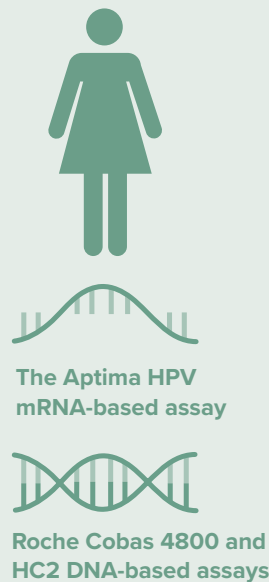
# Comparative cost analysis of a cervical cancer screening programme based on molecular detection of HPV in Spain

Using the Aptima® HPV assay could generate healthcare cost savings of up to €41.9 million compared with DNA-based testing in Spain

*Investigators: Ibáñez R, Mareque M, Granados R, Andía D, García-Rojo M, Quílez JC, Oyagüez I*

## Introduction

- ▶ Human papillomavirus (HPV) cervical cancer screening must use validated HPV tests based on the molecular detection of either viral mRNA (the Aptima HPV assay) or DNA.<sup>1</sup>
- ▶ The Aptima HPV assay has demonstrated the same cross-sectional and longitudinal sensitivity for the detection of HSIL/CIN2+ lesions but with greater specificity than HPV-DNA tests.<sup>1</sup>
- ▶ This study compared the total costs of cervical cancer screening with a primary HPV test based on the detection of mRNA versus DNA.

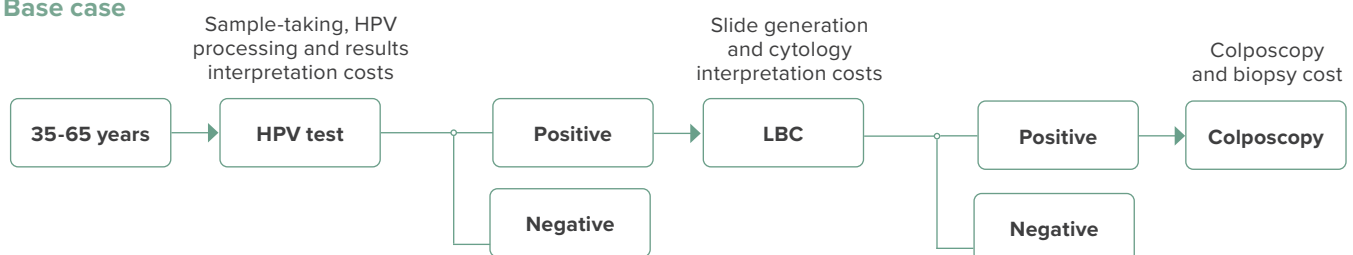


## Study Design

- ▶ Results are based on a simulated cohort of 7,263,529 Spanish women, aged between 35-65 years and 1,947,925 women aged between 25-34 years, obtained from the Spanish National Institute of Statistics for 2018.
- ▶ The total costs for cervical cancer screening for the Aptima HPV assay, and the DNA-based tests (Cobas 4800 HPV and HC2 DNA assays) were calculated, including costs for HPV testing, liquid-based cytology (LBC) and colposcopy.

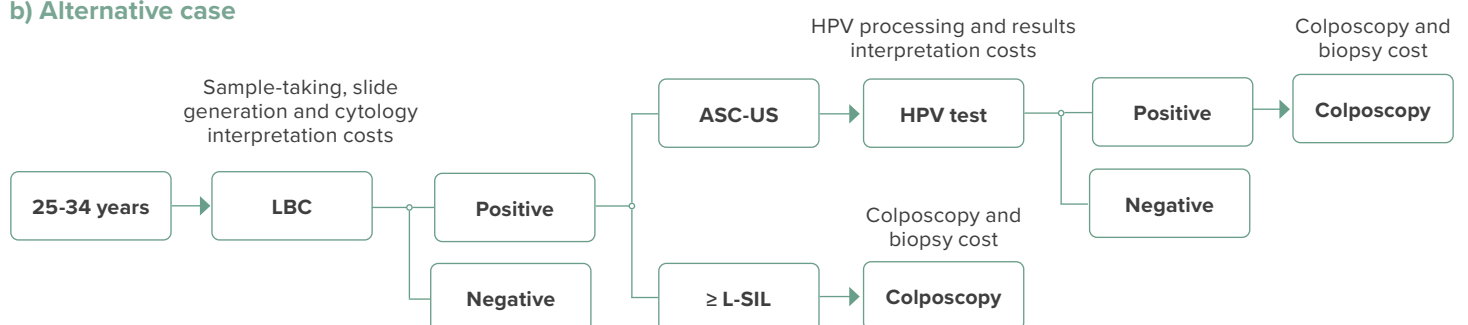
### Cervical screening algorithm for women aged 35-65: HPV testing as a primary screening method<sup>1</sup>

