Growing vaccine hesitancy on long-term vaccination coverage

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HBV COMSAVA

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Vaccine hesitancy defined

"…a delay in acceptance or refusal of vaccination despite availability of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place and vaccines."

Source: SAGE working group on vaccine hesitancy. Vaccine hesitancy: definition, scope, and determinants. *Vaccine* 2015;33(34):4161-4.

Hepatitis B virus (HBV) vaccination

- A loss in vaccine confidence has been linked to decreasing HBV vaccination coverage.
- Health system barriers to achieving universal access to HBV vaccination exist, particularly in low- and middle-income countries.
- As a whole, the prevalence of HBV infection is 7.4-fold higher in low-income as compared to high-income countries.
- Progress in improving timely birth dose coverage has been slow and hindered by concerns regarding costs to individuals, logistical barriers and healthcare service funding shortfalls.
- We must continue to maintain high HBV vaccination rates, which have had a well-documented positive effect on the prevalence of HBV infection globally:
  - HBV 3-dose series (HepB3) vaccination has reduced the HBV surface antigen (HBsAg) prevalence to less than 2% in the under-5.

Sources: Lazarus JV, Picchio CA, Nayagam S, et al. Strengthening vaccine confidence during the COVID-19 pandemic: A new opportunity for global hepatitis B virus elimination. *J Hepatol* 2020.
Kane MA, Roudot-Thoraval F, Guerin N, et al. Global process in the control of viral hepatitis and acceptable delay in hepatitis B immunization. *Hum Vaccin Immunother* 2016:1-4.

Impact of birth dose vaccine on global HBV elimination

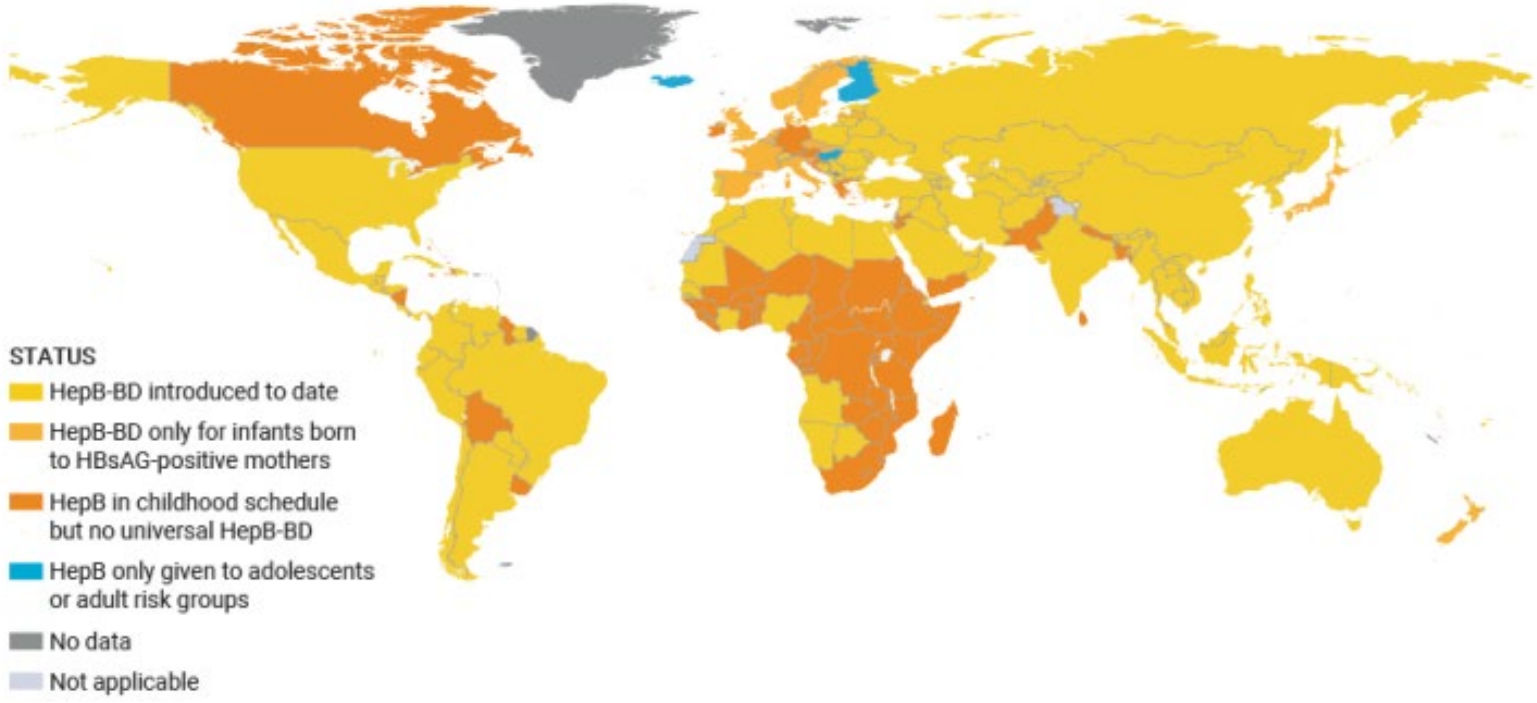
- Scaling up HBV birth dose (HepB-BD) vaccination to 90% by 2030 results in immediate reductions in incident chronic HBV cases and HBsAg prevalence in 5-year olds.
- Without it, HBV elimination cannot be achieved by 2030 in most geographical regions.
- Disruptions in vaccination efforts in 2020 due to COVID-19 will not delay HBV elimination, but will result in an increase in HBV-related deaths in the 2020 birth cohort.

