

# **Experience in organizing acute hepatitis sentinel surveillance in Kyrgyz Republic**

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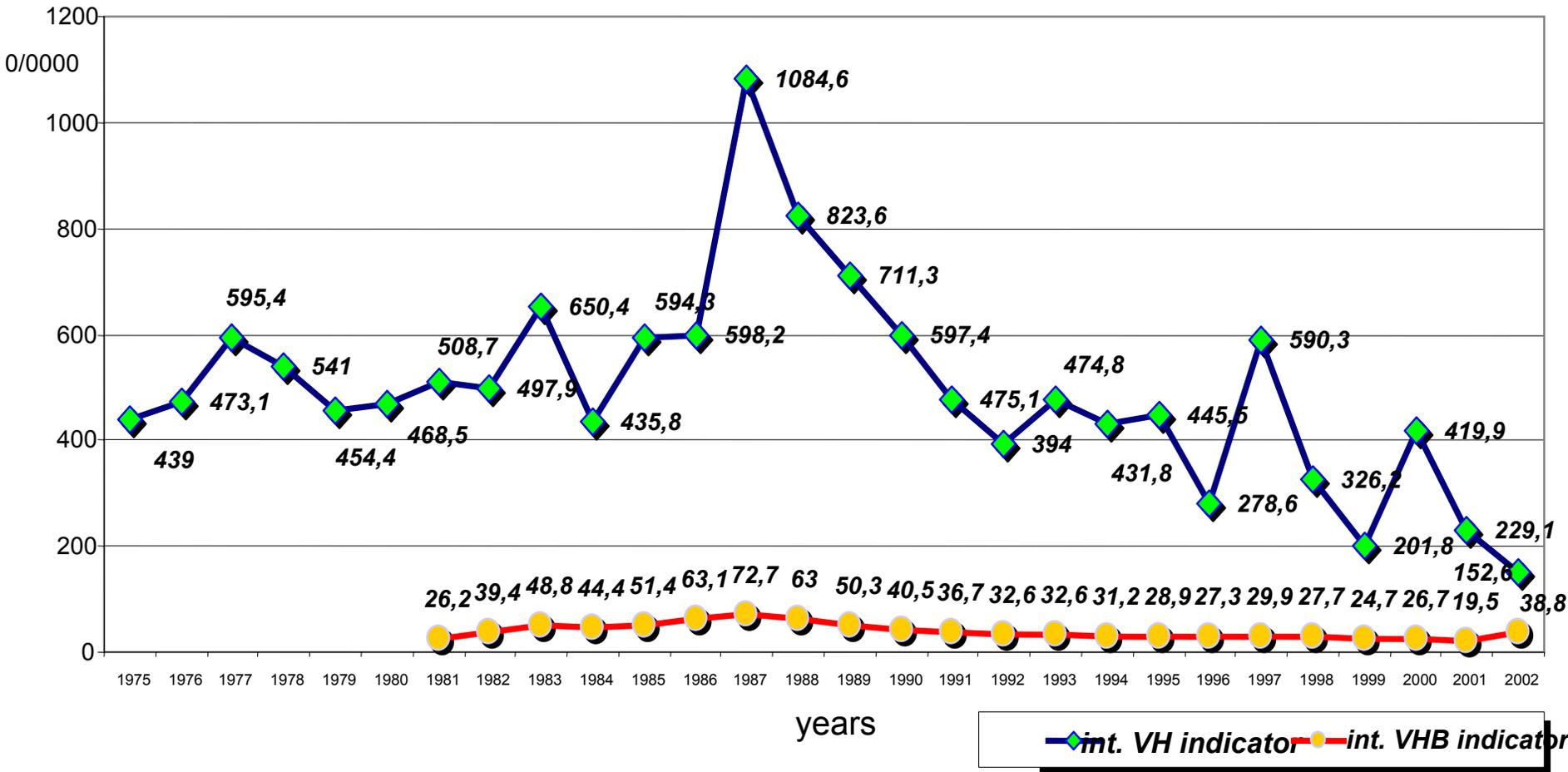
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MoH of Kyrgyz Republic

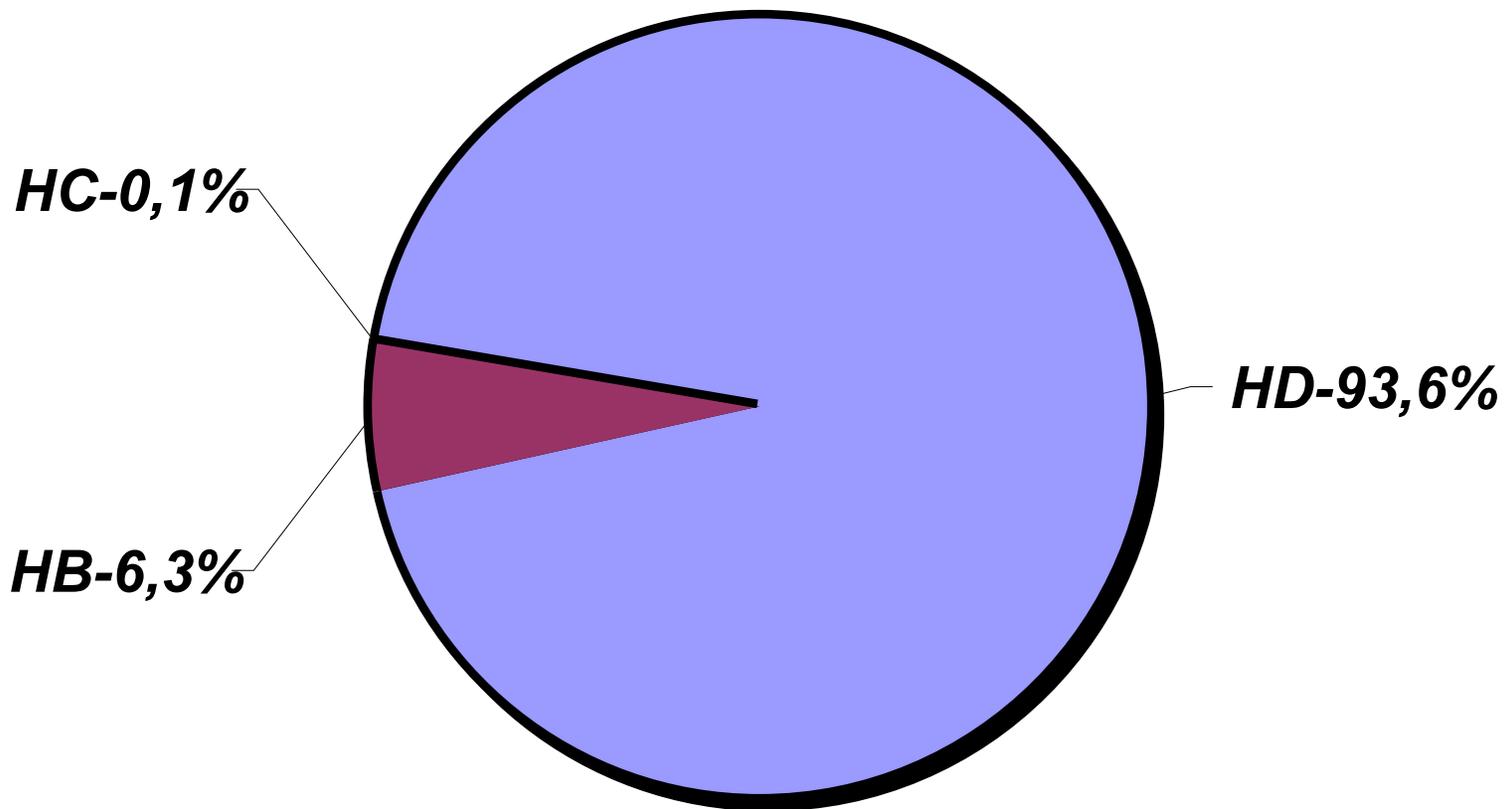
RIC «Profilakticheskaya Medicina»

CDC

# Acute hepatitis incidence, Kyrgyz Republic, 1975-2002



# Etiologic structure of viral Hepatitis based on the results of the routine surveillance in the Kyrgyz Republic



**2000**

Deficiencies of surveillance system for acute viral hepatitis, have used before 2000.

