The Future of Hepatitis C Elimination

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CDA FOUNDATION

Disclosures:

- Nothing to declare

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In 2015, the World Health Assembly endorsed WHO's targets to eliminate HBV / HCV by 2030

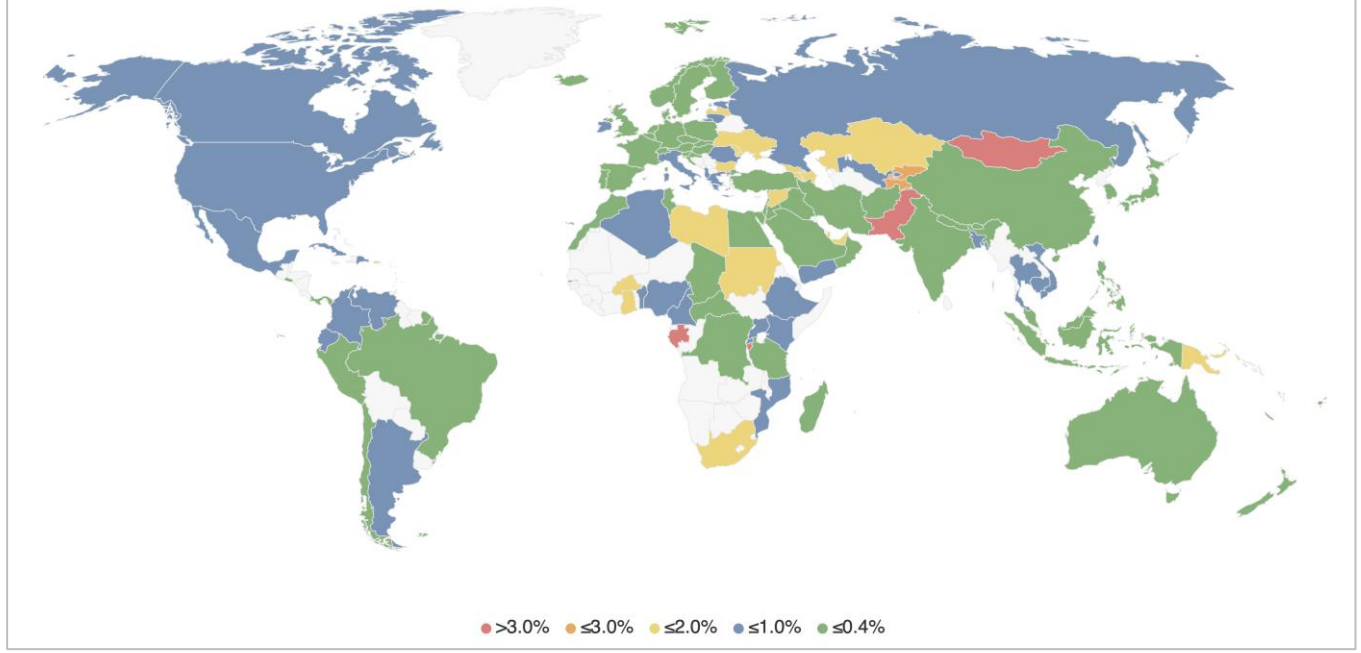
Elimination targets	Elimination of chronic HBV infection as a public health problem		Elimination of chronic HCV infection as a public health problem	
2030 GHSS relative reduction reference targets (compared to 2015)	**Incidence** 95% reduction	**Mortality** 65% reduction	**Incidence** 80% reduction	**Mortality** 65% reduction
HBV- and HCV-specific absolute prevalence, incidence and mortality targets	**HBV EMTCT** ≤0.1% HBsAg prevalence in ≤5 year olds[a,b] *Additional target:* ≤2% MTCT rate (where use of targeted HepB-BD)[c]	**Annual mortality**[g] (HBV) ≤4/100 000	**Annual incidence** (HCV) ≤5/100 000 ≤2/100 (PWID)	**Annual mortality**[g] (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] **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]	**Testing and treatment** ≥90% of people with HBV diagnosed ≥80% of people diagnosed with HBV and eligible for treatment are treated[h] **Prevention** ≥90% HepB3 vaccine coverage ≥90% HepB-BD coverage	**Testing and treatment** ≥90% of people with HCV diagnosed ≥80% of people diagnosed with HCV are treated[g] **Prevention** 0% unsafe injections 100% blood safety 300 needles/syringes/PWID/year	

