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DIRECT MAILING OF SELF-SAMPLE HPV TEST VS. USUAL REMINDER LETTER TO OLDER WOMEN NON-PARTICIPATING IN CERVICAL CANCER SCREENING: A PROSPECTIVE STUDY IN THE CZECH REPUBLIC

NSC NATIONAL
SCREENING
CENTRE



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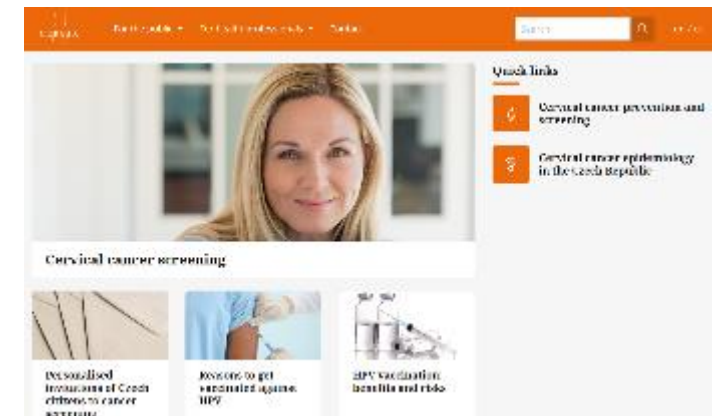
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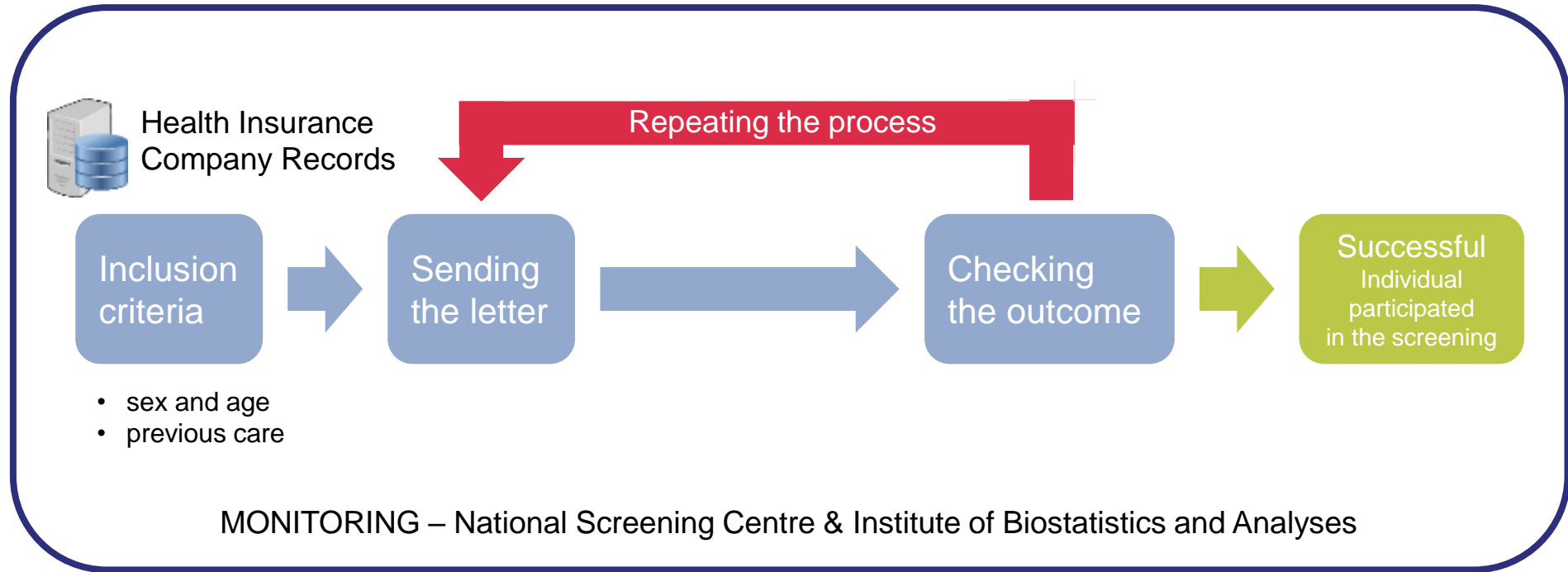
- **Launch of the programme**
 - Quality assurance guidelines were implemented in 2008
 - Programme with centralised invitations was set up in 2014
- **Target population**
 - All adult women
- **Screening test**
 - Annual pap smear
 - Women aged 35 and 45 years with negative cytology: HPV-DNA detection (since 2021)
- **Screening process**
 - Sample collection by a primary care gynaecologist
 - Laboratory examinations in certified cytology laboratories
 - Centralised invitation of non-attenders
- **Governance and coordination**
 - Cervical Cancer Screening Committee of the Ministry of Health
- **Monitoring and evaluation**
 - National Screening Centre, ÚZIS ČR
 - Institute of Biostatistics and Analyses, Faculty of Medicine, Masaryk University



