

TRAINING MODULES ON HEPATITIS B AND C SCREENING, DIAGNOSIS AND TREATMENT



Training Modules on Hepatitis B and C Screening, Diagnosis and Treatment

ISBN: 978-92-9022-747-2

© World Health Organization 2020

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this license, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: “This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition”.

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. Training Modules on Hepatitis B and C Screening, Diagnosis and Treatment; 2020. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <http://www.who.int/about/licensing>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Printed in India



Training Modules on Hepatitis B and C Screening, Diagnosis and Treatment



**World Health
Organization**



Contents

Foreword	v
Introduction	vi
Sample of pre-and post-workshop questionnaire	1
Sample workshop schedules for adaptation	6
Module 1A: Overview of viral hepatitis: global progress update	9
Module 1B: Global and SEAR situation overview	18
Module 1C: Viral hepatitis in the Western Pacific region	26
Module 2: Structure and function of the liver	37
Module 3: Causes and signs and symptoms of liver injury	49
Module 4: Interpretation of liver function tests	65
Module 5: Viral hepatitis transmission and prevention	81
Module 6: Hepatitis B vaccination and prevention of mother-to-child transmission (PMTCT)	93
Module 7: Natural history of hepatitis B virus infection	106
Module 8: Testing and serological markers for hepatitis B virus	117
Module 9: Non-invasive markers of chronic liver disease or liver fibrosis	131
Module 10: Clinical management of hepatitis B virus infection	145
Module 11: Clinical management of hepatitis B infection: case studies	156
Module 12: Treatment of hepatitis B virus infection in special groups	172
Module 13: Testing and serological markers for hepatitis C virus infection	178
Module 14: Natural history of hepatitis C infection	186
Module 15: Clinical management of HCV infection (including case studies)	194
Module 16: Treatment of HCV infection in special situations	219
Module 17: WHO Monitoring and Evaluation Framework for Viral Hepatitis	230

Foreword

Viral hepatitis is a major public health threat, with serious consequences such as cirrhosis and liver cancer. Together, the South-east Asia and Western Pacific regions account for two-thirds of the world's deaths attributable to hepatitis B and C. Cirrhosis and liver cancer is within the top ten causes of death in both regions, with countries having some of the highest incidence of new cases of liver cancer globally.

It is without doubt, action must be taken to change this increasing trajectory of advanced liver disease and liver cancer. Earlier testing and treatment can prevent progression of disease and reduce the risk of developing liver cancer. Hepatitis B is manageable with highly effective medicines. Hepatitis C is curable with oral direct acting antiviral medicines which cure more than 95% of people who complete the 2-3 months therapy.

Many countries are developing or accelerating their national responses for comprehensive prevention, treatment and care for viral hepatitis, as part of the call to action towards elimination of viral hepatitis as a public health threat by 2030. At the core of this action, is the delivery of good quality hepatitis care as part of existing health services, which is safe, affordable, accessible and equitable. Healthcare providers must have the training and capacity to deliver this.

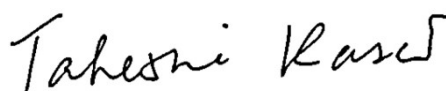
The Training Modules on screening, diagnosis and treatment of hepatitis B and C aims to assist this objective; and is based on WHO guidelines. Specifically, the modules help provide the essential knowledge for practice to those at the frontline of public health action on hepatitis, namely physicians, nurses, pharmacists, community health workers and staff providing hepatitis care.

Guidelines for delivering the best practices in hepatitis care evolve and change with time, based on new evidence. This training module has to keep pace with such changes, and for this reason, is being published electronically as a series of individual chapters. This will allow for individual chapters to be reviewed and updated separately in accordance to new evidence and best practice. The modules should be used in conjunction with international and national guidelines. Users are encouraged to supplement the content with existing evidence-based effective practices at their local level and to bring such practices forward for broader consideration and possible incorporation into standard practice at a national level. While these guidelines reflect normal expectations, there will be circumstances that may require professional judgement of the local healthcare provider.

