

**Plenary Session 2: Landscape**

**Measles Aerosol Vaccine**

**Measles Vaccine, Dry Powder (Inhalable)**

Next-Generation Vaccine Delivery Technology Meeting

Geneva, Switzerland

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# Measles Aerosol Vaccine

## Technology Description:

- Respiratory delivery of the currently available freeze dried measles vaccine



# Measles Aerosol Vaccine

## 1. Controller

1000 doses without recharging  
Operates automatically for 30 seconds

## 2. Nebulizer

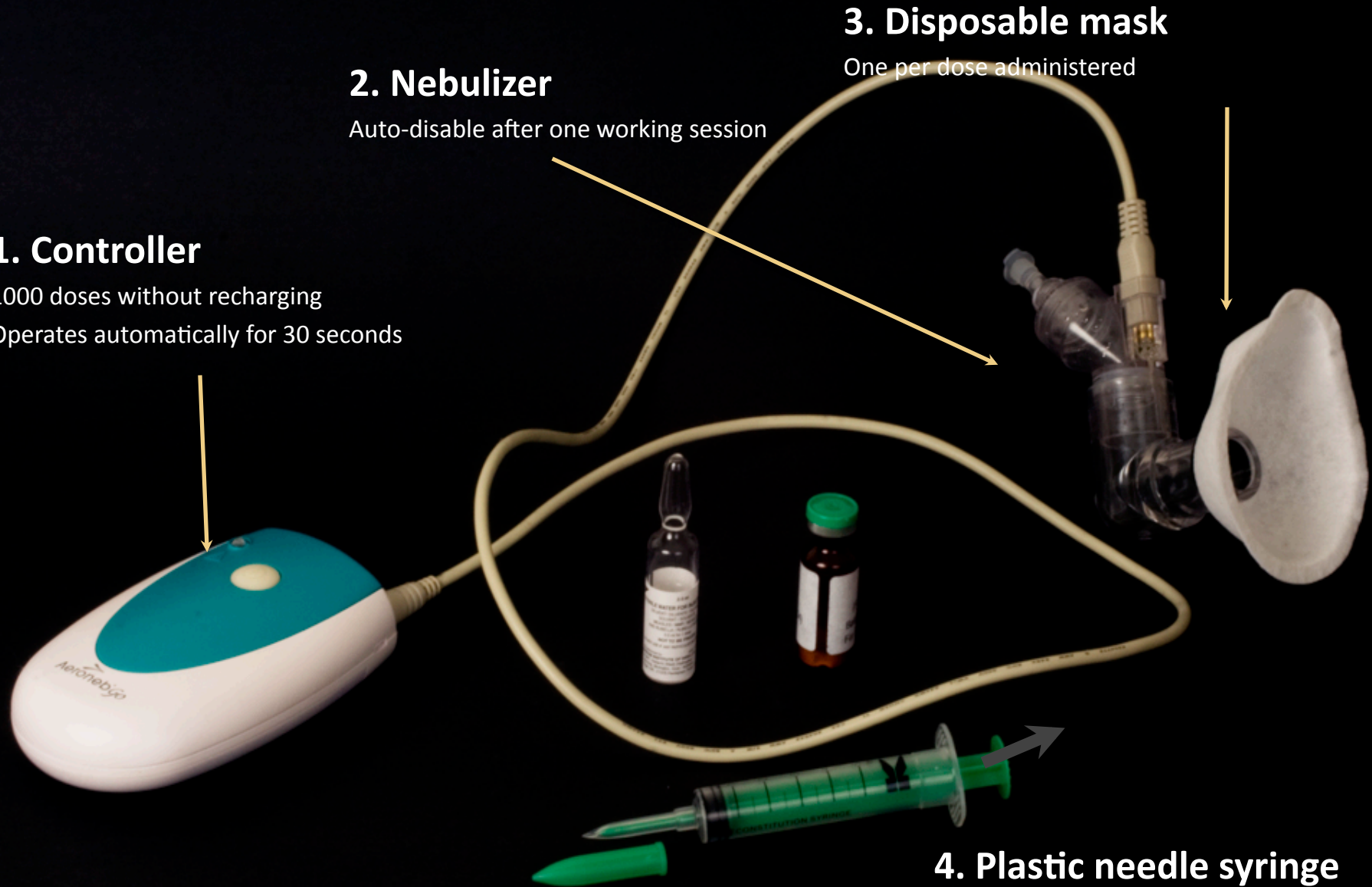
Auto-disable after one working session

## 3. Disposable mask

One per dose administered

## 4. Plastic needle syringe

for vaccine reconstitution

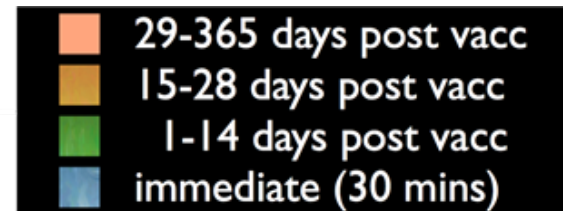


# Phase 1 measles aerosol vaccine:

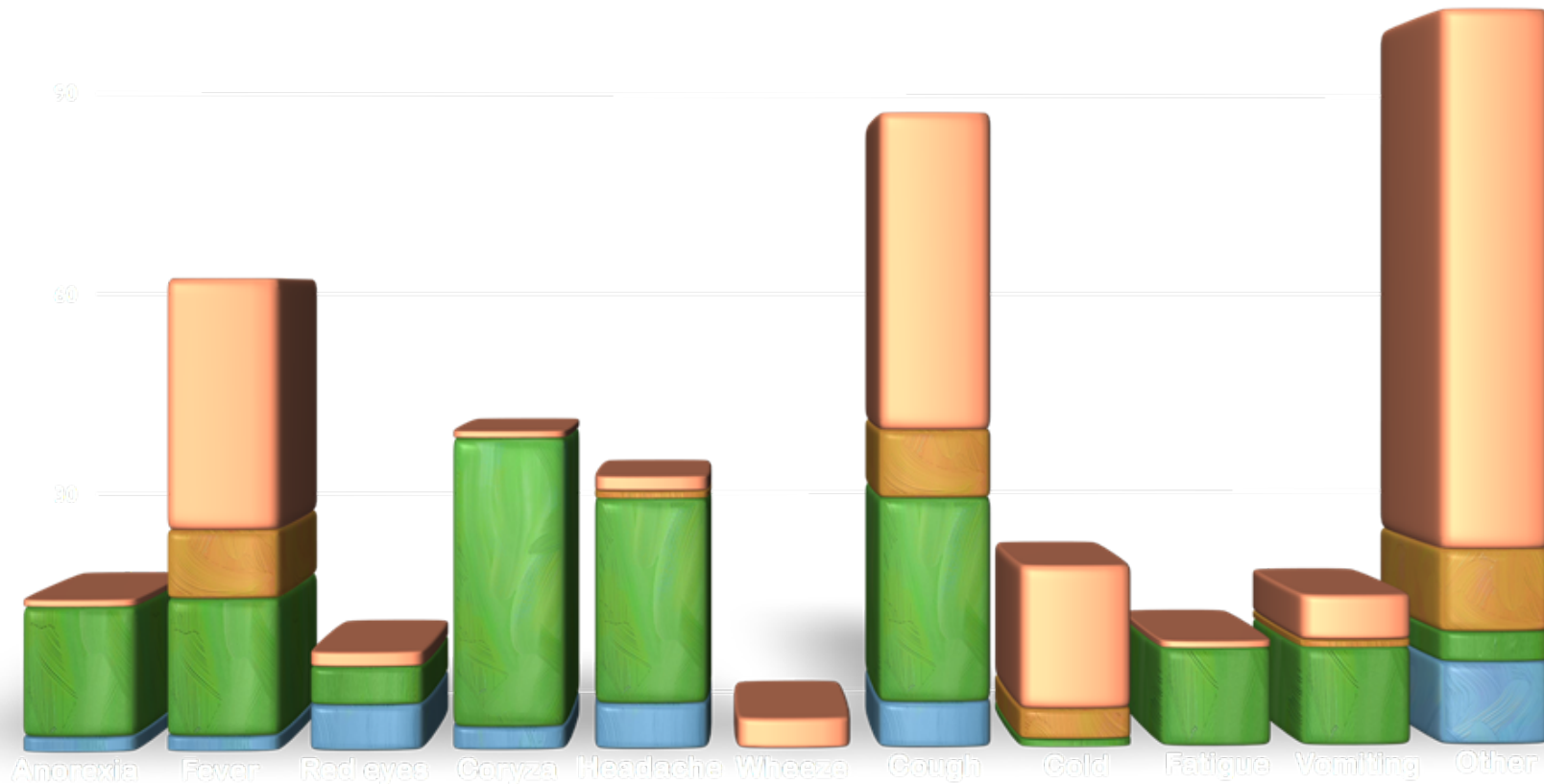
No. of adverse events in 145 healthy measles immune volunteers 1- 35 years of age, India - 2007-08

