# VIRAL HEPATITIS

## STRATEGIC PLAN FOR KEY POPULATIONS IN SRI LANKA

2023-2030

Viral Hepatitis Study Group of the
**Sri Lanka College of Sexual Health and HIV Medicine**

# Viral Hepatitis Strategic Plan for Key Populations in Sri Lanka 2023-2030

**Viral hepatitis study group of the Sri Lanka College of Sexual Health and HIV Medicine**

**Acknowledgments:** The viral hepatitis strategic plan for key populations in Sri Lanka 2023-2030 (VHSP-KP 2023-2030) is a gap closer plan for the elimination of viral hepatitis in Sri Lanka, which was developed by the viral hepatitis (VH) study group of the Sri Lanka college of sexual health and HIV medicine. The college sincerely thank all those who contributed to make this viral hepatitis plan a reality

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# Executive Summary

Viral hepatitis is a preventable serious infection that puts infected people at higher risk for liver disease, cancer, and death. The viral hepatitis strategic plan for key populations in Sri Lanka 2023-2030 (VHSP-KP) is a gap closing plan for the elimination of viral hepatitis in Sri Lanka which was developed by the viral hepatitis study group of the Sri Lanka college of sexual health and HIV medicine. The hepatitis plan includes the national goals, objectives and strategies with emphasis on preventing the transmission through sexual and injecting behaviors and mother to child transmissions (MTCT). This hepatitis plan is an advocacy tool for the national programs to direct health strategic plans of relevant health programs dealing with prevention of communicable diseases. Prevention of viral hepatitis has many synergies with the prevention strategies of HIV, STI and MTCT of HIV and syphilis. Further, national STD and AIDS control program of the ministry of health need to play a complementary and coordinated role with other actors to achieve the vision of the "nation free of viral hepatitis".

If the Sri Lanka to achieve the elimination targets, there should be an integrated, coordinated, and concerted efforts by all the stakeholders. Hepatitis A and hepatitis B are preventable by vaccines, and hepatitis C is curable in one short course of treatment. Therefore, it is the duty of the all the stakeholders to deliver the science to our community.

The South-East Asia Region stats (WHO, 2022) indicates that 60 million people are estimated to be living with chronic Hepatitis B infection and 10.5 million persons with chronic Hepatitis C. It is estimated that 218 000 deaths occur due to viral hepatitis each year in the region with most being attributable to the chronic complications of Hepatitis B and C. In Sri Lanka, the estimated national prevalence of chronic HBV (HBsAg+) was 1.5 (1.34 - 1.66) and Hepatitis C prevalence was 0.75 (0.62 - 0.93). (Coalition of global hepatitis elimination, 2019)

Reversing the rates of viral hepatitis, preventing new infections, and improving treatment and care, reduction of viral hepatitis related stigma, discrimination and health inequalities, require a strategic and coordinated approach by the ministry of health with the other relevant departments and units such as epidemiology unit, national blood transfusion service, national STD/ AIDS control programme, maternal and child health programmes, tertiary care services, health promotion bureau and professional colleges, and relevant community based health systems and the private sector.

The VHSP-KP provides goal-oriented objectives and strategies that can be implemented by a broad mix of stakeholders at all levels and across many sectors, public, private and community. It serves as a mechanism to identify and leverage areas of synergy and resources and to avoid duplication of efforts across agencies.

The plan establishes the following vision, mission and the WHO defined targets for the nation to achieve the elimination target of viral hepatitis by 2030

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|---|---|
| Vision: | A nation free of viral hepatitis |
| Mission: | To end the viral hepatitis through leadership in science and public health practices in Sri Lanka to prevent new viral hepatitis infections, and to provide with high quality treatment and care services and lives free from stigma and discrimination |

**Elimination target of viral hepatitis by 2030 is defined by the WHO as**

- **90%** reduction in new chronic infections compared to 2015 baseline (including 90% reduction in new chronic infections among children less than 5 years old)
- **65%** reduction in mortality compared to 2015 baseline

# Contents

# Acronyms and Abbreviations

| | |
|---|---|
| 95%CI | 95% confidence interval |
| BB | Beach boys |
| CDC | Center for disease control |
| CSO | Civil society organizations |
| CSW | Commercial sex workers |
| DAA | Directly acting antivirals |
| DNA | Deoxyribonucleic acid |
| EPI | Expanded programme of immunization |
| FTC | emtricitabine |
| GFATM | Global fund to fight AIDS, Tuberculosis and Malaria |
| HAV | Hepatitis A virus |
| HBIG | Hepatitis B immunoglobulin |
| HBV | Hepatitis B virus |
| HDV | Hepatitis D virus |
| HEV | Hepatitis E virus |
| HIV | Human immunodeficiency virus |
| IDU | Injection drug users |
| KP | Key populations |
| LGBTQI | Lesbian, gay, bisexual, transgender, queer, intersex |
| MCH | Maternal and child health |
| MOH | Medical officer of health |
| MSM | Men who have sex with men |
| MTCT | Mother to child transmission |
| NDDCB | National dangerous drugs control board |
| OPIM | Other potentially infectious materials |
| PEP | Post exposure prophylaxis |
| PHM | Public health midwife |
| PLHIV | People living with HIV |
| PMTCT | Prevention of mother to child transmission |
| PrEP | Pre exposure prophylaxis |
| PWID | People who inject drugs |
| PWUD | People who use drugs |
| ssRNA | Single stranded ribonucleic acid |
| STD | Sexually transmitted diseases |
| STI | Sexually transmitted infections |
| TDF | tenofovir |
| TG | Transgender |
| VH | Viral hepatitis |
| VHSG | Viral hepatitis study group |
| VHSP | Viral hepatitis strategic plan |
| VHSP-KP | Viral hepatitis strategic plan for key populations |
| WHO | World health organization |

# I. Introduction

## A. The Need for a Viral Hepatitis Strategic Plan (VHSP)

The viral hepatitis strategic plan for key populations 2023-2030 (VHSP-KP 2023-2030) is a gap closure plan for the elimination of viral hepatitis in Sri Lanka, which was developed through a series of consultation with relevant local experts in the field and with extensive review of relevant literature by the viral hepatitis (VH) study group of the Sri Lanka college of sexual health and HIV medicine. The plan has given a special emphasis on the prevention of VH among key populations including sexual health service users. The need of the VHSP-KP is to promote biomedical, behavioural and structural means of prevention, treatment and care services for risk and vulnerable populations for STI/HIV and viral hepatitis. The plan addresses the general strategies and gap closing strategies for key populations in Sri Lanka.

## B. Challenges and Opportunities

The main challenge considered in this VHSP-KP 2023-2030 is to integrate viral hepatitis prevention, treatment and care services to national STI and HIV control programmes. There are missed opportunities for prevention interventions for key populations groups of sexually transmitted infections specially men who have sex with men (MSM), commercial sex workers (CSW) and non-binary gender identities including transgender people, beach boys (BB), people living with HIV (PLHIV), people who use drugs (PWUD) and people who inject drugs (PWID). Further some tailored interventions are necessary for lesbian, gay, bisexual, transgender, queer and intersex (LGBTQI+) communities who have considerable non-discriminatory servicers at sexual health centres. Main challenges also include inadequate diffusion of innovations to key populations of HIV/STI such as vaccinations, closing the knowledge gap, improve the number who know the VH status, address the barriers to access for treatment and care services. It is also important to address economic, social, cultural and political barriers as well as health system inequalities and disparities. Further, creating an enabling environment by mitigating stigma, discrimination, and other social disparities are also challengers for viral hepatitis interventions.

