

Forecasting TB vaccine demand to support supply and procurement planning

Gabriela B Gomez¹, [Jessy Joseph](#)², Eliana Pombo³, Shelly Malhotra⁴ (¹IAVI, The Netherlands; ²IAVI, India; ³Biofabri, Spain; ⁴IAVI, USA)

Background

TB vaccine candidates are entering late-stage development with prioritization of delivery in adolescents and adult populations. Yet currently, TB vaccine markets are not well defined, with uncertain demand and a variety of implementation strategies put forward across epidemiological contexts limiting visibility to manufacturers, and global, regional, and national procurement and financing stakeholders.

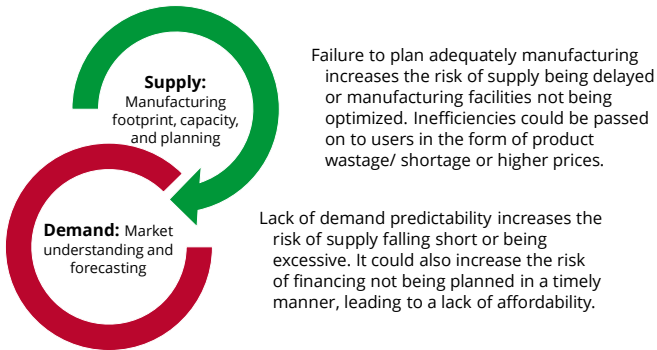


Figure 1. Role of demand forecasting in supply-demand alignment.

Methods

We present insights from two workshops with global health funders, academics, and in-country TB and vaccine decision-makers on potential vaccine use cases. These insights are discussed to inform an iterative global demand forecast model for TB vaccines. The model was initially developed based on landscape assessment of vaccines in development, information from WHO databases and peer-reviewed literature on coverage of vaccine analogues, and interviews with TB and vaccine experts. (G Gomez et al. Understanding the TB vaccine market: Demand considerations and implications for supply planning. *IJTL* (2023) 27:11 suppl 1)

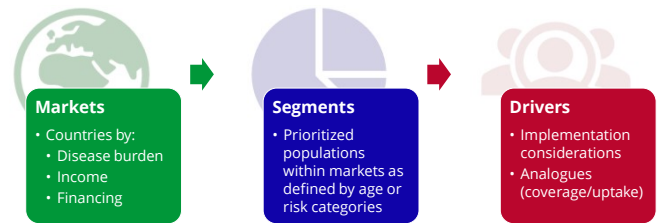


Figure 2. Global demand forecasting framework.

Iterative demand forecasting helps estimate the maximum capacity needed for manufacturers to ensure adequate supply in the first few years of roll out, providing a valuable tool to guide future supply and procurement discussions.

Results

Country-level demand will be driven by implementation decisions such as key populations to prioritize and scale of roll-out. These decisions will differ by country and are driven by local epidemiology and resource availability. During the consultations, participants indicated that while roll-out is likely to start out prioritizing the highest risk populations, a move to broader roll-out within routine pathways through established health service delivery points will likely be required.

Strengthening and integrating TB vaccine roll-out in existing pathways and services presents a strategic opportunity, yet existing delivery pathways for adolescent and adult vaccination are constrained in their reach and their funding. Availability of global and domestic financing mechanisms will be a key determinant of country-level demand, with a market variation in funding availability across high burden countries (Figure 3).

Product characteristics will also inform the implementation approach, with preference for vaccines not requiring prescreening, a single dose, and local manufacturing. Late-stage development plans and country preparedness efforts should be developed with these preferences in mind.

Acknowledgements

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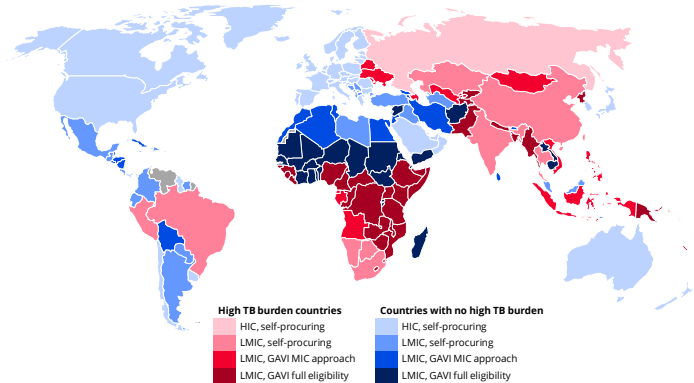


Figure 3. Country distribution by TB burden, income and financing mechanisms.

(HIC, high income country; LMIC, low- and middle-income country; MIC approach: in June 2022, the Gavi Board approved dedicated support to help sustain routine immunization programs in middle-income countries facing challenges related to fragility, emergencies, and displaced populations.)

Conclusion

Currently, there is a significant variation in quantity and timing of demand estimations with implications for both short-term supply needs and long-term market sustainability. As countries start planning for introduction and vaccine candidates advance towards registration, future refinement of the model will need to include financing considerations and country-level preferences for product-specific characteristics.