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## HIV AND AIDS IN POLAND IN 2013\*

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### ABSTRACT

**AIM.** The aim is to analyze the epidemiological situation of newly diagnosed HIV infections and AIDS cases in Poland in 2013 and years earlier.

**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 were derived from annual survey among laboratories.

**RESULTS.** In 2013 there were 1,098 HIV cases diagnosed in Poland (detection rate 2.85 per 100,000 population), including 23 among non-Polish citizens. The rate remained at the same level as in 2011, but 14.7% higher than median in 2007 - 2011. The total number of AIDS cases was 163 (incidence 0.42 per 100,000) and 46 AIDS patients died (0.12 per 100,00).

HIV infection is mainly detected among people aged 20 to 39 years (73.3%) and among males (85.6%). Approximately 68.4% of newly diagnosed infections with known transmission category were acquired by homosexual contacts (MSM). The number of infections in this group decreased by 2.2% compared to previous year. The percentage of late presenters (defined by the time between HIV and AIDS diagnoses of less than 3 months) increased in comparison with year 2012 (8.4% of newly diagnosed HIV infections).

**CONCLUSIONS.** HIV epidemic continues to develop among MSM in Poland. However, assessment of epidemiological situation is limited by the missing data on the probable transmission route in a large percentage of reported newly detected cases of HIV infection.

**Key words:** *AIDS, HIV infection, epidemiology, Poland, 2013*

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### INTRODUCTION

Since the implementation of epidemiological surveillance of HIV/AIDS in Poland in 1985 to the end of 2013, there were 17,689 HIV cases, 3,087 AIDS cases and 1,262 deaths of AIDS patients. In this paper we aimed to present new developments of the epidemiological situation of HIV/AIDS in 2013 in comparison to the preceding years.

### MATERIALS AND METHODS

Assessment of the epidemiological situation in 2013 was based on the analysis of the routine notifications of newly diagnosed HIV infections and incident AIDS cases, delivered by physicians and/or laboratories to

provincial sanitary – epidemiological stations and verified by the end of December 2014. 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 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 2013, were obtained from a voluntary survey conducted annually among laboratories, who offer HIV screening tests in Poland. The survey collects aggregated data on the number of tests performed in each of the laboratories, stratified by the reason for testing if available. In addition, the preliminary data about deaths due to diseases caused by HIV infection (ICD-10 code: B20 - B24) were used from Demographic Research Department in the Central Statistical Office.

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## RESULTS AND DISCUSSION

**Screening for HIV and newly detected HIV infections in 2013.**

In 2013, at least 1,574,320 screening tests for HIV in Polish citizens were performed (Table I). This corresponds to the 41 tests per 1000 residents, and excluding testing of blood donors - approximately 9 tests per 1000 residents. The testing rate increased in comparison to 2012 by 10%, but still remains low in comparison to other countries in Europe. Information on the number of HIV tests performed was obtained from 281 laboratories, but most of them provide information about the total number of tests, without disaggregation by sex or reason for testing. Additionally, the laboratory data refer to the number of tests rather than tested individuals and the possible duplicates are not removed. In consequence, the numbers of infections diagnosed in the laboratory testing survey may not match precisely the number of newly diagnosed infections reported in the case based surveillance system. In 2013 the total number of positive results in the laboratory testing survey (989) was lower by 10% than the number of newly diagnosed HIV cases reported through case based surveillance (1098) indirectly pointing to the level of possible underestimation of testing rates.

In total the frequency of detection of HIV among the Polish citizens was 0.06 per 100 tests, which was largely driven by testing of blood donors. Excluding the blood donors, the frequency was 0.27 per 100 tests. The highest frequency was noted among MSM (5.83%) and IDU (2.76%). With respect to 2012 this indicator decreased for MSM (from 6.04%) and significantly decreased for IDU (from 5.02%).

Overall in 2013, 1,098 HIV infections were diagnosed (2.85 per 100,000). In the year 2012 there were the same number of HIV infection, but in comparison with the preceding years it was 14.7% more than the

median for 2007-2011 years. From all newly diagnosed HIV infections in 2013, 100 cases (9.1% of the total) were reported with a delay, already in 2014.