## C. Scope of the Hepatitis Plan

The scope of the viral hepatitis strategic plan 2023-2030 (VHSP 2023-2030) is to address the prevention, treatment and care services as a national plan with an emphasis on key populations of sexually transmitted and transmissible infections. The overall scope and approaches are based on the following directions

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|---|
| **Vision:** A nation free of Viral hepatitis |
| **Mission:** To end the viral hepatitis through leadership in science and public health practices in Sri Lanka to prevent new viral hepatitis infections, and to provide with quality treatment and care services and lives free from stigma and discrimination |

**Goals:**

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|---|---|
| Goal 1: | Prevent new viral hepatitis infections |
| Goal 2: | Reduce viral hepatitis-related morbidity and mortality |
| Goal 3: | Reduce viral hepatitis-related stigma, discrimination and health inequalities |
| Goal 4: | Improve viral hepatitis strategic information for evidence informed actions |
| Goal 5: | Achieve integrated and coordinated efforts among all partners that address the viral hepatitis prevention, care and treatment |

**Audience:** This plan is mainly developed for the policy makers and program managers in health and sexual health service providers to achieve the goals

# II. Viral Hepatitis Fact sheets

## A. Hepatitis A fact sheet

<table>
<tr><th colspan="2">Hepatitis A</th></tr>
<tr><td>Introduction</td><td>Transmission</td></tr>
<tr><td>• Structure: Nonenveloped, ssRNA virus in the Picornavirus group.<br>• Target cells: liver cells (Hepatotrophic virus).<br>• Incubation period: 15-50 days; average 28 days (CDC, 2023)<br>• Clinical presentation: The illness typically has an abrupt onset of fever, malaise, anorexia, nausea, abdominal discomfort, dark urine, and jaundice. (CDC, 2023)<br>• Spontaneous immune clearance rate: Almost everyone recovers fully from hepatitis A with a lifelong immunity. However, a very small proportion of people infected with hepatitis A could die from fulminant hepatitis. (WHO, 2023)</td><td>• Infectious materials: faeces of an infected individual<br>• Methods of transmission: The virus is primarily spread when an uninfected (and unvaccinated) person ingests food or water that is contaminated with the faeces of an infected person. The disease is closely associated with unsafe water or food, inadequate sanitation, poor personal hygiene and oral-anal sex. (WHO, 2023)</td></tr>
<tr><td>Means of prevention</td><td>Treatment and care options</td></tr>
<tr><td>• Biomedical: Hepatitis A vaccination<br>• Behavioural: The spread of hepatitis A can be reduced by: adequate supplies of safe drinking water; proper disposal of sewage within communities; and personal hygiene practices such as regular handwashing before meals and after going to the bathroom/toilets. (WHO, 2023)<br>• Structural: law, policy, circulars, guidelines and health system improvements</td><td>• There is no specific treatment for hepatitis A. Symptomatic management and management of complications</td></tr>
<tr><td colspan="2">Epidemiological facts in Sri Lanka</td></tr>
<tr><td>• 2019-2022: A retrospective analysis of 1,485 blood samples from patients with clinical hepatitis, received to Kandy hospital laboratory, showed 7.67% HAV IgM prevalence. (KDST Abeywardana, 2022)<br>• 2015-2016: A cross sectional study carried out in Gampaha district among 1,403 participants, the HAV IgG prevalence was 80.7% (95%CI: 78.64–82.76). (Ariyarathna & Abeysena, 2019)<br>• 2019: Study done among 180 Allied Health Sciences students of the Faculty of Medicine, University of Jaffna. The sero-prevalence of HAV infection was found to be 99.4% (R Anusitha, 2021)</td><td>• 2009: Sri Lanka experienced a total of 13,477 cases of a massive HAV outbreak in 2009 (NJ Dahanayaka, 2013)<br>• 2001: Study done among 288 children of Lady Ridgeway hospital, the seroprevalence was 11.6% in children under 10 years of age. (Silva, 2005)</td></tr>
<tr><td>Populations at h risk</td><td>Current challenges</td></tr>
<tr><td>• Most hepatitis A infections occur during early childhood. Risk factors include poor sanitation, lack of safe water, living in a household with an infected person, being a sexual partner of someone with acute hepatitis A infection, use of recreational drugs, sex between men; and travelling to areas of high endemicity without being immunized. (WHO, 2023)</td><td>• Poor Knowledge regarding hepatitis, unhygienic sanitary practices, and unhygienic practices related to drinking water (Ariyaratna N, Abeysena C, 2020)</td></tr>
</table>

## B. Hepatitis B fact sheet

| Hepatitis B | |
|---|---|
| **Introduction** | **Transmission** |
| • **Structure:** Enveloped, partially double stranded DNA virus in the Hepadnavirus group.<br>• **Target cells:** liver cells (Hepatotrophic virus).<br>• **Incubation period: 30-180** days (WHO, 2023)<br>• **Clinical presentation:** The illness can be acute (short and severe) or chronic (long term). The chronic infection puts people at high risk of death from cirrhosis and liver cancer. (WHO, 2023)<br>• **Spontaneous immune clearance rate**<br>Adult acquired infection: 95%<br>Neonates: <10%<br>Children aged 1–5 y: ~70%<br>(Chou HH, 2015) | • **Infectious materials:** blood, serum, plasma, tissue fluids, semen, vaginal and anal fluid, tissue fluids from ulcers skin damage sites, **OPIM**: sweat, tears, saliva, and urine<br>**Methods of transmission:**<br>• **Mother to child transmission:** Transmitted from mother to child at birth and also from an infected mother to an uninfected child during the first 5 years of life. The risk of maternal-infant transmission is related to the HBV replicative status of the mother which correlates with the presence of HBeAg as 90% of HBeAg-positive mothers transmit HBV infection to their offspring compared to only 10%–20% of HBeAg-negative mothers. (Stevens CE, 1975)<br>• **Sexual transmission:** Through unprotected sex (oro-genito-anal penetrative or rubbing sex)<br>• Needle pricks, cuts and mucous membrane exposures among healthcare workers<br>• Sharing injecting equipment and contamination with other potentially infectious material (OPIM)<br>• **Intimate personal objects:** Sharing toothbrush, razors, nail clipping items, tattooing, acupuncturing, skin piercing, slaughterhouse settings, closed institutions with potential for cutting abrasions e.g. daycare, disabled homes, mentally restarted homes, among barbers, butchers etc and high-risk contact/collision sports (Sabeena S, 2022) |
| **Means of prevention** | **Treatment and care options** |
| • **Biomedical:** Hepatitis B vaccine, Immunoglobulins (HBIG), Condoms, personal protective equipment (PPE), Antiviral treatment as prevention (TasP),<br>→ HBV PEP; HBIG and HBV vaccine<br>→ HBV PrEP; HIV PrEP (TDF+FTC) also effective in HBV (CROI, 2020) and HBV vaccination<br>• **Behavioural:** Practice safe sex and use of condoms, personal protective equipment (PPE), reduce number of sexual partners, avoid sharing needles or any equipment used for injecting drugs, piercing, or tattooing, washing your hands thoroughly with soap and water after coming into contact with blood, body fluids, or contaminated surfaces, promotion of health seeking behavior.<br>• **Structural:** Creating enabling environment for treatment, care and support including law, policy, circulars, guidelines and health system | There is no specific treatment for acute hepatitis B. Chronic hepatitis B can be treated with antiviral drugs and immune modulator drugs.<br><br>**Antiviral drugs**<br>• Tenoforvir disoproxil (TDF)<br>• Tenofovir alafenamide (TAF)<br>• Entecarvir<br>• Lamivudine<br>• Telbivudine<br>• Adefovir dipivoxit<br>**Immune modulator drugs**<br>• Pegylated interferon alfa (PegIFN-a).<br>• Interferone alfa.<br>(Hepatitis B Foundation, n.d.) |

