

A photograph showing a group of women and a baby in a community setting. In the foreground, a woman with a colorful patterned shawl holds a baby wrapped in a yellow headscarf and a patterned blanket. Behind her, another woman in a purple top and colorful shawl is smiling. In the background, more women are visible, some holding babies. The setting appears to be an outdoor or semi-outdoor structure with a corrugated metal roof and trees in the distance.

BILL & MELINDA
GATES *foundation*

TOTAL SYSTEM EFFECTIVENESS

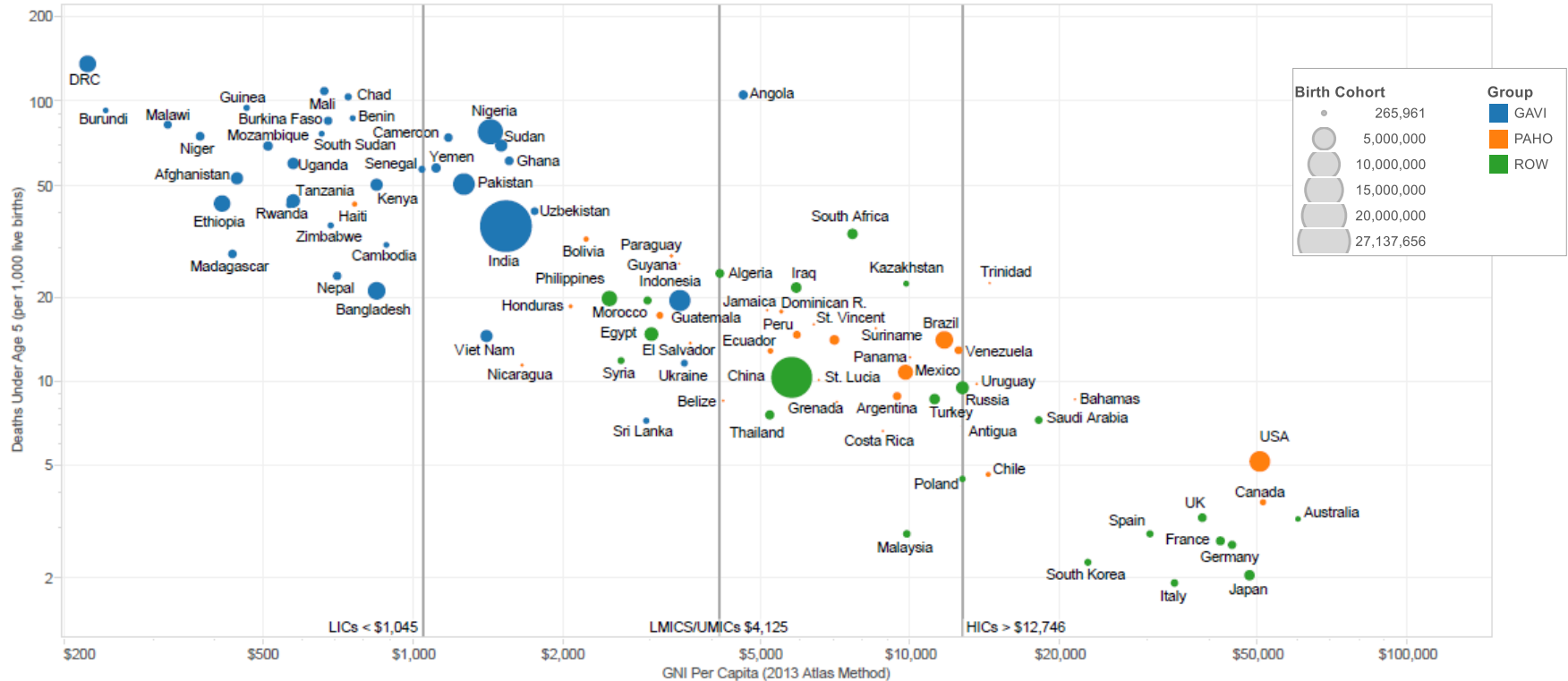
GVIRF 2016 Meeting
15 March, 2016
Johannesburg, South Africa