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SET-UP OF THE INDIVIDUAL INVITATION SYSTEM

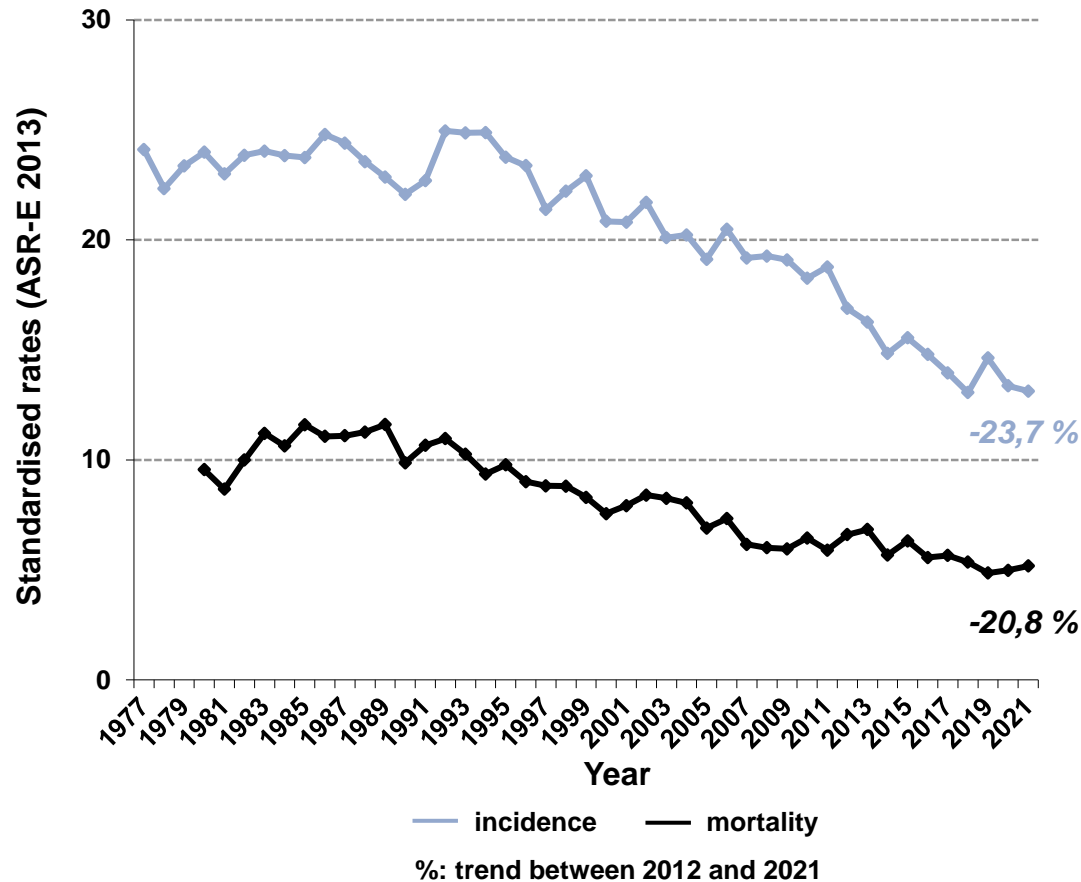


- individuals aged under 70 years were invited
- individuals who had recently undergone respective screening or diagnostic care or had already been treated for the respective cancer were excluded

