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HEPATITIS B

Strategies for HAV and HBV vaccination in the Czech Republic

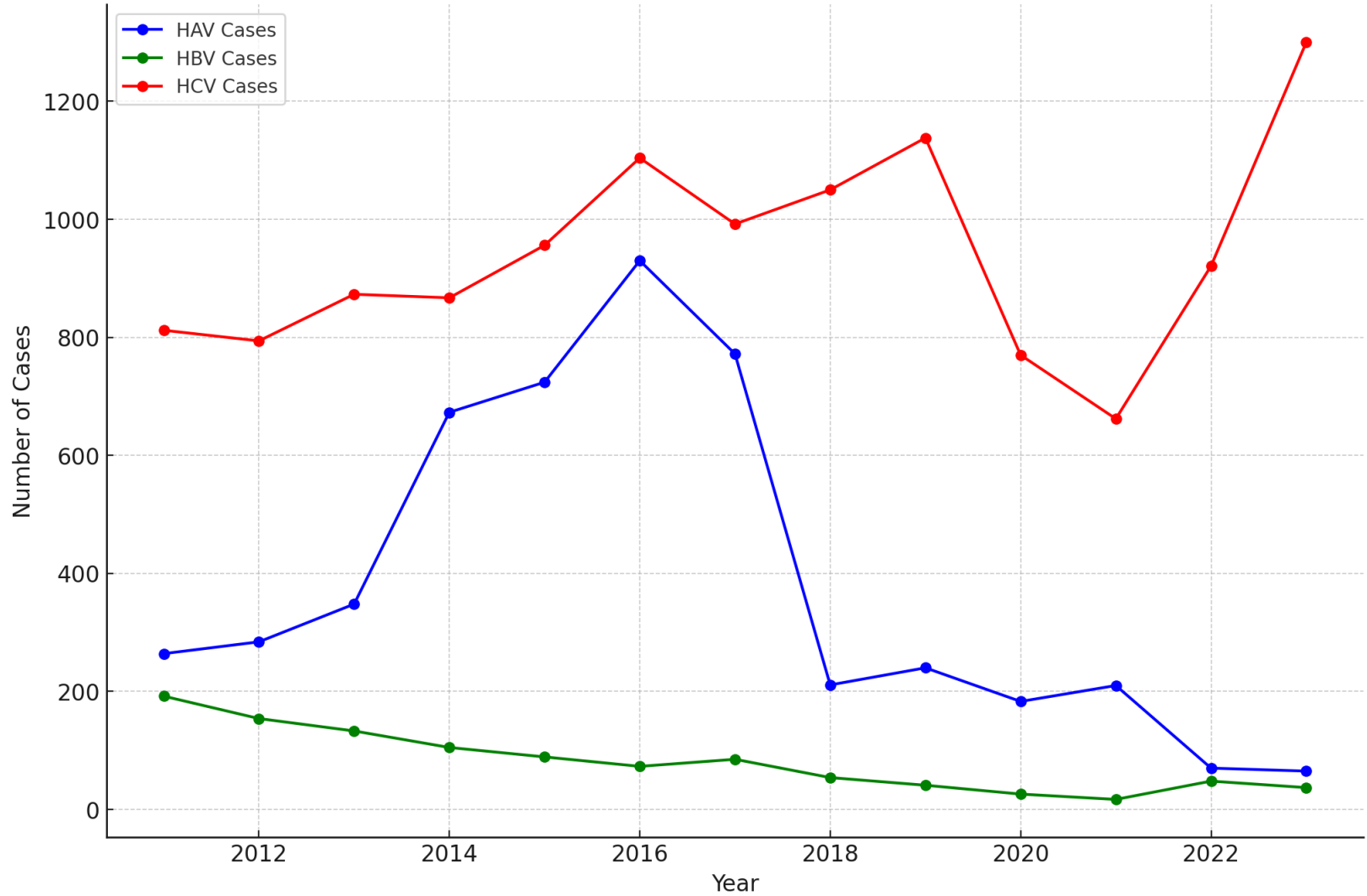
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LEDNE 20

