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# ***EUROCHIP-III***

European Cancer Health Indicator Project-III  
Common Action

## **DELIVERABLE 02 - LITHUANIA**

### **Report of EUROCHIP-3 WP-4 action in Lithuania**

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**Introduction**

The incidence rate of cervical cancer show it as the third leading disease among other female malignant tumours, whereas it is the fourth which accounts for female cancer mortality in the world (Ferlay et al. GLOBOCAN).

Referring to the 2005 data of WHO, cervical cancer incidence rate in Lithuania was of 27.4 per 100000 of the population, while its mortality incidence rate was of 11.8 per 100000 of the population (World Health Organization. 2008). The indicated rates are considerably higher than the average European rates.

Cancer prevention, screening and early detection can provide some of the greatest public health benefits for cancer control. In low resource settings, where cancer control is challenged by limited human, financial and technical resources, cancer prevention and screening are of utmost importance and can provide significant impacts on the cancer burden.

85% of cervical cancer cases (Ferlay et al. GLOBOCAN) were diagnosed in developing countries due to the fact that secondary preventive care is not properly financed there. Therefore, such **countries have to assign a high priority to primary preventive care** if they aim at reducing the number of cervical cancer incidence. Primary and secondary cervical cancer prevention would significantly reduce the incidence of cervical cancer.

Primary prevention includes possessing comprehensive knowledge of cervical cancer risk factors and on their elimination or reduction. Firstly, it concerns the knowledge women have about papilloma virus and the ways of reducing this infection incidence (avoiding situations in which it is more likely to catch the virus, vaccination against it, etc.).

**Lithuanian ACTION 1 for EUROCHIP-3 Work Package 4 aimed to evaluate Vilnius city women's knowledge about cervical cancer risk factors and screening programme.**

The secondary prevention comprises diagnosis of pre-cancerous pathology and early stage cervical cancer (Lorincz, Castle et al. 2002), applying such cytological research methods as *Papanicolaou* (Pap test) test. All the countries with cervical screening programme use the method of Pap test; however, in order to make this screening effective and available, there should be an organized screening system all over the country. It is proven that cervical screening is likely to succeed just in case of an operating and well organized system of testing. These are the following elements that ensure success of a well organized screening:

1. Public health promotion;
2. Well coordinated work of Health Care Centres (well established rapport (information links) between Primary Health Care Centres, Cancer Registry and Pathology laboratory);
3. Quality assurance of medical services by establishing close control;

If the above mentioned elements are not properly introduced and the activities are not coordinated, the screening programme is unlikely to succeed and it is difficult to expect positive outcomes since a coherent system is an essential prerequisite for Pap test.

At present, in Lithuania the absence of both a centralized system of invitation and one for taking Pap tests seem to be the causes for an ineffective screening programme.

**Lithuanian ACTION 2 for EUROCHIP-3 Work Package 4 aimed to increase attendance at cervical screening, studying the impact on screening adherence of the centralized invitation system.**

## ACTION 1

### VILNIUS CITY WOMEN'S KNOWLEDGE ABOUT CERVICAL CANCER RISK FACTORS AND SCREENING PROGRAMME

**Introduction.** The best primary prevention for cervical cancer is characterised by a good knowledge on among women of 1) what is HPV, 2) what is a cervical cancer screening program, 3) what are the purposes of vaccination, and 4) going to regular gynaecological screening and treatment of precancerous lesions.

**Aims of the study** are to survey awareness of women residing in Vilnius about the risk factors of cervical cancer, and to find out if the knowledge of the major risk factors of cervical cancer, i.e. human papilloma virus (HPV), encourages women to a) see a gynaecologist more often, b) to take active participation in the screening program and c) be interested in vaccination in the future.

**Material and methods.** The questionnaire survey (see Appendix 1) consisted of closed-response questions on three parts:

- socio-demographic characteristics (age, education, occupation)
- knowledge about cervical risk factors of cervical cancer (HPV, the type of spread way)
- knowledge of cervical cancer prevention program, frequency of visits to gynaecologist, vaccination against HPV.

