Logistics in Smallpox: The Legacy

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Health care parameters

Prevention - control

Vertical - horizontal

External support - sustainability
Definition of logistics

The time-related positioning of resources
- Human
- Financial
- Material
Ensuring mobility was essential

- Surveillance-containment

- Innovation and Imagination
  - Boats in Bangladesh
  - Helicopters in Ethiopia
  - Camels in Somalia
Managing logistics in crisis

- Effective surveillance-containment operations depended on effective logistics
- Logistics were inadequate to support rapid surveillance/containment operations in many countries
Capacity of the health services

- Bihar, India
- Bangladesh
- Somalia
Bihar

Problem: vehicles not being maintained on a continuous basis despite financial resources being available

Solution: Standard price lists for vehicle maintenance
Bangladesh

- Problem: lack of vehicles and the infrastructure to maintain them

- Solution: purchase of vehicles from external resources and provision of personnel to maintain them.
Somalia

- **Problem:** no infrastructure, no vehicles, no funds, war zone.

- **Solution:** recognition of the smallpox epidemic by the United Nations Disaster Relief Office (UNDRO).
  - emergency provision of money, vehicles, personnel and supplies
Somalia airlift
Managing to find ‘Surge Capacity’

- Partnerships
- Communications
- Agreement to reaching the goal
- Finance
Summary

- WHO’s underlying role in logistics was to provide the required surge capacity to get the job done.

- Surge capacity: the ability to call forth material, human and financial resources when required.
Lessons learned for the EPI

- Big Difference: Smallpox had the ultimate goal of eradication. WHO confirmed that transmission of the variola virus could be contained and thus stop the chains of transmission. Routine vaccination services were not required.

- Big difference: EPI every year has a new cohort to vaccinate requiring storage, distribution and transportation for shipment of vaccines, and outreach teams.
Cold Chain: Smallpox

- None required for smallpox vaccine BUT:

- EPI vaccines are heat sensitive requiring a cold chain

- Maintaining cold chain equipment for EPI vaccines requires sophisticated logistics
Goal of today’s logistics supply chain

To assure that no service delivery point for vaccination service runs out of a vaccine

- Good Management and Planning
  - Annual Plan of Action
  - Supervision

- Stock Inventory System

- Functioning Cold Chain

- Transportation

- Training and Updating Staff
Logistics and cold chain required for supporting vaccines in the national immunization programmes

- Introduction of new vaccines
- Year/anticipated year of introduction
- National cold chain capacity (cm³/child)
Managing today’s logistics

- **Amount of supplies needed**
  - vaccines
  - injection equipment
  - distribution plan (routes!!)

- **Capacities needed**
  - storage (cold and ambient)
  - cooling/freezing packs (transport & vaccination)
  - transportation (shipping carriers, vans)
  - vaccination force (teams, staff)

- **Amount of waste generated**
  - empty vials
  - used syringes
Successful eradication of smallpox

- Lessons learned
- Legacy programmes
- Administrative and technical support
- Logistics
- Finance
- Communications
Acknowledgements


Peter Carrasco, WHO/Department of Immunization, Vaccines and Biologics

Solo Kone, WHO/Department of Immunization, Vaccines and Biologics
Thank you