COUNTRY REPORT

PUBLIC HEALTH SURVEILLANCE IN LATVIA

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This paper presents public health surveillance data in Latvia. This is the first time these data are being published since the restoration of the Second Republic. The paper describes the state-of-the-art monitoring system of food and water safety. It also contains epidemiological data for Latvia. The conclusion brings a success story about the implementation of the monitoring programme in the city of Daugavpils.

Key words: epidemiological data, food, monitoring, water control

At the moment, Latvia has no systematic surveillance and monitoring programme for public health, food safety, and water quality assessment. The main reason lies in allocation of inadequate financial resources. Furthermore, continuous reorganisation of government administration responsible for food safety monitoring impedes the solution. It is expected that the following 5 years will see improvement in budget allocations and implementation of proper monitoring programme designs.

QUALITY OF FOOD

The quality of food has a significant influence on public health (1). Low quality food may cause acute contagious diseases. The main food infections are salmonella, shigellosis, and acute intestinal infections such as hepatitis A, typhoid, leptospirosis, yersiniosis, trichinosis, diphyillobothriosis, and botulism.

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The incidence of acute intestinal diseases has grown for the past few years. In 1999, a large number of group morbidity with acute intestinal diseases, not characteristic of recent years, was registered in families and in public catering. The spread of contagious diseases was stimulated by the failure to comply with hygienic standards. Due to lack of information, people often purchase food products of doubtful quality, even for children. The exact information on food poisoning incidents is not available at the moment, as many people choose to treat themselves instead of seeking medical help. Thus many cases are not registered and sometimes people wait with help until it is difficult to establish the cause of the disease (Table1).

Table 1 *Epidemiological situation in Latvia (1994–1998)*

Name of disease	No. of cases	No. of cases per 100,000 people	Average no. of cases during 1994–1998	Comparison(%)	
				Average no. of cases in the last	No. of cases in 1998 5 years
Hepatitis	1652	67.72	2785	-41	-32
Acute A hepatitis	702	28.78	2168	-68	-56
Acute B hepatitis	453	18.57	432	+5	+14
Acute C hepatitis	247	10.13	98	+152	+47
Typhoid	3	0.12	2	+50	–
Salmonella	915	37.51	947	-3	-17
Shigelosis	439	18.00	657	-35	+35
Botulism	6	0.25	3	+100	+100
Diseases of known aetiology	1455	59.64	608	+139	+40
Diseases of unknown aetiology	1519	62.27	1319	+15	+31
Leptospirosis	43	1.76	54	-20	+34
Yersiniosis	96	3.94	168	-43	-6

Salmonella morbidity tends to decline but it is still very high – 915 cases in 1999. The highest salmonella morbidity level in 1999 was registered in the Aluksne district and the lowest morbidity level in the Saldus district (2.6–133.2 cases per 100,000 inhabitants).

Unfortunately, non-contagious diseases that might be caused by food of poor quality (such as dioxin-caused diseases, allergies, and ontological diseases) are not analysed in Latvia.

Public health is strongly influenced by products, processes, and services used by the population. They must be as safe and as harmless to health as possible. Therefore the European Union and Latvia have drafted safety requirements for products, processes, and services. The defining of requirements is one part of the problem while ensuring compliance is another. The system of control, supervision, and compliance assessment established in the country is intended for this purpose. It is prescribed by

Regulations on respective institutions, the Law On Supervision over the Circulation of Food, the Law On Consumer Protection, the Law On Compliance Assessment, and the regulations of the Cabinet of Ministers developed on its basis. In the Republic of Latvia, compliance assessment is performed by accredited testing and calibrating laboratories and certification and inspection agencies which bear full responsibility for their work.

In 1999 several scandals related to the quality of food proved that the food control system in Latvia needed reinforcement. The dioxin scandal revealed the strengths and weaknesses of our food control system. All agencies controlling food (the State Sanitary Inspectorate, the Sanitary Border Inspectorate, and the State Veterinary Service) reacted efficiently to information received and acted in a co-ordinated manner. However, it turned out that no maximum permissible dioxin limit in food had been established at the national level (nor had it been established at the international level); that there was no laboratory capacity for establishing the limit; and that the exchange of information among food control and monitoring agencies needed improvement. Thus the Latvia Food Centre was entrusted with the task of drafting the »Action Programme for Ensuring Food Safety in Emergency Cases« that would institute a procedure for providing information and mechanisms for operation.

The Regulations On Food Contamination of the Cabinet of Ministers (those have incorporated the European Union Directives 315193/EEC; 194 /97/EEC), were approved in 1999, establishing the maximum permissible contamination limits for food products and raw food, including the permissible dioxin levels.

The incident with contaminated Coca-Cola soft drinks found in the European trade networks highlighted another weak link in food control – what to do with food unfit for distribution. At present there are no uniform national regulations on how and when to destroy or put those food products to other use.

According to the media, the population of Latvia is very interested in consuming good quality and safe food and much attention is paid to the operation of the food control system. To evaluate the actual situation, it would be necessary to introduce a system of indicators that would show how well the food quality assurance system operates in the country and reveal its weaknesses. The information exchange network among institutions must be improved within the food control system. More effort should be invested in informing the public about matters and processes essential for the society and preventing ungrounded rumours. It is necessary to strengthen the material and technical basis of control agencies to ensure their speedy reaction.

QUALITY OF WATER AND THE QUALITY OF POTABLE WATER

According to Regulations of the Cabinet of Ministers No. 63 "Requirements for Compulsory Safety of Potable Water" (23 February 1999), as of 1999 water quality indicators were to comply with the European Union Directives. The National Environment Health Centre for monitoring potable water quality developed the national plan which was implemented in 1999 through monitoring of 14,300 water samples taken from regional, municipal, and household water supplies, as well as from water supply vehicles.

