Knowing the audience

- **Primary audience:** Deputy Secretary, Department of Health Research
- **What does your audience care about?**

  The audience, in this case, is the Department of Health Research in India. They are likely to care deeply about the health and well-being of the population, particularly children, as they play a crucial role in shaping the nation's future. They are concerned about ensuring effective healthcare delivery, reducing disease burdens, and improving overall public health indicators across the country. Hence, the need information about the number of cases of each of the mentioned diseases and the number of deaths. The information to them needs to be provided and sorted as per state, year and disease.
- **What action does your audience need to take?**

  The audience needs to take proactive and strategic action based on the data from the Health Management & Information System (HMIS) report. They should use the data to identify areas with high prevalence and impact of pneumonia, diarrhea, measles, and asthma childhood diseases in India. Then, they must devise evidence-based interventions and implement targeted healthcare programs to address and mitigate the impact of these diseases effectively.
- **What is at stake? What is the benefit if the audience acts in the way you want them to? What are the risks if they don't?**

  The health and well-being of millions of children in India are at stake. Pneumonia, diarrhoea, measles, and asthma are significant childhood diseases that can lead to severe complications, long-term health issues, and even death if not properly addressed. Failing to take action could result in a significant disease burden, increased healthcare costs, and reduced productivity in the affected population.

  By implementing targeted and evidence-based interventions, the Department of Health Research can significantly reduce the prevalence and impact of these childhood diseases. This would lead to improved child health, reduced hospitalizations, better school attendance, and overall increased quality of life for children and their families. Additionally, successful interventions can also contribute to lowering the economic burden on the healthcare system and enhancing the nation's workforce

productivity in the long run. If the Department of Health Research does not take appropriate action based on the data, the prevalence and impact of childhood diseases could continue to rise. This would result in increased healthcare costs, higher rates of hospitalizations, and a strain on healthcare facilities. Moreover, children's health and educational outcomes may be negatively affected, leading to potential long-term consequences for both individuals and the society as a whole. The nation might face challenges in achieving its developmental goals if the health of its future generation is compromised.

The BIG IDEA

Implementing targeted and evidence-based interventions to reduce the prevalence and impact of pneumonia, diarrhoea, measles, and asthma childhood diseases in India is crucial to safeguarding the health and well-being of the nation's children and securing a healthier and more productive future for India.

Data preparation

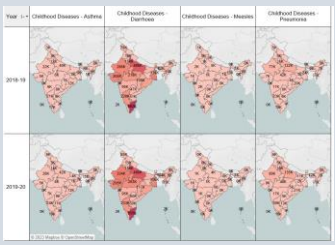
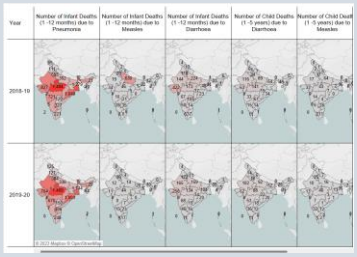
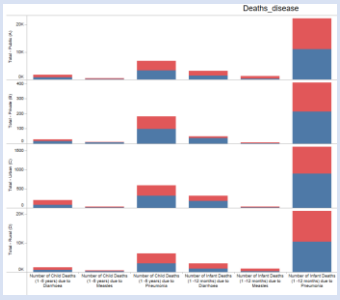
- The two data sets for the years 2018-19 and 2019-20 were union-ed to have a consolidated data source.
- Tableau took the data type of columns like April - Public (A), June - Urban (C), Total - Total ((A+B) or (C+D)), Total - Public (A), Total - Private (B), Total - Urban (C), Total - Rural (D) etc as String and they were then converted to ‘Number(whole) and hence, the NULL values were automatically considered as ‘0’ by Tableau.
- Since we wanted to sort the data year wise, therefore we created a calculated field named ‘Year’ where we spilt the ‘Table Name’ column using the below formula

