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MUMPS IN POLAND IN 2013*

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ABSTRACT

BACKGROUND. Vaccination against mumps from 2003 is mandatory in Poland and given as two dose scheme with MMR vaccine (mumps, measles, and rubella). Earlier this vaccination was only recommended. Despite observed decline in mumps incidence for over a decade which is a result of conducted vaccinations, mumps is still a common childhood disease.

AIM. To assess epidemiological situation of mumps in Poland in 2013, including vaccination coverage in Polish population, in comparison to previous years.

METHODS. The descriptive analysis was based on data retrieved from routine mandatory surveillance system and published in the annual bulletins “Infectious diseases and poisonings in Poland in 2013” and “Vaccinations in Poland in 2013” (Czarkowski MP i in., Warszawa 2013, NIZP-PZH i GIS). Mumps cases were classified according to the criteria of surveillance case definition implemented in the European Union (Commission Decision of 28 April 2008 amending Decision 2002/253/EC). National Immunisation Programme for year 2013 was also used.

RESULTS. In total, there were 2 436 mumps cases registered in Poland in 2013. Incidence of mumps was 6.3 per 100,000 and it was lower by 12.5% in comparison with 2012 and lower by 18.2% in comparison with median for the years 2007-2010. The highest incidence rate was observed among children aged 5 years (54.0 per 100,000). Incidence in men (7.5) was higher than in women (5.2). In 2013, 38 people were hospitalized due to mumps. Vaccination coverage of children aged 3 years in Poland in 2013 was 97.5% and it was lower by 0.4% in comparison with year 2012.

CONCLUSIONS. Systematic execution of mumps vaccination in accordance with the National Immunisation Programme resulted in a significant decrease in the number of registered cases. Due to the high vaccination coverage further decline in the number of cases is expected.

Key words: *mumps, epidemiology, Poland, 2013*

INTRODUCTION

Introduction of mandatory vaccination against mumps in Poland in 2003 resulted in a decrease in the number of registered cases. However, more than 2,000 cases of mumps are still reported every year in Poland.

AIM

The aim of the study was to assess epidemiological situation of mumps in Poland in 2013, including vaccination coverage in Polish population, compared to previous years.

MATERIAL AND METHODS

The descriptive analysis of epidemiological situation of mumps was based on data retrieved from routine mandatory surveillance system and published in the annual bulletin “Infectious diseases and poisonings in Poland in 2013” (Czarkowski MP i in., Warszawa 2014, NIZP-PZH i GIS). Vaccination coverage was assessed based on data published in the annual bulletin “Vaccinations in Poland in 2013”. Mumps cases were classified according to the criteria of surveillance case definition implemented in the European Union (Commission Decision of 28 April 2008 amending Decision

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2002/253/EC). National Immunisation Programme for year 2013 was also used.

RESULTS

Epidemiological situation of mumps in 2013. In 2013, a total of 2 436 mumps cases were registered in Poland, there were 343 more cases than in the previous year. Mumps incidence was 6.37 per 100,000 and was lower by 12.5% compared with the previous year and lower by 18.2% compared with the median for 2006-2010. In 2013, the highest incidence was observed in two voivodeships: śląskie (327) and mazowieckie (349). The lowest incidence was recorded in świętokrzyskie voivodeship (63). The largest increase in the number of

cases compared to 2012 was recorded in mazowieckie and lubuskie voivodeships (Table I).

The highest number of mumps cases were recorded in the first quarter of 2013 (650 cases, i.e. 26.7% of all registered cases), the lowest in the third quarter (533 cases, i.e. 21.9% of all registered cases). It is a noticeable reduction in the number of cases registered in the second quarter in 2013 (533 cases) in comparison to the number of cases reported in the previous year (580) (number of cases decreased by about 20%).

It should be noted that observation of the last fifteen years confirms the extension of the epidemic cycle of mumps, and a progressive incidence decrease in all age groups (Fig. 1).