The highest number of newly diagnosed HIV infections in 2013 was reported in Mazowieckie – 228 (4.30 per 100,000 population in this province) and Dolnośląskie – 136 (4.67 per 100,000 population in this province), Śląskie – 123 (2.67 na 100 tys.) and Wielkopolskie – 108 (3.12 na 100 tys.), and the lowest in Świętokrzyskie – 15 (1.18 per 100,000) and Podlaskie – 17 (1.42 per 100,000). In comparison to 2012 an increase of over 20% in the HIV diagnosis rate was noted in 5 provinces: Dolnośląskie, Kujawsko-pomorskie, Lubuskie, Świętokrzyskie and Wielkopolskie while a significant decline in the new HIV infection occurred in two provinces: Małopolskie and Mazowieckie (Table II).

The HIV infection was most often detected in the age group between 20 and 39 years - 805 (73.3%). The highest percentage of HIV diagnoses in the age group of over 30 was reported in Podlaskie (82.4%), Lubuskie (81.8%) and Zachodniopomorskie (78.6%). Among people under the age of 20 14 HIV infection were diagnosed (1.3%), including three toddlers <1, two children aged 2-5 years and one child in aged 10 years and 8 HIV infection among teenagers aged 18-19 years (Table III). In 2013, as in previous years, the predominant group were men - 940 cases (85.6% of the total), among women, there were 145 HIV infections diagnosed (13.2%). The diagnoses among women were relatively more common in Warmińko-mazurskie (37.5%), Zachodniopomorskie (33.3%) and Podlaskie province (29.4%). In contrast there were no cases among women in Świętokrzyskie province and women constituted less than 10% of all new diagnoses in provinces: Opolskie (9.1%), Kujawsko-pomorskie (7.9%), Małopolskie (6.9%), Wielkopolskie (6.5%) and Pomorskie (4.5%) (Table III).

Table I. Testing for HIV and newly diagnosed HIV infections in Poland in 2013

Tested group	Reported number of tests			Newly diagnosed HIV infections
	Total	HIV positive	Frequency*	
Men who have sex with men (MSM)	326	19	5,83	269
Injecting drug users (IDUs)	217	6	2,76	38
People who have high risk heterosexual contacts	3 004	18	0,60	80
Prison inmates	766	5	0,65	-**
Blood donors	1 223 858	38	0,00	38#
Semen, tissues and organs donors	348	0	0,00	0
Blood, semen, tissues and organs recipients	1 047	0	0,00	0
Patients with hemophilia	437	0	0,00	0
Other / unknown	344 317	934	0,27	653
Polish citizens (total)	1 574 320	977	0,06	1 075
Foreigners	3 114	12	0,39	23#

\*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 - 3; for foreign citizens: MSM - 1, IDU - 1, heterosexual - 2

Table II. Newly diagnosed HIV infections and AIDS cases in Poland in 2007-2013, by province.