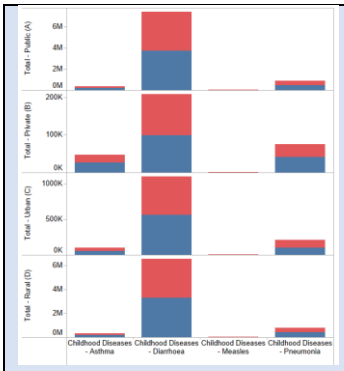
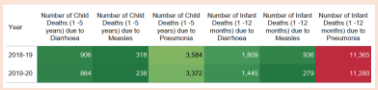
Year

```
CASE RIGHT(LEFT([Table Name], 19), 7)
   WHEN '2018-19' THEN '2018-19'
   WHEN '2019-20' THEN '2019-20'
   ELSE 'Other'
END
```

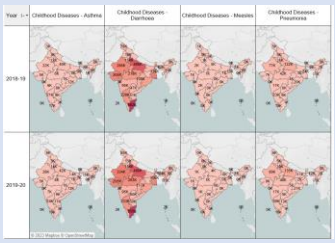
- Since we wanted to create a filter ‘Year’, ‘State’ and ‘Cases’ or ‘Deaths, therefore we first created 3 parameters and 3 calculated fields which are discussed below query wise.
- For ‘View’, the parameter created is ‘View’ and calculated field is ‘Dash_view’.

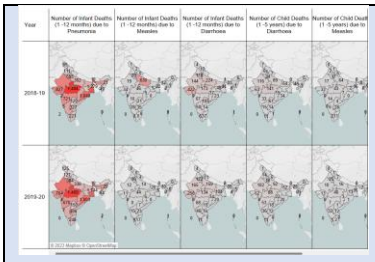
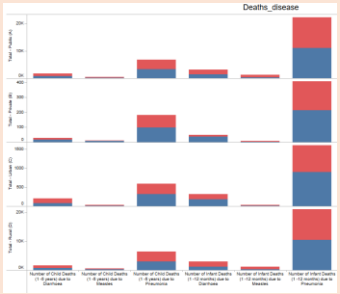
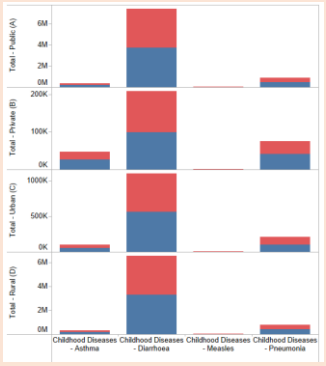
Information communicated

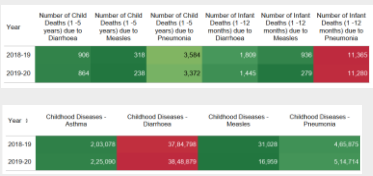
	What are you trying to communicate?	What questions are you trying to answer/display in your visualizations? Write these as specific questions	Data preparation for specific query
State wise distribution  	Number of cases of Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 state wise	What is the distribution of number of cases of Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 state wise?	For 'State', the parameter created is 'State Parameter' and calculated field is 'Choose state'.
	Number of deaths due to Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 state wise	What is the distribution of number of deaths due to Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 state wise?	
Sector wise distribution 	Number of cases of Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 sorted by Public, Private, Urban and Rural.	What is the distribution of number of cases of Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 in urban & rural India and public and private sectors?	The data about the urban, rural, public and private sectors were already available in the data set, hence no specific data processing was required.
	Number of deaths due to Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 sorted by Public, Private, Urban and Rural.	What is the distribution of number of deaths due to Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20 in urban & rural India and public and private sectors?	

			
Overall status  	Total number of cases of Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20	What is total number of cases of Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20?	For 'Year', the parameter created is 'Year Parameter' and calculated field is 'Year'.
	Total number of deaths due to Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20	What is the total number of deaths due to Asthma, Diarrhoea, Measles and Pneumonia in the years 2018-19 and 2019-20?	

Description of visuals used

What type of viz did you create?	Why did you select the viz that you did?	3 Gestalt principles employed.	Pre-attentive attributes
Choropleth map 	**Geographical Distribution and Patterns**: Choropleth maps are highly effective when you want to visualize geographical distributions and patterns.	**Similarity**: The use of consistent color schemes for different diseases/ deaths employs the principle of similarity, allowing viewers to quickly associate similar colors with the same diseases across states.	**Color**: Utilizing color to differentiate disease prevalence/ deaths, with darker colors representing higher case numbers and lighter colors indicating lower numbers.

