



Regional strategy for the
prevention and control of
viral hepatitis

Report of a workshop,
New Delhi, India, 11–13 July 2012

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Acronyms

ART	anti-retroviral treatment
CDC	Centers for Disease Control, Atlanta
DRD	Deputy Regional Director
DSE	Disease Surveillance and Epidemiology
DTP	diphtheria–tetanus–pertussis
EPI	expanded programme on immunization
GBD	global burden of disease
HAV	hepatitis A virus
HBsAg	hepatitis B virus surface antigen
HBV	hepatitis B virus
HCC	hepatocellular carcinoma
HCV	hepatitis C virus
HepB	hepatitis B
HEV	hepatitis E virus
Hib	haemophilus influenzae type b
IEDCR	Institute of Epidemiology, Disease Control and Research
PLHA	people living with HIV/AIDS
PWID	people who inject drugs
RTAG	regional technical advisory group
SAGE	Strategic Advisory Group of Experts
STI	sexually transmitted infection
VH	viral hepatitis
VHN	Viral Hepatitis Network
VHWG	viral hepatitis working group
WHOCC	World Health Organization Collaborating Centres

Contributors

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Mr Gary Reid

Dr Arun B. Thapa

Dr Alexander G. Andjaparidze

1. Background

A workshop was organized in the WHO Regional Office for South East Asia On 11–13 July 2012, with the overall objective of reducing morbidity and mortality of viral hepatitis infection in countries of the South-East Asia Region.

2. Opening session

The workshop was called for order by Dr Rui Paulo De Jesus, Acting Director, Department of Communicable Diseases, Regional Office, and was opened by Dr Poonam Khetrapal Singh, Deputy Regional Director (DRD) for the Regional Office. The address of Dr Samlee Plianbangchang, Regional Director was quoted to highlight that, despite of efforts of Member States to prevent and control of viral hepatitis, the diseases continue to remain serious public health problems in the South-East Asia Region. In the light of World Health Assembly resolution WHA63.18, the Regional Office organized an informal consultation to develop a regional strategy for the prevention and control of viral hepatitis, which was held in New Delhi from 16 to 18 April 2012. The expert panel reviewed the prevention and control activities, priorities for research, policy and action, and opportunities for collaboration between private and public sectors. It is expected that the regional strategy for the prevention and control of viral hepatitis developed by the expert panel will be finalized successfully in this consultation.

Dr Richard Brown, Regional Adviser for Disease Surveillance and Epidemiology (DSE) Unit, Regional Office, introduced the participants from 10 Member States, temporary advisers, partner organizations and the Secretariat from the Regional Office. Dr L.S. Chauhan, Director, National Centre for Disease Control, Ministry of Health and Family Welfare of India, Professor Dr Abul Khair Md. Shamsuzzaman, Chief Scientific Officer, Institute of Epidemiology, Disease Control and Research (IEDCR) of Bangladesh and Dr Khin Khin Gyi, Assistant Director, Expanded Programme on Immunization (EPI), Ministry of Health, Myanmar were proposed by the

DRD and elected as Chairperson, Co-Chairperson and Rapporteur of the meeting, respectively.

3. Objectives

The overall objective of the workshop was to provide a forum to discuss the initiation of public health and clinical actions “to reduce morbidity and mortality of viral hepatitis infection in countries of the South-East Asia Region”.

The specific objectives were to:

- discuss and agree to the regional strategy for prevention and control of viral hepatitis;
- develop an action plan for the implementation of the regional strategy for the prevention and control of viral hepatitis in South-East Asia Region

4 Proceedings

4.1 Global hepatitis programme - current status:

Dr Fatos Hande Harmanci

Epidemics of jaundice have been reported since the fifth century and identification of serum hepatitis (now known to be caused by hepatitis B virus, HBV) and infectious hepatitis (now known to be caused by hepatitis A virus, HAV) dates back to Second World War. This group of viruses also includes hepatitis C virus, HCV and hepatitis E virus, HEV; it gives rise to a major public health problem globally. Despite tremendous success, more needs to be done to prevent and control viral hepatitis.