TOPICS FOR DISCUSSION

- Global vaccine markets
- Remaining immunization challenges
- Reassessing product trade-offs using Total System Effectiveness

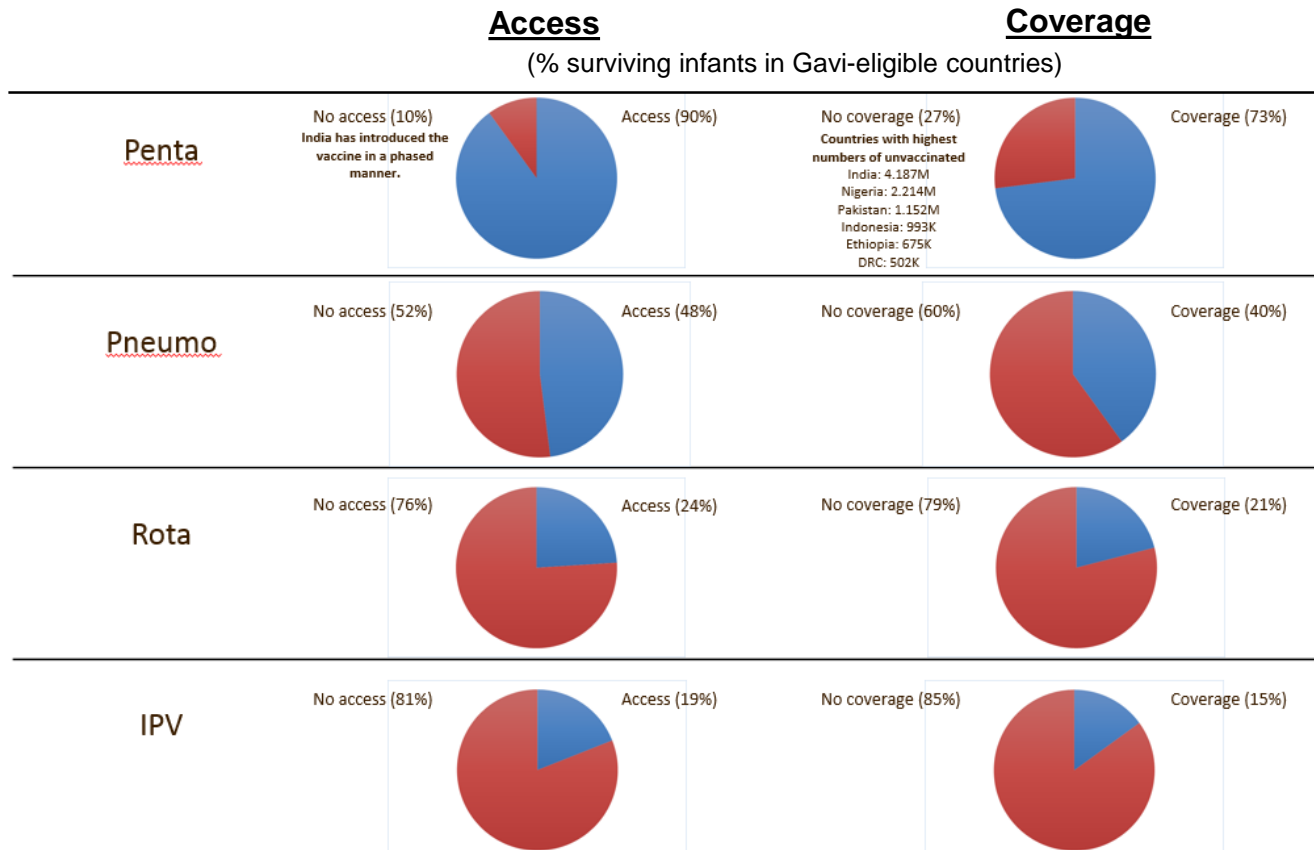
GLOBAL VACCINE MARKETS

We share a common interest in achieving best possible access to vaccines at lower prices.



Note: Only non-PAHO countries with >250,000 annual birth cohort included. Source: World Bank GNI 2013, UNPD Population Prospects 2012 Edition, GAVI Website, September 2014

IMMUNIZATION COVERAGE TARGETS



Source: VIMS Report: Global Vaccine Introduction, September 2015; International Vaccine Access Center (IVAC), Johns Hopkins Bloomberg School of Public Health; Takes phased introduction into account.