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| strengthening (state, private, community systems) | |
| **• Epidemiological Facts in Sri Lanka** | |
| • **2022:** Multi-center study (North Colombo Teaching hospital, Hemas hospital Wattala, Leesons hospital, Ragama and Faculty of Medicine, University of Kelaniya) done among 150 children who received HepB vaccine at 2-4-6 months of age was assessed 10 years after the last dose of vaccination and 85% had protective antibody levels (PJ Perera, 2022)<br>• **2019-2020:** Study done among 235 regular hemodialysis patients who had received three doses of hepatitis B vaccine (in three different schedules) in the last 10 years showed an overall protection with anti-HBs >10mIU/mL was 69% (WM Asmir, 2021)<br>• **2019:** The estimated national prevalence of chronic HBV (HBsAg+) was 1.5 (1.34 - 1.66). (Coalition of global hepatitis elimination, 2019)<br>• **2017: 2018:** Study done in MRI, Out of 517 profiles, 23% (118) had serologically acute hepatitis, 12% (63) chronic hepatitis, 12% (63) early acute hepatitis, 3%(17) acute resolving hepatitis, 2% (10) immune tolerant or immune active chronic hepatitis, 11%(55) chronic HBeAg negative, and 3%(18) chronic inactive carrier stage. Out of the total, 22.4%(116) were positive for HBeAg with high infectivity. HBeAg positivity among the age groups of <10 years, 11-19 years, > 20 years was 72%, 22% and 20% respectively. There was a significant difference in infectivity ($p<0.05$) among the three age groups (Wirasinghe, 2018) | • **2015:** Study among 393 prison inmates the HBsAg prevalence was 0.25% while anti-HCV was positive among 6.9% (M A Niriella, 2015)<br>• **2014:** Study done among 152 nurses at Jaffna hospital, vaccine non-response rate was 7.7% (HBsAb <10mIU/ml) (V Piratheepkumar, 2014)<br>• **2008-2012:** Study done by the MRI among 230 family contacts of 78 chronic HBV carriers, HBcAb prevalence was 23.9% and HBsAg found in 6,1% (MARV Muthugala, 2015)<br>• **2008;** Study among 154 infants (completed 9 months of age) in a MOH area in Galle District in 2008. The overall protection (HBsAb titre >10 mIU/mL) after 3 doses of vaccine was 94.2% with a mean titre of 233.37 mIU/mL (Wijayaratne WMDGB, 2019)<br>• **2001:** A study done to assess the Hepatitis vaccine response (0,1,6 schedule) rate after 12-41 months later among 258 medical student volunteers had shown 9.5% non-responses (anti-HBs <10 mIU/ml) while 40% were hyporesponders anti-HBs <100 mIU/ml (Jennifer Perera, 2001)<br>• **1996:** Study done in Gampaha districts among 300 nurses (stratified random sample) Prevalence of hepatitis B infection as indicated by the presence of HBcAb was estimated to be 11.6% Hepatitis B carrier status as determined by a positive IIBsAg was 2% (E. Padmasiri, 1996) |
| **Populations at risk** | **Current challenges** |
| • People who inject drugs/DUs<br>• MSM/FSW/TG<br>• Frequent blood and blood product recipients (Thalassemia, hemophilics, Renal disease, cancer patients etc)<br>• High risk groups born before HepB vaccination is started in 2003 under EPI<br>• Household contacts<br>• Infected pregnant mother's neonates and children up to 5 years of age | • Lack of education on thr infection<br>• Inadequate prevention servicers for high risk groups<br>• PMTCT servicers for infected mothers or high risk mothers (esp unvaccinated mothers)<br>• Triple elimination interventions for pregnant mothers<br>• Testing and linkage to treatment and care<br>• Slow increase in injecting drug use<br>• Adults not covered by current EPI or those who waned vaccine protection<br>• Price of tests and treatment<br>• Non availability of curative treatment |

## C. Hepatitis C fact sheet

<table>
<tr><th colspan="2">Hepatitis C</th></tr>
<tr><td colspan="2"></td></tr>
<tr><th>Virology:</th><th>Transmission:</th></tr>
<tr><td>• Structure: Single stranded RNA virus (ssRNA) belongs to Flavivirus group. Complete genome sequences are now available for all six HCV types and for several different subtypes of type 1 (a, b, c), 2 (a, b, c) and 3 (a, b, and "10a"). Commonest genotypes reported among liver disease patients in Sri Lanka were 1(b), 2 (a,b), 3(a), [1(b) 2(b)] mixed infection. (D.B. Senevirathna, 2015), Blood donor positive samples had genotype 3 (a and b) (Dammika Senevirathna, 2011)<br>• Target cells: liver cells (Hepatotrophic virus).<br>• Incubation period: 15-150 days<br>• Clinical presentation: The virus can cause both acute and chronic hepatitis, ranging in severity from a mild illness to a serious, lifelong illness including liver cirrhosis and cancer.<br>• Spontaneous immune clearance rate: Around 30% (15–45%) of infected persons spontaneously clear the virus within 6 months of infection without any treatment. The remaining 70% (55–85%) of persons will develop chronic HCV infection. Of those with chronic HCV infection, the risk of cirrhosis ranges from 15% to 30% within 20 years. (WHO, 2023)</td><td>• Infectious materials: Blood<br>• Modes of transmission: Transmit through blood-to-bloodstream contact. Most infection occur through exposure to blood from unsafe injection practices, unsafe medical procedures, unscreened blood or blood product transfusions, injection drug use. (WHO, 2023)<br>• Sexual transmission: Sexual transmission is less common. There may also be an increased risk of blood-to-bloodstream contact during rough sex, anal sex or when a woman has her period. (Hepatitis C transmission and prevention, n.d.)<br>• Mother to child transmission: HCV can be passed from an infected mother to her baby, Hepatitis C is not spread through breast milk but need to consider to abstain from breast feeding if nipple cracks or bleeding is there</td></tr>
<tr><th>Prevention options</th><th>Treatment and care options</th></tr>
<tr><td>• Biomedical: No effective vaccine against hepatitis C, Direct-acting antivirals (treatment as prevention), personal protective equipment (PPE), Condoms<br>• Behavioural: Counsel for safe injecting practice and safe sex including correct condom use, promotion of testing among key populations<br>• Structural: Creating enabling environment for treatment, care and support including law, policy, circulars, guidelines and health system strengthening (state, private, community systems)</td><td>• There are effective treatments for hepatitis C. The goal of treatment is to cure the disease and prevent long-term liver damage.<br>• Direct-acting antiviral medicines (DAAs) can cure more than 95% of persons with hepatitis C infection, but access to diagnosis and treatment is low. (WHO, 2023)<br>• Antiviral medications, including sofosbuvir and daclatasvir, are used to treat hepatitis C. Some people's immune system can fight the infection on their own and new infections do not always need treatment. Treatment is always needed for chronic hepatitis C. (WHO, 2023)</td></tr>
<tr><th colspan="2">Epidemiological Facts in Sri Lanka</th></tr>
<tr><td>• 2019: The estimated national prevalence of chronic HCV (RNA+/cAg) was 0.75 (0.62 - 0.93). (Coalition of global hepatitis elimination, 2019)<br>• 2015: Study among 393 prison inmates anti-HCV prevalence was 6.9% (M A Niriella, 2015)</td><td>• 2002: Study in Gampaha district using multistage cluster sampling (3 MOH areas then 14 PHM areas) among a community sample of 534 individuals Hepatitis C prevalence was 0.6% (95% CI 0.12-1.63). (silva, 2002)</td></tr>
</table>

| | |
|---|---|
| • **2009:** Blood donor screening study done in 2009 among donor samples of 4,980. HCV antibody prevalence was 1.06% while HCV RNA prevalence was 0.16%. (Dammika Senevirathna, 2011) | • **2001:** Study done at three centers (NHSL, LRH, Cancer hospital Maharagama) among 200 multiple transfusion recipients the HCV prevalence was 5%. Prevalence among hemophilics 33% Thalassemia 10% (S Fernando, 2001) |
| **Populations at risk** | **Current Challenges** |
| • People who inject drugs (PWID)<br>• People with HIV<br>• Multiple transfusion recipients<br>• Men who have sex with men<br>• Children born to infected mothers | • Accessing and provision of servicers for injection drug users<br>• Non availability of vaccines<br>• Lack of awareness of infection among KPs<br>• Testing and linkage to care<br>• Price of and access to treatment |