Estimation of global burden is an important step towards prevention and control of viral hepatitis (VH). Globally, it was estimated that one in three people are infected by HBV. Approximately 240 million people are chronic carriers (3.7%). There are about 500 000 to 700 000 HBV-related deaths and about 4.5 million new cases each year.

For HCV, it was estimated that about 130 million to 170 million people are infected worldwide (2.2–3%) while more than 350 000 people die from HCV-related liver diseases and 3–4 million people are infected with HCV each year.

According to the WHO Global burden of disease study reported in 2008 (2004, update), the estimated number of deaths as a result of acute HBV infection is 105 000; 2% of total number infected. The US Centers for Disease Control (CDC) Global hepatitis B disease burden and vaccination impacts study in 2000, the estimated number of HBV-related deaths is 620 000, of which 94% are due to chronic reasons. For chronic hepatitis-associated morbidity, approximately 1 million deaths are due to chronic hepatitis infection (data from 2002), of which end-stage liver disease accounted for one in 40 of all deaths worldwide. About 15–40% of HBV patients may develop cirrhosis, liver failure or hepatocellular carcinoma (HCC); 10–20% of HCV infected patients may progress to cirrhosis in 20 years, of these 1–4% develop HCC each year. About 57% of cirrhosis patients are attributable to VH (30% HBV, 27% HCV) and 78% of HCC are attributable to VH (53% HBV & 25% HCV).

There are studies in some countries in which economic burden of HBV infection was calculated in terms of cost incurred (in US dollars per person per year) from chronic infection, compensated cirrhosis, decompensated cirrhosis, HCC and liver transplant: for example, South Korea – US\$ 209 million in 2001, China – US\$ 9–16 billion in 2009 and Germany – US\$ 1 billion in 2000. In contrast, a single dose of HBV vaccine costs around US\$ 0.2–0.4.

Seroprevalence of anti-HAV immunoglobulin varies from 15–100% across the world. Prevalence in the Nordic countries is the lowest (15%), it is higher in countries of Europe, Australia, Japan and US (40–70%), and highest in the developing countries (almost 100% of adults). There were about 1.5 million clinical cases reported each year (WER, 2000). Another study suggests an estimate of around tens of millions (Wasley, 2006).

The impact of a single dose hepatitis A vaccination in children 12 months of age has been observed in Argentina. The outbreak of HAV disease in 2003–2004 had led to the introduction of hepatitis A vaccination in 2005; in 2006, there was 97% coverage with a single dose of hepatitis A vaccine among infants, given at 12 months of age; in 2011, almost 100% coverage was achieved. There has been a significant decrease in reported

HAV cases and incidence rate was markedly reduced from 7.82 per 10 000 population in 2000 (and 11.33 per 10 000 population in 2004) to 0.14 per 10 000 population in 2011. A similar reduction has been seen in the reported number of HAV-associated fulminant hepatic failure cases.

It has been estimated that, in 2005, there were 20.1 million incidents of HEV infection in nine of 21 GBD regions (representing 71% of the world's population), of which 3.3 million were symptomatic cases, with 70 000 deaths and 3000 stillbirths (Rein, 2011). In South Asia and South-East Asia, more than 25% of populations are HEV positive which accounts for 60.6% of global cases and 64.7% of global deaths. In Egypt, more than 50% of people aged five years and above are HEV positive. HEV infection is the most common cause of acute liver failure in East Asia and South-East Asia.

In 2010, the Sixty-third World Health Assembly adopted resolution WHA 63.18 as sponsored by Brazil, Columbia, and Indonesia, calling for a comprehensive approach to hepatitis prevention and control. The resolution called for World Hepatitis Day on 28 July, Member State action, Secretariat action and accountability to World Health Assembly.

WHO Global Hepatitis Programme was established in December 2011, with the vision of a world where viral hepatitis transmission is stopped and all have access to safe and effective care and treatment. Through a public health approach, the goals of the programme are:

- to reduce the transmission of the various agents that cause viral hepatitis;
- to reduce morbidity and mortality due to viral hepatitis and improve the care of patients with viral hepatitis;
- to reduce the socioeconomic impact of viral hepatitis at individual, community and population levels.

