

Improving access to therapy for HBV patients

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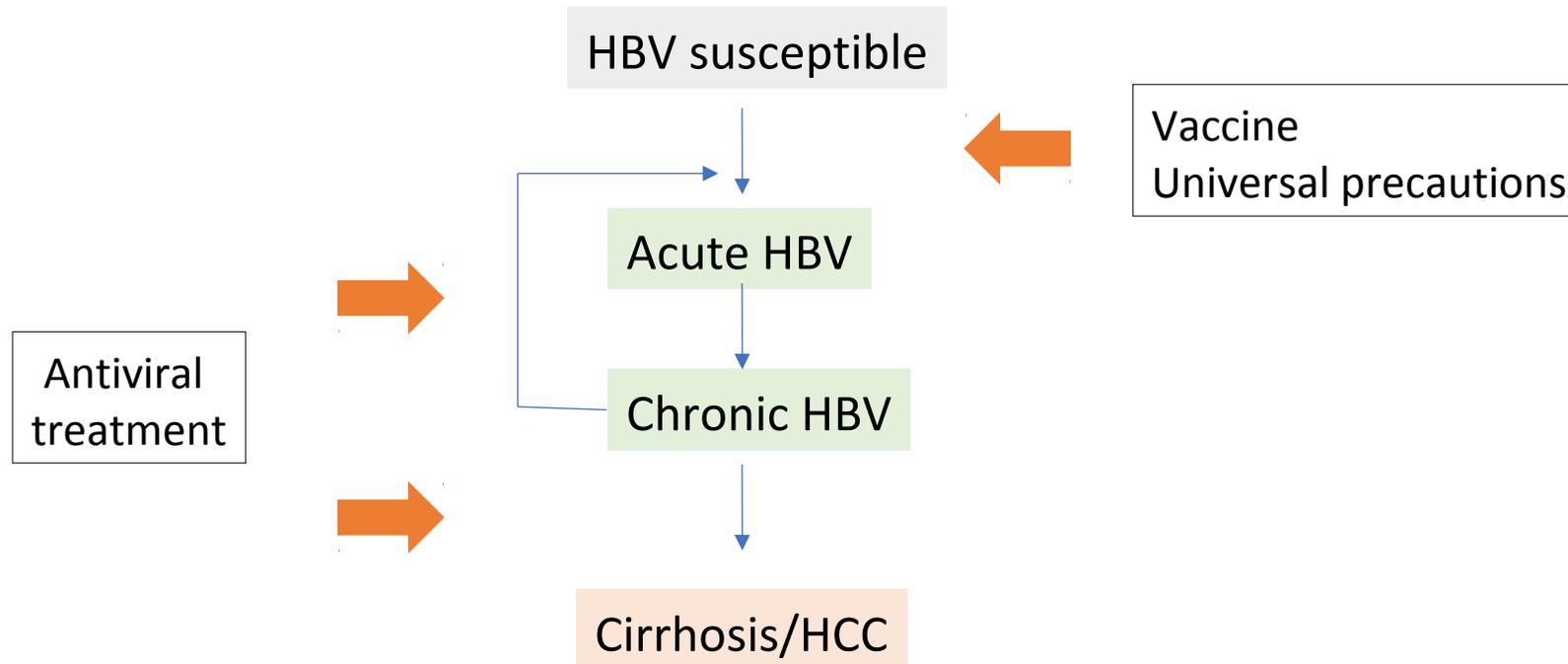


Chronic Hepatitis B (CHB) - a global health problem

from viral suppression to cure

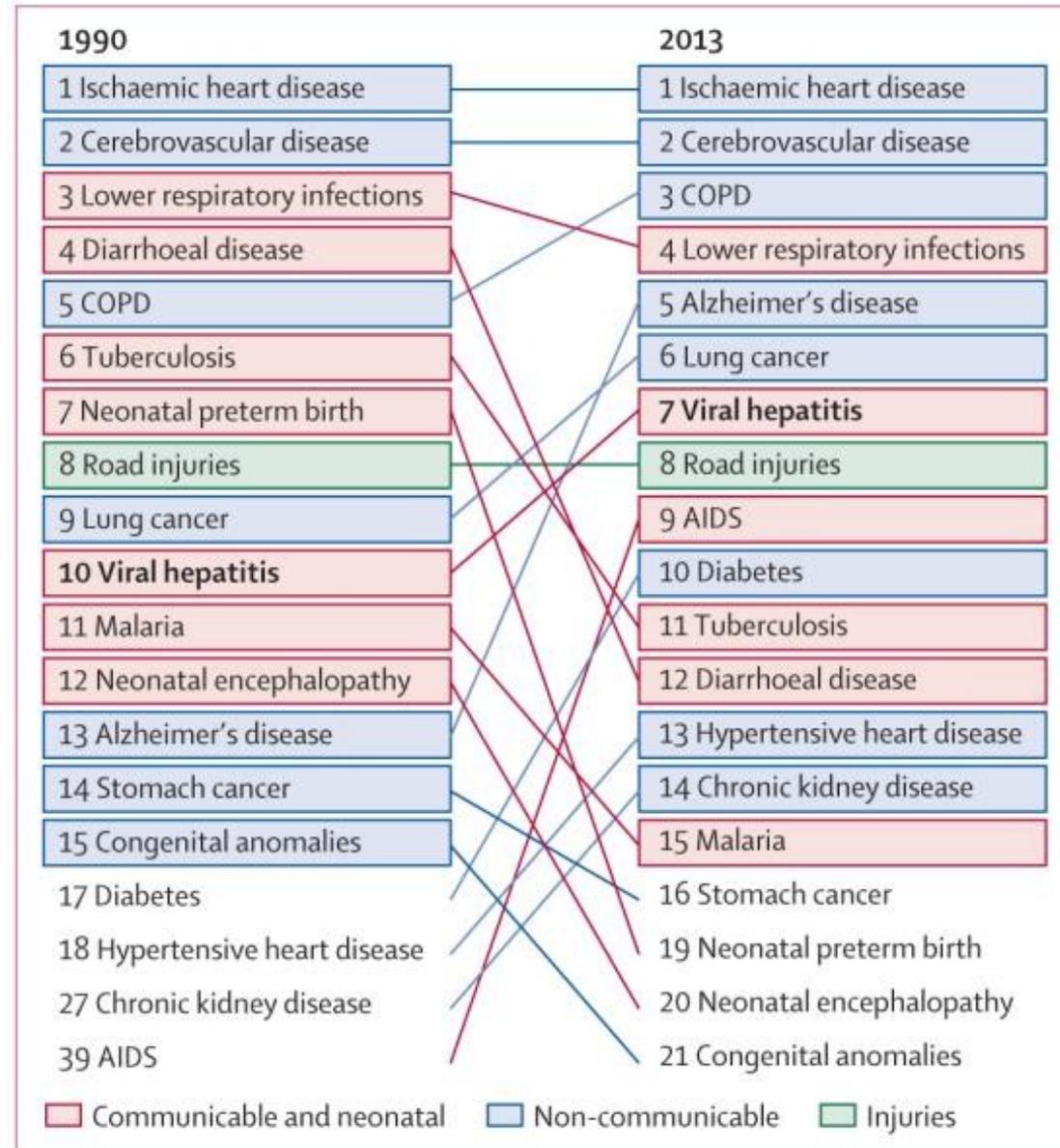
- 257 million CHB worldwide
- 1.7 million CHB treated worldwide
- Hepatocellular Carcinoma (HCC) : 2nd cause of cancer death worldwide