## D. Hepatitis D fact sheet

| **Hepatitis D** | |
|---|---|
| **Introduction** | **Transmission:** |
| • **Structure**: Hepatitis delta virus (HDV) is a defective virus that requires the hepatitis B virus (HBV) to complete its life cycle in human hepatocytes. HDV contain an envelope incorporating HBV surface antigen and hepatitis delta antigen, the only viral encoded protein. (Nathalie Mentha, 2019)<br>• **Target cells**: HBV infected hepatocytes<br>• **Incubation period**: **30-60** days, Survival need HBV as coinfection or superinfection<br>• **Clinical presentation:** In acute coinfection (HBV and HDV); lead to a mild-to-severe hepatitis typically appear in 3–7 weeks after initial confection. In a superinfection (HDV on chronic HBV); Accelerates progression to a more severe disease in 70–90% of persons, cirrhosis (10 years early) and are at an increased risk of hepatocellular carcinoma (HCC). (WHO, 2023) | • **Infectious materials:** Similar to HBV and include, blood, serum, plasma, tissue fluids, semen, vaginal and anal fluid, tissue fluids from ulcers and other skin damage sites<br>• **Modes of transmission:** The routes of HDV transmission, like HBV, occur through broken skin (via injection, tattooing etc.) or through contact with infected blood or blood products. Transmission from mother to child is possible but rare. (WHO, 2023) |
| **Means of prevention** | **Treatment and care options** |
| • **Biomedical:** Hepatitis B vaccination to prevent the superinfection or the coinfection, Condoms<br>• **Behavioural:** Practice safe body piercing techniques in drug injecting habits, medical practice, other piercing, tattooing etc Practice safe sex: by using condoms, reducing partners Promotion of health seeking behaviours<br>• **Structural:** Creating enabling environment for treatment, care and support including law, policy, circulars, guidelines and health system strengthening (state, private, and/or community systems) | • Pegylated interferon alpha is the generally recommended treatment for hepatitis D virus infection. Treatment should last for at least 48 weeks to lower the disease progression. This treatment is associated with significant side effects and should not be given to patients with decompensated cirrhosis, active psychiatric conditions and autoimmune diseases<br>• Bulevirtide is one of the new promising treatments for hepatitis D. (WHO, 2023) |
| **Epidemiological Facts in Sri Lanka** | |
| Studies not found to explain the local epidemiology | |

| | |
|---|---|
| **Population at risk** | **Current Challenges** |
| • People who inject drugs/DUs<br>• MSM/FSW/TG<br>• Frequent blood and blood product recipients (Thalassemia, hemophilics, Renal disease, cancer patients etc) | • Creation of evidence base on HDV infection for actions<br>• Making the availability of testing facilities |

## E. Hepatitis E fact sheet

| **Hepatitis E** | |
|---|---|
| **Introduction** | **Transmission:** |
| • **Structure**: HEV is a single-stranded positive-sense RNA virus (ssRNA) classified within the Hepeviridae family<br>• **Target sells**: Liver cells<br>• **Incubation period**: ranges from **2-10** weeks, with an average of 5 to 6 weeks.<br>• **Clinical presentation**: it often goes undiagnosed because they typically have no symptoms or only a mild illness without jaundice. In rare cases, acute hepatitis E can be severe and result in fulminant hepatitis (acute liver failure). Pregnant women with hepatitis E, particularly those in the second or third trimester, are at increased risk of acute liver failure, fetal loss and mortality. Up to 20–25% of pregnant women can die if they get hepatitis E in third trimester. (WHO, 2023) | **Infectious materials**: faeces of an infected individual<br>**Methods of transmission:** The virus is primarily spread when an uninfected person ingests food or water that is contaminated with the faeces of an infected person. The disease is closely associated with unsafe water or food, inadequate sanitation, poor personal hygiene and oral-anal sex |
| **Means of prevention** | **Treatment and care options** |
| • **Biomedical:** No vaccination<br>• **Behavioural:** maintaining hygienic practices; and avoiding consumption of water and ice of unknown purity.<br>• **Structural:** law, policy, circulars, guidelines, health system improvements | • There is no specific treatment<br>• Avoid unnecessary medications that can adversely affect liver function, e.g. acetaminophen, paracetamol.<br>• Hospitalization is required for people with fulminant hepatitis and symptomatic pregnant women.<br>• Immunosuppressed people with chronic hepatitis E benefit from specific treatment using ribavirin, an antiviral drug. In some specific situations, interferon has also been used successfully. |
| **Epidemiological Facts in Sri Lanka** | |
| 2019: Study done among 180 Allied Health Sciences students of the Faculty of Medicine, University of Jaffna. The seroprevalence of HEV was 0.6%. (R Anusitha, 2021) | |
| Populations at risk | Current Challenges |
| • Populations with risk factors are at higher risk.<br>• Risk factors include Poor sanitation, lack of safe water, living in a household with an infected person, being a sexual partner of someone with hepatitis E infection, sex between men; and (WHO, 2023) | • Poor Knowledge regarding hepatitis E<br>• Prevailing areas of unhygienic sanitary practices, and drinking water |

# III. Viral Hepatitis Strategic Plan (VHSP)

## A. Vision:

A nation free of Viral hepatitis

## B. Mission

To end the viral hepatitis through leadership in science and public health practices in Sri Lanka to prevent new viral hepatitis infections, and to provide with high quality treatment and care services and lives free from stigma and discrimination

## C. Goals

| | |
|---|---|
| **Goal 1:** | **Prevent new viral hepatitis infections** |
| **Goal 2:** | **Reduce viral hepatitis-related morbidity and mortality** |
| **Goal 3:** | **Reduce viral hepatitis-related stigma, discrimination and health inequalities** |
| **Goal 4:** | **Improve viral hepatitis strategic information for evidence informed actions** |
| **Goal 5:** | **Achieve integrated and coordinated efforts among all partners that address the viral hepatitis prevention, care and treatment** |

## Goal 1: Prevent New Viral Hepatitis Infections

### Objective 1.1: Increase awareness of viral hepatitis

***Strategies:***

| | |
|---|---|
| 1.1.1 | Implement local, and national campaigns to provide education about viral hepatitis, the need for vaccination, and the benefits of getting tested, treated, and cured. |
| 1.1.2 | Collaborate with high risk community groups to provide education about viral hepatitis |
| 1.1.3 | Develop accessible, comprehensive, culturally, linguistically, and age-appropriate sexuality education curricula including for hepatitis B, hepatitis C, HIV, STIs, and drug use risk for youth and adults. |
| 1.1.4 | Integrate messaging on HIV, viral hepatitis, STIs, sexual health, and drug use using appropriate channel of communication. |

### Objective 1.2: Increase viral hepatitis vaccination uptake and coverage

***Strategies:***

| | |
|---|---|
| 1.2.1 | Provide hepatitis B vaccine at clinical and high risk community-settings such as HIV, STI clinics, organizations of PWUD and correctional facilities. |
| 1.2.2 | Provide hepatitis B vaccines for healthcare workers and trainee healthcare workers |
| 1.2.3 | Maintain protected level of antibodies among healthcare workers in hospital settings |
| 1.2.4 | Reduce and address the supply chain management issues of viral hepatitis vaccines |
| 1.2.5 | Train providers on hepatitis vaccination and strategies to address barriers of vaccine uptake. |
| 1.2.6 | Selective administration of hepatitis B vaccine “birth dose” within 24 hours of birth. |

| | |
|---|---|
| 1.2.7 | Scale up best practices in hepatitis A and hepatitis B vaccination coverage consistent with national guidelines. |

### Objective 1.3: Eliminate mother to child transmission (MTCT) of hepatitis B and hepatitis C

***Strategies:***

| | |
|---|---|
| 1.3.1 | Develop and implement guidelines for hepatitis B and hepatitis C screening, diagnosis, and management during pregnancy. |
| 1.3.2 | Improve surveillance by documenting pregnancy status at least on all viral hepatitis positive laboratory reports. |
| 1.3.3 | Collaborate with community based organizations working with high risk groups to educate staff and people of childbearing potential about viral hepatitis and the importance of preventing MTCT |

### Objective 1.4: Increase viral hepatitis prevention and treatment services for people who use drugs

***Strategies:***

| | |
|---|---|
| 1.4.1 | Educate communities and individuals about substance use disorders, available prevention, harm reduction and treatment options, and associated risks including transmission of viral hepatitis, HIV, and STIs. |
| 1.4.2 | Expand access to viral hepatitis prevention and treatment services by providing screening, vaccination, and linkage to care in broad range of health care facilities (STI, HIV services, IDU/DU correctional settings) and high risk community-based settings. |
| 1.4.3 | Expand access to substance use disorder treatment and syringe services programs (SSPs) in areas and populations vulnerable to viral hepatitis and HIV outbreaks, and in correctional settings. |
| 1.4.4 | Establish and scale up outreach and peer education services for people who use drugs and provide viral hepatitis services with HIV and STI services. |

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### Objective 1.5: Increase the capacity of health care systems, and the workforce to prevent and manage viral hepatitis

