

SND Svensk Nationell Datatjänst



**Effectiveness of cervical screening
after age 60 according to screening
history: nationwide cohort study**

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Overview

Identification SND1028-001

Abstract

The relatively high incidence of cervical cancer in women at older ages is an issue in countries performing cervical screening for decades. Controversy remains on when and how to cease screening. Existing population-based studies on effectiveness of cervical screening at older ages have not considered women's screening history. We performed a nationwide cohort study to investigate the incidence of cervical cancer after age 60 and its association with cervical screening at ages 61-65, stratified by screening history at ages 51-60. Using the Total Population Register, we identified women born between January 1919 and December 1945, resident in Sweden since age 51. According to the year that each county started the electronic record of cervical screening and women's resident county, we further identified 569,132 women that have cervical screening record available since age 51. Women's screening records, cervical cancer occurrence, and level of education were retrieved from the Swedish National Cervical Screening Registry, the National Cancer Register, and LISA (Longitudinal integration database for health insurance and labour market studies) respectively. We presented the cumulative incidence of cervical cancer from age 61-80 by using competing risk regression models, and compared the hazard ratio of cervical cancer by screening status at ages 61-65 from Cox models, adjusted for birth cohort and level of education, conditioning on screening history in their 50s. We find that Cervical screening at ages 61-65 is associated with a statistically significant reduction of subsequent cervical cancer risk for women unscreened, or screened with abnormalities, in their 50s. In women screened negative in their 50s, the risk for future cancer is not sizeable, and the risk reduction associated with continued screening appears limited. These findings should inform the current debate regarding age and criteria to discontinue cervical screening.

Unit of Analysis Individual

Group

Scope & Coverage

Keywords cervical screening, cervical cancer, cervical cancer prevention, older age

Topics HEALTH, Medical and Health Sciences

Time Period(s) 1991-1991

Countries Sweden

Universe

Women resident in Sweden since age 51 whose cervical screening records are available since age 51

Producers & Sponsors

Primary Investigator(s) Sparén, Pär

Other Producer(s) Karolinska Institutet, Department of Medical Epidemiology and Biostatistics

Funding Agency/ies Swedish Research Council (VR)
Swedish Foundation for Strategic Research, SSF
The Swedish Cancer Society

Sampling

Sampling Procedure

Total universe/Complete enumeration

Data Collection

Data Collection start 1991

Dates end 2013

Time Period(s)

Data Collection Other

Mode

File Description(s)

Dataset contains 1 file(s)

SND1028-001_v001

Cases	569132
Variable(s)	12

Variables List

Dataset contains 12 variable(s)

File SND1028-001_v001

	Name	Label	Question
1	SND_study	SND-study 1028	-
2	SND_dataset..	SND-dataset 1028-001	-
3	SND_version..	SND-version 1.0	-
4	seq_nr	Sequencing number (indicating each individual woman, from 1 to 569,132)	-
5	edu_cat	Education level, in three categories (missing value indicates there is no information about education)	-
6	birth_cat	Birth year category	-
7	scr_51_60	Screening history at ages 51-60, in five categories	-
8	age_first_scr..	Age of first screening at ages 61-65 (missing value indicates there is no screening test at ages 61-65).	-
9	orgscr_county..	If in county that more than 40% of women screened at ages 61-65	-
10	age_entry	Age of entering the cohort	-
11	age_exit	Age of exiting the cohort	-
12	cx_fail	Reason of exiting the cohort	-

Variables Description

Dataset contains 12 variable(s)

File : SND1028-001_v001

SND_study: SND-study 1028

Definition: SND-study 1028: Effectiveness of cervical screening after age 60 according to screening history: nationwide cohort study

Value	Label	Cases	Percentage
1028		569132	100.0%

Information: Type: discrete, Format: numeric, Range: 1028-1028, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -) Mean: (1028 / -) StdDev: (0 / -)

SND_dataset: SND-dataset 1028-001

Definition: SND-dataset 1028-001: Effectiveness of cervical screening after age 60 according to screening history: nationwide cohort study