The survey was conducted in Vilnius University Hospital *Santariškių clinics*, at Mykolas Romeris University, Faculties of Medicine, Chemistry and Physics at Vilnius University, Faculty of Health Care at Vilnius College and at Vilnius Pedagogical University. Participants of the survey were 1825 women aged 18–60, residing in Vilnius, who voluntarily agreed to fill in the self administrative questionnaire. For the analysis, the data was stratified in two groups: women, who knew about HPV and those who didn't. These groups were compared. No information on HPV or on cervical cancer was provided to the respondents before the completion of the questionnaire.

1,018 (56,5%) of the respondents were related with medicine (they either work in the health field or are studying medicine), while 779 (43.4%) of the respondents didn't have any relation with medicine. The average age of the respondents was 32 years.

#### Results

- ✓ Out of the 1797 women who responded to the questionnaire about the cervical cancer screening programme ongoing in Lithuania, 1508 women (83.9%) knew about it.
- ✓ Women's knowledge on the screening program did not depend on their education. 9 out of 10 respondents who were related to the medical field (90.0%) had info on this programme, whereas just 7–8 out of ten respondents who were not related to the medical field had this information (76.4%;  $p < 0,05$ ).
- ✓ The respondents who knew about the HPV were likely to know about the ongoing screening programme ( $p = 0,000$ ). Just 9.6% of the respondents who knew about the HPV as a cervical cancer risk factor did not know about the ongoing cervical screening programme in Lithuania (table 1.1).

**Table 1.1.** Relation between women's knowledge about HPV and cervical screening programme

Knew about HPV*	Knew about cervical screening programme*				p (Chi-Square test)
	Yes	%	No	%	
Yes	1081	90,4	115	9,6	< 0,000
No	413	71,6	164	28,4	

\*Didn't answer the questions: 303 women

- ✓ Almost half of the respondents, i.e. 882 women (49.1%) replied that they visit their gynaecologist (Gyn) regularly. Among them, 90.9% knew about the screening programme, and just 9.1% of them did not know anything about it ( $p=0,000$ ). Still, 3 out of 4 (77.7%) women who do not regularly visit the gynaecologist, knew about cervical cancer screening programme in Lithuania (table 1.2)

**Table 1.2** Relation between women knowledge about cervical screening program and visit to the Gyn

Knew about cervical screening program*	Visits to the gynaecologist*				p (Chi-Square test)
	Regularly		Irregularly/No		
	N	%	N	%	
Yes	802	90,9	706	77,7	< 0,000
No	80	9,1	202	22,3	

\*Didn't answer the questions: 7 women

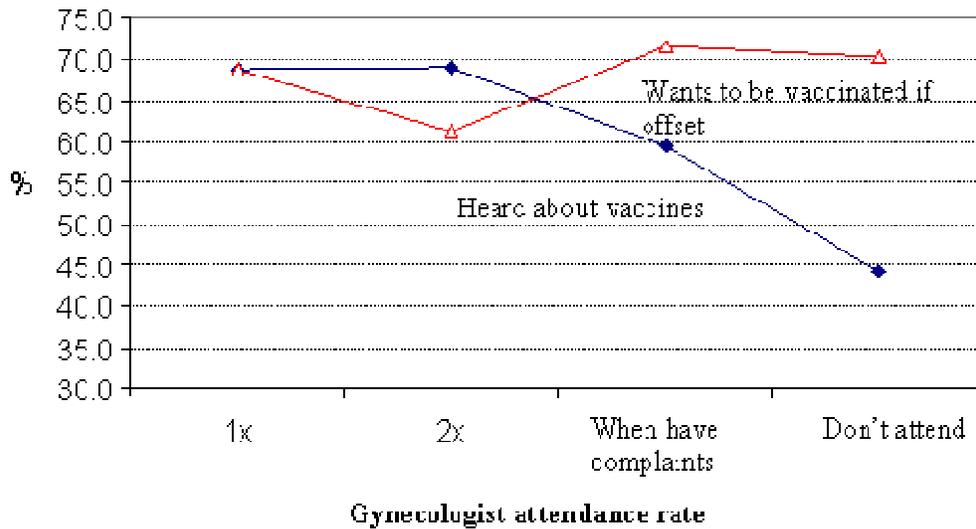
- ✓ Out of 1797 respondents, 908 (50.5%) respondents visited the gynaecologist only when they had complains or didn't visit the gynaecologist at all (39.7% and 10.8%, respectively). Almost half of the respondents (882 - 49.1%) answered that they visit the gynaecologist regularly. 90.9% of them knew about the screening programme and just 9.1% of the women had never heard of it (table 1.2)
- ✓ As the survey data suggest, those respondents who have secondary or basic education visited their gynaecologist more regularly than those respondents who have higher education or not completed higher education ( $p=0,000$ ) (Table 1. 3)