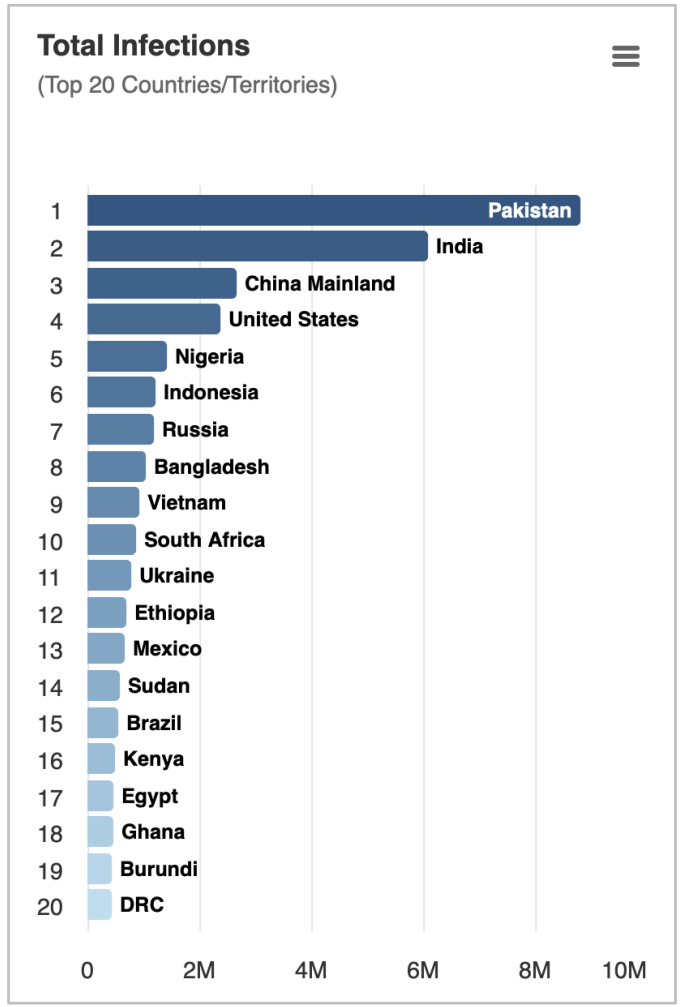
World Health Organization. Global health sector strategies on, respectively, HIV, viral hepatitis and sexually transmitted infections for the period 2022-2030. Geneva, Switzerland: World Health Organization, 2022.
World Health Organization. Interim guidance for country validation of viral hepatitis elimination, 2021.

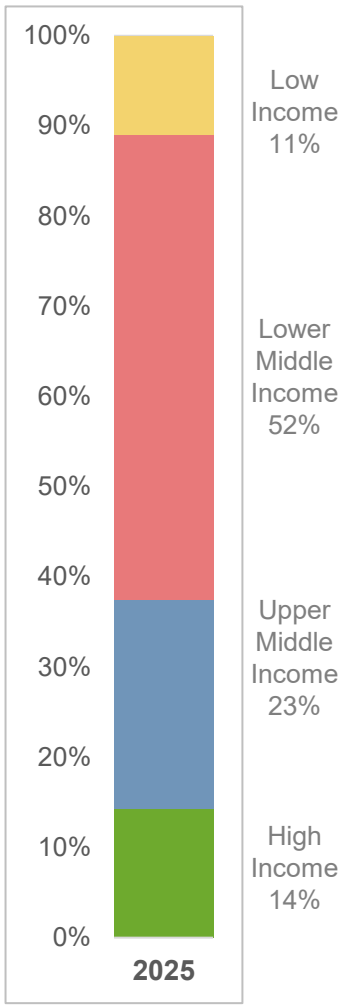
Globally, approximately 46 million individuals are infected with the hepatitis C virus (HCV), leading to a mortality rate of one person every 2 minutes

