

The state of hepatitis B

Global Epidemiology of viral hepatitis B

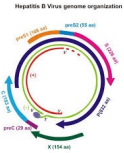
Dr 'Funmi Lesi
Global Hepatitis Programme
Global HIV, Hepatitis and STIs Programmes
World Health Organization
January 26, 2022



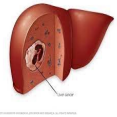
Outline

1. Background
2. Unmet critical need for prevention, treatment and care (2021 Progress Report)
3. Strategic shifts towards elimination in a new global health care era
4. Measuring progress and reaching hepatitis elimination
5. Key messages

Viral hepatitis B-a high burden disease



HBV is a small DNA virus that replicates through an RNA intermediate and can integrate into the host cell genome. HBV CCCDNA is responsible for viral persistence



The outcome of chronic infection is variable ranging from mild fibrosis to cirrhosis and decompensated liver disease and liver cancer.



Different routes of transmission in endemic and non-endemic communities.



Vaccination available since the early 1980s, safe, immunogenic, effective, efficacy in preventing HBV infection over 95%,

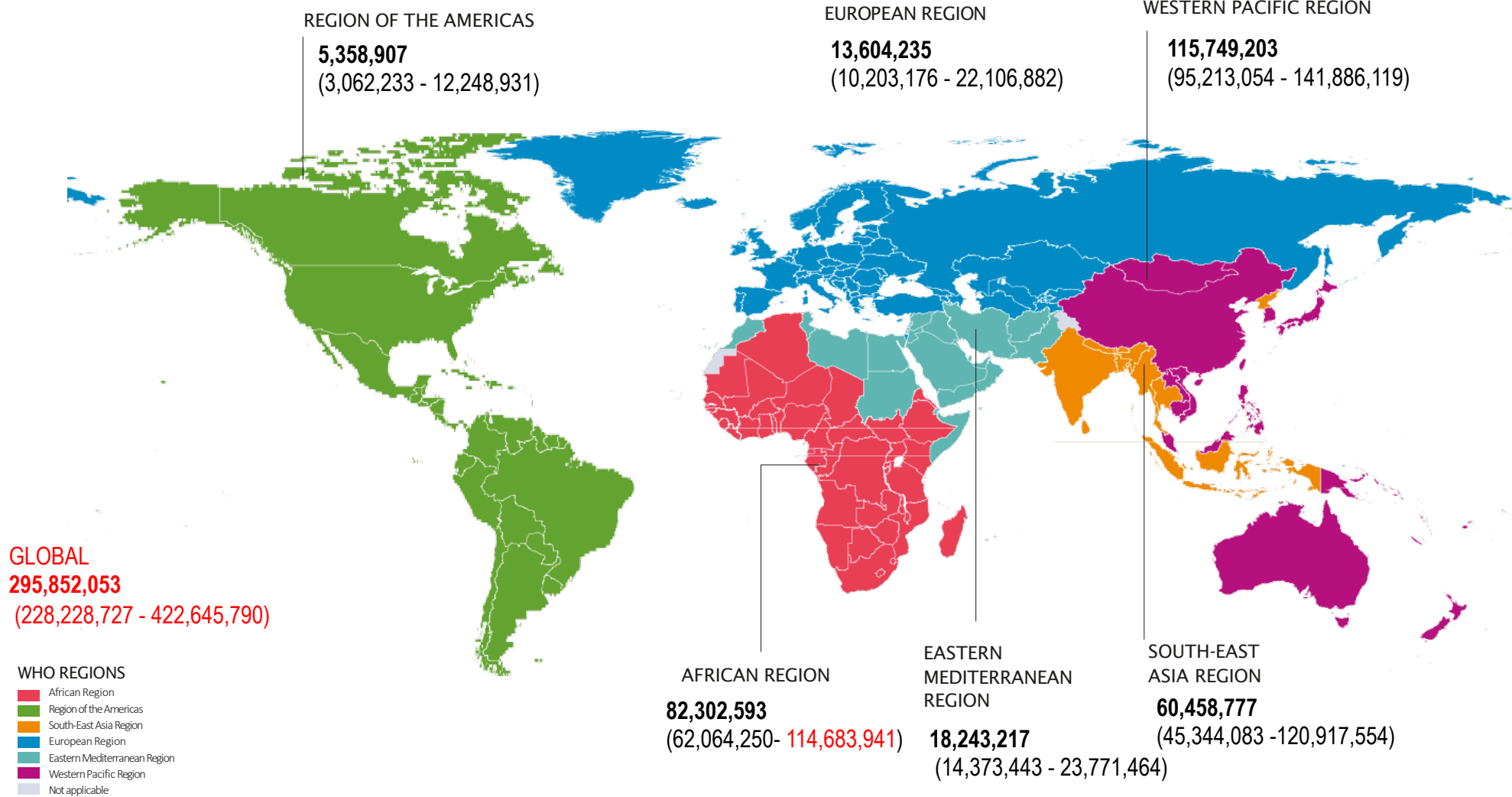


Screening for chronic HBV is performed by testing for serum HBsAg. Testing for HBV DNA is routinely used in making treatment decisions and monitoring of disease course. Oral therapy (TDF, Entecavir) it is usually lifelong.

Burden of HBV infection (HBsAg) in the general population by WHO region, 2019:



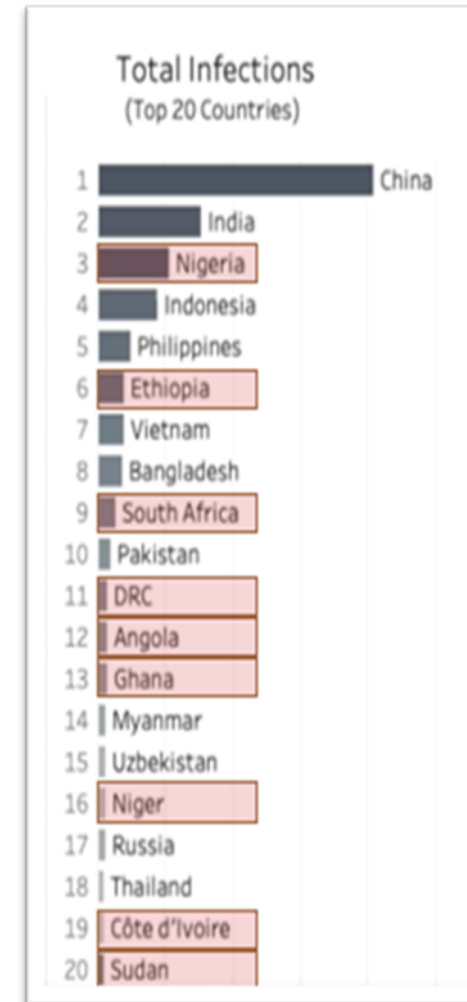
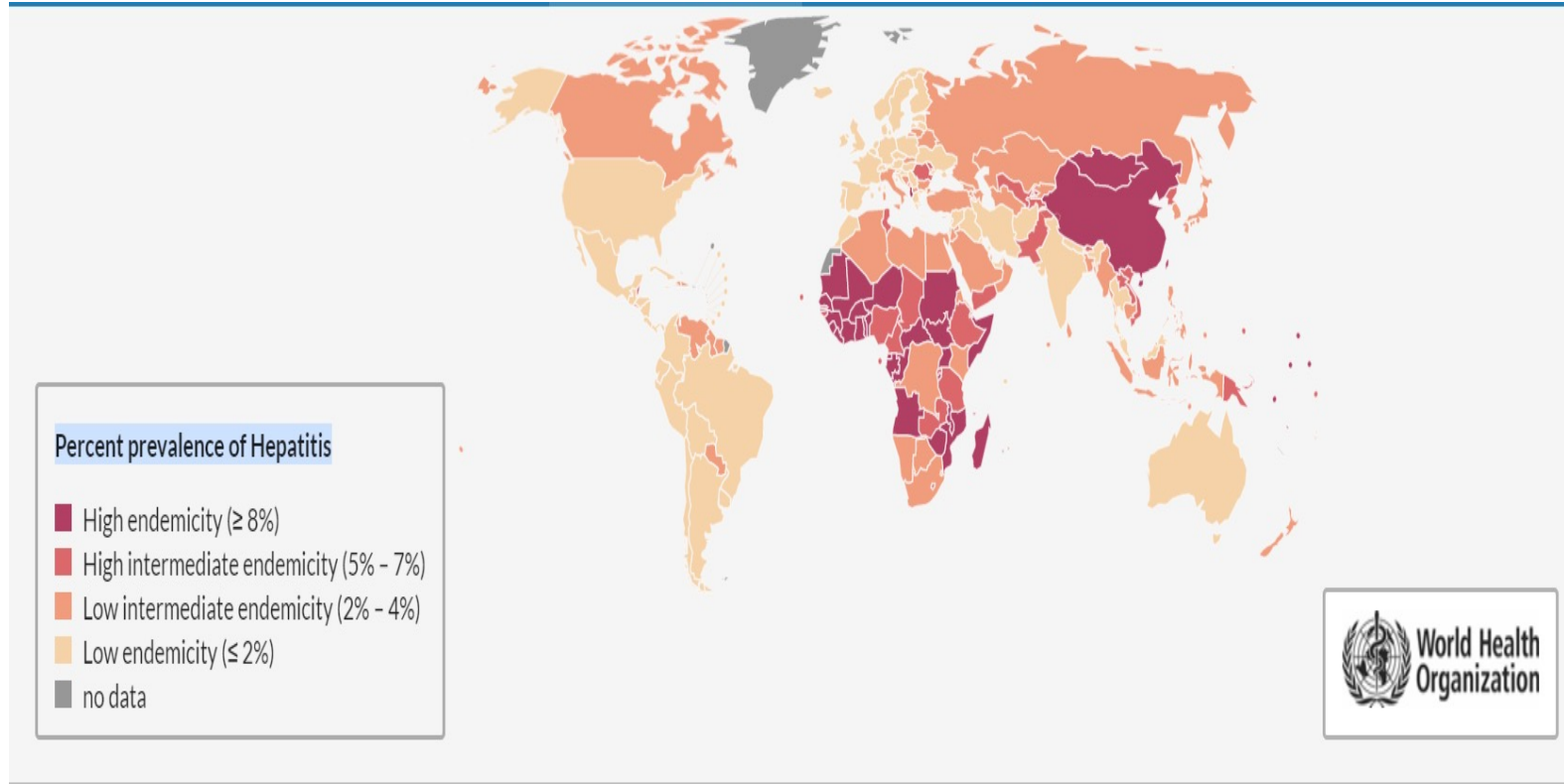
296 million



¹Global Progress Report on HIV, viral hepatitis and sexually transmitted infection, 2021: <https://www.who.int/publications/i/item/9789240027077>

²WHO, Interim guidance for country validation of viral hepatitis elimination, 2021: <https://www.who.int/publications/i/item/9789240028395>