The programme introduces the Framework for Global Action with four strategic axes:

- Axis 1: raising awareness, promoting partnerships, and mobilizing resources;
- Axis 2: evidence-based policy and data for action;

- Axis 3: prevention of transmission; and
- Axis 4: screening, care and treatment.

Member States can work with WHO through the Viral Hepatitis Network (VHN) and WHO Collaborating Centres (WHOCC). The VHN provides a forum for exchange of information and collaboration among the various stakeholders in order to implement a common viral hepatitis work plan while WHOCC in Member States can provide support to the global hepatitis strategy.

4.2 Viral hepatitis in the context of HIV:

Mr Gary Reid

In the South-East Asia Region, there were an estimated of 3.5 million HIV-infected people, of which 210 000 people became newly infected with HIV. The number of new infections in the South-East Asia Region is declining and deaths from AIDS have dropped for those infected who are receiving treatment. Unsafe sex and injected drug use are the two main drivers of the epidemic. HIV prevalence remains consistently high among people who inject drugs (PWID).

Based on limited available information, it was estimated that prevalence of hepatitis B surface antigen (HBsAg) among PWID is 5–10% in 21 countries, and more than 10% in another 10 countries. The prevalence of HCV is 60–80% in 25 countries and more than 80% in another 12 countries. It was also estimated that 10 million of PWID worldwide are infected with HCV.

In Asia, infection rate of HBV is about 10% among PWID. Reports from Chennai, India and Viet Nam give higher infection rates, 11% and 81% respectively. In the South-East Asia Region, the average infection rate of HCV among the general population is less than 5%. However, the rate of HCV infection is as high as 50–100% among the HIV-positive PWID. The prevalence of HCV is often underestimated due to limited surveillance data. According to studies in Thailand, the prevalence of HBV and HCV among people living with HIV/AIDS (PLHA) is 58% and 48% respectively.

Chronic hepatitis B occurs in 10–20% of HIV-infected persons. Recent studies suggest the influence of HBV infection on the course of HIV and

AIDS. It was also found that HIV infection accelerates HCV-related disease progression and mortality. Currently, it is recommended that initiation of anti-retroviral treatment (ART) for those co-infected (with HIV and HCV) should follow the same principles and recommendations as in HIV mono-infected persons.

4.3 Viral hepatitis vaccine:

Dr Arun B. Thapa

Viral hepatitis B vaccine is the only vaccine that is being used and incorporated in the national immunization schedule by all Member States in the South-East Asia Region. The impact of viral hepatitis B vaccination had been or is being assessed in some countries in the Region. In Bhutan, a nationwide survey showed 80% reduction in chronic HBV infection.

In November 2011, the WHO Strategic Advisory Group of Experts (SAGE) recommended vaccination against HAV be integrated into the national immunization schedule for children aged one year and above if indicated on the basis of incidence of acute hepatitis A from high endemicity to intermediate, and cost-effectiveness.

Viral hepatitis E vaccine has been licensed in China in 2011, but supply is not yet available in the global market. Viral hepatitis C vaccine is under the process of development.

In 2012, different formulations of hepatitis B vaccine were being used in the countries in South-East Asia Region. Hepatitis B monovalent vaccine is being used in India, Maldives and Myanmar; hepatitis B-diphtheria-tetanus-pertussis (HepB-DTP) in the Democratic People's Republic of Korea, Indonesia, Thailand and Timor-Leste; hepatitis B-diphtheria-tetanus-pertussis-*Haemophilus influenzae* type b (HepB-DTP-Hib) in Bangladesh, Bhutan, Nepal and Sri Lanka. With support from the GAVI Alliance for introduction of pentavalent vaccine (HepB-DTP-Hib) through its co-financing programme, Maldives, Myanmar and Democratic People's Republic of Korea plan to switch to HepB-DTP-Hib in the second half of 2012. India started piloting HepB-DTP-Hib in two states in 2009 and will expand to an additional six states in 2012.

