

Reporting rates for cervical screening in the Szczecin Region during the period 2007–2010

Alfred Owoc¹, Radunka Cvejic¹, Anna Koprowicz¹, Katarzyna Sygit², Adam Fronczak³, Iwona Bojar^{1,4}

¹ Higher School of Public Health, Zielona Góra, Poland

² Department of Health Education, University of Szczecin, Szczecin, Poland

³ Medical University, Łódź, Poland

⁴ Department for Health Problems of Ageing, Institute of Rural Health, Lublin, Poland

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Abstract

In Poland, the incidence of cervical cancer remains on the level of the mean value observed in the regions of Eastern and Central Europe; however, it is higher than in Western Europe. The effects of performance of prophylactic programmes would be more effective if an improvement was observed in the reporting by women for examinations, and the quality and accessibility of these tests was observed, in accordance with international standards. The objective of the study was analysis of the reporting rates for cervical screening in the Szczecin Region during the period 2007-2010.

Statistical data were analyzed obtained from: the Central (Poznań) and Regional (Szczecin, Olsztyn) Coordination Centre for the Programme of Prophylaxis and Early Detection of Cervical Cancer of the Medical Prophylaxis Computer Information System (SIMP), and Oncology Centre in Warsaw. All collected data were subjected to the statistical analyses.

The West Pomeranian Voivodeship, with reporting rates for cervical test of about 30% (women aged 25-59) occupies the second or third position in Poland, following the Varmian-Masurian Voivodeship.

Personal invitations and screening examinations, as well as an increase in the number of services providers at the basic level in the West Pomeranian Voivodeship, have not been sufficiently effective in ways of increasing reporting rates for cervical tests. Apart from personal invitations, the patients acquired knowledge concerning screening from many sources, primarily from medical specialists, nurses and the media.

The obtaining of further reduction in mortality and morbidity in the West Pomeranian Voivodeship requires the development of new methods which would result in an increase in the number of women participating in cervical screening, to cover with examinations a minimum of 70-75% of the population.

Key words

cervical cancer, reporting rates, prophylaxis

INTRODUCTION

Worldwide, more than half a million women annually fall ill with cervical cancer, and approximately 270,000 die [1]. The majority of women affected by this disease live in the developing countries. If no improvement is observed in the effectiveness of prevention of this disease, and no reduction in the number of new cases, there is a probability that by 2050, a million new cases of cervical cancer will be diagnosed worldwide [2].

In Poland, the frequency of occurrence of cervical cancer remains on the level of the mean value observed in Eastern and Central Europe, but higher than in West European countries [3]. Despite the fact that within 50 years a decrease in morbidity has been noted due to this cancer, unfortunately, a constant increase in mortality has been clearly observed. In 1963, 4,846 women fell ill, and in 2008 (despite the dynamic progress in medicine) – 3,320 of the population of Polish women. In 1963 – 1,051 women died, while in 2008 – 1,745 [4]. Thus, approximately 10 women daily are informed that they are ill with cervical cancer, and nearly 5 patients die

due to this disease. The detection of pre-cancerous changes is relatively inexpensive and simple, and international standards have been developed for procedures concerning the detection and treatment, there are great opportunities for change in these unfavourable statistics.

Before the implementation in the West Pomeranian Voivodeship of the National Programme for Control of Cancerous Diseases during the period 2001-2003, the Szczecin Region Screening Programme for Early Cervical Cancer Detection was performed. This undertaking was financed by the Szczecin Health Insurance Agency. Cervical cytology was performed in 105,750 women, and 24 cases of invasive cancer were detected. Probably, in 735 women with the diagnosis of pre-cancerous changes, within the period of more than 5-10 years, invasive cancer would develop [5].

In 2005, the Act of the National Programme for Control of Cancerous Diseases provided financial resources which allowed the performance of an efficient oncologic prophylaxis. Programmes were developed which enabled the undertaking of a number of actions on behalf of cancer control. One of these programmes was the All-Polish Population Programme for Prophylaxis and Early Detection of Cervical Cancer, bestowed in 2010 by the Pearl of Wisdom Award by the European Cervical Cancer Association (ECCA) [6]. The effects of this programme will be better provided and an improvement will be noted in reporting rates for

Address for correspondence: Iwona Bojar Department for Health Problems of Ageing, Institute of Rural Health, Jaczewskiego 2, 20-090 Lublin, Poland.
E-mail: iwonabojar75@gmail.com

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examinations, and the quality and accessibility of the tests will be in accordance with international standards. The programme assumes that every 3 years, each woman aged 25-59 will have a cervical test performed [7]. In Poland, there are approximately 9 million women at this age, and in 2008 tests were performed in every 3.2 women, i.e. about 25% of the population [8].

