



September 17, 2020

# VERSE Equity Dashboard

Visual mock-up for country equity and  
efficiency dashboard

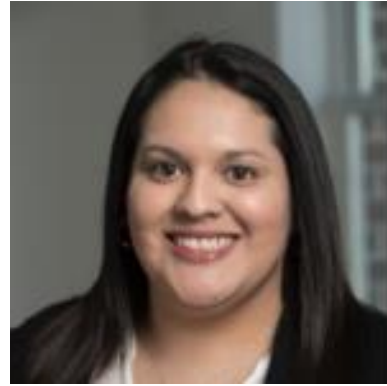
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# The VERSE Team



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# VERSE Overview

- **Vaccine Economics Research for Sustainability & Equity (VERSE)**
- **Objective:** To provide countries with robust evidence on the economic and equity implications of their immunization financing and delivery strategies.
- **Funded by:** The Bill & Melinda Gates Foundation



# Health Equity Objectives

- Develop a model and tool for countries to make standardized equity assessments of vaccine coverage that are comparable and trackable over time
- Allow for modeling of equity-efficiency tradeoffs
- Pilot in 2 - 4 countries & develop case-studies



# VERSE Equity Dashboard: Background

**Goal:** Create easy-to-use, easy-to-interpret tool for advocates and decisionmakers to assess vaccine-related equity in a country and track progress in equity and efficiency over time

**Initial focus countries:** Bangladesh, India, Nigeria, Uganda

- Compare within and between countries
  - Dashboard will compare sub-regions within each country on an equity-efficiency plane
  - Future capabilities may make it possible to add regions from several countries for comparison
- Tracking progress over time
  - The first iteration of the dashboard will offer a snapshot of the equity of vaccine coverage by sub-region in the focus countries
  - As we add more years of data, the dashboard will show trends in equity over time



# Equity in what?

- The Dashboard will examine equity over several key outcomes related to vaccines. These will include:
  1. **Programatic Equity:** Vaccine Coverage (Metric: % Coverage)
  2. **Economic Equity:** Vaccine preventable disease-related out-of-pocket expenditure and Cost-of-Illness Benefits (Metric: US\$ or local currency)
  3. **Health Outcomes Equity:** DALYs averted due to vaccine coverage (Metric: DALYs)