Elimination of HBV infection and HBV-related diseases



The global burden of HBV infection

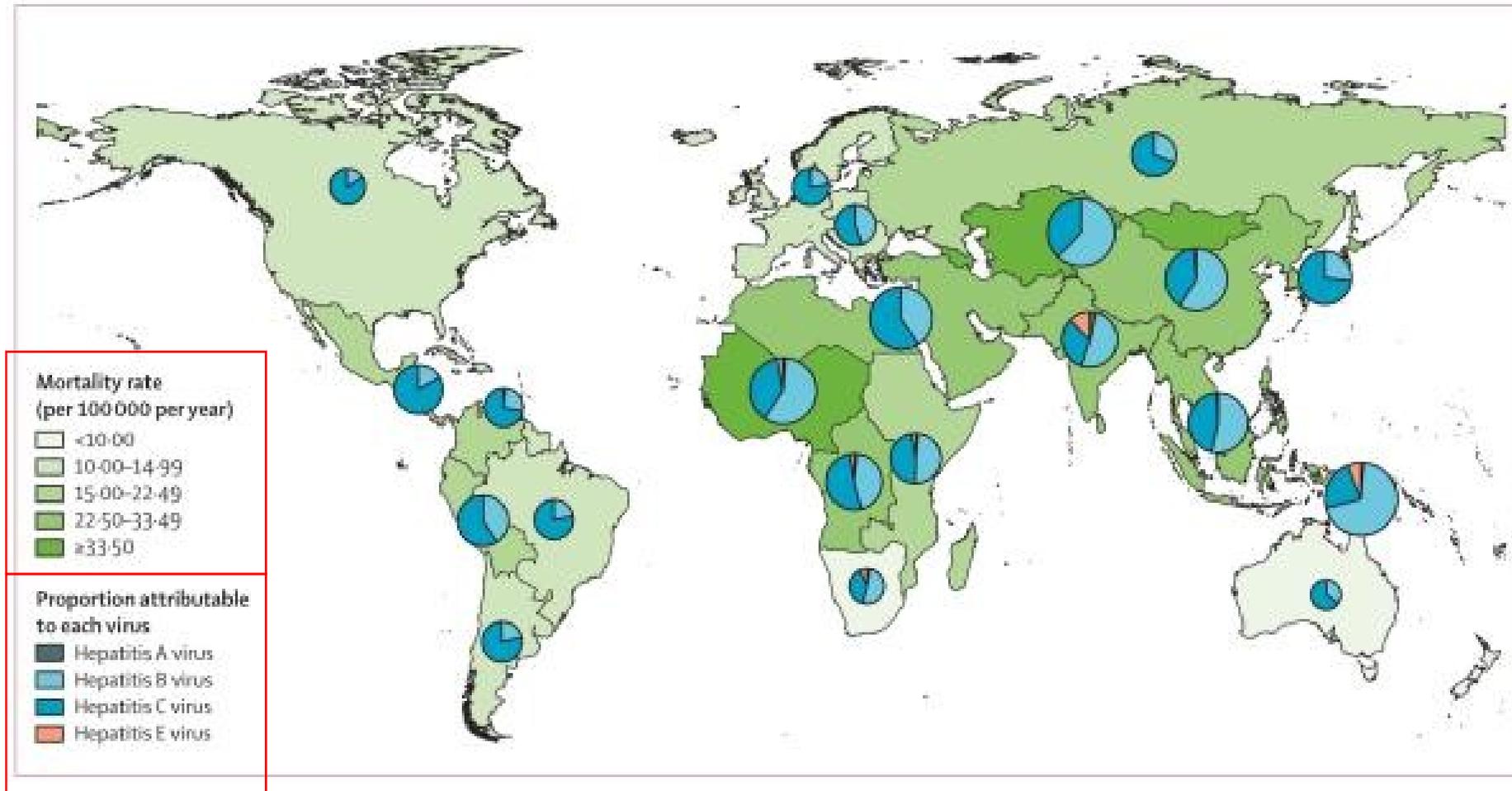
Leading causes of mortality and trends, 1990–2013