In many countries worldwide, including the USA and the European Union, national programmes for the control of cancerous diseases have existed for many years. These programmes were established and performed, guided by the principle that according to the recommendations developed based on many-years experiences and studies, they may be an effective instrument for the reduction in the number of new cases and deaths due to cancer, and result in an improvement of the effects of cancer treatment, quality of life and life span of patients.

In the Maastricht Treaty there were records concerning control of cancerous diseases in the countries of the European Union. Due to the anti-cancer programme 'Europe Against Cancer', the death rates on the Old Continent decreased by 10%. An important tool was also the European Code Against Cancer developed in 1986. In Poland, attempts are being undertaken to implement the last version accepted for implementation of 2003, as an example of anti-cancer actions.

Experts at the European Parliament assume that the observance of the recommendations of the programme 'Europe Against Cancer' and the European Code Against Cancer will lead to the situation that by the year 2018, in each member state the percentage of the population participating in screening examinations will increase by 50%, in order to detect cancer at an early phase of its development [9]. At the same time, the World Health Organization defines screening examinations as secondary prevention interventions carried out in order to control diseases by the detection of changes in asymptomatic population, at the earliest possible stage of development [10]. According to the definition contained in the European Code Against Cancer, screening consists in the organized performance of a test or history taking among individuals who do not report to a doctor in association with the symptoms of the disease [11].

The primary objective of screening examinations is a prophylactic detection of health hazards. The EU advisers considered the development of national programmes of cancer prevention as a priority task, in accordance with the realities in individual countries [12].

The primary problem of the Population Prophylactic Programme and Early Cervical Cancer Detection established in Poland by virtue of the Act the National Programme for Control of Cancerous Diseases is the low reporting rate for cervical tests. In order to obtain an 80% decrease in mortality due to cervical cancer, among other things, cervical screening should range within a reporting rate of 70-75% [10, 13].

OBJECTIVE

The objective of the study was analysis of the reporting rates for cervical test in the West Pomeranian Voivodeship during the period 2007-2010, with particular consideration of the results of the Population Prophylactic Programme and Early Cervical Cancer Detection.

METHODS

Statistical data were analyzed describing the performance in the Szczecin Region of the basic actions as a result of the implementation in Poland of the National Programme for Control of Cancerous Diseases. The study material concerned the performance of the Prophylactic Programme and Early Cervical Cancer Detection in the Szczecin Region during the period 2007-2010.

The following statistical data were analyzed:

- Central (Poznań) and Regional (Szczecin, Olsztyn) Coordinating Centre for the Prophylactic Programme and Early Cervical Cancer Detection – pertaining to reporting rates to cervical tests among women aged 25-59.
- Computer Information System of Medical Prophylaxis – in the matter of performance of the Prophylactic Programme and Early Cervical Cancer Detection.
- Warsaw Oncology Centre.

While performing statistical analysis of the results obtained, dichotomic variables were characterized by reporting the following: size of the sample (n) and frequency (%) of occurrence of their category. The obtained frequencies of cytological screening in selected years and provinces and nationwide were compared by means of the chi-squared test with Yates' correction. The permissible error probability of the first type (significance level) is assumed to be 0.05.

RESULTS

During the period 2007-2010 in Poland, a slight increase in reporting rates was noted, nevertheless, the mean value for the 4 years discussed was only 24.16%. The results obtained in the West Pomeranian Voivodeship (calculated annually) since the introduction of the National Programme for Control of Cancerous Diseases each year, exceeded the country's average. Comparison of the reporting rates for Poland and the West Pomeranian Voivodeship in individual years is as follows: 2007: 21.3% vs. 27.3%; 2008: 24.4% vs. 33.4%; 2009: 26.8% vs. 32.2%; 2010 – 24.2% vs. 28.4% (Tab. 1).

The percentage of tested women in West Pomeranian Voivodeship who reported for cytological screening in selected years (2007, 2008, 2009, 2010) was significantly statistically ($p < 0.001$) higher than the corresponding values (%) for the female population in Poland. Frequency differences equalled 6%, 9%, 5.4%, and 4.2%, respectively.