Number of HAV, HBV, and HCV Cases in the Czech Republic (2011-2023)



Source: EPIDAT, ISIN 2024

Viral Hepatitis A



Number of Cases in the Czech Republic (2010-2023)



Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cases	862	264	284	348	673	724	930	772	211	240	183	210	70	65

In the Czech Republic, **hepatitis A (HAV) immunization strategy** is primarily based on **targeted vaccination** rather than universal vaccination. The vaccination is recommended for high-risk groups, travelers, and individuals in specific occupations or circumstances that expose them to the risk of hepatitis A infection. The strategy focuses on preventing the spread of the virus in populations at higher risk of infection or in close contact with potential sources of the virus. Below is a detailed overview of the strategy:



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Lääketieteellinen tutkimuskeskus
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1. Targeted Vaccination for High-Risk Groups

Hepatitis A vaccination is not part of the routine immunization schedule for the general population in the Czech Republic. Instead, it is recommended and provided for specific high-risk groups, including:

- **Travelers to Endemic Areas:** Individuals traveling to countries or regions with a high incidence of hepatitis A, such as parts of Africa, Asia, and South America, are advised to receive the hepatitis A vaccine before traveling.
- **Healthcare Workers and Sanitation Workers:** People working in healthcare, especially those in contact with biological waste, blood, or infectious diseases, and sanitation workers who might be exposed to contaminated materials, are at a higher risk of infection and are recommended to get vaccinated.
- **Food Handlers:** People working in the food industry, particularly in positions involving food preparation and handling, are at risk of contracting or transmitting the hepatitis A virus through contaminated food or poor hygiene practices. Vaccination is recommended for food handlers to prevent outbreaks.
- **Residents and Staff in Institutions for Mentally Disabled People:** People living or working in residential institutions for people with intellectual disabilities are often at a higher risk of exposure due to close contact and challenges in maintaining hygiene, making vaccination essential.
- **Men Who Have Sex with Men (MSM):** This group is considered to be at higher risk of hepatitis A infection due to certain sexual practices that may increase exposure to the virus. Vaccination is recommended to reduce the risk of infection.
- **Intravenous Drug Users:** Individuals who inject drugs are at an increased risk of contracting hepatitis A due to poor sanitation or contaminated environments, particularly in shared living spaces. Vaccination is recommended as part of harm reduction strategies.
- **Household Contacts of Infected Persons:** Individuals living in close contact with a person diagnosed with hepatitis A are advised to get vaccinated to prevent the spread of the virus within the household.

2. Pre-Exposure Vaccination

• **Hepatitis A Vaccination for Travelers:** The vaccination is particularly recommended for travelers to countries where hepatitis A is endemic. It involves receiving one dose of the vaccine ideally two to four weeks before departure. A second dose is recommended after six to twelve months to ensure long-term protection, which can last up to 20 years or more.

• **Vaccination for Specific Professions:** Certain professions that involve a higher risk of contact with contaminated materials (e.g., healthcare workers, sewage workers) are also advised to receive the hepatitis A vaccine as a precautionary measure.

3. Post-Exposure Prophylaxis

• **Vaccination for Close Contacts of Infected Persons:** When an individual is diagnosed with hepatitis A, vaccination is recommended for close household members, roommates, or other individuals who have had close contact with the infected person. This can prevent secondary transmission of the virus.

• **Use of Immunoglobulin:** practically not used any more.

HEPATITIS B

4. Combined Hepatitis A and B Vaccine

The Czech Republic also offers a **combined hepatitis A and B vaccine** for individuals at risk of both viruses. This vaccine is commonly used for travelers or individuals who are exposed to both HAV and HBV due to their occupation or lifestyle. It provides protection against both diseases through a series of three doses.

