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## HIV AND AIDS IN POLAND IN 2012

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### ABSTRACT

**INTRODUCTION AND AIM.** From 1985 until the end of 2013, 17,565 cases of HIV infection, 3,062 AIDS cases and 1,246 deaths due to AIDS were registered in Poland. In this paper we aim to analyze the epidemiological situation of newly diagnosed HIV infections and AIDS cases in Poland in 2012.

**MATERIALS AND METHODS.** Descriptive analysis of newly detected HIV cases and incident AIDS cases was performed based on routine notifications by clinicians and laboratories. Data on the number of HIV tests from annual survey among laboratories were also used.

**RESULTS.** In 2012 there were 1,093 HIV cases diagnosed in Poland (detection rate 2.84 per 100,000 population), including 27 non-Polish citizens. The detection rate remained comparable to 2011, but approximately 30% higher than in 2006 - 2010. The total number of AIDS cases was 155 (incidence 0.40 per 100,000) and 57 AIDS patients died (0.15 per 100,000).

HIV infection is mainly detected among people aged 20 - 39 years (72.6%) and males (83.5%). As many as 70% of newly diagnosed infections with known route of transmission occurred among men who have sex with men (MSM). The number of infections in this group increased by 9% from 2011 and over 3 times compared to 2006 - 2010 average. The percentage of late presenters (defined by the time between HIV and AIDS diagnoses of less than 3 months) decreased in comparison with 2011 (7.9% of newly diagnosed HIV infections).

**CONCLUSIONS.** HIV epidemic is still spreading among MSM in Poland. However, assessment of epidemiological situation is limited by the lack of data on the probable transmission route in a large percentage of reports of newly diagnosed HIV cases.

**Key words:** *AIDS, HIV infection, epidemiology, Poland, 2012*

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### INTRODUCTION

Since the implementation of epidemiological surveillance of HIV/AIDS in 1985 to the end of 2013, there were 17,565 HIV cases, 3,062 AIDS cases and 1,246 deaths due to AIDS recorded in Poland. From mid-2000s, a significant increase in the rate of new HIV diagnoses is observed. In this paper we aim to present the epidemiological situation of HIV/AIDS in Poland in 2012 in comparison to the preceding years.

### MATERIALS AND METHODS

The assessment of the epidemiological situation in 2012 was based on the analysis of the routine notifications of newly diagnosed HIV infections and incident AIDS cases, sent by physicians and/or laboratories

to provincial sanitary – epidemiological stations and verified by the end of December 2013. The reported cases are classified according to the HIV and AIDS case definition for epidemiological surveillance system established by the decision of the European Commission of 19<sup>th</sup> March 2002 (under Decision No 2119/98/EC of the European Parliament and the European Council). The data on the number of HIV tests performed in 2012 were obtained from a voluntary survey conducted annually among laboratories offering HIV screening tests in Poland. The survey collects aggregated data on the number of tests performed in each of the laboratories and, if available, stratified by the tested group. Additionally, the preliminary data on deaths due to diseases caused by HIV infection (ICD-10 code: B20 - B24) were obtained from the Department of Demographic Surveys and Labour Market in Central Statistical Office.

## RESULTS AND DISCUSSION

**HIV infection in 2012.** In 2012, at least 1,572,742 screening tests for HIV in Polish citizens were performed (Table I). This corresponds to 41 tests per 1000 residents, and excluding routine testing of blood donors - approximately 9 tests per 1,000 residents. The testing rate increased in comparison to 2011 by 4%, but still remains low in comparison to other European countries. Out of 255 laboratories, which participated in the survey, approximately 50% were able to stratify the number of tests by tested group and reason for testing. The majority of them performed mainly screening tests in general population (e.g. screening before surgery, in pregnancy). Furthermore, since the laboratories send the, aggregated data, the possible duplicates are not removed. Consequently, the numbers of infections diagnosed in each group may not entirely correspond to the number of newly diagnosed infections reported in the case-based surveillance system.