Source: de Villiers MG, Nayagam S, & Hallet TB. The impact of the timely birth dose vaccine on the global elimination of hepatitis. *Nature Comms* 2021;6223.

Global HBV vaccination

- HepB3 global vaccination rate: 83% (2019)
- HepB-BD vaccination rate: 43% (2019)
  - Only 6% in African region

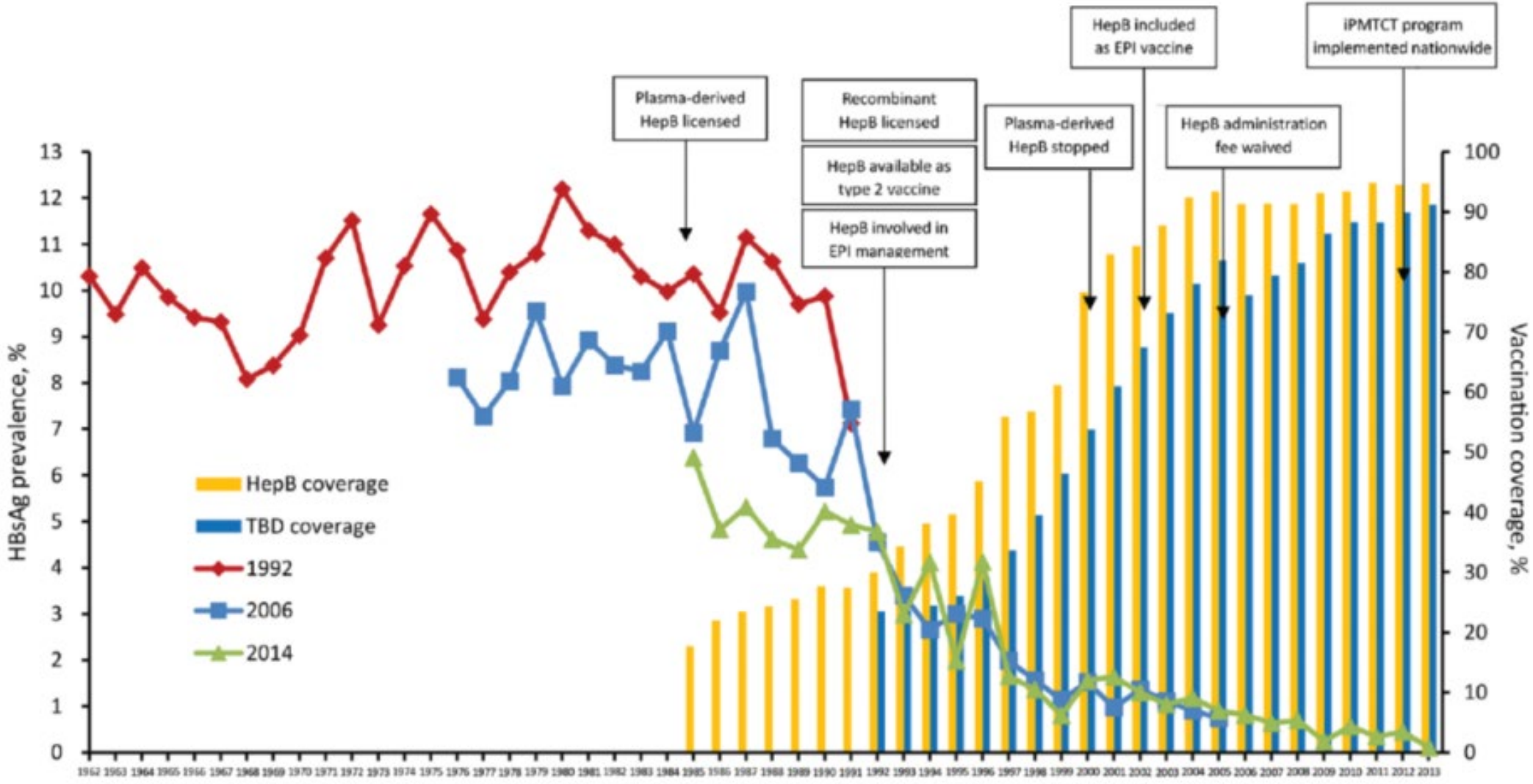
Hepatitis B birth dose vaccination strategies in the national immunization programme, April 2021