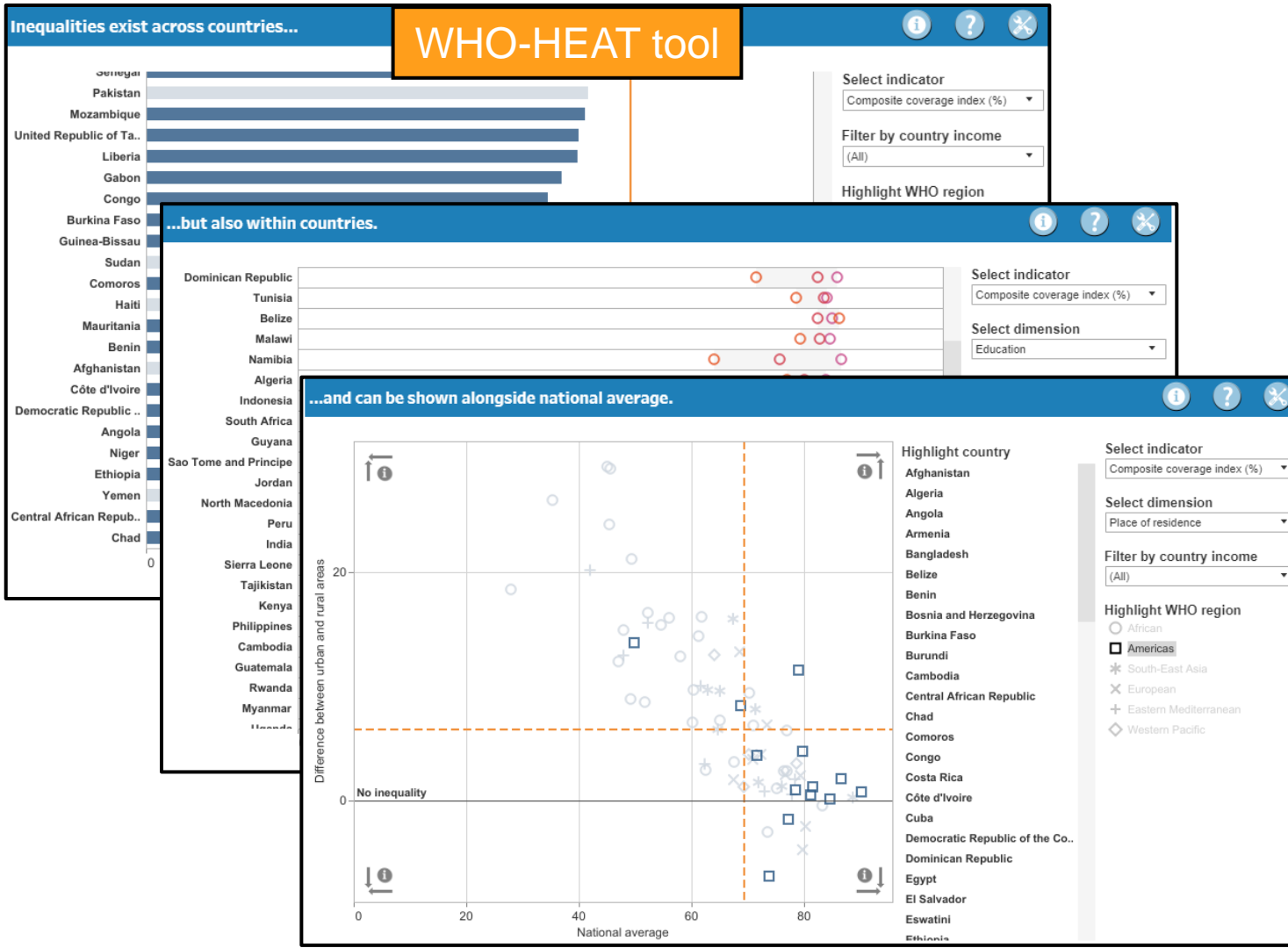
# Composite equity metric (*multivariate equity*)<sup>1</sup>

- Dashboard will show composite equity metric using the approach outlined in Barbosa & Cookson(2019) using the following dimensions:
  1. Socio-economic status (Metric: Wealth Quintile)
  2. Urban/Rural Designation (Metric: Residential Location Indicator)
  3. Politically relevant geographic sub-division (Metric: State, Region...)
  4. Sex of vaccine-recipient (Metric: Male/Female sex of child vaccinated)
  5. Maternal Education Level (Metric: Years of Education)
- Each equity dimension will also be presented separately

1. Barbosa EC, Cookson R. Multiple inequity in health care: An example from Brazil. *Social Science & Medicine*. 2019;228:1-8. doi:[10.1016/j.socscimed.2019.02.034](https://doi.org/10.1016/j.socscimed.2019.02.034)