The samples were assessed according to chemical and microbiological indicators. Of 13,500 samples tested according to microbiological indicators, 17.6% did not comply with the requirements for potable water safety. Of 12,300 samples tested according to chemical indicators (iron, organoleptics - qualities of taste and of color), 52.4% did not comply with the requirements for potable water safety. These results are alarming. A considerable part of potable water in Latvia does not comply with requirements due to high iron content. It must be pointed out that iron contamination does not pose a serious threat to health, but rather the question of water quality. With that respect, the Environmental Health Action Plan identified the following priorities as early as 1997: quality improvement of potable water, renewal of pipelines in the water supply system, and the installation of equipment for removing iron.

Within the framework of the programme for assessing potable water, specialists at health centres inspected 30 wells in each administrative territory of Latvia (a total of 2784 wells). Samples were analysed according to microbiological, organoleptic, and chemical indicators. The analysis showed that the concentration of microbiological contaminants in those wells was comparatively high. In locations where high microbiological contamination in wells and parts of the water supply pipelines has been determined, water should be boiled before use to prevent the risk to human health. The chemical content of potable water is influenced by the geological structure of the area. In the water from wells in Latvia, the average concentration of ammonia ions, nitrates and nitrites is lower than the permissible level for potable water. However, the average iron content (0.51 mg/l) is above the permissible level for potable water. The main problems are the contamination of shallow wells with nitrogen compounds from ground water or underground water as a result of improper management or disregard of protective zones around the wells.

Quality of bathing waters

During the first quarter of 1999, specialists of the National Environment Health Centre drafted and approved the "Procedure for Monitoring Bathing Places" that introduced uniform documentation and established the procedure for choosing the place and time for taking samples. It stipulates that samples are to be taken only in official or potential bathing places and that the laboratory analyses are to be performed according to methodologies recognized by the European Union. This would allow comparison of data for this country with the data of foreign countries.

During the bathing season of 1999, the bathing water quality studies were conducted in 162 inland bathing sites in Latvia with the purpose to establish the degree of compliance with the requirements for bathing places. According to chemical indicators, 28.5% of the samples did not meet the requirements. The cause of non-compliance was mostly the excessive content of active ingredients and oil products on the surface, colour, the low oxygen saturation level in separate bodies of water, and mechanical admixtures. Car-washing in the close vicinity of recreation areas may have caused the excessive content of active ingredients and oil products on the surface. The high oxygen consumption points to contamination by organic substances which stimulate the overgrowth of water bodies and the appearance of micro-organisms that result in the deterioration of colour, smell, taste, and overall appearance of water. Further, 18.2% of samples did not comply with the microbiological requirements. However, no pathogenic microflora was found.

During the bathing season 1999, 1018 samples of bathing water were taken from 36 fixed sampling sites on the Latvian coast in the Gulf of Riga. The chemical content was established for 500 samples of which 12 (2.4%) did not meet the standard. The microbiological testing involved 518 samples of which 54 (10.6%) failed to meet the standard (Table 2).

Table 2 *Water quality in bathing places in Latvia (samples not meeting the standards are expressed in percentages)*

Inland bathing places	1997	1998	1999
Chemical indicators	40.0	25.7	28.5
Microbiological indicators	35.5	13.9	18.2

In comparison with 1998, the quality of water has not undergone any substantial change. It must be emphasised that pathogenic microflora was found in none of the samples collected throughout the bathing season (1 June – 1 September).

An example of food and water control

The best situation from both organizational and operational points of view is found in the city of Daugavpils. The city Centre for Public Health is responsible for monitoring and analysis operations in the field of public health. The Laboratory for Hygienic Research provides a wide spectrum of water and food quality analyses and implements an ever growing programme for environmental risk assessment (Table 3). Food safety monitoring includes samples tests for radiological safety, heavy metal contamination, and the presence of pesticides.

Table 3 *Analytical research programme in Daugavpils (number of samples analysed by the Hygienic Research Laboratory)*

	1997	1998	1999
Drinking water samples	6,751	8,517	10,662
Food safety samples	2,882	3,039	2,849
Water quality analyses	6,523	8,258	9,247
Physical conditions	1,015	2,577	2,180
Air in the working zone	1,756	1,704	5,104
Food samples	2,147	2,165	723
Radiological analysis	507	615	711
Heavy metals	228	259	1,415
Pesticides	409	757	1,202
Total	20,318	27,891	41,093

As an example, Table 4 presents data on nitrate contamination of potatoes in Latvia. Compared to the results from Belgium (2), the highest acceptable concentrations in Latvia are taken as normal (they vary from 140 to 166 mg/kg). The nitrates content in potatoes in Latvia changes from year to year (44.8–74.4mg/kg). Drinking water samples are taken for routine analysis and are tested for heavy metals.

Table 4 *Average nitrate contamination in potatoes, mg/kg (data by Daugavpils Hygienic Laboratory)*

1995	1996	1997	1998	1999
54.3	44.8	47.4	74.4	52.0

The reorganisation of national administration and the partial delegation of food safety analysis to the State Veterinary Service explain the drop in that activity. The monitoring is mostly financed through the national budget. Only a minor part is covered by private persons.

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Sažetak

PRAĆENJE STANJA ZDRAVLJA LJUDI U LATVIJI

Članak analizira podatke o javnom zdravstvu u Latviji. Ovo je prva objava takovih rezultata od ponovnoga uspostavljanja Druge Republike. Članak predstavlja najnoviji sustav praćenja sigurnosti hrane i vode i epidemiološke podatke o Latviji. Osim toga, opisana je i uspješna primjena monitorinškog programa za grad Daugavpils.

Ključne riječi:
epidemiološki rezultati, kontrola hrane, kontrola voda, monitoring

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