Switching from monovalent hepatitis B vaccine to HepB-DTP-Hib does lead to some unfavourable consequences due to limited availability of DTP vaccine in the global market. As a result, in 2012, there was shortage of DTP vaccine in some countries in the Region. Unavailability of DTP vaccine means that countries probably have no choice but to go for the more costly HepB-DTP-Hib vaccine. For countries that receive financial support from the GAVI Alliance for new or under-utilized vaccines, this usually means co-payment for the first initial five-year period. Eventually, countries will have to cover the whole cost of the vaccine.

Implementing viral hepatitis B vaccination programme that includes the birth dose can be a challenge in monitoring and reporting. The birth dose is required to be administered soon after birth, usually within 24 hours of delivery, so health personnel who attend the mother and new-born should be trained to ensure timely administration of hepatitis B vaccine birth dose. In rural areas, this can be logistically difficult due to lack of proper vaccine storage and cold-chain infrastructure.

In addition, there have been some concerns raised by national programme managers as well as experts regarding its feasibility especially in terms of priority and cost benefit.

4.4 Summary of proceedings of informal consultation to develop a regional strategy for the control of viral hepatitis, WHO Regional Office, New Delhi, 16–18 April 2012: *Dr Alexander G. Andjaparidze*

Five major issues related to lack of knowledge and awareness and/or inadequate understanding identified in the last informal consultation include:

- (1) the burden of viral hepatitis and existence of different types of viral hepatitis;
- (2) chronic viral hepatitis among health-care workers and social-service providers;
- (3) chronic viral hepatitis among at-risk population, the general public and policy-makers;

- (4) how common acute cases of HEV infection occur and how dangerous this infection is for pregnant women and carriers of HBV and HCV;
- (5) the extent and seriousness of this public health problem, to which inadequate public resources are being allocated for prevention, control, and surveillance of viral hepatitis.

This situation has led to the following circumstances.

- Inadequate disease surveillance systems, under report acute and chronic infections, so the full extent of the problem is unknown.
- Individuals who are at risk do not know that they are at risk or how to prevent infections and protect themselves from being infected.
- Individuals who are at risk may not have access to preventive services.
- Chronically infected people do not know that they are infected.
- Chronically infected people do not realize the need for changing lifestyle and behaviour to avoid complications.
- Many health-care providers do not screen people for risk factors or do not know how to manage infected people.
- Infected people often have inadequate access to testing, social support, and medical services.

The informal consultation has identified a regional strategy that uses a modular approach including six regional strategic frameworks:

- (1) framework for policy, planning and resource mobilization
- (2) framework for surveillance
- (3) framework for research
- (4) framework for prevention and control
- (5) framework for education
- (6) framework for medical care and treatment

These regional frameworks are aligned with the four strategic axes of the WHO Prevention and Control of Viral Hepatitis Infection: Framework for Global Action.

Global: WHO strategic axis	Regional: strategic framework
Raising awareness, promoting partnerships, and mobilizing resources	<ul style="list-style-type: none"> • Policy, planning and resource mobilization
Evidence-based policy and data for action	<ul style="list-style-type: none"> • Surveillance • Research (operational research for improvement of the viral hepatitis prevention and control)
Prevention of transmission	<ul style="list-style-type: none"> • Prevention and control (promoting risk reduction, safe health care, screening blood and blood products, safe medical manipulations/injections and HBV vaccination)
Screening, care and treatment	<ul style="list-style-type: none"> • Medical care and treatment (assuring timely access to care, treatment and other related services for acute and chronic viral hepatitis patients) • Education (improved knowledge and awareness)

The strategies were developed with a vision that “public health and clinical impact of infection with hepatitis viruses in the South-East Asia Region is reduced to a minimum” and a goal for “implementation of policies, programmes and interventions to interrupt transmission and reduce the incidence and the consequences of viral hepatitis in the countries of the South-East Asia Region”.

5. Conclusions and recommendations

The following recommended action points were agreed on for WHO Regional Office and Member States.

