Health Economic Impact Model of a Digital Health Solution

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Background/Objectives

Cervical cancer is a global health concern, with substantial social and economic costs. Although cervical cancer is largely curable when detected early, it is still the leading cause of death for women in 36 countries and ranks fourth globally.[1]
The World Health Organization's Cervical Cancer Elimination Initiative aims to eradicate the disease, promoting digital solutions for improved access, efficiency, and adherence to guidelines.[2] **navify** Cervical Screening is a digital health solution that aims to facilitate the screening of the patients by supporting HCPs to follow screening guidelines and patient histories as well as analyzing population-based data on screening rates and guideline adherence.

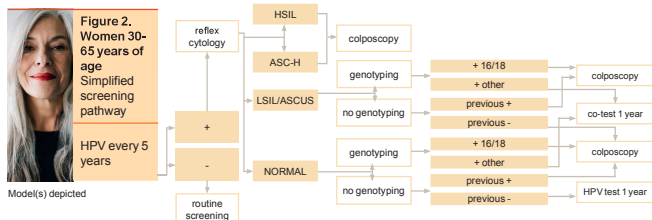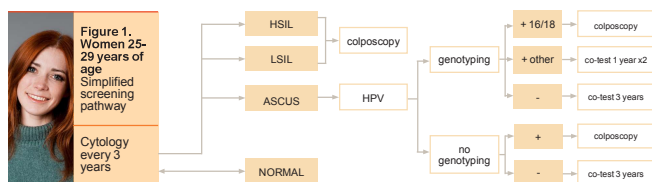Global economic impact of cervical cancer: **$682 billion (2020-2050)** [3]

Adherence to guidelines improves patient care and reduces healthcare costs [4]

This poster delves into the potential impacts of **navify** Cervical Screening through a health economic impact model assessment in Catalonia (Spain).

Methods

- **Model focus:** Examines HCP adherence to cervical cancer guidelines and the implementation benefits of **navify** Cervical Screening.
- **Population:** Targets women aged 25–65 in Catalonia: estimated 2.1 million.[5]
- **Guideline basis:** Utilizes 2022 local cervical cancer prevention guidelines as the basis for the impact model.[6]
- **Treatment algorithm:** Employs the most evidence-backed and consensus-driven treatment algorithm, as depicted in Figures 1 and 2.
- **Model limitations:** Syte Institute acknowledges the exclusion of some medical and economic factors and the reliance on assumptions due to the confines of scientific data available up to 2023.

Figure 1. Women 25-29 years of age
Simplified screening pathway
Cytology every 3 years

Figure 2. Women 30-65 years of age
Simplified screening pathway
HPV every 5 years

Model(s) depicted

The health economic impact model procedure included the following steps:

Model framework
Metric selection based on latest available literature.

Country specific model
Systematic review of the national guidelines. Determine priority metrics following national status.

Model refinement
Validation and complementation with expert interviews. Final decision on the top, mid and low cases based on literature and expert feedback.

The model considers variables like screening participation, excessive testing and interventions, as well as economic costs. The outputs are displayed based on HCP adoption rates and adherence improvements: top-case (best), mid-case (average), and low-case (worst).
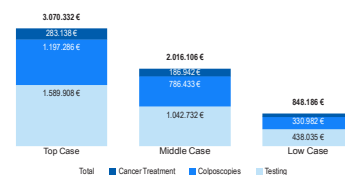
Results

Potential yearly cost benefits for a screening program with **navify** Cervical Screening (Catalonia, Spain).

Annual Cost Without **navify** Cervical Screening		Annual Cost Reduction (%) With **navify** Cervical Screening			
		top-case	mid-case	low-case	savings
Cancer Treatment	721.814 €	39%	26%	11%	net savings
Cancer Screening	9.461.650 €	17%	11%	5%	net savings
Colposcopies	2.457.755 €	49%	32%	13%	net savings
Annual Cost Totals	**12.641.219 €**	**20%**	**13%**	**5%**	**net savings**

Estimated savings: navify Cervical Screening

Net savings of cancer treatment, colposcopies and cancer screening according to each of the three scenarios: top-case, mid-case, and low-case.

	Top Case	Middle Case	Low Case
Total	3.070.332 €	2.016.106 €	848.186 €
Cancer Treatment	283.138 €	186.942 €	330.982 €
Colposcopies	1.197.286 €	786.433 €	438.035 €
Testing	1.589.908 €	1.042.732 €	

Conclusions

The model shows that patient navigation with a digital health solution leads to financial savings and improved patient care.

navify Cervical Screening primarily offers savings in colposcopy costs, followed by cancer treatment and screening.

Adherence to cervical cancer screening guidelines reduces cancer cases, unnecessary cytology and HPV testing, and colposcopies.[2]

References

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Further details and comprehensive content related to this poster are available in the white paper titled 'Supporting Cervical Cancer Screening: A Health and Economic Impact Model with a Digital Health Solution,' reference number MC–13004, published by Roche.

Disclaimer and Conflicts of Interest

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