

Sala "20 maggio 2012" Terza Torre - Viale della Fiera 8, Bologna

EPIDEMIOLOGIA DEL TUMORE DELLA CERVICE UTERINA E SCREENING

Lauro Bucchi

Registro Tumori della Regione Emilia-Romagna

IRST IRCCS

Meldola

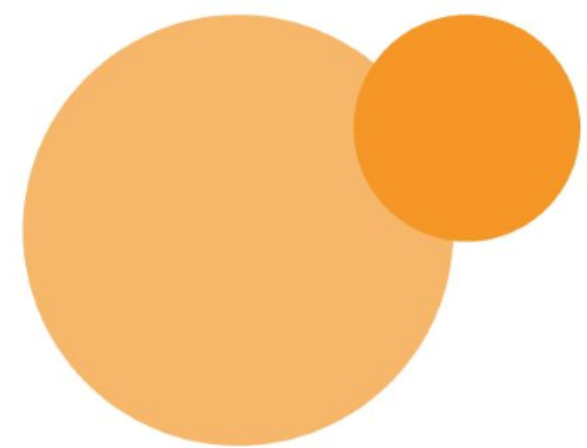


 Regione Emilia-Romagna

6 FEBBRAIO 2023

COME CAMBIA LO SCREENING DEL TUMORE DELLA CERVICE UTERINA
PER LE DONNE VACCINATE CONTRO L'HPV

 SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA



The challenges of organising cervical screening programmes in the 15 old member states of the European Union

Marc Arbyn^{a,*}, Matejka Rebolj^{b,c}, Inge M.C.M. De Kok^b, Murielle Fender^d, Nikolaus Becker^e, Marian O'Reilly^f, Bengt Andrae^g

EUROPEAN JOURNAL OF CANCER 45 (2009) 2671–2678

Il contesto Europeo

Introduction of new methods of prevention, such as HPV screening and prophylactic HPV vaccination, can reduce the burden further, but this will require a high level of organisation with particular attention needed for the maximisation of population coverage, compliance with evidence-based guidelines, monitoring of data enabling continued evaluation and improvement of the preventive programmes.

6 FEBBRAIO 2023

European Guidelines for Quality Assurance in Cervical Cancer Screening. Second Edition—Summary Document

M. Arbyn¹, A. Anttila², J. Jordan³, G. Ronco⁴, U. Schenck⁵, N. Segnan⁴, H. Wiener⁶, A. Herbert⁷ & L. von Karsa^{8*}

Annals of Oncology 21: 448–458, 2010

Il contesto Europeo

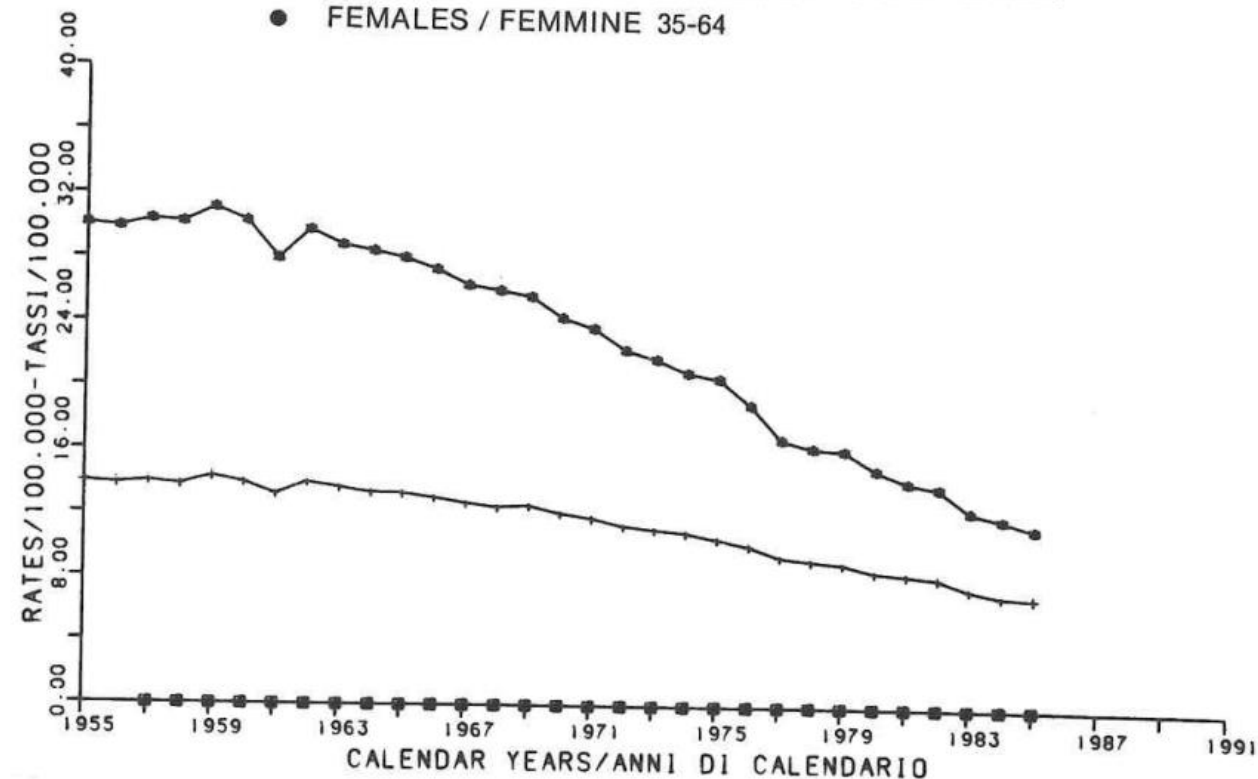
- Population-based information must be established for continuous monitoring of screening process indicators. An appropriate legal framework is required for registration of individual data and linkage between population databases, screening files and cancer and mortality registers. Indicators of screening programme extension and quality need to be published regularly.

6 FEBBRAIO 2023

CANCER MORTALITY IN ITALY: AN OVERVIEW OF AGE-SPECIFIC AND AGE-STANDARDISED TRENDS FROM 1955 TO 1984

Carlo La Vecchia,^{1,2} Eva Negri,^{1,3} Adriano Decarli,^{4,5} Monica Fasoli¹ and Cesare Cislaghi⁴

+ FEMALES ALL AGES / FEMMINE TUTTE LE ETA
● FEMALES / FEMMINE 35-64



6 FEBBRAIO 2023

SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA

La situazione
pre-screening
citologico

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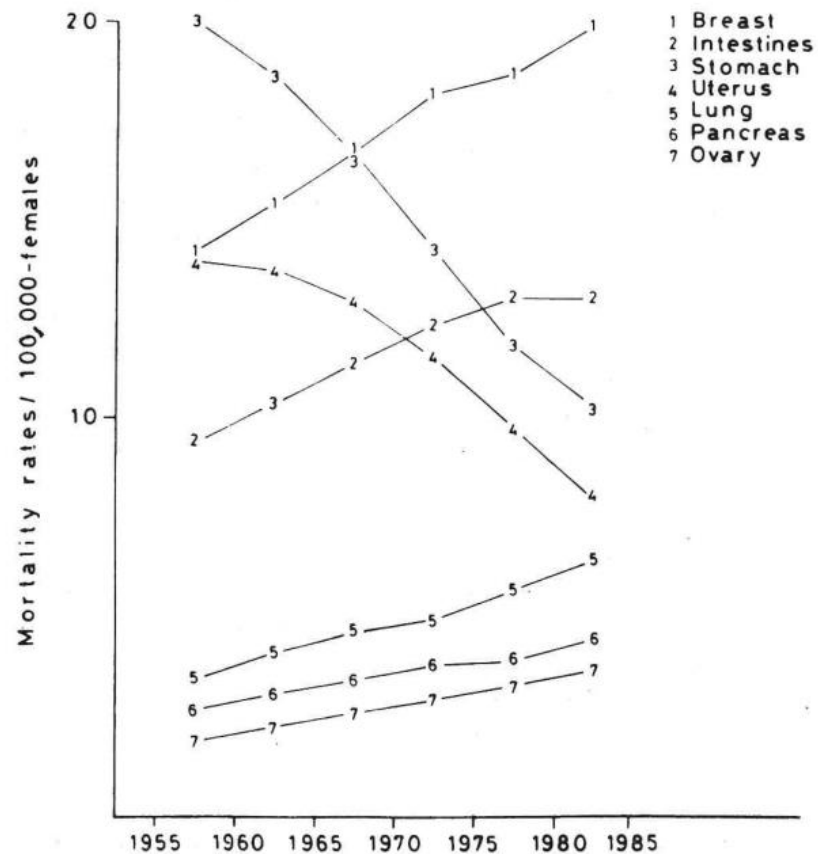


Fig. 2 - Trends in age-standardized death certification rates of major cancer sites in Italian females, 1955-1984.