# VERSE dashboard added value beyond WHO-HEAT data visualizer



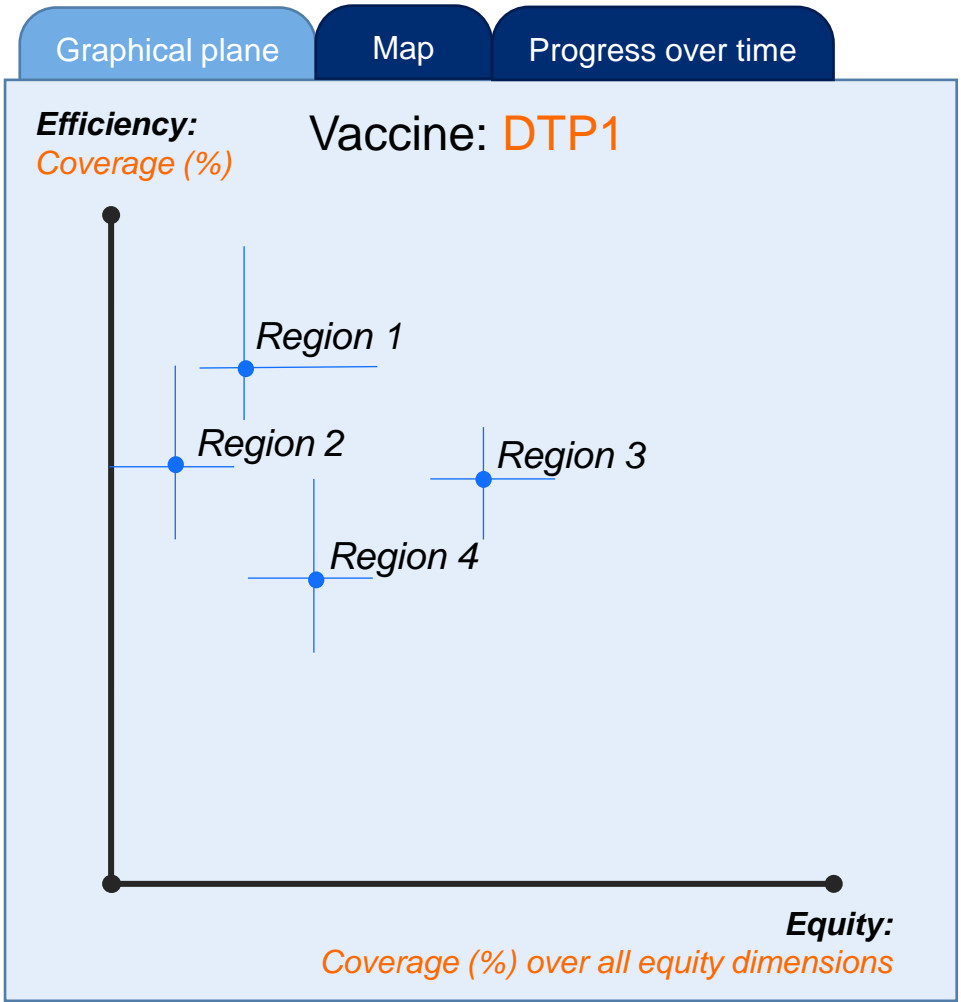
- VERSE dashboard will...
  - Show **multivariate** equity over all dimensions
  - Efficiency indicators will include coverage (%), cost per dose
- VERSE scope is currently narrower than HEAT tool
  - VERSE is vaccine-specific
  - Presents data for limited number of countries





# Equity-Efficiency Plane: Multivariate equity

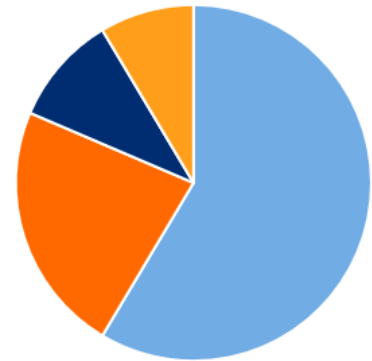
1. Select vaccine	
<input type="checkbox"/> All vaccines	
<input checked="" type="checkbox"/> DTP1	
<input type="checkbox"/> DTP3	
<input type="checkbox"/> Measles first dose	
2. Select efficiency (y-axis)	
<input checked="" type="checkbox"/> % coverage	
<input type="checkbox"/> DEA efficiency	
<input type="checkbox"/> Cost per 1% coverage	
3. Select equity dimension (x-axis)	
<b>Composite Equity</b> ▼	
<input checked="" type="checkbox"/> Overall equity (wealth, urban/rural, ...)	
<input type="checkbox"/> Wealth quintile	
<input type="checkbox"/> Urban/rural	
<input type="checkbox"/> Child sex	
<input type="checkbox"/> Maternal education	
<b>Equity in coverage</b> ▼	
<b>Equity in health (DALYs)</b> ▼	
<b>Equity in financing (OOPE)</b> ▼	



Reference categories:  
**Wealth quintile:** richest (5<sup>th</sup>)  
**Urban/rural:** urban  
**Child sex:** Male  
**Maternal education:** no education

Contributors to Inequity (Coverage, health, OOPE)

Decomposition of Overall Equity



■ SES ■ Urban/Rural ■ Child sex ■ Maternal education

The overall equity measure reflects equity over four dimensions (socioeconomic status, urban/rural, child sex, maternal education level).