The number and the percentage of cytological screening in West Pomeranian Voivodeship and Varmian-Masurian Voivodeship in years 2007-2010 for one year is presented in Table 2.

In the years 2007, 2009 and 2010, the frequency of cytological screening in the West Pomeranian Voivodeship was significantly statistically lower than in Varmian-Masurian Voivodeship ($p < 0.001$).

The number and the percentage of cytological screening in Greater Poland Voivodeship and Masovian Voivodeship in 2007-2010, for one year is presented in Table 3.

In the Greater Poland Voivodeship in 2007, 2009 and 2010, the percentage of cytological screening was significantly statistically lower than in the Masovian Voivodeship ($p < 0.001$), whereas in 2008 it was significantly statistically higher ($p < 0.001$).



Table 1. Comparison of the number and percentage of reporting rates for cervical screening in Poland and in the West Pomeranian Voivodeship during 2007-2010, calculated annually

Year	Number of women aged 25-59		Population examined		Percentage of population examined		p
	Poland	West Pomeranian Voivodeship	Poland	West Pomeranian Voivodeship	Poland	West Pomeranian Voivodeship	
2007	3,227,918	148,651	686,036	40,631	21.3	27.3	<0.001
2008	3,252,888	149,444	793,411	49,940	24.4	33.4	<0.001
2009	3,274,036	149,701	876,538	48,182	26.8	32.2	<0.001
2010	3,289,805	150,041	797,562	42,671	24.2	28.4	<0.001

Source: compiled based on data from the Central Coordinating Centre, Szczecin Region Coordinating Centre and Computer Information System of Medical Prophylaxis.

Table 2. Number and percentage of reporting rates for cervical tests on cervical cancer screening in West Pomeranian and Varmian-Masurian Voivodeships during 2007-2010, calculated on the basis of one year

Year	Number of women 25-59 years		Tested population		% of the tested population		p
	West Pomeranian	Varmian – Masurian	West Pomeranian	Varmian – Masurian	West Pomeranian	Varmian – Masurian	
2007	148,651	122,002	40,631	50,540	27.3	41.4	<0.001
2008	149,444	123,187	49,940	41,397	33.4	33.6	>0.30
2009	149,701	123,965	48,182	41,832	32.2	33.7	<0.001
2010	150,041	124,320	42,671	47,205	28.4	38.0	<0.001

Source: prepared based on data form WOK Szczecin and Olsztyn.

Table 3. Number and percentage of reporting rates for cervical tests on cervical cancer screening in Poland and Greater Poland and Masovian Voivodeships during 2007-2010, calculated on the basis of one year

Year	Number of women 25-59 years		Tested population		% of the tested population		p
	Greater Poland	Masovian	Greater Poland	Masovian	Greater Poland	Masovian	
2007	290,192	439,196	30,259	81,251	10.4	18.5	<0.001
2008	292,574	444,286	54,888	79,972	18.8	18.0	<0.001
2009	294,648	448,373	58,202	100,884	19.8	22.5	<0.001
2010	296,310	451,568	50,282	93,475	17.0	20.7	<0.001

Source: prepared based on the data form WOK Szczecin and Warsaw.

According to the reporting rates for cervical tests within the Prophylactic Programme and Early Cervical Cancer Detection (calculated every 3 years), the West Pomeranian Voivodeship occupies the second or third position. From the beginning of the performance of the Programme the highest percentage of reporting for cervical tests was obtained in the Varmian-Masurian Voivodeship, whereas the lowest was in the Greater Poland Voivodeship.

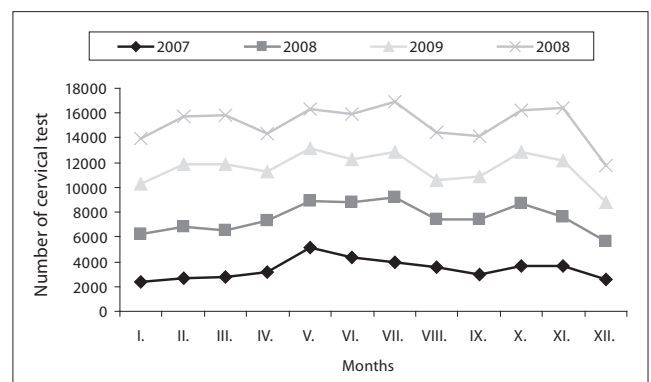
Since 2007, a certain regularity has been observed which indicates that the highest reporting rates for cervical test within the Prophylactic Programme and Early Cervical Cancer Detection are noted in the northern part of Poland, in the Varmian-Masurian Voivodeship, Pomeranian Voivodeship and West Pomeranian Voivodeship, whereas the lowest rates are observed in the Voivodeships of Greater Poland and Masovia.