Overall, the frequency of detection of HIV among the Polish citizens was 0.08 per 100 tests, which was largely driven by testing of blood donors. Having excluded the blood donors, the frequency was 0.34 per 100 tests. The highest frequency was noted among MSM (6.04%) and IDU (5.02%). Compared to 2011 this indicator decreased for MSM (from 9.87%) and increased for IDU (from 3.28%). However, during the 2004 – 2012 the overall trend for IDU was decreasing. For MSM, the highest value of indicator was noted in 2007. Since that year, a slight decrease in observed.

Overall, 1,093 HIV infections were diagnosed (2.84 per 100,000) in 2012. Compared to 2011 and median for 2006 - 2010, a decrease of 2.3% (26 cases) and on increase of 30.3% was reported, respectively. Given all newly diagnosed HIV infections in 2012, 240 cases

(22.0% of the total) were reported with a delay, not until 2013.

The highest number of newly diagnosed HIV infections in 2012 was reported in Mazowieckie - 337 (6.36 per 100,000 population in this province) and Dolnośląskie provinces - (3.71 per 100,000 population in this province) while the lowest - in Świętokrzyskie (0.47 per 100,000) and Łódzkie provinces (1.39 per 100,000). Compared to 2011, there was a significant increase in HIV diagnosis rate in 7 provinces, i.e.: Kujawsko-Pomorskie, Lubelskie, Małopolskie, Mazowieckie, Podkarpackie, Świętokrzyskie and Zachodniopomorskie, while a decline was observed in six provinces, i.e.: Dolnośląskie, Lubuskie, Łódzkie, Opolskie, Śląskie and Wielkopolskie (Table II).

The HIV infection was most often detected in the age group 20-39 years - 793 (72.6%). The highest percentage of HIV diagnoses in the person aged over 30 was reported in Świętokrzyskie (100.0%), Lubuskie (76.5%), Zachodniopomorskie (72.5%) and Opolskie provinces (72.0%). However, 20 persons under the age of 20 (1.8%) were diagnosed with HIV infection including one infant <1, three children aged 2-5 years and 16 teenagers aged 15-19 years (Table III). In 2012, as in previous years, the HIV infection predominated in men - 913 cases (83.5%) compared to women - 159 cases (14.5 % of the total). The majority of women infected with occurred in Lubuskie (47.1%) and Zachodniopomorskie provinces (33.3%). The percentage of women in the total number of newly diagnosed HIV cases did not exceed 10% in the following provinces: Pomorskie (8.0%), Małopolskie (9.3%) Kujawsko-pomorskie (9.7%) and Warmińsko-mazurskie (9.7%) (Table III).

Table IV summarizes the newly detected HIV infections in different regions in Poland in 2012, according to the probable route of transmission. Similarly to 2011, the information on transmission route was not reported for the majority of cases (606 – 55.4%

Table I. Testing for HIV and newly diagnosed HIV infections in Poland in 2012

Tested group	Reported number of tests			Newly diagnosed HIV infections
	Total	HIV positive	Frequency*	
Men who have sex with men (MSM)	679	41	6.04	340
Injecting drug users (IDUs)	219	11	5.02	41
People who have high risk heterosexual contacts	5,983	65	1.09	92
Prison inmates	8,571	57	0.67	-**
Blood donors	1,225,720	53	0.004	53#
Semen, tissues and organs donors	591	0	-	0
Blood, semen, tissues and organs recipients	999	0	-	0
Patients with hemophilia	496	0	-	0
Other / unknown	329,484	1 000	0.30	546
Polish citizens (total)	1,572,742	1 235	0.08	1 066
Foreigners	3,290	52	1.58	27#

\*Number of positive tests with respect to number of screening tests (per 100 tests)

\*\*Information if the infection was diagnosed in prison is not available through surveillance

#known transmission route for blood donors: MSM - 6, heterosexual - 1; for foreign citizens: MSM - 2, IDU - 2, heterosexual - 5

Table II. Newly diagnosed HIV infections and AIDS cases in Poland in 2006-2012, by province.

