



Control model of epidemic processes of hepatitis B, rubella and measles in Altai

Krai

T.V. Safyanova, N.V. Lukyanenko

Higher educational establishment “Altai State Medical University”

Public health and social development ministry

Barnaul

Control system of the epidemic processes of hepatitis B, measles and rubella is presented as macrosystem formed by subsystems of epidemiological surveillance and control. Efficiency of surveillance can be ensured only with full-fledged maintenance and realization of its subsystems – informational, diagnostic and management decision-making [1, 2, 3].

During the period of realization of the national project “Health”, in segment “Additional immunization of population” since 2006 and implementation of the third stage of the measles’ liquidation in Russian Federation since 2008, in Altai Krai there’s been necessity of improvement in control system of the epidemic processes of infectious diseases, controlled by means of special prophylaxis. The system which is optimized in the area of organization of epidemiological control as many-level system of epidemiological surveillance by the use of developed indices of its efficiency and operational alteration depended on made management decisions.

Grounds for improvement of epidemiological surveillance system in Altai Krai are:

- specificity of the region;
- our own researches into regular occurrence of hepatitis B, measles, rubella, development of their epidemic processes during different periods of vaccinal prevention;
- expansion of the age cohort of vaccinated children and inclusion of adult population in massive immunization process. The expansion and the inclusion are related to realization of the national “Health” project in segment “Additional immunization of population”.

Altai Krai has following peculiarities :

- low density of population;
- remoteness of some areas from the regional center;
- insufficient staffing of medical service in rural areas.

These peculiarities determine difficulties not only in data gathering about fullness, timeliness and quality of vaccination, but also in organization of vaccination in new conditions of strategy and tactics of immunization.



Standard system of epidemiological surveillance in Altai Krai is added with multilevel component, defined by regional and municipal levels and object sub-levels. Regional level is represented by the “Main Administration of Health and pharmaceuticals in Altai Krai” and “Federal service on customers' rights protection and human well-being surveillance in Altai Krai”.

Municipal level is represented by:

- administrations of the cities and areas;
- chief directorates of inter-regional medical districts;
- centers of medical prophylaxis;
- central city hospitals;
- central region hospitals;
- departments of the territorial administration of Federal service on customers' rights protection and human well-being surveillance in Altai Krai;
- federal medical institution "Center of Hygiene and Epidemiology" in Altai Krai.

Medioprofilactic clinics are referred to sublevels of epidemiological surveillance system.

All levels and sub-levels of epidemiological surveillance system are tasked with the adoption of certain administrative decisions.

On basis of the multi-level system of epidemiological surveillance over vaccine-preventable diseases, following adapted components were developed:

- improvement of informational support at the expense of “BARS” program. (Web-monitoring of public health);
- adoption of automated system of immunization control (ACS immunization) on every level and sublevel of the system, which ensured the free access to information distributed among databases of medical and preventive treatment facilities by the Main Administration of Health and pharmaceuticals in Altai Krai. Supplying information, as well as improvement in the organization of vaccination by substitution of existing manual planning methods for new ones, which consider more determining factors;
- development and adoption of the monitoring system of German measles in pregnant women, in the form of recommended methodology of clinical diagnosticate, epidemiological survey of rubella cases, proposed reporting form of surveillance and examination of pregnant women. These steps made possible a flexibility and adequacy of prophylactic measures and minimized the risk of rubella spreading.

One of the most effective and economically expedient measure in the system of epidemiological surveillance is a vaccinal prevention.



A system of organizing vaccination of infectious diseases (regional model) is created in Altai Krai. The system involves the interaction of three blocks. These blocks are defined by:

- national immunization calendar;
- national project "Zdorovie" in segment "Additional immunization of population"
- departmental target program "Vaccinal prevention" and municipal subprograms "Vaccinal prevention", which regulate prophylactic vaccination.

The following components are represented in the structure of the model:

- administration system
- methodological support
- system of planning and carrying out a vaccination;
- storage and transportation of medical immunobiological preparations (MIBP).

The legal basis of the model are compiled from the following documents, approved at the regional level:

- the Law "On immunoprophylaxis of infectious diseases in Altai Krai" (№ 159 Decree of the Altai Regional Council of People's Deputies of 29.05.2000);
- "The program of measles elimination in Altai Krai for 2007-2011";
- The program "Prevention of social diseases and their control for 2007- 2011";
- "Retraining and advanced training of health workers" for 2007-2011;
- departmental target program "Vaccinal prevention" for 2007 - 2011.