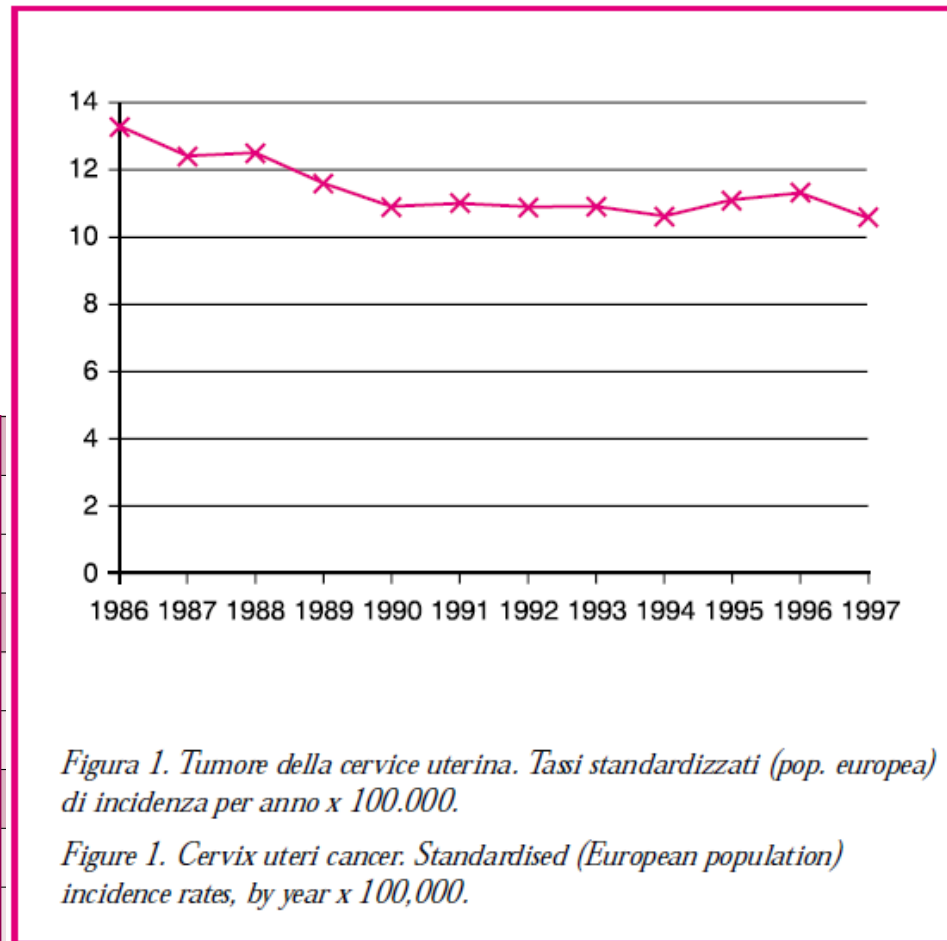
Tumori ginecologici: cervice, corpo dell'utero, ovaio

Paola Zambon,¹ Francesco La Rosa²

ep anno 28 supplemento (2) marzo-aprile 2004

La situazione pre-screening citologico

1986-1990
-4.7
-7.3;-2.0
1990-1997
-0.2
-1.3;+1.0



Tumori ginecologici: cervice, corpo dell'utero, ovaio

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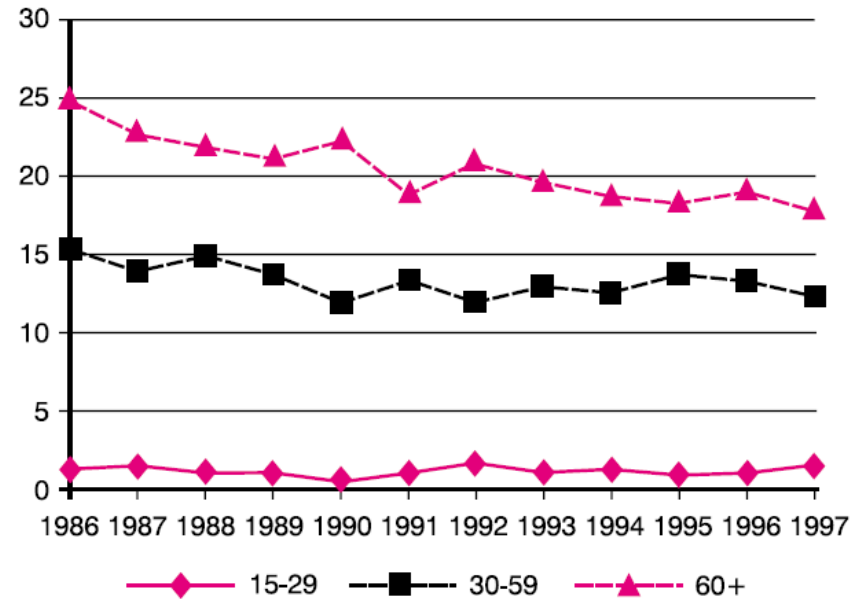


Figura 2. Tumore della cervice uterina. Tassi di incidenza per classi d'età per anno x 100.000.

Figure 2. Cervix uteri cancer. Incidence rates by age-classes and year x 100,000.

Tumori ginecologici: cervice, corpo dell'utero, ovaio

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La situazione pre-screening citologico

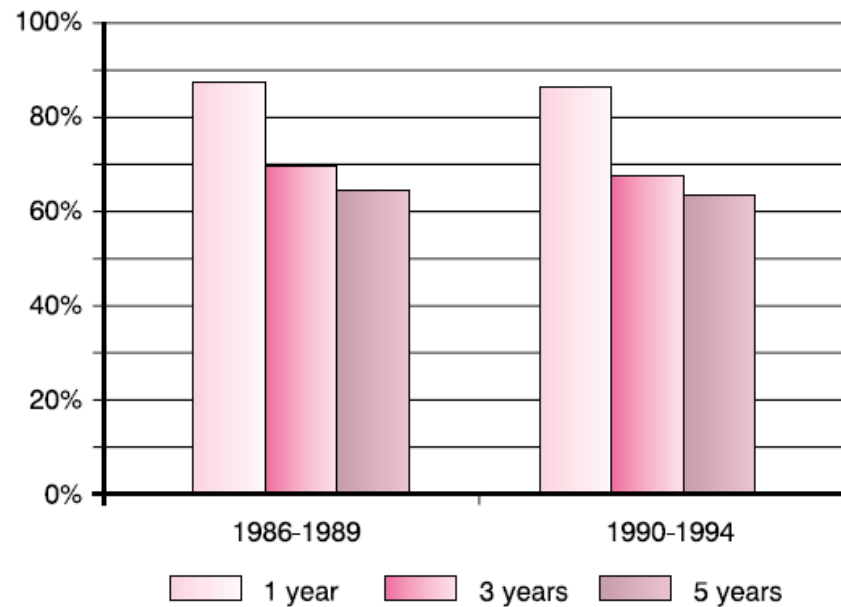


Figura 4. Tumore della cervice uterina. Sopravvivenza relativa a 1, 3 e 5 anni dalla diagnosi per periodo d'insorgenza.

Figure 4. Cervix uteri cancer. Relative survival at 1, 3 and 5-years after diagnosis by period of incidence.