Province	Newly diagnosed HIV infections*						AIDS cases*						Deaths of AIDS cases*							
	median 2006 - 2010		2011		2012		median 2006 - 2010		2011		2012		median 2006 - 2010		2011		2012		total in years 1986-2012	
	n**	r	n	r	n	r	n**	i	n	i	n	i	n**	m	n	m	n	m	Total	Total
1. Dolnośląskie	107	3.71	128	4.39	108	3.71	41	1.43	35	1.20	31	1.06	15	0.52	12	0.41	10	0.34	638	250
2. Kujawsko-pomorskie	37	1.79	29	1.38	31	1.48	5	0.24	5	0.24	1	0.05	4	0.19	6	0.29	0	0.00	169	84
3. Lubelskie	15	0.69	38	1.75	48	2.22	7	0.32	4	0.18	6	0.28	2	0.09	2	0.09	3	0.14	84	33
4. Lubuskie	24	2.37	28	2.74	17	1.66	7	0.69	12	1.17	1	0.10	3	0.30	4	0.39	0	0.00	115	47
5. Łódzkie	50	1.94	61	2.40	35	1.39	13	0.51	19	0.75	17	0.67	3	0.12	3	0.12	5	0.20	194	68
6. Małopolskie	38	1.15	59	1.77	97	2.89	8	0.24	7	0.21	7	0.21	4	0.12	4	0.12	5	0.15	101	48
7. Mazowieckie	123	2.37	294	5.57	337	6.36	9	0.17	19	0.36	13	0.25	4	0.08	6	0.11	5	0.09	411	193
8. Opolskie	14	1.36	30	2.95	25	2.47	3	0.29	6	0.59	3	0.30	1	0.10	1	0.10	2	0.20	70	33
9. Podkarpackie	13	0.62	17	0.80	31	1.46	8	0.19	4	0.19	2	0.09	1	0.05	2	0.09	1	0.05	39	22
10. Podlaskie	9	0.75	19	1.58	20	1.67	6	0.34	6	0.50	4	0.33	1	0.08	3	0.25	1	0.08	57	21
11. Pomorskie	37	1.66	59	2.59	50	2.18	14	0.63	11	0.48	16	0.70	4	0.18	4	0.18	7	0.31	293	125
12. Śląskie	46	0.99	137	2.96	115	2.49	16	0.34	15	0.32	24	0.52	4	0.09	4	0.09	8	0.17	340	126
13. Świętokrzyskie	10	0.79	13	1.02	6	0.47	1	0.08	4	0.31	1	0.08	0	0.00	1	0.08	0	0.00	30	15
14. Warmińsko-mazurskie	29	2.03	49	3.37	31	2.14	8	0.56	9	0.62	5	0.34	2	0.14	4	0.28	3	0.21	98	27
15. Wielkopolskie	52	1.53	92	2.67	71	2.05	11	0.32	16	0.46	9	0.26	4	0.12	8	0.23	2	0.06	139	67
16. Zachodniopomorskie	32	1.89	33	1.92	51	2.96	5	0.30	11	0.64	15	0.87	1	0.06	4	0.23	5	0.29	141	51
Unknown	244		33		20		0		0		0		0		0		0			0
POLAND	839	2.20	1119	2.90	1093	2.84	167	0.44	183	0.48	155	0.40	53	0.14	68	0.177	57	0.15	2919	1210

\* HIV/AIDS cases or deaths by place of residence;

\*\* n - number, r - diagnosis rate per 100,000 population, i - incidence, m - mortality per 100,000 population



Table IV. Newly diagnosed HIV infections in Poland in 2012, by province and transmission group

Province	Transmission group*							Infections among blood donors
	MSM	IDU	Het	MtC	O/Unk	Total	Rate per 100,000	
POLAND	342	43	98	4	606	1093	2.8	53
1.Dolnośląskie	7	4	3	0	94	108	3.7	4
2.Kujawsko-pomorskie	7	0	1	0	23	31	1.5	4
3.Lubelskie	15	3	8	1	21	48	2.2	1
4.Lubuskie	0	0	0	0	17	17	1.7	0
5.Łódzkie	10	8	9	1	7	35	1.4	3
6.Małopolskie	9	2	5	0	81	97	2.9	3
7.Mazowieckie	178	6	35	0	118	337	6.4	6
8.Opolskie	1	2	0	0	22	25	2.5	2
9.Podkarpackie	7	1	7	0	16	31	1.5	3
10.Podlaskie	11	1	4	0	4	20	1.7	0
11.Pomorskie	14	2	5	0	29	50	2.2	2
12.Śląskie	23	4	4	1	83	115	2.5	14
13.Świętokrzyskie	3	0	0	0	3	6	0.5	1
14.Warmińsko-mazurskie	6	3	1	0	21	31	2.1	3
15.Wielkopolskie	39	4	5	0	23	70	2.0	4
16.Zachodniopomorskie	6	2	9	1	33	51	3.0	3
Unknown	6	1	2	0	11	20		0