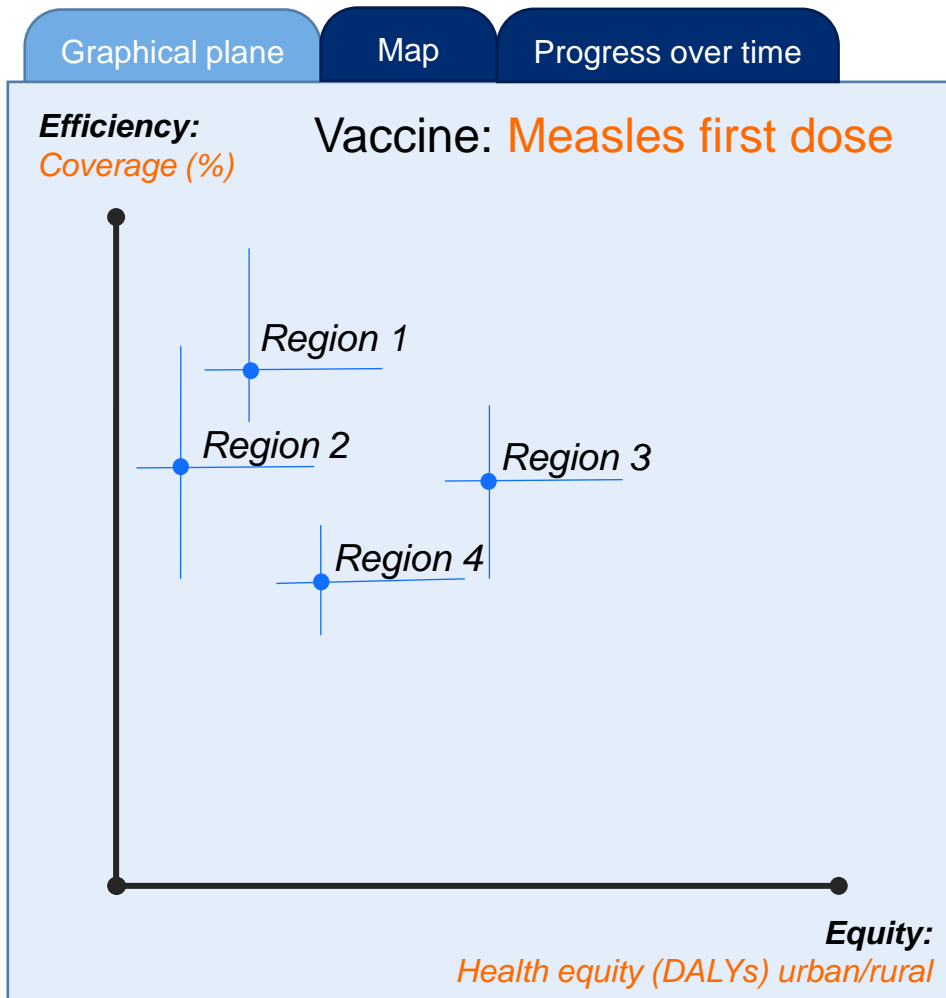
Across all categories in [Country], socioeconomic status contributes to 59% of inequity; urban/rural, 23%; child sex, 10%; maternal education level, 8%.

Select dimension in step 3.



