Discussion: Practical considerations for RTS, S malaria vaccine supply chain
Key Considerations to inform discussion

• Targeted Distribution
• Cold Chain Capacity
• Wastage
• Flexible data driven supply plans
Targeted Distribution

• Only areas classified as the highest need will initially receive the vaccine resulting in selective introduction at the sub-administrative level in many countries.
• Initial target areas will be based on prevalence of malaria and under-5 mortality which may translate into harder to reach areas.
• This will require a more targeted distribution and management approach than most countries are used to.
Cold Chain Capacity

• PATH Analysis across 9 countries, 5,466 health facilities. The average utilization rate of cold chain space is 33% for routine immunization.

• Need for analysis of country cold chain capacity across all levels of service delivery
  • Include consideration of introduction or changes of other vaccines such as a shift from Rotarix (single dose vial) to Rotavac (5 dose vial) which may create significant realignment of cold chain capacity throughout the system.

• Invest in WHO PQ cold chain equipment and ensure proactive maintenance plan
• RTS,S is a two dose vial clipped with a diluent
• Potential challenge with carrying significant quantities in cold boxes for outreach purposes.
Wastage

**Lack of accurate data** on vaccine wastage is a **key barrier** to correct planning for vaccine procurement

Tracking wastage is difficult because it can occur at all points in the supply chain. Also, with wastage data there is:

- Inconsistent reporting
- Underreporting

Causes of wastage may be:

- **Avoidable**, such as exposure to out-of-range temperatures (closed-vial wastage)
- **Unavoidable** when a health worker cannot use all doses in a multidose vial before its discard point (open-vial wastage).

Lack of accurate data can lead to:

- Over or under estimation of demand resulting in:
  - Unnecessary vaccine procurement if wastage is overestimated
  - Stockouts and service delivery interruptions if wastage is underestimated
Vaccine wastage at SDPs in the three study countries

Closed-vial wastage

- Across all three countries, 17% to 50% of SDPs in the sample experienced at least one incident of closed-vial wastage during the prospective period.
- Some of the closed-vial wastage rates were above the standard assumption of <1%.
- Closed-vial wastage rates are low. However, when these events leading to closed vial wastage occur, they can lead to a relatively large loss if the stock at the affected facility.

Open-vial wastage

- Open-vial wastage rates for vaccines with preservatives are lower than for vaccines without preservatives.
- newer vaccines may have higher open-vial vaccine wastage.
- There is a desire for more training on vaccine wastage at all levels of the health system in all three countries.

<table>
<thead>
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<th>Vaccine</th>
<th>Country A</th>
<th>Country B</th>
<th>Country C</th>
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<tbody>
<tr>
<td>Penta</td>
<td>Open-vial (mean)</td>
<td>3%</td>
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<td>Closed-vial (mean)</td>
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<td>3.6%</td>
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<td>1%</td>
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<td></td>
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<td>33%</td>
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<tr>
<td></td>
<td>Closed-vial (mean)</td>
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<td>0.2%</td>
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</tbody>
</table>
Flexible data driven supply plans

- Reliable access to accurate data will inform
  - Reverse logistics and re-distribution
  - Staggard delivery schedule
  - Maintenance data can inform cold chain equipment purchase and planning
Questions for discussion

Targeted Distribution
- What are potential distribution challenges with a targeted approach?

Cold Chain Capacity
- Do you have a current CCE inventory?
- Do you purchase WHO PQ equipment? In not what are the barriers to doing so?

Wastage
- Do you feel you have accurate wastage data to inform procurement decision?

Flexible data driven supply plans
- Do you have real time stock data to allow for redistribution or staggered delivery when appropriate?

Others?