5.1 Strategic framework for policy, planning and resource mobilization

5.1.1 Policy and planning

Member States

- (a) identify person or establish unit responsible for the coordination of prevention and control of viral hepatitis at the Ministry of Health; and
- (b) establish a national committee on viral hepatitis responsible for the development of a national strategy and programmes on viral hepatitis prevention and control, and its supervision, coordination, implementation and monitoring at the national level.

WHO

- (a) nominate focal point in the Regional Office responsible for the coordination of work for prevention and control of viral hepatitis;
- (b) establish viral hepatitis working group (VHWG) at the Regional Office;
- (c) identify technical staff in WHO Country offices who will be responsible for the WHO viral hepatitis programme at country level;
- (d) establish a regional technical advisory group (RTAG) for viral hepatitis; and
- (e) Prepare background material for a resolution on viral hepatitis prevention and control, to be adopted by the Member States at the Regional Committee session.

5.1.2 Communication for advocacy

WHO

- (a) advocate viral hepatitis prevention and control with decision-makers and leaders and connect different organizations and groups for advocacy.

Member States

- (b) build strong relationships with the media to expand and improve the quality of coverage on viral hepatitis; and
- (c) build strong relationships with decision-makers and leaders to encourage effective action and ensure the interests of people with viral hepatitis are heard and addressed.

5.1.3 Resource mobilization

Member States

- (a) involve high-level government officials and dignitaries in the process of fund-raising;
- (b) build relationships with national/international business communities and organizations to provide a forum for raising donations; and
- (c) regularly update community and donor agencies regarding resources that have been received for the viral hepatitis programme and how effectively it has been used.

WHO

- (a) develop a strategy for resource mobilization and a list of priorities for funding;
- (b) identify potential proposal writers for funding purposes;
- (c) identify potential financial institutions interested in providing resources for the prevention and control of viral hepatitis;

- (d) advocate fund raising for viral hepatitis in various meetings, symposiums, forums and high level decision-making gatherings; and
- (e) organize potential donors meetings and seminars for fundraising purposes.

5.2 Strategic framework for surveillance

Member States

- (a) conduct a situational analysis of viral hepatitis burden and establish the national viral hepatitis surveillance system;
- (b) develop standard protocols for the viral hepatitis core and targeted surveillance;
- (c) establish the national centre for surveillance, prevention and control of viral hepatitis;
- (d) establish the national referral centre for laboratory diagnosis of viral hepatitis;
- (e) integrate viral hepatitis surveillance in other diseases surveillance system;
- (f) carry out pre-qualification viral hepatitis diagnostics and develop national standardized protocols for testing samples for viral hepatitis;
- (g) ensure national capacity development and implementation of national viral hepatitis programmes; and
- (h) allocate and mobilize resources for the viral hepatitis programme.

WHO

- (a) support Member States in establishing a national viral hepatitis surveillance system;
- (b) facilitate integration of viral hepatitis surveillance in the other diseases surveillance system;
- (c) support Member States in conducting an evaluation of the national viral hepatitis surveillance system by developing a standard protocol;

- (d) include an assessment of the attributes of the existing surveillance system, including completeness, data quality and accuracy, timeliness, sensitivity, specificity, positive predictive value, representativeness and stability, in the evaluation; and use the results of evaluation to formulate detailed technical guidelines and standards for viral hepatitis surveillance published in a report;
- (e) support Member States in the development of standard protocols for the core surveillance of acute HAV, acute HEV, and acute and chronic HBV and HCV infections, and revise the standardized case definition, case-reporting forms including case evaluation, and follow up, as well as support development and implementation of automated data collection systems;
- (f) support Member States in conducting targeted surveillance, including serological testing and monitoring incidence and prevalence of viral hepatitis infection in populations not fully captured by core surveillance;
- (g) facilitate the establishment of national referral centres for viral hepatitis surveillance and prevention, and referral centres for laboratory diagnosis of viral hepatitis to coordinate network of laboratories in Member States; and
- (h) support Member States in carrying out pre-qualification of viral hepatitis diagnostics and quality assurance.

