सत्यमेव जयते

Ministry of Health & Family Welfare

Government of India

NATIONAL VIRAL HEPATITIS CONTROL PROGRAM

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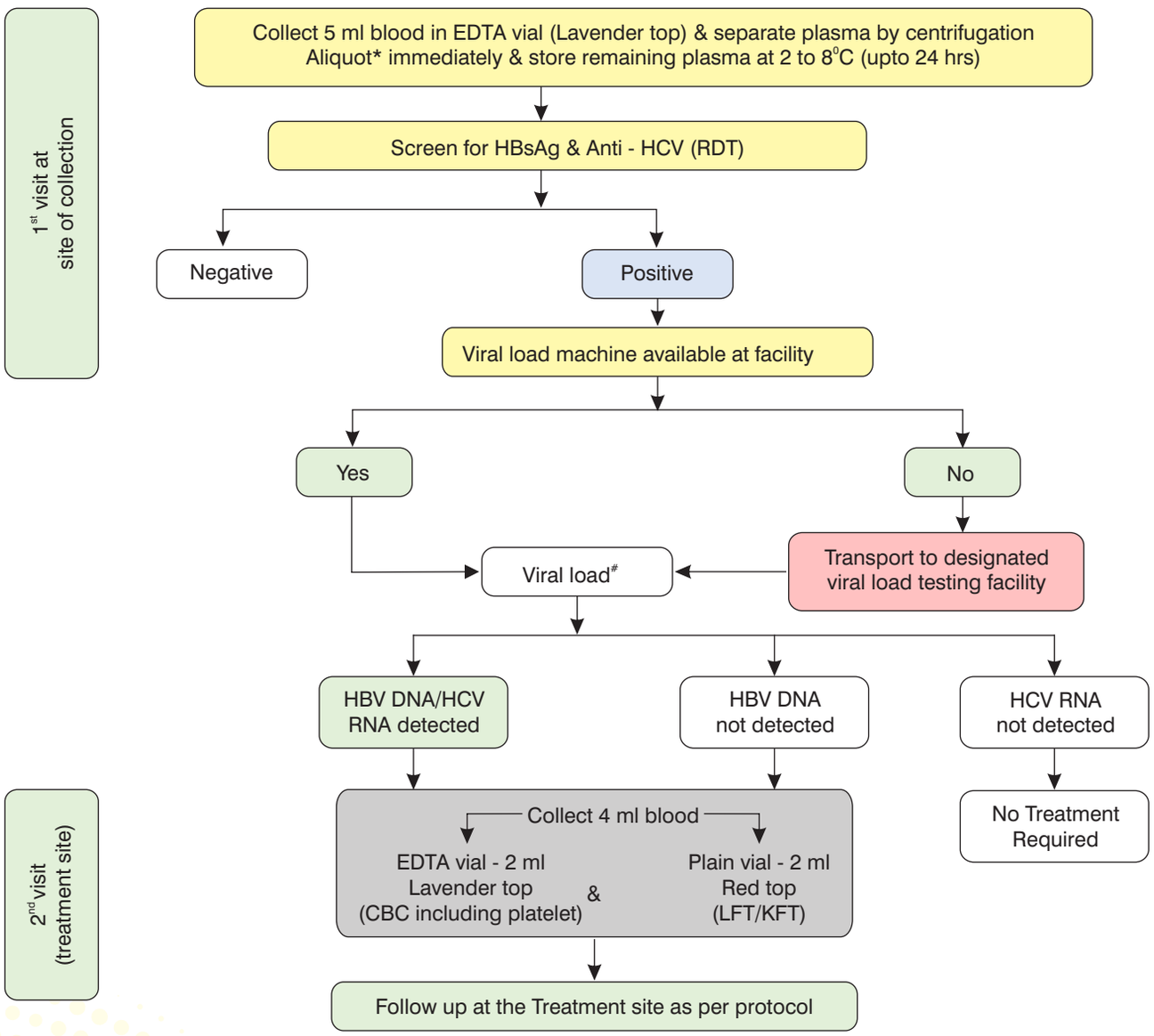
राष्ट्रीय वायरल हेपेटाइटिस नियंत्रण कार्यक्रम

Testing for Hepatitis B & C

Hepatitis B & C are asymptomatic viral infections which can lead to cirrhosis and hepatocellular carcinoma.

Screening for HBsAg and Anti HCV should be offered to all who are perceived to be at risk using serum/ plasma/whole blood specimen.

All positive specimens have to be confirmed by molecular testing (viral load) for further management.