Access: Reflects children who theoretically have access to the vaccine if the vaccine has been introduced into the country's national immunization program.

Coverage: Estimated percent of children reached with the new vaccine.

PROGRAMMATIC CHALLENGES

Immunization Factors

Underlying Challenges

Coverage

% of children vaccinated

- Reaching every district
- Adherence rate

Efficacy

% of children vaccinated receiving target outcome

- Potency (thermostability, freeze prevention, vial condition)
- Correct, timely administration

Safety

Frequency and severity of adverse events

- Correct reconstitution
- Potential for contamination
- Needlestick safety and correct administration

Product cost efficiency

Total cost per administered dose

- Vaccine/device COGS including development costs
- Supplies: syringes, safety box
- Wastage

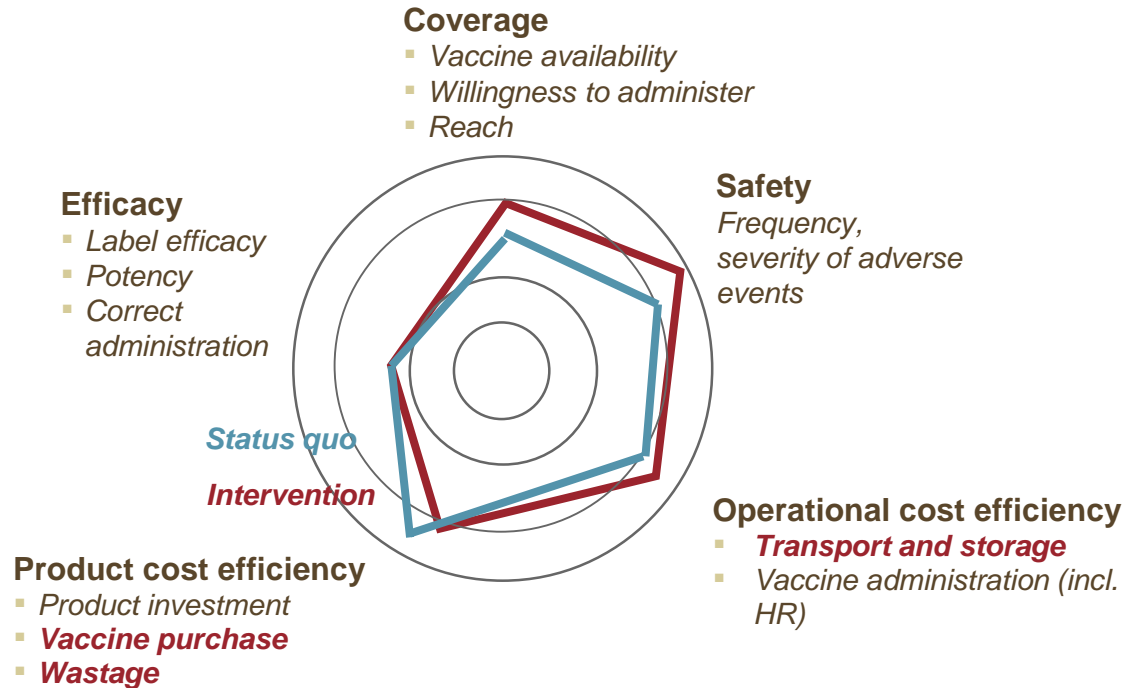
Operations cost efficiency

Total cost per administered dose

- Supply chain: transport, storage, cold chain capacity
- National program management / training
- Time required to administration vaccine

REASSESSING PRODUCT DECISION MAKING

The Total System Effectiveness (TSE) approach provides a framework for evaluating trade-offs of a vaccine or intervention.