- Insufficiently informative on etiology of acute viral hepatitis in Kyrgyz Republic and factors contributive for infection spread
- Unstandardized

## **GOAL:**

introduction of acute hepatitis sentinel surveillance in Kyrgyzstan with CDC financial and methodological support

## **Objectives:**

- Provide reliable etiological diagnostics of acute viral hepatitis
- Standard collection of information pertaining to risk factors of viral hepatitis
- Perfection of epidemiological analyses with the aim to identify risk groups and factors related to AVH

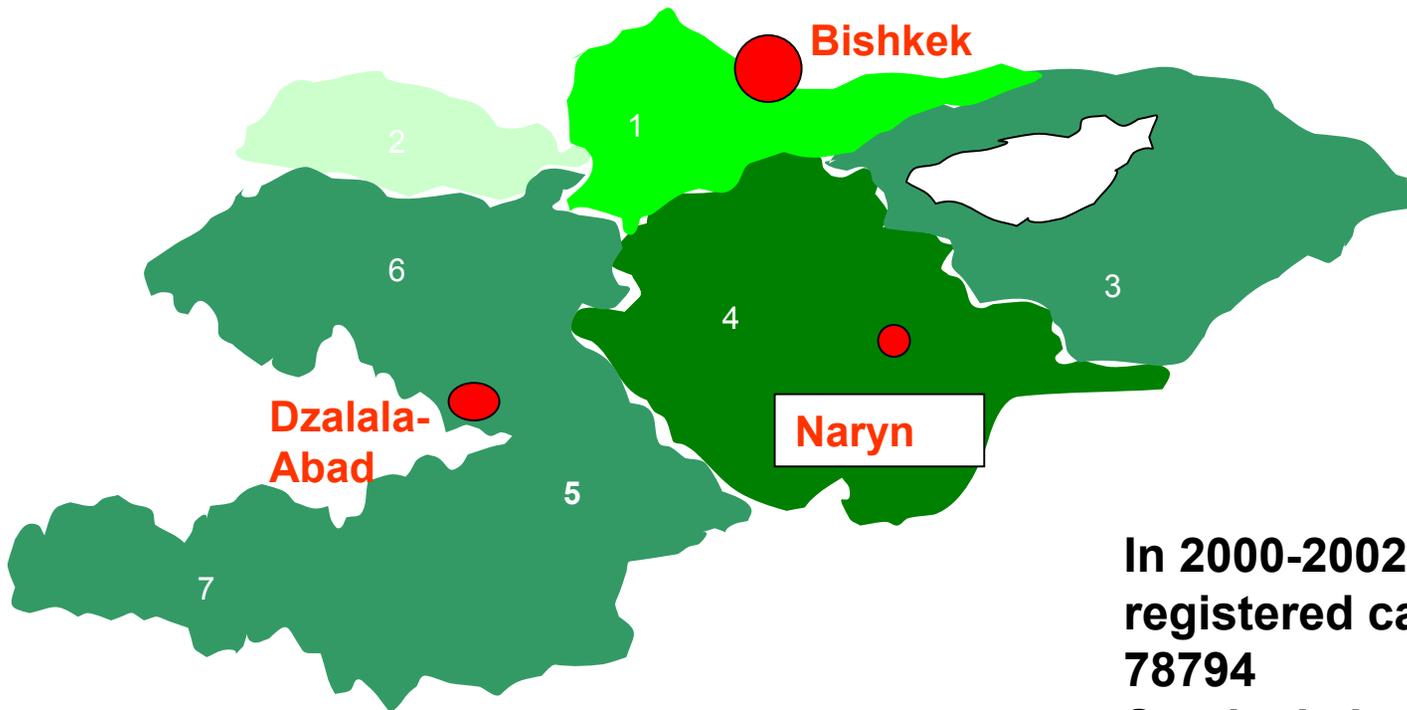
# Materials and methods (1)

- National reference laboratory has been put up, standard conditions to carry out tests and quality control are ensured
  - Essential equipment and supplies have been procured
  - Reference laboratory staff has been trained
  - The entry quality control over test kits used has been introduced
  - Quality control has been introduced
- Essential regulatory documents of the MoH have been devised and enforced; they determine the procedure of carrying out sentinel epidemiological surveillance (Ordinance of the MoH of Kyrgyz Republic of 02.12.1999, №350 «On Setting up Republican Reference Laboratory for Viral Infection Diagnostics and the sites for «sentinel» epidemiological surveillance over viral Hepatitis»)

## Materials and methods (2)

- Sentinel surveillance sites in Bishkek, Naryn and Jalal-Abad have been set up
- Methodology and organizational scheme of sentinel epidemiological surveillance have been devised, including:
  - sampling methodology and sampling size have been determined
  - standard case definition has been introduced
  - algorithm of lab testing has been standardized
  - standard questionnaire form to collect demographic, clinical and epidemiological information has been developed
- The procedure has been established as to delivering the material to the reference laboratory and its external quality control with the samples cross check in CDC reference laboratory, Atlanta
- 4 training courses have been organized for the site personnel (lab technicians, infectiologists, epidemiologists, nurses) on assessment of the system of epidemiological surveillance, quality control and methods of sentinel surveillance

# Acute Hepatitis Sentinel Surveillance, Kyrgyzstan



In 2000-2002 totally  
registered cases of AVH -  
78794  
Sentinel sites  
– 2584 (6,6%)

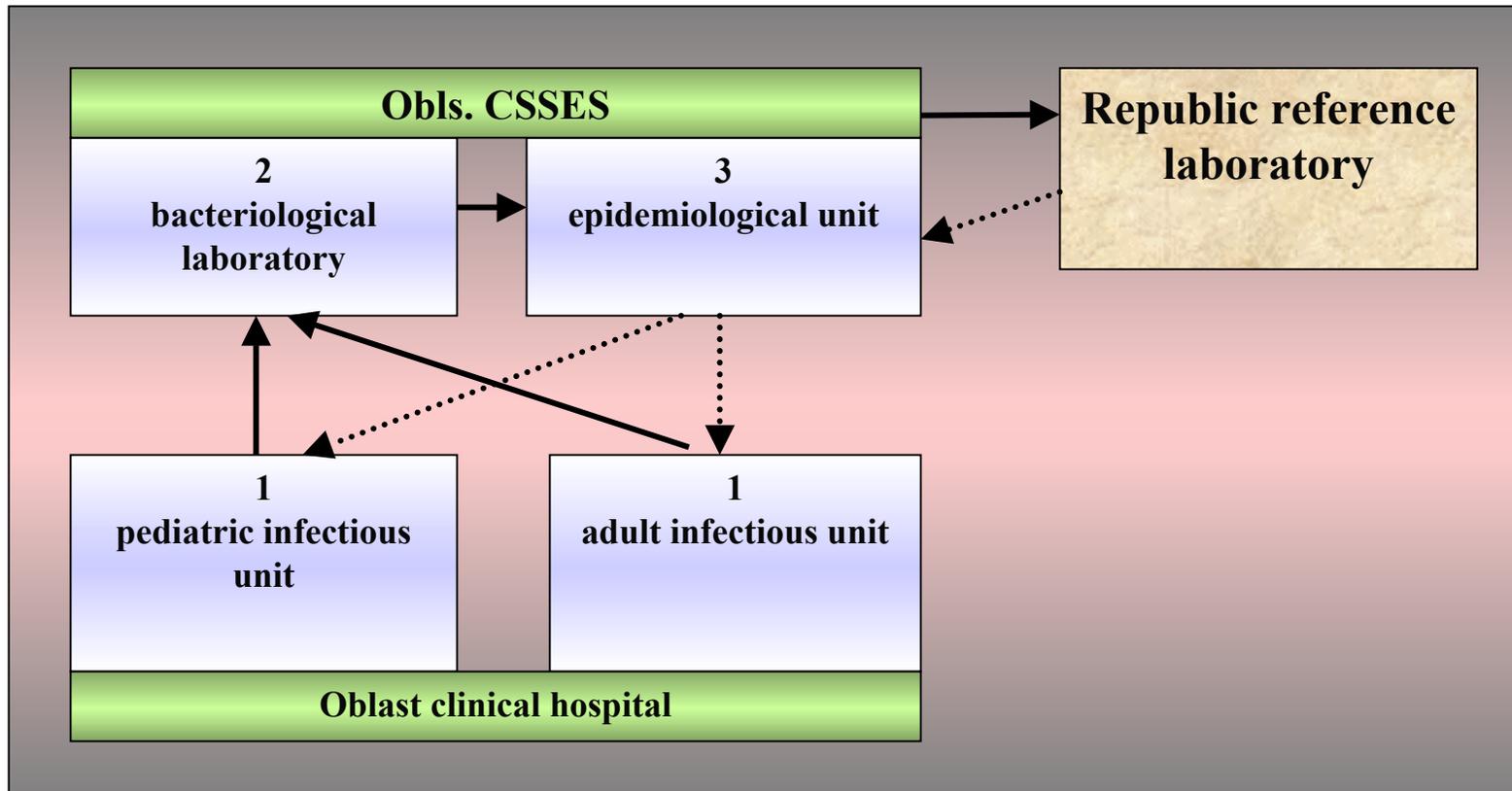
# Terms of reference of sentinel sites

- **Infectious Hospital**
  - **confirmed correspondence to case definition ;**
  - **collection and marking of the blood sample ;**
  - **filling in and marking of the questionnaire ;**
- **REGIONAL CENTER OF STATE SANITARY EPIDEMIOLOGICAL SURVEILLANCE**
  - **blood serum separation in the volume of 2 ml into plastic vials (2 ml) and storing them under -10-15°C until shipment to the Republican reference-laboratory;**
  - **shipment of serum and questionnaires to the Republican reference-laboratory in Bishkek every 2 weeks;**
  - **quality assurance of pre-analytical stage of serum lab testing in order to avoid errors when collecting, storing and transporting serum samples.**