Most AE were mild or moderate  
Two SAE not vaccine related

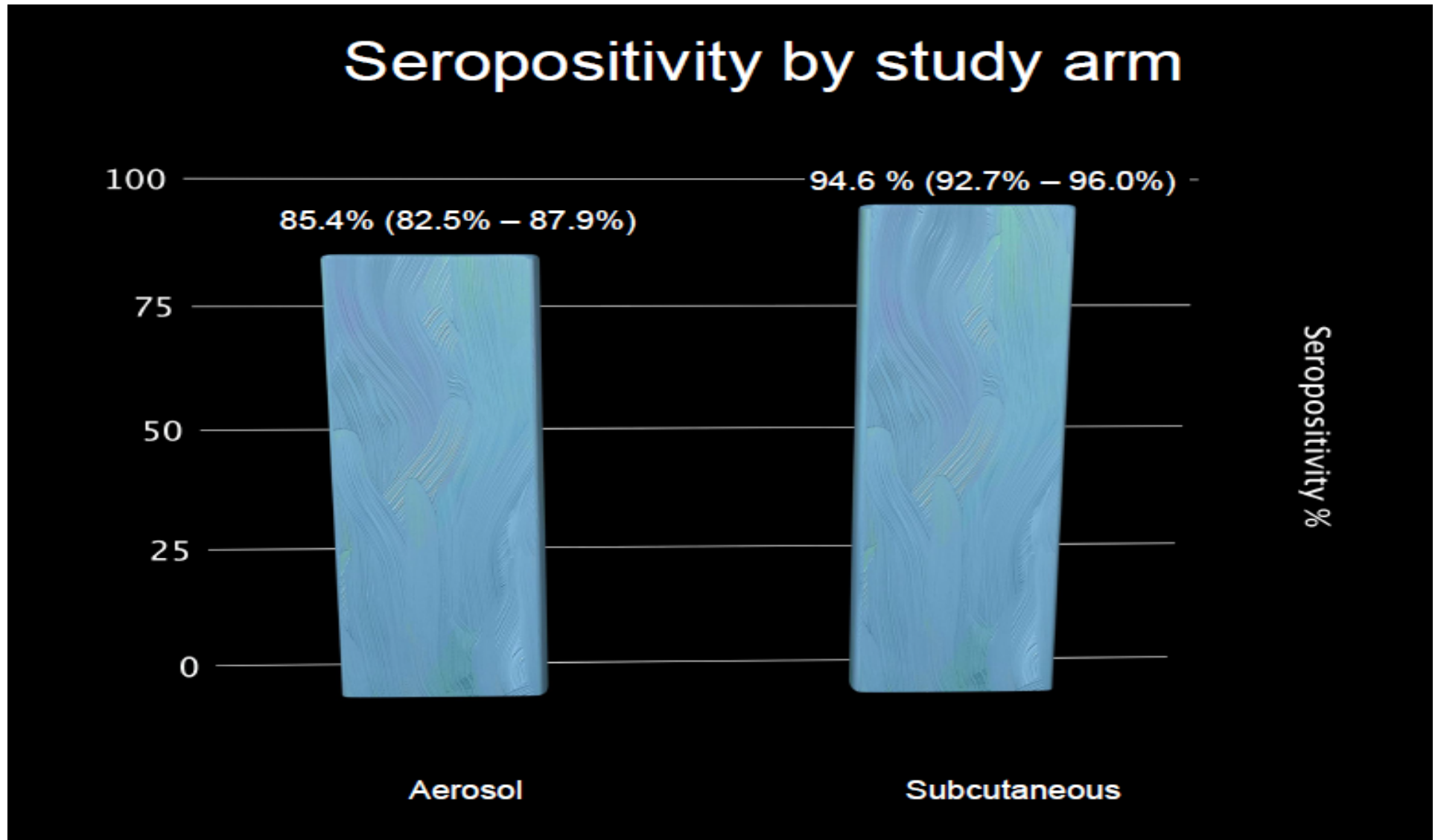
120