5.3 Strategic framework for research

Member States

- (a) establish and ensure inclusion of an appropriate viral hepatitis research agenda for relevant institutions into national health policies and programmes;
- (b) ensure adequate funds are allocated for research on viral hepatitis;
- (c) establish a national database of all ongoing research relevant to the viral hepatitis programme, including drug trials, development of vaccine and diagnostic tools, and share this information both within the state and with other states in the South-East Asia Region;
- (d) set up a network of institutions engaged in research, such as national centres of excellence, academic institutions, and

WHOCCs to support research relevant to national programmes, facilitate close collaboration between researchers and programme managers and promote actionable research;

- (e) build/enhance institutional and individual capacity-building for preparing quality research proposals and conducting research that can be applied for prevention and control of viral hepatitis; and
- (f) promote research that determines the influence of environmental, ecological and social factors on epidemiology of viral hepatitis.

WHO

- (a) facilitate the identification of regional and national research priorities for public health, and clinical policies and interventions;
- (b) advocate, technically justify and identify needs to financial institutions and donor agencies for obtaining resources for research in the field of viral hepatitis;
- (c) collaborate with Member States and technical partners in building research capacity based on identified need and clear timelines, at national, institutional and individual levels;
- (d) assist with the design of operational research protocols and coordinate multicentric studies to address the challenges in the viral hepatitis prevention and control programme in an effective manner; and
- (e) facilitate national and international networking of researchers and laboratories, including sharing/dissemination of research information among Member States by various means, including through the WHO South-East Asia Journal of Public Health.

5.4 Strategic framework for prevention

Member States

- (a) intensify regular monitoring of water quality, timely take appropriate preventative measures and develop new approaches for improvement of people's hygienic behaviour;

- (b) develop contingency plan and action for containment of HAV and HEV outbreaks, and clearly define the role and responsibilities of the health sector, water and sanitation and the community;
- (c) conduct studies to determine the need for inclusion of hepatitis A vaccine in routine childhood immunization;
- (d) formulate the hepatitis A vaccination policy for persons with chronic liver diseases;
- (e) design a programme for the delivery of the hepatitis B vaccine birth dose as part of the integrated package for maternal and new-born care (if not yet implemented);
- (f) start piloting a programme for the delivery of the hepatitis B vaccine birth dose in selected districts (if not yet implemented);
- (g) review the piloting programme and, based on results, modify the national strategy for hepatitis B immunization;
- (h) study the appropriateness and feasibility of a national policy to extend hepatitis B vaccination to: all children and adolescents under the age of 18 years and not previously vaccinated, all health professionals, and people considered to be high risk;
- (i) review the current national policies on mandatory screening of blood and blood products for hepatitis B and C using new, highly specific and sensitivity standardized diagnostic kits;
- (j) monitor and enforce the safe injection programme in all health facilities;
- (k) implement harm-reduction programmes for people who use or inject illicit drugs; and
- (l) implement guidelines for safe practices in tattoo and piercing parlours.

WHO

- (a) advocate for the provision of safe water and proper sanitation;
- (b) support country efforts to improve hygienic practices;
- (c) provide technical assistance for preparedness, detection and response to outbreaks of viral hepatitis;

- (d) provide technical assistance to conduct studies to determine the need for inclusion of hepatitis A vaccine in routine childhood immunization, and for persons with chronic liver disease;
- (e) support Member States in designing and implementing programmes for delivery of the hepatitis B vaccine birth dose;
- (f) support Member States in formulation of policy to implement 'catch-up' hepatitis B vaccination to adolescents;
- (g) support Member States in formulation of national policy to extend hepatitis B vaccination to all health professionals and people in high-risk groups;
- (h) support implementation of mandatory screening of all blood and blood products; and
- (i) support efforts to prevent iatrogenic transmission of hepatitis B and C.