Estimating the impact of an organised screening programme on cervical cancer incidence: A 26-year study from northern Italy

Lauro Bucchi¹, Flavia Baldacchini¹, Silvia Mancini¹, Alessandra Ravaioli¹, Orietta Giuliani¹, Rosa Vattiato¹, Fabio Falcini^{1,2}, Paolo Giorgi Rossi³, Cinzia Campari⁴, Debora Canuti⁵, Enza Di Felice⁶, Priscilla Sassoli de Bianchi⁶, Stefano Ferretti⁶, Nicoletta Bertozzi⁶ and Annibale Biggeri⁷,

on behalf of the Emilia-Romagna Region Workgroup for Cervical Screening Evaluation

Int. J. Cancer: **144**, 1017–1026 (2019) © 2018 UICC

L'impatto
dello screening
citologico

THE LANCET, MAY 30, 1987

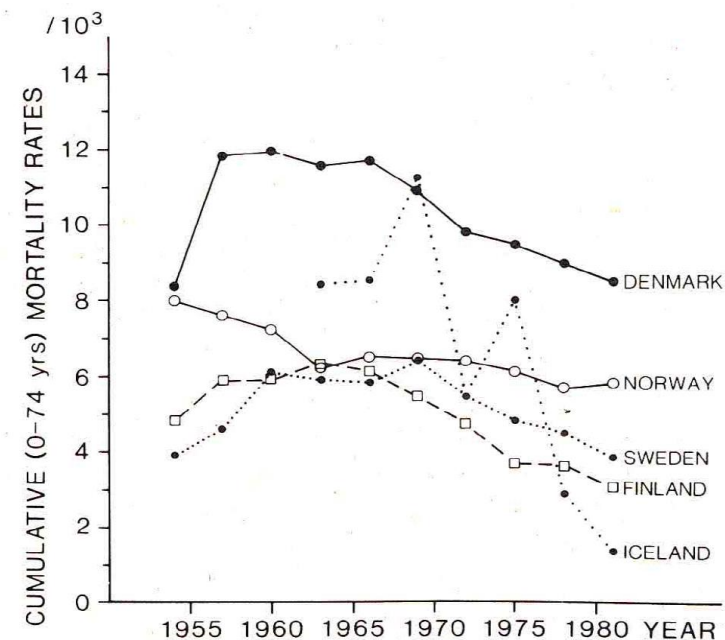
Public Health

TRENDS IN MORTALITY FROM CERVICAL CANCER IN THE NORDIC COUNTRIES: ASSOCIATION WITH ORGANISED SCREENING PROGRAMMES

ESA LÄÄRÄ^{1,2*}

NICHOLAS E. DAY³

MATTI HAKAMA^{2,4}



WHO mortality data bank

Trends in triannual cumulative mortality rates (0-74 years of age) of cervical cancer in the Nordic countries, 1953-1982.

Estimating the impact of an organised screening programme on cervical cancer incidence: A 26-year study from northern Italy

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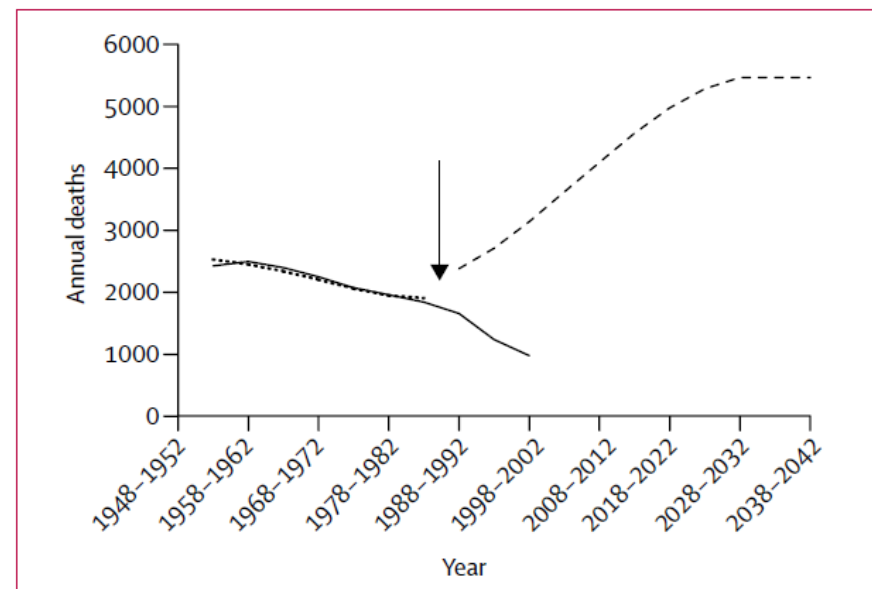
L'impatto dello screening citologico

The cervical cancer epidemic that screening has prevented in the UK

Julian Peto, Clare Gilham, Olivia Fletcher, Fiona E Matthews

Lancet 2004; 364: 249–56

Figure 4: Projected cervical cancer deaths in women younger than 85 years without any screening (England and Wales)



Estimating the impact of an organised screening programme on cervical cancer incidence: A 26-year study from northern Italy

Lauro Bucchi¹, Flavia Baldacchini¹, Silvia Mancini¹, Alessandra Ravaioli¹, Orietta Giuliani¹, Rosa Vattiato¹, Fabio Falcini^{1,2}, Paolo Giorgi Rossi³, Cinzia Campari⁴, Debora Canuti⁵, Enza Di Felice⁶, Priscilla Sassoli de Bianchi⁶, Stefano Ferretti⁶, Nicoletta Bertozzi⁶ and Annibale Biggeri⁷,

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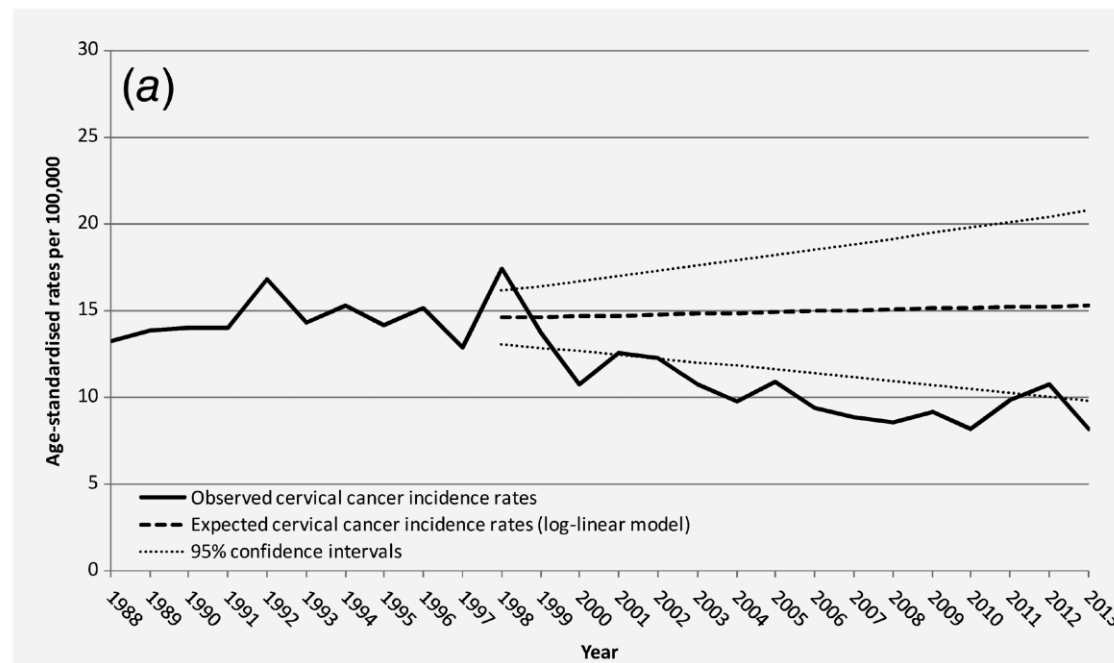


Figure 1. Curve of observed total annual cervical cancer incidence rates per 100,000 women aged 25–64 years in 1988–2013 and curve of total annual rates that would be expected in 1998–2013 in the absence of screening. In the two panels of the Figure, the bold line represents the curve of observed total annual cervical cancer incidence rates. The dashed lines represent the curve of expected total annual rates in the absence of screening derived from (a) a log-linear model and (b) an age-period model (see text). The dotted lines represent the 95% confidence bands around the expected rates. All rates were age-standardised using the European standard population. Emilia-Romagna Region cancer registries and health care district cervical cancer screening programmes, Italy, 1988–2013.