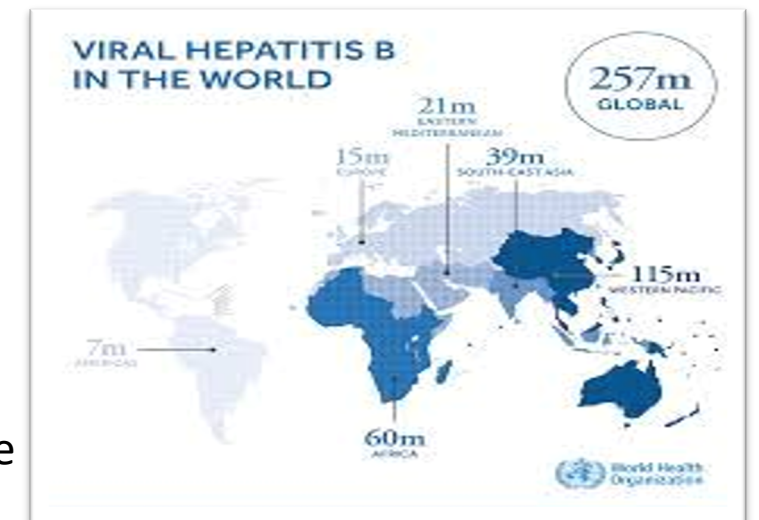
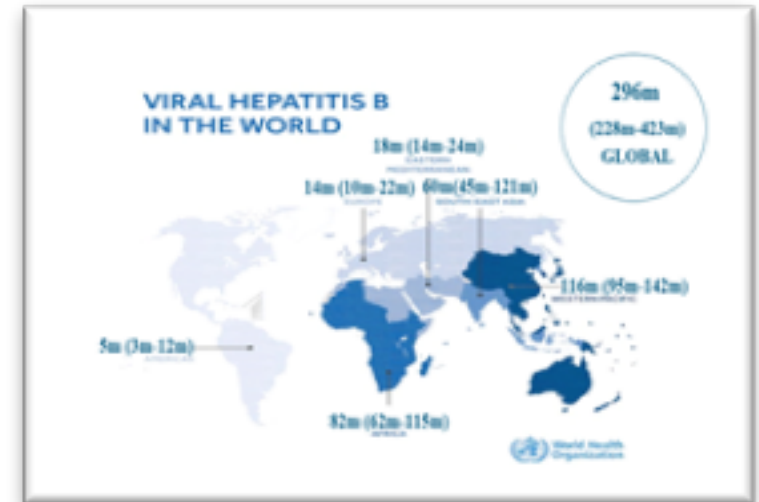
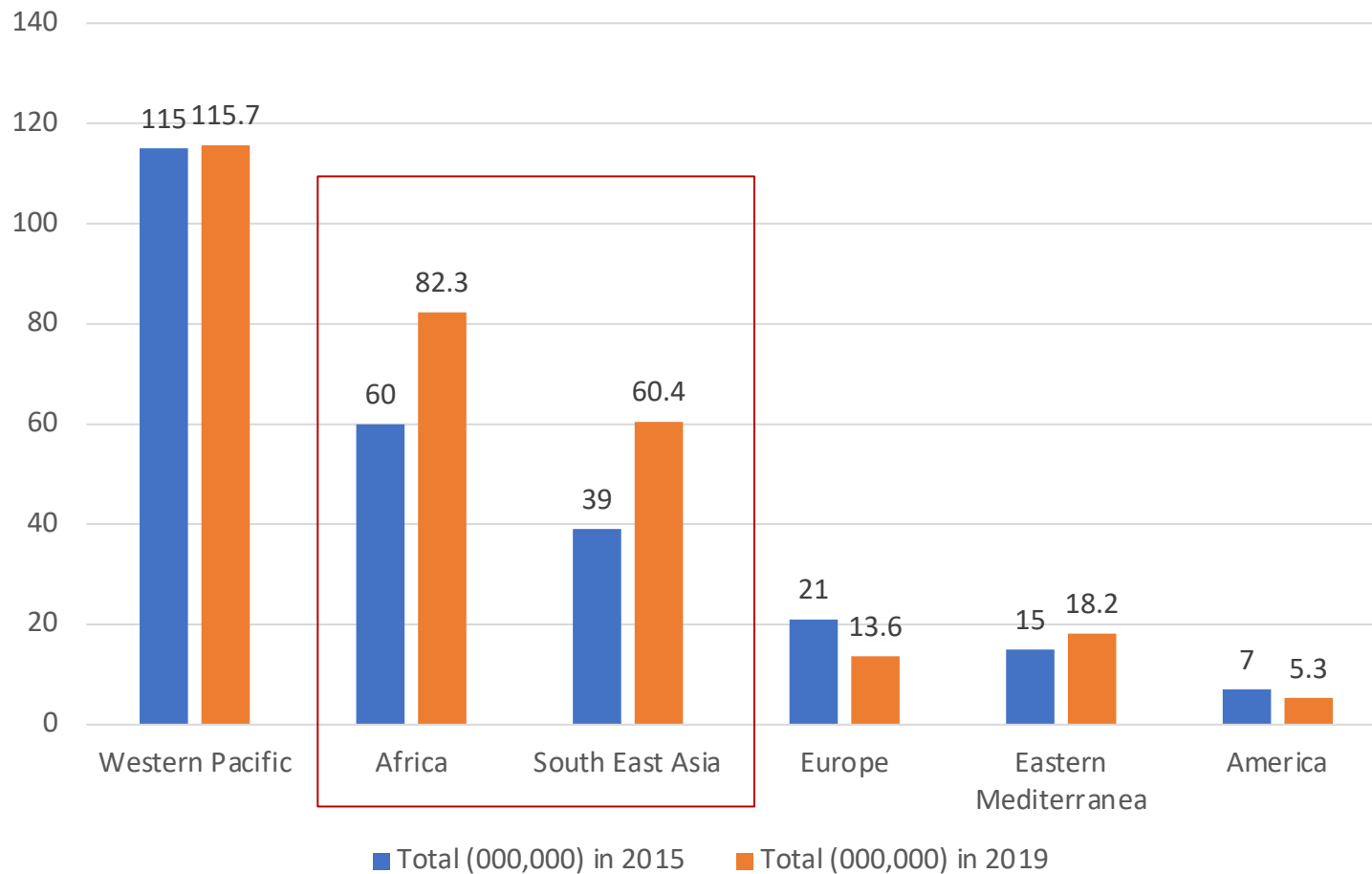
In highly endemic areas, transmission occurs primarily perinatally or in early childhood



In areas with intermediate endemicity, infection occurs in all age groups.

In areas of low hepatitis B seroprevalence, most infections occur in adults, especially among persons belonging to defined risk groups

Increased estimated global burden from 257 million(2015) to 296 million (2019)



