System of epidemiological surveillance for viral hepatitis in the Russian Federation

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Outline

• Legal Framework of the Epidemiological Surveillance
  • Key policy documents;

• Epidemiological Surveillance System: Structure and Functions
  • Key players;
  • Main components and data flow;

• Viral Hepatitis Registry as a data source for program development, monitoring and evaluation
Public Epidemiological Surveillance: Structure and Operations

Russian Consumer Protection & Human Wellbeing Service (Rospotrebnadzor)
Public Epidemiological Surveillance: Structure and Operations

Ministry of Health

Federal Medico-biological Agency

Blood Service

Federal Center for Hygiene and Epidemiology

Reference Center for Viral Hepatitis

Russian Consumer Protection & Human Wellbeing Service (Rospotrebnadzor)

Health Care Facility

Rospotrebnadzor Administration

Health Care Facility

Health Care Facility

Health Care Facility

Ministry of Defense

Chief Military Medical Administration

Ministry of Justice

Medical Administration of Federal Penitentiary Service

Ministry of Agriculture

Federal Service for Veterinary and Phytosanitary Surveillance
Public Epidemiological Surveillance: Structure and Operations

Russian Consumer Protection & Human Wellbeing Service (Rospotrebnadzor)

Information
- Collect epidemiologically significant data on viral hepatitis
- Data analysis and evaluation
- Data sharing between stakeholders

Diagnosis
- Retrospective and operational epidemiological analysis
- Anti-epidemic action quality & effectiveness assessment

Management
- Specific preventive and anti-epidemic action planning; emergency & management decisions on implementation
- Viral hepatitis incidence prognosis
- Prospective target programming on incidence reduction, or prospective subject-focused preventive action planning
Epidemiological surveillance: data

Collection of epidemiologically significant data on viral hepatitis

Viral hepatitis case detection

Health workers of health institutions (adults, children, adolescents) and rehabilitation facilities, both public and private

Visit to health institution

Proactive case detection

Emergency notification (Form 058/y)

Interim diagnosis

Verified diagnosis
Diagnostics and reporting: data flow

Health Care Facility

Local Administration, responsible for ID surveillance

HBsAg (+) or Anti-HCV (+)

Hepatology Center

Local outpatient Clinic

Federal Center for Hygiene and Epidemiology

12 h

Monthly
Epidemiological surveillance: data

Collection of epidemiologically significant data on viral hepatitis

- **Viral hepatitis case detection**: Health workers of health institutions (adults, children, adolescents) and rehabilitation facilities, both public and private.
  - Visit to health institution
  - Proactive case detection
  - Emergency notification (Form 058/y)

- **Sanitary/hygiene monitoring**:
  - Local natural environments
  - Food industry
  - Public catering
  - Community services
  - Health institutions
  - Schools
  - Indoor 24/7 stay institutions for adults and children

- **Monitoring of circulating viral strains**: Population immunity to HAV and HBV
  - Data analysis and assessment
  - Data sharing between stakeholders

- **Serologic monitoring**: Population immunity to HAV and HBV
Epidemiological surveillance: diagnosis

Operational analysis

- Daily data analysis comparing current, control and previous (week or 10 days) levels:
  - All VH cases detected and related deaths;
  - VH-infected employees at epidemiologically sensitive companies;
  - Each meaningful deviation from normal microbiological and virological test result (water, food);
  - Emergencies, repair works
  - Gross violation of production process and sanitary/anti-epidemic regime at epidemiologically sensitive facilities;
  - New epidemiologically sensitive facilities commissioned;
  - Quality and effectiveness of measures taken.

Retrospective analysis

- Long-term VH incidence versus respective averages (10 - 15 years)
  - Administrative area
  - Communities
  - City districts
  - Urban and rural communities,
  - Age and social/occupational groups
  - Individual companies

Area demographics

- Population immunity
- Sanitary/hygiene status and improvements at communities and epidemiologically sensitive facilities
Reportable forms of Viral Hepatitis

- **Acute hepatitis**
  - Acute hepatitis A
  - Acute hepatitis B
  - Acute hepatitis C
  - Acute hepatitis E

- **Chronic hepatitis**
  - Chronic hepatitis B
  - Chronic hepatitis C

- **Carriage of hepatitis B virus**

- **Hepatitis D is not a reportable disease**
Federal statistical monitoring forms