In 2007 and 2008, in the West Pomeranian Voivodeship, the smallest number of women reported in the Kamień Pomorski Province: 16.8%, and 19.7%, while the largest number in 2007 in the Sławno Province – 30.1%, and in 2008 in the Łobez Province – 34.8%. In 2009, the smallest number of women reported for cervical test in the Choszczno Province (19.2%), and in 2010 in the Kołobrzeg Province (20.6%). The best results were obtained in 2009 and 2010 in the Wałcz Province – 38.6% and 45.9%, respectively.

Since 2007 in the West Pomeranian Voivodeship, a constant increase has been observed in the number of women reporting for cervical test. The number of providers of health services performing cervical tests had no influence of this result.

In 2007, the Szczecin Agency of the National Health Insurance signed an agreement for performing cervical

tests with 73 health services providers of the primary level, in 2008 – with 113, in 2009 with 116, and in 2010 with 115 [3]. Compared to 2007, in 2008 there were by 35.4% more providers, in 2009 – by 38%, and in 2010 – by 37.2%. The number of women who performed cervical test in these years did not increase in proportion to the number of services providers, compared to 2007. In 2008, an increase was noted in the reporting rates by 22.3%, in 2009 – 17.8%, and in 2010 – 9.8%. In 2007, 556 cervical tests were performed per one provider, in 2008 – 442, in 2009 – 415, and in 2010 – 371 (Fig. 1).

**Figure 1.** Number of cervical tests performed in the West Pomeranian Voivodeship within the Prophylactic Programme and Early Cervical Cancer Detection, according to months during 2007-2010.

Source: compiled based on data collected by the Regional Coordinating Centre Prophylactic Programme and Early Cervical Cancer Detection in Szczecin and Computer Information System of Medical Prophylaxis.



In 2007, the highest number of cytological screenings was reported in the months of May (12.7%), June (10.6%), July (9.8%), November (8.9%) and October (8.9%), and the lowest in the months of January (5.7%) and December (6.2%).

In 2008, the highest number of cytological screenings was reported in the months of July (10.5%), October (10.1%), June (9.0%), April (8.4%), as well as February (8.3%), and the lowest in the months of December (6.3%) and May (7.4%).

In 2009, the highest number of women reported for cytological screening in the months of March (11.1%), February (10.3%), November (9.3%), May (8.9%) and October (8.7%), and the lowest in the months of August (6.5%) and December (6.6%).

In 2010, the highest number of cytological screenings was reported in the months of November (9.9%), July (9.5%), March and February (9.1%), and August (8.9%), and the lowest in the months of December and April (7.2%).

The frequency of cytological screenings in the West Pomeranian Voivodeship by month, in the order from the lowest to the highest is presented in Table 4.

Overall in 2007–2010 the lowest number of cytological screenings was reported in the month of December, and the highest in the months of May (2007), July (2008), March (2009) and November (2010). An increase in the number of cytological screenings during particular months might have been due to the cancer prevention campaigns in the media, following which women reported for cytological screenings more frequently. As an analysis of the number of cytological screenings by quarters shows: in 2007 the highest number of cytological screenings was reported in the second quarter, in 2008 – in the third quarter, in 2009 – in the first quarter, and in 2010 – in the first quarter, which does not suggest that the frequency of cytological screenings is season-dependent.

Considering the fact that the reporting by patients for cervical test is irregular, both in the West Pomeranian Voivodeship and in the whole of Poland, it is necessary to try new methods of reaching women, and finding subsequent information sources encouraging screening tests, in order to improve oncologic awareness among women. This is probably due to unsatisfactory reporting rates for examinations and that the Szczecin Agency of the National Health Insurance

Agency does not spend the planned means for both the diagnostic stage and the extensive stage of the Prophylactic Programme and Early Cervical Cancer Detection (Figs. 2, 3).