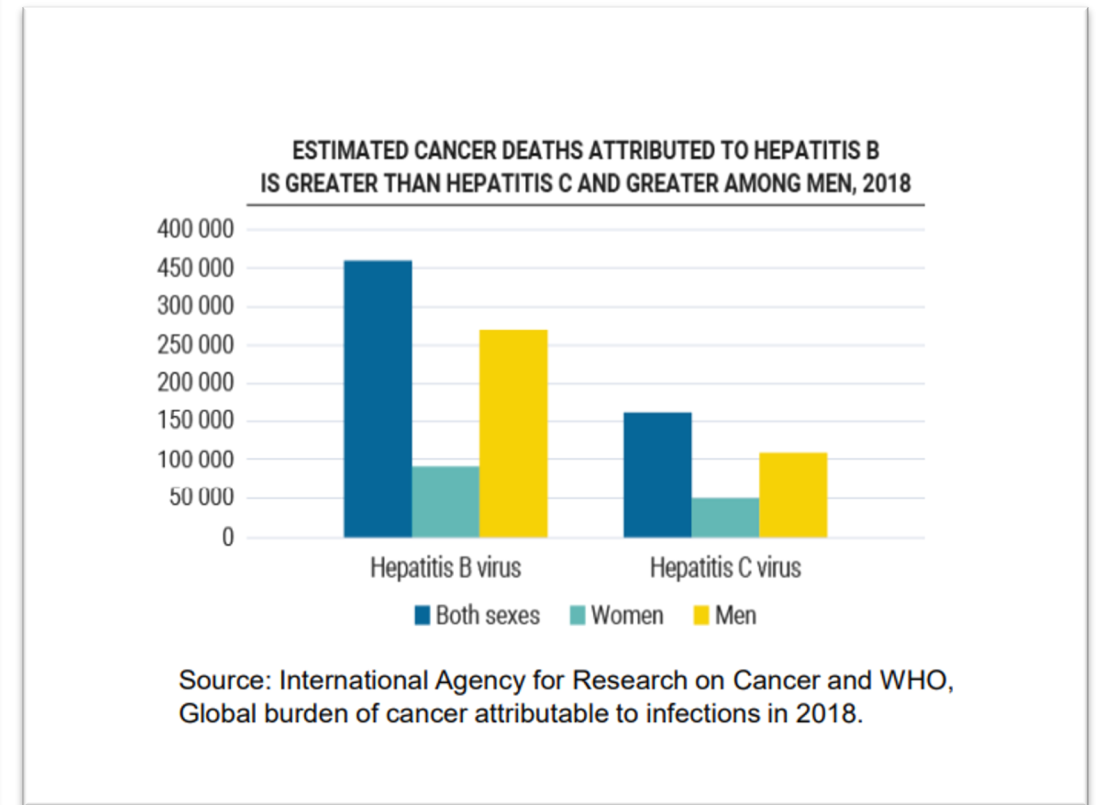
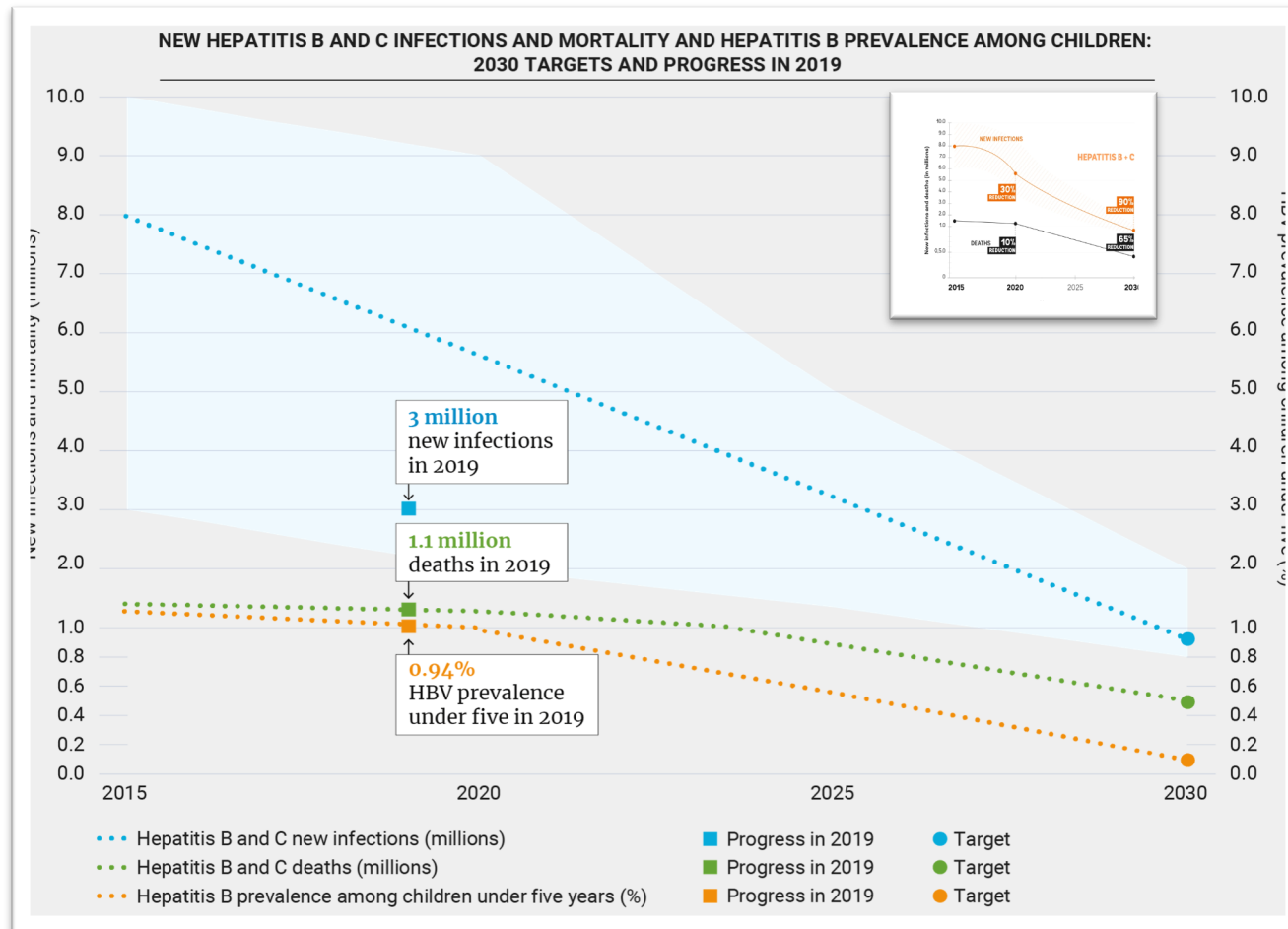
Increased regional burden mostly in AFRO and SEARO accounting for global increase
Decreased burden in Europe and the Americas