***Strategies:***

| | |
|---|---|
| 1.5.1 | Partner with professional and academic bodies to include viral hepatitis prevention, treatment and care in the curriculum of medical and other health care professionals. |
| 1.5.2 | Develop training and decision support tools for service providers in public, private and community health systems, to support them in implementing viral hepatitis prevention, testing, and treatment. |
| 1.5.3 | Develop training and decision support tools for the management of hepatitis B and hepatitis C for pregnant women and newborns. |

## Goal 2: Reduce viral hepatitis-related morbidity and mortality

### Objective 2.1: Increase the proportion of people who are tested and know their viral hepatitis status

***Strategies:***

| | |
|---|---|
| 2.1.1 | Scale up implementation of hepatitis C screening among high risk adults and pregnant women and provide linkage to care. |
| 2.1.2 | Expand innovative models for viral hepatitis testing in community-based organizations working with high risk groups, mobile units, substance use treatment programs, correctional facilities, syringe services programs, HIV/STI and sexual health clinics |

| | |
|---|---|
| 1.1.3 | Expand the availability and accessibility to hepatitis B and hepatitis C testing in public, private and community based health systems. |
| 2.1.4 | Increase availability of reflex testing for hepatitis B, and hepatitis C. |
| 2.1.6 | Increase hepatitis B testing among high risk subpopulations with HBsAg prevalence of ≥2%. |

**Objective 2.2: Improve the quality of care and retention in care**

***Strategies:***

| | |
|---|---|
| 2.2.1 | Educate people who are newly diagnosed about recommended assessment, vaccination, treatments, and the benefits of treatment adherence and completion |
| 2.2.2 | Improve linkage to care between testing service providers to viral hepatitis treatment providers. |
| 2.2.3 | Scale up innovative models of care that increase convenience and reach people impacted by viral hepatitis, such as telehealth, mobile units, and apps for patient self-management and care coordination. |
| 2.2.4 | Scale up innovative approaches to retain in care. |
| 2.2.5 | Develop and implement viral hepatitis quality measures in screening, care, and treatment. |
| 2.2.6 | Study risk factors for hepatitis B reactivation in persons with inactive disease (resolved infection) and make recommendations for prophylaxis, monitoring, and use of vaccination to boost immunity in people with antibody to hepatitis B who are receiving immunosuppressive therapy. |

**Objective 2.3: Increase the capacity of the public, private an community systems and the health care workforce to provide effective holistic care and treatment for people with viral hepatitis**

***Strategies:***

| | |
|---|---|
| 2.3.1 | Partner with professional societies and academic institutions to increase provision of viral hepatitis screening and treatment by health care professionals and paraprofessionals. |
| 2.3.2 | Expand hepatitis C screening and treatment capacity among public, private, and community settings to support the implementation of viral hepatitis testing, counseling, and treatment recommendations. |
| 2.3.3 | Use technology and digital collaboration tools such as online training and case conferencing to expand health care provider expertise. |
| 2.3.4 | Improve implementation of recommended monitoring and care for people with chronic hepatitis B or chronic hepatitis C related to treatment status, fibrosis, and risk for hepatocellular carcinoma, to prevent morbidity and mortality from hepatocellular carcinoma, end-stage liver disease, and other hepatitis-related sequelae. |
| 2.3.5 | Expand and improve effectiveness of viral hepatitis navigation and linkage to care in programs that provide viral hepatitis outreach, screening, and treatment. |
| 2.3.6 | Implement strategies address co-occurring conditions, such as alcohol and other substance use disorders, particularly those reaching priority populations. |

**Objective 2.4: Support the development and uptake of new and improved diagnostic technologies, therapeutic agents, and other interventions for the identification and treatment of viral hepatitis**

***Strategies:***

| | |
|---|---|
| 2.4.1 | Advance the development and use of viral hepatitis point-of-care diagnostics and self-collection diagnostics. |
| 2.4.2 | Develop accurate and convenient tests that discriminate between acute and chronic HCV infections (such as HCV core antigen and serologic tests). |
| 2.4.3 | Improve and validate tools for earlier detection of hepatocellular carcinoma, such as improved liver imaging and blood and urine tests. |

| | |
|---|---|
| 2.4.4 | Improve prevention of end-stage liver disease and hepatocellular carcinoma among people living with viral hepatitis with effective treatment. |

## Goal 3: Reduce viral hepatitis related disparities and health inequities

### Objective 3.1: Reduce stigma and discrimination faced by people with and at risk for viral hepatitis

***Strategies:***

| | |
|---|---|
| 3.1.1 | Mitigate viral hepatitis related stigma and discrimination in the society including key populations such as MSM, PWUD/PWID, CSW etc.) |
| 3.1.2 | Reduce stigma and discriminatory practices, at health care delivery systems. |
| 3.1.3 | Enforce necessary laws and policies that protect people with viral hepatitis against stigma and discrimination |
| 3.1.4 | Educate health care and general public on laws and policies against stigma and discrimination against viral hepatitis. |
| 3.1.5 | Train health professionals on the delivery of culturally competent education, counseling, testing, care, and treatment for viral hepatitis, including development of Guidelines. |

### Objective 3.2: Address social determinants of health and co-occurring conditions

***Strategies:***

| | |
|---|---|
| 3.2.1 | Establish and expand policies and approaches that promote viral hepatitis prevention, treatment and care in programs of other sectors and systems (education, justice system etc.) that impact social determinants of health. |
| 3.2.2 | Provide comprehensive care service that address co-occurring conditions for people with and at risk for viral hepatitis, HIV, STIs, and substance use disorders. |
| 3.2.3 | Develop and implement effective interventions that address social determinants of health among people with and at risk for viral hepatitis. |

## Goal 4: Improve viral hepatitis strategic information for evidence informed actions

### Objective 4.1: Improve public health surveillance across the course of the disease and the determinants of the disease

***Strategies:***

| | |
|---|---|
| 4.1.1 | Establish a quality assured system of recording and reporting of viral hepatitis infection including pregnant women at MOH, district and national level for hepatitis A, B and C |
| 4.1.2 | Implement sentinel surveillance for hepatitis B and C among high risk groups for early identification of epidemics |
| 4.1.3 | Collaborate and integrate with HIV programs for behavior surveys |
| 4.1.4 | Develop and promote standardized data collection tools and forms for relevant data reporting entities |
| 4.1.5 | Develop and implement quality improvement processes by regularly monitoring the hepatitis B continuum of care and hepatitis C care cascade. |

### Objective 4.2: Conduct routine analysis of viral hepatitis data and disseminate findings to inform public health action and the public

***Strategies:***

| | |
|---|---|
| 4.3.1 | Establish data recording and reporting system for the programmatic data with a plan of data analysis and dissemination for evidence informed actions at district level. |
| 4.3.2 | Collect and monitor data on viral hepatitis incidence, prevalence, and deaths with hepatitis B and hepatitis C as an underlying or contributing cause. |
| 4.3.3 | Conduct and publish epidemiologic studies and surveys to close gaps of scientific evidences |

## Goal 5: Achieve integrated and coordinated efforts among partners that address the viral hepatitis prevention, care and treatment

### Objective 5.1: Integrate programs to address the syndemic of viral hepatitis, HIV, STIs, and substance use disorders

***Strategies:***

| | |
|---|---|
| 5.1.1 | Integrate and scale up viral infection prevention, treatment and care considering the through syndemic nature (having mutually responsible health programs in one platform) |
| 5.1.2 | Provide technical assistance and training for health care providers to manage and treat people with co-morbidities such as viral hepatitis, HIV, STI, and/or substance use disorders. |
| 5.1.3 | Encourage to work collaboratively across departments to address cross-cutting programs that address the syndemic. |
| 5.1.4 | Work to align indicators and integrate surveillance data across programs and clinical service providers that address viral hepatitis, HIV, STI, and substance use disorder services. |

### Objective 5.2: Establish and increase collaboration and coordination of viral hepatitis programs and activities across public and private stakeholders

***Strategies:***

| | |
|---|---|
| 5.2.1 | Establish viral hepatitis strategic planning with relevant stakeholders including people with life-experiences with viral hepatitis. |
| 5.2.2 | Coordinate and align strategic planning efforts on viral hepatitis, HIV, STIs, and substance use disorders across national and local partners. |
| 5.2.3 | Encourage development of public-private partnerships to expand education, screening, vaccination, linkage to treatment and care of viral hepatitis. |