Burden of infection and disease of HBV

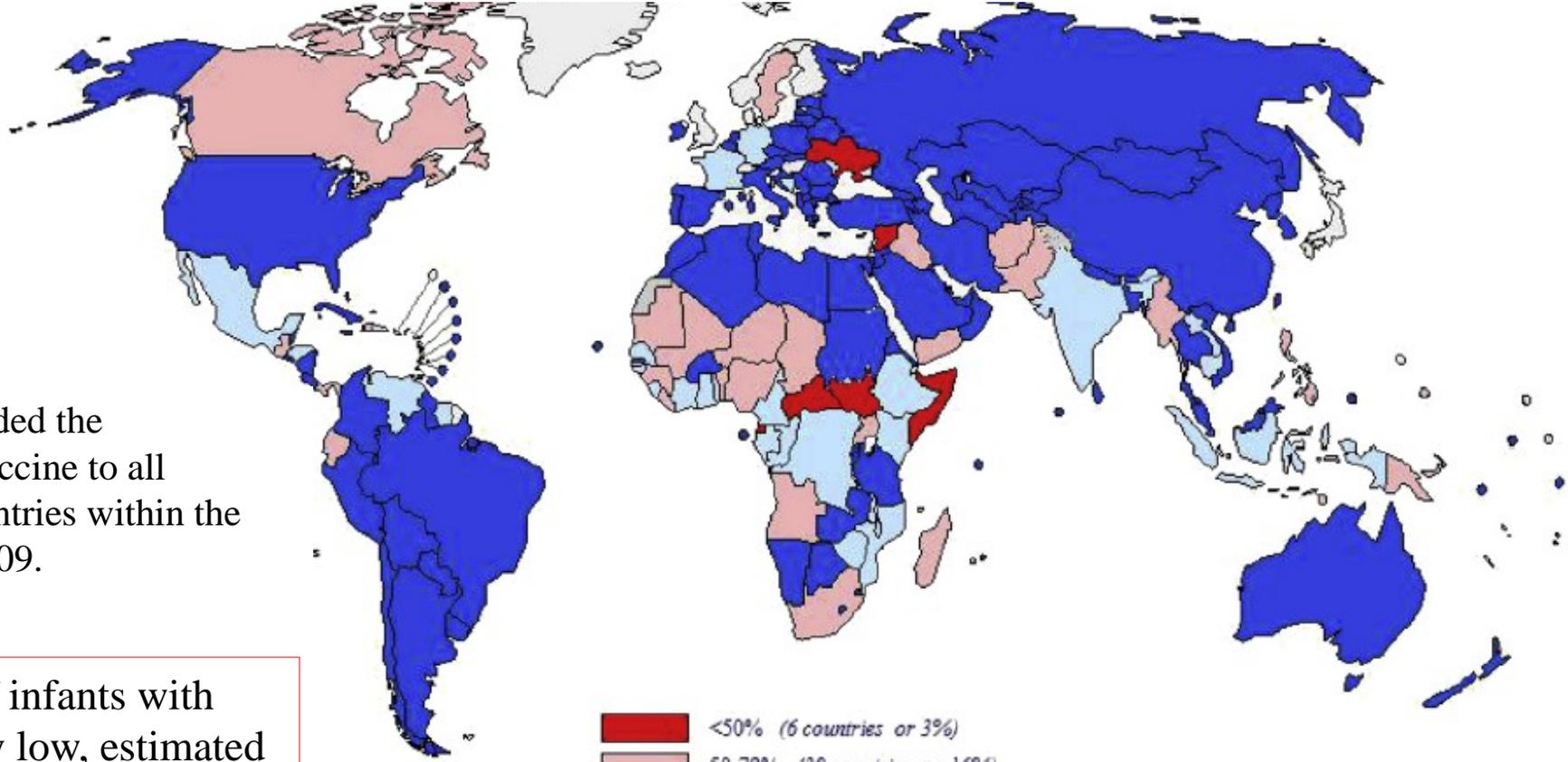
	HBV	HCV	HIV
Chronic infections worldwide (WHO)	240m	188m	35.3m
Chronic infections in European Region (WHO)	13.3m	15m	2,2m
Mortality (deaths/year) worldwide	786,000	499,000	1,6m
Mortality (deaths/year) in WHO European Region	36,000	86,000	66,000

Map of viral hepatitis-related, age-standardised mortality rate, by GBD region



Controlling the infection

Hepatitis B Immunization in Infants - 2015



The WHO has recommended the administration of HBV vaccine to all newborns in endemic countries within the first 24 h of birth since 2009.