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5. Public Health Efforts and Outbreak Response

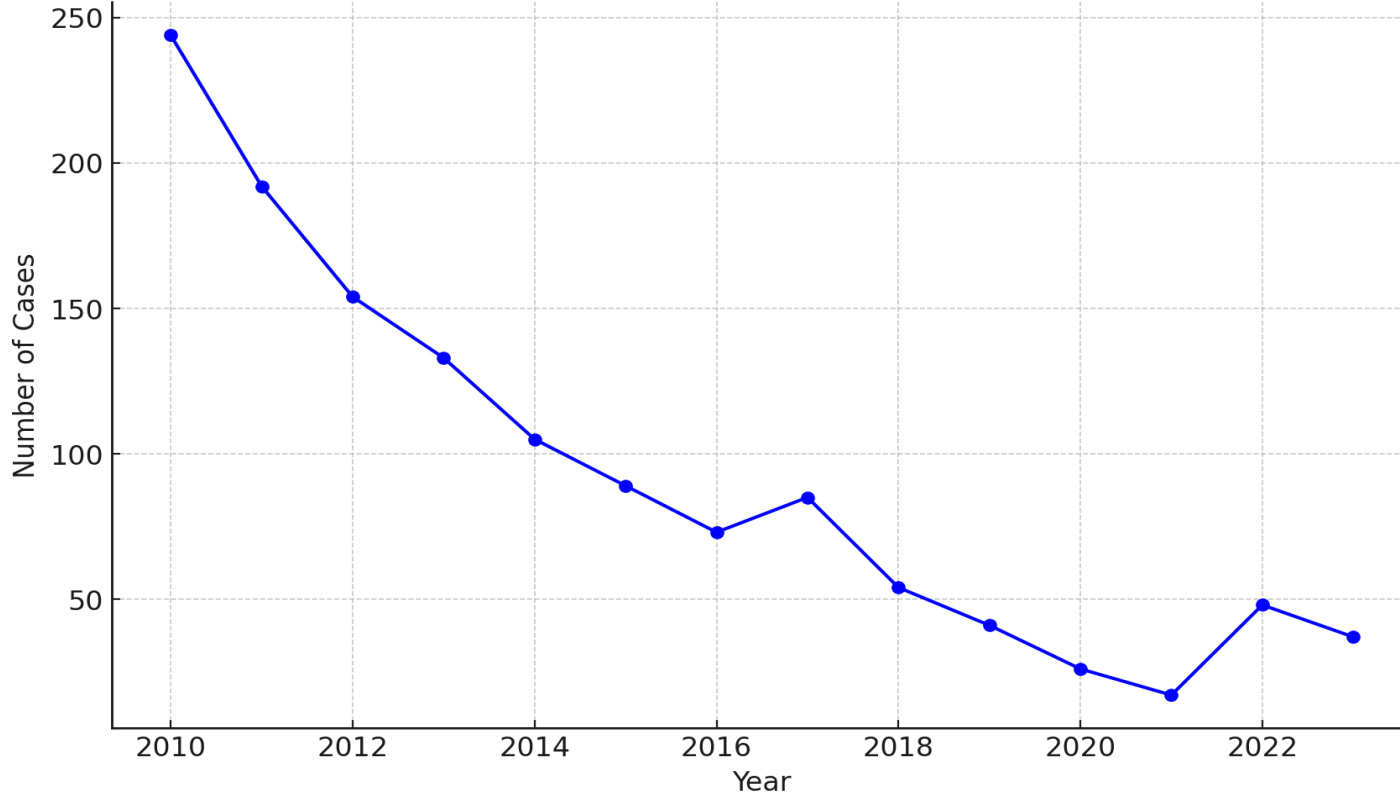
- **Outbreak Control:** In the case of hepatitis A outbreaks, public health authorities in the Czech Republic may implement additional vaccination efforts, particularly in settings like schools, kindergartens, or community centers, where there is a risk of rapid spread. Vaccination campaigns may target affected populations or specific regions to control the outbreak.

- **Hygiene and Sanitation Campaigns:** Alongside vaccination, public health campaigns focus on promoting good hygiene and sanitation practices, such as regular handwashing, proper food handling, and the consumption of safe drinking water. These campaigns help reduce the risk of transmission and complement vaccination efforts.