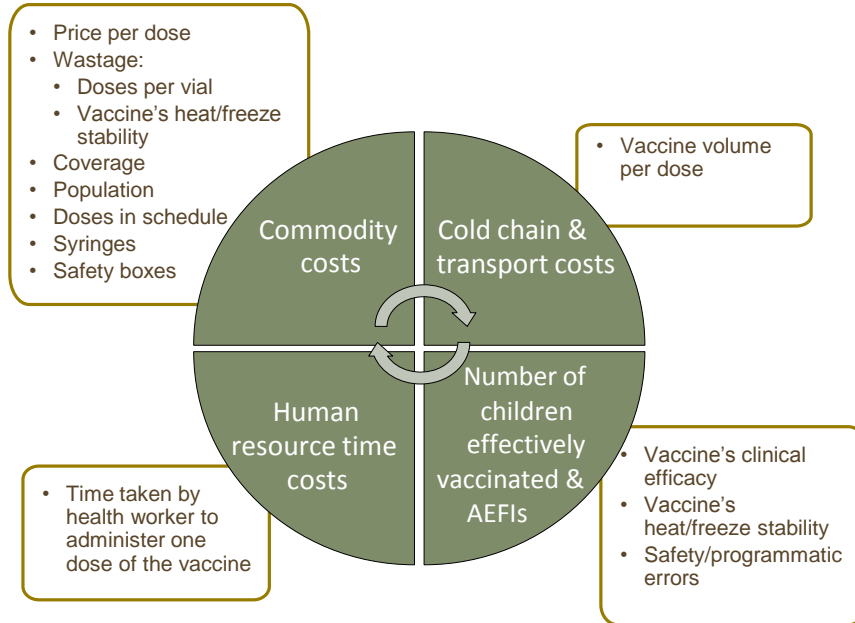


Illustrative output
Improvement radiates outward

TOTAL SYSTEM EFFECTIVENESS

The TSE framework assesses product cost, system cost, efficacy, safety and coverage of specific vaccine product attributes against status quo.

Analytical Framework

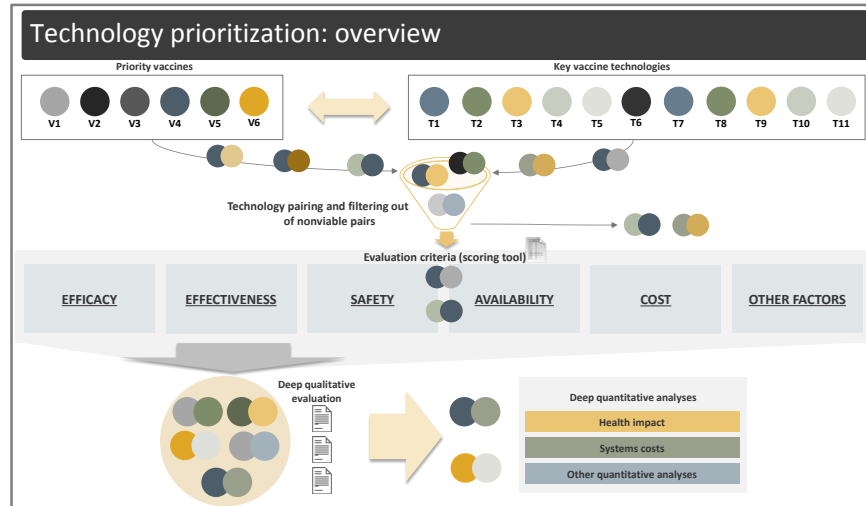


- Enables decision-makers to **evaluate the full set of trade-offs**
- **Quantifies** where possible to **measure impact** of any chosen intervention against a starting baseline
- Where data is limited, provide proxies or directional **estimates of impact**

TOTAL SYSTEM EFFECTIVENESS

The TSE framework assesses product cost, system cost, efficacy, safety and coverage across a variety of vaccine product innovations or interventions.

Vaccine Technology Prioritization Framework



- Prioritization of vaccine product and program **challenges**
- Map **vaccine priorities to innovative technologies** or interventions
- Help decision-makers **down-select** from multiple options
- Inform **go/no go decisions**

VALUE OF TOTAL SYSTEM EFFECTIVENESS

- Offer **countries** a framework for assessing the full costs and benefits for different vaccine products to advance decision-making
- Inform **donors and procurement stakeholders** regarding prioritization of future products that may help to achieve immunization targets
- Assist **vaccine and technology developers** in linking product attributes to market demand