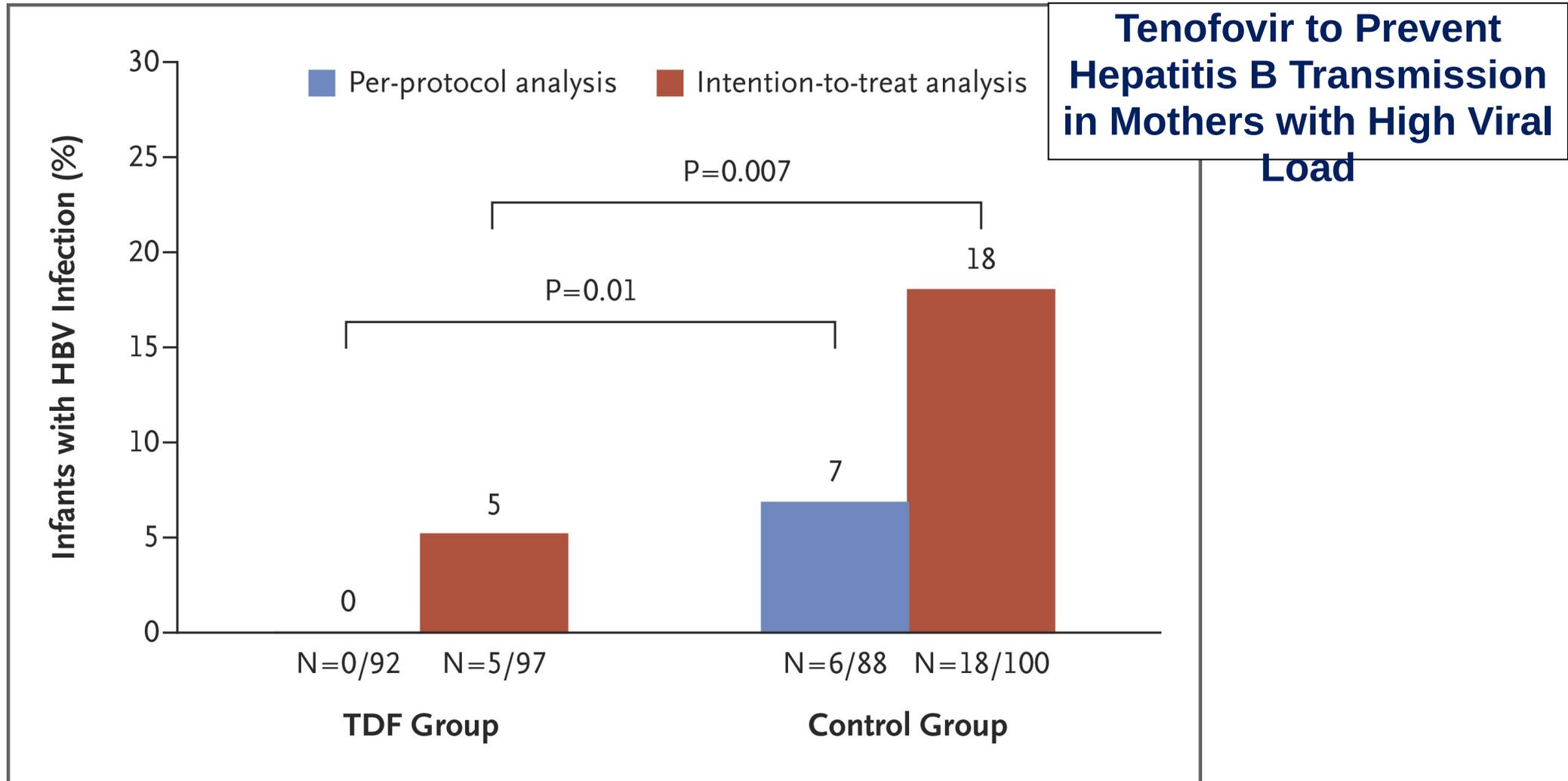
The global coverage of infants with birth dose remains very low, estimated at only 38% in 2014

Source: WHO/UNICEF coverage estimates 2015 revision. July 2016.
Map production: Immunization Vaccines and Biologicals, (IVB). World Health Organization. 194 WHO Member States.
Date of slide: 20 July 2016

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.



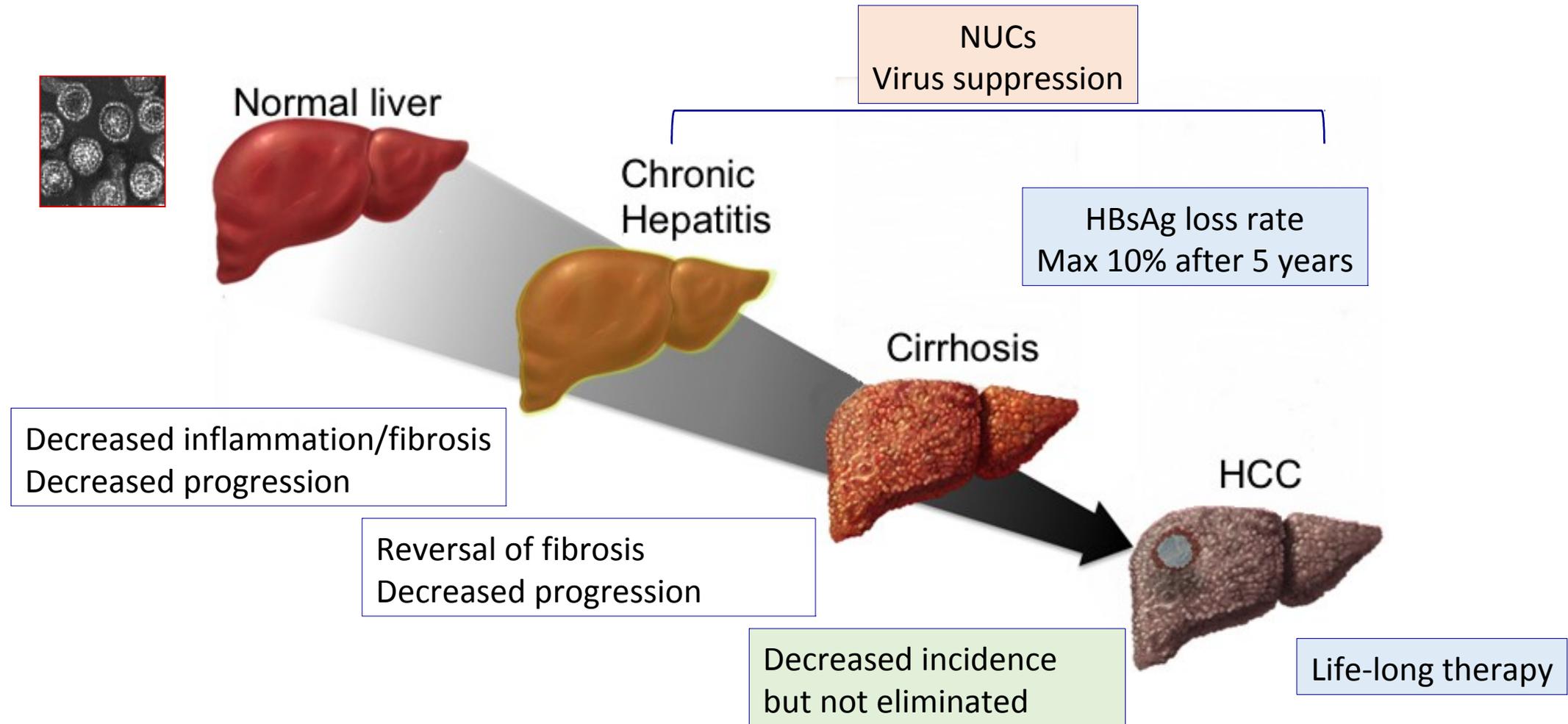
Infant immunization is not sufficient to prevent MTCT in highly viremic mothers



Barriers to treatment

Current treatments: virus suppression and sustained disease control

Why not treating more patients ?