2021 Progress Report-unmet critical need for prevention, treatment and care

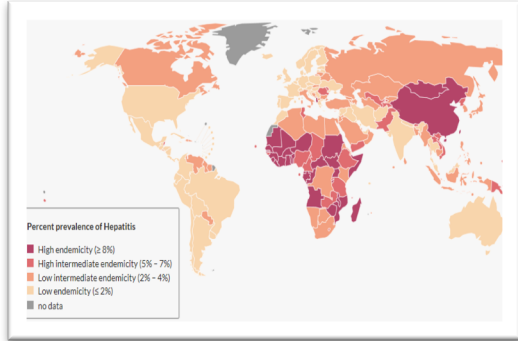


Status of the Global Hepatitis response

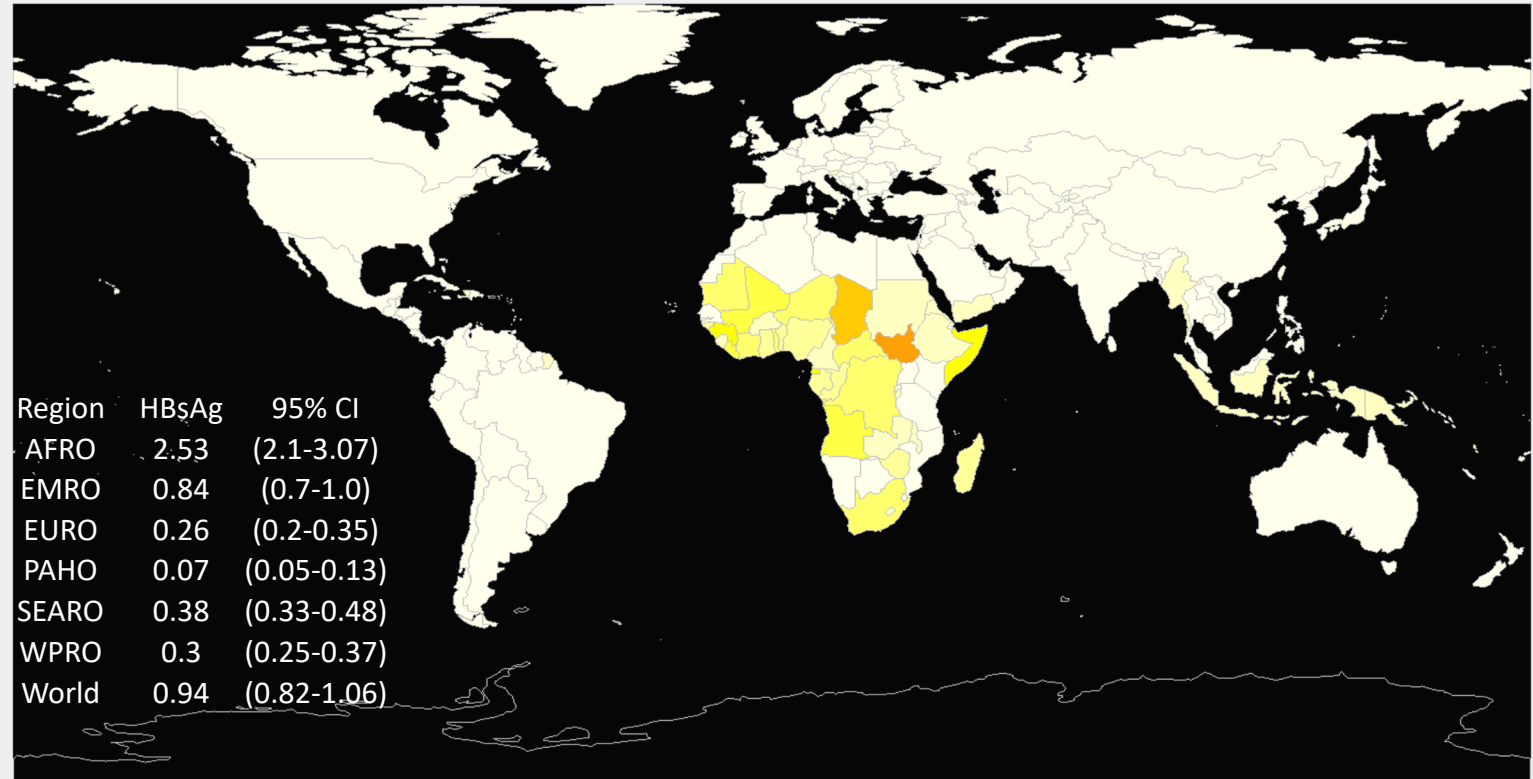
Impact targets by 2020 and 2030 and progress report (2021)



Significant Impact of hepatitis B vaccine on prevalence of HBsAg in children under 5 years