Source: WHO, 2021.

China as an example

Control of HBV infection through vaccination, including timely birth dose, 1962-2013 birth cohorts



Source: Viral Hepatitis Prevention Board, Hepatitis B vaccination worldwide: Lessons learnt and the way forward. VHPB Russia meeting 2018.

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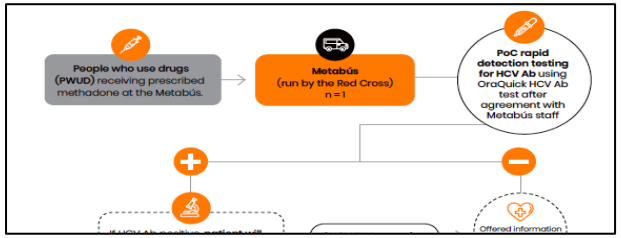
HBV-COMSAVA and Hep C Free Baleares

Two new Spanish models of care were launched by ISGlobal during the COVID-19 pandemic

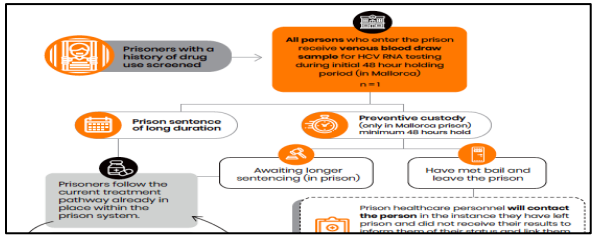
HBV COMSAVA
Hepatitis B Community Screening and Vaccination in Africans

A community-based testing and vaccination initiative to link West African migrants to liver specialist care in the greater Barcelona area through the utilisation of simplified diagnostic methods and peer supporters.
https://www.isglobal.org/-/hbv-comsava; https://www.nature.com/articles/s41598-021-96350-3?proof=t%C2%A0