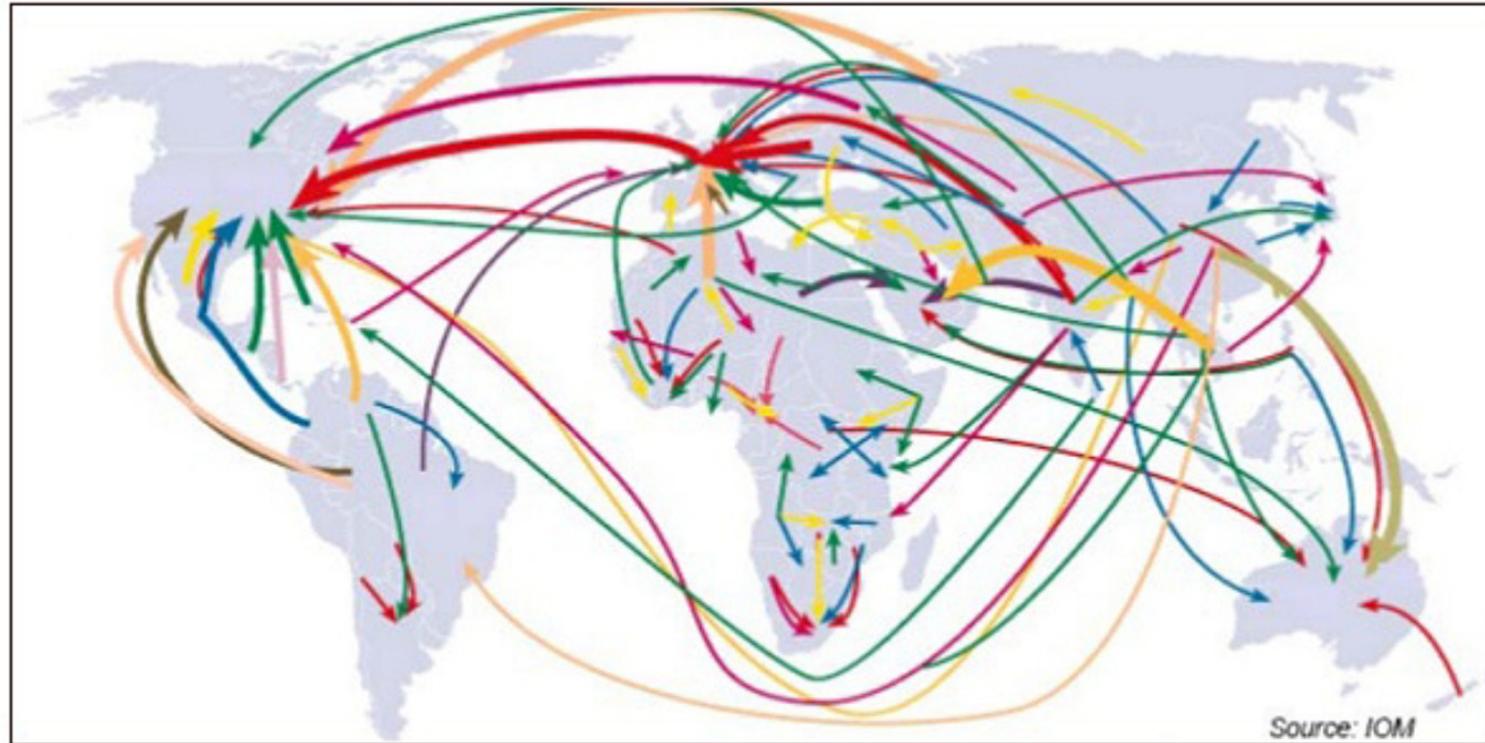
Liaw YF et al, N Engl J Med. 2004; Chang et al, Hepatology 2010; Marcellin et al, Lancet 2013; Hosaka et al, Hepatology 2013; Kim et al, Cancer 2015; Papatheodoridis et al, J Hepatol 2015

Lack of knowledge and awareness

	Low-to middle-income countries with high prevalence	Middle-to high-income countries with low prevalence
Lack of knowledge and awareness	<ul style="list-style-type: none">• Education of the public• Education of stakeholders• Improve communication to reach high risk groups	<ul style="list-style-type: none">• Support studies to increase evidence-based knowledge to create an appreciation of the impact of the disease• Increase awareness among physicians who treat with immunosuppressive drugs