Province	Newly diagnosed HIV infections*						AIDS cases*						Deaths of AIDS cases*									
	median 2007 - 2011		2012		2013		median 2007 - 2011		2012		2013		total in years 1986-2013		median 2007 - 2011		2012		2013		total in years 1986-2013	
	n**	r	n	r	n	r	n**	i	n	i	n	i	Total	n**	m	n	m	n	m	n	Total	
1. Dolnośląskie	119	4,14	108	3,70	136	4,67	38	1,32	32	1,10	41	1,41	699	15	0,52	10	0,34	11	0,38	0,00	84	
2. Kujawsko-pomorskie	29	1,40	31	1,48	38	1,81	5	0,24	1	0,05	1	0,05	172	4	0,19	0	0,00	0	0,00	0,00	84	
3. Lubelskie	15	0,69	48	2,21	44	2,04	6	0,28	6	0,28	5	0,23	92	2	0,09	3	0,14	1	0,05	0,00	36	
4. Lubuskie	28	2,74	17	1,66	24	2,35	8	0,79	1	0,10	0	0,00	116	3	0,30	0	0,00	0	0,00	0,00	47	
5. Łódzkie	53	2,09	35	1,38	39	1,55	14	0,52	17	0,67	13	0,52	223	3	0,12	5	0,20	5	0,20	0,20	79	
6. Małopolskie	42	1,28	97	2,90	58	1,73	7	0,21	7	0,21	2	0,06	106	4	0,12	5	0,15	0	0,00	0,00	50	
7. Mazowieckie	124	2,39	337	6,37	228	4,30	10	0,19	14	0,26	16	0,30	441	5	0,10	5	0,09	7	0,13	0,13	204	
8. Opolskie	17	1,64	25	2,47	22	2,18	4	0,39	3	0,30	3	0,30	76	1	0,10	2	0,20	1	0,10	0,10	35	
9. Podkarpackie	13	0,62	31	1,46	31	1,46	6	0,19	2	0,09	2	0,09	42	2	0,09	1	0,05	1	0,05	0,05	24	
10. Podlaskie	18	1,51	20	1,67	17	1,42	5	0,34	4	0,33	2	0,17	64	1	0,08	1	0,08	1	0,08	0,08	23	
11. Pomorskie	37	1,66	52	2,27	44	1,92	14	0,63	16	0,70	9	0,39	310	4	0,18	7	0,31	3	0,13	0,13	131	
12. Śląskie	49	1,06	116	2,51	123	2,67	15	0,32	24	0,52	21	0,46	381	4	0,09	8	0,17	7	0,15	0,15	135	
13. Świętokrzyskie	10	0,79	6	0,47	15	1,18	1	0,08	1	0,08	2	0,16	34	0	0,00	0	0,00	0	0,00	0,00	16	
14. Warmińsko-mazurskie	29	2,03	31	2,14	24	1,66	8	0,56	5	0,34	9	0,62	111	2	0,14	3	0,21	1	0,07	0,07	30	
15. Wielkopolskie	63	1,85	72	2,08	108	3,12	11	0,32	9	0,26	19	0,55	166	6	0,18	2	0,06	1	0,03	0,03	70	
16. Zachodniopomorskie	33	1,92	52	3,02	42	2,44	5	0,30	15	0,87	18	1,05	167	1	0,06	5	0,29	6	0,35	0,35	57	
Unknown	243		20		105		0		0		0		0	0		0		0			0	
POLAND	957	2,51	1098	2,85	1098	2,85	173	0,45	157	0,41	163	0,42	3200	61	0,16	57	0,148	46	0,12	0,12	1288	

\* 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 III. Newly diagnosed HIV infections in Poland in 2013, by sex, age and province of residence

Age group (years)	Province																										
	dolnośląskie			kuj.-pom.			lubelskie			lubuskie			łódzkie			małopolskie			mazowieckie			opolskie			podkarpackie		
	M**	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
<20	1	0	1	0	0	1	1	2	0	1	1	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
20-29	46	10	56	19	0	19	17	2	19	3	0	3	8	1	9	12	1	14*	70	13	83	7	0	7	11	2	13
30-39	37	5	42	8	1	9	12	3	15	9	2	11	14	2	16	18	1	19	86	11	97	9	2	11	8	2	10
40-49	24	2	26	7	1	8	6	0	6	6	0	6	4	1	5	11	1	13*	29	3	32	3	0	3	4	1	5
50-59	7	7	8	0	1	1	2	0	2	1	0	1	2	1	3	5	0	5	7	2	9	1	0	1	1	1	2
≥60	2	0	2	1	0	1	0	0	0	0	0	3	0	3	1	1	2	4	0	4	0	0	0	0	0	0	0
Unknown	1	0	1	0	0	0	0	0	0	0	0	1	0	1	2	0	5*	1	0	1	0	0	0	0	0	0	1
Total	118	24	136	35	3	38	38	6	44	19	3	22	33	6	39	49	4	58*	197	31	228	20	2	22	25	6	31

Age group (years)	Province																											
	podlaskie			pomorskie			śląskie			świętokrzyskie			warm.-maz.			wielkop.			zachodniop.			Unknown			POLAND			
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
<20	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	2	0	2	9	5	0	14
20-29	2	1	3	15	1	16	34	6	42*	5	0	5	7	1	8	36	3	39	5	3	8	27	2	31*	324	46	5	375
30-39	8	3	11	17	0	17	41	4	47*	6	0	6	5	11	43	2	45	13	2	15	43	5	48	378	50	2	430	
40-49	2	0	2	8	1	9	19	6	25	2	0	2	2	2	12	2	14	6	4	10	11	3	14	154	27	1	182	
50-59	0	1	1	1	0	1	5	1	6	2	0	2	1	1	5	0	5	1	2	3	6	0	6	49	11	0	60	
≥60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	2	3	5	2	0	2	18	4	0	22	
Unknown	0	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	2*	0	0	0	0	1	2*	8	2	5	15	
Total	12	5	17	42	2	44	101	18	123*	15	0	15	15	9	24	100	7	108*	28	14	42	91	11	105*	940	145	13	1098