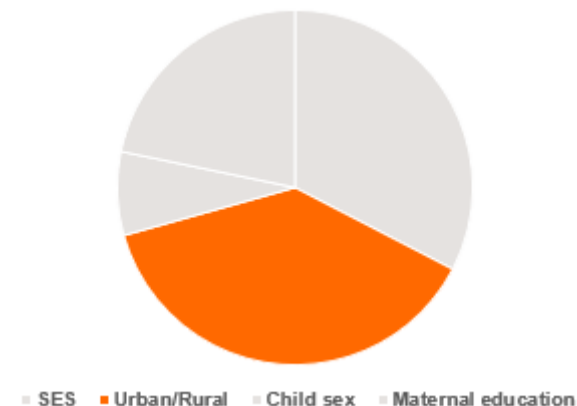
# Equity-Efficiency Plane: Urban/rural equity

1. Select vaccine	
<input type="checkbox"/> All vaccines	
<input type="checkbox"/> DTP1	
<input type="checkbox"/> DTP3	
<input checked="" type="checkbox"/> Measles first dose	
2. Select efficiency (y-axis)	
<input checked="" type="checkbox"/> % coverage	
<input type="checkbox"/> DEA efficiency	
<input type="checkbox"/> Cost per 1% coverage	
3. Select equity dimension (x-axis)	
Composite Equity	▽
Equity in coverage	▽
Equity in health (DALYs)	▽
<input type="checkbox"/> Overall equity (wealth, urban/rural, ...)	
<input type="checkbox"/> Wealth quintile	
<input checked="" type="checkbox"/> Urban/rural	
<input type="checkbox"/> Child sex	
<input type="checkbox"/> Maternal education	
Equity in financing (OOPE)	▽



Reference categories:  
Wealth quintile: richest (5<sup>th</sup>)  
Urban/rural: urban  
Child sex: Male  
Maternal education: no education

Contributors to Health Inequity  
Urban/Rural



For health equity in [Country], urban/rural location contributes to 38% of inequity; socioeconomic status, 33%; maternal education 22%; child sex, 8%.

Select dimension in step 3.



# Map: Efficiency and wealth [income] equity

**1. Select vaccine**

All vaccines

DTP1

DTP3

Measles first dose

**2. Select efficiency (y-axis)**

% coverage

DEA efficiency

Cost per 1% coverage

**3. Select equity dimension (x-axis)**

**Composite Equity** ▼

Overall equity (wealth, urban/rural, ...)