## **Terms of reference of reference laboratory**

- **Reception of serum samples and questionnaires, ensuring serum and questionnaire data quality control;**
- **laboratory testing of each serum sample for the markers of acute HA, HB, HC and HD infection according to standard algorithm;**
- **questionnaire and tests results computer data entry in Epi Info 6 format;**
- **data analysis and report writing ;**
- **sending review results and reports to the DSSES of the MoH of the Republic of Kyrgyzstan and to sentinel surveillance sites in the form of electronic synoptic tables.**

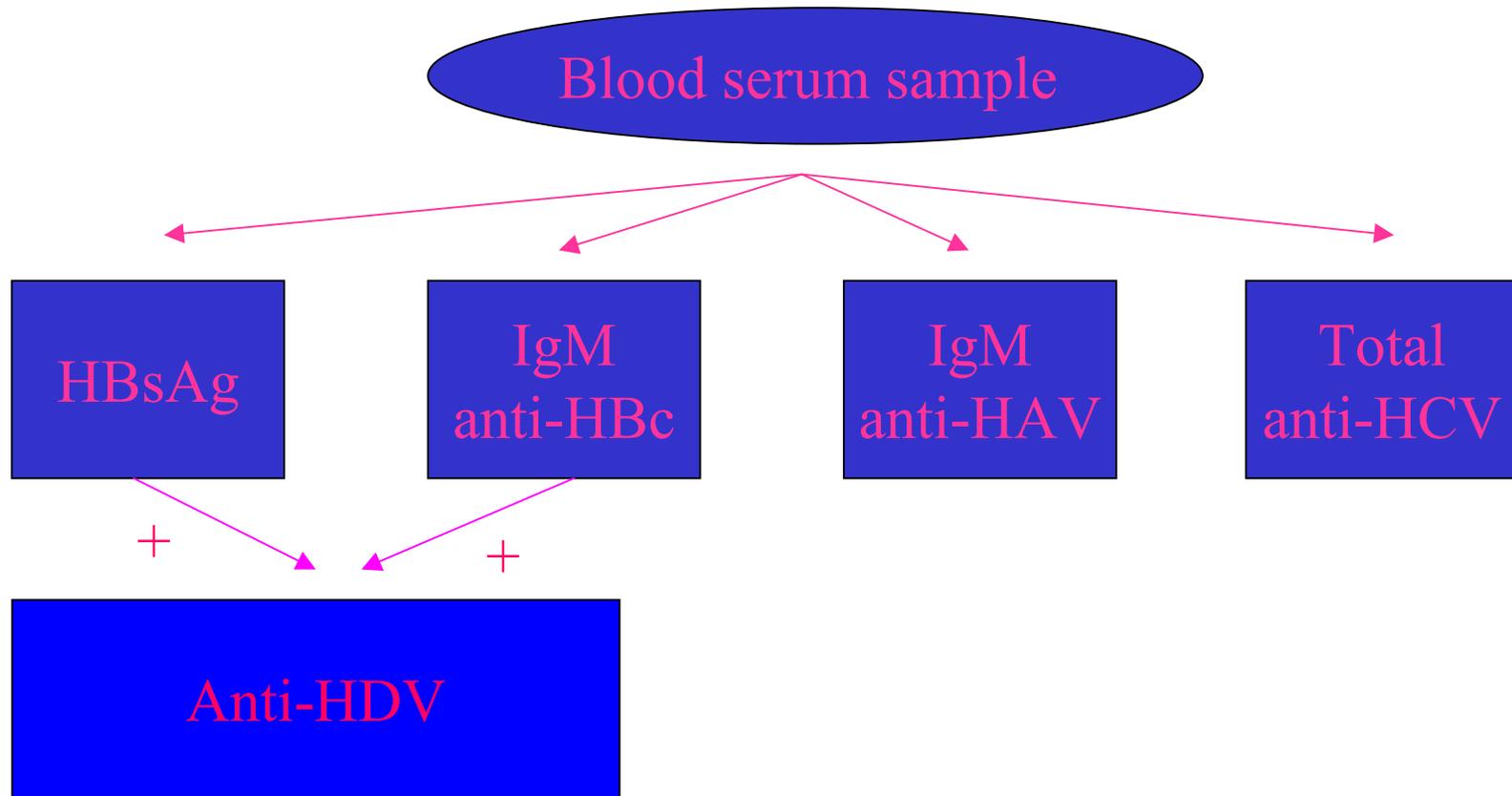
# The scheme of sentinel site functioning



## *Note:*

1. Oblast clinical hospital - clinical diagnostics, blood collection and filling in questionnaires.
2. Obl. CSSES - collection of serum from blood samples, labeling and storing until shipping it to the reference laboratory
3. Obl. CSSES - collection of questionnaires, registration and shipment of serum samples and questionnaires to the Republican reference laboratory; feedback system organization.

# Algorithm of Laboratory Diagnostics of Acute Hepatitis

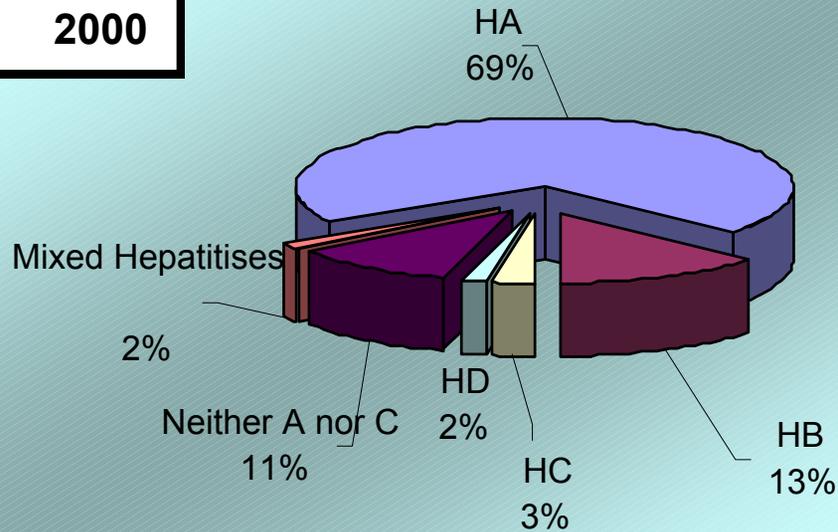


# Acute Viral Hepatitis Case Definition

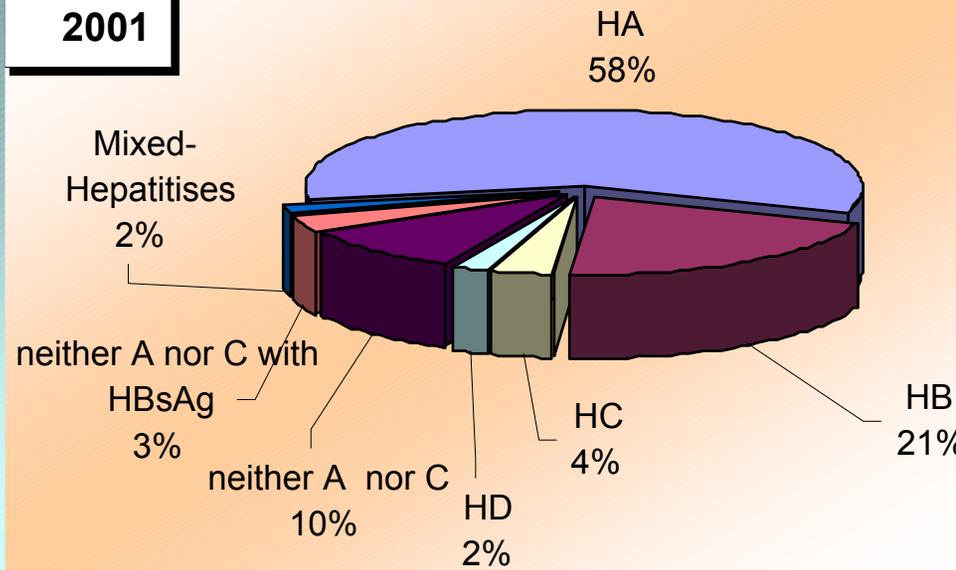
Clinical description	Laboratory criteria	Case classification
An acute illness that includes the discrete onset of symptoms and jaundice or elevated serum aminotransferase levels (>2.5 times the upper limit of normal)	IgM анти-HAV (+)	<b>Hepatitis A</b>
	IgM анти-HBc (+) HBsAg (+/-)	<b>Hepatitis B</b>
	анти-HDV (+) HBsAg (+) или IgM-HBc (+)	<b>Hepatitis D</b>
	анти-HCV (+)	<b>Hepatitis C</b>