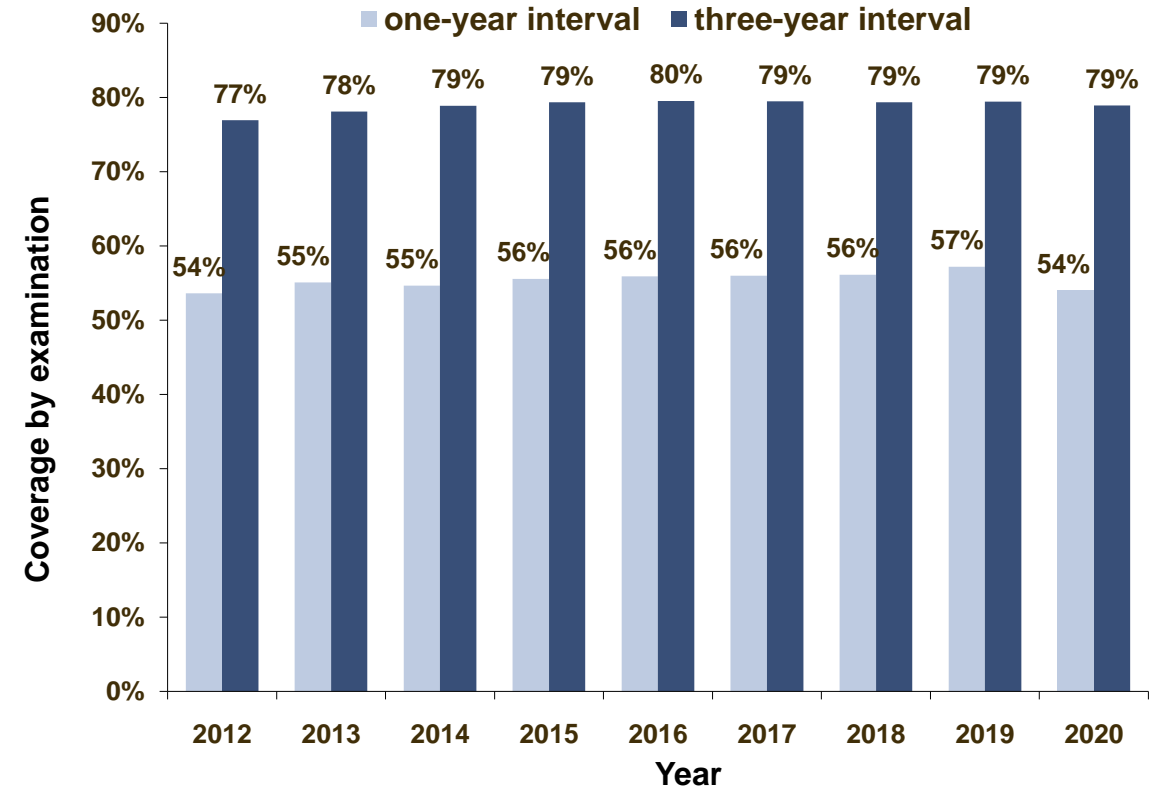
➔ INTEGRATED POPULATION-BASED APPROACH

CERVICAL CANCER AND COVERAGE BY EXAMINATION

Time trends of cervical cancer incidence and mortality in women
(Age-standardised European rates (ASR-E): rates per 100,000 women)



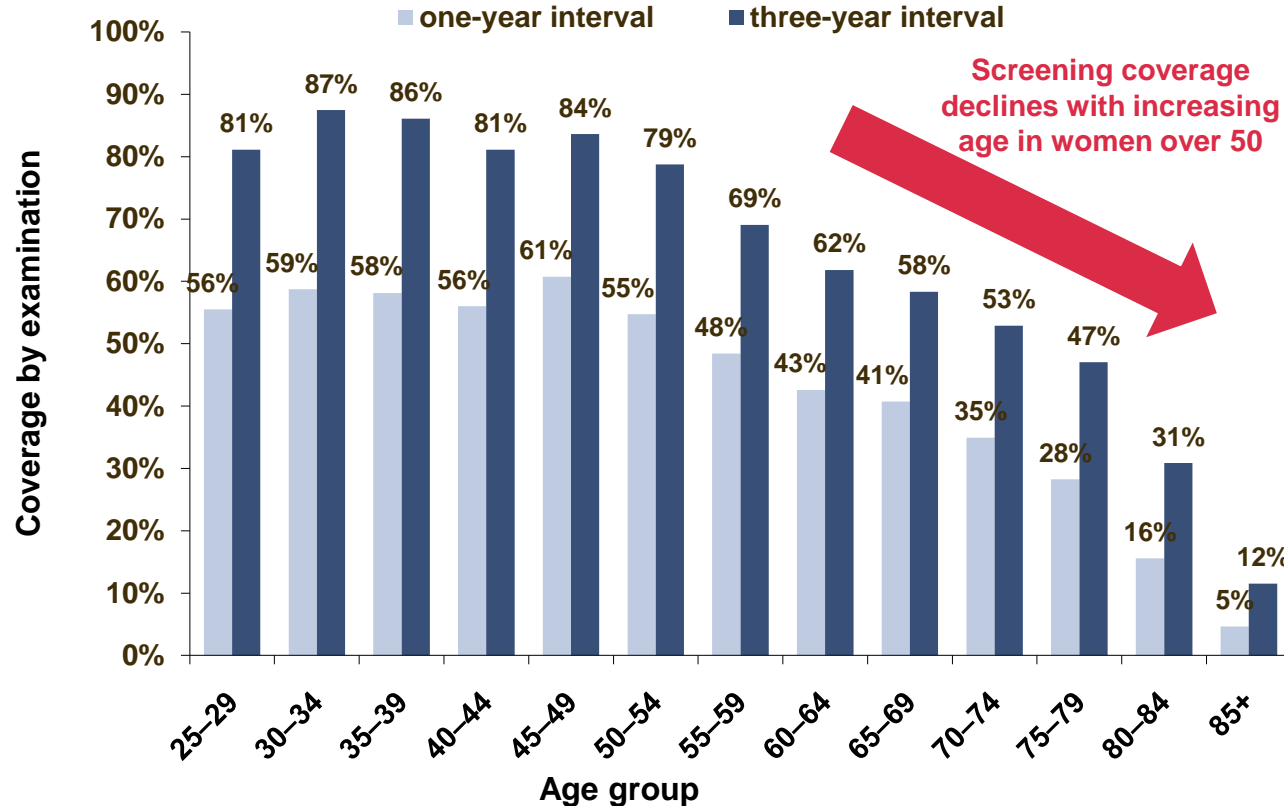
Coverage by screening examination, women aged 25—59 years