Migration and viral hepatitis

Globalization of Disease

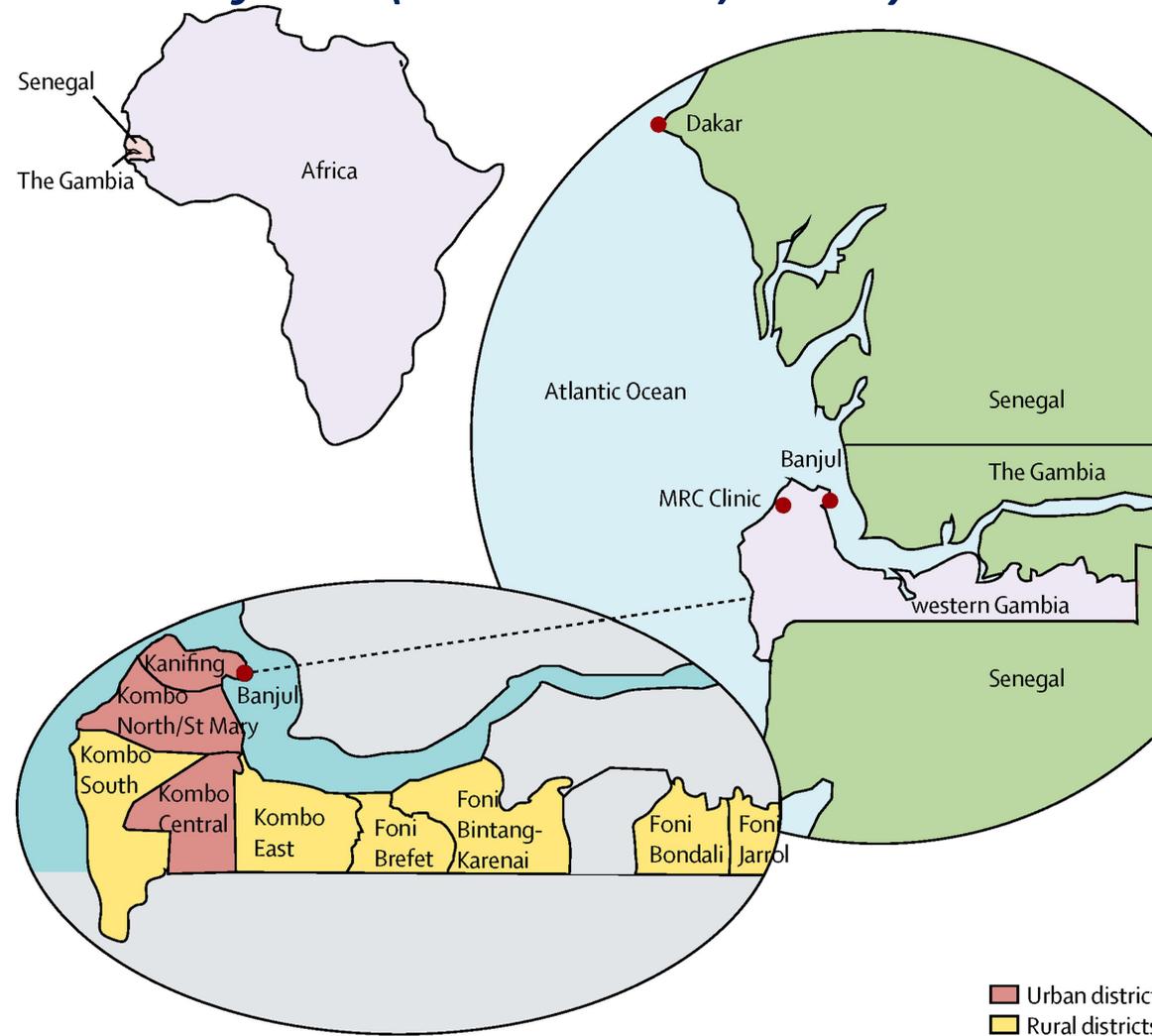


Foreign-born individuals comprise majority of growing HDV positive population in North America and Western Europe...

Germany: Wedemeyer et al., Hepatology 2007
Heidrich et al., J Viral Hepatitis 2009
France: Le Gal et al., Hepatology 2007
UK: Cross et al., J Med Virol 2008
Italy: Stroffolini et al., J Med Virol 2009
Piccolo et al., Eur J Publ Health 2010