Before 2000: 4.7%



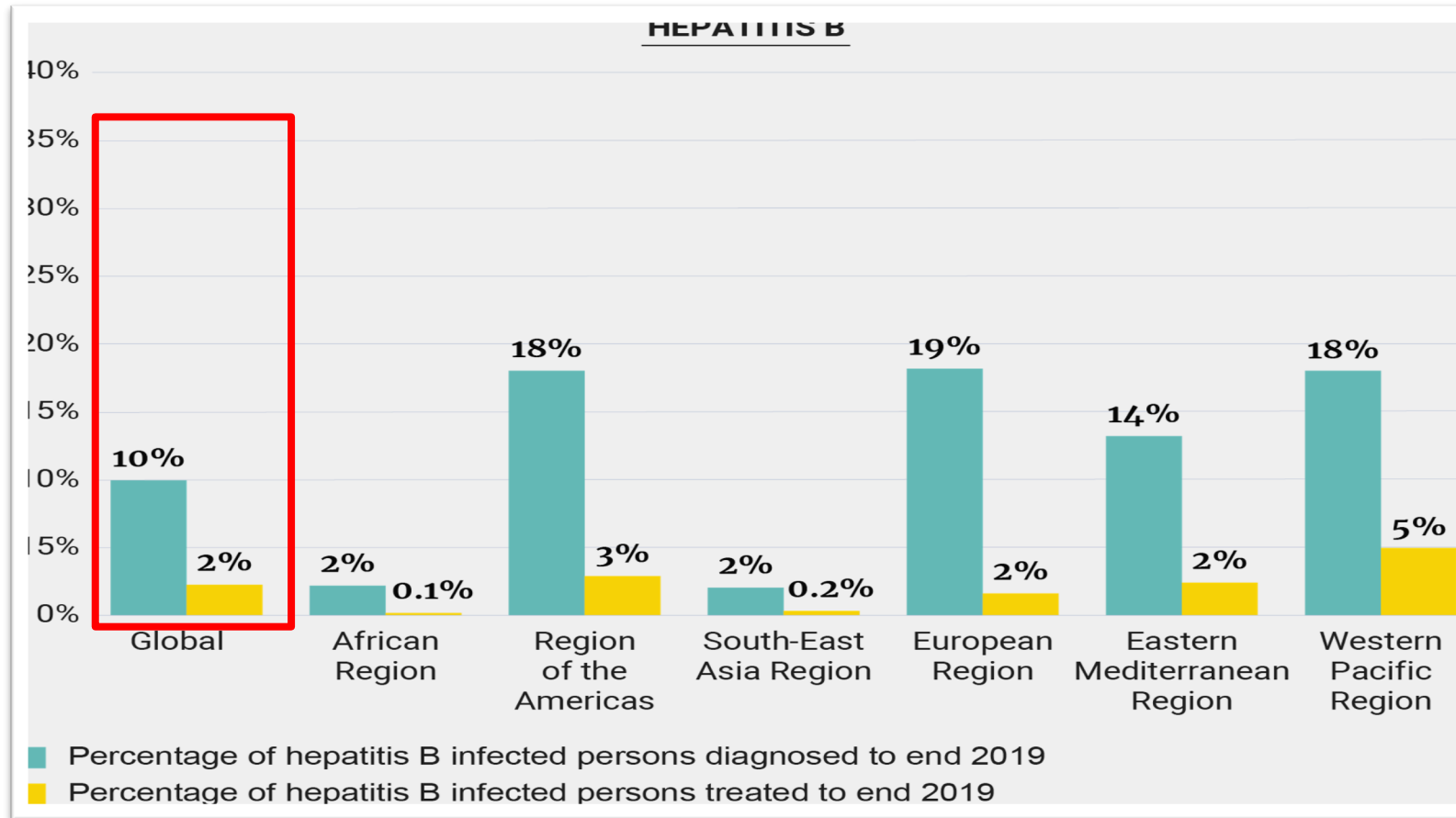
In 2020: 0.94%



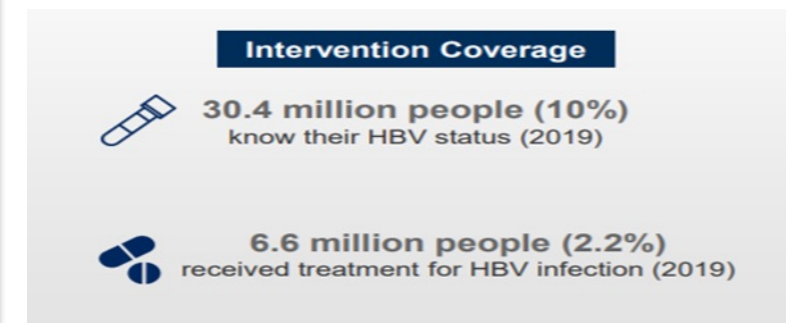
43% global coverage for timely HBV birth dose vaccine (2019)

Despite the progress, 6.4 million children aged < 5 with chronic HBsAg in 2019

Major gaps in testing and treatment towards public health elimination



Only 10% of estimated 296 million people with chronic HBV infection were diagnosed in 2019 with variation by regions (only 2% are on treatment)



Estimating the proportion of people with chronic hepatitis B virus infection eligible for hepatitis B antiviral treatment worldwide: a systematic review and meta-analysis



Mingjuan Tan*, Ajeet S Bhadoria*, Fuqiang Cui, Alex Tan, Judith Van Holten, Philippa Easterbrook, Nathan Ford, Qin Han, Ying Lu, Marc Bulterys, Yvan Hutin



Findings Of the 13 497 studies, 162 were eligible and included in our analysis. These studies included 145 789 participants. The pooled estimate of the proportion of cirrhosis was 9% (95% CI 8–10), ranging from 6% (4–8) in community settings to 10% (9–11) in clinic settings. Examining the proportion of participants who had characteristics used to determine eligibility in the WHO guidelines, 1750 (10·1%) of 17 394 had HBV DNA exceeding 20 000 IU/mL, and 20 425 (30·8%) of 66 235 had ALT above the upper limit of normal. 32 studies reported eligibility for treatment according to WHO or any other guidelines, with a pooled estimate of eligibility at 19% (95% CI 18–20), ranging from 12% (6–18) for studies in community settings to 25% (19–30) in clinic settings.

