## Easy Level Questions

### 1. How do vaccination rates correlate with a decrease in disease incidence?

Scatter plot - Power BI shows a clear inverse correlation. As vaccination coverage increases, disease incidence, especially measles and mumps, drops significantly.

### 2. What is the drop-off rate between 1st dose and subsequent doses?

Pie chart for schedule rounds reveals fewer booster entries compared to initial doses, indicating a drop-off of about 30–50% in follow-up doses.

### 3. Are vaccination rates different between genders?

Data not available as per gender

### 4. How does education level impact vaccination rates?

Data not available as per education level

### 5. What is the urban vs. rural vaccination rate difference?

Data not available as per urban/rural

### 6. Has the rate of booster dose uptake increased over time?

Yes, Line chart - `Schedule\_rounds = Booster` shows increasing uptake post-2010.

### 7. Is there a seasonal pattern in vaccination uptake?

Data not available as per seasons

### 8. How does population density relate to vaccination coverage?

Data not available as per population

### 9. How do vaccination rates correlate with a decrease in disease incidence?

Same Question as Q1

### 10. Which regions have high disease incidence despite high vaccination rates?

Scatter plot comparing incidence and coverage, shows that certain African and Southeast Asian countries have high incidence despite >80% coverage.

## Medium Level Questions

### 1. Is there a correlation between vaccine introduction and a decrease in disease cases?

Yes. Line chart comparing vaccine introduction year to disease trend shows a visible drop in reported cases post-introduction.

### 2. What is the trend in disease cases before and after vaccination campaigns?

Trend chart shows significant drops in diseases like measles after mass vaccination campaigns.

### 3. Which diseases have shown the most significant reduction in cases due to vaccination?

Measles, Polio, and Hepatitis B have seen the largest case reduction according to the reported cases data.

### 4. What percentage of the target population has been covered by each vaccine?

Using a table of Doses vs Target population, most vaccines reached 80–90%, with a few below 60%.

### 5. How does the vaccination schedule (e.g., booster doses) impact target population coverage?

Vaccines requiring multiple doses tend to have lower complete coverage due to drop-offs.

### 6. Are there significant disparities in vaccine introduction timelines across WHO regions?

Yes. The stacked column chart by WHO region shows that AFR and SEARO regions have delayed adoption of newer vaccines like HPV.

### 7. How does vaccine coverage correlate with disease reduction for specific antigens?

Scatter plots and combo charts show antigens with high coverage tend to have corresponding lower incidence rates.

### 8. Are there specific regions or countries with low coverage despite high availability of vaccines?

Regions like sub-Saharan Africa show low coverage even when vaccines were introduced.

### 9. What are the gaps in coverage for vaccines targeting high-priority diseases (e.g., TB, Hepatitis B)?

TB and Hepatitis B coverage is inconsistent across countries; some have <60% even with vaccine access.

### 10. Are certain diseases more prevalent in specific geographic areas?

Yes. Disease-wise incidence maps and filters show clustering — e.g., Polio in specific South Asian zones.

## Scenario-Based Questions

### 1. A government health agency wants to identify regions with low vaccination coverage to allocate resources effectively.

Use the map and matrix visuals to highlight countries below 60% coverage. The dashboard supports drillthrough for deeper insights.

### 2. A public health organization wants to evaluate the effectiveness of a measles vaccination campaign launched five years ago.

Line chart of measles incidence shows sharp decline after campaign year, confirming effectiveness.

### 3. A vaccine manufacturer wants to estimate vaccine demand for a specific disease in the upcoming year.

The forecast chart visualizes projected coverage based on trends, helping estimate future demand.

### 4. A sudden outbreak of influenza occurs in a specific region, and authorities need to ramp up vaccination efforts.

Filter Power BI visuals by region + disease (flu), then view incidence spike and schedule responsiveness.

### 5. Researchers want to explore the incidence rates of polio in populations with no vaccination coverage.

Filter the dashboard to 'Polio' and identify countries with 0% or missing coverage and high incidence.

### 6. WHO wants to track global progress toward achieving a target of 95% vaccination coverage for measles by 2030.

The gauge chart tracks current measles coverage globally (~79%) vs. the 95% goal.

### 7. A health agency wants to allocate vaccines to high-risk populations such as children under five and the elderly.

The age distribution chart helps identify the most frequently targeted age bands for vaccine planning.

### 8. A non-profit wants to detect disparities in vaccination coverage across different socioeconomic groups within a country.

Data not available for this

### 9. Authorities want to determine how vaccination rates vary throughout the year.

Data not available for this

### 10. Two regions use different vaccination strategies (e.g., door-to-door vs. centralized vaccination clinics). Authorities want to know which strategy is more effective.

Data not available for this