(2025)
Chronic HCV Infections:
45,794,000
1%

Diagnosed	Annual Treated	Annual Deaths	Deaths per hour
21%	2%	239,485	27

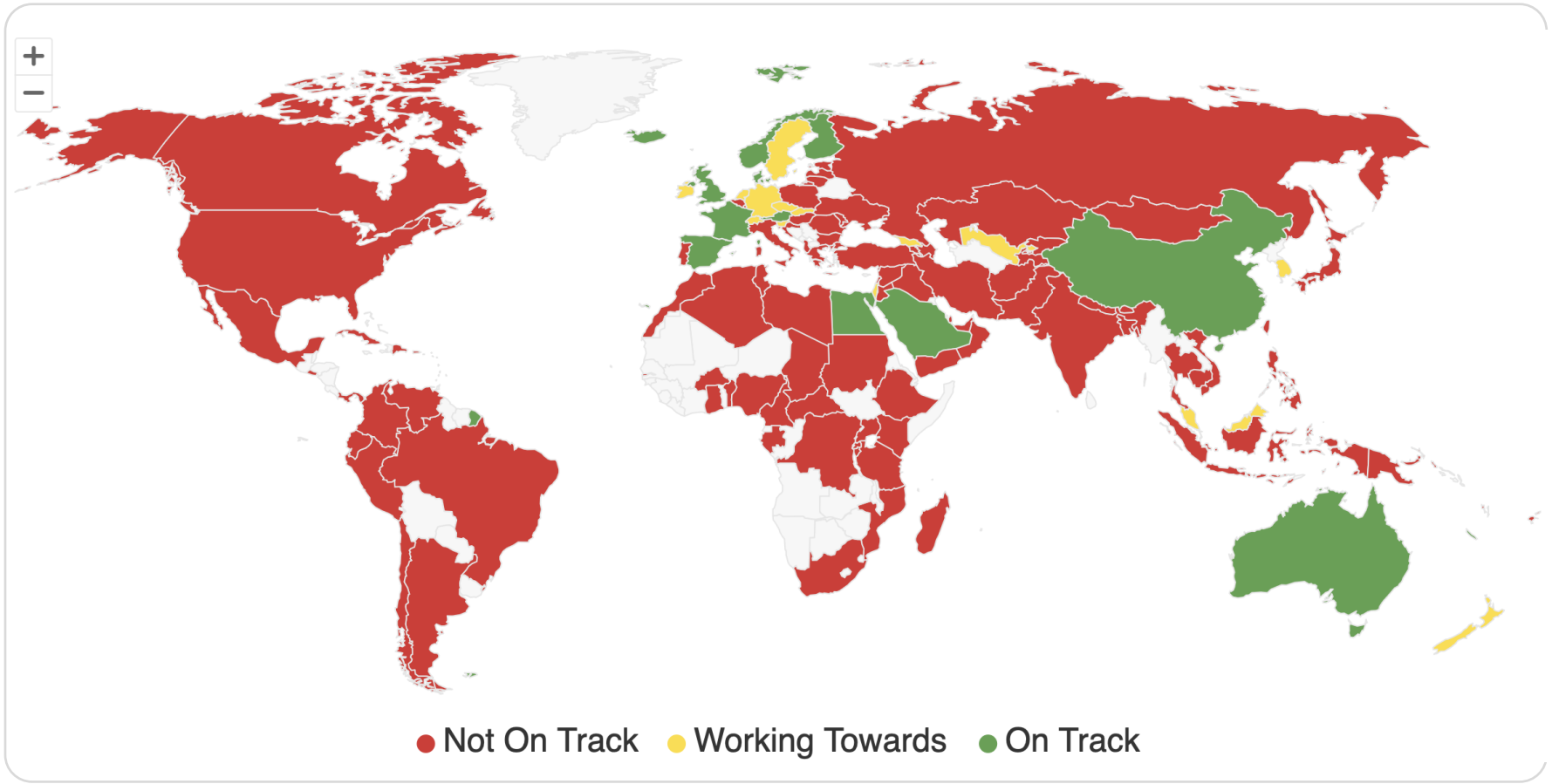






Cui F, Faini D, Razavi-Shearer D, Razavi H, Manzengo Mingiedi C, Gonzalez MA, et al. The burden of chronic hepatitis B and C in 2022 and progress towards elimination: a global report. Lancet Gastroenterol Hepatol. 2026. Polaris Observatory C. Global prevalence, cascade of care, and prophylaxis coverage of hepatitis B in 2022: a modelling study. Lancet Gastroenterol Hepatol. 2023;8(10):879-907. Cui F, Blach S, Manzengo Mingiedi C, Gonzalez MA, Sabry Alaama A, Mozalevskis A, et al. Global reporting of progress towards elimination of hepatitis B and hepatitis C. Lancet Gastroenterol Hepatol. 2023;8(4):332-42. https://cdafound.org/polaris-countries-distribution/

12 countries are on track to achieve all WHO elimination targets for HCV and another 15 will achieve these targets shortly after 2030



China is the big addition in 2025 as the result of the newly announced China Action Plan

https://cdafound.org/polaris/elimination-maps/

Australia	Finland
Austria	France
China	Iceland
Denmark	Norway
Egypt	Saudi Arabia
England/UK	Spain

Czechia	Malta
Georgia	Netherlands
Germany	New Zealand
Ireland	Slovakia
Israel	Slovenia
Korea, South	Sweden
Malaysia	Switzerland
Uzbekistan	

What about Path To Elimination (PTE)?

- PTE is for current or past year, WHO targets are projecting the continuing impact of a program
- Global data collection for Blood Safety, Injection Safety and Syringes/PWID are old and incomplete
- Of the 12 countries meeting WHO Targets by 2030
  - » 5 would qualify for Gold tier
  - » 2 would qualify for Silver tier
  - » 5 would not qualify for any PTE medal
- In almost all cases this was due to missing data (as opposed to low coverage)

PTE tier	Impact targets	Programme targets
The gold level recognizes where a country has implemented:		
Gold tier	N/A	• 100% blood safety • 100% injection safety • ≥150 needles/syringes/year in PWID[a] (or OAT coverage for PWID >20% in countries with defined opioid epidemics) • ≥80% of people living with chronic HCV are diagnosed • ≥70% of people diagnosed with HCV are treated • Establishment of sentinel surveillance programme for hepatitis sequelae[b]
The silver level recognizes where a country has implemented:		
Silver tier	N/A	• 100% blood safety • 100% injection safety • NSP and OAT present in country[c] • ≥70% of people living with chronic HCV are diagnosed • ≥60% of people diagnosed with HCV are treated
The bronze level recognizes where a country has implemented:		
Bronze tier	N/A	• ≥95% blood safety • ≥95% injection safety • NSP is present in the country[c] • ≥60% of people living with chronic HCV are diagnosed • ≥50% of people diagnosed with HCV are treated

Guidance for country validation of viral hepatitis elimination and path to elimination: technical report. Geneva: World Health Organization; 2023.