	**Relative Comparisons**: Choropleth maps excel at facilitating relative comparisons between different regions.	**Proximity**: The arrangement of states close to each other based on their geographical location follows the principle of proximity, helping viewers mentally group neighboring regions for easier comparison.	**Spatial Arrangement**: Grouping states with similar case numbers/ deaths close to each other to help viewers quickly identify clusters of high or low prevalence.
	Choropleth maps are commonly used in government reports and various public policy contexts.	**Closure**: The use of clearly defined state boundaries creates an enclosed space for each state, applying the closure principle and aiding in perceiving each state as a distinct entity.	**Size**: Adjusting the size of state shapes based on case numbers/ deaths, emphasizing states with larger cases/ deaths and drawing attention to disparities.
Stacked Bar Chart  	**Part-to-Whole Comparison**: Stacked bar charts are particularly effective for showcasing the composition and distribution of parts within a whole. By stacking segments of different colors on top of each other, we can visually represent how individual components contribute to the total.	**Similarity**: Using consistent colors within each sector for different diseases, helping viewers associate the same colors with the same diseases in both urban and rural segments.	**Color**: Employing distinct colors for each year highlight the disease/ death-wise differences with sectors on the y-axis.
	Category Comparison Over Time or Across Groups: Stacked bar charts are useful when you need to compare categories over time or across different groups.	**Proximity**: Placing urban,rural, private and public segments on the y-axis, adhering to the principle of proximity, making it easier to compare data for each disease/ deaths between sectors.	**Enclosure**: Adding clear boundaries around each stacked bar while hovering over to separate and focus attention on individual segments, aiding in precise comparisons.

	Visualization of Cumulative Data: Stacked bar charts can effectively display cumulative data that accumulates over time or across categories.	**Continuity**: Aligning segments within each bar, applying the principle of continuity and allowing viewers to perceive the segments as parts of a whole.	**Size**: Adjusting the chart as per year, state and cases/ deaths emphasize the proportional distribution of diseases/ deaths in each sector.
Table 	**Detailed Data Representation**: Tables are excellent for presenting detailed and granular data that might be overwhelming to display using other visualization formats.	**Proximity**: Grouping numbers in rows and columns, applying the principle of proximity, allowing viewers to easily scan and compare data within each category.	**Font Style and Size**: Increasing the font size for total case numbers/ deaths to draw attention and indicate their significance.
	Exact Data Comparison: Tables enable viewers to precisely compare values across different categories, attributes, or time periods.	**Similarity**: Employing uniform formatting (font style, alignment) for numbers within each column, aligning with the principle of similarity, aiding quick identification and comparison.	**Color**: Highlighting the figures by using background for key cells, directing the audience's attention.
	Complementary Visual Aid:A table serves as a complementary visual aid alongside other visualization types. While graphs and charts can provide an overview of trends and patterns, a table can offer a more comprehensive breakdown of the data.	**Closure**: Creating visual enclosure with grid lines, applying the closure principle, helping viewers perceive each cell as a distinct unit in the table.	**Alignment**: Right-aligning numbers for easy comparison, following the principle of alignment for improved readability.

Dashboard

- The dashboard consists of 6 worksheets divided equally into 2 sets – Cases and Deaths. Cases represent the total number of cases of each disease and Deaths represent the total number of deaths for each disease (Diarrhoea, Asthma, Measles, and Pnuemonia).
- The dashboard can be personalised using the filter on the top right corner.
- There are 3 filters namely View, Year and State.
- If one wishes to see the data on number of cases, then one can choose ‘Cases’ under ‘View’ filter. And if one wishes to see the number of deaths, then choose ‘Deaths’ under ‘View’ filter.
- If one wishes to see the data of either of the years (2018-19 or 2019-20), then choose the appropriate year under the filter ‘Year’. The default is the data from both the years.
- If one wishes to see the data of a specific state, the choose the state from the ‘State’ filter.