Risks

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Epidemic



Threat assessment: The introduction of an infectious disease with high potential for spread (especially droplet- or airborne viral infections) from abroad and its extensive dissemination in Estonia is very likely. Epidemic spread of vaccine-preventable diseases is unlikely, given the level of vaccination coverage in the population. Compared with the previous assessment, the probability of a new pandemic emerging and spreading has increased from likely to very likely, considering the high mutation capacity of pandemic-potential viruses, their rapid spread, increasingly effective adaptation mechanisms for transmission to humans, and the frequent absence or weakness of population-level immunity. At the same time, the probability of epidemic spread of vaccine-preventable diseases has decreased from unlikely to very unlikely.

Epidemics may be caused by pathogens of various origins, particularly viruses or bacteria transmitted through contaminated air, food, water, droplets, airborne particles, or direct contact. Diseases with very high or high epidemic potential include droplet- and airborne-transmitted infections such as measles, COVID-19 and other coronavirus infections such as MERS and SARS, influenza, as well as contact-spread haemorrhagic viral fevers such as Ebola and Marburg, and also hepatitis A, Escherichia coli infections, and others. An epidemic can develop very rapidly in today's conditions of intensive international travel, particularly when a new virus emerges. The spread of a virus can become extensive quickly, since in the initial phase its nature is often unknown – specific diagnostic tools, effective treatments, and suitable containment measures may be lacking. As a result, it is difficult to detect and control cases in time, creating favourable conditions for rapid viral transmission before intervention measures can be applied.

The probability of a new pathogen emerging in Estonia is very low. However, the likelihood of a new pathogen – especially a virus – arising is greater in regions with higher population density and more frequent contact between humans and different animal and bird species. The population is vulnerable to the spread of a new pathogen, as there is no prior exposure or immunity.

THREATS

- ✓ Year by year, anti-vaccination attitudes have deepened, with an increasing number of parents refusing to vaccinate their children, thereby raising the risk of outbreaks of vaccine-preventable diseases.

- Vulnerable population groups for several infectious diseases include people with chronic illnesses and weaker immune responses, the elderly, pregnant women, and young children.

- A growing global problem is the ability of pathogens (viruses, bacteria, fungi, protozoa) to become resistant to available treatments. This creates a situation where an infectious disease no longer responds to standard medical therapies, and diseases may emerge whose spread we can no longer control.

- Unfortunately, science cannot precisely predict the timing of viral mutation processes. Annual seasonal spikes in illness confirm that viruses mutate continuously. When viruses undergo complete genetic structural changes, disease may spread epidemically, cause a rapid and simultaneous increase in the need for hospitalisation, and disrupt the provision of vital services.

- Increased international travel may raise the likelihood of importing cases of disease. The manifestations and probability of such risks may also be affected by complex security and economic-political conditions, which could be accompanied by large-scale migration.

- Climate change significantly influences the spread of infectious diseases, as it alters environmental conditions in ways that facilitate the spread of pathogens and their vectors into new areas. Rising temperatures, changes in rainfall patterns, and higher humidity create better conditions for ticks and mosquitoes, enabling them to remain active for longer and extend their habitats further north.

ACTIONS

- Preventing epidemics requires a strong and well-functioning monitoring system. The Health Board monitors and analyses the spread of pathogens, including viruses, and the epidemiological situation both in Estonia and internationally. Preparedness plans have been developed to minimise disease spread.

- The Health Board’s website provides systematic and regularly updated information on infectious diseases, including brief descriptions, prevention, and containment measures.

- In Estonia, 14 infectious diseases are covered by the national immunisation programme.

- Regular campaigns are carried out to influence vaccination behaviour and provide vaccination recommendations, and a dedicated website (vaktsineeri.ee) has been established.

- Estonia has developed vaccination plans to ensure rapid and accessible immunisation for all in the event of possible epidemics or pandemics. The state participates in joint procurement initiatives of the European Union, ensuring fast access to vaccines when necessary. National medicine reserves

- ✓ have also been created to guarantee the availability of essential medicines in crisis situations.

GUIDELINES

Preventing the emergence of an epidemic and coping during one requires the contribution of everyone. It is important to follow national behavioural guidelines and to avoid all contact with others if there is any suspicion of infection.

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