The China action plan sets targets for each province to scale up HCV and HBV screening and treatment; and to diagnose 80% of all viral hepatitis infections by 2030 and treat 80% of those diagnosed

关于印发《中国防治病毒性肝炎行动计划（2025—2030 年）》的通知

Notice on the Issuance of the "China Action Plan for the Prevention and Control of Viral Hepatitis (2025-2030)"

国疾控传防发〔2025〕13 号

各省、自治区、直辖市及新疆生产建设兵团疾控局、发展改革委、公安厅（局）、司法厅（局）、财政厅（局）、卫生健康委、医保局、中医药局、药监局：

To the Disease Control and Prevention Bureaus, Development and Reform Commissions, Public Security Departments (Bureaus), Justice Departments (Bureaus), Finance Departments (Bureaus), Health Commissions, Medical Insurance Bureaus, Traditional Chinese Medicine Bureaus, and Drug Administrations of all provinces, autonomous regions, municipalities directly under the Central Government, and the Xinjiang Production and Construction Corps:

为落实《“健康中国 2030”规划纲要》要求，进一步加强我国病毒性肝炎防治工作，维护人民群众生命健康，国家疾控局等 9 部门联合制定了《中国防治病毒性肝炎行动计划（2025—2030 年）》，现印发给你们，请认真组织实施，切实落实各项政策和保障措施，确保目标如期实现。

To implement the requirements of the "Healthy China 2030" Outline, further strengthen the prevention and control of viral hepatitis in my country, and safeguard the lives and health of the people, the National Center for Disease Control and Prevention and nine other departments have jointly formulated the "China Action Plan for the Prevention and Control of Viral Hepatitis (2025-2030)", which is now issued to you. Please conscientiously organize and implement it, and earnestly implement various policies and guarantee measures to ensure that the goals are achieved as scheduled.

- This represents the largest global elimination program
- 25% of all HBV/HCV infections in the world reside in China
- The announcement follows two large pilot programs:
  - Guandong province (population 127 million)
  - Hainan province (population 10 million)

Polaris Observatory allow us to follow countries' progress toward elimination – High income countries eliminating HCV fall into three categories

Early adopters

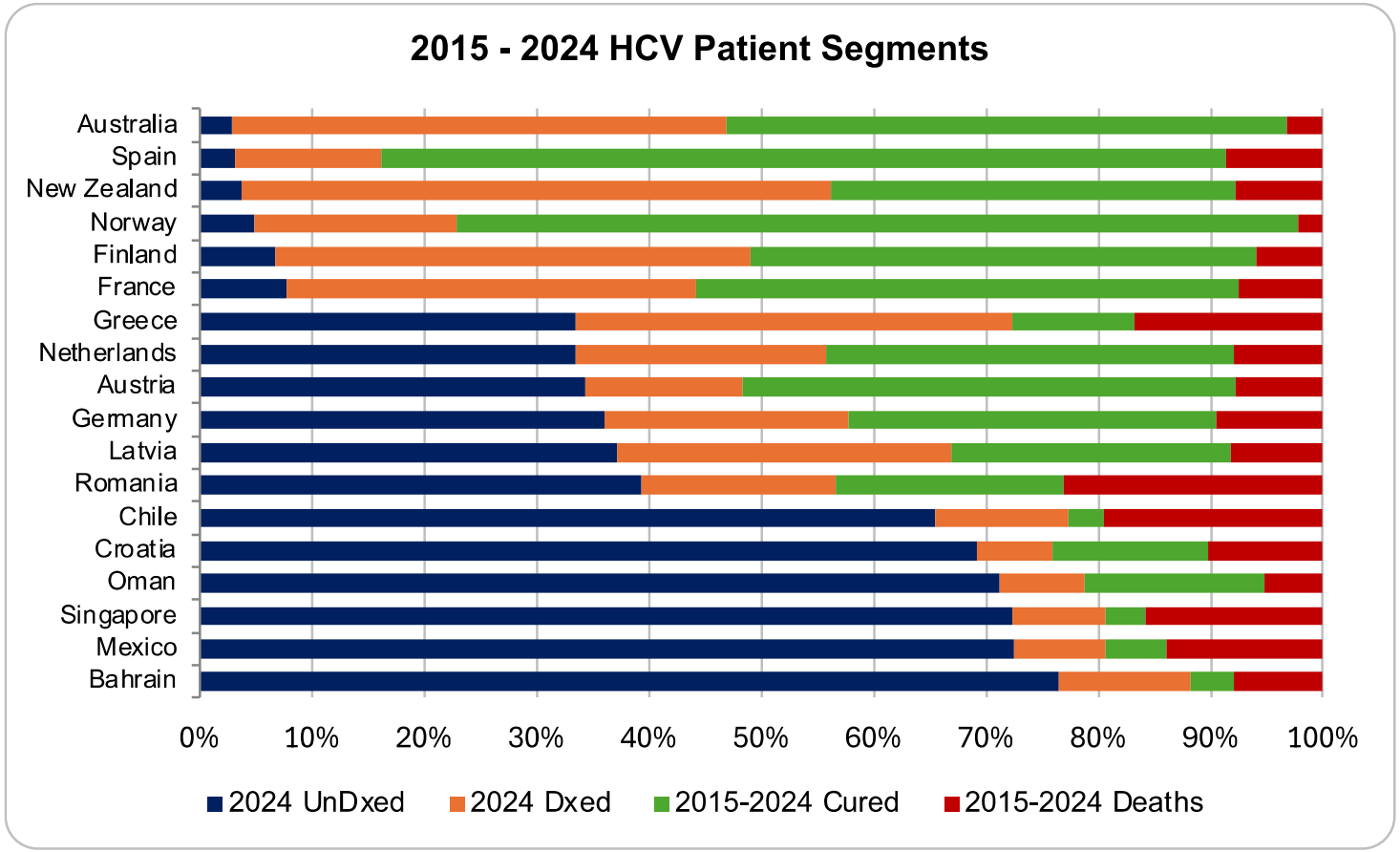
- Active screening
- Active linkage to care
- Proactive simplified treatment