In 2013, as in the previous year, the highest number of cases was recorded in children and teenagers aged

Table I. Mumps in Poland in 2006-2013. Number of cases and incidence per 100.000 population and number and percentage of hospitalized cases by voivodship

Voivodeship	Mediana 2007-2011		2012		2013			
	number of cases	incidence per 100 000	number of cases	incidence per 100 000	number of cases	incidence per 100 000	hospitalization number	%
POLAND	2 954	7.7	2 779	7.2	2 436	6.3	38	1.56
1. Dolnośląskie	209	7.2	157	5.4	129	4.4	5	3.88
2. Kujawsko-pomorskie	199	9.6	201	9.6	180	8.6	2	1.11
3. Lubelskie	144	6.7	165	7.6	124	5.7	4	3.23
4. Lubuskie	108	10.6	78	7.6	83	8.1	-	-
5. Łódzkie	171	6.7	129	5.1	107	4.2	2	1.87
6. Małopolskie	222	6.8	265	7.9	198	5.9	4	2.02
7. Mazowieckie	335	6.4	316	6,0	349	6.6	8	2.29
8. Opolskie	110	10.6	91	9,0	93	9.2	1	1.08
9. Podkarpackie	107	5.1	111	5.2	78	3.7	1	1.28
10. Podlaskie	97	8.1	84	7,0	67	5.6	1	1.49
11. Pomorskie	123	5.5	194	8.5	174	7.6	2	1.15
12. Śląskie	421	9.1	386	8.4	327	7.1	3	0.92
13. Świętokrzyskie	128	10.1	94	7.4	63	5,0	1	1.59
14. Warmińsko-mazurskie	98	6.9	105	7.2	67	4.6	1	1.49
15. Wielkopolskie	315	9.3	240	6.9	260	7.5	3	1.15
16. Zachodniopomorskie	105	6.2	163	9.5	137	8,0	-	-

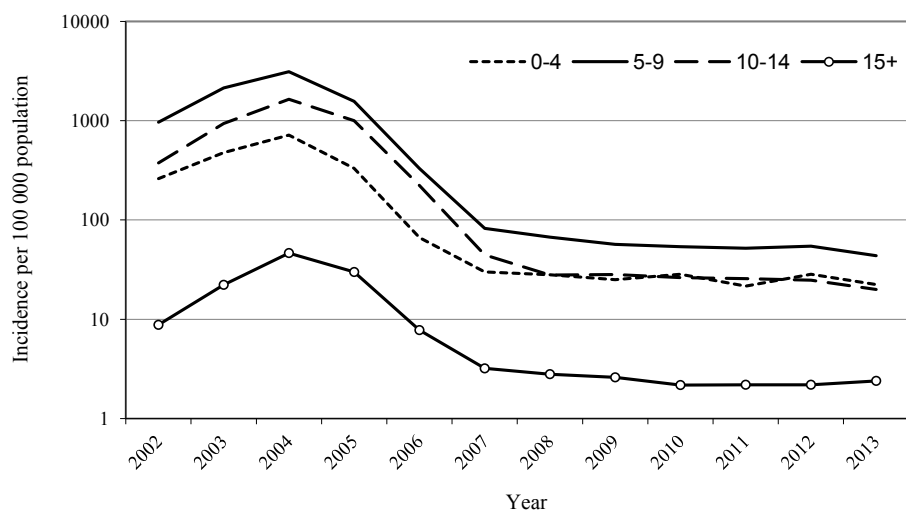


Fig. 1. Mumps in Poland, 2002-2013. Incidence per 100,000 population by age group

≤14 years - 1652, i.e. 67.8% of the total number of cases. Number of cases among children aged 5-9 years was 832, i.e. 34.2% of the total number of cases, incidence 43.6 per 100 thousand. Number of cases in age groups 0-4 and 10-14 years were 452 (incidence 22.3 per 100,000, 18.6% of the total number of cases) and 368 (incidence 19.9 and 15.1 % of the total number of cases), respectively. In those over 54 years of age the incidence was less than 1 per 100,000 and cases in this age group accounted for 2.7 % of the total number of cases in 2013 (Tab. II.).

In 2013 there were 1402 cases of mumps recorded among males (incidence 7.5 per 100,000) and 1034 among females (5.9 per 100 000). As in the previous year, most cases of mumps in age group above 35 years were recorded among females.

The incidence of mumps in the cities (6.2 per 100,000) was lower than in rural areas (6.6). The highest incidence (6.7) was registered in the cities with population of 20-49 thousands, the lowest incidence (6.1) was recorded in cities with population of ≥ 100,000. Comparing rural areas with the cities, incidence by age groups did not significantly differ.

In 2013, 38 people were hospitalized due to mumps (13 people more than in previous year), which accounts for 1.6% of all registered cases. The highest number of hospitalized cases due to mumps, i.e. 8, was in mazowieckie voivodeship.