# Etiologic structure of acute viral Hepatitis, Sentinel Surveillance (2000-2002)

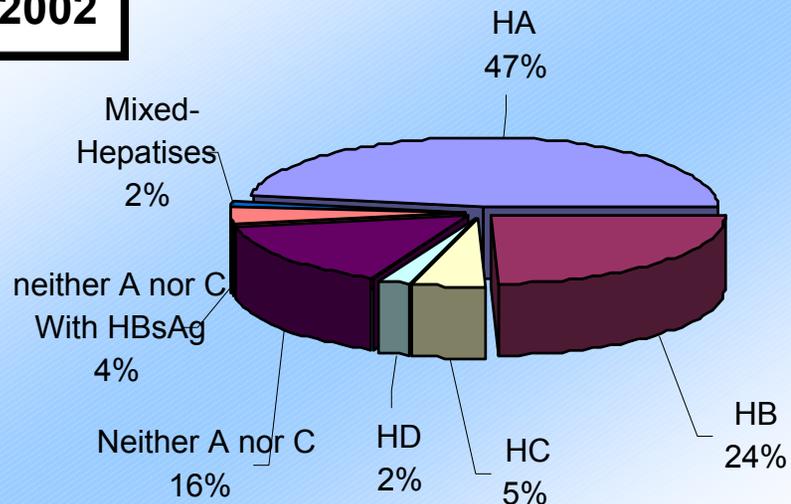
**2000**



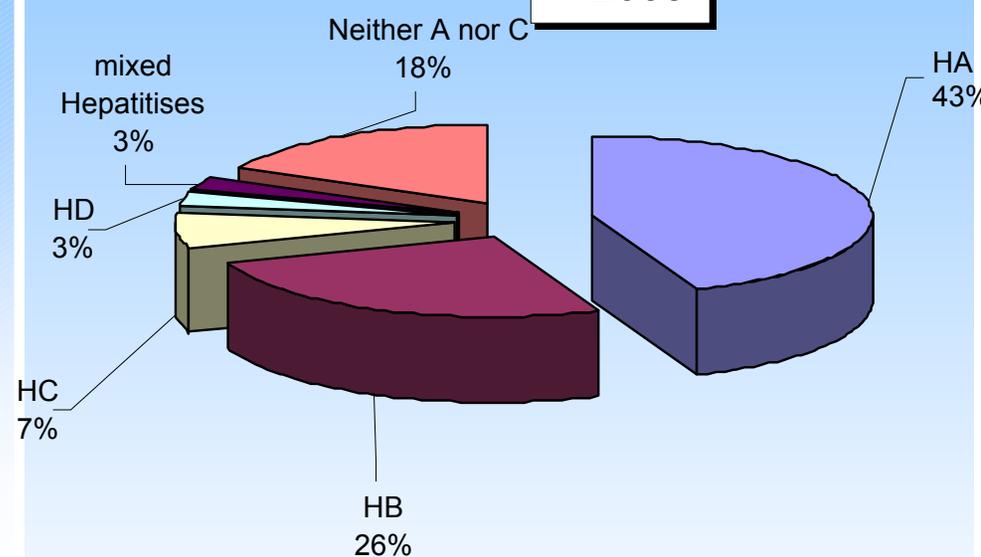
**2001**



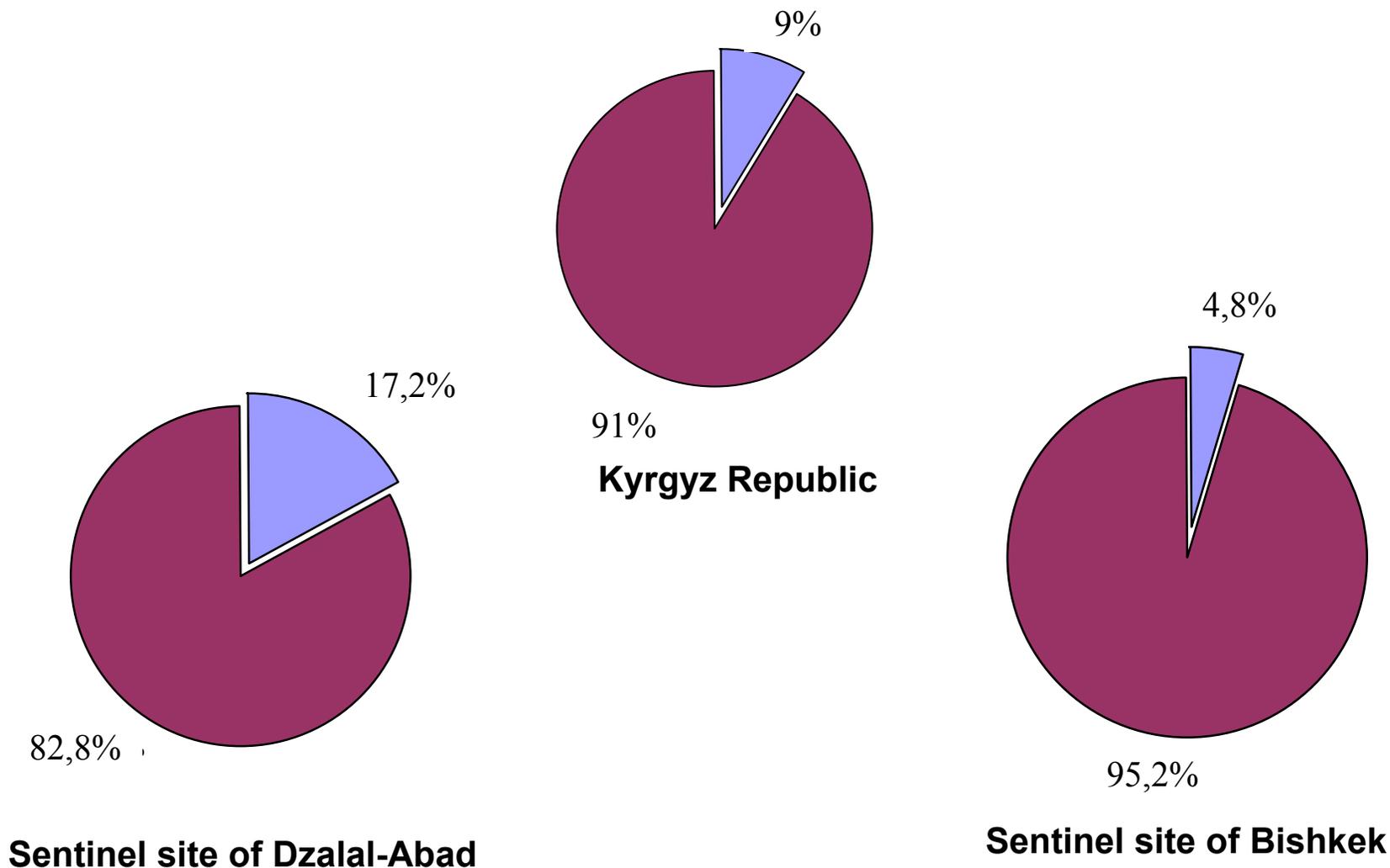
**2002**



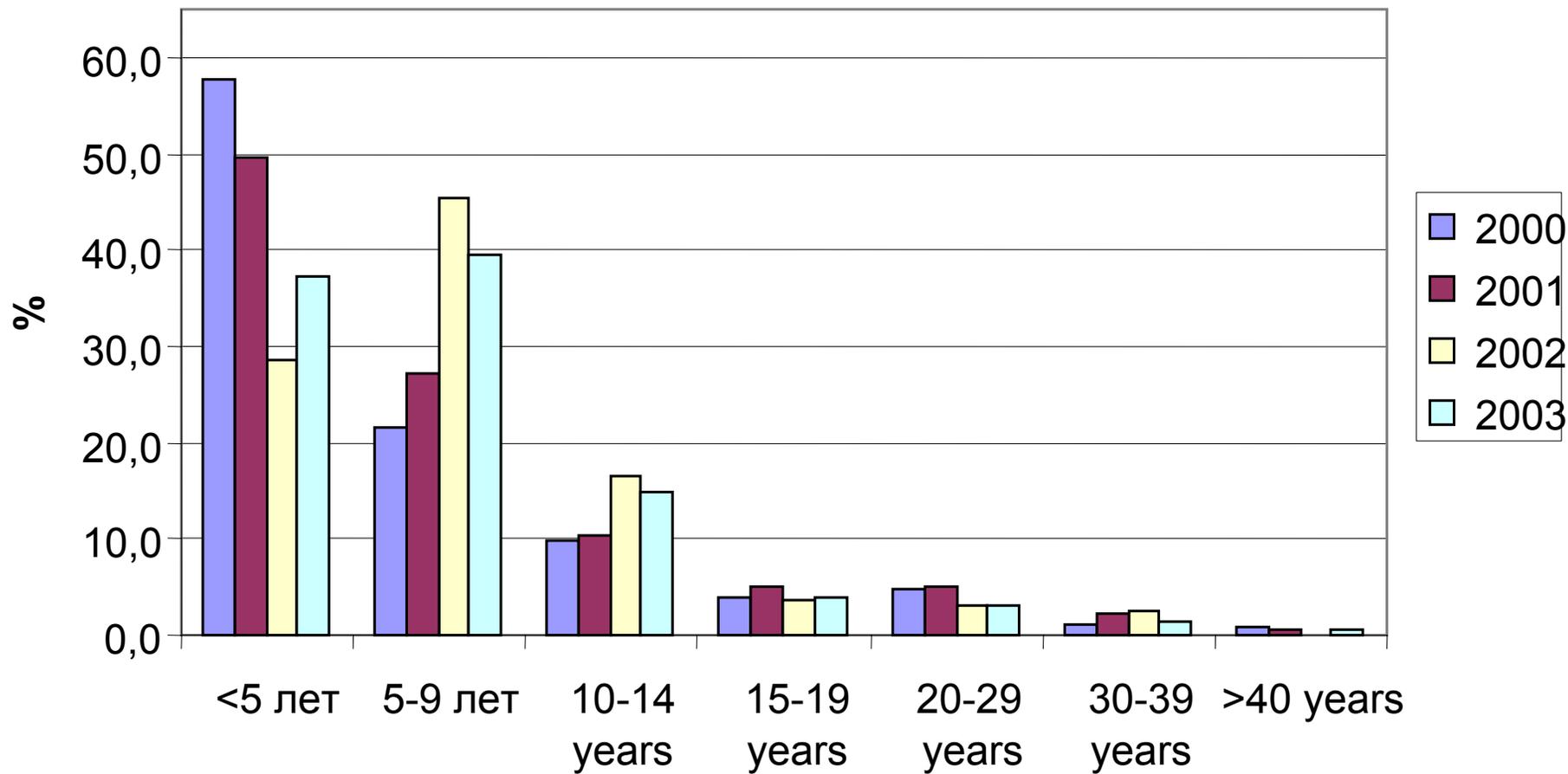