We hope these training modules will be a tool to assist work in countries and healthcare providers.



Poonam Khetrpal Singh, Ph.D.
Regional Director for WHO South-East Asia Region



Takeshi Kasai, MD. Ph.D.
Regional Director for WHO Western Pacific Region

Introduction

Viral hepatitis is the seventh leading cause of death worldwide. Annual deaths from hepatitis (1.34 million) exceed the number of AIDS-related deaths (1.0 million) and approach the mortality associated with tuberculosis (1.67 million).

Viral hepatitis is caused by different virus types. The most serious are hepatitis B and C viruses, which together cause around 90% of hepatitis deaths worldwide. An estimated 257 million people globally are infected with hepatitis B virus (HBV), and roughly 900 000 per year die of HBV. It is estimated that 71 million people around the world are infected with hepatitis C virus (HCV) and that 400 000 people die of HCV-related causes each year.

The WHO South-East Asia Region (SEAR) is home to an estimated 39 million people with chronic HBV and an estimated 10 million people with HCV. An estimated 410 000 people in the Region die annually due to viral hepatitis, with chronic complications associated with HBV and HCV accounting for 78 % of the total.

The WHO Western Pacific Region (WPR) shoulders a substantial burden with an estimated 115 million people living with hepatitis B and 14 million living hepatitis C. The Region accounts for almost 40% of all global hepatitis related deaths. Liver cancer is the top 6th cause of death in the region, mostly due to chronic hepatitis B and C. Six out of the 10 countries with highest incidence of new liver cancer cases are in WPR.

The increasing trend in hepatitis-related deaths is alarming and action can be taken. Cirrhosis and liver cancer due to hepatitis is preventable as treatment prevents disease progression and hepatitis C infection is curable. The Global Health Sector Strategy (GHSS) for Viral Hepatitis 2016-2021 outlines the vision of elimination of viral hepatitis as a public threat by 2030, as part of Sustainable Development Goals for health.

Many countries are developing their national response for comprehensive prevention, treatment and care for hepatitis, as part of Health for All. Delivery of services for screening, diagnosis and treatment of hepatitis B and C as part of existing health services underlies universal health coverage. Capacity to deliver good quality services by all cadres of health care providers for hepatitis care is important.

These training modules have been developed by WHO South-East Asia and Western Pacific Regional Offices as part of bi-regional collaboration, and were developed following global WHO guidelines for hepatitis which can be adapted to country-specific needs. The modules are available publicly for the use capacity building of health care providers.

We would like to thank the WHO collaborating center for viral hepatitis at Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India and the WHO collaborating center for chronic hepatitis and liver cancer, Kanazawa University, Kanazawa, Japan for their technical assistance in the development of these modules. The bi-regional pilot workshops were supported by UNITAID funding through the Coalition PLUS HIV/HCV Drug Affordability Project with TREAT Asia.

Sample: pre-and post-workshop questionnaire, to be adapted as appropriate

Training Workshop on Hepatitis B and Hepatitis C screening, diagnosis and treatment

Instruction: Please circle at the correct answer(s).

