

Appendix 1

Table 1 – Definitions of study Indicators, data sources and calculation methods

Indicator	Definition	Frequency	Data Source(s)	Calculation Notes / Linkage Needed
Screening participation (%) [1]	Proportion of eligible women participating in organized screening	Annual	SIARS, SiiMA[2]	(number screened / eligible) x 100
Screen-detected ICC rate [3]	ICC detected within screening per 1,000 screened women	Annual	SiiMA + GDH (linked)	(screen-detected ICC / screened women) x 1000
ICC incidence outside screening [3]	ICC cases diagnosed outside screening per 100,000 unscreened women	Annual	GDH + INE + SiiMA (linked)	(ICC outside screening / unscreened women) x 100,000 Unscreened =total female population aged ≥15 – screened women

SIARS: Primary care registries; SiiMA: national screening information system; GDH: Hospital Morbidity Databases; INE: Statistics Portugal

- [1] Afonso AD, Dinis J, Portugal C, Sousa N, Fernandes I, Netto E, et al. Avaliação e Monitorização dos Rastreios Oncológicos de Base Populacional. 2023.
- [2] Statistics Portugal. *www.ine.pt*. <http://www.ine.pt> [accessed 25 August 2025].
- [3] Arbyn M, European Commission. Directorate-General Health & Consumer Protection. European guidelines for quality assurance in cervical cancer screening. Office for Official Publications of the European Communities; 2008.

Table 2 – Sensitivity analyses: Poisson regression models with and without temporal adjustment”

Outcome	Model	IRR	95% CI	p-value
Screen-detected ICC	Adjusted for time	1.94	1.11–3.40	0.020
	Unadjusted	2.15	1.63–2.82	<0.001
ICC outside screening	Adjusted for time	0.94	0.65–1.35	0.734
	Unadjusted	0.91	0.75–1.10	0.328

IRRs estimated using Poisson regression models with log link. Adjusted models include a continuous time variable (2014–2023).