\* includes cases with missing data for sex; \*\* M-male; F - female; UNK - unknown; T - total

Table IV. Newly diagnosed HIV infections in Poland in 2013, by province and transmission group

Province	Transmission group*							Infections among blood donors
	MSM	IDU	Het	MtC	O/Unk	Total	Rate per 100,000	
POLAND	270	39	82	4	703	1098	2,9	38
1.Dolnośląskie	4	10	7	1	114	136	4,7	6
2.Kujawsko-pomorskie	11	0	2	0	25	38	1,8	2
3.Lubelskie	14	1	7	0	22	44	2,0	2
4.Lubuskie	1	0	0	0	23	24	2,3	1
5.Łódzkie	14	2	5	1	17	39	1,5	2
6.Małopolskie	11	0	2	0	45	58	1,7	1
7.Mazowieckie	118	10	24	0	76	228	4,3	1
8.Opolskie	5	0	1	0	16	22	2,2	3
9.Podkarpackie	5	3	4	0	19	31	1,5	0
10.Podlaskie	1	1	1	0	14	17	1,4	0
11.Pomorskie	9	2	3	0	30	44	1,9	2
12.Śląskie	12	3	3	0	105	123	2,7	8
13.Świętokrzyskie	6	0	2	0	7	15	1,2	1
14.Warmińsko-mazurskie	3	4	5	1	11	24	1,7	1
15.Wielkopolskie	44	1	5	0	58	108	3,1	6
16.Zachodniopomorskie	5	2	9	0	26	42	2,4	1
Unknown	7	0	2	1	95	105		1

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

Table IV summarizes the newly detected HIV infections in different regions in Poland in 2013, according to the likely transmission route. As previously, the information on transmission route was not reported for the majority of cases. After a decrease in the percentage of reports with missing transmission route to 55.3% in 2012, in 2013 this percentage was again up, to 64.0%. Among those with known transmission route the largest group were men who have sex with men (MSM) - 270 (68.4% of cases with known transmission route) and persons infected through heterosexual contact - 82 (20.8%). The third most numerous group of HIV infected were injecting drug users – 39 people (9.9%). Compared with 2012, there was an decrease of infections diagnosed both among MSM and IDU, by 22.0% and 7.1% respectively. 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 provinces: Lubuskie (100.0%), Wielkopolskie (88.0%), Kujawsko-pomorskie and Małopolskie (over 87.5%), Opolskie (83.3%) while infections through heterosexual contact consist more than half cases in Zachodniopomorskie province (56.3%). It is also a likely route of infection reported commonly in the provinces: Warmińsko-mazurskie (38,5%), Podkarpackie and Podlaskie (over 33,3%) and Dolnośląskie and Lubelskie (over 31,8%). On the other hand IDU related infections were significantly more common in Dolnośląskie (45.5%), Podlaskie (33.3%) and Warmińsko-mazurskie (30.8%). Infections among children were only in Warmińsko-mazurskie (7.7%), Łódzkie and Dolnośląskie (over 4.5%). Particularly high

percentage of cases with missing probable transmission mode was reported from the provinces: Lubuskie (95.8%), Śląskie (85.4%), Dolnośląskie (83.8%) and Podlaskie (82.4%).

**AIDS in 2013.** In 2013, 163 AIDS cases were diagnosed in Poland (0.42 per 100,000). There were 6 more cases than in the preceding year and 10 cases (5.8%) less than the median for the years 2007-2011. Among cases diagnosed in 2013, there were 20 (12.3%) reported with delay in 2014, as a result of the verification process according to the case definition. Among cases reported in 2013, there was cases diagnosed in 2005(1), 2006(1), 2008 (2) and 2009 (2), 2010 (8) and in 2012 (57).

