

# Addressing Global Healthcare Challenges

Formulating the Problem by addressing Healthcare Challenges

## Problem Statement

The existing healthcare systems often struggle to provide **timely and cost-effective solutions**, especially in resource-constrained areas, exacerbating the burden on individuals, families, and healthcare providers. The **lack of accessible and affordable healthcare services** poses a significant barrier to addressing the global health burden accompanied by following challenges:

1. **Non-communicable diseases (NCD's)** including CVD, diabetes etc. continue to be a significant health concern globally. Access to **early detection and accurate diagnosis** of these NCDs is crucial for effective management and improved health outcomes. NCDs account for approximately 71% of all deaths worldwide, with CVD being the leading cause. Access to early detection of NCDs remains limited in resource-constrained areas. Addressing this challenge is crucial to achieve **UN SDG target 3.4.1**, which aims to reduce premature mortality from NCDs by one-third by 2030.
2. **Mental health** disorders affect people of all ages and have a substantial impact on individuals and societies. Globally, around **1 in 4** people will experience a mental health disorder in their lifetime. However, the treatment gap for mental health is significant, with approximately 50% of people not receiving the mental health services they need. UN SDG target 3.4.1 encompasses promoting mental health and well-being.
3. **Undernourishment** remains a critical global health concern, particularly in low-income and food-insecure regions. Approximately 690 million people suffer from chronic undernourishment, with children being particularly vulnerable. Malnutrition, including both undernutrition and micronutrient deficiencies, contributes to increased morbidity and mortality rates, impaired cognitive development, and reduced productivity. Achieving UN SDG target 2.1.1, which aims to eradicate hunger and ensure access to safe, nutritious, and sufficient food for all, requires effective strategies to address undernourishment globally.
4. Limited healthcare facilities, scarcity of specialized expertise, and inadequate diagnostic tools hinder the early identification, precise diagnosis, and effective treatment of these health conditions. Approximately half of the world's population still **lacks access to essential healthcare services**. Overcoming barriers related to healthcare infrastructure, workforce shortages, and financial constraints is essential to ensure universal health coverage and meet the broader objectives of the UN SDGs.

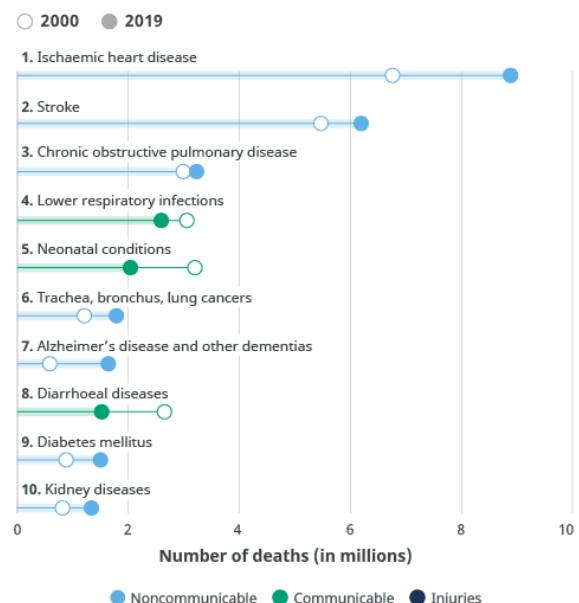
## Analysis

### Deaths from Non-Communicable Diseases:

At a global level, 7 of the 10 leading causes of deaths in 2019 were noncommunicable diseases. These seven causes accounted for 44% of all deaths or 80% of the top 10. However, all noncommunicable diseases together accounted for 74% of deaths globally in 2019.

The world's biggest killer is ischaemic heart disease, responsible for 16% of the world's total deaths. Since 2000, the largest increase in deaths has been for this disease, rising by more than 2 million to 8.9 million deaths in 2019. Stroke and chronic obstructive pulmonary disease are the 2nd and 3rd leading causes of death, responsible for approximately 11% and 6% of total deaths respectively.

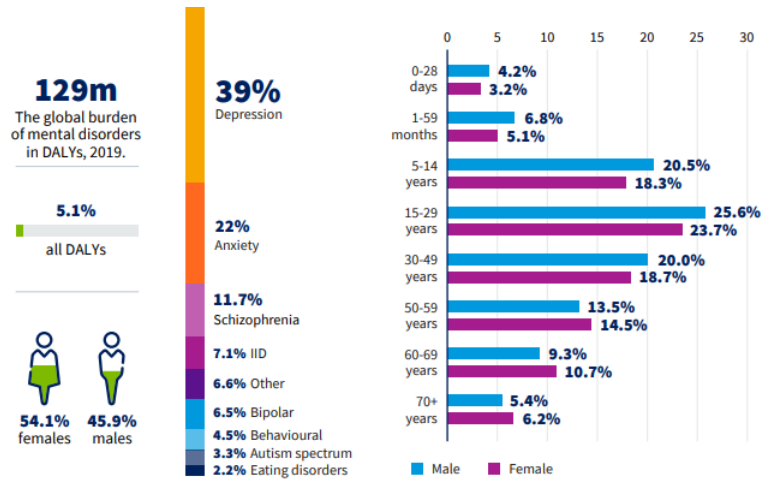
### Leading causes of death globally



### The global burden of mental disorders:

Mental disorders are the leading cause of years lived with disability, accounting for one in every six (15.6%) YLDs globally. Substance use disorders account for a further 3.1% of YLDs; and neurological conditions account for 6.4%. Combined mental, neurological and substance use disorders account for one in every four YLDs globally

**Autism: also referred to as autism spectrum disorder—constitutes a diverse group of conditions related to development of the brain. About 1 in 100 children has autism.**



### Our Solution

Orchid aims to overcome these challenges by leveraging cutting-edge technologies, such as advanced machine learning algorithms, cloud computing, and a comprehensive solution that empowers individuals to take control of their health and well-being. Orchid is an **AI-powered** healthcare web & mobile application, aims to provide accessible and affordable healthcare services to people worldwide. The application includes NCD's diagnosis tools, AI diet planner, mental health diagnosis, ASD diagnosis for age groups 1 to 3 and AI self-diagnosis, utilizing state-of-the-art technologies like **TensorFlow & Scikit-learn**. The mobile app is built with Flutter, while the web application is built with Django. Orchid's loosely coupled architecture allows for easy integration, making it a versatile solution to meet the specific needs of healthcare providers. The application also includes features where users can maintain their medical profile, analyse their diagnosis history, book appointments, read blogs, report bugs, and much more.