\* MSM - men who have sex with men, IDU - injecting drug users, Het - heterosexual contact, MtC - child of HIV+ mother, O/Unk - other/unknown

of the total) and this percentage is comparable to the one of 2011 (57.5%). Given the cases with known transmission route, the largest group constituted men who have sex with men – 342 persons (70.2% of cases with known transmission route) and persons infected through heterosexual contact - 98 (20.1%). The third most numerous group of HIV infected were injection drug users - 43 people (8.8%). Compared to 2011, there was an increase of infections among MSM by 9.3% and a significant decrease among IDU by 34.4%. There are differences in the distribution of transmission routes between provinces. Among the cases with a known transmission route, the infection among MSM dominated in the following provinces: Świętokrzyskie (100.0%), Kujawsko-pomorskie (87.5%), Wielkopolskie (83.0%) and Mazowieckie (81.3%) while the infections through heterosexual contact were more frequently reported in Zachodniopomorskie (50.0%) and Podkarpackie (46.7%) provinces. Particularly high percentage of cases with missing probable transmission route was reported in such provinces as: Lubuskie (100.0%), Opolskie (88.0%), Dolnośląskie (87.0%) and Małopolskie (83.5%).

**AIDS in 2012.** In 2012, 155 AIDS cases were diagnosed in Poland (0.40 per 100,000). Compared to 2011 and median for 2006-2010, its number was lower by 28 and 12 cases (7.2%) respectively. Out of AIDS cases diagnosed in 2012, 57 (36.8%) were reported not earlier than in 2013 which result from the verification process according to the case definition. Given the cases reported in 2012, there was one case diagnosed in each of the following years: 1997, 2002, 2006, 2008, 2009;

two cases diagnosed in 2007 and 2010 and 37 cases diagnosed in 2011.

The number of cases according to provinces, ranged from 1 case in Kujawsko-pomorskie, Lubuskie and Świętokrzyskie provinces to 31 cases (20.0% of all diagnosed cases) in Dolnośląskie province. Compared to 2011, the increase in AIDS incidence occurred in five provinces in 2012, including significant increase in Pomorskie, Śląskie and Zachodniopomorskie provinces. In the remaining provinces the decline was observed with the largest change observed in 6 provinces: Kujawsko-pomorskie, Lubuskie, Mazowieckie, Opolskie, Świętokrzyskie i Wielkopolskie (Table II).

In 2012, AIDS was diagnosed in 118 men (76.1%) and 37 women (23.9%). The highest number of cases was observed in people aged 30-39 years - 67 cases (43.2% of the total), while the person at the age of 20-29 years accounted for 9.0% of the AIDS cases (Table V).

As many as 57 cases (36.8% of the total) were most probably infected via injecting drug use. More than half of the HIV cases with a history of IDU (56.1%) were reported among people aged 30 - 39 years. In person under the age of 30 years, the proportion of infections attributed to this transmission route amounted to 8.8% (Table V).

All 155 AIDS cases were diagnosed based on at least one AIDS indicator diseases, including 66 patients (42.6%) diagnosed with 2 diseases, 24 (15.5%) with three and 2 patients (1.3%) with 4 AIDS indicator diseases. Figure 1 presents the number of people with specific AIDS indicator diseases. Noteworthy in that there was a large number of patients who were diagnosed with HIV wasting syndrome - 50 cases (32.3% of

Table V. AIDS cases in Poland in 2012 by sex, age\* and transmission group

Age group (years)	Sex		Transmission group					Total
	M	F	MSM	IDU	Het	MtC	O/Unk	
<20	0	1	0	0	0	1	0	1
20-29	11	3	6	5	1	0	2	14
30-39	48	19	7	32	16	0	12	67
40-49	48	7	11	15	12	0	17	55
50-59	8	5	1	4	4	0	4	13
60 i >	3	2	0	1	3	0	1	5
Total	118	37	25	57	36	1	36	155

\* age at AIDS diagnosis; M - males, F - females; MSM - men who have sex with men, IDU - injecting drug users, Het - heterosexual contact, MtC - mother-to-child, O/Unk - other/unknown

all cases). The wasting syndrome is a late stage condition, which could be avoided through timely diagnosis and treatment.

