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Incidence of Measles Across the Population in Lviv Region in Ukraine

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ABSTRACT

In spite of vaccinal prevention, measles remains one of burning issues of public health service in Ukraine and Lviv region. According to statistics, increased measles cases in Ukraine is observing each 5-6 years. The predominant cause of incidence across the population is low preventive vaccination [3].

During 2017-2018-2019 in Lviv region there is the complicated epidemiological situation with measles incidence. In 2017 in Lviv region only 92 measles cases were recorded, but in 2018 - 11 474 cases (451.54 per 100 thousand people). Among the number of the diseased 8243 (72%) constitutes children. During 6 months in 2019, 6 024 people have diseased, including 4126 children, 1898 adults (218.62 per 100 thousand people).

Among diseased children 73.7 % was not vaccinated according to the existing Calendar of Preventive Vaccination. 4 fatal cases have been recorded (2 in 2018 and 2 in 2019).

Keywords

Measles, Incidence, Vaccination.

Introduction

According to the World Health Organization, 70% of measles cases in Europe falls to Ukraine [1]. In Ukraine since 2017 the measles outbreak has been observed – 4 782 people have diseased. 5 people have died. In 2018, 54 481 people have diseased – 20 204 adults and 34 277 children. 16 people have died. In general, the incidence of measles is characterized with periodicity with inter epidemiological period of 5 years (Figure 1).

Figure 1: The incidence of measles during 2000-2018 in Ukraine.

In Lviv region over last 15 years 3 epidemiological measles outbreaks have been recorded: in 2001, 3192 cases with intensive figure per 100 thousand of people (127.9). In 2006 - 3165 cases (126.8), in 2012 - 3140 cases (125.8). Measles incidence has been recorded in all administrative territories. During 2017-2018-2019 in Lviv region there is the complicated epidemiological situation with measles incidence. In 2017 in Lviv region only 92 cases were recorded and in 2018 there were 11 474 cases (451.54 per 100 thousand of people), of which 8243 (72%) children. During 6 months in 2019 6 024 people have diseased, including 4126 children, 1898 adults (218.62 per 100 thousand of people).

Among diseased children 73.7% was not vaccinated according to the existing Calendar of Preventive Vaccination.

4 fatal cases have been recorded (2 in 218 and 2 in 2019). Fatal cases have been recorded both among children of 5-8 ages with baseline somatic pathology and adults with baseline pathology of Down syndrome. During 2018 measles cases have been recorded among 72 pregnant women. Upon recovery 31.5% pregnant women had the threatening miscarriage for a term of gestation 13-27 weeks during one month after post-discharge. Childbearing on 26th week of gestation has been recorded. Significant difference between measles clinical cases among pregnant women and

women without any sign of pregnancy has not been observed.

Live vaccine is the only reliable protection against measles. The World Health Organization recommends 95 % of people to get 2 vaccines against measles to keep the high level of population immunity and to eliminate measles [1]. 95% of vaccinated are protected after injection with 1 dose of vaccine and 99% people are protected after 2 doses, accordingly[2]. As of today, vaccination against measles is made with MMR vaccine (measles, mumps and rubella vaccine) in age of 1 and 6 according to the Calendar of Preventive Vaccines and is included into the obligatory preventive vaccines. It is permitted for vaccination violating the Calendar when 2 doses of vaccines shall be injected with lapse of 30 days. Coverage is given in figures 2 and 3. According to the given figure, coverage of preventive vaccination against measles of children of 1 age and upwards was unequal during 2008-2018 from 28.4% in 2010 up to 89.9% in 2018. Vaccine delivery to regions was also unequal. According to figure 4, there is the tendency of wide coverage with 1 dose of vaccine against measles among children during the given period.

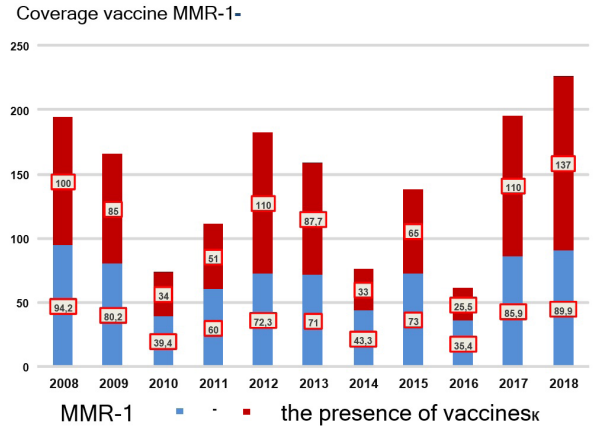

Figure 2: Coverage vaccine MMR-1.

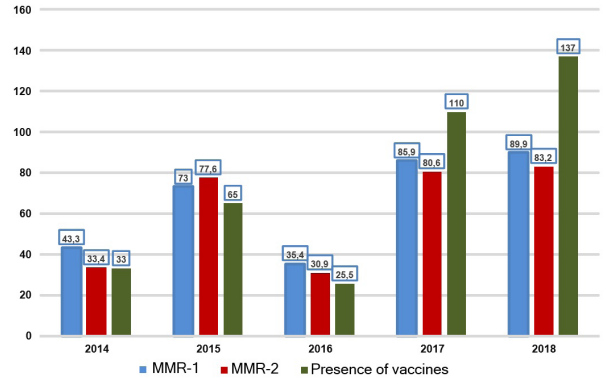

Figure 3: Following CPC target groups of children 1 and 6 years.

In case of contact with any infected person, it is provided for extraordinary vaccination during 72 hours from the contact. Since May 2019, the law has permitted to vaccinate children of 6 months and upwards against measles.

Taking into consideration the low level of preventive vaccination, in January 2019 it was decided to perform explanatory work among teachers and parents of non-vaccinated children in general educational institutions involving medical employees. For convenience, it was proposed to vaccinate in schools by force of mobile teams. According to calculation results, 15, 297 children of 7-17 years required vaccination, of which 11 608 - 50.6% have been vaccinated during January-March 2019. Mobile medical teams worked in 40 regional schools and 22 schools of Lviv. Herewith, scheduled preventive vaccination was performing. As of today, Priorix, Belgium and MMR, USA are used for vaccination in Ukraine. Vaccination of adults against measles in Ukraine was available only for those people who had contact with the infected person till 2018, since 2018 vaccination of adults among risk group has been proposed, including military men, medical employees, transport and education workers, emergency response groups.

The cause of low coverage with preventive vaccination in Ukraine is the parental refusal of vaccination [4]. To improve this situation, during 2017-2019 the Department of Health of Lviv Regional State Administration with assistance of the Global Bank and Children Fund of the United Nations Organization UNICEF is implementing the regional educational project “School of successful medical manager”, one of the key topics of which is the discussion of burning issues of vaccination implementation, making adequate managerial decisions, implementation of educational units into the system of medical education, formation of adequate population confidence to vaccination. 36 trainings have been performed for prime tier basic physicians and nurses on the matters of immunization theory and practice, efficient communication with parents on the matters of vaccination.

Conclusion

Once measles elimination till 2020 [5] is the unachievable goal, during the period of reforming the public health service system it is necessary to create the perception and confidence of population to vaccination. One of the dominant tasks is training of medical officers, regardless of their specialty, with immunization theory and practice and active cooperation with educators and media organizations.

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