Sample collection:

1st visit - Daily if viral load testing facility available. At designated days if specimen referred for viral load

2nd visit - Planned according to turn around time of viral load test

*Aliquot - Blood collected in EDTA vial is centrifuged and separated in sterile screw capped vial

#Viral load testing (HBV DNA or HCV RNA PCR Quantitative) should be done within 24 hrs of specimen collection

Sample storage:

Short term - Refrigerator (2 to 8°C) for 24 hrs (as plasma) and transport next day to the designated viral load testing facility

Long term - Deep freezer (-20°/-80°C). Do not freeze thaw plasma

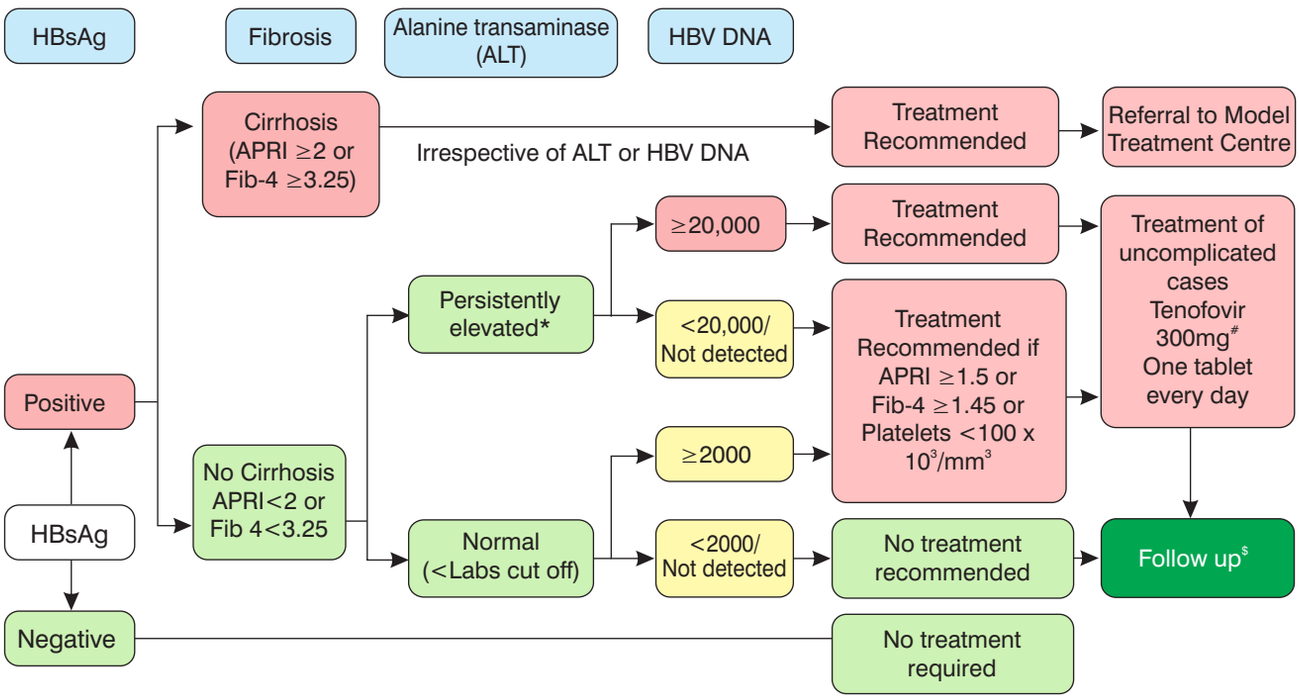
Sample transport:

In triple layer packing in cold boxes (2 to 8°C) with thermometer

The screening test and viral load test should be IVD & conform to laid down quality standards with reproducibility and traceability.

Management of Hepatitis B at Treatment Centres

Hepatitis B is usually asymptomatic and can progress to complications like cirrhosis and hepatocellular carcinoma (HCC). The disease is manageable with lifelong treatment and preventable with vaccination.



$$\text{APRI} = \frac{\dfrac{\text{AST}}{\text{AST(Upper Limit of Normal)}}}{\text{Platelet count}(10^9/\text{L})^{\#\#}} \times 100$$

$$\text{Fib-4} = \frac{\text{Age(years)} \times \text{AST (IU/L)}}{\text{Platelet count}(10^9/\text{L})^{\#\#} \times \sqrt{\text{ALT (IU/L)}}}$$