**2003**



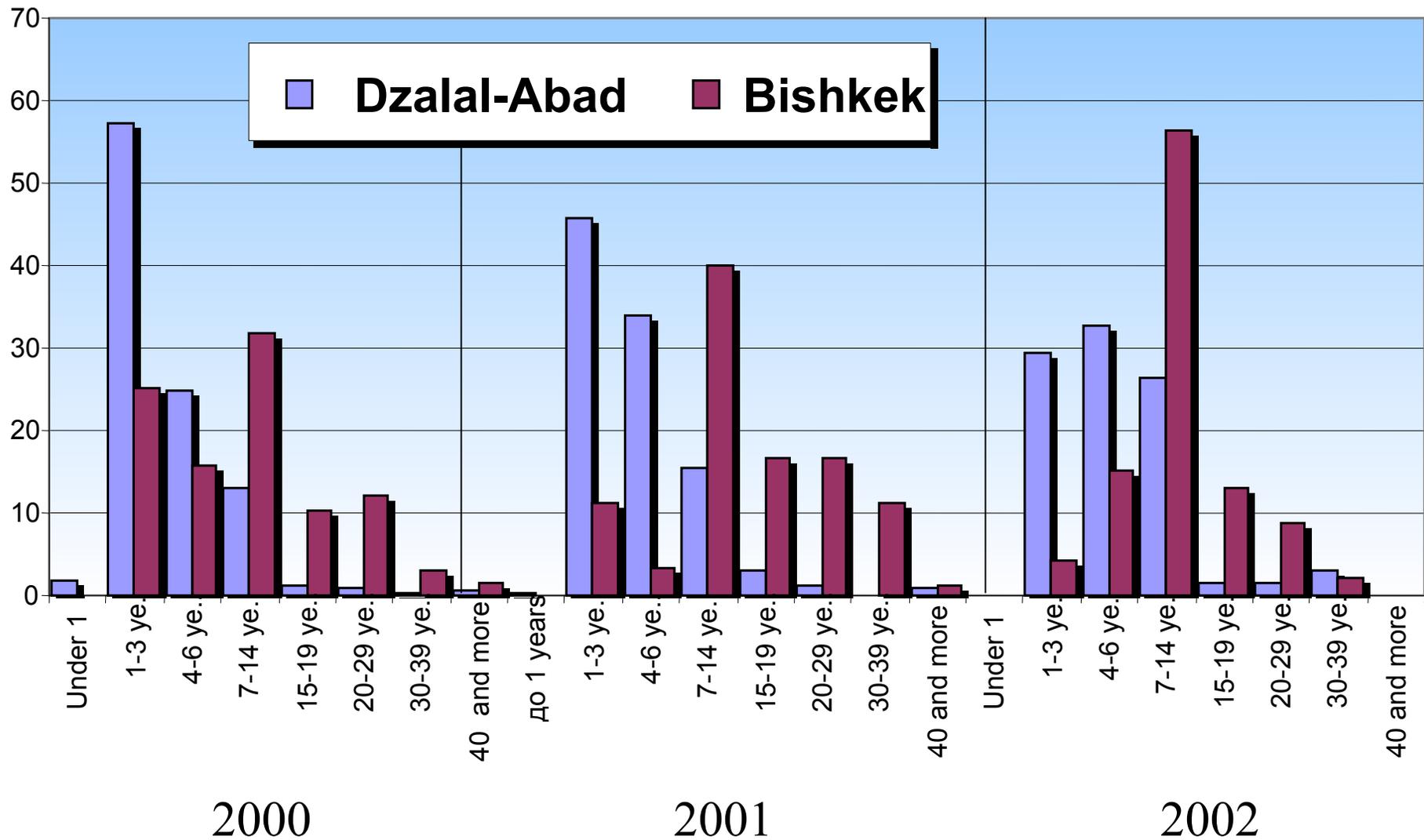
# Etiological role of Hepatitis E within the structure of nonA non C Hepatitis, sentinel surveillance, 2000



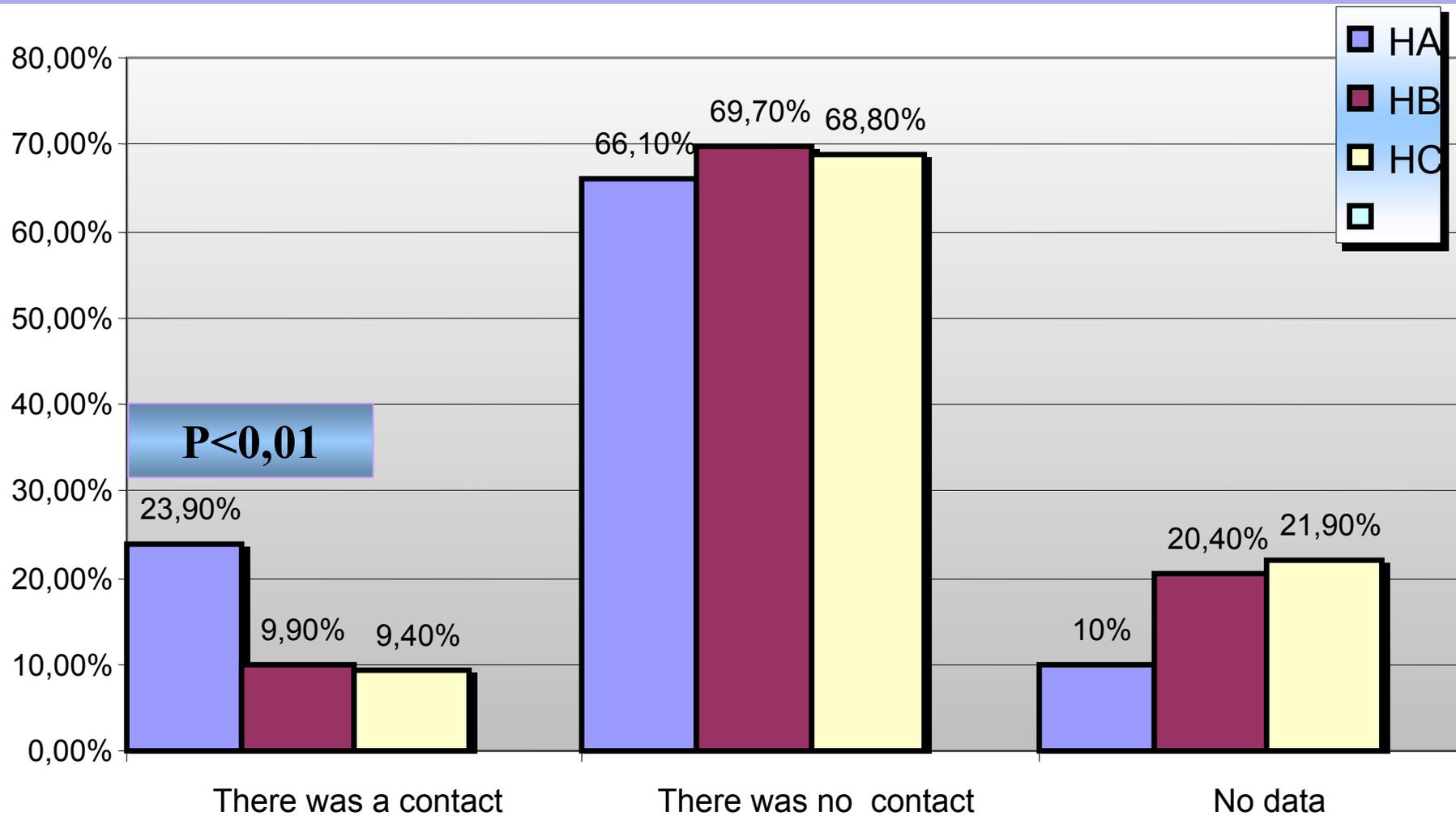
# Distribution of acute Hepatitis A by age groups (sentinel surveillance of Kyrgyzstan 2000-2003)