Value	Label	Cases	Percentage
1		569132	100.0%

Information: Type: discrete, Format: numeric, Range: 1-1, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -) Mean: (1 / -) StdDev: (0 / -)

SND_version: SND-version 1.0

Definition: SND-version 1.0, 2017-08-22

Value	Label	Cases	Percentage
1		569132	100.0%

Information: Type: discrete, Format: numeric, Range: 1-1, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -) Mean: (1 / -) StdDev: (0 / -)

seq_nr: Sequencing number (indicating each individual woman, from 1 to 569,132)

Information: Type: continuous, Format: numeric, Range: 1-569132, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -) Mean: (284566.5 / -) StdDev: (164294.401 / -)

edu_cat: Education level, in three categories (missing value indicates there is no information about education)

Definition: Data are retrieved from LISA (Longitudinal integration database for health insurance and labour market studies).

Value	Label	Cases	Percentage
1	Low (less than high school)	229594	40.6%
2	High school	217651	38.5%
3	University exam and above	118462	20.9%
Sysmiss		3425	

File : SND1028-001_v001

edu_cat: Education level, in three categories (missing value indicates there is no information about education)

Information: Type: discrete, Format: numeric, Range: 1-3, Missing: *

Statistics (NW/ W): Valid: (565707 / -) Invalid: (3425 / -)

birth_cat: Birth year category

Value	Label	Cases	Percentage
1	1919-1925	26772	4.7%
2	1926-1930	48732	8.6%
3	1931-1935	92472	16.2%
4	1936-1940	148326	26.1%
5	1941-1945	252830	44.4%

Information: Type: discrete, Format: numeric, Range: 1-5, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -)

scr_51_60: Screening history at ages 51-60, in five categories

Definition: Data are retrieved from the Swedish National Cervical Screening Registry.

Value	Label	Cases	Percentage
1	Adequately screened, negative	340703	59.9%
2	Inadequately screened, negative	111866	19.7%
3	Unscreened	89172	15.7%
4	Having low-grade abnormality	15941	2.8%
5	Having high-grade abnormality	11450	2.0%

Information: Type: discrete, Format: numeric, Range: 1-5, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -)

age_first_scr_6165: Age of first screening at ages 61-65 (missing value indicates there is no screening test at ages 61-65).

Definition: Data are retrieved from the Swedish National Cervical Screening Registry.

Information: Type: continuous, Format: numeric, Range: 61-66, Missing: *

Statistics (NW/ W): Valid: (209036 / -) Invalid: (360096 / -) Mean: (62.847 / -) StdDev: (1.37 / -)

orgscr_county: If in county that more than 40% of women screened at ages 61-65

Value	Label	Cases	Percentage
0	No	150235	26.4%
1	Yes	418897	73.6%

Information: Type: discrete, Format: numeric, Range: 0-1, Missing: *

File : SND1028-001_v001

orgscr_county: If in county that more than 40% of women screened at ages 61-65

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -)

age_entry: Age of entering the cohort

Value	Label	Cases	Percentage
61		569132	100.0%

Information: Type: discrete, Format: numeric, Range: 61-61, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -) Mean: (61 / -) StdDev: (0 / -)

age_exit: Age of exiting the cohort

Information: Type: continuous, Format: numeric, Range: 61-81, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -) Mean: (71.922 / -) StdDev: (4.995 / -)

cx_fail: Reason of exiting the cohort

Definition: The information is retrieved from the Swedish National Cancer Registry (cervical cancer), Cause of Death Register (death), Patient Register (hysterectomy), and Migration Register (emigration).

Value	Label	Cases	Percentage
1	Having cervical cancer	868	0.2%
2	Competing events (death or having total hysterectomy)	85280	15.0%
3	Censoring (emigration, turning age 81, or 2011-12-31).	482984	84.9%

Information: Type: discrete, Format: numeric, Range: 1-3, Missing: *

Statistics (NW/ W): Valid: (569132 / -) Invalid: (0 / -)