

## INTRODUCTION

- The World Bank and Pan American Health Organization, recommend the use of combined vaccines to improve the efficiency of National Immunization Programs (NIP)<sup>1</sup>.
- Studies suggest that the introduction of fully liquid hexavalent vaccines allows a more efficient resource allocation by freeing approximately 52% of the required storage capacity in comparison to the pentavalent vaccine + IPV scheme in Perú and <sup>2,3</sup>.

## OBJECTIVE

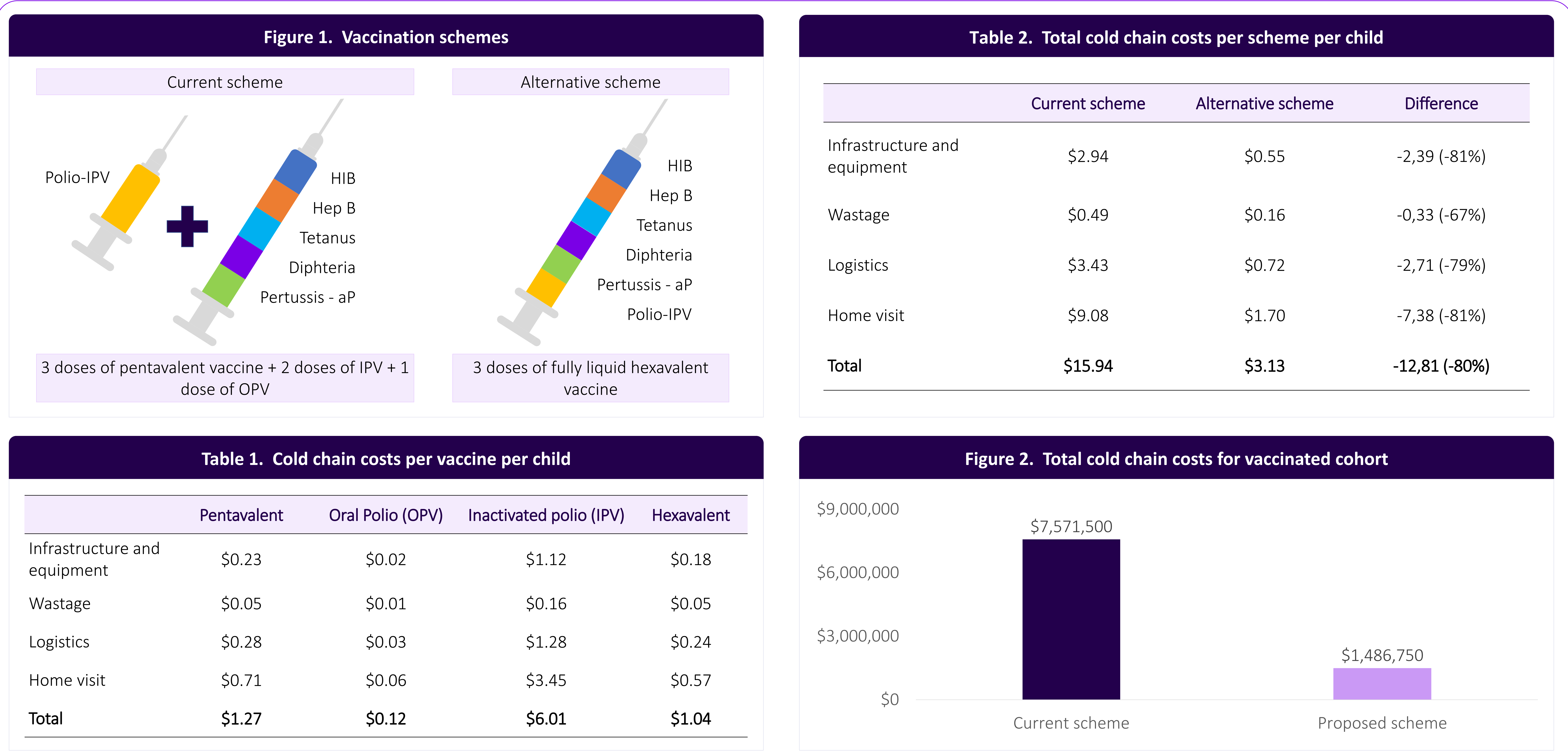
This study aims to evaluate cold-chain optimization opportunities and the efficiency impact of introducing a fully liquid acellular hexavalent vaccine in the Peruvian NIP.

## METHODS

- The potential benefits associated with the introduction of the fully liquid acellular hexavalent vaccine were evaluated through a literature review and a cost analysis based on published literature, by comparing the total cost associated with the inclusion in comparison to the actual scheme (pentavalent vaccine + IPV) for the full cohort of newborns in Peru.
- The analysis included infrastructure, equipment, waste (final disposal), logistics (medical and office equipment), and home visit costs.
- Total costs were estimated for a target population of 475,000 infants under one year old for whom the vaccination scheme is applicable.
- Costs are expressed in 2022 American dollars USD.



**POSTER HIGHLIGHT:** The introduction of a fully liquid acellular hexavalent vaccine optimizes the NIP by lowering logistic and administration costs, freeing up space that may be used to reach a larger cohort and improve vaccination access, particularly during public health outbreaks.



## RESULTS

- Total cold-chain costs per infant were estimated at USD\$3.13 and USD\$15.94 for the complete fully liquid acellular hexavalent and pentavalent vaccine schemes respectively.
- Therefore, once infrastructure, equipment, waste, logistics, and home visit costs are included in the analysis, the fully liquid acellular hexavalent vaccine represents potential savings of around 80% in comparison to the pentavalent vaccine + IPV scheme.
- For the analysis population, total savings could potentially reach USD \$ 6,000,000. Additionally, freed storage capacity in the cold chain can be used for other vaccines.

## CONCLUSIONS

- Adopting international recommendations helps guaranteeing the cold-chain availability of vaccines. This is particularly crucial, since the COVID-19 pandemic showed the need of an efficient cold-chain, for better attending national vaccination needs.
- The introduction of the fully liquid hexavalent vaccine allows a larger vaccination rate by decreasing the resources required and minimizing total costs.

## REFERENCES

- World Health Organization, PATH. Optimize: Senegal report. Seattle: PATH; 2013 [https://www.path.org/publications/files/TS\\_opt\\_senegal\\_rpt.pdf](https://www.path.org/publications/files/TS_opt_senegal_rpt.pdf).
- Seinfeld J, Rosales ML, Sobrevilla A, López Yescas JG. Economic assessment of incorporating the hexavalent vaccine as part of the National Immunization Program of Peru. BMC Health Serv Res. 2022 May 16;22(1):651. doi: 10.1186/s12913-022-08006-1.
- Lieu TA, Black SB, Ray GT, Martin KE, Shinefield HR, Weniger BG. The hidden costs of infant vaccination. Vaccine. 2000 Aug 15;19(1):33-41. doi: 10.1016/s0264-410x(00)00154-7.