#### a) Base case



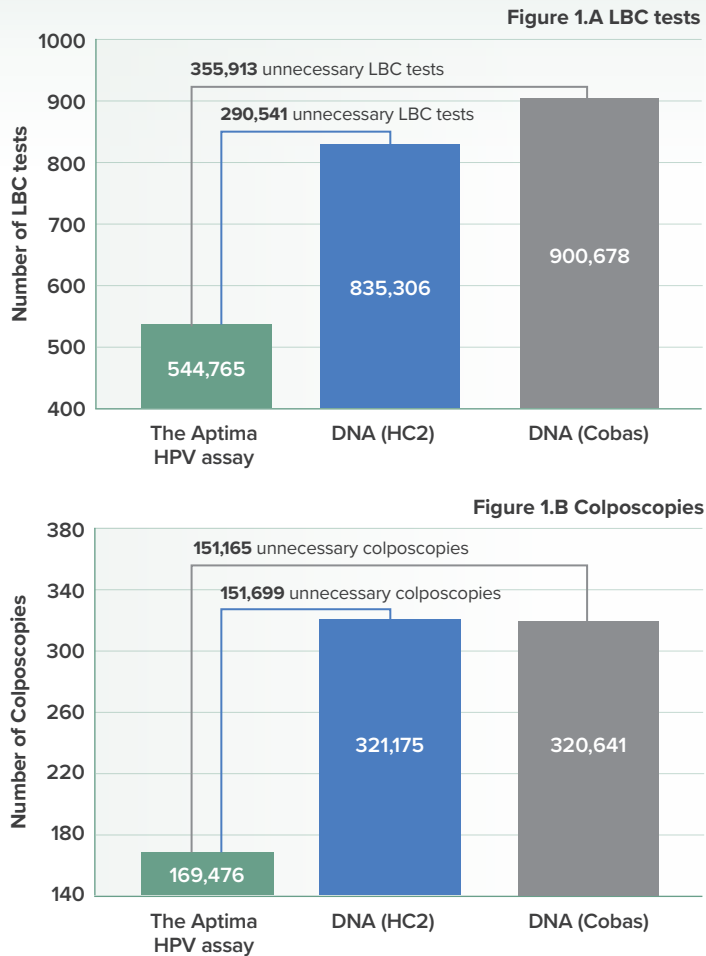
### Cervical screening algorithm in Spain for women aged 25-34: LBC testing as a primary screening method<sup>1</sup>

#### b) Alternative case



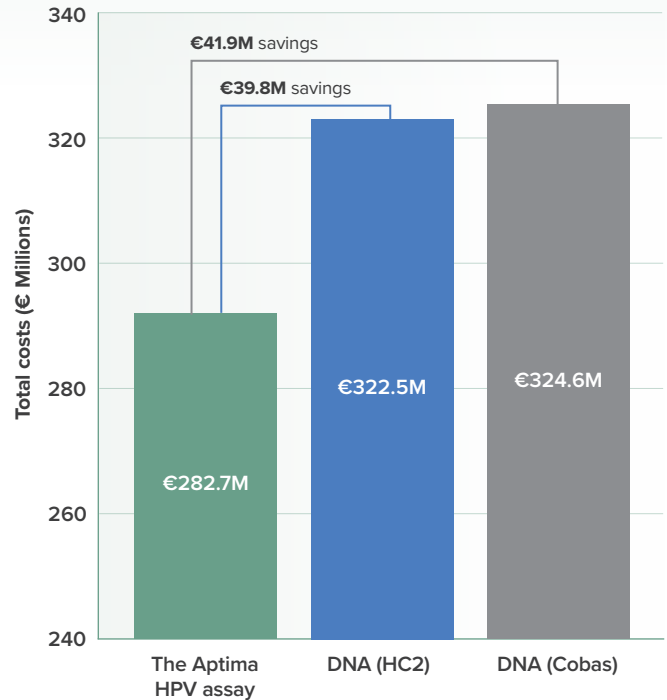
# Results

Figure 1: Number of tests performed<sup>1</sup>



- ▶ The Aptima HPV assay detects the active infection (expression of HPV E6/E7 mRNA) instead of HPV DNA, reducing the detection of transient infections that are less likely to progress to HSIL/CIN2+.<sup>1</sup>
- ▶ Sensitivity analyses showed that the Aptima HPV assay was less costly and reduced the number of procedures performed in all the scenarios (Figures 1.A & 1.B).<sup>1</sup>

Figure 2. Cost savings using the Aptima® HPV assay for primary screening vs. DNA-based assays<sup>1</sup>



- ▶ These cost savings are a direct result of the increased specificity of the Aptima HPV assay reducing the number of women referred for further reflex tests.<sup>1</sup>
- ▶ The Aptima HPV assay saves up to €41,121,564 compared to testing with Cobas, and €39,839,711 with HC2 in women aged 36-65 (based on the molecular detection of HPV) (Figure 2). If women aged 25-34 years were included (LBC as a primary screening method) the Aptima HPV assay saves up to €42,472,579 compared to Cobas and €41,121,564 with HC2.<sup>1</sup>

## Conclusion

- ▶ Using the Aptima HPV assay could generate healthcare cost savings up to €41.9 million compared to DNA testing in Spain (assuming 70% coverage of women aged 35-65). It would also improve health management for women by reducing unnecessary follow-up tests.

Reference: 1. Ibañez, R., Mareque, M., Granados, R. et al. Comparative cost analysis of cervical cancer screening programme based on molecular detection of HPV in Spain. BMC Women's Health 21, 178 (2021). <https://doi.org/10.1186/s12905-021-01310-8>

CE EC REP Hologic BV, Da Vincilaan 5, 1930 Zaventem, Belgium. EC REP information wherever applicable

Diagnostic Solutions | Hologic.com | euinfo@hologic.com

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