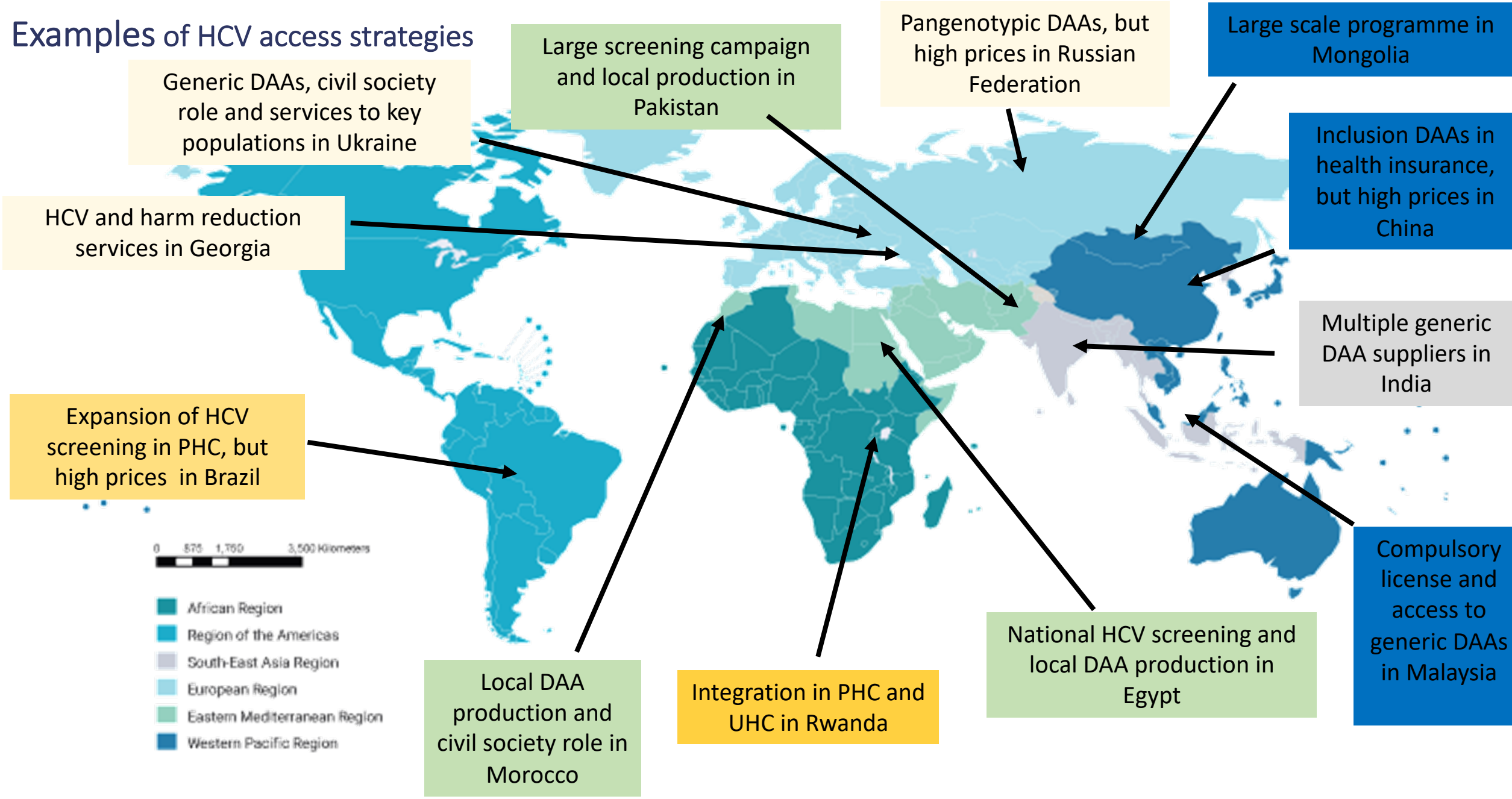
Interpretation Many studies described people with HBV infection, but few reported information in a way that allowed assessment of eligibility for treatment. Although about one in ten of the 257 million people with HBV infection (26 million) might be in urgent need of treatment because of cirrhosis, a larger proportion (12–25%) is eligible for treatment in accordance with different guidelines. Future studies describing people with HBV infection should report on treatment eligibility, according to broadly agreed definitions.