Majority

- Passive national elimination program
- Select screening
- Some linkage to care
- Opportunistic treatment

Laggards

- Provide free screening, lab tests and treatment
- Don't promote the elimination program
- Limited screening
- Poor linkage to care



Lost to follow-up remains a big problem even among early adopters

Center for Disease Analysis Foundation. Polaris Dashboard. Available at https://cdafound.org/polaris/dashboard.

In countries with HCV elimination programs, we are seeing a very large loss to follow up

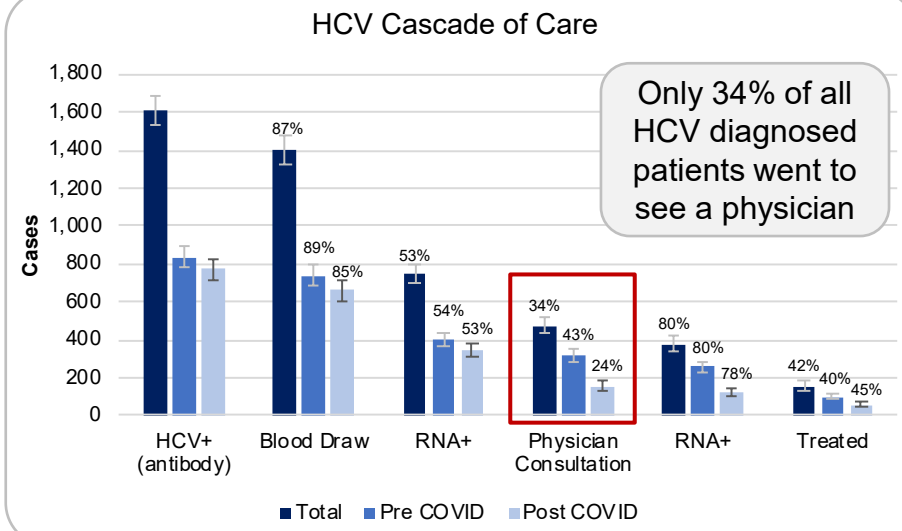
In the United States, 65–77% of patients diagnosed with HCV who have treatment coverage are lost to follow-up within 1 year of diagnosis

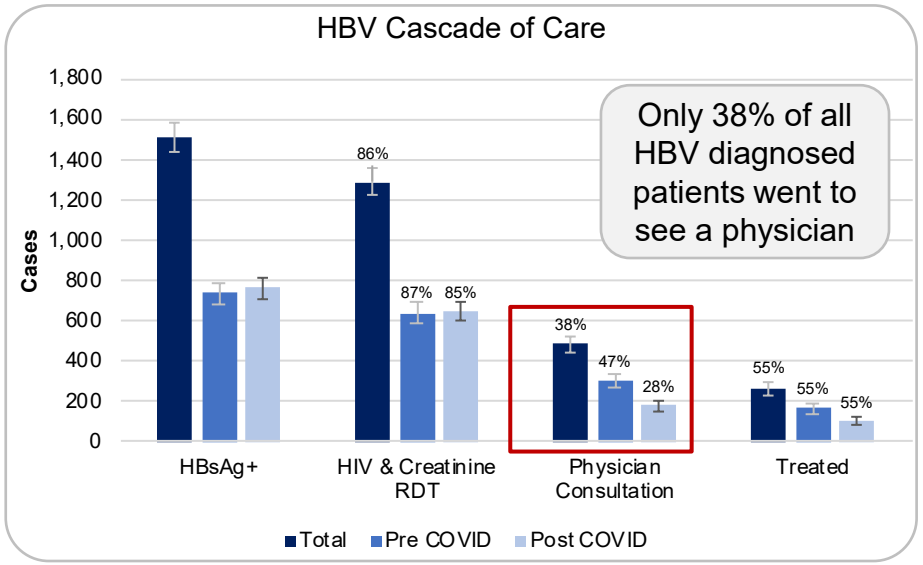
Results: The prevalence of DAA treatment initiation within 360 days of the first positive HCV RNA test result among Medicaid, Medicare, and private insurance recipients was 23%, 28%, and 35%, respectively; among those treated, 75%, 77%, and 84%, respectively, initiated treatment within 180 days of diagnosis. Adjusted odds of treatment initiation were lower among those with Medicaid (aOR = 0.54; 95% CI = 0.51–0.57) and Medicare (aOR = 0.62; 95% CI = 0.56–0.68) than among those with private insurance. After adjusting for insurance type, treatment initiation was lowest among adults aged 18–29 and 30–39 years with Medicaid or private insurance, compared with those aged 50–59 years. Among Medicaid recipients, lower odds of treatment initiation were found among persons in states with Medicaid treatment restrictions (aOR = 0.77; 95% CI = 0.74–0.81) than among those in states without restrictions, and among persons whose race was coded as Black or African American (Black) (aOR = 0.93; 95% CI = 0.88–0.99) or other race (aOR = 0.73; 95% CI = 0.62–0.88) than those whose race was coded as White.