The number of CD4 cells at the time of AIDS diagnosis was reported for 129 patients (83.2% of the total). For 72 cases (55.8%) it was lower than 50 cells per microlitre while for 36 persons (27.9%) the number of CD4 cells ranged from 50 to 199 cells. For 21 patients (16.3%) the level of CD4 cells was higher than 200 per microlitre.

Of 155 patients who were diagnosed with AIDS in 2012, only 33 persons (21.3%) were treated with antiretroviral therapy (any attempt of treatment) before AIDS was diagnosed. More than half of AIDS cases (55.5%, 86 people) were late presenters (HIV infection and AIDS diagnosed less than 3 months apart). It should be noted that the upward trend in the incidence of AIDS related only to the persons who were not previously diagnosed with HIV infection, and not those who knew their serostatus before (Table VI).

According to reports send to the Department of Epidemiology NIPH - NIH by the end of 2013, there were 57 deaths of AIDS patients in 2012- mortality rate 0.15 per 100,000. No deaths were observed in 3 provinces: Kujawsko-pomorskie, Lubuskie and Świętokrzyskie. The number of deaths in other provinces ranged from 1 to 10, and the mortality rate in these provinces ranged from 0.05 per 100,000 in Podkarpackie to 0.34 in Dolnośląskie provinces (Table II). Among the fatal cases the predominant transmission route was injecting drug use - 29 persons (50.9% of all deaths). There were 43 deaths among males (75.4%) and 14 among women (24.6%). Most patients died at the age of 30-49 years - 43 patients (75.4%).

Deaths from AIDS-related causes accounted for 87.7% of all deaths (50 people). The most common cause of death were multiple infections (9 persons) and other medical conditions - 9 people (ICD-10 code: B23.8). Out of 155 AIDS cases diagnosed in 2012, 46 deaths were reported until the end of 2013 including

Table VI. AIDS cases in Poland in 1986-2012, by the year of diagnosis and time lapse between the diagnosis of HIV infection and AIDS

Year of AIDS diagnosis	Time lapse between detection of HIV infection and AIDS diagnosis:				Total*
	AIDS within 3 months of HIV diagnosis	3 months or more after HIV diagnosis, but no later than 1 year	between 1 to 3 years	3 years or later	
1986-1995	143	28	98	150	420
1996	40	4	10	60	114
1997	34	10	21	63	128
1998	42	5	24	59	130
1999	43	1	19	74	138
2000	52	5	13	57	127
2001	61	7	7	58	133
2002	43	10	18	54	125
2003	66	4	11	65	146
2004	96	7	14	58	176
2005	83	4	13	52	153
2006	90	5	14	55	167
2007	72	5	15	49	141
2008	104	6	12	55	180
2009	77	6	10	35	130
2010	87	6	15	60	173
2011	107	6	13	52	183
2012	86	3	12	51	155
Total	1326	122	339	1107	2919

\* excludes 25 cases with missing date of HIV diagnosis

42 patients who died within six months from AIDS diagnosis (early fatality in AIDS - 27.1%).

According to the preliminary data from the Department of Central Statistical Office, 93 people died due to illness caused by HIV (ICD-10 B20 - B24) in 2012. If we assume that these data is complete, the proportion of deaths due to HIV/AIDS reported to the State Sanitary Inspection is 53.7% (50/93).