 26 million

People with HBV infection in need of urgent treatment because of cirrhosis

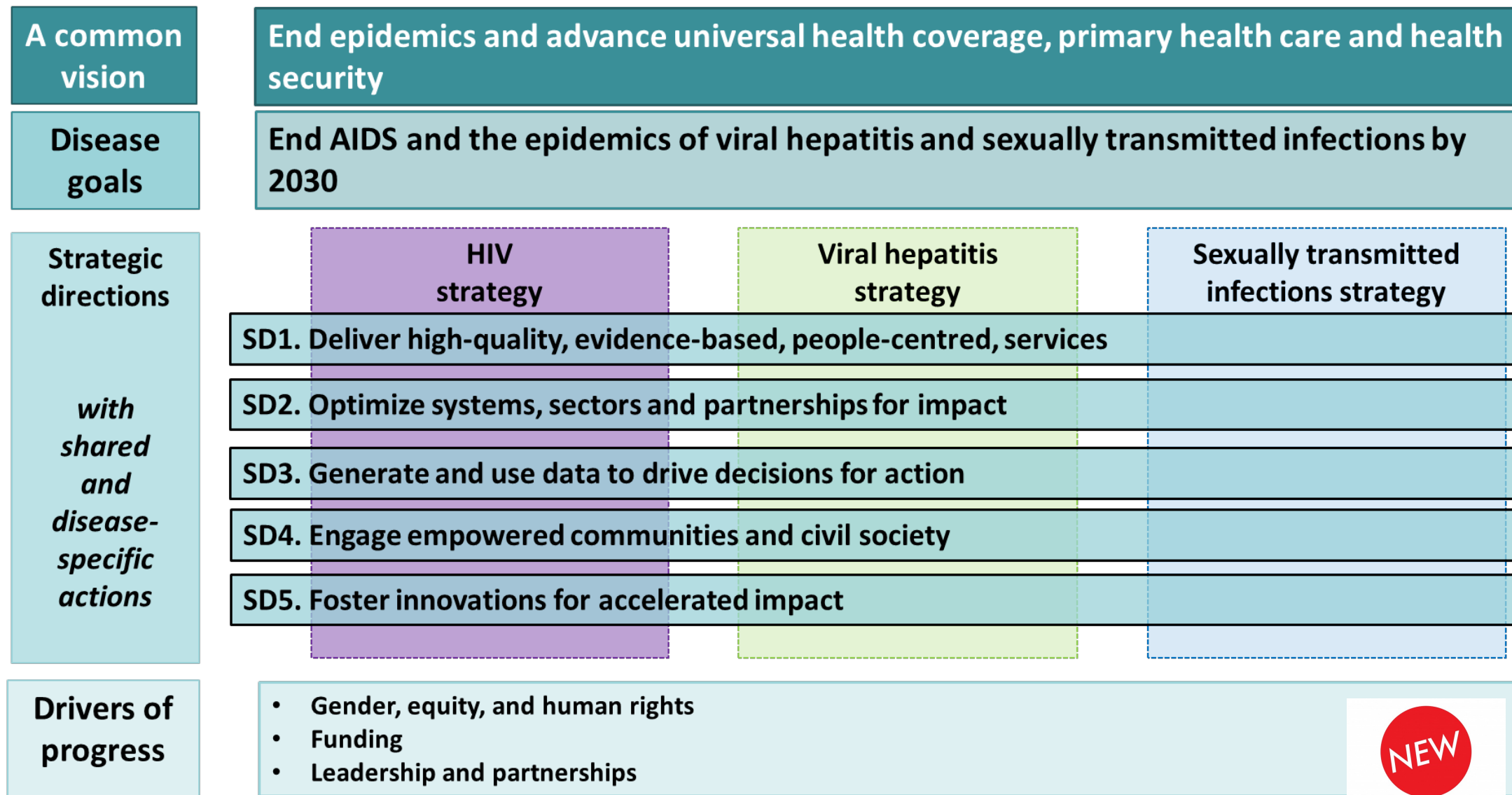


Examples of HCV access strategies



Strategic shifts towards elimination in a new global health care era

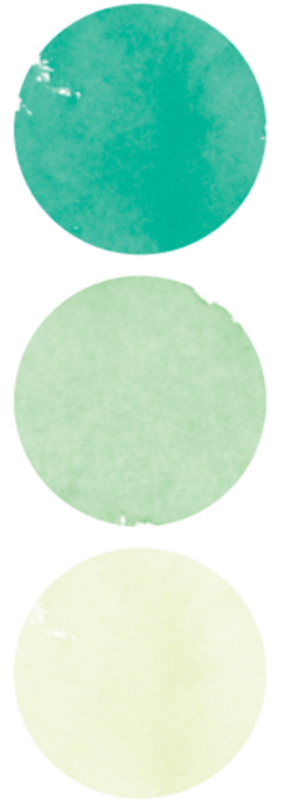
Vision, goals and strategic directions (GHSS 2022-2030)



(Current draft)

Eight Key shifts required to end the epidemic of viral hepatitis by 2030 (GHSS 2022-2030)

1. Greater public awareness of the importance of viral hepatitis B and C prevention, testing and treatment
2. Increased financial resources allocated
3. Scale-up of universal access to hepatitis B birth dose vaccine and improved services for prevention of vertical transmission
4. Continuous investment in primary prevention
5. Greatly increased access to hepatitis B and C virus testing and treatment
6. Simplified and decentralized service as well as integrated service delivery
7. Strengthened community and civil society
8. Innovations to accelerate action (incl HBV cure)



Measuring progress and reaching elimination

WHO Interim guidance for Validation of Viral hepatitis Elimination (2021) - implication for countries



Elimination targets	Elimination of chronic HBV infection as a public health problem		Elimination of chronic HCV infection as a public health problem	
2030 GHSS relative reduction reference targets (compared to 2015)	Incidence 95% reduction	Mortality 65% reduction	Incidence 80% reduction	Mortality 65% reduction
HBV- and HCV-specific absolute prevalence, incidence and mortality targets	HBV EMTCT ≤0.1% HBsAg prevalence in ≤5 year olds ^{a,b} <i>Additional target: ≤2% MTCT rate (where use of targeted HepB-BD)^c</i>		Annual incidence (HCV) ≤5/100 000 ≤2/100 (PWID)	Annual mortality^d (HCV) ≤2/100 000
Programmatic targets^d	Countries with universal HBV vaccine birth dose (BD) ≥90% HepB3 vaccine coverage ≥90% HepB timely hepatitis B BD (HepB-BD) coverage ^e		Testing and treatment ≥90% of people with HBV diagnosed ≥80% of people diagnosed with HBV and eligible for treatment are treated ^h	
	Countries with targeted HBV vaccine birth dose (BD) ≥90% HepB3 vaccine coverage ≥90% coverage of those infants at risk with targeted HepB-BD ≥90% coverage of maternal antenatal HBsAg testing ≥90% coverage with antivirals for those eligible ^f		Prevention 0% unsafe injections 100% blood safety 300 needles/syringes/PWID/year	

- ABSOLUTE targets:**
 - (i) Enables direct comparison across countries of progress towards elimination
 - (ii) Avoids needs to establish baseline incidence or mortality
- Incidence should be in populations representative of the general or PWID population
- Programme coverage needs to be achieved and maintained for at least 2 years

Options for validation of viral hepatitis elimination

TABLE 2.2 Options for validation of elimination of viral hepatitis B and C as a public health problem

Option	Options for validation of elimination	Impact indicators	Programme indicators
Option A	HBV EMTCT (as part of triple elimination of HIV, syphilis and HBV, or HIV/HBV) ^a	Annual HBV incidence ^d and MTCT rate ^e (additional target) in countries with targeted timely HepB-birth dose (BD)	HBV birth dose and infant vaccination coverage for newborns and infants HBV antenatal testing and antiviral prophylaxis coverage
Option B	HCV as a public health problem	Annual HCV incidence and HCV mortality	Coverage of prevention, testing and treatment
Option C	HBV as a public health problem (including HBV EMTCT)	Annual HBV incidence (and MTCT rate) and HBV mortality	Coverage of prevention, testing and treatment
Option D	Elimination of both HBV and HCV as a public health problem (including HBV EMTCT)	A, B and C above	A, B and C above



WHO Guidelines for viral hepatitis is available to support hepatitis elimination

2015

- ✓ Elimination strategy
- ✓ HBV Guidelines

2016

- ✓ Revised HCV Guidelines (DAA)
- ✓ National plan development manual

2017

- ✓ Baseline estimates: Global Hepatitis Report
- ✓ HBV/HCV testing Guidelines
- ✓ Injection safety campaign

2018

- ✓ Global hepatitis reporting system piloted
- ✓ HCV treatment Guidelines: Treat All
- ✓ Cost effectiveness calculators (HBV/HCV)

2019

- ✓ Consolidated strategic information guidelines (Feb 2019)

2020

- ✓ HBV PMTCT recommendations on antiviral medicine use in pregnancy

2021

- ✓ Interim Guidance for country validation of viral hepatitis elimination
- ✓ HCV self testing guidelines

2022

- ✓ Update of Hepatitis B treatment guidelines & Consolidated VH guidelines **NEW**

WHO delivered many of the global goods needed



Key messages

- Huge global HBV burden and significant regional variation
- Major gaps in treatment and care remain despite progress in the past 5 years
- We have the strategy and the tools to make hepatitis elimination a reality by 2030
- Building back better differently and enhancing opportunities from the COVID-19 response and embracing partnerships and innovations
- Political commitment and collective effort is needed to reach elimination by 2030

Acknowledgements



Colleagues-Global Hepatitis team Geneva, Regional and Country offices, Partners