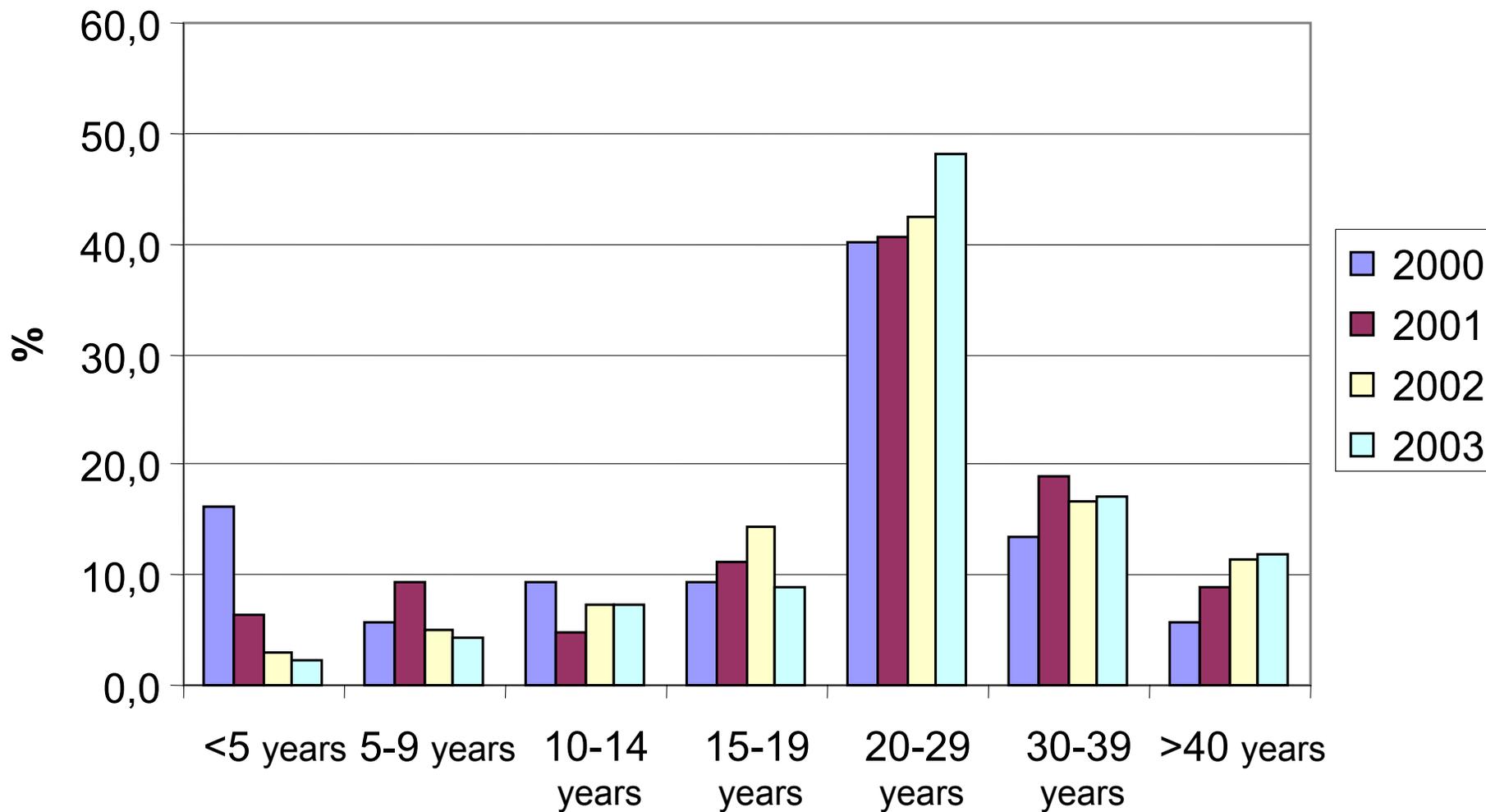
# Distribution of Hepatitis A by age groups in sentinel sites of Bishkek and Dzalal-Abad in 2000-2002 .



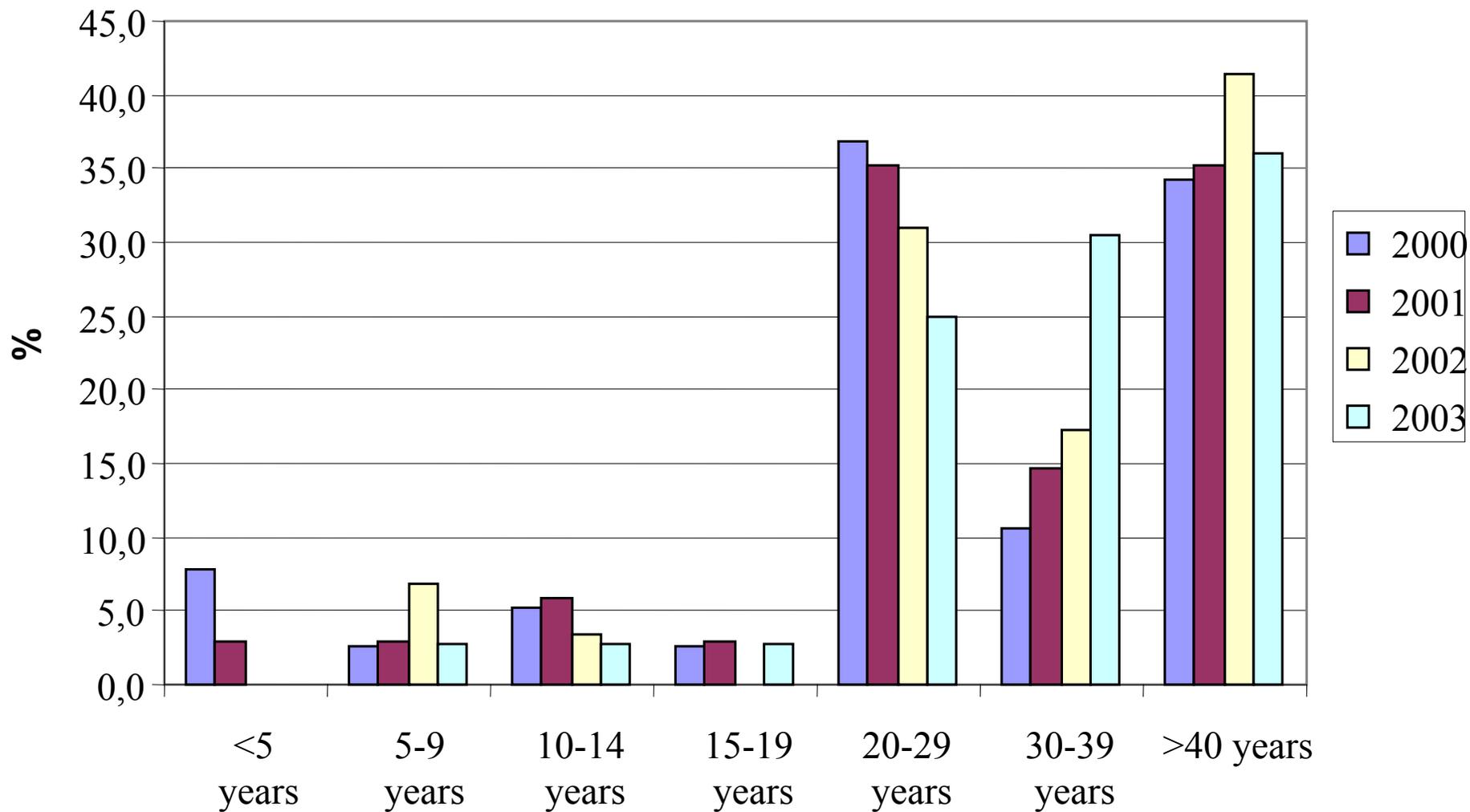
# Distribution of cases of acute viral Hepatitis A, B and C by contact with jaundice patient 6 months prior to the onset of the disease