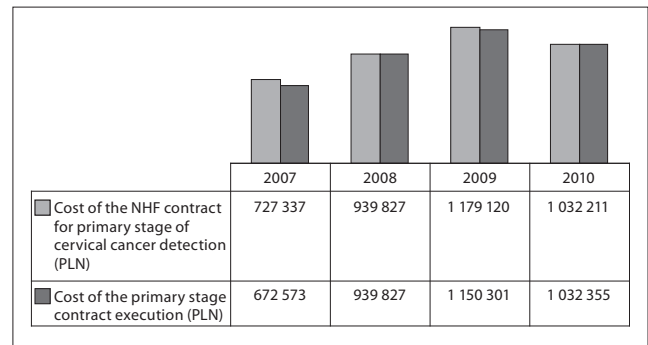


Figure 2. Planned cost of performance of the primary stage of Prophylactic Programme and Early Cervical Cancer Detection in the West Pomeranian Voivodeship during the period 2007-2010.*

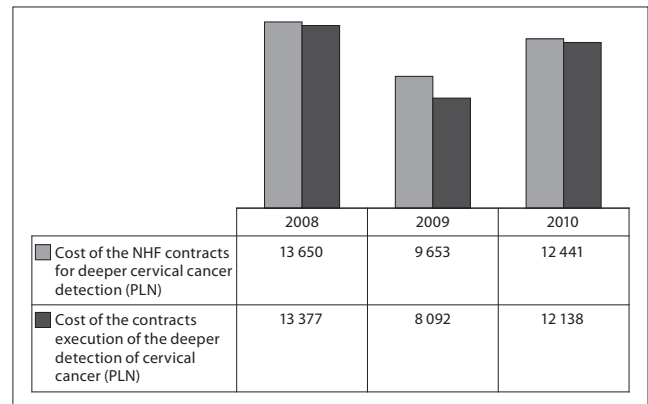


Figure 3. Planned cost of performance of the primary stage of Prophylactic Programme and Early Cervical Cancer Detection in the West Pomeranian Voivodeship in 2008-2010.*

*Source: compiled based on data from the Szczecin Agency of the National Health Insurance Fund 2011.

The planned costs of contract by the Szczecin Agency of the National Health Insurance Fund for the primary

Table 4. Frequency of reporting for cervical tests of women from the West Pomeranian Voivodeship, divided into months during 2007-2010, presented from the highest to the lowest value

Lp.	2007		2008		2009		2010	
	Month	%	Month	%	Month	%	Month	%
1.	May	12.7	July	10.5	March	11.1	November	9.9
2.	June	10.6	October	10.1	February	10.3	July	9.5
3.	July	9.8	June	9.0	November	9.3	March	9.1
4.	November	8.9	September	8.8	May	8.9	February	9.1
5.	October	8.9	April	8.4	October	8.7	August	8.9
6.	August	8.7	February	8.3	January	8.5	January	8.5
7.	April	7.7	November	8.0	April	8.1	June	8.3
8.	September	7.4	August	7.8	July	7.5	October	7.7
9.	March	6.7	January	7.7	June	7.2	September	7.7
10.	February	6.6	March	7.6	September	7.2	May	7.4
11.	December	6.2	May	7.4	December	6.6	April	7.2
12.	January	5.7	December	6.3	August	6.5	December	6.7

Source: prepared based on the data form collected from WOK PPIWWRSM in Szczecin and SIMP.



stage were used 100% in 2008, while in 2009 these costs were exceeded by 144 PLN. Since 2008, the costs planned for extensive diagnostics has never been completely used. During 2007-2009, the presented costs by the National Health Insurance Fund was increased by the costs of the Ministry of Health, associated with, among other things, the sending of invitations to the inhabitants of the West Pomeranian Voivodeship: 2007 – 590,000 PLN (National Health Insurance Fund), 2008 – 270,000 PLN (Regional Coordinating Centre), and 2009 – 160,000 PLN (Regional Coordinating Centre), and the functioning of the Regional Centre for Prophylaxis (2007 – 315,000 PLN, 2008 – 360,000 PLN, and 2009 – 270,000 PLN).