The features of administration system are:

- •chain of command (from the krai's administration to the Administrations of cities and districts, inter-district offices of the Chief Medical counties);
- •horizontal management (mutual exchange of information on the fulfillment of subordinate structures' duties);
- •Unified targets.

The basic structural unit of the Main Administration of Health and pharmaceuticals in Altai Krai is a Regional center of medical prophylaxis. It provides analysis and synthesis of information on the organization of vaccination and subsequent management decisions under this section.

Krai's administrative Institutions are estimated by immunization coverage of contingent (at least 96%) and by financial support of the municipal program " Vaccinal prevention ". A peculiarity of this component is that it is a part of evaluating criteria of any Krai's administrative territory. It's used as an indicator of socio-economic development and submitted to the Main Department of Economy and Investment in Altai Krai.



Within the framework of ACS Immunization the ACS-Warehouse system was created. It ensures control and, if necessary, correction of receiving\expenditure stocktaking of MIBP.

The adopted management system of epidemic processes of vaccine-preventable diseases, based on an integrated approach and a uniform system of immunization, has demonstrated high efficiency at the regional level. As the result of the introduction of this system in the Altai Kai were achieved the priority parameters for provision of the population with medical immunobiological drugs, vaccination certificates. Vaccination coverage of the decreed age is over 95% of number of subjected to vaccination. The number of seronegative during scheduled examination of various population groups does not exceed 7% for measles and 4% for rubella, as a result, the criteria for elimination of measles was met, and also morbidity of rubella and hepatitis B were significantly reduced in the region.

Bibliography:

10. Litkina I.N. Creation of unified system of control over epidemic processes of measles, rubella and epidemic parotiditis: abstract of a thesis. Doctor of Medicine / I. N. Litkina. [Web]. – 2011. – Access : [http:// vak.ed.gov.ru](http://vak.ed.gov.ru).
11. Cherkasskiy B.L. Modern views of control system of epidemiological process / B. L. Cherkasskiy, E. G. Simonova // Epidemiology and infectious diseases. – 2006. – № 5. – P. 4-7.
12. Cherkasskiy B.L. Global epidemiology / B. L. Cherkasskiy. – M.: Practical medicine, 2008. – 447 p.

**Сведения об авторах**

Safyanova Tatyana Viktorovna – Senior Lecturer, Department of Epidemiology, PhD, HEE "Altai State Medical University" Health Ministry of Russia, Barnaul; applicant for the degree of Doctor of Medicine

656008, Altai Kai, Barnaul

Partizanskaya street , b. 146, apt. 37,

tel.: 8(3852) 68-96-70; 68-08-49,

mob.: 8 903-947-38-42,

E-mail: tysya_095@mail.ru

Lukyanenko Natalia Valentinovna – Head of the Department of Epidemiology, M.D., HEE "Altai State Medical University" Health Ministry of Russia, Barnaul;

656024, Altai Kai, Barnaul

Lyapidevskogo street, 1

Center of Medical Prevention, State Health Care Institution

«Regional clinic hospital»,

tel.: 8(3852)68-98-07, 68-96-70;

mob.: 89628071414,

E-mail: infec@yandex.ru



**Control model of epidemic processes of hepatitis B, rubella and measles
in Altai Krai**

T.V. Safyanova, N.V. Lukyanenko

Higher educational establishment "Altai State Medical University"

Public health and social development ministry

Barnaul

Summary. Epidemiological surveillance over any infection provides for functioning of key subsystems: informational, diagnostic and management decision-making.

Efficiency of surveillance can be ensured only with full-fledged maintenance and realization of these subsystems.

Standard system of epidemiological surveillance in Altai krai is added with multilevel component, defined by regional and municipal levels and object sub-levels. On basis of the multi-level system of epidemiological surveillance over vaccine-preventable diseases, following adapted components were developed:

- "BARS" Web-monitoring of public health;
- adoption of automated system of immunization control (ACS immunization) on every level and sublevel of the system;
- development and adoption of the monitoring system of German measles in pregnant women.

Within the framework of epidemiological surveillance a system of organizing vaccination of infectious diseases (regional model) is created in Altai Krai.

Key words: hepatitis B, rubella, measles, german measles, epidemic process, control sy