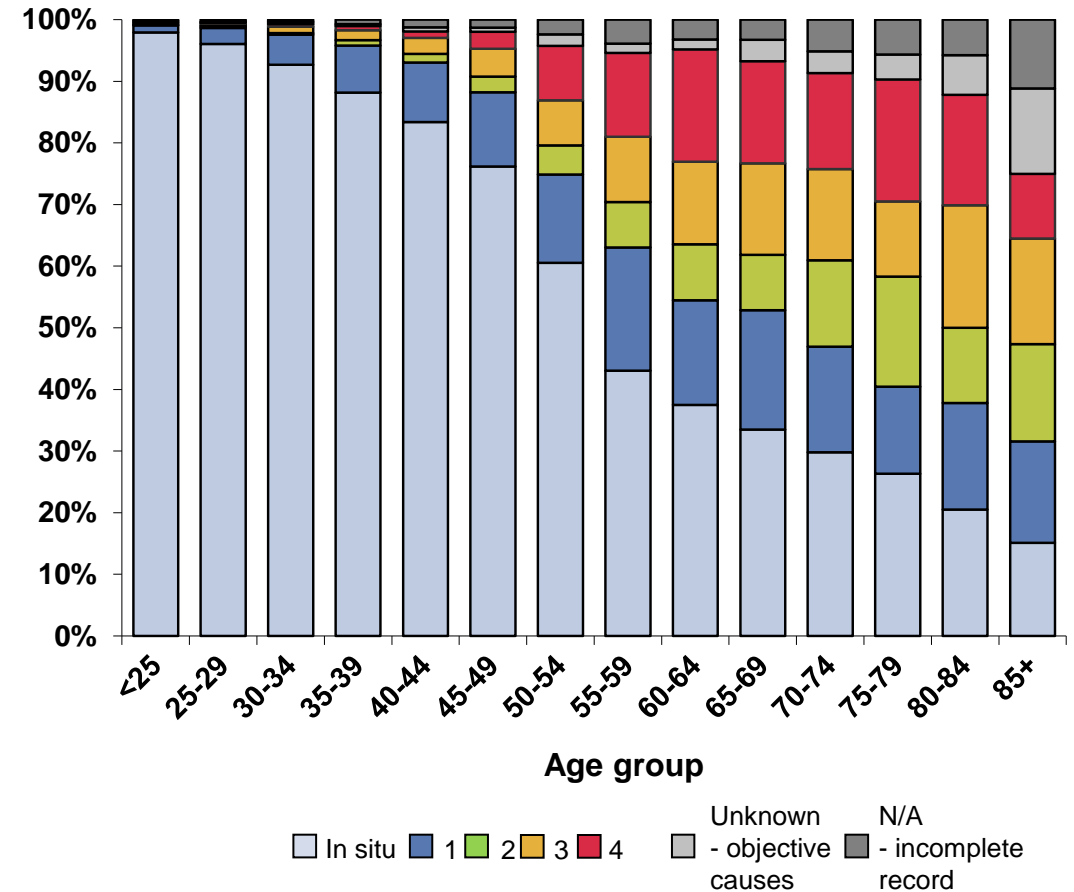
In the past 10 years, the incidence and mortality rates of cervical cancer have substantially decreased. Coverage by screening examination at one-year interval has been over 50%, the coverage at the three-year interval reached almost 80%.