Vaccinations against mumps in 2013. In 2003, vaccination against mumps (MMR vaccine against measles, mumps and rubella) was introduced to National Immunisation Programme as mandatory. Until 2003, vaccination of children against mumps was only recommended. According to the current National Immunisation Programme, two doses of mumps vaccine are given:

Table II. Mumps in Poland in 2012-2013. Incidence per 100,000 and percentage in age groups

Age group	2012		2013	
	incidence per 100 000	%	incidence per 100 000	%
0 - 4	28.4	21.1	22.3	18.6
0	3.6	0.5	3.3	0.5
1	9.4	1.4	7.4	1.2
2	29.7	4.5	19.7	3.3
3	36.3	5.6	32.3	5.6
4	60.2	9.1	44.8	8.0
5 - 9	54.5	36.1	43.6	34.2
5	71.8	10.2	54.0	9.3
6	65.8	8.9	51.8	8.4
7	47.5	6.2	46.5	7.2
8	46.5	5.9	27.2	4.1
9	38.2	4.9	36.1	5.3
10 - 14	24.8	17.0	19.9	15.1
15 - 19	11.9	9.7	12.2	10.9
20 - 29	3.1	6.6	4.2	9.8
30 - 39	1.8	4.0	1.9	4.8
40 +	0.8	5.5	0.9	6.7
Total	7.2	100.0	6.3	100.0

first dose at 2 years of age (13-14 months) and a second dose at 10 years of age. In 2013, mumps vaccination coverage in children aged 3 years decrease by 0.4% and reached 97.5% in the country (Fig. 2). The highest vaccine coverage was recorded in warmińsko-mazurskie voivodeship (99.7%) and the lowest in mazowieckie (96.4%) and małopolskie (97.3%) voivodeships.

Among 2 436 registered in 2013 cases of mumps, 1052 (43.2%) received one dose of vaccination, 254 (10.4%) received two doses and 494 (20.3%) were not vaccinated against mumps. In 636 patients (26.1%) vaccination status was unknown. Conducting vaccination program against mumps in Poland have influenced the

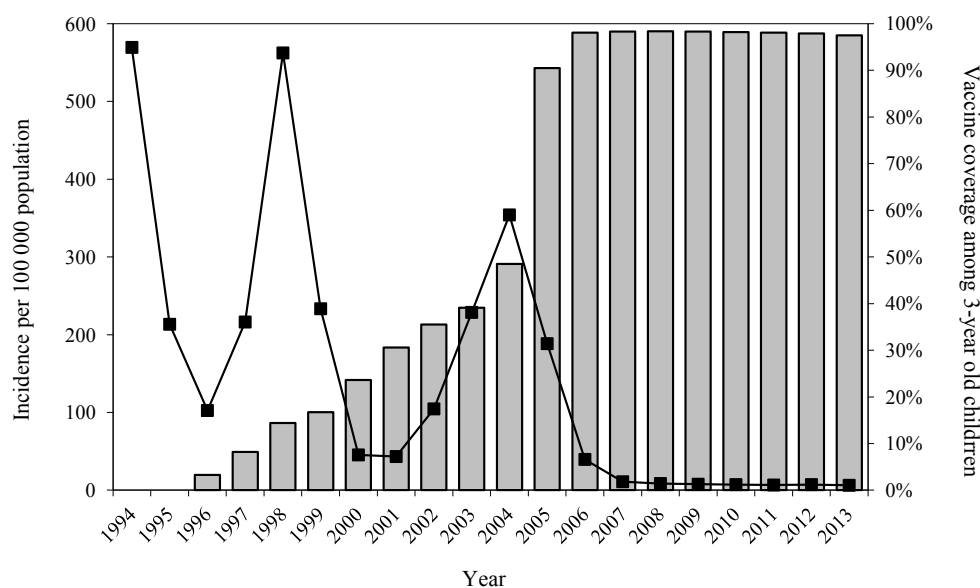


Fig. 2. Mumps in Poland in 1994-2013. Incidence per 100,000 population and vaccine coverage among 3-year old children

periodicity of the disease epidemics. Before vaccination against mumps become mandatory in Poland increasing rates occurred periodically (every 3-4 years), currently the time between mumps epidemics is extended.

CONCLUSIONS

There is a decreasing trend in mumps incidence in Poland observed since the introduction of mandatory vaccination against mumps, although the dynamics of this process has slowed down. There are still more than 2000 cases, which indicate the necessity to maintain a high level of vaccination coverage of the population.

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