

## Epidemiological Analysis of Measles Outbreak in North-Kazakhstan Region of the Republic of Kazakhstan

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**Abstract :** In recent years in the Republic of Kazakhstan there have been registered outbreaks of measles among the population. The objective of work was the analysis of outbreak of measles in 2014 among the population of North-Kazakhstan region of the Republic of Kazakhstan. For the analysis of the measles outbreak descriptive and analytical research, techniques were used and threshold levels of morbidity were calculated. The increase of incidence was noted from March to July. The peak was registered in May and made 9.0 per 100000 population. High rates were registered in April - 5.7 per 100000 population, and in June and July they made 5.7 and 3.1 respectively. Duration of the period of increase made 5 months. The analysis of monthly incidence of measles revealed spring and summer seasonality. Across the territory it was established that 69.2% of cases were registered in the city, 29.1% in rural areas and 1.7% of cases were brought in from other regions of Kazakhstan. The registered cases and threshold values of measles during the outbreak revealed that from 12 to 24 week, and also during the 40th week the cases exceeding the threshold levels are registered. Thus, for example, for the analyzed 1 week the number of the revealed patients made 4, which exceeds the calculated threshold value (3) by 33.3%. The data exceeding the threshold values confirm the emergence of a disease outbreak or the beginning of epidemic rise in morbidity. Epidemic rise in incidence of the population of North-Kazakhstan region was observed throughout 2014. The risk group includes 0-4 year-old children, who made 22.7%, 15-19 year-olds - 25.6%, 20-24 year-olds - 20.9%. The analysis of measles cases registration by gender revealed that women are registered 1.1 times more often than men. The ratio of women to men made 1:0.87. In social and professional groups often ill are unorganized children - 23.3% and students - 19.8%. Studying clinical manifestations of measles in the hospitalized patients, the typical beginning of a disease with expressed intoxication symptoms - weakness, sickliness was established. In individual cases expressed intoxication symptoms, hemorrhagic and dyspeptic syndromes, complications in the form of overlay of a secondary bacterial infection, which defined high severity of the illness, were registered both in adults and in children. The average duration of stay of patients in the hospital made 6.9 days. The average duration of time between date of getting the disease and date of delivery of health care made 3.6 days. Thus, the analysis of monthly incidence of measles revealed spring and summer seasonality, the peak of which was registered in May. Urban dwellers are ill more often (69.2%), while in rural areas people are ill more rarely (29.1%). Throughout 2014 an epidemic rise in incidence of the population of North-Kazakhstan region was observed. Risk group includes: children under 4 - 22.7%, 15-19 year-olds - 25.6%, 20-24 year-olds - 20.9%. The ratio of women and men made 1:0.87. The typical beginning of a disease in all hospitalized with the expressed intoxication symptoms - weakness, sickliness was established.

**Keywords :** epidemiological analysis, measles, morbidity, outbreak

**Conference Title :** ICID 2017 : International Conference on Infectious Diseases

**Conference Location :** Sydney, Australia

**Conference Dates :** January 26-27, 2017