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## D. Key populations in Sri Lanka

The priority populations or the disproportionately impacted populations (key populations) need to be identified based on the programme data and/or research findings. People who practice or exposed to the modes of transmissions are the high risk groups further, people who have the pulling and pushing factors to get exposed to the viral hepatitis infection are the vulnerable populations. Therefore, in Sri Lankan context VHSP identifies the following high risk and vulnerable populations for viral hepatitis prevention treatment and care servicers. For a low prevalent country to be free of viral hepatitis, the high risk and vulnerable group interventions are especially needed to be included and provided prevention servicers. The groups in the table below, may have more than one exposure risks and need to be considered the multi-modes of exposures and bridging role of some population groups who have contact with risk groups and the non-risk or general population groups. Some of the groups listed below need local research evidences to consider as a risk or vulnerable group.

| High risk activities | Risk or vulnerable groups | Estimated population sizes |
|---|---|---|
| Sexual transmission Hepatitis B and C | Men who have sex with men (MSM) | 30,000-50,000 (NSACP, 2018) |
| | Female Sex workers | 20,000-35.000 (NSACP, 2018) |
| | Male sex workers | 4,000-8,400 (NSACP, 2018) |
| | LGBTQI community | 12% of the population (Approx. 1.5 million) (Equal Ground, 2017) |
| | Transgender populations | 1,392-1,966 (NSACP, 2018) |
| | Beach boys | 3,000-6,000 (NSACP, 2018) |
| | STI clinic attendees | 51,240 per year (NSACP, 2021) |
| | STI patients seeking care | Approx. 200,000 per year |
| | People living with HIV | 3,300-4,000 (NSACP, 2021) |
| Sharing injecting equipment | Injecting drug users | 650-1,200 (NSACP, 2018) |
| | Tattooing service providers and clients | No estimates available |
| | Acupuncturing service providers and clients | 29 clinics in Sri Lanka (Top accupuncture clinics in sri lanka, 2023) |
| Through contaminated blood and blood products Hepatitis B and C | Cancer patients | 37,648 reported in 2020 (NCCP, 2020) |
| | Healthcare workers (government sector) | 150,273 (Ministry of Health, 2020) |
| | Hemodialysis patients | No trusted source of data found |
| | Recipients of frequent blood or blood product transfusions | - |
| | Thalassemia patients (sever form) | Estimated 2000 patients with sever thalassemia (P. Premawardhena, 2022) |
| | Haemophilia (all forms) | 2,100 (Haemophilia in the Sri Lankan context, 2022) |
| Mother to child transmission Hepatitis B and C | Infected pregnant mothers | No trusted source of data found |
| | Pregnant mothers with infected partners | No trusted source of data found |
| | Pregnant mothers with infected household member/s | No trusted source of data found |
| Sharing or frequent contacts with personal and intimate objects and intimate body-body contacts Hepatitis B | Household members living with an infected family member | No trusted source of data found |
| | Barbers and saloon service providers | No trusted source of data found |
| | Sensual body treatment service providers (e.g. spa) | No trusted source of data found |
| | Masseuses | No trusted source of data found |
| | Manicure and pedicure service providers | No trusted source of data found |
| | Prison staff | 6,268 (Department of Prison, 2022) |
| | Total number of prisoners | 26,176 (Department of Prison, 2022) |
| | Elderly care home staff/nursing staff | No trusted source of data found |
| | People living in elderly care settings | No trusted source of data found |
| Fecal-oral transmission Hepatitis A and E | People who do not have access to safe water | No trusted source of data found |
| | People who do not have access to hygienic food | No trusted source of data found |

## E. Indicators

**Elimination target of viral hepatitis by 2030 is defined by the WHO as**

- **90% reduction in new chronic infections compared to 2015 baseline and**
- **65% reduction in mortality compared to 2015 baseline**

To achieve these targets, the VH study group suggest the following impact and service indicators to be monitored and achieved by the country

| Category | Category | Target area | 2015 baseline | 2030 target |
|---|---|---|---|---|
| **Impact target** | Hepatitis B Incidence | Reduction of new hepatitis B infections by 90% compared to 2015 baseline | Estimate or assumed value | 90% reduction from 2015 baseline |
| | Hepatitis C Incidence | Reduction of new hepatitis C infections by 90% compared to 2015 baseline | Estimate or assumed value | 90% reduction from 2015 baseline |
| | Hepatitis B Mortality | Reduction of hepatitis B mortality by 65% compared to 2015 baseline | Estimate or assumed value | 90% reduction from 2015 baseline |
| | Hepatitis C Mortality | Reduction of hepatitis B mortality by 65% compred to 2015 baseline | Estimate or assumed value | 90% reduction from 2015 baseline |
| Service coverage targets | HBV vaccination | childhood vaccine coverage (third dose coverage) | Estimate or assumed value | 100% |
| | Prevention of MTCT of HBV infection among positive mothers | Screen all high risk mothers and pregnant mothers of high risk partners. | Estimate or assumed value | 100% |
| | | HBV birth-dose vaccination coverage among exposed neonates | Baseline | 100% |
| | | HBIG birth-dose coverage | Estimate or assumed value | >95% |
| | | HBV and HBIG birth-dose converge | Estimate or assumed value | >95% |
| | Blood safety | Percentage of blood donations screened in a quality assured manner for hepatitis B and C | 100% | 100% |
| | Harm reduction for injecting drug users | Number of sterile needles and syringes provided per person who injects drugs per year | Estimate or assumed value | >95% |
| | | Percentage of PWIDs who injected safely | Estimate or assumed value | >95% |
| | Testing and diagnosis among high risk groups e.g. Frequent blood and product recipients, cancer patients, IDU, MSM, | Percentage of high risk groups who tested for hepatitis B and know their results | Estimate or assumed value | >95% |
| | | Percentage of high risk groups who tested for hepatitis C and know their results | Estimate or assumed value | >95% |

| | | | |
|---|---|---|---|
| FSW, TG. Prison inmates | | | |
| Treatment | Percentage receiving specific treatment for viral hepatitis B | Estimate or assumed value | 100% |
| | Percentage receiving specific treatment for viral hepatitis C | Estimate or assumed value | 100% |
| Risk group vaccination | HBV vaccination of health care workers/trainees | Estimate or assumed value | >95% |
| | HBV vaccination coverage of HIV patients | Estimate or assumed value | >95% |
| | HBV vaccination coverage of household contacts | Estimate or assumed value | >95% |
| | HBV vaccination converge of MSMs (esp. who waned the protection of HepB infant vaccination) | Estimate or assumed value | >95% |
| | HBV vaccination coverage of commercial sex workers | Estimate or assumed value | >95% |
| | HBV vaccination coverage of PWID | Estimate or assumed value | >95% |
| | HBV vaccination of evidence informed other risk groups | Estimate or assumed value | >95% |

# IV. Implementation and Accountability

Implementation of viral hepatitis prevention, treatment and care servicers need to be carried out with the overarching and guiding principles of partnership, accountability, non-discrimination, empowerment, rights based approaches, equality, equity and legality. Every sector has a role to play and the delivery of the evidence informed and culturally appropriate science for those needed servicers through proper programming and planning. Overall plan of implementation is to reduce the morbidity and mortality with the improvement of quality of life and life expectancy. The VH plan presents a framework with goals, objectives, and strategies for reducing and eliminating viral hepatitis in the country. It is necessary to establish and increase collaboration and coordination of viral hepatitis programmes and activities across public, private and community stakeholders. Following are the potential actors of the viral hepatitis prevention, treatment and care in Sri Lanka.