The total amount of expenditures for the performance of the Population Programme in the West Pomeranian Voivodeship during 2007-2009 was 14,072 million PLN (2007 – 2.95 million PLN, 2008 – 5.39 million PLN and 2009 – 5.732 million PLN). (Data from the Central Coordinating Centre, Regional Coordinating Centre, and Computer Information System of Medical Prophylaxis). The cost of reporting of one woman for cervical test, and the detection of one cervical cancer would be lower provided that more patients reported for these tests.

The medical specialist played the most important role in encouraging women to participate in cervical tests in individual years in the West Pomeranian Voivodeship; also important were: personal invitations, nurses, other sources of information and the media. According to the ranking, the information passed via SMS and PHC physician was the least important.

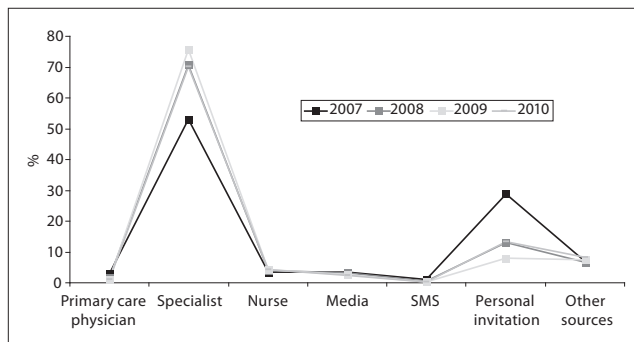


Figure 4. Sources of information inspiring women living in the West Pomeranian Voivodeship to perform cervical test during 2007-2010.

Source: own sources were developed based on data collected by the Regional Coordinating Centre Prophylactic Programme and Early Cervical Cancer Detection in Szczecin and Computer Information System for Medical Prophylaxis.

During 2007-2010, the largest number of patients (mean results for 4 years) decided to perform cervical test due to a medical specialist (67.4%), followed by personal invitations (15.9%), other sources of information (7.3%), nurses (6%) and the media (3%), while SMS and PHC physician were the worst sources of information (2% and 1.8%, respectively).

DISCUSSION

By virtue of the National Programme for Control of Cancerous Diseases, the Prophylactic Programme and Early Cervical Cancer Detection was implemented in Poland, within which cervical screening is performed once every 3 years among women aged 25-59. Similar programmes

performed in Europe resulted in a decrease in morbidity and mortality due to this disease [14].

The most comprehensive cohort study coordinated by the International Agency for Research on Cancer (IARC) showed that a total elimination of cervical cancer is impossible, because a negative result of cervical smear test may mean 90% probability that cancer of this organ will not develop [11].

The US Preventive Services Task Force (USPSTF) definitely recommends prophylactic screening of the cervix in sexually-active women, when the cervix is preserved, because systematic population programmes reduce morbidity and mortality due to cancer of this organ. Tests performed every 3 years bring about the greatest benefit, and they should start within 3 years from undertaking sexual activity, or before the age of 21. The implementation of screening among women who have never been covered by such examinations reduces, within 3 years from implementation, the number of new cases and deaths from 60%-90%. This regularity concerns women of all age groups [15, 16].

The observation of 8 screening programmes with the participation of approximately 2 million women provided an answer in the matter of optimum intervals between the subsequent cervical tests. Screening examinations performed every 5, 3, and 2 years, and annually in women aged 35-64, decreased the incidence of invasive cancer by 84%, 91%, 93% and 94%. This comparison shows that there is no clear difference between the intervals of 3 years, 2 years, and annually [16].

The National Programme for Control of Cancerous Diseases and the Polish Gynaecological Society recommend cervical screening every 3 years in the case of normal cytologic smears and lack of cervical cancer risk factors [8, 17]. Cervical test should be performed by women who are infected with HIV, take immunosuppressive drugs, are infected with 'high risk' type HPV, with a past history of treatment due to *cervical intraepithelial neoplasia* (CIN2, CIN3) or cervical cancer [18, 19].

According to the recommendations by the European Union and the World Health Organization, in Poland, the basis for screening is the long-term character of its performance, the quality of the examinations, as well as determination of an optimum population to be examined [20, 21, 22].

The introduction in Poland of screening examinations for cervical cancer did not bring about the expected results because of unsatisfactory reporting rates within the programme, especially among worse educated women living in the rural areas [23].