CERVICAL CANCER AND COVERAGE BY EXAMINATION BY AGE

Coverage by screening examination in 2021 by age



Stages of the disease in the period 2017–2021



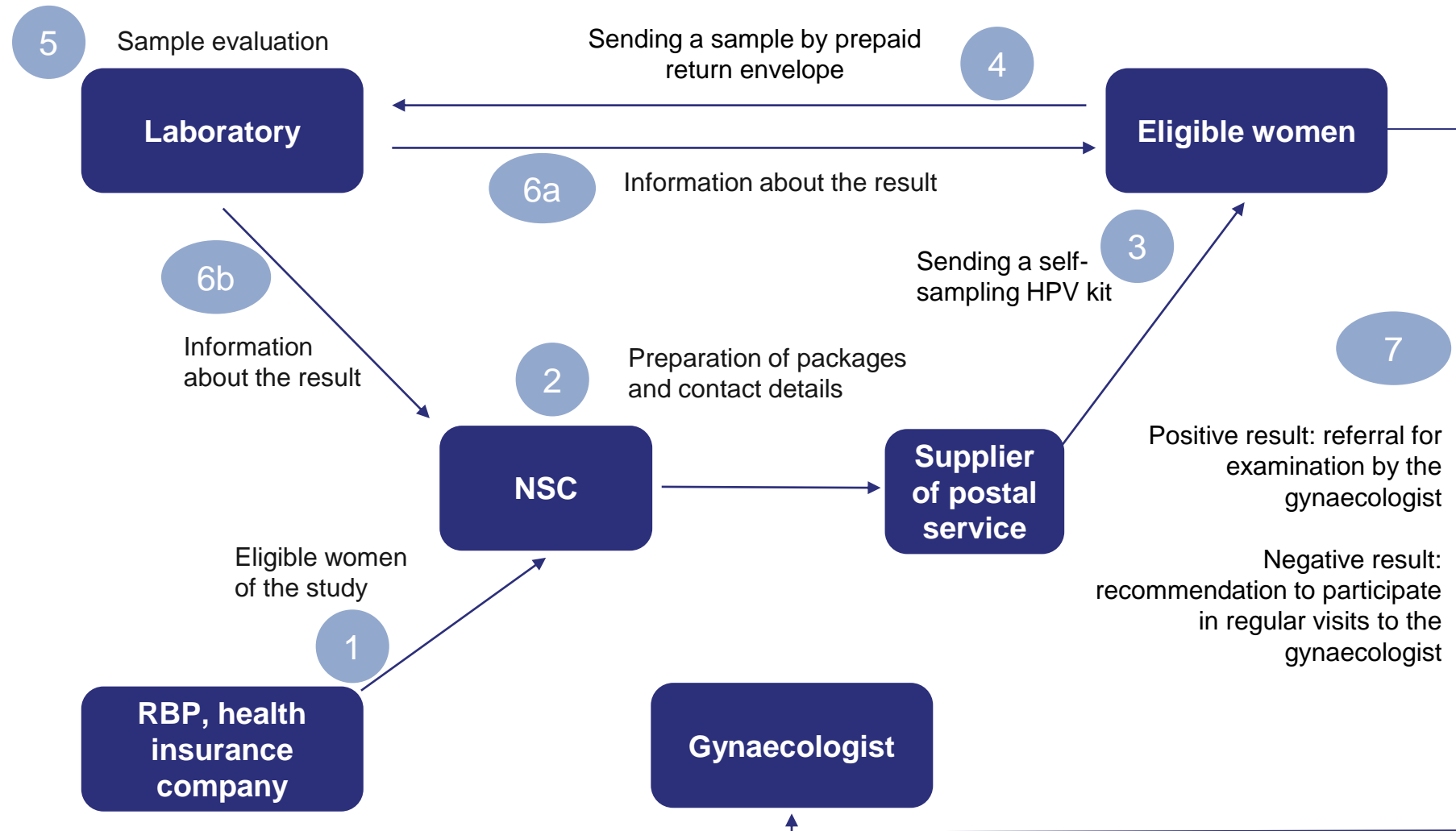
For women aged 50 years and over, coverage by screening examination is decreasing with age. Older women are diagnosed with more advanced stages of cervical cancer.