- Form 1 Communicable and parasitic diseases (monthly versus previous year)
- Form 2 Communicable and parasitic diseases (monthly, annual):
  - Section 1. CC
  - Section 3. Nosocomial infections
- Form 5 Immunization rates (monthly, annual)
- Form 6 Immunized children and adults (annual)
- Form 23-09 CD outbreaks (annual)
- Form 2-13 Sanitary/hygiene, microbiological and parasitological lab performance (federal health institutions and hygiene and epidemiological centers) (annual)
- Form 18 Sanitary state of RF regions (annual)
Incorrect Hep B and C mortality data

The number of reported deaths from chronic hepatitis B and C in Russia in 2016 was 37 (0.03 per 100,000) and 144 (0.1 per 100,000) respectively.

Chronic hepatitis $\rightarrow$ Cirrhosis $\rightarrow$ Cancer

**Code ICD**

- B18.X
- K74.9
- C22.0
Web-base Information Systems

Epidemiological Information system «Viral Hepatitis» (since 2011)

Federal Viral Hepatitis Registry (since 2012)
Mission of the Registry

• Collection and systematization of uniformed personified data records for patients with viral hepatitis B, C, D;

• Collection and analysis of epidemiological data;

• Optimization of medical monitoring of patients with chronic hepatitis B, control of its completeness, timeliness and quality;

• Informational support for the development of prevention, diagnostic and treatment programs for viral hepatitis B, C and D;

• Collection and analysis of data on the therapeutic efficacy, and monitoring of completeness of a medical care for patients with chronic viral hepatitis.
Functional structure of the Registry

• Current

- Administrative module
- Registry of patients with viral hepatitis
- Clinical and laboratory data module
- Module of patient and case registration
- Module of antiviral therapy
- Statistical module

• Prospective

- Administrative module
- Registry of patients with viral hepatitis
- Statistical module
- Module of medical monitoring
- Module of antiviral therapy
- Clinical and laboratory data module

New modules
Updated modules
Implementation of the Federal Viral Hepatitis Registry (by 22.10.2018)
Progress in the implementation the Registry in Regions of Russian Federation

By October 22, 2018:

- Implemented in 72 out of 85 regions of Russian Federation;
- > 2 166 clinics;
- > 3 684 users;
- 478 065 of patients are registered.
Distribution of CHC patients by age and sex

Data from the Federal Registry of Viral Hepatitis patients
HCV transmission routes in Russia

Reports from local epidemiologist

Acute HCV, 2016 г

N=874

- In-patients health care: 50.5%
- Out-patients health care: 27.3%
- Sexual contact: 10.0%
- Transfusion: 4.8%
- In-house contact: 1.0%
- PWID: 0.5%
- Professional risk: 0.5%

Viral Hepatitis Registry

Acute and Chronic HCV cases, 2013-2017 г

N=41,518

- Transfusion: 29%
- In-house contact: 20.2%
- MTCT: 14%
- PWID: 7.4%
- Cosmetic manipulations: 13.1%
- Sexual contact: 11%
- Professional risk: 4.8%

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Distribution of HCV genotypes and fibrosis staging in CHC patients in Russia

Data from the Federal Registry of Viral Hepatitis patients
HCV genotypes in age groups

Data from the Federal Registry of Viral Hepatitis patients

N=79,646
Fibrosis stage in CHC patients by age and sex

Data from the Federal Registry of Viral Hepatitis patients
Chronic Hep C treatment in Russia

Treatment coverage

- Diagnosed: 298,200
- Treatment initiated: 10,493

Treatment regimens

- 85% DAA
- 15% IFN

SVR rate by treatment regimen

- DAA: 68
- IFN: 32
- DAA: 96
- IFN: 4

Data from the Federal Registry of Viral Hepatitis patients
HCV cascade of care: Russia

- Estimated prevalence: 5,700,000
- Anti-HCV diagnosed: 2,900,000 (51%)
- HCV RNA tested: 1,600,000 (55%)
- Linked to care: 592,000 (37%)
- Treated: 29,600 (5%)
- Cured: 13,200 (72%)
Epidemiological surveillance: issues to be addressed

• To update Sanitary Rules for Hepatitis B and C (is scheduled for 2019);

• To implement registration of hepatitis D at the Federal level;

• To improve screening programs for viral hepatitis B and C;

• To improve registration of chronic viral hepatitis outcomes: liver cirrhosis and HCC;