How does integration affect the cost of immunization campaigns? Findings from Nigeria and Sierra Leone

**BACKGROUND**
- The COVID-19 pandemic accentuated the need for efficient strategies for vaccine delivery.
- Co-delivering multiple antigens through immunization campaigns is likely to take place more frequently over the coming years.
- However, the impact of integration on campaign costs is not known.

**OBJECTIVE & SCOPE**
- To estimate the cost of immunization campaigns in two countries, with co-delivery of additional antigens and interventions in certain geographies.
- Compare costs of integration vs non-integration.

### Cost per dose delivered, exclusive of vaccine costs

<table>
<thead>
<tr>
<th>Areas</th>
<th>Nigeria</th>
<th>Sierra Leone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>$0.72</td>
<td>$0.87</td>
</tr>
<tr>
<td>YF only states</td>
<td>$0.40</td>
<td>$0.45</td>
</tr>
<tr>
<td>YF &amp; MenA co-delivery</td>
<td>$0.73</td>
<td>$0.68</td>
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<tr>
<td>Nationwide</td>
<td>$0.71</td>
<td>$0.42</td>
</tr>
<tr>
<td>MR, OPV</td>
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</tr>
</tbody>
</table>

**Delivered doses per ward**
- Nigeria: 17,232
- Sierra Leone: 3,266

**Delivered doses per facility**
- Nigeria: 19,801
- Sierra Leone: 4,286

**Labor and other opportunity costs**
- Nigeria: $0.14 to $0.70
- Sierra Leone: $0.14 to $1.12

**Financial costs (includes per diem)**
- Nigeria: $0.18 to $0.70
- Sierra Leone: $0.38 to $1.12

**Economic cost**
- Nigeria: Median doses delivered per ward $0.14 to $0.70
- Sierra Leone: Median doses delivered per facility $0.38 to $1.12

**METHODS**
- Ingredients-based, retrospective costing studies.
- Estimated the costs incurred by MOH and implementing partners at all levels.

**RESULTS**
- Average financial cost of delivery was $0.34 per dose delivered in Sierra Leone and $0.32 in Nigeria which is below Gavi support levels for campaigns.
- However, averages mask large subnational cost variation: in Sierra Leone, financial unit cost ranged across facilities from $0.14 to $1.12 per dose delivered while in Nigeria the delivery cost per dose delivered ranged from $0.18 to $0.70 across wards.

**INTEGRATION**
- In Sierra Leone, both the financial and economic cost per dose delivered were lower in districts that delivered more interventions, suggesting cost efficiencies from co-delivery.
- In Nigeria, no financial cost efficiencies were observed, as the financial unit cost of delivery was greater in the state that co-delivered multiple antigens during the campaign.
- This is likely because, despite delivering two antigens as opposed to one, wards in this state delivered fewer doses during the campaign.
- Nevertheless, the economic cost per dose was lower in the state that co-delivered yellow fever and MenA. As labor makes up 96-99% of the opportunity costs across states, this suggests efficiencies in the use of human resources.

**CONCLUSIONS**
- Large subnational cost variation means tailored planning and budgeting is needed to ensure high coverage is achieved among all target populations and in all settings.
- Co-delivery may be associated with cost efficiencies, but only if co-delivery means increased delivery volume.
- Changes in funding mechanisms to promote co-delivery campaigns should consider potential unintended consequences on health worker reliance on campaign per diems.
- Any savings from co-delivery campaigns should be reinvested in strengthening the routine system.