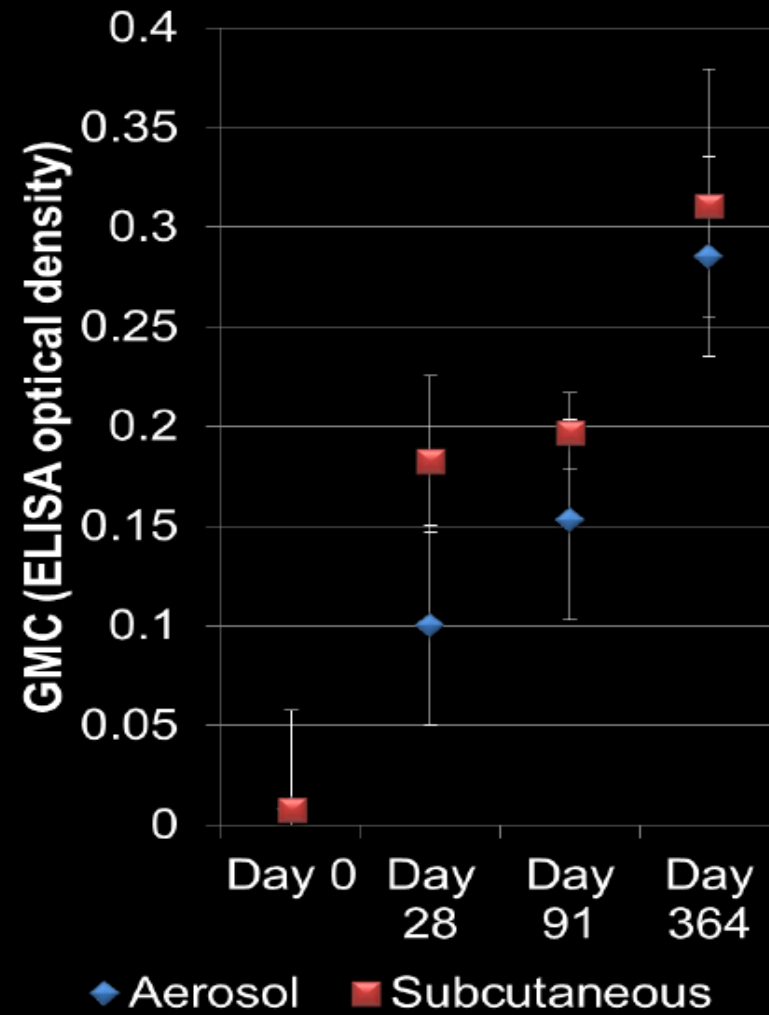
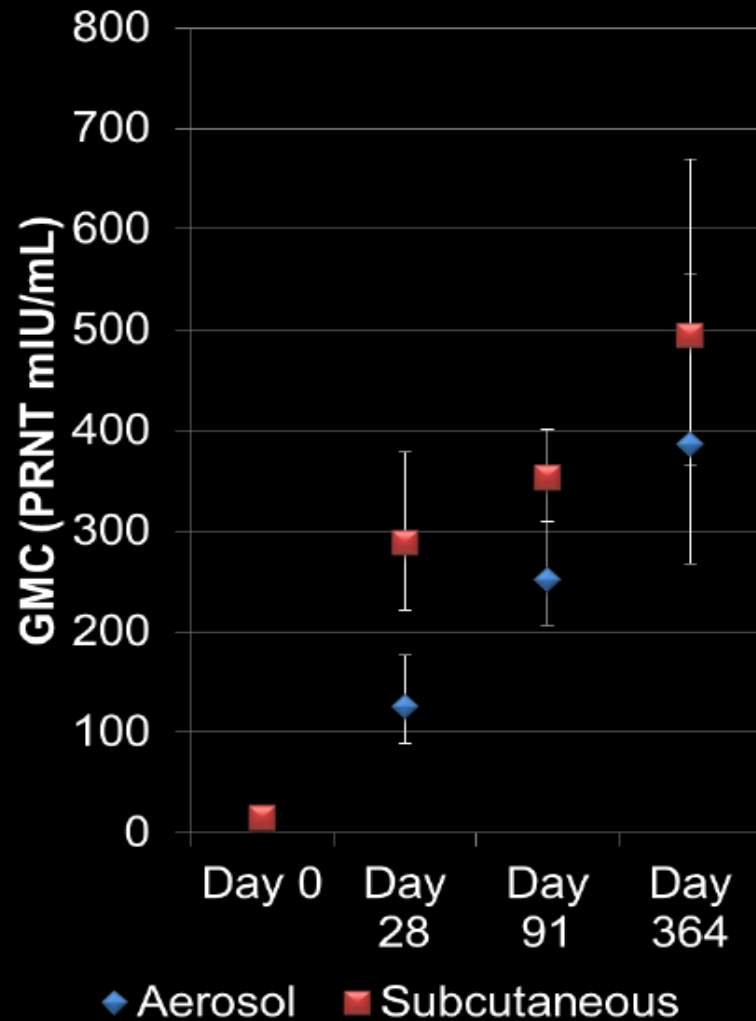
No. of adverse events



