

**Topic : Vulnerable Population (Age Group 0-14 and 60+ ) State wise in India**

**Domain :** Health infra, Population, Age Group, etc. for Vaccination

**Team Name : Error\_404**

**Team Members :**

- 1) **Mehul Lokhande**
- 2) Abhishek Ove

**Organisation:** Pimpri Chinchwad College Of Engineering, Pune - 411044

**Contact Email:** mehullokhande9@gmail.com

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**Methodology :**

1) **Dataset :**

- a. **Map :** [https://static.fossee.in/mapathon/Mapathon2020\\_Data/](https://static.fossee.in/mapathon/Mapathon2020_Data/)
- b. **Dataset : Census of India 2011.**

2) **Theory :**

The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. The economic and social disruption caused by the pandemic is devastating. Though the vaccine has been invented, the main challenge is the distribution of vaccine due to limitation on number of doses.

**Description and Analysis:**

The Vaccine needs to be distributed in phases, giving preferences to different categories like,

- Frontline Workers like Medical People, Administrative and Police forces.
- Vulnerable Age Groups like people in age groups of 0-14 years of age, 60 and above years of age and people chronic disorders.
- The remaining healthy population of age group 15-59 years of age.

Seeing this scenario, we have calculated total vulnerable population state wise, and plotted the percentage data using measures of statistics, **Natural Breaks Algorithm** and graduated texture.

### **3) QGIS Method (Preparation)**

- Preparation and extraction of relevant Data i.e. extracting data related to Age Groups 0-14 years and 60 & above years of age.
- Calculation of percentage of vulnerable population using statistics.
- Processing the calculated data using Natural Break (Jenks) Algorithm and graduated texture.
  - This algorithm tries to find natural groupings of data to create classes. The resulting classes will be such that there will be maximum variance between individual classes and least variance within each class.
  - The Jenks Natural Breaks Classification system is a data classification method designed to optimize the arrangement of a set of values into "natural" classes.
  - A Natural class is the most optimal class range found "naturally" in a data set.
  - A class range is composed of items with similar characteristics that form a "natural" group within a data set.

#### **Applications and Uses :**

- Used for devising strategy for distribution of Vaccines in this situation of pandemic.
- For fast and Efficient Vaccine Delivery
- Used for administration purposes, as this map will help visualize the Total Vulnerable Population Statewise.