**Table 1.3** Relation between women education and frequency of visits to gynaecology

Education	N	Frequency of visits to gynaecology				p (Chi-Square test)
		regularly		Not regularly/Never		
		N	%	N	%	
Higher	279	155	55,6	124	44,4	<0,000
Not completed higher	1083	480	44,3	603	55,7	
Secondary	202	102	50,5	100	49,5	
Basic	156	110	70,5	46	29,5	
Didn't answer	77	-	-	-	-	

- ✓ It was surprising that more than 70% of women who do not visit gynaecologist would like to get vaccinated against HPV (Figure 1.1). *Note: the question about the vaccines was included in order to find out women attitudes to the vaccine and vaccination and their willingness to get vaccination or to have their daughters vaccinated.*

**Figure 1.1.** Knowledge about vaccines (blue line) and willingness to get vaccinated depending on attendance at the gynaecologist (red line).



1x: 1 visit to gynaecologist per year; 2x: 2 visits to gynaecologist per year

**Conclusions.** Knowledge about HPV as a main risk factor of cervical cancer among educated Vilnius city women is not sufficient. Women who know HPV to be a risk factor, are willing to visit gynaecologists regularly as recommended by the prevention program. The observations show that 70 percent of women who visit gynaecologists rarely are willing to take vaccination. It might show that women overestimate the importance of vaccines and underestimate the importance of the regular screening for the prevention of cervical cancer. In order to reduce cervical cancer rate in Lithuania, first of all it is necessary to give priority to primary disease prevention. Therefore, some funds should be allocated for population education and for raising awareness on cervical cancer risk factors and the importance of cervical cancer screening programme.

## ACTION 2

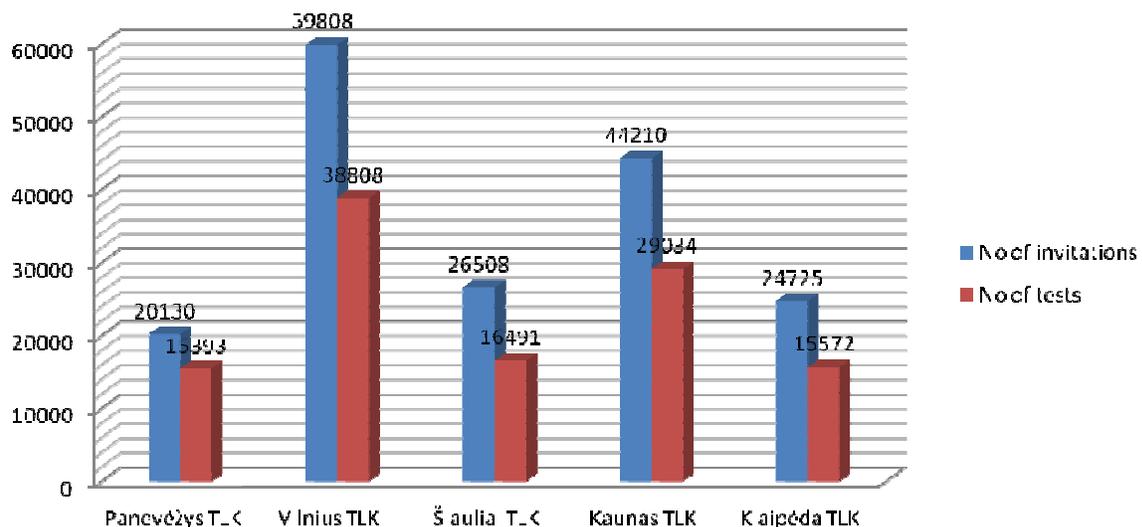
### STUDY TO INCREASE ATTENDANCE AT SCREENING FOR CERVICAL CANCER (Panevezys case study)