Hepatitis C
Free Balears



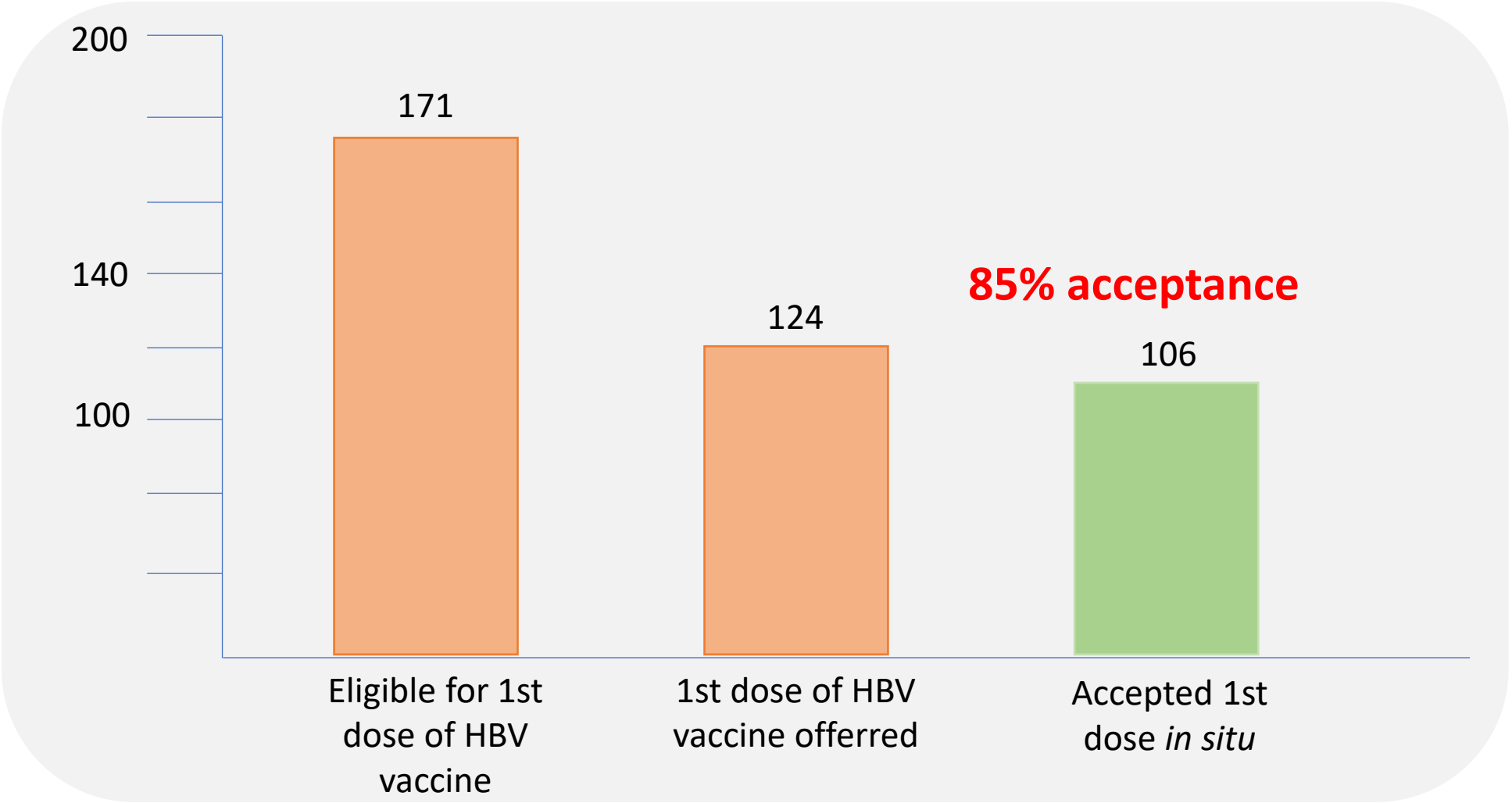
PWID pathway



Prisoner pathway

Eliminating the hepatitis C virus (HCV) on the Balearic Islands by linking patients who use drugs from addiction services centres, a non-governmental organisation, a prison and a mobile methadone bus to HCV care. https://bmjopen.bmj.com/content/11/10/e053394

HBV-COMSAVA: low HBV vaccine hesitancy



Main reason for not accepting 1st dose (n=7, 39%) was not being present to pick-up results

Source: Picchio CA, Rando-Segura A, Fernández E, et al. HBV screening in west African migrant community and faith-based organizations increases HBV vaccination among this high-risk population in greater Barcelona, Spain. Abstract #976. To be presented at EASL ILC 2022.

Combined COVID-19 vaccination and HCV screening

- We explored the acceptability of combining HCV point-of-care testing (PoCT) with COVID-19 vaccination in a mobile testing unit (MTU) in Madrid, Spain, and a centre for addiction services (CAS) in Barcelona, Spain, in high-risk populations (i.e., homeless people, those with substance use and/or mental disorders, sex workers, refugees, undocumented migrants) .

- At the MTU in Madrid:
  - Of the 101 participants, 12% reported a previous COVID-19 diagnosis and none had been vaccinated for COVID-19.
  - All received the Janssen vaccine without any identified adverse events.
  - All were tested for HCV antibodies (Ab) and 15% were positive, of which all were tested for HCV-RNA and 60% were positive, of which 44% have started treatment.

- At the CAS in Barcelona:
  - Of the 51 participants, 12% reported a previous COVID-19 diagnosis, 90% had been vaccinated for COVID-19, of which 89% had received the full first round schedule but none had received a booster.
  - Everyone received a Moderna vaccine without any identified adverse events.
  - Of all, 71% were tested for HCV Ab and 19% were positive, of which all were tested for HCV-RNA and none were positive.

Source: Valencia J, Ryan P, Cuevas G, et al. Combined COVID-19 vaccination and HIV and hepatitis C virus screening intervention for high-risk populations at a mobile testing unit in Madrid, Spain. Abstract #1722. To be presented at EASL ILC 2022.

