



Comparison of Costs Incurred in Dedicated and Diffused Vaccine Logistics Systems

Cost-Effectiveness of Vaccine Logistics in Cabo Delgado and Niassa Provinces, Mozambique

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I. Executive Summary

The Project to Support PAV¹ logistics system, implemented by VillageReach, the Foundation for Community Development (FDC), and Mozambique's Ministry of Health (MISAU) in the Cabo Delgado Province of Mozambique from 2002-2007 showed significant cost savings over the operations of the vaccine logistics system operated by MISAU in Niassa province. The comparison showed both an absolute cost savings as well as increased cost efficiency as measured in cost per child vaccinated with DPT-Hep B3. The Project to Support PAV logistics system in Cabo Delgado employed an active logistic delivery system where vaccines were reliably delivered to the health units each month, while Niassa's vaccine logistics system consists of a mixed and inconsistent system combining collection and distribution based activities that vary by location and month. This report also makes specific cost recommendations for implementing the Project to Support PAV logistics system in the Niassa province.

The vaccine distribution system in Niassa operates under the current MISAU system organization with no transport or personnel resources dedicated exclusively to vaccine logistics. The Project to Support PAV in Cabo Delgado operated with vehicles and staff dedicated exclusively to vaccine logistics. Additionally, the vaccine logistics system in Cabo Delgado integrated supportive supervision and information management into the vaccine distribution.

The primary objective of the cost study was to compare the incremental costs of the vaccine logistics system used by the Project to Support PAV. In particular, understanding the costs of the changed system introduced by the external intervention is of considerable interest to MISAU, which must ultimately bear the costs of any elements of the VillageReach model that are incorporated into its own system.

The cost study found the following results:

The Project to Support PAV vaccine logistics system is less expensive than traditional vaccine distribution systems.

- The dedicated vaccine logistics system in Cabo Delgado was 23.2% less expensive than the Niassa system on an absolute level: \$349,805 per year compared to \$455,313 per year.

The Project to Support PAV vaccine logistics system is significantly more cost-effective than traditional vaccine distribution systems.

- Because of greatly higher vaccine coverage rates (95.4% in Cabo Delgado compared to 70% in Niassa), the dedicated vaccine logistics system in Cabo Delgado was significantly more cost-effective, at \$5.76 per child vaccinated with DPT-Hep B3 compared to \$10.36 per child vaccinated with DPT-Hep B3 in Niassa.

The Project to Support PAV logistics system allocates more expenses to the actual cost of vaccines rather than to the distribution system.

- In the vaccine logistics system in Niassa, the purchase cost of vaccines and syringes comprised only 27% of total distribution system expenses, while in the Project to Support PAV system, they totaled 54% of the vaccine logistics system expenses.

¹ In Portuguese speaking Mozambique, PAV is Programa Alargado de Vacinação, the Expanded Program on Immunization.