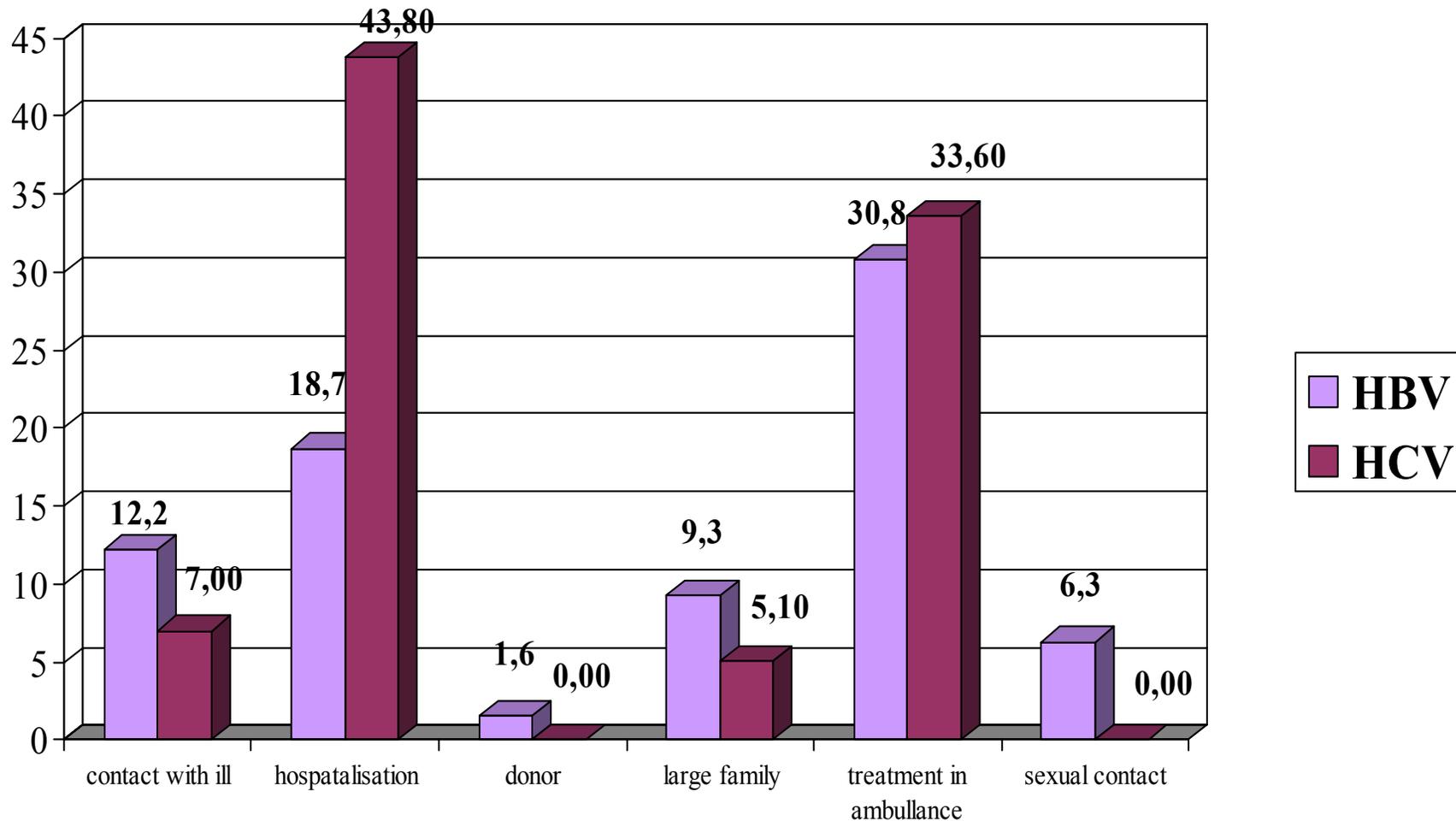
# Distribution acute Hepatitis B cases by age groups



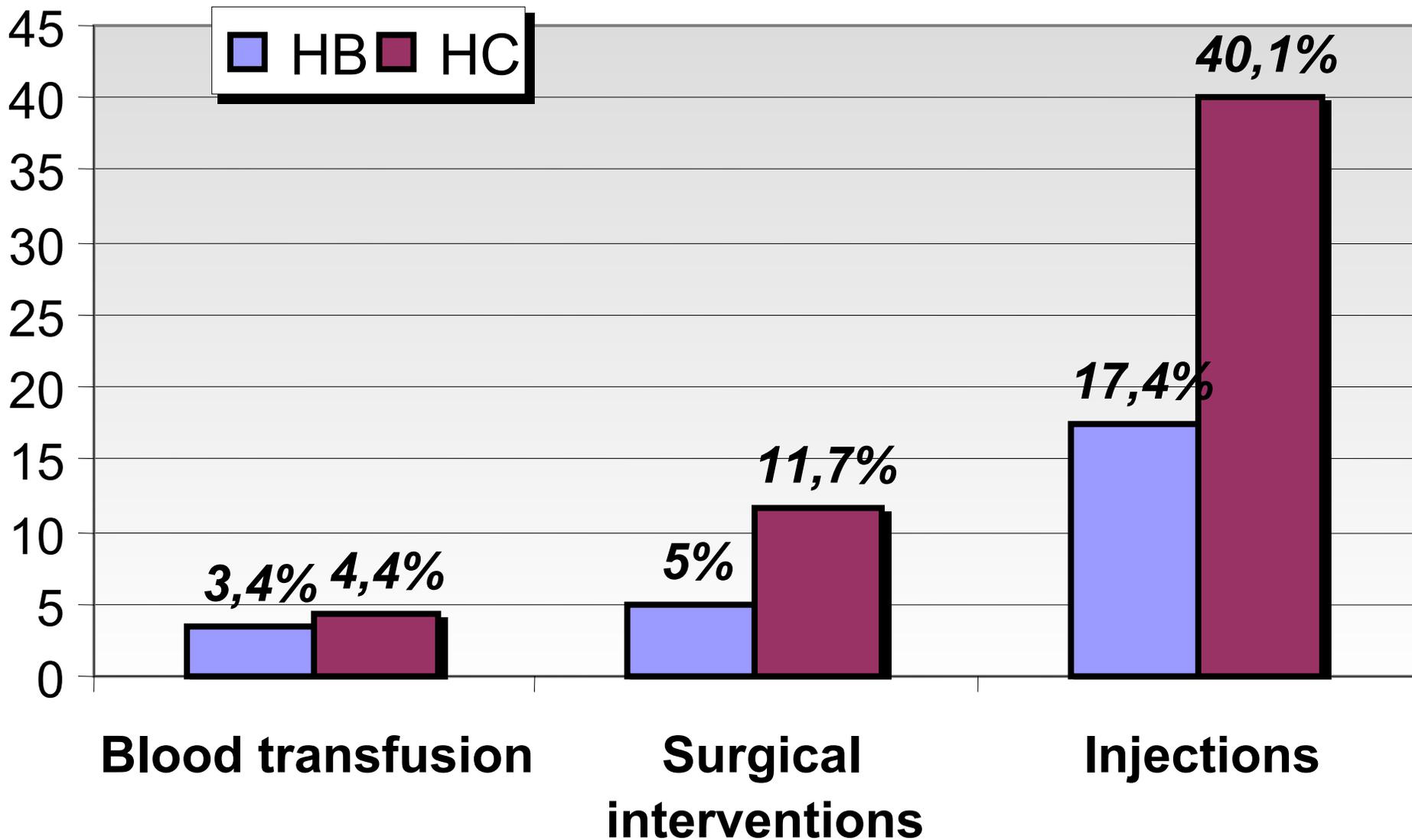
# Distribution of acute Hepatitis C cases by age groups