Your initial: _____

1. Which of the following statement is NOT correct?
 - A. There are five main hepatitis viruses which infect human
 - B. HBV and HCV can cause liver cirrhosis and hepatocellular carcinoma
 - C. The main routes of transmission of HBV are perinatal and bloodborne
 - D. More than 90% of patients with chronic HBV infection can be cured by drug treatment.
2. Which of the following statements is NOT correct?
 - A. HCV is transmitted mainly through exposure to contaminated blood products
 - B. Persons with acute HCV infection are often asymptomatic.
 - C. HCV frequently affects organs other than the liver, such as joints and the kidneys.
 - D. HIV/HCV-coinfected patients have faster progression to cirrhosis.
3. Which of the following statements is NOT correct?
 - A. A positive HCV antibody test does not confirm the presence of chronic HCV infection
 - B. All patients who test positive for HCV antibody should have HCV RNA testing to confirm chronic infection.
 - C. The definition of chronic HCV infection is the presence of HCV RNA in the blood over six months after the estimated time of infection.
 - D. We can assess the degree of liver fibrosis by testing ALT/AST, albumin, INR and bilirubin.
4. We know the value of AST and Platelet of a patient. By which test can we assess liver fibrosis?
 - A. FIB-4
 - B. APRI
 - C. FibroTest
 - D. Fibroscan
5. Which of the following is NOT correct describing acute HBV infection?
 - A. It is characterized by the presence of anti-HBs during the acute phase
 - B. HBsAg appears firstly after acquisition of HBV infection
 - C. IgM anti-HBc appears soon after the appearance of HBsAg
 - D. The clinical symptoms, aminotransferases elevation and HBsAg usually disappear within 6 months
6. Which is NOT correct interpreting HBV serological markers?
 - A. HBsAg +, Anti-HBs -, Anti-HBc (IgM) +, Anti-HBc (Total) + ; Recent infection
 - B. HBsAg +, Anti-HBs-, Anti-HBc (IgM) -, Anti-HBc (Total) + ; Chronic infection
 - C. HBsAg -, Anti-HBs+, Anti-HBc (Total) +; Immunity due to vaccination
 - D. HBsAg -, Anti-HBs-, Anti-HBc (Total) -; Never infected
7. A patient has Anti-HCV (+) and HCV RNA (-). What is the interpretation?
 - A. Recent infection
 - B. Chronic infection
 - C. Never infected
 - D. Infection resolved or cured

8. Which person does NOT have screening for HBV?
- A. A 24 year-old pregnant woman (the HBsAg seroprevalence is 5% in her country)
 - B. A 52 year-old man with general malaise and jaundice
 - C. A 7 year-old boy his brother is with HBV infection
 - D. A 22 year-old woman. She is a nurse and has not been vaccinated previously
9. Which of the following is NOT correct?
- A. WHO recommends tenofovir or entecavir to all adults, adolescents and children aged 12 years or older in whom antiviral therapy for HBV is indicated
 - B. Nucleos(t)ide analogues (NAs) with a low barrier to resistance can lead to drug resistance and are not recommended
 - C. For the HBV treatment by NAs, lifelong antiviral therapy is generally required
 - D. Discontinuation of NAs may be considered in some persons with clinical evidence of cirrhosis
10. Which is NOT correct regarding monitoring during treatment of HBV infection?
- A. ALT, HBsAg, HBeAg and HBV DNA levels should be monitored annually.
 - B. Non-invasive tests to assess for the presence of cirrhosis are recommended to be monitored annually
 - C. More frequent monitoring is recommended for persons in whom treatment has been discontinued
 - D. In a patient with cirrhosis and family history of HCC, surveillance for liver cancer should be done every 12 months
11. Which of the following is NOT correct?
- A. All HIV/HBV co-infected individuals should receive antiretroviral therapy regardless of CD4 count
 - B. HBV/HCV co-infected individuals should usually receive initial treatment for HCV
 - C. PWID are at increased risk of acute and chronic hepatitis B and liver related disease, and therefore require additional care
 - D. In persons with HIV/HCV co-infection, treatment for HCV infection need to consider drug-drug interaction with anti-retroviral medications.
12. Based on the 2018 WHO hepatitis C treatment guidance, which one of the following should be considered “highest priority” for hepatitis C treatment?
- A. Coinfection with tuberculosis
 - B. Coinfection with HIV
 - C. People who inject drugs
 - D. Type 2 diabetes mellitus
13. Based on the 2018 WHO hepatitis C treatment guidance, which one of the following is

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_24470