**Introduction:** Although readily detectable in its premalignant stage, cervical cancer remains the fourth most common female cancer in Lithuania. Lithuanian Cervical screening programme began in 2004 and is estimated to reduce mortality from cervical cancer by 50% and save as many as 125 lives per year in Lithuania and also to reduce incidence by 30-70%. Since the programme introduction, the growing incidence of cervical carcinoma cases was observed underlying an early detection of already present cancer cases.

The current programme guidelines recommend to screen aged 25-60 year every 3 years by taking conventional Pap smear. Of the 875772 women aged 25-60 approximately 115298 are screened every year. Since the introduction of the programme, a significant increase in incidence of CIN3/CIS (by 34.4% in all age group) has been documented. The growing incidence was stabilized from 2004 (23.1/100000) to 2008 (24.1/100 000). However we have not observed the decrease of incidence in invasive cervical carcinoma cases.

Despite the state support to cervical cancer screening, some barriers in implementation of the screening programme still exist. The weaknesses of this programme are the invitation system decentralization and tolerance to opportunistic screening. Women are invited to participate into the screening program and to take Pap smears when they are going to the health care center for health problems or during gynaecological visits. Formally the invitation procedure is performed into the doctor office and the invitation service with the patient informed consent is registered into the patient fund database “Sveidra”. So invitations are not sent regularly by mail (as National guidelines stated) and healthy women are not periodically invited to participate in the screening program. The “well functioning” invitation component is presented in **Figure 2.1**.

**Figure 2.1.** The number of Pap tests and number of invitations during the program 2011 year period in major Lithuanian counties.



The low program coverage, varying from 30 to 40%, supports the fact that the invitation component is non functional and impells an observation on the realistic situation.

Low attendance ratio, lack of the invitation component and absence of quality control system are the major weaknesses of our cervical cancer screening program. The weakness of the invitation system is illustrated by the data from the State Patient Fund data base “Sveidra” where the proportion of rescreened women participating in all program rounds was analyzed. As a result, it was clearly stated that 38% (104 676) of screened women in program round II came from program round I and were rescreened in II round (Table 2.1).