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Viral Hepatitis B

Incidence of Acute Viral Hepatitis B in the Czech Republic (2010-2023)



Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cases	244	192	154	133	105	89	73	85	54	41	26	17	48	37

Source: EPIDAT, ISIN 2024

In the Czech Republic, **preventive strategies** against **viral hepatitis B (HBV)** focus on **vaccination, public awareness, and harm reduction** to control and reduce the spread of the infection.

Main preventive strategies:

1. Universal Vaccination Program

- **Mandatory Vaccination for Newborns and Children:** Since 2001, hepatitis B vaccination has been included in the national vaccination program. All newborns are vaccinated against hepatitis B shortly after birth. The vaccination is part of a series of routine immunizations in early childhood, ensuring that a large portion of the population is immune to HBV.
- **School-Age Vaccination:** In the early years of the program, children who had not been vaccinated at birth were also vaccinated in school to ensure broader coverage.

2. Targeted Vaccination for High-Risk Groups

- **Healthcare Workers:** Medical professionals and others who work in environments where they may come into contact with blood or bodily fluids (e.g., hospitals, dental practices) are required to be vaccinated against hepatitis B.
- **Intravenous Drug Users:** People who inject drugs are at a higher risk of contracting HBV due to the sharing of needles. Special programs are in place to vaccinate drug users, often as part of broader harm reduction strategies.
- **People with Chronic Diseases:** Patients undergoing **hemodialysis** or those with certain chronic illnesses, such as **HIV/AIDS**, are prioritized for hepatitis B vaccination, as they are more vulnerable to infections.
- **Pregnant Women:** Screening for hepatitis B is routinely offered to pregnant women during prenatal care. If a pregnant woman is found to be infected, steps are taken to prevent transmission to the newborn (e.g., administration of **hepatitis B immunoglobulin (HBIG)** and vaccination of the newborn at birth).

3. Public Awareness Campaigns

• **Education on Transmission and Prevention:** Public health authorities run awareness campaigns to educate the general public about how hepatitis B is transmitted, particularly through blood, sexual contact, and from mother to child during childbirth. These campaigns emphasize the importance of vaccination and safe practices.

• **Awareness Among High-Risk Populations:** Special attention is given to high-risk groups, such as intravenous drug users, men who have sex with men (MSM), and people with multiple sexual partners, to raise awareness about the availability of vaccinations and preventive measures.

4. Harm Reduction Programs

•**Needle Exchange Programs:** Needle exchange programs are available for people who inject drugs. These programs provide sterile needles and syringes to prevent the sharing of contaminated equipment, a major route of hepatitis B transmission among drug users.

•**Opioid Substitution Therapy (OST):** Opioid substitution therapy, such as **methadone** programs, is offered to people addicted to opioids. These programs help reduce drug use, limit the sharing of needles, and encourage participation in vaccination and treatment programs.



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5. Screening and Early Detection

- **Routine Screening for High-Risk Groups:** High-risk populations, including healthcare workers, pregnant women, and individuals with multiple sexual partners, are routinely screened for hepatitis B. Early detection can prevent the spread of the virus to others and ensure timely access to care.

- **Prenatal Screening:** Pregnant women are routinely tested for hepatitis B as part of standard prenatal care. If a pregnant woman is found to be positive for HBV, measures such as administering HBIG and vaccinating the newborn are implemented to prevent mother-to-child transmission.

6. Prevention of Mother-to-Child Transmission

•**Screening of Pregnant Women:** As part of prenatal care, pregnant women are screened for hepatitis B. If a woman is found to be HBV-positive, steps are taken to prevent transmission to the child.

•**Immunoprophylaxis at Birth:** Newborns of HBV-infected mothers receive hepatitis B immunoglobulin (HBIG) and the first dose of the hepatitis B vaccine within 12 hours of birth. This dual approach helps prevent perinatal transmission of the virus.

•**Follow-Up Vaccination:** The newborn receives additional doses of the hepatitis B vaccine as part of the standard vaccination schedule, ensuring long-term immunity.

7. Blood and Organ Donation Screening

•**Screening of Donated Blood and Organs:** All blood and organ donations are routinely screened for hepatitis B to prevent the transmission of the virus through transfusions or transplants. This has been a standard practice in the Czech Republic for many years, ensuring the safety of the blood supply.