STUDY DESIGN AND OUTCOMES



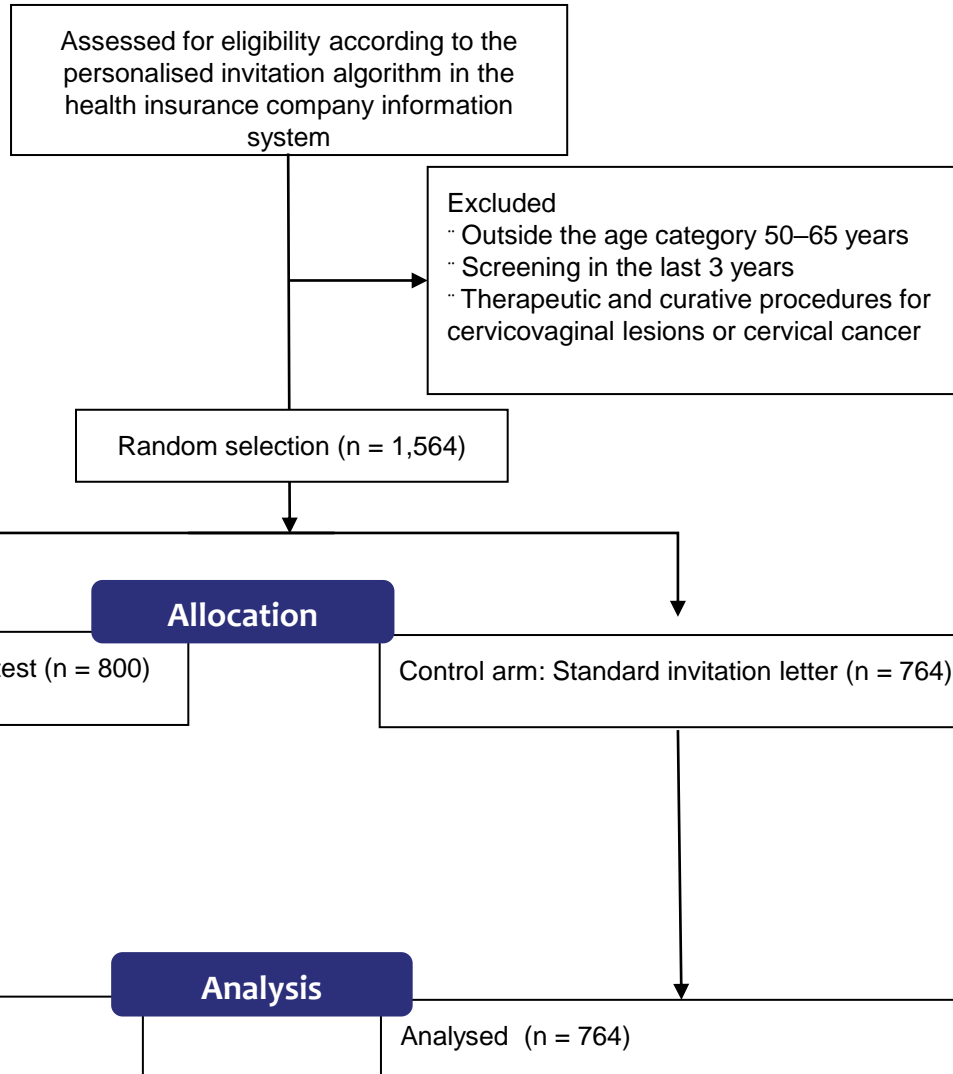
- Target population of women in the study
 - non-participation in cervical screening
 - meet the criteria for personalised invitation
 - age 50-65 years
- Implementation within the existing personalised invitation system
 - mailing was conducted in February and March 2021
 - eligible women were randomly selected (1:1) to one of the following arms
 - direct mailing of the self-sampling HPV kit, Evelyn Brush (intervention arm)
 - mailing of standard invitation letter (control arm)
 - The study was conducted with a health insurance company (RBP, health insurance company)
- Study outcomes
 - the primary outcome was the calculation and comparison of the two arms in the overall participation rate
 - intervention arm:
$$\frac{\text{samples evaluated in the laboratory OR participation in a screening examination by a gynaecologist}}{\text{all mailed women with a self-sampling HPV kit}}$$
 - control arm:
$$\frac{\text{participation in a screening examination by a gynaecologist}}{\text{all mailed women with a standard letter}}$$
 - data from the health insurance company and the laboratory were used for statistical analysis