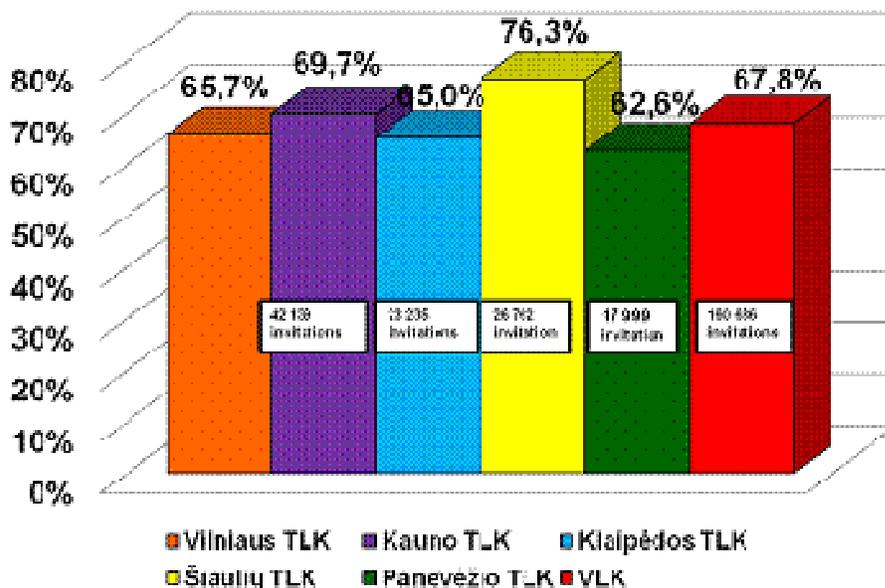
**Table 2.1.** The number of rescreened women in program period 01/07/2007-31/12/2009

	Number of screened women in period 01/07/2007-31/12/2009	Number of rescreened women period 01/07/2007-31/12/2009
25-29 years	33 053	
30-60 years	241 738	104 676 (38%)

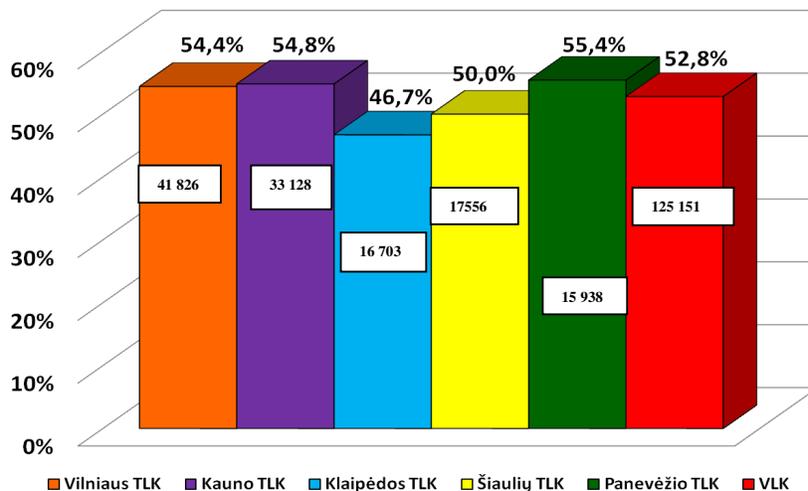
**Case study in Panevezys county** was selected for a screening campaign for the following major reasons:

- 1) highest incidence of cervical cancer cases: 33.0/100000-49.0/100000 is registered there.
- 2) Low invitation component in Panevezys town region compared to other Lithuanian regions (**Figure 2.2**). Low attendance ratio was observed in this region (**Figure 2.3**). Low coverage was also observed in Panevėžys primary health care center. (**Figure 2.4**).

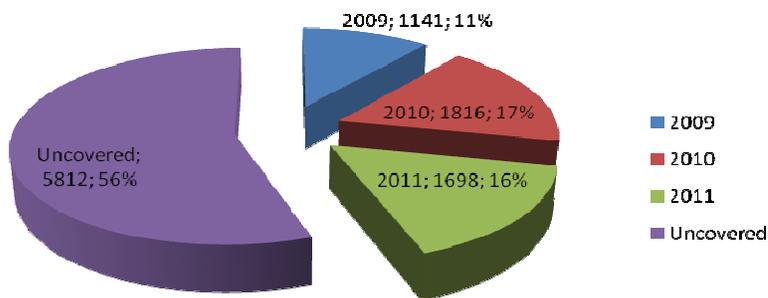
**Figure 2.2.** The volume of invitation in all Lithuanian major counties during the program 2009 period.



