

# IMPROVING EFFICIENCY USING A FULLY LIQUID COMBINATION VACCINE: EVIDENCE FROM A TIME-MOTION STUDY IN INDIA

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## Background and aims

Immunization is essential to achieve the Millennium Development Goal (MDG) of reducing child mortality. Fully liquid combination vaccines have been developed to rationalize vaccine delivery and to simplify supply and administration of vaccines. A study was carried out to understand implications of a fully liquid pentavalent DTP-HepB-Hib vaccine in terms of resource requirements, efficiency and impact on vaccination programs.

## Methods

A time-motion study was conducted at the Institute of Child Health (ICH) in Calcutta, India. The study compared a single fully liquid DTP-HepB-Hib vaccine vs. a lyophilized vaccine with two vials requiring reconstitution. 312 children were vaccinated over 6 weeks in 2006. An economic analysis was done to estimate potential time and cost savings.

## Results

Study results indicated significant time savings for vaccine preparation and total vaccine consultation for the fully liquid vaccine of 52 % and 23% ( $p < 0.05$ ) as compared to the lyophilized vaccine. At current vaccine load time savings at ICH would be between 15 and 25 working days per year. Package volume is less for a fully liquid vaccine, leading to potential cost savings for storage and distribution. Extrapolated to India, these savings could be up to US\$ 55.5 million per year. Delivery time savings could be around 107,000 working days per year.

## Conclusions

The fully liquid DTP-HepB-Hib combination vaccine offers important time gains for vaccine delivery and savings for storage and distribution costs as compared to a vaccine requiring reconstitution. Fully liquid combination vaccines might contribute to better resource management and ultimately improve efficiency of immunization programs.

## Funding

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