Genetic Disorders

The government is setting up **specialist laboratories** in the country to conduct **tests for genetic diseases,** which is a leading cause of death among infants and children in the poorest districts across the country.

- There are **117 aspirational districts** that lack such diagnostic facilities.
- The laboratories will run under the **Human Genetics and Genome Analysis Programme** under the Department of Biotechnology, Ministry of Science and Technology.
    - The programme addresses issues related to specific inherited diseases concerning the Indian population.

Genetic Disorders in India

- Common **genetic disorders in India** are Beta-Thalassemia, Cystic Fibrosis, Sickle Cell Anaemia, Spinal Muscular Atrophy and Haemophilia.
    - **Beta thalassemia** is a blood disorder that reduces the production of hemoglobin.
    - **Cystic fibrosis** is a disorder that causes severe damage to the lungs, digestive system and other organs in the body.
    - **Sickle cell anemia,** or sickle cell disease (SCD), is a genetic disease of the red blood cells (RBCs).
    - **Spinal muscular atrophy** is a disorder characterized by weakness and wasting in muscles used for movement (skeletal muscles).
- According to the Health ministry, at least **80% of rare diseases** have an identified **genetic origin** and disproportionately impact children.
    - **Half of all new cases are in children** and are responsible for 35% of deaths before the age of 1 year, 10% between the ages of 1 and 5 years, and 12% between 5 and 15 years.
- According to the government estimates, **the genetic** and congenital disorder is the **second most** common cause of infant and **childhood mortality,** and occurs with a prevalence of 25-60 per 1,000 births.

Need For Laboratories

- There is a consequent mushrooming of private labs in the country not following international standards.
- Genetic testing has enabled researchers and clinicians to detect inherited traits, diagnose heritable conditions, determine, and quantify the likelihood that a heritable disease will develop, and identify genetic susceptibility to familial disorders.