**Government sector**; The advisory committee for communicable diseases (ACCD) of the ministry of health consisting of subject experts is the decision making body on the control of communicable diseases. The pivotal implementation role of the infectious disease control is vested in the epidemiology unit of the ministry of health, Sri Lanka. The epidemiology unit is linking with over 340 medical officer of health (MOH) areas in the country to implement its functions. In addition, national STD/AIDS control program (NSACP) headquarters with 41 network of sexual health clinics in the country is another well-structured health system to control STI and HIV. The NSACP provide sexual health services to range of high risk sub populations for STIs and HIV in the country. Therefore, the NSACP is one of the important entry points to mainstream viral hepatitis prevention programme in Sri Lanka especially for key populations. Other health systems include, national blood trqnsfusion service, family health bureau, infectious disease hospital (IDH), national dangerous drugs control board (NDDCB), health promotion bureau, The government hospital network including primary and secondary care institution, tertiary care hospitals All have to play a role in the provision of prevention, treatment and care services. Furthermore, other government sectors

also need to play a role as partners of the overall implementation and accountability of the national efforts such as education, judiciary, prison, law enforcement servicers, social services etc.

**Private sector:** Growing private sector provides a considerable viral hepatitis related servicers with the provision of treatment care and support servicers providing secondary and tertiary care services as well as prevention servicers (e.g. vaccine servicers)

**Professional colleges and other academic bodies:** These colleges have to play a vital role in initiating and creating discussions and forming policies and guidelines with the advocating role to the government and the other health sectors.

**Non-governmental partners, civil society organizations (CSOs):** Addressing viral hepatitis is not needed to be solely a government activity. Success also depends on coordinated actions by non-governmental organizations such as community-based and civil society organizations. Capacity building and strengthening community health system are also some important areas of VH prevention, treatment and care services especially when addressing syndemic of HIV, STIs, viral hepatitis, mental health issues, stigma, discrimination, and social determinants of health. However, community systems dedicated for public health purposes are created when the epidemics warrant such a caliber of intervention. However, there are many community-led interventions for key populations of HIV infection, currently carried out by the non-governmental sub-recipients of GFATM as well as through the network of STI clinics of the national STD/AIDS control programme. Therefore, the community systems are also an important entry points of prevention servicers of viral hepatitis among sub populations of MSM, FSW, PWUD/PWID, TG, and beach boys (BB). These community-led programs can be integrated with VH servicers.

**Development partners:** Development partners play a major role in mainstreaming and implementing various project to improve the health concerns in the country. Their, technical and monetary assistance always a great assets to implement the national strategic plan in Sri Lanka.

# V. Viral Hepatitis in Pregnancy

Out of all the viral hepatitis infections, hepatitis B has the highest risk of mother to child transmission. Most of the global burden of chronic hepatitis B infection can be attributed to MTCT of HBV at, or shortly after, birth or in early childhood. In addition, the risk for chronic infection is inversely related to age at acquisition; approximately 90% of infected infants and 30% of infected children aged <5 years become chronically infected, compared with 2%–6% of persons who become infected as adults (CDC, 2021)

Transmission of HBV from mother to child is more common in children born to women who have a high viral load and/or are positive for the HBeAg. Therefore, EMTCT of HBV is an integral part of elimination of HBV (CDC, 2022)

## A. Elimination of mother-to-child transmission of HIV, syphilis and hepatitis B (Triple elimination strategy)

The "triple elimination initiative", encourages countries to simultaneously commit to EMTCT of HIV, syphilis and HBV. Essential triple EMTCT services include

- Testing for HIV, syphilis and HBV in antenatal care clinics
- Prompt and efficacious interventions to treat women who test positive, and to prevent transmission of the infection(s) to their children

- Counselling for women and their partners to reduce transmission risk and ensure appropriate treatment
- Appropriately attended, safe delivery
- Appropriate follow-up of exposed infants, including HBV vaccine birth dose
- Optimal infant feeding and
- Lifelong treatment and care for mothers living with HIV, or eligible for treatment for HBV or syphilis

Success in all countries depends on the combined efforts of advocates, policy-makers, health providers and community representatives. These stakeholders must help ensure that services are non-coercive and that the human rights of women, children and families affected by the 3 conditions are protected (WHO, 2023). Sri Lanka has achieved the target of elimination of mother to child transmission of HIV and syphilis in 2019

## B. Hepatitis and pregnancy fact sheet

<table>
<tr><th colspan="2">Hepatitis and pregnancy</th></tr>
<tr><td colspan="2">All 5 Hepatitis viruses can harm mother and foetus</td></tr>
<tr><td>MTCT of HAV<br>• Acute hepatitis A virus (HAV) infection during pregnancy might increase the rates of adverse pregnancy outcomes; cases leading to fetal liver injury and mother-to-child transmission (MTCT) of HAV have been reported<br>• Pregnant women with chronic hepatitis B virus (HBV) infection might have an increased risk of preterm delivery and gestational diabetes<br>MTCT of HBV<br>• There is risk of MTCT of HBV, especially in mothers with high levels of HBV DNA and who are positive for Hepatitis e antigen (HBeAg), but this risk is reduced with the use of maternal antiviral therapy and prompt administration of infant immune prophylaxis</td><td>MTCT of HCV<br>• Pregnant women with chronic hepatitis C virus (HCV) infection have increased rates of adverse pregnancy outcomes; MTCT occurs in 5% and is linked with invasive fetal monitoring and prolonged rupture of membranes<br>MTCT of HDV<br>• Risks related to underlying cirrhosis can be more frequent in pregnant women with hepatitis D virus (HDV) infection; MTCT of HDV is rare and management is the same as HBV monoinfection<br>MTCT of HEV<br>• Acute hepatitis E virus (HEV) infection in pregnancy is associated with an increased risk of maternal death and infant mortality, including higher rates of preterm delivery and stillbirths; MTCT of HEV can occur.</td></tr>
<tr><th>Means of prevention</th><th>Treatment and care options</th></tr>
<tr><td>• Biomedical prevention: infant vaccine (birth dose), infant immune globulin (HBIG). Tenofovir prophylaxis to mother, primary prevention for potential contacts<br>• Behavioural prevention: improve treatment seeking behavior, patient education, discuss<br>• Structural prevention: law, policy, circulars, guidelines, health system improvements</td><td>• Provision of universal treatment for infected pregnant mothers and newborns<br>• Implementation of testing services for pregnant mothers of key population or pregnant mothers who have key population partners<br>• Mainstreaming the triple elimination strategy with hepatitis B</td></tr>
<tr><th colspan="2">Epidemiological Facts in Sri Lanka</th></tr>
<tr><td colspan="2">• 2023: A nationwide cross-sectional survey conducted among 1269 pregnant women and 2538 five year olds in 2023 by the Epidemiology Unit, Ministry of Health, Sri Lanka (unpublished data) showed that Childhood Hep B vaccination coverage (Penta 3 coverage) 99% while Hep B prevalence among 5-year-olds was 0% Hep B prevalence among pregnant mothers was 0%</td></tr>
<tr><th>Populations at risk</th><th>Current Challenges</th></tr>
</table>

| | |
|---|---|
| Pregnant mothers or their partners who belong to high risk groups such as<br>• People who inject drugs/DUs<br>• MSM/FSW/TG<br>• Frequent blood and blood product recipients (Thalassemia, hemophilics, Renal diseases cancer patients etc)<br>• Women belong to above risk groups born before 2003 (before the childhood HepB vaccination started in Sri Lanka under EPI) | • Lack of awareness of infection<br>• Testing and linkage to care<br>• Injection drug use<br>• Low adult vaccination rates<br>• Price of test and treatment<br>• No curative treatment |

## C. EMTCT of HBV

The impact target for EMTCT of hepatitis B is defined by WHO as achievement of a 90% reduction in new chronic infections, equivalent to less than 0.1% prevalence of hepatitis B surface antigen (HBsAg) among children less than 5 years old. For countries using targeted timely Hep B birth dose an additional target of achieving ≤ 2% MTCT rate is given. (WHO, 2021)

The process targets for EMTCT of Hep B includes

1. ≥90% coverage of maternal HBsAg testing.
2. ≥90% coverage with antivirals for eligible HBsAg-positive pregnant women.
3. ≥90% coverage with three doses of HBV infant vaccinations (HepB3)
4. ≥90% HepB timely birth dose coverage (with universal programme) or infants at-risk (with targeted timely hepatitis B birth dose, HepB-BD) (WHO, 2021)

A comprehensive package of interventions is needed to achieve the global goal of ≤0.1%HBsAg prevalence among children. This should be built on a strong hepatitis B vaccination programme and strengthened MCH services, and includes

- Prevention of infection in young women
- Screening and care of pregnant women with chronic hepatitis B infection,
- Possible use of antiviral drugs and the use of hepatitis B immunoglobulin(HBIG) among infants born to HBsAg-positive mother