SCHEME OF THE DIRECT MAILING OF SELF-SAMPLING HPV KITS



FLOW CHART OF THE STUDY ARMS AND BASELINE DATA

Enrollment

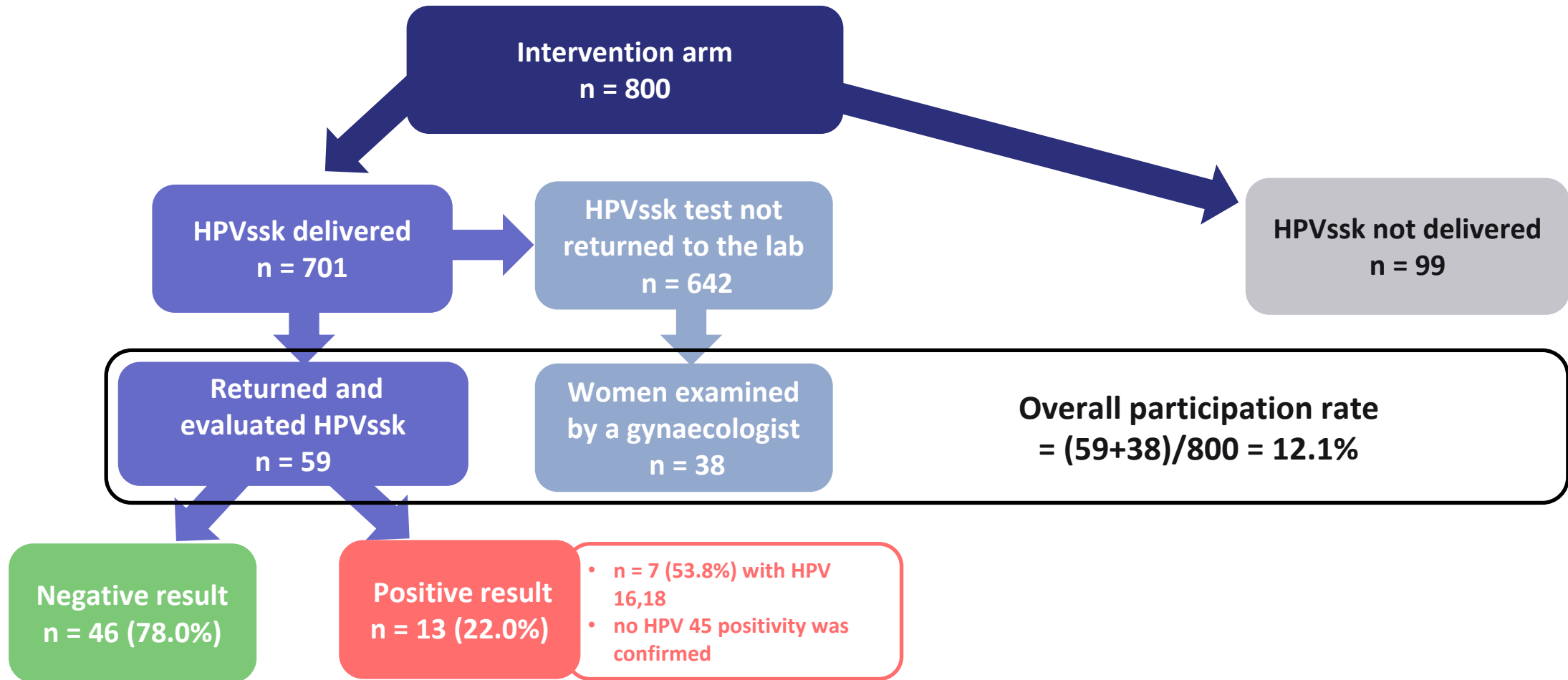


Baseline characteristics of eligible population by study arms

Characteristics	Intervention arm (self-sampling HPV test)		Control arm (invitation letter)	
	No.	%	No.	%
Age group				
50–54	200	25.0%	177	23.2%
55–59	274	34.3%	270	35.3%
60–65	326	40.8%	317	41.5%
No of previous invitations ^a				
1	102	12.8%	115	15.1%
2	84	10.5%	64	8.4%
3	258	32.3%	262	34.3%
4	132	16.5%	123	16.1%
5 and more	224	28.0%	200	26.2%
Letter variant ^b				
C	94	11.8%	100	13.1%
C and M	180	22.5%	190	24.9%
C and K	73	9.1%	81	10.6%
C and M and K	453	56.6%	393	51.4%

a represents how many times a woman has received an invitation
 b describes what screening programmes the invited women did not attend; C – cervical cancer screening, M – breast cancer screening, K – colorectal cancer screening