In the Szczecin Region, the Act was preceded by the programme performed in 2001-2003: the 'Szczecin Region Screening Programme for Early Cervical Cancer Detection'. The undertaking was financed by the Szczecin Region Health Insurance Fund. As many as 105,750 cervical tests were performed; 24 cases of invasive cancer detected; in 735 patients pre-cancerous changes were diagnosed [5].

After implementation of the National Programme for Control of Cancerous Diseases Act considerable resources were spent from the Ministry of Health and the National Health Insurance Fund. For example, in 2006, the Ministry of Health allocated for these programmes 50 mln PLN, in 2007 – 54.4 mln PLN, in 2009 – 42.7 mln PLN, and in 2009 – 31.7 mln PLN, and for the Prophylactic Programme and Early Cervical Cancer Detection, in 2006 – 16.5 mln PLN, in 2007 – 12.6 mln PLN, in 2008 – 10.7 mln PLN, and 2009 – 8.8 mln PLN [24].



From 2007, the West Pomeranian Voivodeship Agency of the National Health Insurance Fund did not spend the planned means, neither for the diagnostic nor the expanded stage of the Prophylactic Programme and Early Cervical Cancer Detection. Only in 2008 was the planned budget used for the primary stage, and in 2010 the plan of expenditures was exceeded by only 144 PLN. In turn, the planned cost for extensive diagnostics has never been fully used since 2008. This situation could have been due, among other things, to a poor – about 30% – reporting rates to cervical tests.

The mean reporting rates for cervical tests within the Prophylactic Programme and Early Cervical Cancer Detection during the period 2007-2010 was only 24.2%. The highest reporting rates for cervical screening was noted in the Varmian-Masurian Voivodeship (36.3%), whereas the lowest – in the Greater Poland Voivodeship (16.3%). From 2007 until 2010, a certain regularity was observed which showed that the highest reporting rates within the Prophylactic Programme was noted in the northern part of Poland, in the Varmian-Masurian, Pomeranian and West Pomeranian Voivodeships. From 2007, in the West Pomeranian Voivodeship, which according to the reporting rates occupies the second or third position in Poland, a constant increase has been observed in the participation of patients in cervical tests. In 2007, reporting rates were 24%, and in 2010 – 30%. Within this region, the smallest number of women reported in 2007 and 2008 in the Kamień Pomorski Province, while the largest number – in 2007 in the Sławno Province, and in the Łobez Province. In 2009, the smallest number of cervical tests were performed in the Choszczno Province, and in 2010 – in the Kolobrzeg Province. In 2009 and 2010, the best results were obtained in the Wałcz Province. An increase in the number of services providers performing cytologic tests did not improve reporting rates; however, an increase in reporting rates was observed at the end of February and the beginning of March, and the end of October and beginning of November, also in May and during holidays. The greatest interest in cervical screening during this period was probably due to the organization of media campaigns, both regional and all-Polish (World Cancer Day: February, Mother's Day: May, Summer with the Radio: July, Pink and Blue Ribbon: October).

CONCLUSIONS

1. The West Pomeranian Voivodeship with reporting rates for cervical tests of about 30% among women aged 25-59 occupied one of the first places in Poland.
2. In the West Pomeranian Voivodeship, personal invitations for screening examinations and an increase in the number of services providers on the primary level were not sufficiently efficient ways of action which would result in an increase in the reporting rates for cervical tests.
3. None of the routes of oncologic information should be ignored, because the patients, apart from personal invitations, obtained their knowledge concerning the screening from many sources, primarily a medical specialist, a nurse, and from the media.
4. The obtaining of a further decrease in morbidity and mortality in the West Pomeranian Voivodeship requires the development of new methods which would result in an increase in the number of women participating in cervical

screening in order to cover a minimum of 70 – 75% of the population.