Monitoring the Treatment

	Base Line	6 months	12 months
Tests	Complete blood counts including platelet count (CBC)	Hemoglobin and Platelet count	Hemoglobin and Platelet count
	Liver Function Test (LFT) (at least ALT & AST)	LFT (at least ALT & AST)	LFT (at least ALT & AST)
	Ultrasound (USG) of abdomen	x	x
	HBV DNA Quantitative	x	HBV DNA Quantitative
	Renal Function Test	Renal Function Test	Renal Function Test

Referral to Model Treatment Centre

- Cirrhosis
- Ascites, Gastrointestinal Bleed, Encephalopathy
- Treatment experienced patients
- Renal Failure
- Children < 18 years
- Co-infection of HBV with HIV and/or HCV
- HCC
- Thalassemia
- Patient on chemotherapy
- Virological failure
- Hemoglobinopathies
- Co-morbidities including Tuberculosis, Diabetes, COPD and Hypertension
- Hemoglobin < 9 g/dL
- Seizures
- H/o alcohol consumption

APRI (AST-to-platelet ratio index); AST (Aspartate Transaminase); Fib-4 (Fibrosis 4)

*Persistently elevated - at least 2 values four weeks apart in the last 6 months, which are above the upper limit of normal

#In children 12 years of age and older, and weighing at least 35 kg

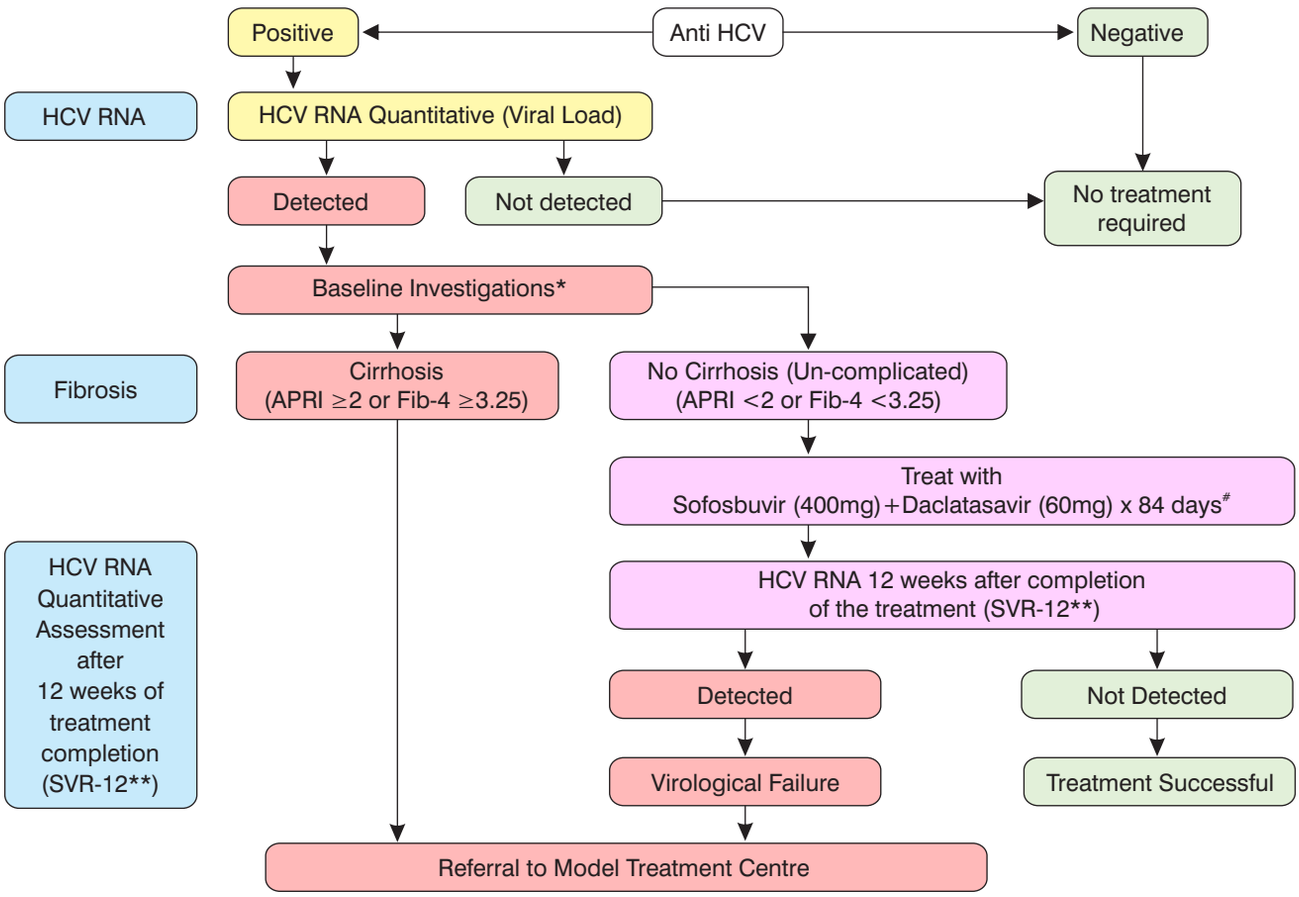
$All HBsAg positive patients should be monitored with HBV DNA quantitative on yearly basis (including those found not eligible for treatment)