**Figure 2.3.** The volume of Pap test in all major Lithuanian counties during 2009 period.



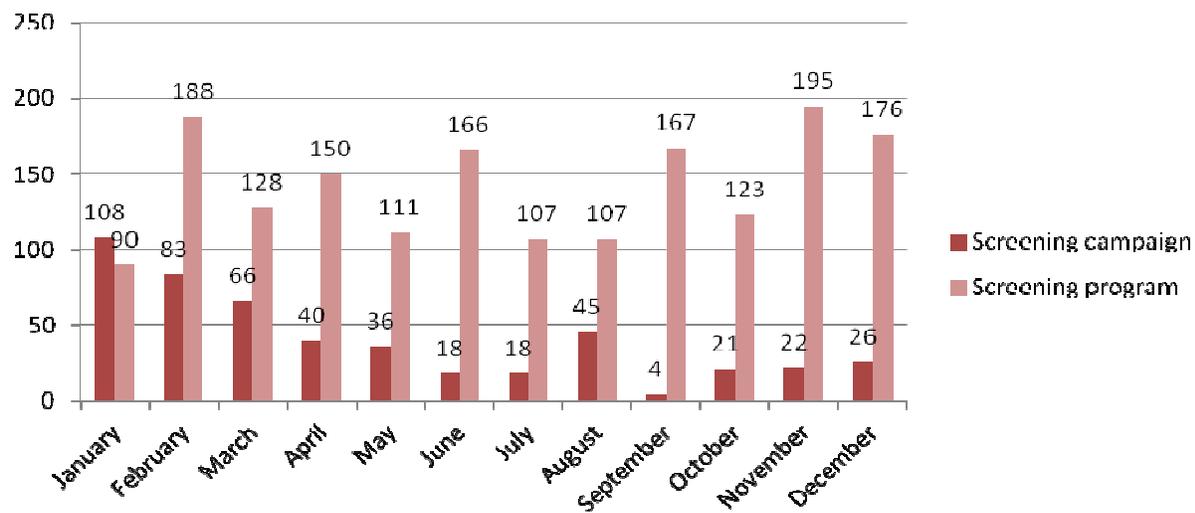
**Figure 2.4.** The screening program coverage without screening campaign results during period 2009-2011 in Panevezys primary health care center.



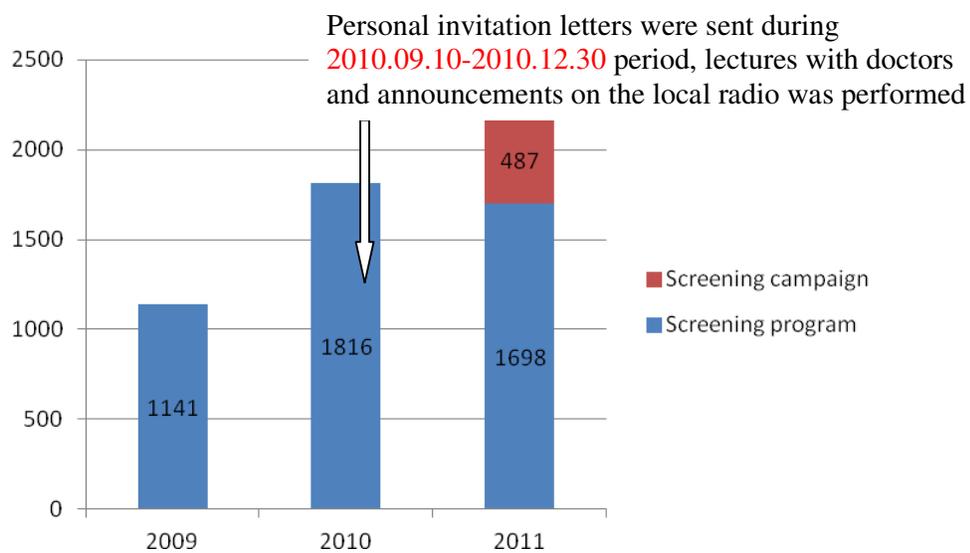
**Aims of the study.** The objective of the study is to increase attendance rate for cervical cancer screening programme in Panevezys county (with the highest incidence of cervical cancer) via personal invitations, and to investigate the differences between a screening program with organized invitations and a screening program with a decentralized invitation system, considering the fact that there is a lack of studies to analyze the impact of personal invitation letters on screening program results. In order to show the importance of the centralized invitation system, the invitation campaign was organised.