Wealth quintile

Urban/rural

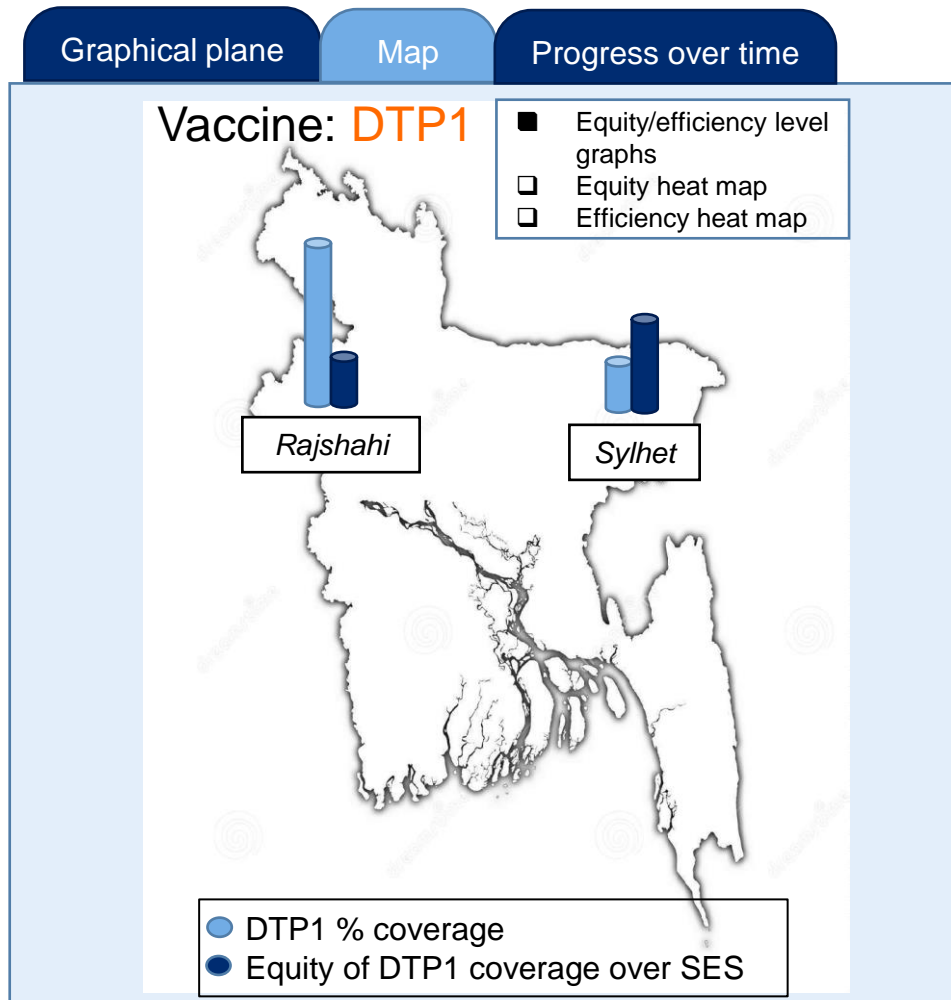
Child sex

Maternal education

**Equity in coverage** ▼

**Equity in health (DALYs)** ▼

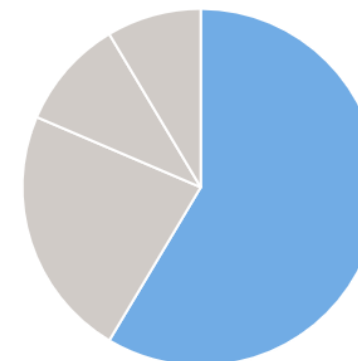
**Equity in financing (OOPE)** ▼



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## Contributors to Inequity (Coverage, health, OOPE)

### Socioeconomic Status



■ SES   ■ Urban/Rural   ■ Child sex   ■ Maternal education

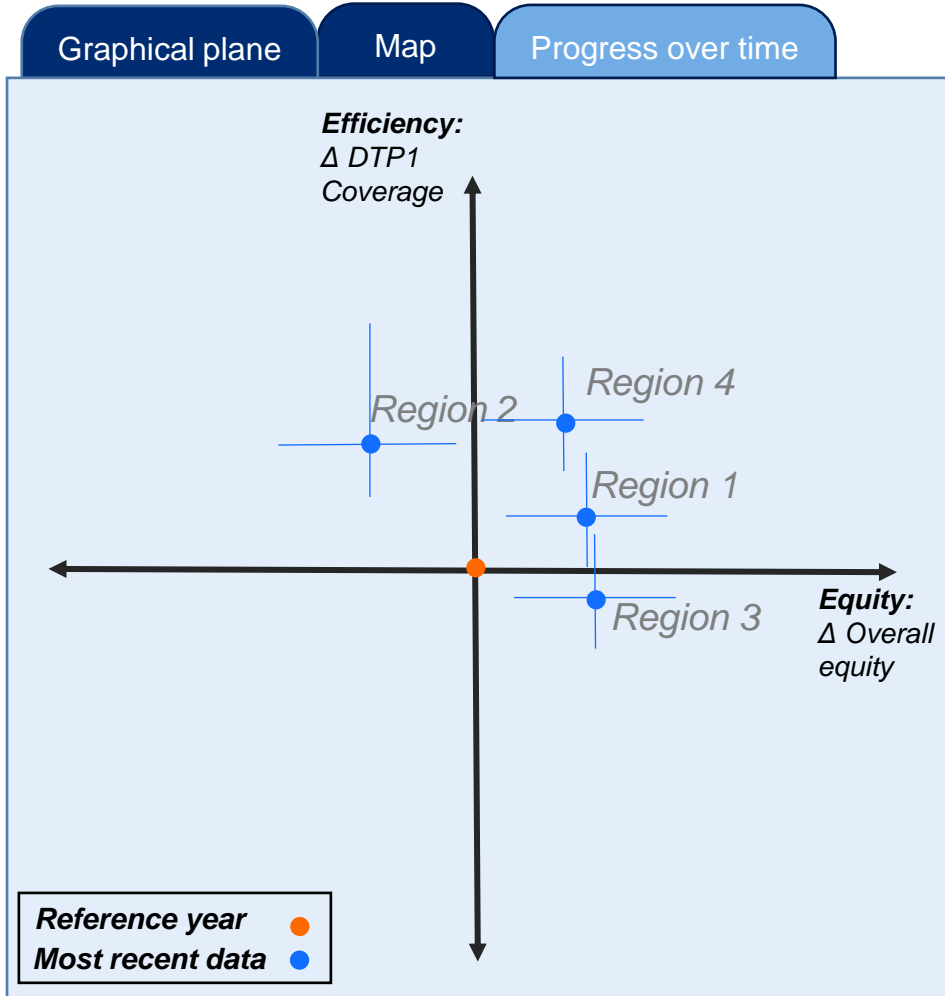
*Across all categories in [Country], socioeconomic status contributes to 59% of inequity; urban/rural, 23%; child sex, 10%; maternal education level, 8%.*