Calculate APRI / Fib-4 using platelet count in thousands. eg. 150000/ microlitre = 150 thousands. i.e. 150 will be used as denominator

Hepatitis B is a vaccine preventable disease. All health care workers should be vaccinated for Hepatitis B.

Management of Hepatitis C at Treatment Centres

Hepatitis C is usually asymptomatic and can progress to complications like cirrhosis and hepatocellular carcinoma (HCC). The disease is curable with early diagnosis and treatment.



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Monitoring the Treatment

	Base Line	Week 4	Week 24 (SVR-12)
Tests	Complete blood counts including platelet count (CBC)	CBC	HCV RNA Quantitative (Viral Load)
	Liver Function Test (at least ALT & AST)	Liver Function Test (at least ALT & AST)	
	Serum Creatinine	Serum Creatinine	

Referral to Model Treatment Centre

- Cirrhosis
- Ascites, Gastrointestinal Bleed, Encephalopathy
- Treatment experienced patients
- Renal Failure
- HCC
- Co-infection of HCV with HIV and/or HBV
- Thalassemia
- Patient on chemotherapy
- Virological failure
- Hemoglobinopathies
- Hemoglobin < 9 g/dL
- Co-morbidities including Tuberculosis, Diabetes, COPD and Hypertension
- Seizures
- H/o alcohol consumption

APRI (AST-to-platelet ratio index); AST (Aspartate Transaminase); Fib-4 (Fibrosis 4); ALT (Alanine Transamine); HCV- Hepatitis C Virus; SVR** - Sustained Virological Response

#dose adjustments in PLHIV, renal insufficiency, etc

Calculate APRI / Fib-4 using platelet count in thousands. eg. 150000/ microlitre = 150 thousands. i.e. 150 will be used as denominator

Hepatitis C is a curable disease. Early diagnosis and treatment can prevent severe complications such as Cirrhosis and Liver Cancer.

Prevention of mother to child transmission of Hepatitis B virus

Hepatitis B is most commonly transmitted from mother to child. It is a vaccine preventable disease.

Screen all pregnant women in the first antenatal visit for Hepatitis B virus (HBV) infection by detecting HBsAg in serum/plasma/whole blood specimen using rapid tests.

Categorize HBV positive pregnant woman as 'High-Risk Pregnancy'.

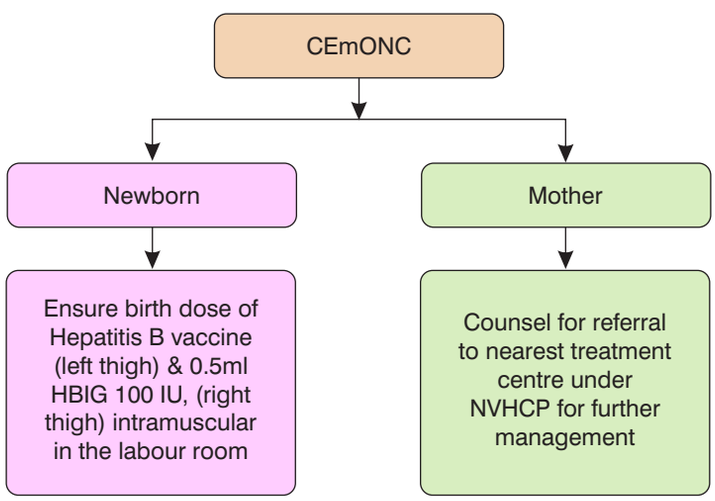
Counsel the pregnant woman for institutional delivery and promote screening of her first degree relatives for HBV infection.

Screening facilities to share the line list of screened positive pregnant women with the District Nodal Officer (NVHCP) to track the positive women for ensuring institutional delivery (monthly).

Ensure referral of these women for institutional delivery at designated Comprehensive Emergency Obstetrics and Newborn Care (CEmONC) centre where birth dose Hepatitis B vaccine and Hepatitis B immunoglobulin (HBIG) is available.

Ensure availability of Hepatitis B vaccine and HBIG in the labour room tray.