Global studies assessing COVID-19 vaccine hesitancy

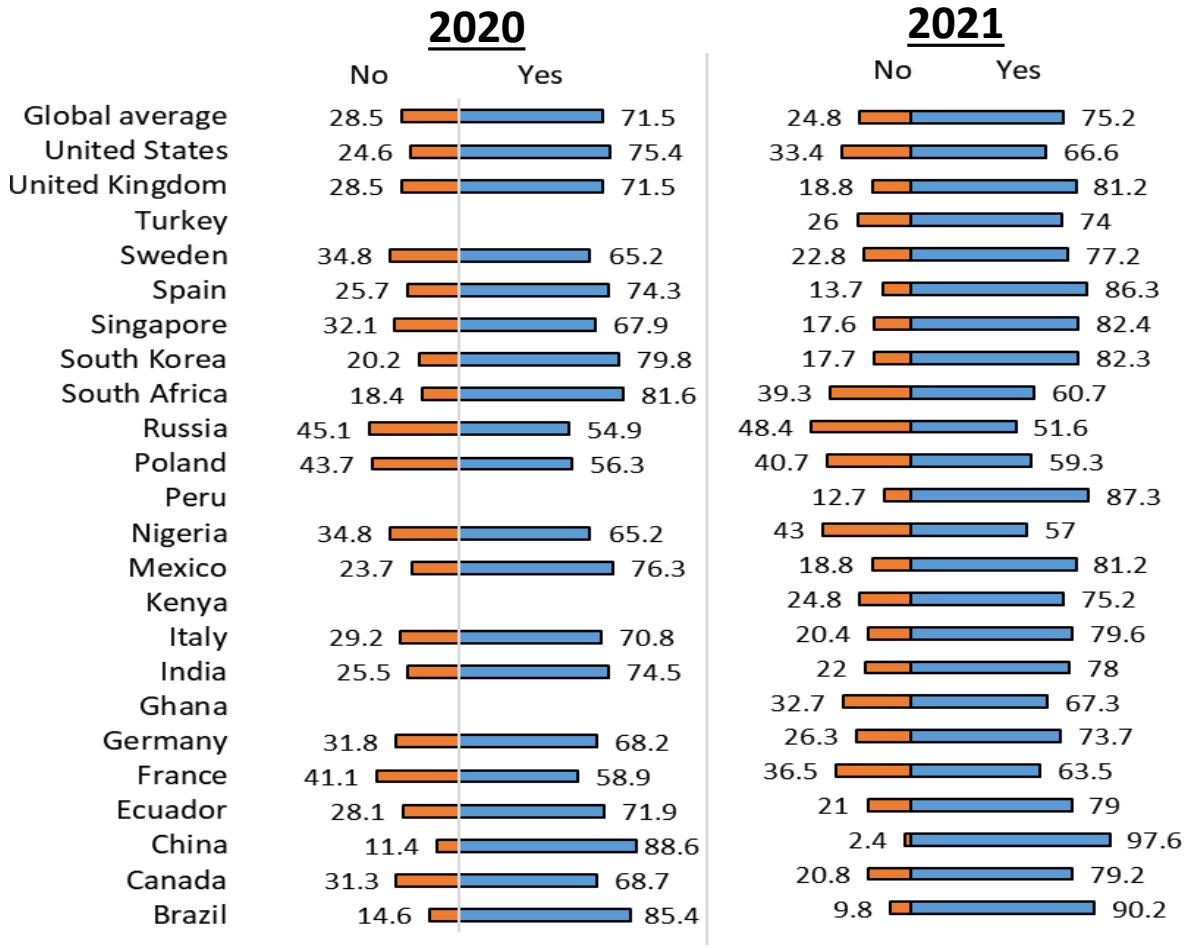
- 16-20 June 2020
  - Strata established by age, gender, level of education and region determined participation to achieve a representative sample
  - Participating countries: n=19 (most-affected by COVID-19)
  - Total participants: n=13,426 (country samples: n=619-773)

- 25-30 June 2021
  - Same strata + identification of health care professionals
  - Same 19 countries + 4 most affected in unrepresented world regions
  - Total participants: n=23,000 (country samples: n=1,000)

Sources: Lazarus JV, et al. A global survey of potential acceptance of a COVID-19 vaccine. *Nature Medicine*, 2021;27(2):225-8.
Lazarus JV, et al. Revisiting COVID-19 vaccine hesitancy around the world, data from across 23 countries in 2021. *Nature Communications*, 2022; In press.