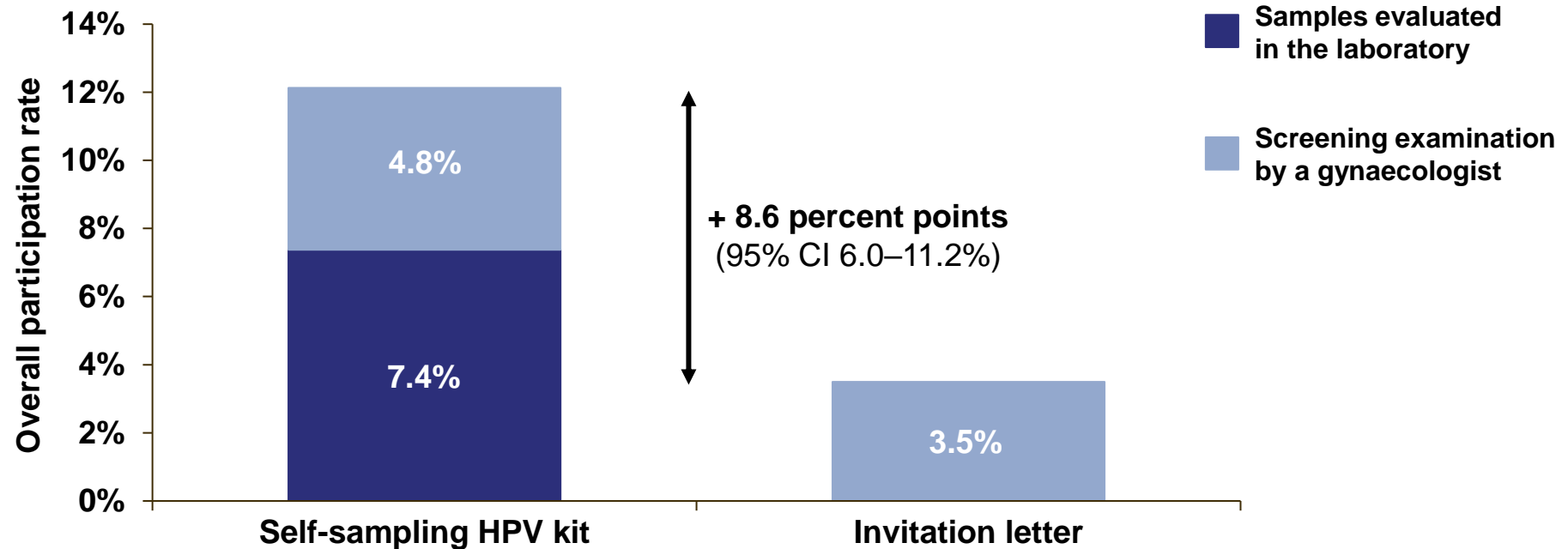
FLOW OF WOMEN IN THE INTERVENTION ARM OF THE STUDY



HPVssk - HPV self-sampling kits

The overall participation rate in the intervention arm is 12.1%. Twenty-two percent of women who returned the self-sampling HPV kit (n = 59) had a positive result (half with HPV 16, 18). Approximately 70% with a positive test result visited a gynaecologist.

COMPARISON OF OVERALL PARTICIPATION RATES BETWEEN ARMS



The difference between the groups was **8.6%** (95% CI 6.0-11.2%; $p < 0.001$) in favour of the intervention arm. The result was also confirmed with a binomial regression model adjusted for invitation order, letter variant, and age, overall participation rate difference was **7.7%** (95% CI 5.3-10.2%; $p < 0,001$).

- In the Czech Republic, we observe insufficient participation in screening among women aged 50 years and older.
- Self-sampling HPV kit is, therefore, a potentially feasible method of reaching women who do not attend a cervical screening programme.
- Compared to the standard invitation letters, the direct mailing of the self-sampling HPV test achieved a better overall participation rate (by approximately 8-9 percentage points, more than triple).
- Over 80% of women report an excellent or very good experience with the self-sampling HPV test.

THANK YOU FOR YOUR ATTENTION!

THANKS TO NUMEROUS COLLABORATORS AND STAKEHOLDERS