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## D. Summary of WHO recommendations in EMTCT of HBV

- **Testing of pregnant women;** All pregnant women should be tested for HIV, syphilis and hepatitis B surface antigen (HBsAg) at least once and as early as possible in the pregnancy
- **Tenofovir prophylaxis**; WHO recommends that pregnant women testing positive for HBV infection (HBsAg positive) with an HBV DNA ≥ 5.3 log10 IU/mL (≥ 200,000 IU/mL) or HBeAg positive mothers where HBV DNA testing is not available at ANC settings should receive tenofovir prophylaxis from the 28th week of pregnancy until at least birth, to prevent mother-to-child transmission of HBV
- **Immunization for HBV**; All infants should receive their first dose of hepatitis B vaccine as soon as possible after birth, preferably within 24 hours; for countries with universal timely Hepatitis B birth dose. The birth dose should be followed by two or three doses to complete the primary series.
- **Infant hepatitis B immune globulin (HBIG) prophylaxis** shortly after birth has an additional benefit for prevention

## E. Infant HBIG prophylaxis and birth dose of infant hepatitis B vaccine

Infant hepatitis B immunoglobulin (HBIG) prophylaxis shortly after birth and maternal peripartum prophylaxis with antivirals can provide additional protection to that provided by a timely birth dose of hepatitis B vaccine. In contrast, maternal HBIG administration does not provide additional protectionton for the infant. (WHO,2020)

For infants born to HBsAg positive mothers, monovalent hepatitis B pediatric vaccine and HBIG may be given at the same time but at different injection sites, using separate needles and syringes. Passive antibody from HBIG does not interfere with an active response to hepatitis B pediatric vaccine. (Australian Technical Advisory Group on Immunisation (ATAGI), 2022)

| **Infant HBIG prophylaxis and birth dose of infant hepatitis B vaccine** |
|---|
| • For an infant with perinatal exposure to an HBsAg positive mother, a regimen combining one dose of hepatitis B immunoglobulin (HBIG) with the first dose of hepatitis B vaccine should be administered within 12 hrs of birth. This is 85-95% effective in preventing development of the HBV carrier state. HBIG is not required by the baby if the mother is positive for HBeAb in spite of being an HBsAg positive carrier.<br>• The following schedules of vaccination are recommended in the order of preference<br>1. HBIG + HBV vaccine at 0, 2, 4, 6 months as per national immunization programme<br>2. HBIG + HBV vaccine at 0, 1, 6 months<br>3. If HBIG is not available HBV vaccine accelerated schedule at 0, 1, 2 and 12 months.<br>• Simultaneous administration of HBIG and vaccine should be at two different sites (SLMA, 2017) |

(Australian Technical Advisory Group on Immunisation (ATAGI), 2022)

## F. Recommendations of VH study group for EMTCT of HBV in Sri Lanka

According to the currently available data on HBV in Sri Lanka, infant Hep B vaccination coverage is 99%. When Hep B prevalence is considered, it is 0% among both five year olds and pregnant mothers. However, data is scares and further research is required for a better understanding of HBV prevalence in Sri Lanka among high-risk groups and pregnant mothers.

Sri Lanka has a well-established system of maternal and child health services through which the National immunization programme is carried out. Since 2003 the country has introduced administration of targeted timely regimen of HepB vaccine at the completion of 2,4,6 months of age. (SLMA, 2017)

- **The VHS group recommends continuing the Hep B vaccination for infants according to the National programme for immunization, thereby in future almost all women in the child bearing age group will be covered**.

The cohort of females who received the 3 dose course of Hep B vaccine are entering the child bearing age group. However, pregnant women born before 2003 didn't receive Hep B vaccine in infancy. Following vaccination, a protective antibody titre is present in >95% of infants, children and young adults. The duration of protection is over 20 years in healthy persons. (SLMA, 2017).

However, the wearing off of HBsAb after infant immunization is not studied so far and warrants serological assessment during adulthood especially during pregnancy.

- **The VH study group recommends to conduct a pilot programme in a maternity hospital in an urban/semi urban setting for testing:**

**HBsAb in pregnant women who have received Hep B vaccination in infancy**

**HBsAg in pregnant women who haven't received Hep B vaccination in infancy**

The results will give a better understanding of the Hep B prevalence and protection following Hep B vaccination in infancy among the general population.

In addition, there are some pregnant women who are disproportionately impacted due to either themselves or their partners being from high risk groups such as people who inject drugs (PWID), MSM, FSW, TG, cancer patients, thalassemia patients, patients on regular hemodialysis and healthcare workers. These women can be screened after identification by the MCH health staff and either vaccinated if negative or referred to further care if positive. However, this can cause stigma and discrimination for pregnant women who belong to high risk groups and all measures should be taken to maintain highest level of confidentiality and avoid stigma. This also can be initiated as a pilot project in an urban setting as an opt out method.

- **The VH study group recommends that pregnant women who belong to high risk groups should be identified and screened for HBsAg and followed up accordingly while avoiding stigma and discrimination towards these women.**

When a pregnant mother becomes positive for Hepatitis B, a system for proper follow up care including maternal care, post exposure prophylaxis for the newborn and the partner screening and multi-disciplinary team involvement should be established.

- **The VH study group recommends establishing a system for proper maternal care, post exposure prophylaxis for the baby and screening of partners for Hepatitis B positive pregnant women.**

**Summary of VHS group recommendations in EMTCT of HBV in Sri Lanka**

- To continue Hep B vaccination for infants according to the National programme for immunization
- For a better understanding of Hepatitis B prevalence and protection following Hepatitis B vaccination among the general population, to conduct a pilot programme in a maternity hospital in an urban/semi urban setting for testing, HBsAb in pregnant women who have received Hepatitis B vaccination in infancy and HBsAg in pregnant women who haven't received Hepatitis B vaccination in infancy
- Pregnant women who belong to high risk groups should be identified and screened for HBsAg and followed up accordingly while avoiding stigma and discrimination towards these women.
- A system should be established for proper maternal care, post exposure prophylaxis for the baby and screening of partners for Hepatitis B positive pregnant women.

# VI. Prevention Packages

Viral hepatitis study group recommend the following prevention packages for clients those who are reaching sexual health services and through outreach services for high risk groups.

## A. HIV/STI prevention package for key populations

**HIV /STI prevention package**

1. HIV education
2. STI education

**Means of prevention (education, promotion and provision)**

1. Condom (include condom-dildo demonstration)
2. PrEP (HIV pre exposure prophylaxis Continuous PrEP or Event driven PrEP)
3. PEP (oPEP or nPEP/PEPSE
4. Non-sharing practices of injecting equipment

**Testing for early identification**

1. Screening of high risk populations (key populations) for HIV and STI
2. Screening of antenatal mothers for HIV and syphilis

**Referral for treatment and care servicers**

1. Refer for treatment and care servicers

## B. Viral hepatitis prevention package for key populations

**Viral hepatitis prevention package**

1. Hepatitis B, C education (refer relevant fact sheets)
2. Hepatitis A and E education (refer relevant fact sheets)

**Means of prevention (education, promotion and provision)**

1. Condom (include condom-dildo demonstration)
2. Practice of non-sharing of injecting equipment and other personal and intimate objects
3. Hepatitis B infant vaccination (with birth dose for infants born to HBV infected mothers)
4. Hepatitis B vaccination for high risk groups, considering the waning time (15-30 years) of infant HBV vaccination or HBsAb levels (MSM, FSW, TG, IDU, HIV patients, frequent transfusion recipients, cancer patients, haemodialysis patients and healthcare workers)
5. Vaccination of household contacts and sex partners for hepatitis B
6. Tenofovir prophylaxis for infected pregnant mothers with HBV
7. Birth dose vaccination and/or HBIG for neonates born to mothers with HBV infection
8. Hepatitis A vaccination for population at risk

**Testing for early identification**

1. Screening for HBV infection (HBcAb IgM, HBsAg,)
2. Screening for HCV infection

**Referral for treatment and care servicers**

2. Refer for treatment and care servicers

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# VIRAL HEPATITIS STRATEGIC PLAN FOR KEY POPULATIONS IN SRI LANKA 2023- 2030

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