INTRODUCTION OF 5 DOSE VIALS OF MEASLES RUBELLA (MR) VACCINE IN ZAMBIA TO UNDERSTAND THE EFFECT OF DOSE PER CONTAINER ON SYSTEMS AND COST

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BACKGROUND
The Dose Per Container Partnership (DPCP) is a project funded by the Bill & Melinda Gates Foundation and Implemented by JSI Research & Training Institute, Inc. and partners, which aims to improve immunization services through the use of single-dose vials of complex vaccine products. This decision-making process involves by including DPCP site and understanding and assessing the trade-offs between cost and immunization health systems impact enables informed decision making by country and global managers tasked to optimize equitable, timely, safe, and cost-effective coverage.

METHODS
Household Coverage Survey: A household coverage survey using a two-stage cluster design was conducted. The survey gathered information from caregivers about two cohorts of children aged 12 to 23 months for estimating first dose MV vaccine coverage and children aged 24 to 35 months for estimating second dose MV vaccine coverage. These data for first dose MV and second dose MV were collected and analyzed based on vaccination cards.

Key Informant Interviews: Key informant interviews (KII) were conducted at a subset of health facilities and districts offices across all 14 districts to examine factors associated with missed opportunities, safety and equity, coverage and health worker preferences for various vaccines. Key informants included health workers and facility administrators, District Medical and Child Health (MCH) Coordinators and Legislators, Principal Nursing Officers (PNOs).

Routine Immunization System Observation: The qualitative data collection team conducted 20 systematic observations of vaccine handling and vaccination practices at health facilities. This included observing refrigerators for functionality and temperature, vaccine storage handling and stockkeeping practices, transportation, and cold chain insulation and vaccination sessions at the facility or outreach to observe the attitude, behavior, and practices of health workers.

Administrative Data Review: The team collected twelve months of retrospective administrative data from the health management information system on all health facilities in the implementation and control districts. The team used this data to calculate coverage, wastage, and stock and demand indicators.

Costing Survey: Data were collected using a structured quantitative questionnaire to gather information on the resources used for the logistics systems and immunization services delivery. It included the costs of the current system where 10 dose vials are used.

Routine Monitoring: DPCP is collecting monthly data from all sites to look at coverage, wastage, reaction rates, and seasonal flu vaccination.

Similar methods will be used and scaled to assess the effect of switching from 10 dose vials to 5 dose vials.

OBJECTIVES OF THE IMPLEMENTATION RESEARCH
1. Examine the effects of switching from 10-vial to 5-vial doses of vaccines containing vaccine (MCV) on first and second dose coverage, open date, storage, dosage, session size, storage and distribution capacity, logistics, service delivery, and total systems costs for R1.
2. Understand how vaccination presentations may have an influence on missed opportunities, timely coverage, equitable coverage, and safety.
3. Explore MCV preference and examine MCV behavior with various vaccination presentations.
4. Identify the factors that enable and hinder the proper use of each of the two presentations.

BASELINE HOUSEHOLD SURVEY FINDINGS

<table>
<thead>
<tr>
<th>Timeliness of MCV in children age 12-23 months according to cards by study arm</th>
<th>Timeliness of MCV and MCV in children age 24-35 months according to card, by study arm</th>
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<tbody>
<tr>
<td>80%</td>
<td>80%</td>
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<tr>
<td>40%</td>
<td>39.5%</td>
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<tr>
<td>100%</td>
<td>39.7%</td>
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<td>80%</td>
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23% of household survey respondents stated that she had taken a child to a health facility for vaccination and the child was not vaccinated. The reasons for not being vaccinated by the respondents include the following:

- 49.5% of respondents stated that they did not have money to take their child to the health facility.
- 34.5% of respondents stated that they did not know how to get their child vaccinated.
- 16% of respondents stated that they did not have time to take their child to the health facility.
- 13% of respondents stated that they did not know where to take their child for vaccination.
- 4% of respondents stated that they did not have transportation to take their child to the health facility.

KEY BASELINE FINDINGS

- **Coverage**
  - Complete coverage for children aged 12-23 months
  - Complete coverage for children aged 24-35 months
- **Wastage**
  - Most wastage occurred in gestation (5.5%)
  - Most wastage occurred in gestation (5.5%)
- **Safety**
  - None of the vaccine vials were reported to be spoiled
- **Behavior**
  - None of the vaccine vials were reported to be spoiled
  - None of the vaccine vials were reported to be spoiled

RESEARCH DESIGN
A cluster randomized block design was used to allocate districts into control and intervention groups. The districts were matched according to average population size per health facility and number of health facilities within each district. Health facilities in the intervention group are receiving 5 dose vials while the control group is using standard 10 dose vials.

Data will be collected before and after this intervention to assess the effect of switching from 10 dose vials to 5 dose vials. A before-and-after approach will be used to assess a change in coverage rates.

YES, BECAUSE EVERYONE IS CONCERNED ON REDUCING THE VACCINE WASTAGE. IT IS A REASON WHY MOTHERS ARE SENT BACK AND ASKED TO COME A DIFFERENT DAY WHEN THERE ARE ENOUGH CHILDREN TO OPEN THE VIAL. THIS IS SO BECAUSE EVERYONE WANTS TO REDUCE THE WASTAGE.

Natural Dilemmas: Only 43% of respondents admitted they do not want to waste money on a single child vaccine.