## SUMMARY

Despite a slightly lower number of newly diagnosed HIV infections in 2012 compared to 2011, it is too early to conclude that the epidemic is slowing down. The decrease may result from fluctuations in testing frequency or even be caused by a reporting delay, especially that the number of infections among MSM, currently the most affected group, is on the increase. This increasing tendency contrasts with a decrease in frequency of HIV detection based on HIV testing data. However, we note that those already diagnosed, generally would not be tested again. The decreasing rates among MSM and IDU may therefore to a certain extent be explained by increase of testing and decreasing fraction of undiagnosed infections. It corresponds to the observed decrease in the

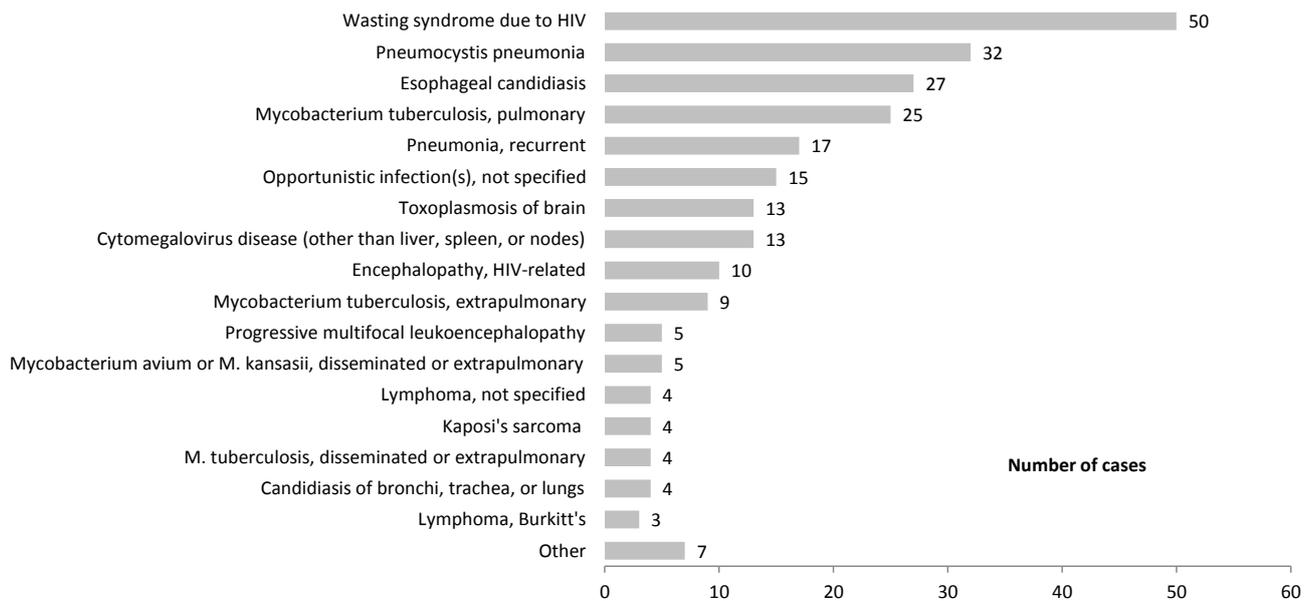


Fig.1. Indicator diseases among AIDS cases diagnosed in 2012. Number of cases

proportion of late presenters among the new diagnoses, although this number continues to be of concern.

In 2012, AIDS incidence decreased by 15.5% in comparison with 2011, but this rather represents fluctuation around a stable trend. Similarly to the previous years more than half of AIDS cases in 2012 were late presenters. This situation and a low percentage of AIDS cases who were treated before this diagnosis (21.3%) suggests a significant problem of undiagnosed HIV infection. This suggests continuing necessity for improvement of testing strategies and referent to treatment as the effective and early initiated antiretroviral therapy can prevent AIDS.

Despite the improvement in the reporting of transmission route, it is still unknown for more than half of newly diagnosed HIV infections. This remains the main limitation in infection of the surveillance data in Poland.

## CONCLUSIONS

1. Current increasing trend in the number of HIV/AIDS cases requires intensification of prevention measures, especially targeted at MSM.
2. Promotion of HIV testing and efficient referent to treatment remains a priority to avoid spread of AIDS and AIDS related deaths.
3. Monitoring system of HIV/AIDS requires improvement in terms of data complement and integration with other data sources, including behavioral surveys, allowing to understand the observed trends.

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