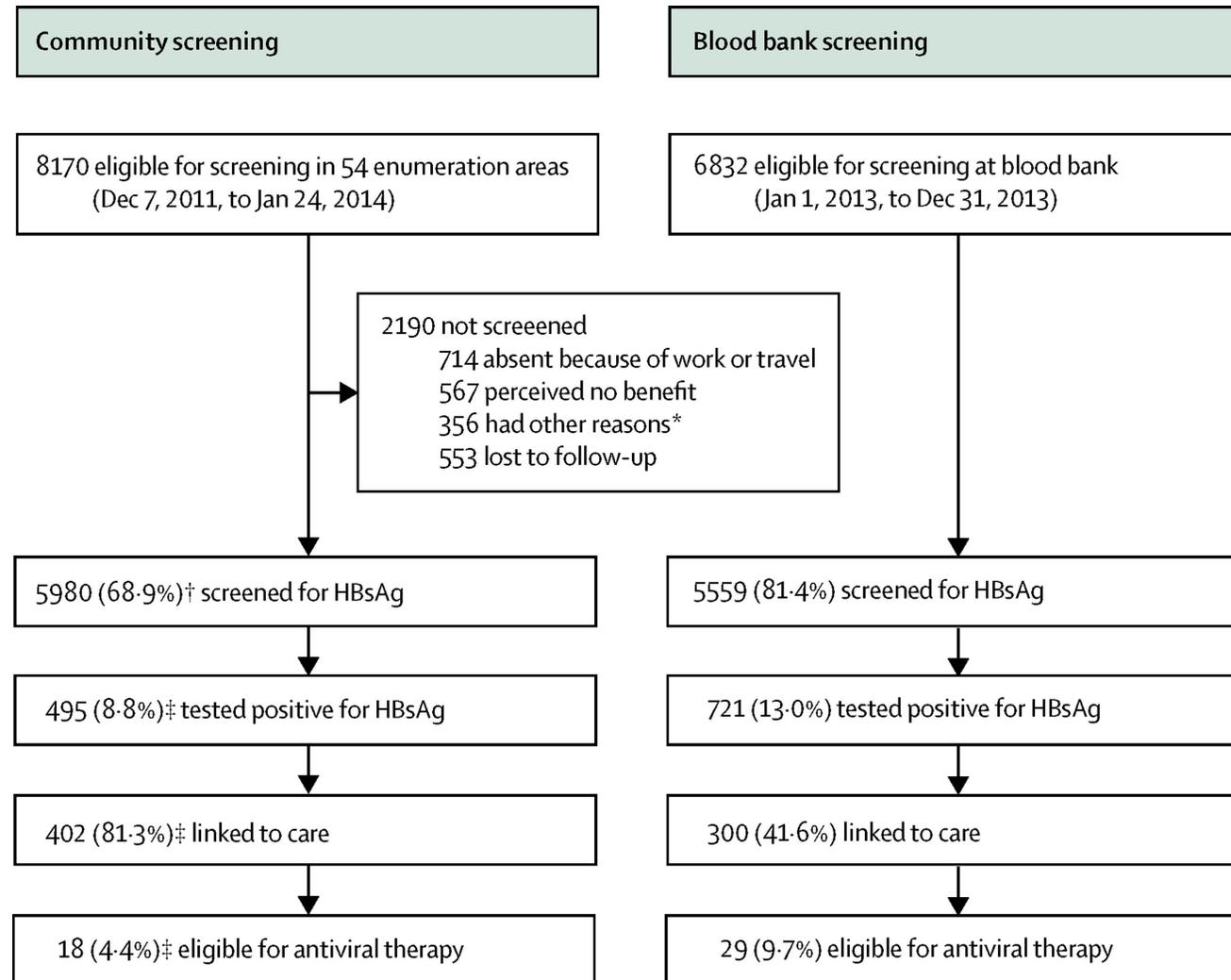
Screening and linkage to care

Acceptability and feasibility of a screen-and-treat program for hepatitis B virus infection in The Gambia: the Prevention of Liver Fibrosis and Cancer in Africa (PROLIFICA) study



Lemoine et al,
The Lancet Global Health, 2016

From screening to linkage to care – The PROLIFICA experience in Gambia



Screening and linkage to care

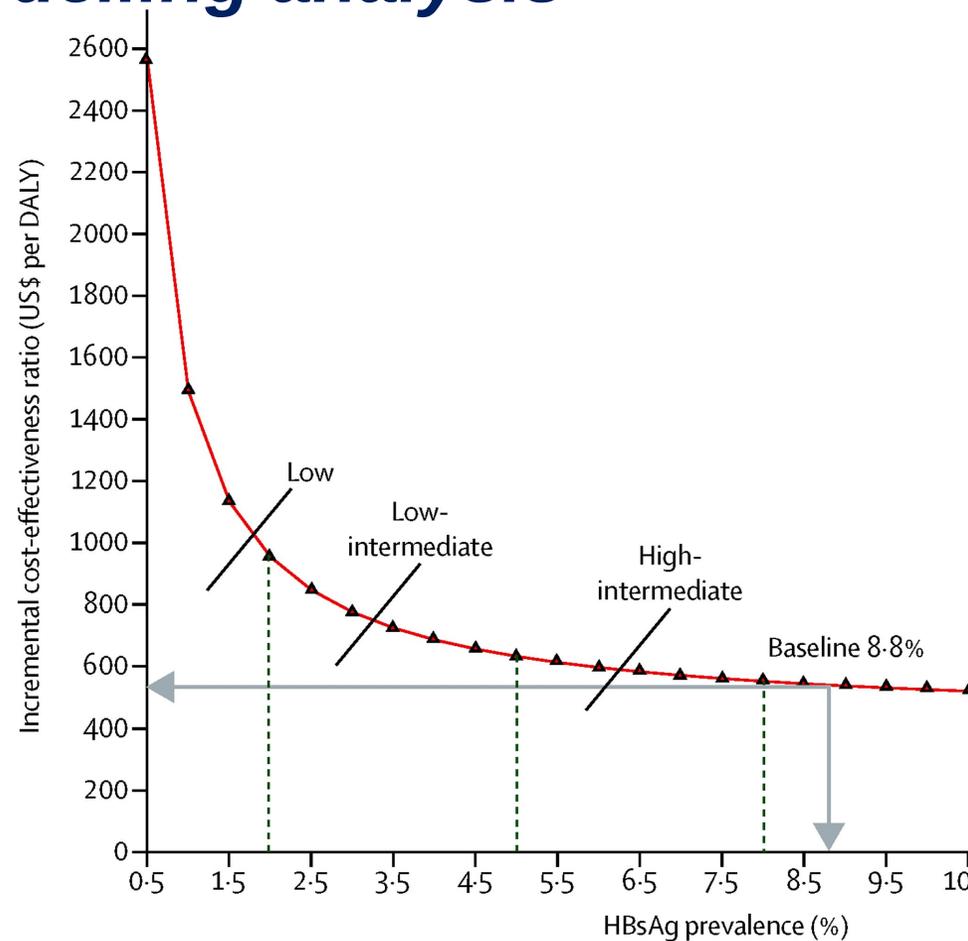
	Low-to middle-income countries with high prevalence	Middle-to high-income countries with low prevalence
Limited screening and linkage to care	<ul style="list-style-type: none">• Implementation of national policies on HBV screening• Point of care screening• Diagnostic assays which are more readily available at lower costs• Virological assessment and liver disease staging with POC tests	<ul style="list-style-type: none">• International policy on appropriate HBV screening• Screening of risk groups (according to guidelines) including vulnerable populations• Screening of immigrants from high prevalence regions

Limited access to treatment

Main hurdles for expanding treatment access

- Life-long suppressive therapy
- Not all HBV carriers are eligible to therapy according to clinical practice guidelines (some societies are widening treatment indications)
- Management of chronic HBV infection differs across countries worldwide (cf the different local practice guidelines)
- Cost and availability of existing antivirals (generics ?)
- Cost and availability of monitoring treatment efficacy

Cost-effectiveness of community-based screening and treatment for chronic hepatitis B in The Gambia: an economic modelling analysis



	Average per person				ICER		
	Cost (US\$)	Life-years saved	QALY	DALY	US\$ per DALY averted	US\$ per QALY gained	US\$ per life-year saved
Current practice	11.15	19.84	16.98	4.28
Screen and treat intervention	44.08	19.89	17.04	4.22	540	511	645

DALY=disability-adjusted life-year. ICER=incremental cost-effectiveness ratio. QALY=quality-adjusted life-year.