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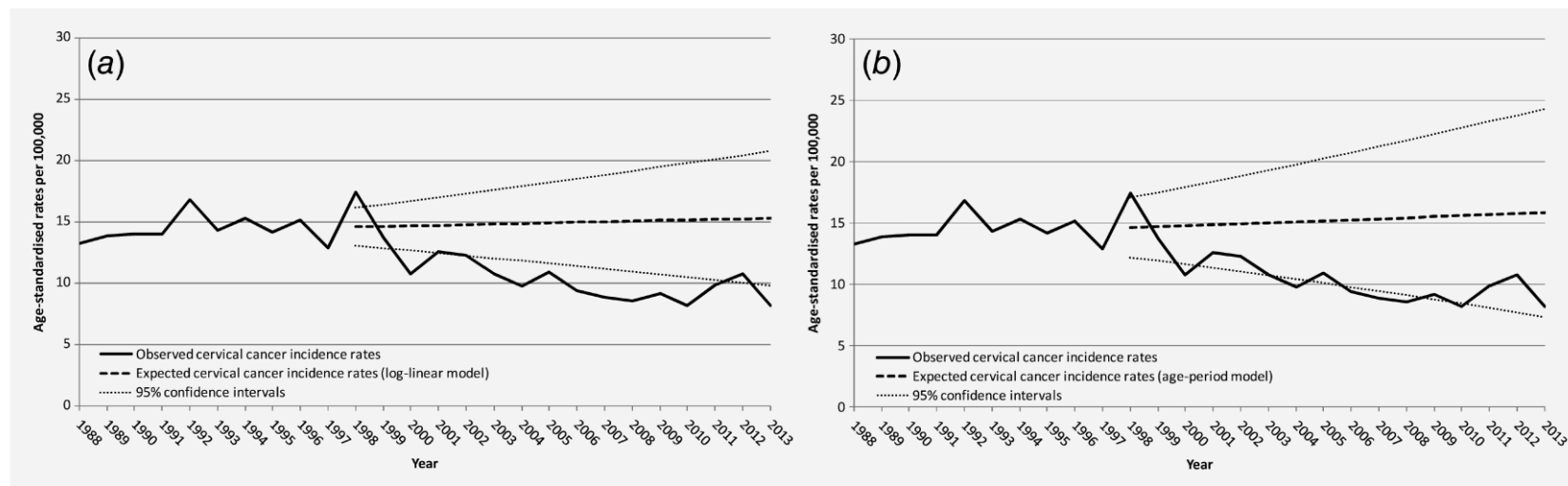


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L'impatto
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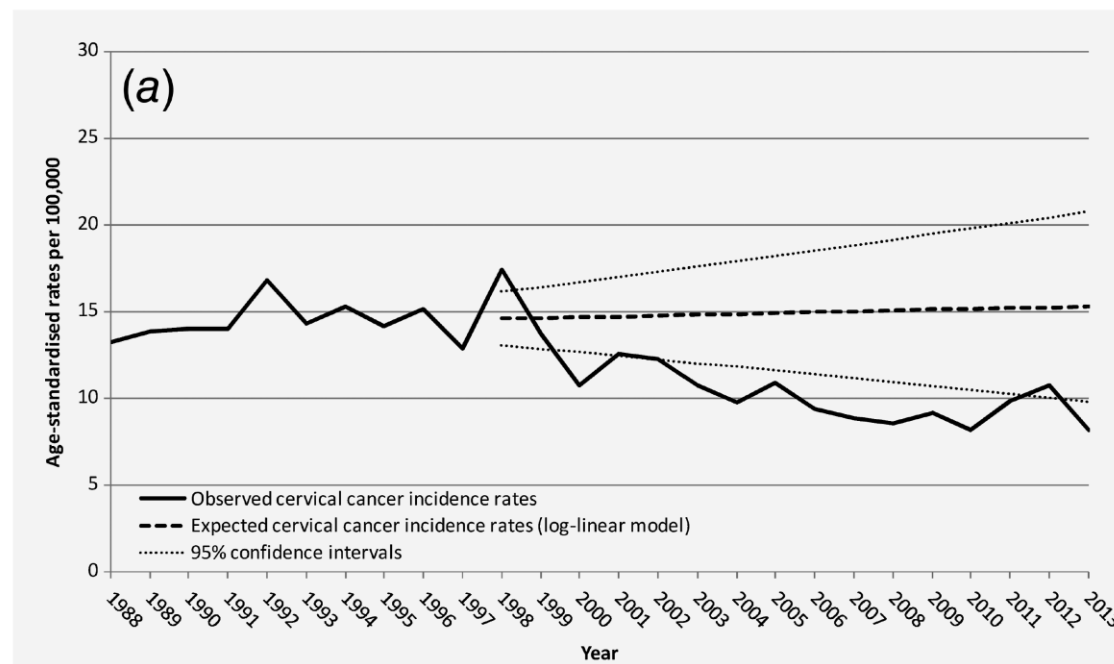


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Year	Method of estimate of expected rate		
	From a log-linear model		
	Incidence rate ratio (95% confidence interval)	Annual number prevented	Cumulative number prevented
1998	1.18 (1.03–1.30)	–28	–28
1999	0.94 (0.80–1.05)	10	–18
2000	0.74 (0.62–0.83)	41	23
2001	0.85 (0.70–0.98)	24	47
2002	0.83 (0.68–0.98)	26	73
2003	0.73 (0.58–0.87)	46	119
2004	0.66 (0.52–0.80)	60	179
2005	0.73 (0.56–0.90)	48	227
2006	0.65 (0.49–0.82)	63	290
2007	0.60 (0.45–0.77)	71	361
2008	0.60 (0.44–0.79)	58	419
2009	0.63 (0.45–0.84)	55	474
2010	0.56 (0.40–0.76)	66	540
2011	0.67 (0.47–0.94)	50	590
2012	0.74 (0.51–1.05)	36	626
2013	0.56 (0.38–0.81)	61	687

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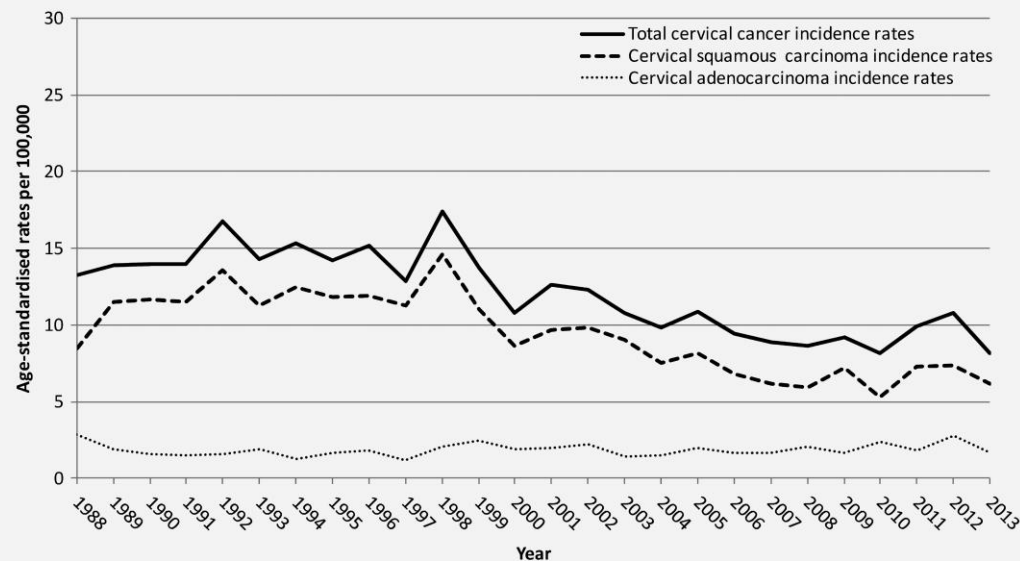


Figure 2. Curve of observed annual incidence rates of cervical cancer (total), squamous cervical carcinoma, and cervical adenocarcinoma per 100,000 women aged 25–64 years. The bold line represents the curve of observed total annual cervical cancer incidence rates (the same curve as in Figure 1a and b). The lower section of the Figure shows the calendar time trends in observed annual rates of the two subtypes of cervical cancer, squamous carcinoma (dashed line) and adenocarcinoma (dotted line). The decreasing trend in observed total annual rates was entirely accounted for by squamous carcinoma. Adenocarcinoma incidence was stable over the entire time period (log-linear model exponential slope 1988–2013, 1.005; 95% CI, 0.993 to 1.016) and corresponded to the estimated trend in total annual rates for the years 1988–1997 (log-linear model exponential slope, 1.003; 95% CI, 0.983 to 1.024). The latter was also the estimated trend for the years 1998–2013 in Figure 1a, which is thus validated by the adenocarcinoma incidence trend. All rates were age-standardised using the European standard population. Emilia-Romagna Region cancer registries and health care district cervical cancer screening programmes, Italy, 1988–2013.

