Costs of Reaching ZD Children – What is Known and Unknown

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Number of Zero Dose Children has increased

- Disruptions in immunization service delivery led to a backsliding in overall coverage.
- As of 2022 WUENIC figures, many countries had seen recovery, but zero dose was at **14.3M** – above the 2019 level. This slowed recovery is largely clustered in Gavi and former Gavi countries.
Cost of Increasing Coverage

- 2 recent systematic reviews on cost of increasing coverage
    - The intervention costs per dose per percent increase in absolute immunization coverage for the 56 interventions ranged widely from $0.01 to $38.16, with a mean cost per dose per percent coverage change of $3.13 (standard deviation (SD) $7.02).
    - Interventions to improve coverage are more expensive for higher levels of baseline coverage, suggesting the diminishing returns associated with reaching harder-to-reach and smaller target populations.
    - Higher non-vaccine intervention costs per dose per percent coverage change in relatively high-income country settings, and the lowest costs in relatively low-income countries
    - 14 cost and CEA studies from low- and middle-income countries
    - Calculated incremental coverage and incremental intervention cost
    - Most studies reported increases in coverage post intervention (avg 23 percentage points)
    - ICERs ranged from $0.66 - $161.95 per child vaccinated (2017$)
    - Lots of heterogeneity in how costs were estimated; incompleteness of reporting
    - Missed opportunity to pair costing with interventions focusing on increasing coverage
Reaching ZD children vs reaching universal coverage

- The incremental cost of reaching a ZD child may not necessarily be on the rising portion of the average cost curve.
- In low coverage settings where there are lots of ZD children, the cost of reaching an additional ZD child may be declining.
- In higher coverage settings with fewer ZD children, the cost of reaching an additional ZD child may be rising.
- In areas with large pockets of ZD children (clusters), the cost of reaching ZD children may be starting to rise, but not by much. There may be additional costs to identify and travel, but once there, costs will be spread over a large number of children.
Cost of Increasing Coverage ≠ Cost of ZD Children

- The study was conducted in a sample of 40 districts in Assam, Bihar, Maharashtra, Rajasthan, and Uttar Pradesh – home to a large number of zero dose children.
- Evaluated the health impacts and incremental cost-effectiveness of the Intensified Mission Indradhanush (IMI) in India.
- The incremental cost per zero-dose child was $83 ($40 to dominated). At district level, range was $22 (Bihar) to $193 (UP).
- Study also estimated the incremental cost per DALY and per life-year saved.
- Incremental cost per dose was $6 ($3 in Rajasthan - $28 in UP).
- Compared to $1.30 (Bihar) - $1.40 (UP)/dose obtained from a large costing study of routine services in similar areas of India (Chatterjee S, et al 2018).
- Districts with higher coverage had higher ICERS.
- Related study (Clarke-Deelder E, et al 2021) found that the IMI generated the largest effects for DTP1 vaccine: IMI reached approximately one-third of children who would otherwise not have received these vaccines.
## Additional Limited Evidence on the cost of reaching a type of ZD child

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<th>Source</th>
<th>Location</th>
<th>Result</th>
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<tbody>
<tr>
<td>Rainey JJ, Bhatnagar P, Estivariz CF, Durrani S, Galway M, Sandhu H, Bahl S, Jafari H, Wenger J. Providing monovalent oral polio vaccine type 1 to newborns: findings from a pilot birth-dose project in Moradabad district, India. Bull World Health Organ. 2009 Dec;87(12):955-9.</td>
<td>Moradabad District, India</td>
<td>The estimated cost of vaccinating <strong>one newborn</strong> within 72 hours of birth was Rs 133 (US$ 3). This is significantly higher than the cost to vaccinate one newborn during an SIA at approximately Rs 13 (US$ 0.31).</td>
<td>Costs included project expenses associated with the per diem and transportation for vaccine delivery coordinators, reporting incentives for focal persons and delivery kits for the traditional birth attendants.</td>
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What Do We Currently Know About the Cost of Reaching ZD Children

- Limited specific evidence on the cost of reaching zero-dose children – data desert
  - Important to shine more of a light on this for policy and programming

- The cost of scaling up coverage has a larger evidence base
  - Higher incremental unit costs than routine services
  - Contexts with higher initial coverage have much greater incremental costs
What Do We Need to Know About ZD Costs

- How much it will cost to reach ZD children *in addition to* the ongoing costs of routine programs for a range of interventions and contexts?

- Which ZD interventions represent more value for money than others?

- How can countries integrate, sustain, and finance efforts to reach ZD children?

- What are the cost implications of ZD interventions for households?
  - Do they save household costs or are they cost prohibitive?

- How much more resources are needed globally to reach ZD children?
  - to achieve the objective of reducing ZD children by 50%
  - what is the envelope of funding that Gavi needs to provide?

- What are the limits & tradeoffs of reaching ZD given financial constraints of programs? Is this agenda worth the additional cost?
What Do We Need to Do About ZD Costing

- Ensure an agreement around what it means to cost ZD – incremental nature
- Ensure robust cost estimates
  - How do we pull out the ZD component of integrated services?
  - How do we evaluate the contribution of multiple ZD interventions implemented simultaneously?
  - Do we need to standardize or is guidance available sufficient to focus on incremental costs?
  - Is costing enough or should we be evaluating cost-effectiveness or return on investment?
  - Is the provider perspective sufficient? The best?
- Identify the best (or second-best) way to determine the number of ZD children reached
- Find ways to piggy-back onto efforts to reach ZD to take advantage of opportunities
- Work with countries and country teams
- Report with completeness
  - Contextualize the findings: comparisons with routine costs, government resources and financing
References


THANK YOU