Even after removing HCV treatment restrictions and reimbursing treatment, most HCV patients are lost to follow up

Thompson, et. al. MMWR MMWR, Vol. 71(32):1011–2022.

We are seeing similar loss to follow up in low and middle-income countries as well
Conclusion: There is low awareness among patients and GPs

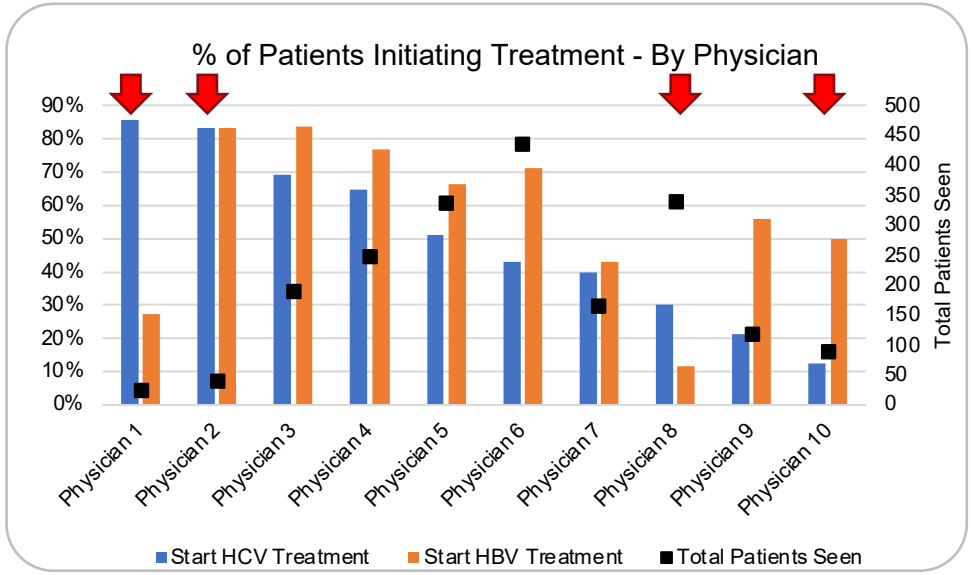




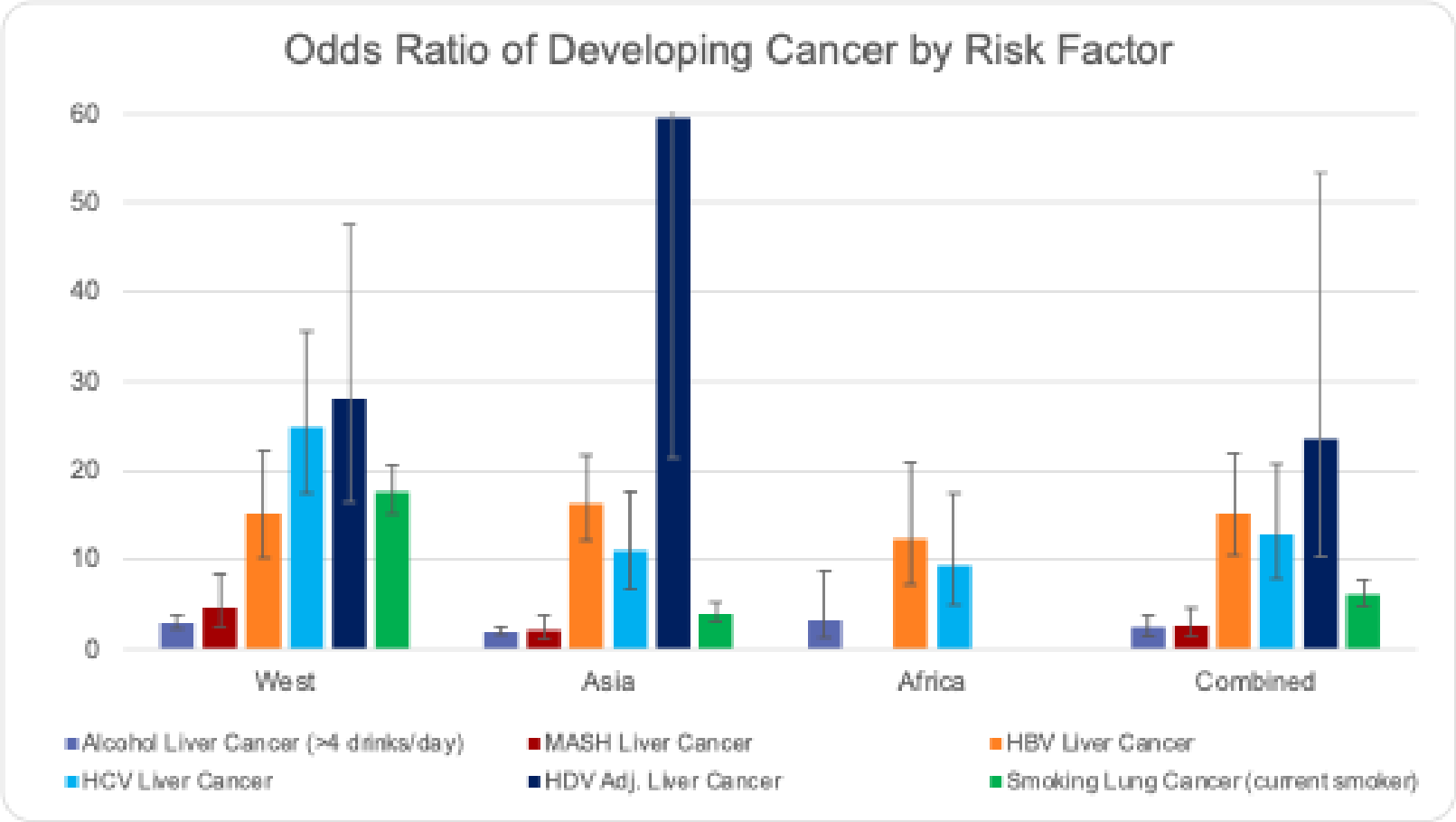
In Uzbekistan, we screened 340K individuals for HBV and HCV and used a call center to contact the lost-to-follow-up individuals:

- 40% of all patients lost-to-follow-up did not know there was a relationship between HBV/HCV infection and HCC.
- 33% stated that fear of side effects was the reason for not seeking treatment.

We discovered that our own, trained general practitioners, were informing patients that they did not need treatment.



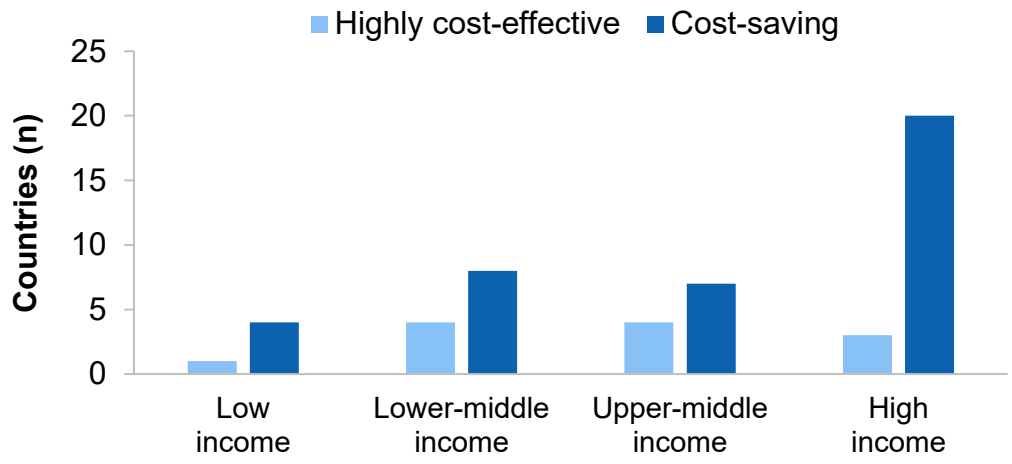
We need to understand that the risk of developing HCC is very high with viral hepatitis as compared to the risk of cancer from smoking one pack of cigarette per day



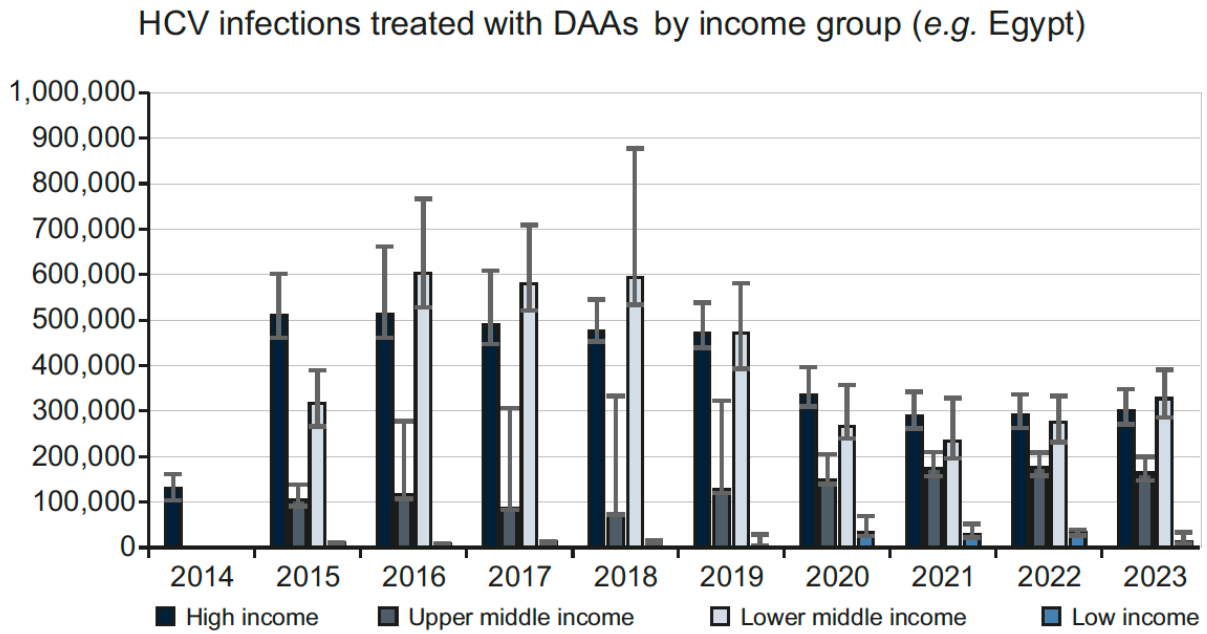
Wallace C, Razavi-Shearer D, Hall S, et al. Risk of liver cancer from major causes compared to smoking and lung cancer: a systematic review and meta-analysis. Submitted for publication.