Changes in the incidence of cervical tumours by disease stage in a cytology-based screening programme

Lauro Bucchi¹, Silvia Mancini¹, Flavia Baldacchini¹, Orietta Giuliani¹, Alessandra Ravaioli¹, Rosa Vattiato¹, Fabio Falcini^{1,2}, Paolo Giorgi Rossi³, Cinzia Campari⁴, Debora Canuti⁵, Enza Di Felice⁶, Priscilla Sassoli de Bianchi⁶ and Stefano Ferretti⁷; on behalf of the Emilia-Romagna Region Workgroup for Cervical Screening Evaluation*

J Med Screen
2020, Vol. 27(2) 96–104

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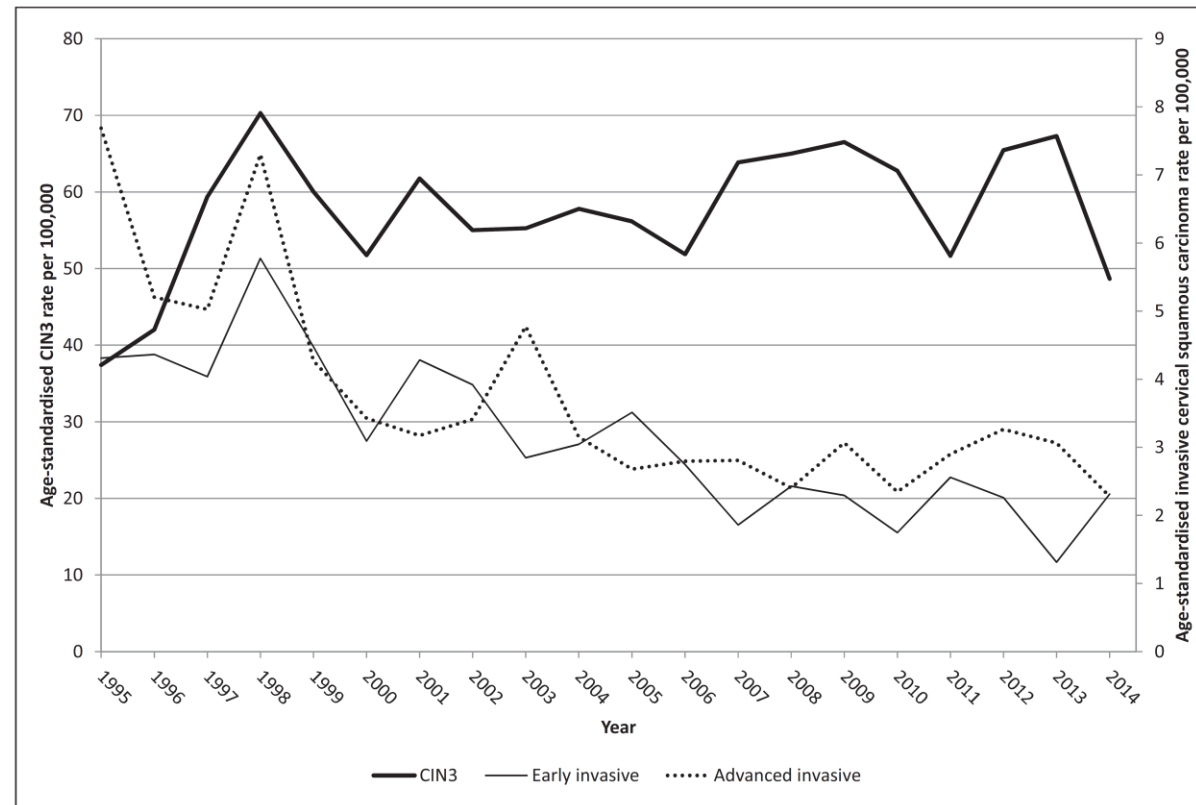


Figure 2. Curve of observed annual incidence rates of cervical intraepithelial neoplasia grade 3 (CIN3), early-stage cervical squamous carcinoma, and advanced-stage cervical squamous carcinoma per 100,000 women aged 25–64 in 1995–2014. CIN3 includes CIN2–3, CIN3, and squamous carcinoma in situ; early stage includes pT1a, pT1a1, and pT1a2; advanced stage includes pT1b or greater, and ypT. All rates were age-standardized (2013 European standard population). Emilia-Romagna Region, Italy.

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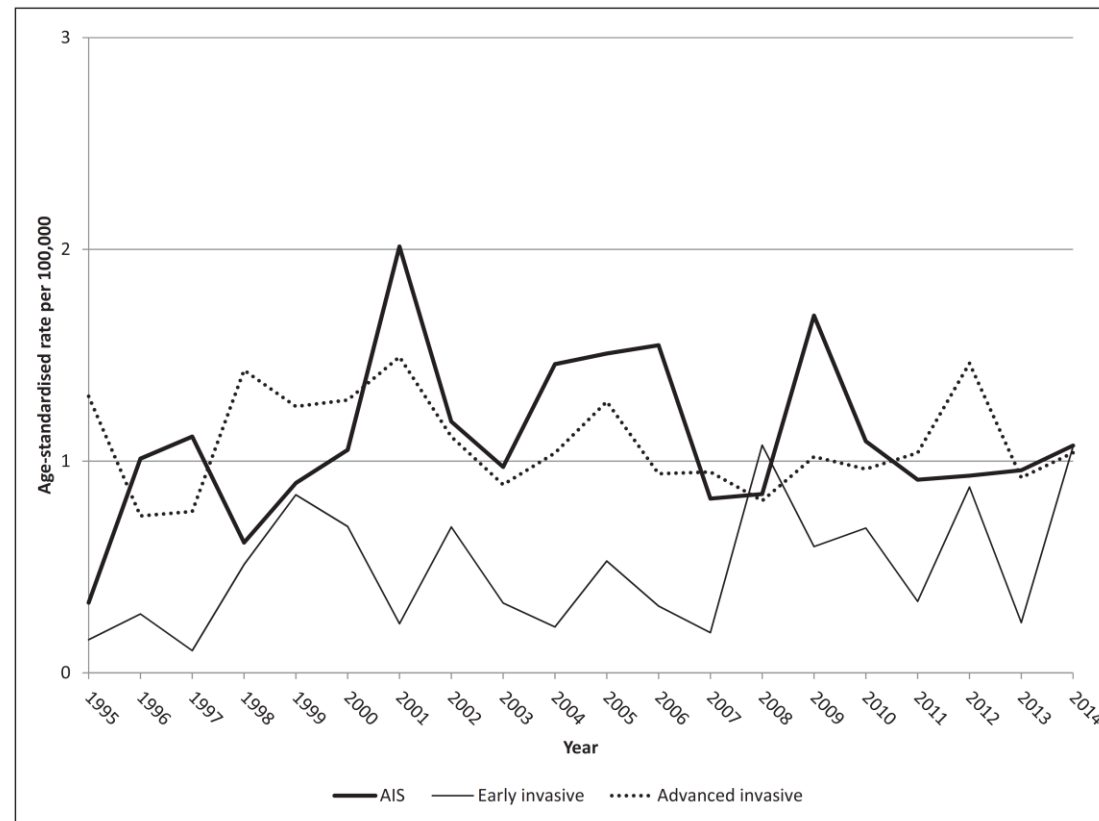
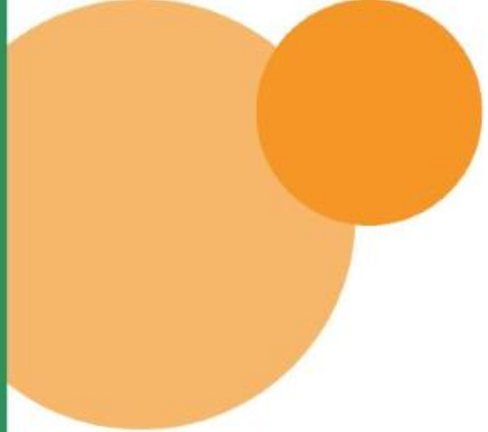


Figure 3. Curve of observed annual incidence rates of cervical adenocarcinoma in situ (AIS), early-stage cervical adenocarcinoma, and advanced-stage cervical adenocarcinoma per 100,000 women aged 25–64 in 1995–2014. Early stage includes pT1a, pT1a1, and pT1a2; advanced stage includes pT1b or greater, and ypT. All rates were age-standardized (2013 European standard population). Emilia-Romagna Region, Italy.