8. Infection Control Measures in Healthcare Settings

•**Strict Sterilization Protocols:** Hospitals, clinics, and dental practices adhere to strict sterilization protocols to prevent the spread of bloodborne pathogens like HBV. Medical equipment, particularly needles, syringes, and surgical instruments, are either disposable or thoroughly sterilized between uses.

•**Personal Protective Equipment (PPE):** Healthcare workers are trained in using personal protective equipment, such as gloves and masks, to avoid exposure to blood and body fluids that may carry the virus.



9. National and International Collaboration

• **National Action Plans:** The Czech Republic aligns with international guidelines and works toward the **WHO's** goal of eliminating viral hepatitis as a public health threat by 2030. The national public health authorities, along with global health organizations, are working to enhance awareness, screening, and vaccination efforts.

• **Surveillance Systems:** A robust surveillance system tracks new cases of hepatitis B, helping public health authorities monitor trends and adjust prevention efforts accordingly.

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Challenges in Preventive Strategies

• **Reaching High-Risk Populations:** One of the ongoing challenges is ensuring that high-risk populations, such as drug users and marginalized communities, are adequately reached through vaccination and harm reduction programs.

• **Undiagnosed Cases:** Many individuals with hepatitis B may be unaware of their infection, as the disease can be asymptomatic for long periods. Continuous efforts are needed to enhance screening and early detection, especially among high-risk groups.

Czech Immunization Calendar

Age	2 months	4 months	12 months
HepB	Hexa x	Hexa x	Hexa x

Basic vaccination of newborns of HBsAg-positive mothers is carried out with one dose of the hepatitis B vaccine no later than 24 hours after birth. The vaccination of these children continues from the sixth week after birth according to the summary of product characteristics for the hexavalent vaccine.