Ensure universal precautions during delivery to protect healthcare provider.



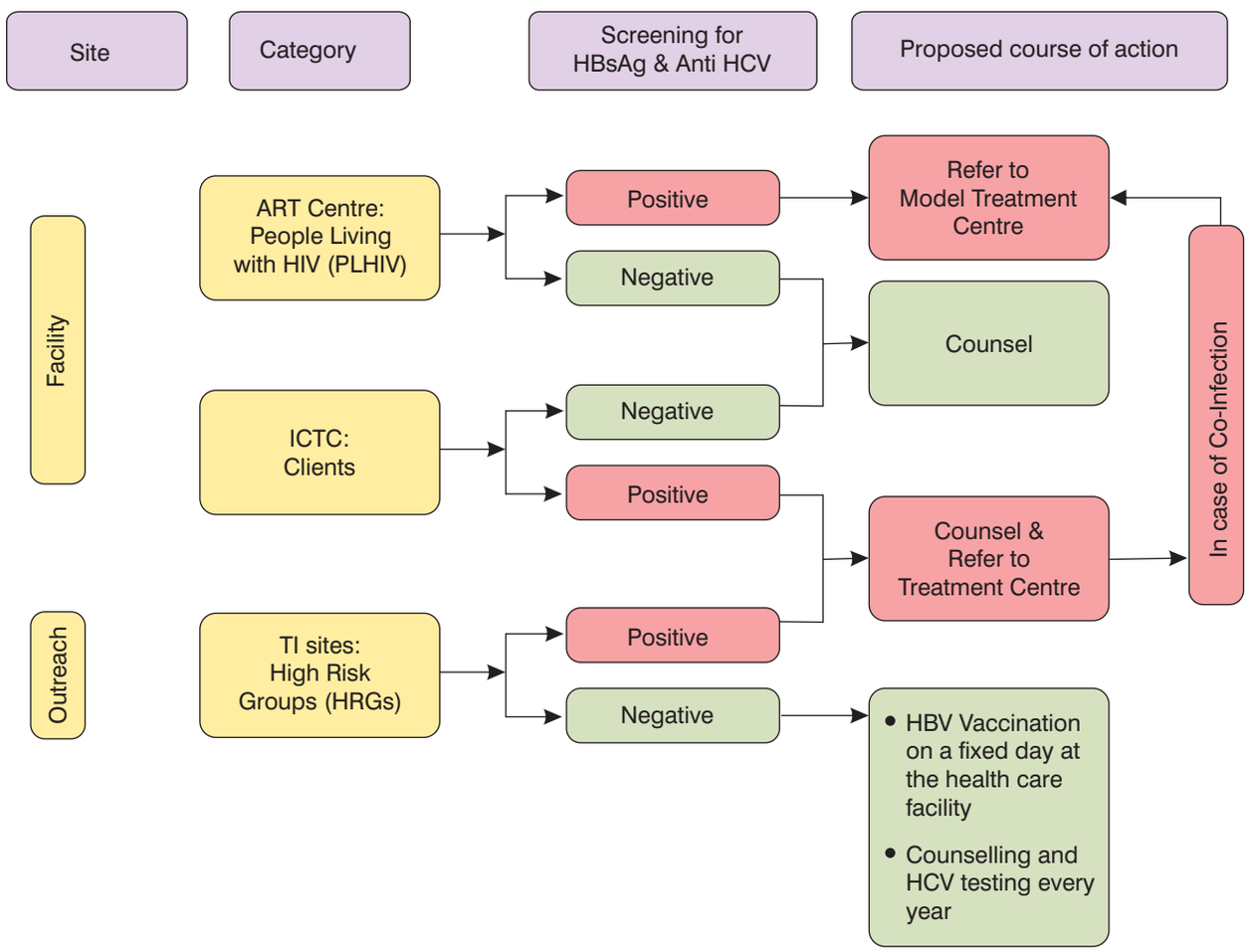
Hepatitis B is a vaccine preventable disease. Vaccinate all newborns within 24 hours of birth.

Integration with National AIDS Control Programme

Prevalence of Hepatitis B virus and Hepatitis C virus is higher in High Risk Groups (HRGs) as compared to general population.

Coordinate with State AIDS Control Society (SACS) to access high risk population.

Screening of identified populations at Integrated Counselling and Testing Centre (ICTC) / Anti Retroviral Therapy (ART) centre / Targeted Intervention (TI) sites for biomarkers for Hepatitis B and C using rapid kits supplied by NVHCP.



Focussed counselling must be given to High Risk Population to prevent infection with HBV and HCV.