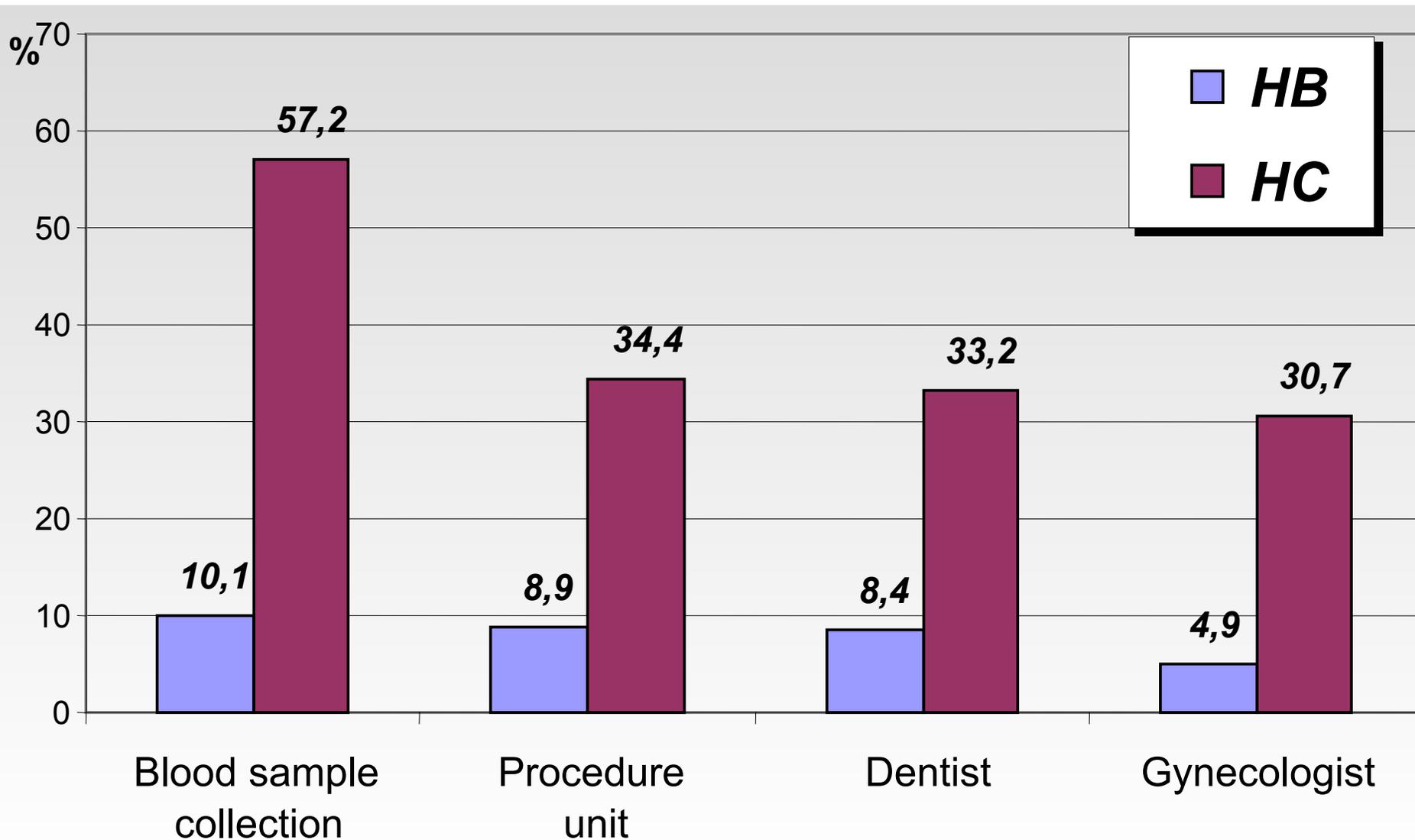
# Distribution of acute hepatitis B and C cases by probable risk factors, sentinel sites of Kyrgyzstan, 2000-2003 (1)



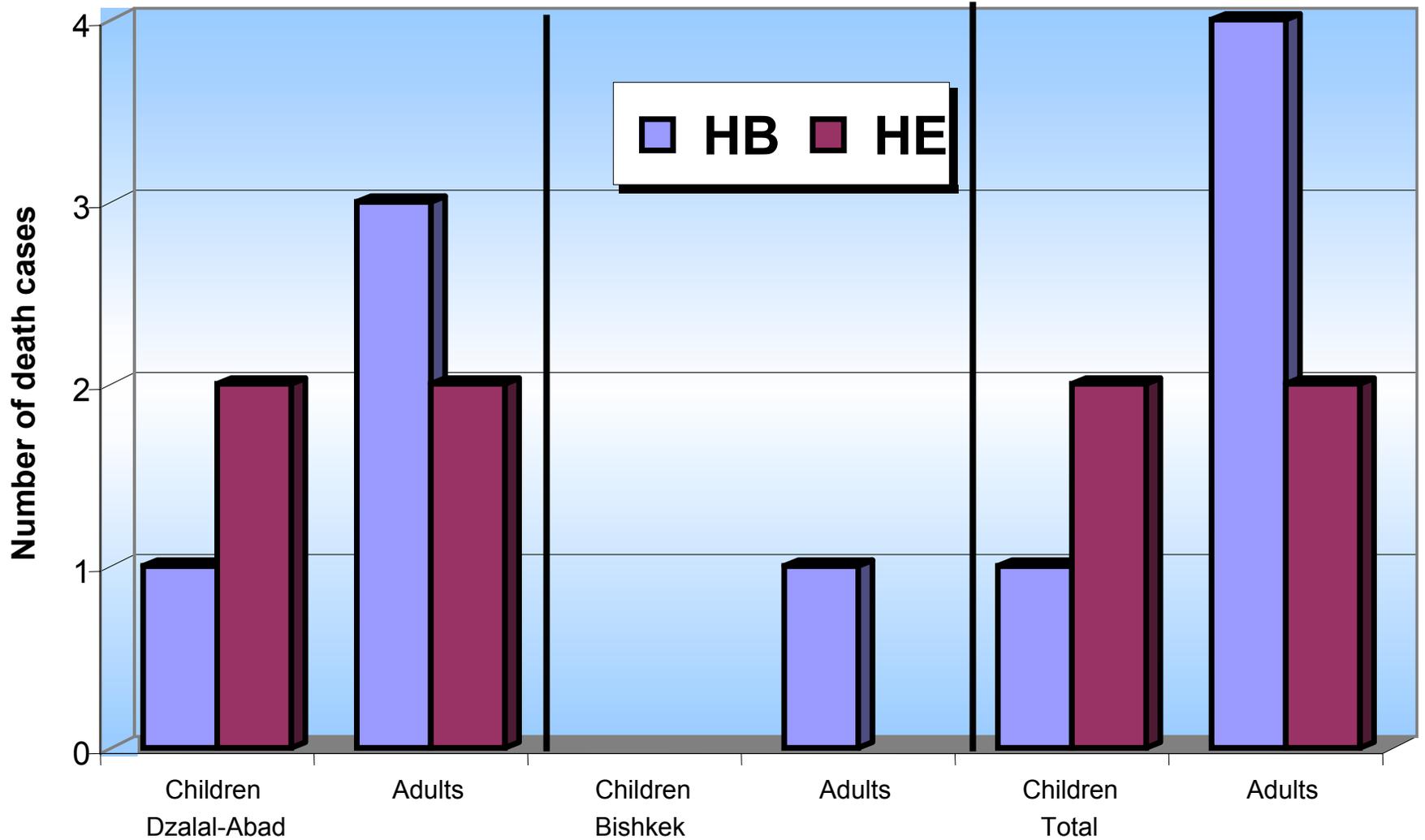
## Distribution of cases of acute viral Hepatitis B and C by probable risk factors (2)



# Distribution of cases of acute viral Hepatitis B and C by probable risk factors (3)



# Etiology of death cases, sentinel surveillance



# Conclusions

- The acute hepatitis sentinel surveillance has been introduced and has been functioning in the Republic of Kyrgyzstan since January 1, 2000
- The acute hepatitis sentinel surveillance is used by the Ministry of Health of Kyrgyzstan to:
  - determine exact etiological structure of acute viral Hepatitis
  - get objective data about risk groups and probable ways of infection transmission
  - develop, monitor and evaluate effectiveness of prevention programs and plans on viral hepatitis

# Acknowledgment

- To the Regional CDC office in CAR
  - USAID
- Global Alliance on Vaccines and Immunization
  - Ministry of Health of Kyrgyz Republic
  - Department of State Sanitary Epidemiological Surveillance of Kyrgyz Republic