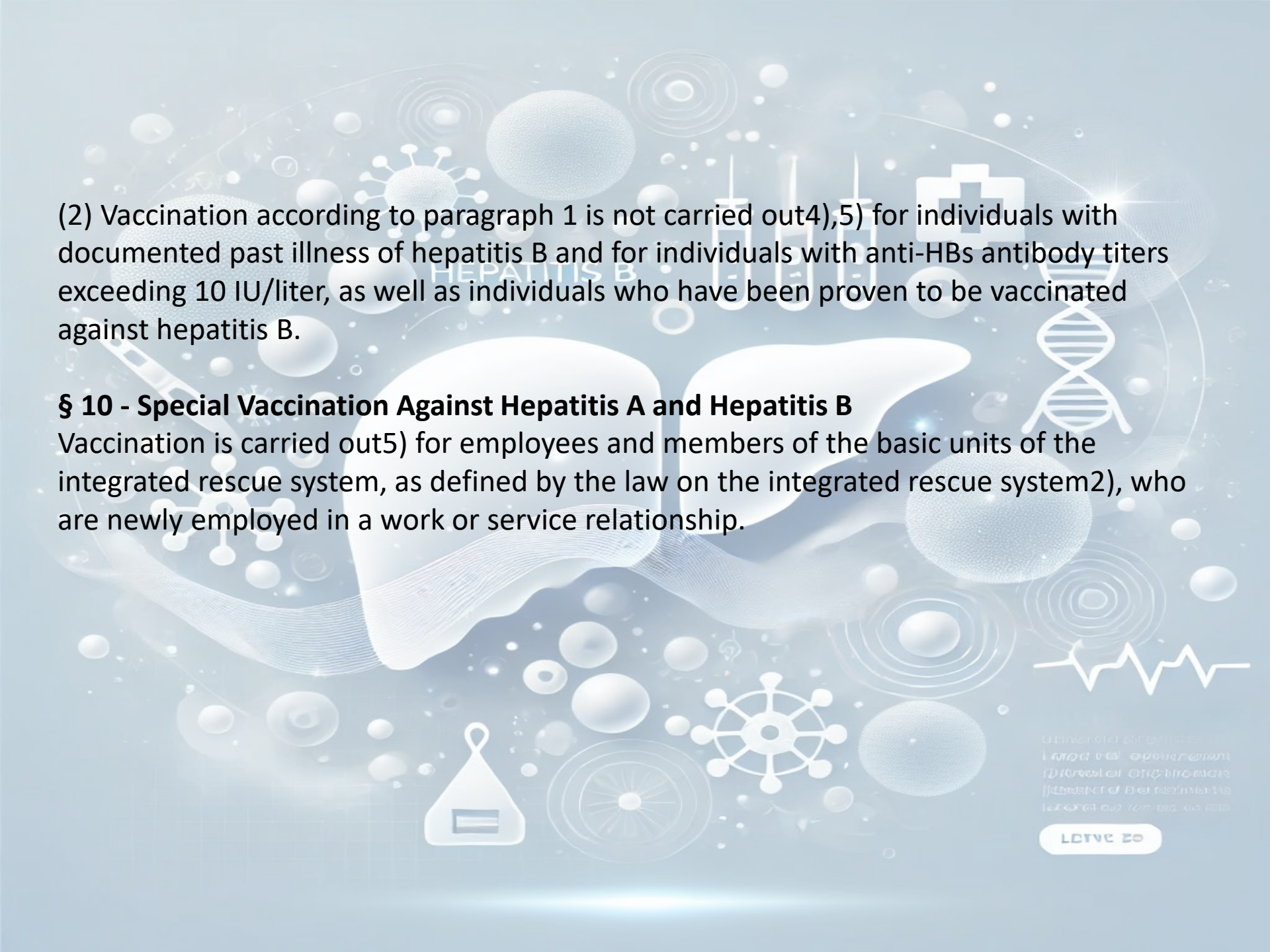
Regular Vaccination Against Hepatitis B

- (1) Vaccination is carried out by administering three doses of the vaccine to individuals who are to be included in regular dialysis programs.
- (2) Vaccination according to paragraph 1 is not carried out if the individual has been vaccinated or after verification of immunity status, the level of anti-HBs antibodies is higher than 10 IU/liter.

Special Vaccination Against Hepatitis B Virus

(1) Vaccination is carried by administering three doses of the vaccine to individuals who:

- a) work at workplaces specified in § 16 paragraph 1, if they are engaged in the **examination and treatment of individuals** for whom they are responsible,
- b) are involved in low-threshold programs for **drug users**,
- c) are in **close and regular contact** with a person suffering from **hepatitis B or an HBsAg carrier**,
- d) are not yet vaccinated and are **newly admitted to homes for persons with disabilities** or homes with special care,
- e) are **exposed to the risk of biological material**,
- f) **study at medical faculties or nursing schools**, and for students at other universities, except medical faculties, who are involved in activities in healthcare facilities for the examination and treatment of patients, as well as students at secondary and higher vocational social schools preparing for activities in social service facilities during the examination and treatment of individuals admitted to these facilities,
- g) provide **field or outpatient social services**,
- h) are newly employed as **members of the Prison Service** of the Czech Republic,
- i) are enrolled in retraining courses and **provide care and treatment** to individuals in social service facilities and healthcare facilities, or
- j) **handle hazardous waste** in healthcare facilities and social service institutions.



(2) Vaccination according to paragraph 1 is not carried out⁴),⁵) for individuals with documented past illness of hepatitis B and for individuals with anti-HBs antibody titers exceeding 10 IU/liter, as well as individuals who have been proven to be vaccinated against hepatitis B.

§ 10 - Special Vaccination Against Hepatitis A and Hepatitis B

Vaccination is carried out⁵) for employees and members of the basic units of the integrated rescue system, as defined by the law on the integrated rescue system²), who are newly employed in a work or service relationship.

Conclusion

The Czech Republic's preventive strategy against hepatitis B is centered on **vaccination, public awareness, and harm reduction programs**. The country has a comprehensive approach to control the spread of the virus, focusing on both the general population (through universal vaccination) and high-risk groups (through targeted interventions). With ongoing efforts in education, screening, and vaccination, the Czech Republic continues to work towards reducing the incidence of hepatitis B and preventing new infections



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