In provinces the number of cases ranged from <3 in Kujawsko-pomorskie, Małopolskie, Podkarpackie, Podlaskie and Świętokrzyskie to 41 cases (25.2% of all diagnosed cases) in Dolnośląskie. In 2013, the increase in AIDS incidence, compared to year 2012, occurred in six provinces, including marked increase in Dolnośląskie and Wielkopolskie. The same level of incidence as in 2012, was reported in Kujawsko-pomorskie (0,05 per 100,000) and Podkarpackie (0,09 per 100,000). In the other 7 provinces the decline was observed, the largest in 3 provinces: Łódzkie, Małopolskie and Pomorskie (Table II).

In 2013, AIDS was diagnosed in 133 men (81.6%) and in 30 women (18.4%). The highest number of cases was observed in people between 30 and 39 years of age - 66 cases (40.5% of the total), while 14.7% of the AIDS cases were reported among young people between 20 and 29 years of age (Table V).

In 2013, the of AIDS cases was similar in IDU and MSM groups, respectively 45-46 cases (27.6%-28.2%).

Among MSM AIDS cases are commonly reported among group in aged 30-39 years (43.5%), like among IDU (47.8%). Among younger people, aged 20-29, the predominant HIV transmission route sex between men (Tab. V).

Table V. AIDS cases in Poland in 2013 by sex, age\* and transmission group

Age group (years)	Sex		Transmission group					Total
	M	F	MSM	IDU	Het	MtC	O/Unk	
<20	0	0	0	0	0	0	0	0
20-29	22	2	10	3	4	0	7	24
30-39	53	13	20	22	11	0	13	66
40-49	29	9	11	12	6	0	9	38
50-59	23	3	4	8	5	0	9	26
60 i >	6	3	1	0	4	0	4	9
Total	133	30	46	45	30	0	42	163

\* 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

In 2013 all 163 AIDS cases were diagnosed based on at least one AIDS indicator diseases, 47 patients (28.8%) were diagnosed with 2 diseases, 9 (5.5%) with three and 2 patients (1.2%) with 4 AIDS indicator diseases. The number of people with specific AIDS indicator diseases is presented in Figure 1. Notably there was a large number of patients who were diagnosed with HIV wasting syndrome - 46 cases (28.2 % of all cases). The wasting syndrome is a late stage condition, which should be avoided through timely diagnosis and treatment. The second largest group consisted of people with Pneumocystis pneumonia - 31 cases (19.0%).

The number of CD4 cells at time of AIDS diagnosis was reported for 128 patients (78.5% of the total). For 57 cases (44.5%) it was lower than 50 cells per microlitre. Among 49 persons (38.3%) the number of CD4 cells

Table VI. AIDS cases in Poland in 1986-2013, 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	419
1996	40	4	10	60	114
1997	34	10	21	63	128
1998	42	5	24	59	130
1999	43	1	19	74	137
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	175
2005	83	4	13	52	152
2006	90	5	14	55	164
2007	73	5	15	49	142
2008	104	6	12	55	177
2009	78	6	10	35	129
2010	87	6	15	60	168
2011	108	6	13	52	179
2012	87	3	12	52	154
2013	92	10	9	52	163
Total	1422	132	348	1160	3062

\* excludes 25 cases with missing date of HIV diagnosis

ranged from 50 to 199 cells. For 22 patients (17.2%) the level of CD4 cells was higher than 200 per microlitre.

Of the 163 patients who were diagnosed with AIDS in 2013, only 40 persons (24.5%) were treated with antiretroviral therapy (any attempt) before AIDS was diagnosed. More than half of AIDS cases (56.4%, 92 people) were late presenters (HIV infection and AIDS diagnosed less than 3 months apart). It should be noted