**Material and methods.** The pilot study using the centralized invitation system was carried out in Panevezys. The study included women who live in the Panevezys county and who have not participated in the programme since the beginning of the programme in 2004. Personal registered invitation letter to attend the primary health care centre for Pap smear taking were sent by post. Invitation letters were sent to 1789 women (included in the group „Screening campaign“). The invitations were distributed in September-December 2010. Analysed period of attendance rate is January-December 2011. All Pap smears and requisition forms were sent to Diagnostic Pathology laboratory for cytological investigation. The Pap smears were reported using the Bethesda system categories. The results were registered to the pathology laboratory database „Dineta“ and the data were stored separately. Women with cytological pathological findings had their results compared with histological findings, which were extracted from Panevezys hospital pathology department and Pathology Diagnostics „Dineta“ data base and these results were linked.



**Figure 2.6.** The structure of Pap tests in Panevėžys Primary Health Care center during 2011 year.

Comparing the results of the year 2009 with the results of the year 2011 we have found that the number of women attending the screening program has increased almost twice (**Figure 2.7**).

**Figure 2.7.** The number of women participating in the screening program before and after personal invitations in 2009-2011 period with screening campaign results

Analysing women by testing age, most active were women from 35 to 59 (Table 2.2).

**Table 2.2.** The volume of women according the testing age who attended the screening with private invitation letter during 2011 period.

Year interval	Freq.	Percent
25-29	49	10.1
30-34	45	9.2
35-39	71	14.6
40-44	77	15.8
45-49	88	18.1
50-54	90	18.5
55-59	58	11.9
60-64	9	1.8
Total	487	100

Among the 487 participants to the “Screening campaign”, 14 cases (2.9%) of pathological cytology were detected: 6 HSIL (High-Grade Squamous Intraepithelial Lesion), 4 ASCUS (Atypical Cells of Undetermined Significance) and 4 LSIL (Low-Grade Squamous Intraepithelial Lesion) cases were found (Table 2.3). 3 cases of pathology were detected to women from rural area (25% of the 12 women from rural area participating in the screening campaign).

2.5% of Pap smears were evaluated as unsatisfactory.

**Table 2.3.** Distribution of pathological cytology according the age interval among women participants to the „screening campaign“.

Age group	LSIL	ASCUS	HSIL	Total
25-30	1	1	-	2
30-34	2	-	2	4
35-39	-	1	-	1
40-44	-	1	3	4
45-49	1	1	-	2
50-54	-	-	1	1
55-60	-	-	-	-
60-65	-	-	-	-
Total	4 (0.82%)	4 (0.82%)	6 (1.23%)	14

Moreover, „Screening campaign“ found 1.23% HSIL cases while in Panevezys pathology laboratory where the rate of HSIL cases is 0,31% (Table 2.4).

**Table 2.4.** Cytological Bethesda categories distribution according pathology departments during cervical cancer screening program (from 1/7/2007 to 30/6/2010).