# Measles Aerosol Vaccine Phase II / III RCT



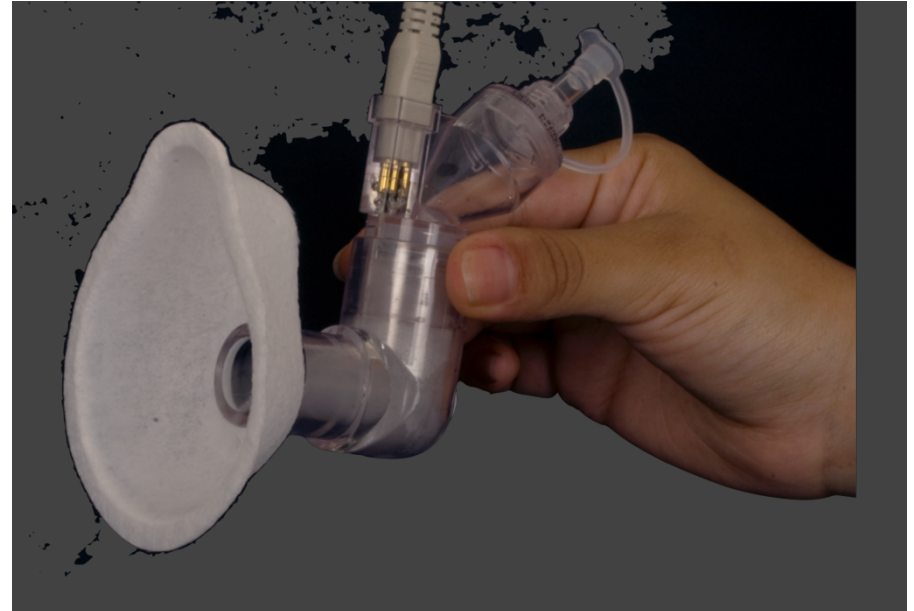
# Measles Aerosol Vaccine



# Measles Aerosol Vaccine

## Status:

- ✓ Bench testing
- ✓ Animal immunogenicity
- ✓ Animal Toxicity
  
- ✓ Phase 1 in healthy adults
- ✓ Phase II/III in adults
- ✓ Usability and acceptability
- ✓ Cost and ICEA



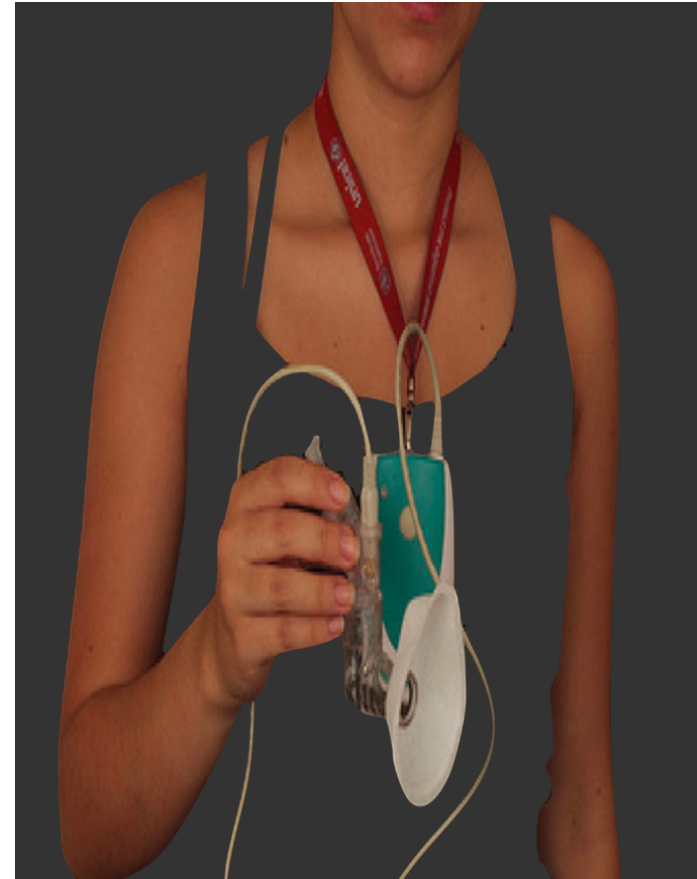
# Measles Aerosol Vaccine

## Benefits:

- Non injectable, easier to administer
- No waste disposal
- Similar cost per dose

## Challenges:

- Need demonstration studies with MR to further document benefits
- Resources to conduct demonstration studies





# 40 children vaccinated



Injectable route



Aerosol route

# Measles Aerosol Vaccine: Opportunities –Way Forward

Global Public Health Challenge:

## Technology Availability:

- Could be available in 3-5 years time if funding for trial and demonstration studies with MR recommended by SAGE were conducted

**INJECTABLE MEASLES VACCINE**

The diagram illustrates the challenges of injectable measles vaccine through three sequential images connected by red plus signs. The first image shows a healthcare worker in a white coat administering an injection. The second image shows a pile of discarded needles and syringes next to a biohazard safety box labeled 'Safe 5L Safety Box' and 'BIOHAZARD'. The third image shows a fire burning in a disposal facility.

Requires trained health staff to give injections

Creates unsafe waste

Requires infrastructure to dispose of waste