5.5 Strategic framework for education

Member States

- (a) regularly mark 28 July as World Hepatitis Day and use it for a mass campaign for education and awareness across the country;
- (b) aim to create a safe environment for accessing information, testing and care, particularly in rural and underserved communities;
- (c) for HBV awareness, include messages about mother-to-child transmission and information about the demographic groups with the highest rates of infection;
- (d) for HCV awareness, include messages about prior blood transfusions and past and current drug use;
- (e) educate the general public to reduce unnecessary injections;
- (f) facilitate training of water and sanitation staff about prevention of viral hepatitis;
- (g) conduct training on viral hepatitis prevention and integration of services for service providers working in the fields of: HIV, sexually transmitted infection (STI), tuberculosis, alcohol and drug treatment, mental health, immigrant health, refugee health, and others serving the at-risk population including those in correctional facilities; and

- (h) conduct workshops/seminars for service providers and local health officials to share experiences integrating viral hepatitis prevention, education, testing, vaccination, and care into their services.

WHO

- (a) support efforts of Member States to produce information materials for a general audience, emphasizing that everyone is affected as most people do not know they are infected and most do not have any visible symptoms;
- (b) support efforts of Member States to increase the knowledge of viral hepatitis among the general population and promote a healthy lifestyle among persons newly diagnosed or living with chronic hepatitis;
- (c) support Member States to improve and expand the knowledge of viral hepatitis among health and human-service providers;
- (d) use conferences and meetings as opportunities to promote tailored viral hepatitis awareness and service-integration messages.

5.6 Strategic framework for medical care and treatment

Member States

- (a) establish a national referral centre on medical care and treatment of viral hepatitis which should organize seminars, meetings and training in the field of care and treatment of viral hepatitis;
- (b) develop standard procedures for the management of acute viral hepatitis;
- (c) develop guidance on counselling and support care for infected individuals;
- (d) evaluate current protocols used for treatment of chronic hepatitis B and C patients;
- (e) participate in the field testing and implementation of WHO-consolidated treatment protocols for the management of chronic hepatitis B and C and HIV co-infections; and
- (f) conduct operational research for the improvement of care and treatment of chronic HBV and HCV infections.

WHO

- (a) support Member States in the establishment of national referral centres for the care and treatment of viral hepatitis;
- (b) support the establishment of networks among the national referral centres of Member States for the care and treatment of viral hepatitis;
- (c) support efforts of Member States in developing national capacities for medical care and treatment of viral hepatitis;
- (d) support efforts of Member States in developing standard procedures for the management of acute viral hepatitis;
- (e) support efforts of Member States in developing guidance on counselling and support care for infected individuals;
- (f) support efforts of Member States in evaluating current national treatment and care protocols for chronic hepatitis B, C and HIV co-infections;
- (g) support Member States in adaptation and implementation of WHO-consolidated treatment guidelines for the management of chronic hepatitis B and C and co-infections with HIV; and
- (h) support Member States in conducting operational research for improvement of care and treatment of chronic HBV and HCV infections.

Annex 1

Summary of viral hepatitis transmission, risk activities, prevention and treatment

Hepatitis	Modes of transition	Risk activities/factors	Prevention	Treatment options
A	<p>Ingestion of faecal matter, even in microscopic amounts, from:</p> <ul style="list-style-type: none"> contaminated water, drinks and food prepared in unhygienic conditions; close person-to-person contact with a hepatitis A-infected person; and sexual contact with a hepatitis A-infected person. 	<ul style="list-style-type: none"> Living in area with high and intermediate hepatitis A endemicity Drinking unsafe water, drinks and eating food using improperly washed plates and kitchen utensils Sexual contact with a hepatitis A-infected person Living with or caring for a hepatitis A-infected person Use of illegal drugs (injection or non-injection) 	<ul style="list-style-type: none"> Hepatitis A vaccination Proper hand washing with soap after the use of toilets and changing diapers, and before preparing and eating food Drinking safe water using properly washed plates and kitchen utensils Immuno-globulin (in special conditions only) 	<ul style="list-style-type: none"> Provide symptomatic and supportive treatment

