Overview of Cost-effectiveness of Key Vaccines: A study

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Introduction

Purpose: The importance of cost-effectiveness studies in healthcare.

Objective: Provide an overview of our study on the cost-effectiveness of key vaccines in Nigeria.

Stakeholder participation and ownership is imperative

Goal: Enable informed decision-making for vaccine deployment.

What is a Cost-Effectiveness?

- **Definition**: Evaluates the costs and health outcomes of different healthcare interventions.
- **Comparison**: Compares the costs and effectiveness of various vaccines.
- **Outcome**: Helps determine which vaccines provide the best value for money.
- **Relevance**: Critical for resource-limited settings like Nigeria.
- **Impact**: Guides policy for better healthcare investments.

Possible key vaccines to be studied

Measles Vaccine:

- Importance: Prevents measles outbreaks.
- Coverage: Target population and current reach.

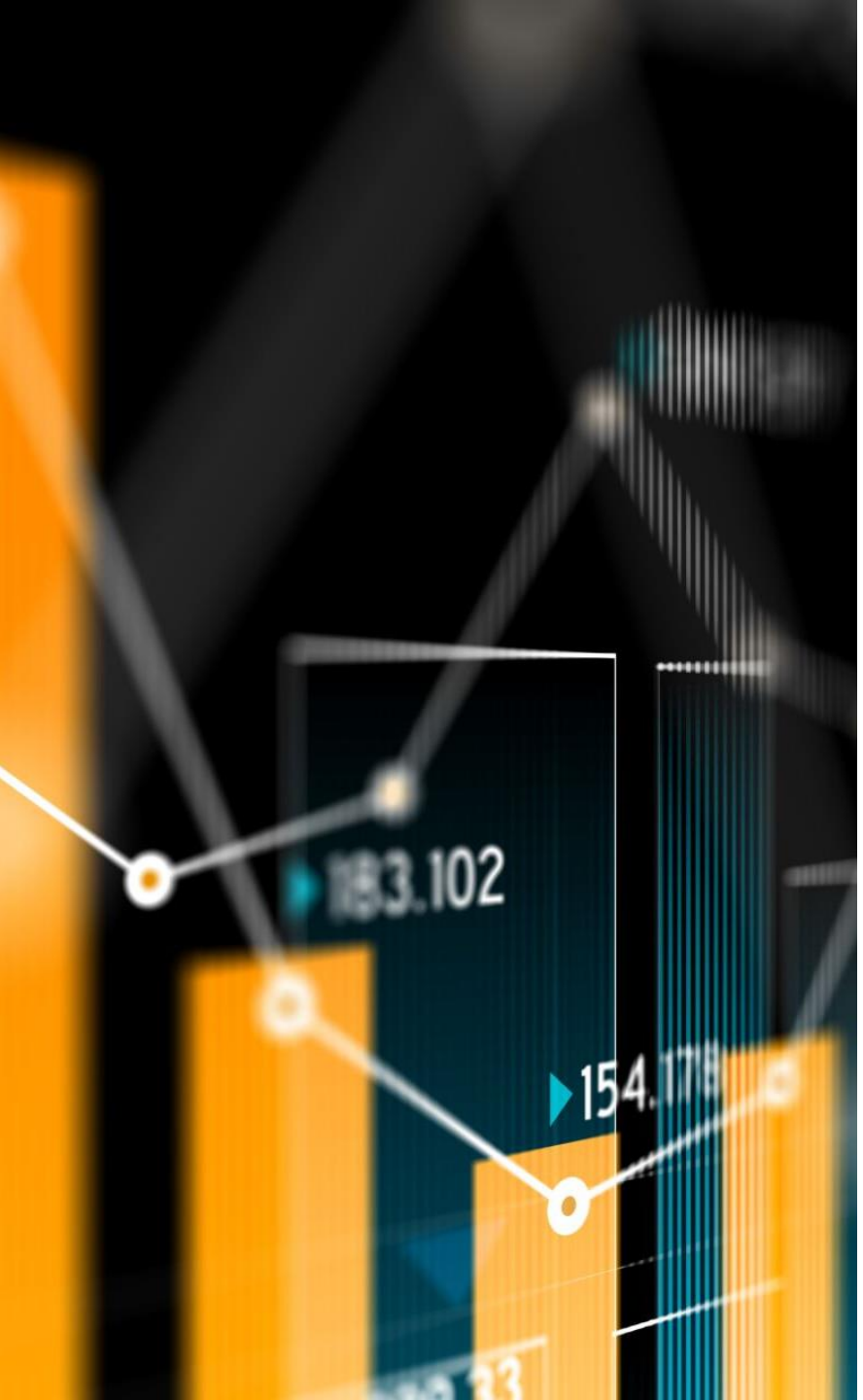
Malaria Vaccine:

- Importance: Reduces malaria incidence and mortality.
- Deployment: Strategies and challenges.

5-in-1 Meningococcal Vaccine:

- Importance: Protects against multiple strains of meningitis.

Benefits: Comprehensive protection in one shot.



Methodology

- **Study Design**: Retrospective and hypothetical scenarios.
- **Data Collection**: Facility and household data collection.
- **Metrics**: Health outcomes measured in QALYs and DALYs.
- **Economic Models**:
  - Cost-Effectiveness Analysis (CEA)
  - Cost-utility analysis (CUA)
  - Budget Impact Analysis (BIA)
- **Tools**: EQ-5D-5L for QALY calculation, WHO methods for DALY calculation.

Determining QALYs

- **Definition**: Quality-Adjusted Life Years (QALYs) measure the value of health outcomes.
- **Calculation**: Combines quantity and quality of life.
- **Tool**: EQ-5D-5L questionnaire.
- **Process**:
  - Collect health state data.
  - Use country-specific value sets.
  - Calculate utility scores.
- **Example**: Vaccination program increases QALYs by reducing disease burden.

Determining DALYs

- **Definition**: Disability-Adjusted Life Years (DALYs) measure overall disease burden.
- **Calculation**: Combines years of life lost (YLL) and years lived with disability (YLD).
- **Process**:
  - Calculate YLL from premature death.
  - Calculate YLD from illness duration and severity.

- **Example**: Malaria vaccine reduces DALYs by preventing malaria cases.

Results of Cost-Effectiveness Analysis (CEA)

Measles Vaccine:

- Cost per QALY gained.
- Reduction in DALYs.

Malaria Vaccine:

- Cost per QALY gained.
- Reduction in DALYs.

5-in-1 Meningococcal Vaccine:

- Cost per QALY gained.
- Reduction in DALYs.

Conclusion:

All vaccines demonstrate cost-effectiveness, providing significant health benefits relative to their costs.

Budget Impact Analysis (BIA)

Purpose: Estimates the financial impact of implementing vaccines within a budget context.

Measles Vaccine:

- Total program cost.
- Budget implications.

Malaria Vaccine:

- Total program cost.
- Budget implications.

5-in-1 Meningococcal Vaccine:

- Total program cost.
- Budget implications.

Conclusion: Provides insight into the affordability and financial planning for vaccine programs.

Conclusion

Summary:

- All three vaccines are cost-effective.
- Significant health benefits at reasonable costs.

Policy Recommendations:

- Prioritize funding for these vaccines.
- Integrate findings into national health strategies.
- Strengthen health infrastructure to support vaccine deployment.

Next Steps:

- Continued monitoring and evaluation.
- Engagement with stakeholders.

Advocacy for sustained investment in vaccination programs.