REFERENCES

1. Parkin D. The global health burden of infection-associated cancer in the year 2002. *Int J Cancer*. 2006; 118: 3030-3044.
2. Ferlay J, Bray P, Pisani P, Parkin DM. *GLOBOCAN 2008: Cancer incidence, mortality and prevalence worldwide*. IARC Cancer Base No 5, Version 2.0 IARC Press, Lyon.
3. Didkowska J, Wojciechowska U, Zatoński W. Nowotwory szyjki macicy w Polsce – epidemiologiczny bilans otwarcia i perspektywy Ginekol Pol. 2006; 77: 660-666.
4. Krajowy Rejestr Nowotworów. Centrum Onkologii – Instytut im. Marii Skłodowskiej-Curie. Zakład Epidemiologii i Prewencji Nowotworów, <http://epid.coi.waw.pl/krn/> (access: 23.01.2011).
5. Chosia M, Domagała W. West-Pomeranian program of cervical cancer prevention. Results of phase one study. *J Oncol*. 2003; 53: 409-413.
6. Program wykrywania raka szyjki macicy nagrodzony. "Pearl of Wisdom" Europejskie Stowarzyszenie Raka Szyjki Macicy (ECCA). [http://www.pulsmedycyny.compl/index/\(access: 25.01.2010\)](http://www.pulsmedycyny.compl/index/(access: 25.01.2010)).
7. Spaczyński M. Polskie Towarzystwo Ginekologiczne. Rekomendacje PTG dotyczące diagnostyki, profilaktyki i wczesnego wykrywania raka szyjki macicy. *Ginekol Pol*. 2006; 77: 655-659.
8. Spaczyński M, Nowak-Markwitz E, Basta A. Rekomendacje PTG dotyczące szczepienia przeciwko zakażeniom HPV. *Ginekol Pol*. 2007; 78: 185-190.
9. Rezolucja Parlamentu Europejskiego z 10.04.2008; w sprawie zwalczania nowotworów w rozszerzonej Europie. Punkt V.2.
10. Wronkowski Z, Zwierko M, Nowacki MP, Raport z Programu modelowego skryningu raka piersi i raka szyjki macicy w Polsce, 1999-2000; COI Warszawa 2002.
11. Zatoński W. (ed.) Europejski Kodeks Walki z Rakiem, Centrum Onkologii, Warszawa 2003.
12. Kancelaria Senatu Unii Europejskiej. Sprawozdanie 6/8 Bruksela, 9 kwietnia 2008; g. 20.00.
13. Olszewski WT. Badania przesiewowe w kierunku nowotworów. In: Krzakowski M. (ed.) *Onkologia Kliniczna*. Borgis, Warszawa 2006.
14. Eaker S, Adami H, Sparen P. Reasons women do not attend screening for cervical cancer: a population – based study in Sweden. *Prev Med*. 2001; 32: 482-491.
15. International Agency for Research on Cancer (IARC) Working Group on the Evaluation of Cervical Cancer Screening Programmes. Screening for squamous cervical cancer: duration of low risk after negative results of cervical cytology and its implication for screening policies. *Brit Med J*. 1986; 293(6548): 659-664.
16. Sasieni PD, Cuzick J, Lynch-Farmery E. Estimating the efficacy of screening by auditing smear histories of women with and without cervical cancer. The National Coordinating Network for Cervical Screening Working Group. *Brit J Cancer*. 1996; 73(8): 1001-1005.
17. Sigurdsson K. Trends in cervical intra-epithelial neoplasia in Iceland through 1995: evaluation of targeted age groups and screening intervals. *Acta Obstet Gynecol Scand*. 1999; 78: 486-492.
18. Saslow D, Runowicz C, Solomon D. American Cancer Society guideline for the early detection of cervical neoplasia and cancer. *CA Cancer J Clin*. 2002; 52: 342-362.
19. Spaczyński M, Nowak-Markwitz E, Kędzia W, Januszek-Michalecka L, Michalska M. Skryning w Polsce na tle państw Unii Europejskiej. In: Spaczyński M, Kędzia W, Nowak-Markwitz E. (eds.) *Rak Szyjki Macicy. Profilaktyka, diagnostyka, leczenie*. PZWL, Warszawa 2009.
20. Karsa L, Antilla A, Ronco G. Cancer Screening in the European Union. Report on the implementation of the Council Recommendation on cancer screening. First report. IARC, 2008.
21. Council Recommendation of 2 December 2003 on cancer screening, Official Journal of the European Union, L2003/327:0034: 0038:EN (access: 20.04.2011).
22. Arbyn M, Antilla A, Jordan J, et al. European guidelines for quality assurance in cervical cancer screening. Second edition. IARC, 2008.
23. Didkowska J, Wojciechowska U, Zatoński W. Nowotwory szyjki macicy w Polsce – epidemiologiczny bilans otwarcia i perspektywy Ginekol Pol. 2006; 77: 660-666.
24. Fałek A. Informacja Ministerstwa Zdrowia na temat leczenia chorób onkologicznych, Warszawa, 5.01.2011.