Global studies assessing COVID-19 vaccine hesitancy

"I will take the COVID-19 vaccine when it is available to me."



***Note**:* Four countries (Ghana, Kenya, Peru and Turkey) were not included in the 2020 study.

Source: Lazarus JV, Wyka K, White TM, Picchio CA, Rabin K, Ratzan SC, Parsons Leigh J, Hu J, El-Mohandes A. Revisiting COVID-19 vaccine hesitancy around the world, data from across 23 countries in 2021. *Nature Communications*, 2022; In press.

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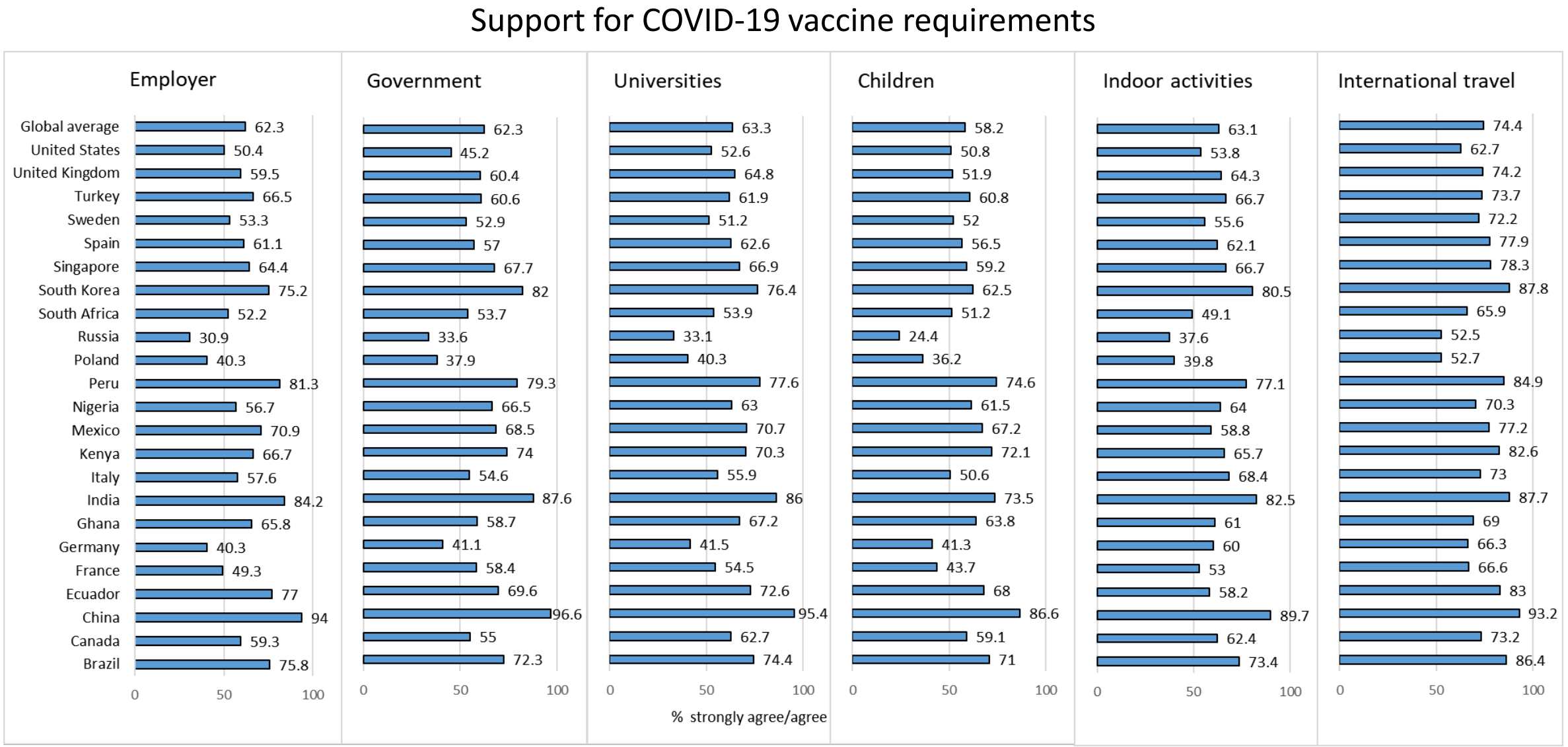