Hepatitis	Modes of transition	Risk activities/factors	Prevention	Treatment options
B	<ul style="list-style-type: none"> • Contact with infectious blood, semen and other body fluids 	<ul style="list-style-type: none"> • Birth from a hepatitis B-infected mother • Sexual contact with a hepatitis B-infected person • Multiple sexual partners • Living with an STI • Injection drug use • Living with a hepatitis B-infected person • Occupational exposure to blood • Long-term haemodialysis • Working in health-care facility 	<ul style="list-style-type: none"> • Hepatitis B vaccination • Immunoglobulin • Use of condoms for sex • Not sharing personal care items (e.g. razors, toothbrushes) • Not sharing needles, syringes or drug paraphernalia (works) • Ensuring use of sterile equipment for any tattoo or body piercing • Proper infection control in health care settings and public safety work • Screening blood and blood products on Hepatitis B markers • Reducing unnecessary injections 	<ul style="list-style-type: none"> • For acute hepatitis B, provide supportive treatment • For chronic hepatitis B, provide regular monitoring for signs of liver disease progression and consider antiviral medication

Hepatitis	Modes of transition	Risk activities/factors	Prevention	Treatment options
C	<p>Contact with infectious blood, primarily through:</p> <ul style="list-style-type: none"> • sharing needles, syringes or drug paraphernalia (works); • sexual contact with a hepatitis C-infected person; • birth from a hepatitis C-infected mother; • needle sticks or sharp instrument injuries; and • tattooing/body piercing. 	<ul style="list-style-type: none"> • Current or past injection drug use • Receipt of blood or organs • Receipt of clotting factor concentrates • Long-term haemodialysis • Occupational exposure to blood • Birth from a hepatitis C-infected mother 	<ul style="list-style-type: none"> • Not sharing needles, syringes or drug paraphernalia (works) • Using of condoms for sex • Not sharing personal care items (e.g., razors, toothbrushes) • Ensuring use of sterile equipment for any tattoo or body piercing • Proper infection control in health-care - settings and public safety work 	<ul style="list-style-type: none"> • For acute hepatitis C, provide supportive treatment and consider antiviral medication • For chronic hepatitis C, provide regular monitoring for signs of liver disease progression and consider antiviral medication
E	<p>Ingestion of faecal matter, even in microscopic amounts, from:</p> <ul style="list-style-type: none"> • contaminated water source; and • zoonotic transition from uncooked meat products. 	<ul style="list-style-type: none"> • Living in areas where hepatitis E infection is common • Drinking unsafe water, drinks and eating food using not properly washed plates and kitchen utensils • Pregnancy • Consumption of uncooked meat products 	<ul style="list-style-type: none"> • Improvement of sanitary and hygienic practices to eliminate faecal contamination of food and water. • Provision of safe drinking water and proper disposal of sanitary waste 	<ul style="list-style-type: none"> • Provide symptomatic and supportive treatment

Annex 2

Agenda

Day 1

1. Opening session
2. Global hepatitis programme – current status
3. Viral hepatitis in the context of HIV
4. Viral hepatitis vaccine
5. Summary of proceedings of informal consultation to develop a regional strategy for the control of viral hepatitis, WHO Regional Office, New Delhi, 16–18 April 2012
6. Review of regional strategy for the prevention and control of viral hepatitis: Hepatitis A
7. Burden of viral hepatitis in the South-East Asia Region
8. Mission and vision: themes and cross-cutting issues
9. Strategic frameworks:
 - Framework for surveillance
 - Framework for prevention and control
 - Framework for education
 - Framework for medical care and treatment
 - Framework for research; Framework for policy, planning and resource mobilization
10. Conclusions and recommendations

Annex 3

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Approximately 1.4 million deaths are caused by hepatitis viruses every year globally and around 500 000 of these estimated deaths occur in the WHO South-East Asia Region alone. The deaths associated with viral hepatitis exceed the mortality estimates for malaria, dengue and HIV/AIDS combined. The report provides a summary of recommended action points for the regional strategy for the prevention and control of viral hepatitis in the WHO South- East Asia Region.



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