L'impatto dello screening citologico

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Table 1. Ratio between the average annual age-standardized (2013 European standard population) incidence rate of cervical tumours per 100,000 women aged 25–64 in 1997–1998, 1999–2006, and 2007–2014 and the rate of pre-screening years (1995–1996) by type and stage of disease. Emilia-Romagna Region cancer registries and health care district cervical cancer screening programmes, Italy, 1995–2014.

Disease and stage ^a	1997–1998			1999–2006			2007–2014		
	Obs	Exp	Incidence rate ratio ^b (95% CI)	Obs	Exp	Incidence rate ratio ^b (95% CI)	Obs	Exp	Incidence rate ratio ^b (95% CI)
Squamous tumours									
Cervical intraepithelial neoplasia grade 3	1058	658	1.61 (1.45–1.79)	4090	2895	1.41 (1.29–1.55)	4325	2824	1.55 (1.41–1.70)
Squamous carcinoma, early stage	78	68	1.14 (0.80–1.62)	243	300	0.80 (0.60–1.08)	152	309	0.49 (0.36–0.67)
Squamous carcinoma, advanced stage	96	98	0.97 (0.72–1.31)	233	426	0.54 (0.42–0.70)	195	444	0.44 (0.33–0.57)
Squamous carcinoma, unknown stage	35	46	0.76 (0.48–1.21)	140	201	0.70 (0.49–1.01)	141	204	0.69 (0.48–0.99)
Glandular tumours									
Adenocarcinoma in situ	14	12	1.20 (0.52–2.78)	96	50	1.87 (0.94–3.70)	74	51	1.44 (0.72–2.88)
Adenocarcinoma, early stage	5	4	1.29 (0.31–5.38)	34	17	1.97 (0.60–6.41)	46	16	2.65 (0.82–8.53)
Adenocarcinoma, advanced stage	17	15	1.10 (0.53–2.31)	80	66	1.18 (0.65–2.17)	72	69	1.03 (0.56–1.91)
Adenocarcinoma, unknown stage	4	14	0.28 (0.09–0.89)	22	62	0.35 (0.17–0.73)	29	64	0.46 (0.23–0.92)

^aCervical intraepithelial neoplasia (CIN) grade 3 includes CIN2-3, CIN3, and squamous carcinoma in situ; early stage includes pT1a, pT1a1, and pT1a2; advanced stage includes pT1b or greater, and ypT; unknown stage includes pT1 not otherwise specified, pTx, and missing pT information.

Clinical Epidemiology of Microinvasive Cervical Carcinoma in an Italian Population Targeted by a Screening Programme






Lauro Bucchi ¹ , Silvano Costa ², Silvia Mancini ^{1,*} , Flavia Baldacchini ¹, Orietta Giuliani ¹, Alessandra Ravaoli ¹ , Rosa Vattiato ¹, Federica Zamagni ¹ , Paolo Giorgi Rossi ³, Cinzia Campari ⁴, Debora Canuti ⁵, Priscilla Sassoli de Bianchi ⁵, Stefano Ferretti ⁶ , Fabio Falcini ^{1,7}
and on behalf of the Emilia-Romagna Region Workgroup for Cervical Screening Evaluation [†]
Cancers **2022**, *14*, 2093.






Table 3. Univariate association of registered patient and disease characteristics with the pattern of treatment of stage IA cervical carcinoma. Emilia-Romagna Region, Italy (1995–2016).

Characteristic	Number	Pattern of Treatment				<i>p</i> -Value *
		Conservative without LND (<i>n</i> = 350)	Conservative with LND (<i>n</i> = 12)	Hysterectomy without LND (<i>n</i> = 317)	Hysterectomy with LND (<i>n</i> = 197)	
Time period of diagnosis					<0.001	
1995–1999	262	73 (27.9)	4 (1.5)	127 (48.5)	58 (22.1)	
2000–2004	243	101 (41.6)	1 (0.4)	96 (39.5)	45 (18.5)	
2005–2010	226	104 (46.0)	2 (0.9)	60 (26.5)	60 (26.5)	
2011–2016	145	72 (49.7)	5 (3.4)	34 (23.4)	34 (23.4)	

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Clinical Epidemiology of Microinvasive Cervical Carcinoma in an Italian Population Targeted by a Screening Programme

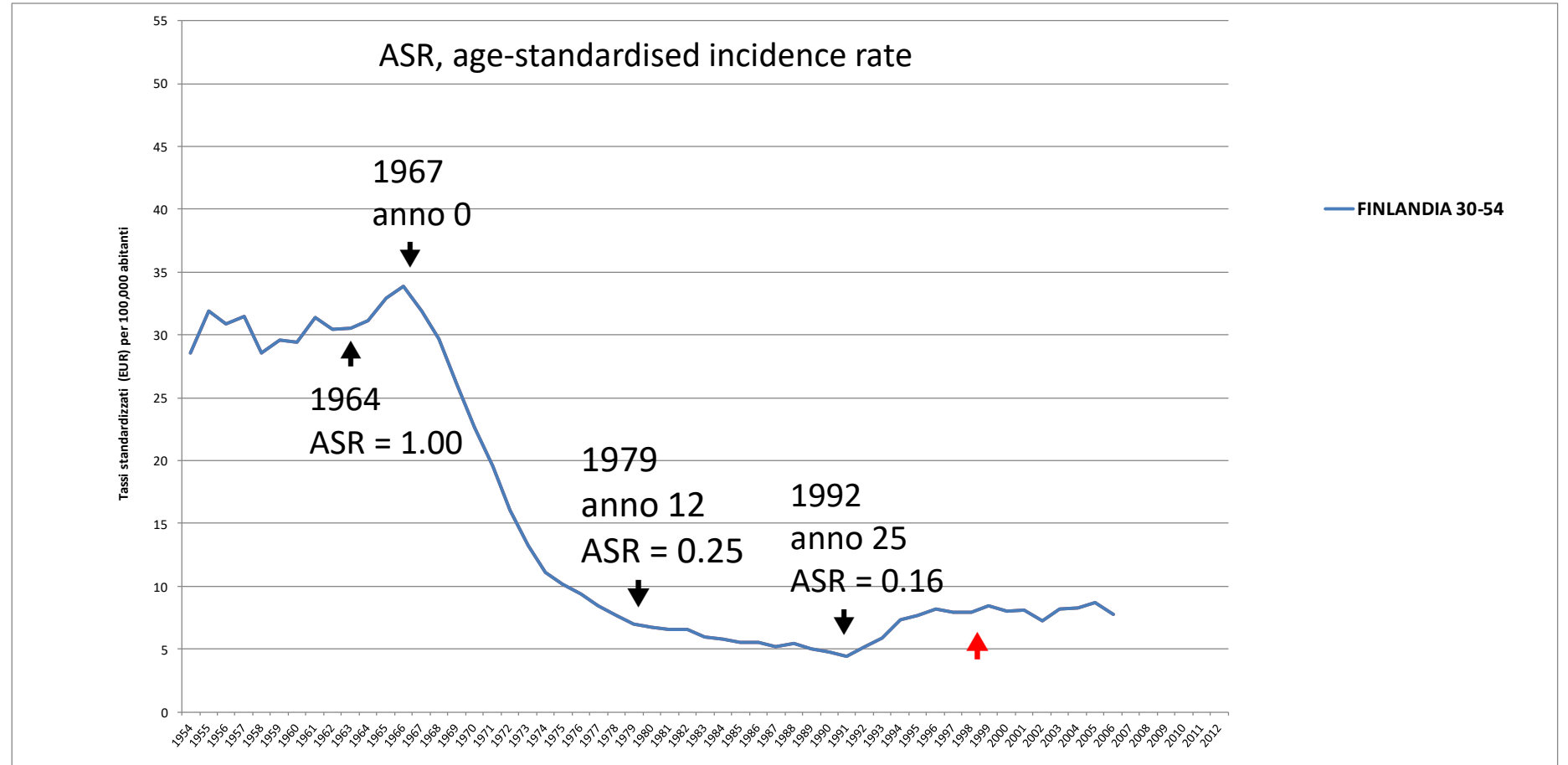
Lauro Bucchi ¹, Silvano Costa ², Silvia Mancini ^{1,*}, Flavia Baldacchini ¹, Orietta Giuliani ¹,
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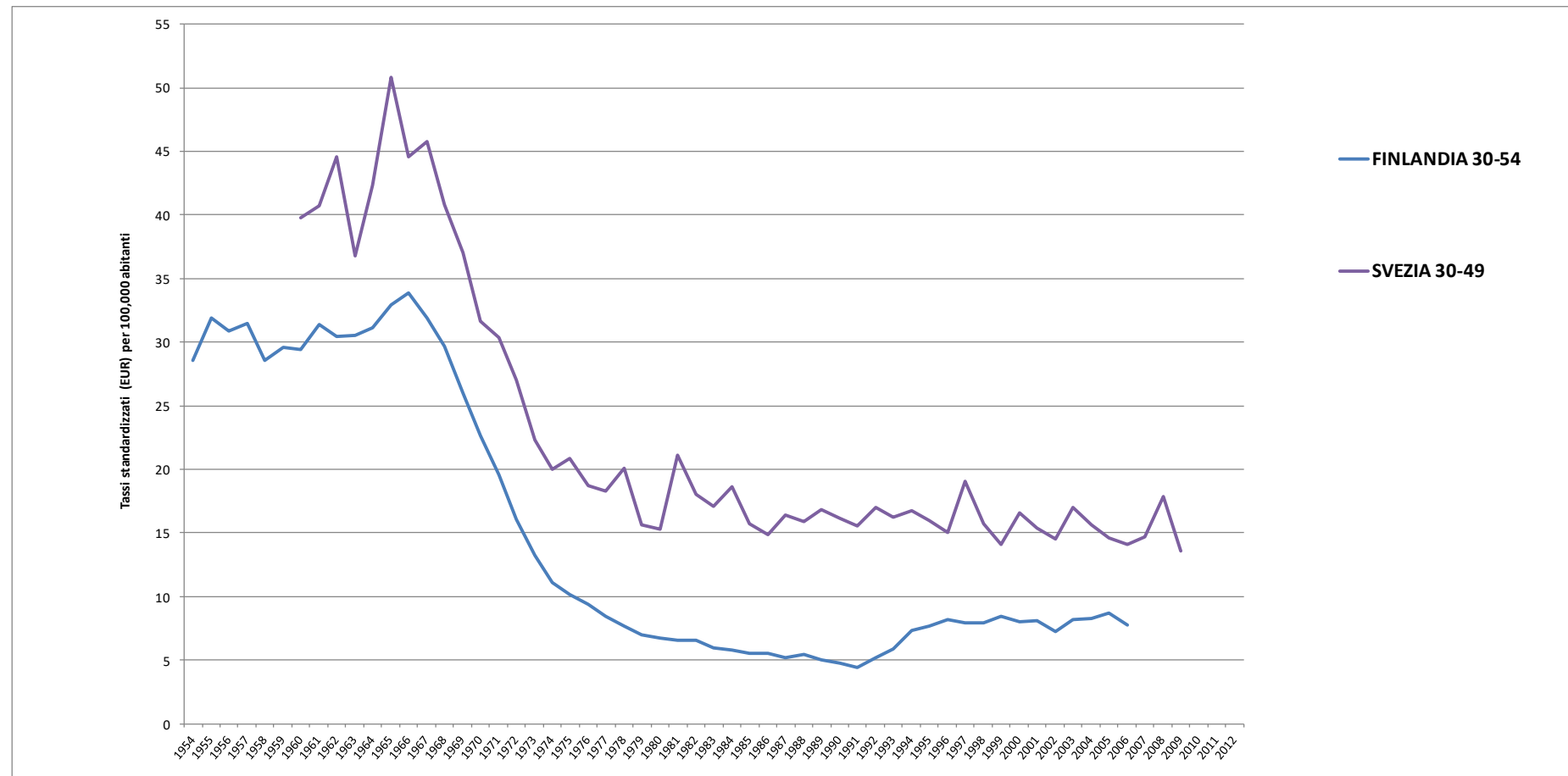
Table 4. Multivariate association of the registered patient and disease characteristics with the likelihood of hysterectomy—versus conservative treatment—and the likelihood of hysterectomy with—versus without—lymph node dissection in the treatment of stage IA cervical carcinoma. Emilia-Romagna Region, Italy (1995–2016).