Elimination of HCV is cost-saving or highly cost-effective in all analyzed countries, irrespective of income level

Cost effectiveness of HCV elimination (n=51)



- HCV treatments are curative in 8–12 weeks
- Treatment prices have dropped significantly since their launch in 2014
- In high-income, lower-middle–income, and low-income countries,
  HCV elimination is **mostly cost-saving**
- Simplified test-and-treat guidelines are more likely to result in cost-savings



CDA foundation, unpublished data.

Polaris Observatory Collaborators. Electronic address: hrazavi@cdafound.org; Polaris Observatory Collaborators. Number of people treated for hepatitis C virus infection in 2014-2023 and applicable lessons for new HBV and HDV therapies. J Hepatol. 2025 Aug;83(2):329-347. doi: 10.1016/j.jhep.2025.01.013. Epub 2025 Feb 4. PMID: 39914746; PMCID: PMC12278943.

One reason that viral hepatitis programs are not receiving the support and funding they need is the fact that we do not put any disability for people with chronic HBV or HCV

Table 1. HIV, Malaria, TB and viral hepatitis burden in Africa

Disease	Number of cases as of 2022	Death from the disease as of 2022	DALY as of 2019
HIV	25.6 [21.6–30.0] million	380,000 [300,000–540,000]	35.9 million
Malaria	233 million	580,000	43.3 million
Tuberculosis	2.5 million	424,000	17.8 million
Viral Hepatitis	77.4 [60.3-95.3] million **HBV:** 68.0 [55.4-85.6] million **HCV:** 9.4 [8.0-14.7] million	346,000 [270,000-426,000] **HBV:** 305,000 [249,000-384,000] **HCV:** 41,000 [35,200-64,600]	5.7 [4.6-8.3] million **HBV:** 5.2 [4.4-8.1] million **HCV:** 0.5 [0.4-0.6] million

Reference: Unpublished work CDA Foundation conducted for Africa CDC

Comparison of disability weights used for all liver diseases and HIV – we are clearly underestimating the disabilities associated with all liver diseases

Sequela (Liver Diseases)	GBD 2016[1]
F0-F4	0
Decompensated cirrhosis	0.178
Hepatocellular carcinoma	0.466
Liver transplant	0.024

Sequela (HIV)	GHE 2021[2]	GBD 2021[2]	GBD 2010[2]	GBD 2004[2]
HIV: symptomatic, pre-AIDS	0.078	0.078	0.221	0.167
HIV/AIDS cases, receiving ARV treatment	0.274	0.274	0.053	0.135
AIDS cases, not receiving ARV treatment	0.582	0.582	0.547	0.505

Sequela (HIV)	GBD 2016[1]
AIDS wo ARV treatment wo anemia	0.582
AIDS wo ARV treatment w mild anemia	0.583
AIDS wo ARV treatment w moderate anemia	0.603
AIDS wo ARV treatment w severe anemia	0.642
Early HIV without anemia	0.012
Symptomatic HIV without anemia	0.274
Symptomatic HIV with mild anemia	0.277
Symptomatic HIV with moderate anemia	0.312
Symptomatic HIV with severe anemia	0.381
AIDS w ARV treatment wo anemia	0.078
AIDS w ARV treatment w mild anemia	0.081
AIDS w ARV treatment w moderate anemia	0.125
AIDS w ARV treatment w severe anemia	0.215

1. *Abajobir AA, Abate KH, Abbafati C, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet; **390**(10100): 1211–59.*
2. *WHO 2024, WHO methods and data sources for global burden of disease estimates 2000 2021*

Conclusions:

- Many countries are making progress toward eliminating HCV. As China has shown it is never too late to start a program.
- Screening and linkage to care remain significant barriers to HCV elimination. For example, England, Germany, and Spain are implementing programs to address this issue.
- After screening, a substantial portion of HCV-infected individuals fail to follow up. Relink programs are crucial and cost-effective in bringing them back to care.
- The risk of cancer due to viral hepatitis has not been accurately communicated. Changing this would increase awareness among patients and providers.
- We all know that the elimination of HCV is in most cases cost saving.
- Furthermore, the disability weights assigned to all liver diseases (HBV, HCV, HDV, and MASH) are significantly lower compared to HIV, malaria, and tuberculosis. We urgently need a comprehensive update of these weights to attract global attention and funding to liver diseases.