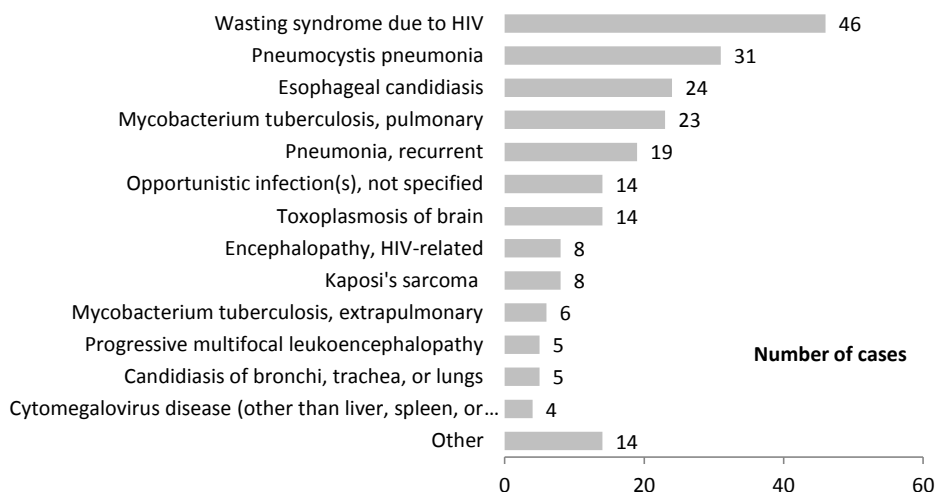


Fig.1. Indicator diseases among AIDS cases diagnosed in 2013. Number of cases.

that the upward trend in the incidence of AIDS relates only to persons with previously undiagnosed HIV infection, and not those who knew their serostatus before (Table VI).

According to reports received by the Department of Epidemiology NIPH - NIH by the end of 2014, there were 46 deaths of AIDS patients in 2013- mortality rate 0.12 per 100 000. There were no deaths in 3 provinces: Kujawsko-pomorskie, Lubuskie and Małopolskie. The number of deaths in other provinces ranged from 1 to 11, and the mortality rate in these provinces ranged from 0.05 per 100 000 in Lubelskie or Podkarpackie to 0.38 in Dolnośląskie province (Table II). Among the death cases the predominant transmission route was injecting drug use - 18 people (39.1% of all deaths). There were 35 deaths among males (76.1%) and 11 among women (23.9%). Most patients died at the age of 30 to 49 years - 25 patients (54.3%).

Deaths from AIDS-related causes accounted for 84.8% all deaths (39 people). Among 163 AIDS cases diagnosed in 2013, 34 deaths (20.9%) were reported until the end of 2014 including 27 patients who died within six months from AIDS diagnosis (early fatality in AIDS - 16.6%).

According to the preliminary data from the Central Statistical Office, 123 people died due to illness caused by HIV (ICD-10 B20 - B24) in 2013. If we assume that these data is complete, the proportion of deaths due to HIV/AIDS reported to the State Sanitary Inspection is 32% (39/123).

## SUMMARY

The number of newly diagnosed HIV infections in 2013 r. remained comparable to the number reported in 2012. This may point to stabilization of the detection rate, at a higher level, after the raise noted in 2004-2011.

The decreasing numbers of newly diagnosed infections both among MSM and IDU (among cases with knowing transmission route) is a positive tendency. However, the significant percentage of missing data on transmission route, more than half of newly diagnosed HIV infections, is a major limitation of analysis of the transmission patterns. We note though that the declining tendency in these two key population also occurred

in the laboratory testing survey data, with percent of positive results decreased both among the tested MSM and IDU.

The significant decrease of AIDS incidence, which took place in 2012 (a decrease of more than 15.5% compared to 2011), was not sustained in 2013, with the incidence returning to the prior levels. The difficulty to reduce AIDS incidence (and HIV related mortality) results to a large extent from unresolved problem of delayed diagnosis. Similarly to the preceding years more than half of AIDS cases in 2013 concerned the late presenters. The second issue is the delayed entry into care. Each year we observe over 50 persons, who develop AIDS despite earlier HIV diagnosis. Research shows that the problem of delayed linkage to care may concern even 40% of the newly diagnosed patients. These findings imply the continuing necessity to enhance the testing strategy and linkage to care all persons diagnosed with HIV in order to prevent advanced immunodeficiency with timely treatment.

## CONCLUSIONS

1. Promotion of HIV testing and efficient linkage to care for newly diagnosed HIV cases remains a priority to avoid development of AIDS and AIDS related deaths.
2. Monitoring system of HIV/AIDS requires improvement in terms of data complement (transmission route, residence-province, gender).
3. Integration different data sources on HIV/AIDS situation, allowing to better assessment the HIV/AIDS epidemic in Poland.

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