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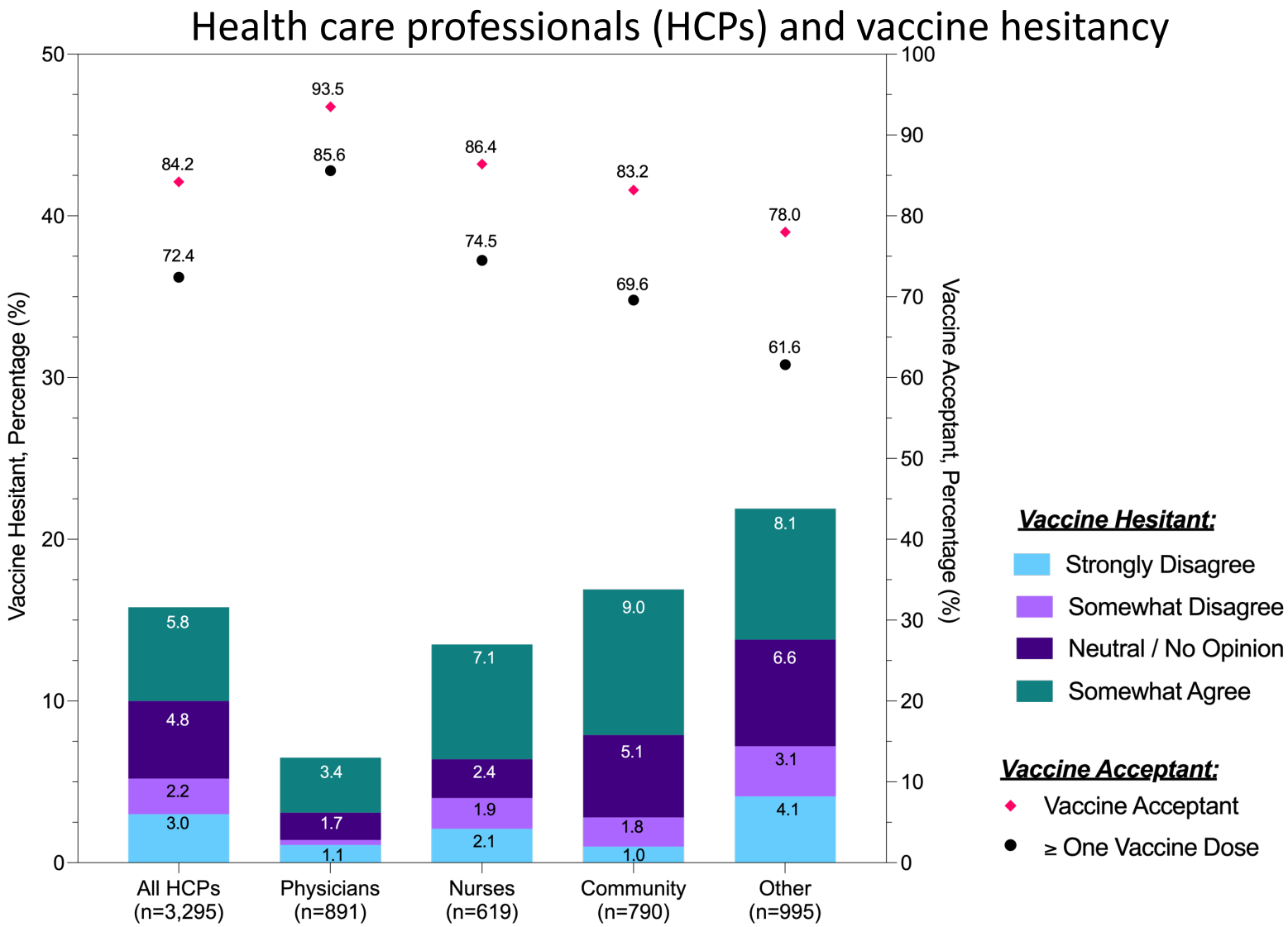