Table 2: Summary results for each strategy

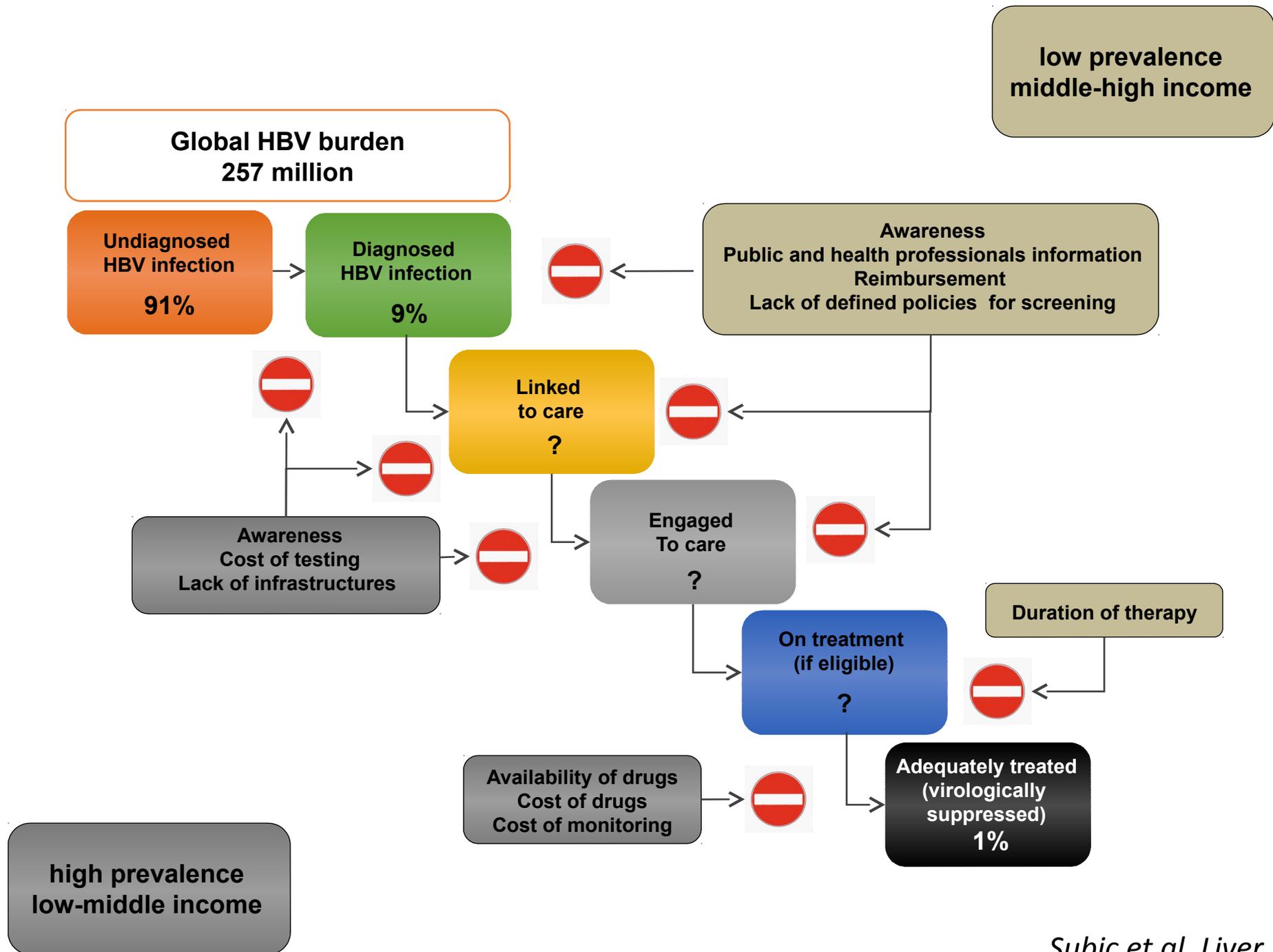
Adult community-based screening and treatment for HBV in the Gambia is likely to be a cost-effective intervention. Higher cost-effectiveness might be achievable with targeted facility-based screening, price reductions of drugs and diagnostics, and integration of HBV screening with other public health interventions.

Improve access to treatment

	Low-to middle-income countries with high prevalence	Middle-to high-income countries with low prevalence
Limited treatment	<ul style="list-style-type: none">• Lower cost constraints by developing insurance systems supported by local governments• Increase accessibility of drugs by innovative cost models	<ul style="list-style-type: none">• Increase awareness among patients• Better training of physicians to optimally treat according to guidelines• Simplify and ensure reimbursements for treatment

Funding limitations

- **HBV has attracted far fewer resources for clinical management and research than other chronic infectious diseases such as HIV, HCV or malaria.**
- **In the UK, HBV receives 0.7% of total expenditures compared to 3.0% for HCV, 13.9% for malaria, and 17.5% for HIV.**
- **Mortality from HBV > malaria but the latter receives nearly 5 times more funding.**
- **HDV which co-infects 20 million HBV carriers and results in more aggressive liver disease, receives nearly no resources.**
- **Fight against social stigma and discrimination through education of the public, physicians, and stakeholders**



HBV cure: An attainable goal within the next decade !



- Collaboration between Academia, Industry and Stakeholders

National health programs



- International HBV cure programs