Characteristic	Odds Ratio (95% CI) for Hysterectomy * Versus Conservative Treatment	Odds Ratio (95% CI) for Hysterectomy with LND Versus without LND
Time period of diagnosis		
1995–1999	1.00 (reference category)	1.00 (reference category)
2000–2004	0.51 (0.34–0.78)	0.95 (0.57–1.57)
2005–2010	0.42 (0.27–0.64)	2.28 (1.35–3.84)
2011–2016	0.33 (0.20–0.54)	2.47 (1.30–4.71)

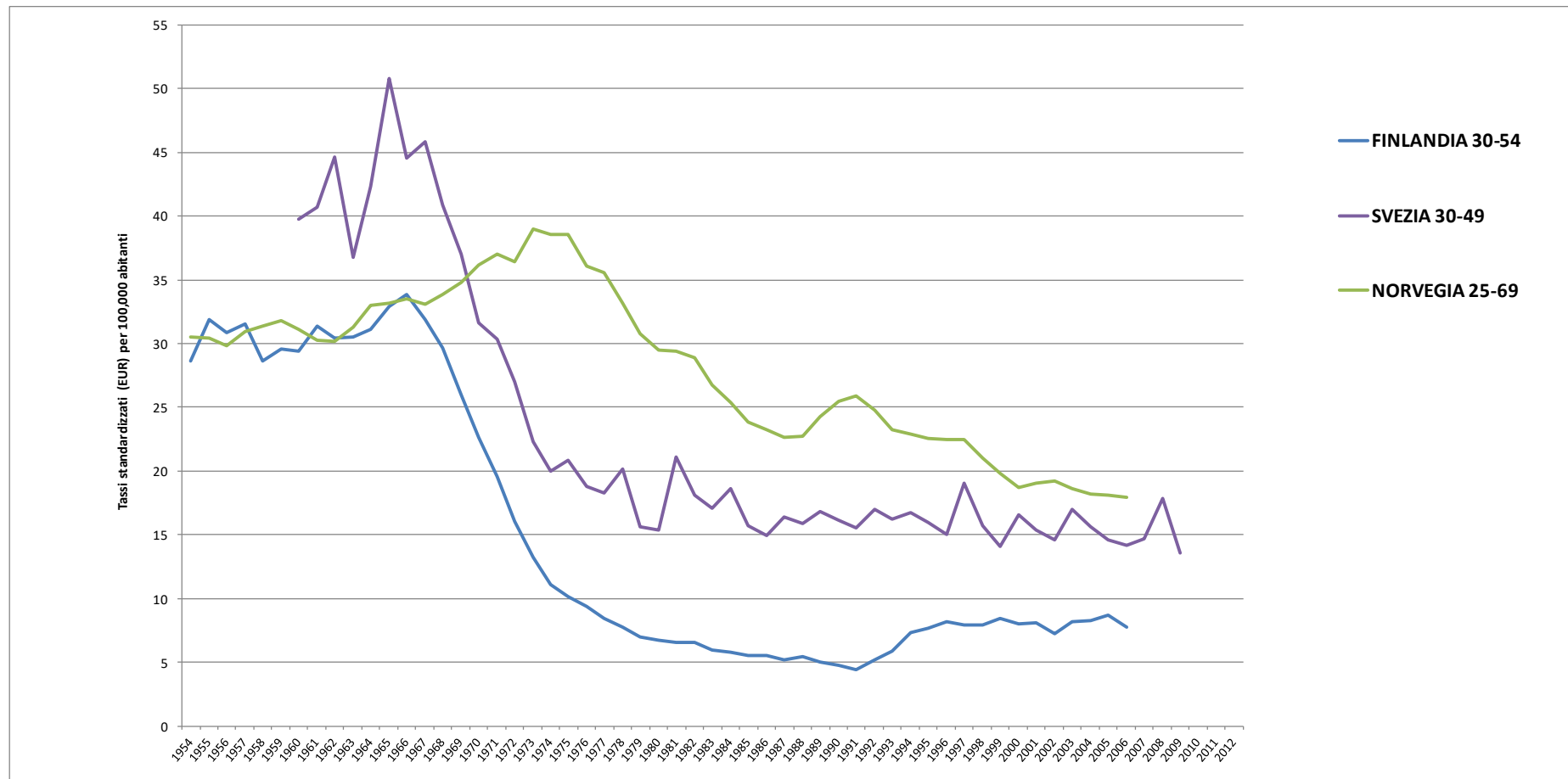
Lo screening in Europa



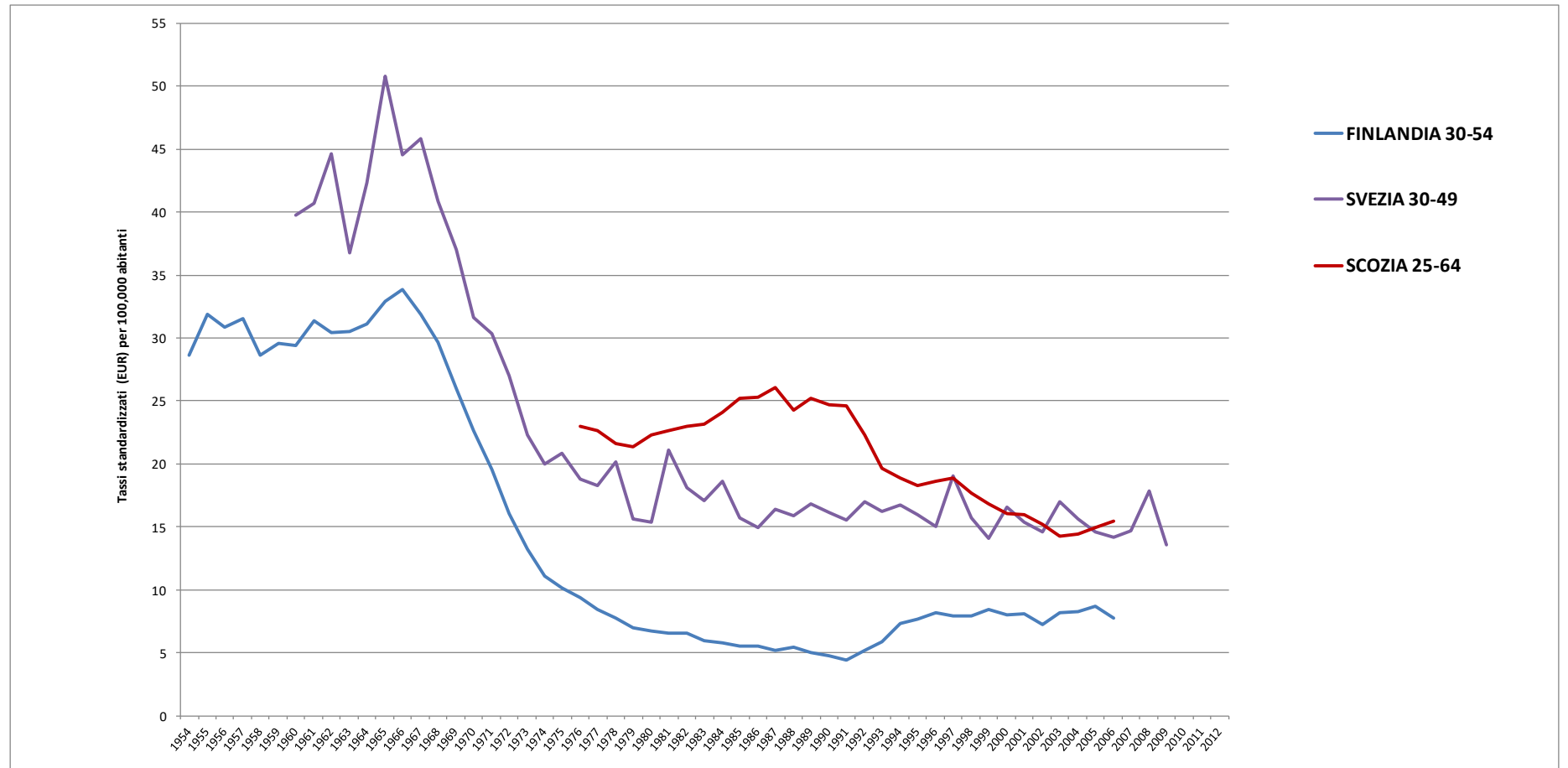
Lo screening in Europa



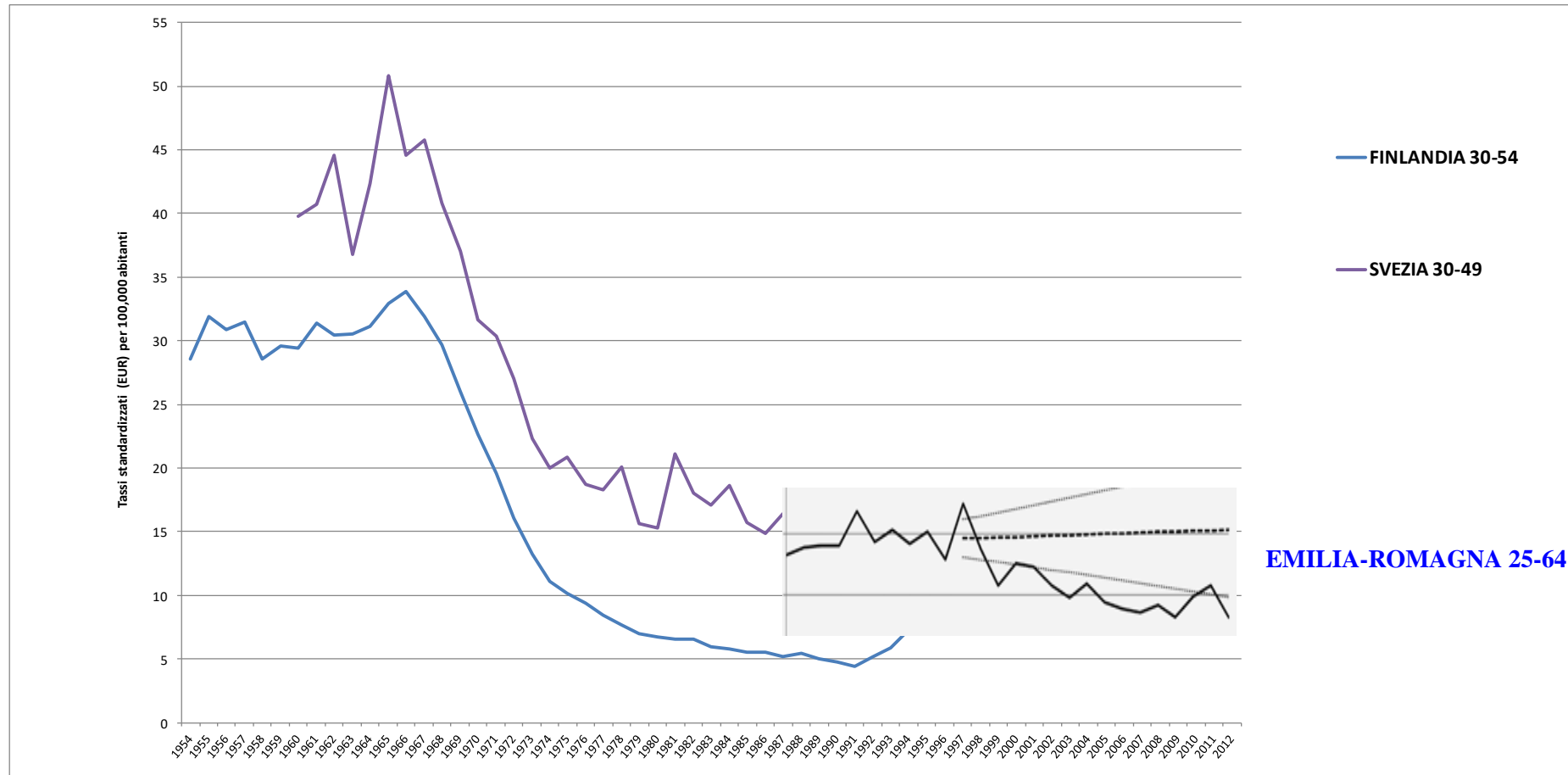
Lo screening in Europa



Lo screening in Europa



Lo screening in Europa





Conclusioni

- ✓ Il programma di screening della Regione Emilia-Romagna è tra i pochi in Europa di cui siano noti gli effetti sull'incidenza del cancro cervicale invasivo
- ✓ Il programma ha ridotto l'incidenza del cancro cervicale invasivo nella popolazione bersaglio del 40% a 10 anni dall'inizio
- ✓ Il programma ha avuto una qualità tecnica adeguata e un impatto commisurato alla partecipazione della popolazione
- ✓ In una prospettiva storica, i 30 anni che l'hanno preceduto si possono definire decenni di opportunità preventive sprecate
- ✓ A breve, sarà possibile valutare i (primi) benefici aggiuntivi della doppia strategia vaccinazione anti-HPV – screening dell'HPV

6 FEBBRAIO 2023