*Select dimension in step 3.*



# Tracking equity over time

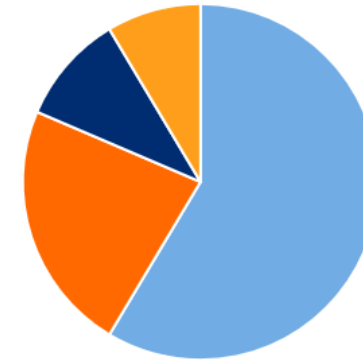
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The overall equity measure reflects equity over four dimensions (socioeconomic status, urban/rural, child sex, maternal education level).

Across all categories in [Country], socioeconomic status contributes to 59% of inequity; urban/rural, 23%; child sex, 10%; maternal education level, 8%.

Select dimension in step 1.



# Table of Indicators

Select country and regions: ▼

Select indicators:

- Slope Index
- Relative Index
- Absolute Equity Gap
- Relative Equity Gap
- Concentration Index

Slope Index <i>i</i>		Relative Equity Gap <i>i</i>	
Region 1			
Overall equity			
SES	12	DTP3 coverage is 12% points higher for the richest quintile than the poorest quintile.	<i>Indicator not applicable</i>
Child sex		<i>Indicator not applicable</i>	1.04 DTP3 coverage is 4% higher for male children than female children
Urban/rural		<i>Indicator not applicable</i>	1.16 DTP3 coverage is 16% higher in urban areas than rural areas
Region 2			
Overall equity			
SES			
Child sex			
Urban/rural			





# Table of Indicators

Select indicators:

- Slope Index
- Relative Index
- Absolute Equity Gap
- Relative Equity Gap
- Concentration Index

Select country and regions: ▼

Slope Index 		Relative Equity Gap 	
Region 1			
Overall equity			
SES			<i>Indicator not applicable</i>
Child sex			coverage is 4% higher for male children than female children
Urban/rural	<i>Indicator not applicable</i>	1.16	DTP3 coverage is 16% higher in urban areas than rural areas
Region 2			
Overall equity			
SES			
Child sex			
Urban/rural			

The **slope index of inequality** represents the absolute difference in estimated values of a health indicator between the most-advantaged and most-disadvantaged groups, while accounting for other subgroups.

Slope Index = level in most-advantaged – level in least advantaged







# Discussion Questions (I)

1. Would a vaccine equity tool of this form be useful for you or your country/organization?
2. Who (title/position) at your organization would be most likely to use such a tool?
3. Are the proposed dimensions of health equity appropriate for your setting? Are there other dimensions that are missing that you would find useful?
4. Does the format of the tool appear user-friendly?
5. Is this similar to other tools you are familiar with? If so, which ones?



## Discussion Questions (II)

1. Are there aspects that could be improved to make the tool or its outputs more user-friendly?
2. Are the outputs of the tool clearly displayed and appropriate for your setting?
3. Are there additional outputs that should be included in the tool?
4. What data is readily available to populate this tool from your setting?
5. What data gaps do you anticipate that may hinder the usefulness of this tool?
6. Are you interested in continuing to engage in the development process (e.g., piloting the tool in your country, reviewing mock-ups of the dashboard)?