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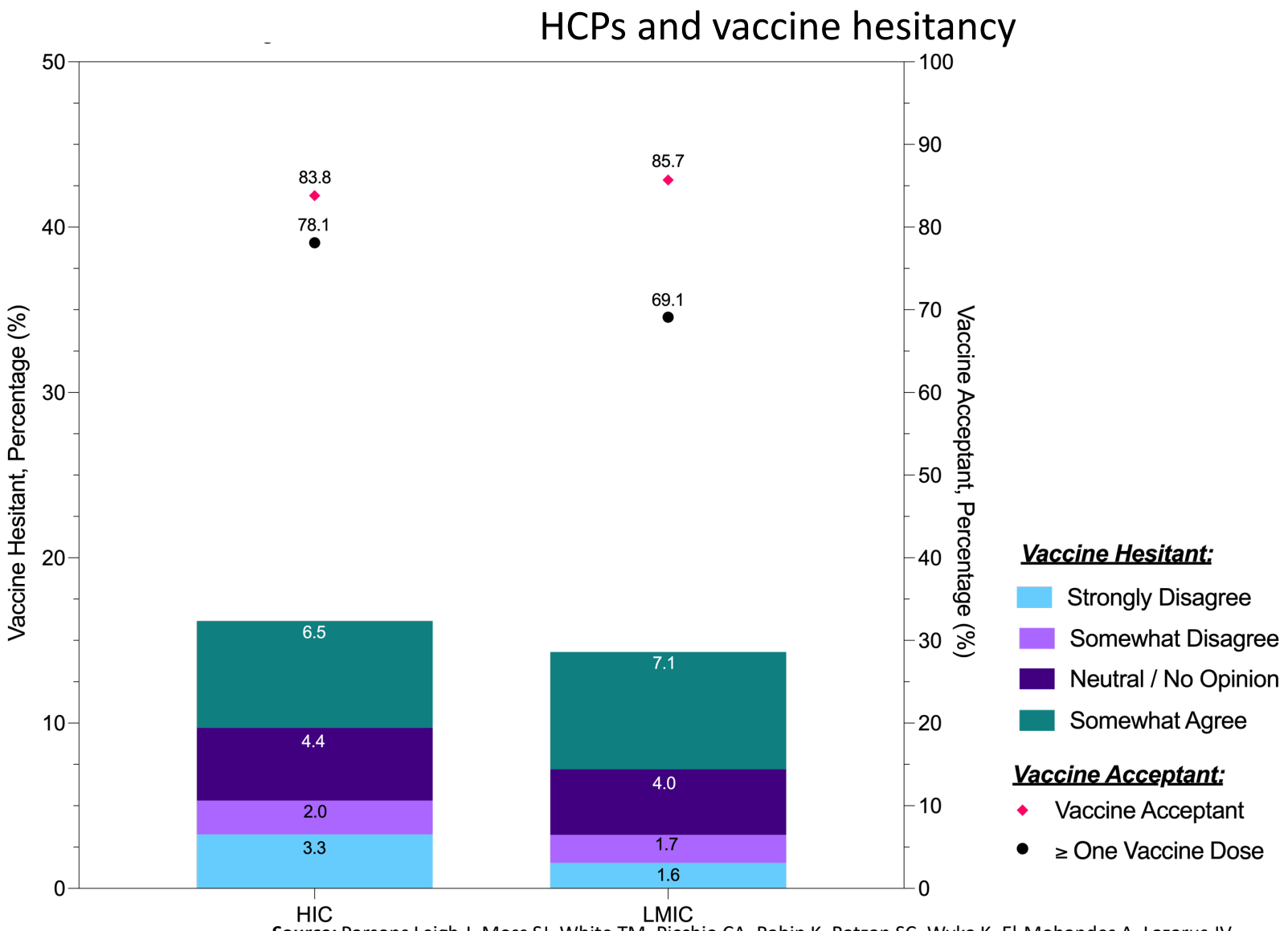

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Take away messages

- Increasing vaccine hesitancy in the general population can result in reduced vaccination coverage for vaccine preventable diseases (like HBV). In the case of HBV, could impact long-term elimination efforts
  - Measles (reported outbreaks in unvaccinated populations)
- Vaccine hesitancy among HCPs could derail progress in vaccination campaigns, like for COVID-19
- Combining strategies (like testing + vaccination) can help increase vaccine uptake and reduces LTFU – for ex combine the COVID-19 vaccination with HBV vaccination in high-risk populations.

Acknowledgements

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All authors of all cited studies and my team at ISGlobal.

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ENDING THE COVID-19 PANDEMIC AS A PUBLIC HEALTH THREAT

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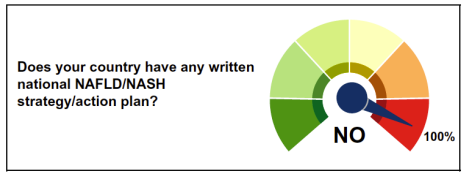
NOhep
Hepatitis C micro-elimination

Reinvigorating the Response to HIV/AIDS
Lessons and Actions from COVID-19



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