Pathology departments	Unsat.	NIML	ASCUS	ASCH	LSIL	HSIL	SCC
National Center of Pathology	5.75	89.84	2.14	0.46	0.63	1.08	0.03
Antakalnis clinics	2.53	95.19	1.14	0.17	0.20	0.76	0.00
Kaunas Oncology hospital	2.82	82.46	5.91	1.59	3.37	3.17	0.09
Kaunas Medical Academy	4.45	86.34	3.40	0.40	4.12	1.21	0.05
Siauliai hospital	0.25	98.07	0.30	0.10	0.57	0.65	0.01
SK IMPEKS center	2.10	93.95	2.38	0.17	0.22	1.12	0.03
Klaipeda hospital	2.49	95.41	0.89	0.13	0.51	0.54	0.02
<b>Panevėzys hospital</b>	<b>3.94</b>	<b>91.00</b>	<b>3.06</b>	<b>0.40</b>	<b>1.13</b>	<b>0.31</b>	<b>0.00</b>
Pathology diagnostics	5.00	91.17	1.71	0.23	0.60	1.27	0.00
Klaipeda university hospital	2.77	91.60	1.20	0.07	3.20	1.03	0.03
Kaunas II hospital	5.46	89.02	3.72	0.00	1.02	0.38	0.10

Unsat: unsatisfactory pap test; NIML: negative for intraepithelial lesion or malignancy; ASC-H: atypical squamous cells cannot exclude high grade squamous intraepithelial lesions; SCC: squamous cell carcinoma; HSIL: High-Grade Squamous Intraepithelial Lesion, ASCUS: Atypical Cells of Undetermined Significance; LSIL: Low-Grade Squamous Intraepithelial Lesion

Of the 14 women detected thanks to “Screening campaign”, after the reporting of final cytological results, we were able to find 5 records in Panevezys pathology department: 5 women underwent cervical biopsy procedures (others did not receive biopsy). Routine histological investigation was performed. The results of histological investigation and cyto-histo correlation is shown in table 2.5.

**Table 2.5.** Cytological and histological correlation of women who were diagnosed with cytological abnormalities and had cervical biopsies.

	Without follow-up	No signs of neoplasia	CIN1	CIN2	CIN3/CIS
ASCUS	4	-	-	-	-
LSIL	3	-	-	-	1
HSIL	2	3*	-	-	1
<b>Total</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>

\*small cervical biopsy with thermal artefacts was observed on histological examination

### Conclusions

Cervical cancer remains the fourth most common female cancer in Lithuania. The cervical cancer screening program in Lithuania started in 2004, however the main weaknesses of the program are the decentralized invitation system and the tolerance to the opportunistic screening. The EUROCHIP-3 study in the Panevezys region showed that personal invitation letters increased screening program attendance rate, so it is straightforward to recommend & conclude that a centralized personal invitation system needs to be established.

However, in order to optimise attendance/coverage, it would be important to study various strategies in the future and continuously improve attendance, for example:

- 1) running simultaneous tailored information campaigning with sending invitations
- 2) testing whether to provide screening visit time and place readily in the invitation
- 3) sending one reminder letter for those not attending following the first invitation
- 4) possibly studying self-sampling among those who had not attended even after one reminder letter could also be tested in the invitation system in the future
- 5) by repeating invitations to the same target population several times (i.e. with more years of running the activity) it is likely to increase attendance over the years.

Furthermore, the study revealed that rural women belong to a higher risk group of cervical cancer.

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APPENDIX 1 – QUESTIONNAIRE USED IN ACTION 1



What do we know about cervical cancer prevention?

- 1. Are you aware of prevention programme carried out in Lithuania?  
Yes      No
- 2. How often do you pay visits to gynaecologist:  
Once a year    Twice a year    When I have gynaecological problems    I do not pay visits
- 3. Is HPV the main cause of cervical cancer?  
Yes                      No
- 4. Have you heard about HPV before?  
Yes                      No
- 5. Have you heard about oncogenic HPV types?  
Yes                      No
- 6. Have you heard about HPV that causes herpes genitalis ?  
Yes                      No
- 7. Are you aware about vaccination against HPV?  
Yes                      No
- 8. Would you like to get vaccinated against HPV virus??  
Yes                      No

Age \_\_\_\_\_

Education: a) higher b) Not completed higher c) secondary e) basic

Field of occupation related with medicine Not related with medicine

Thank you.