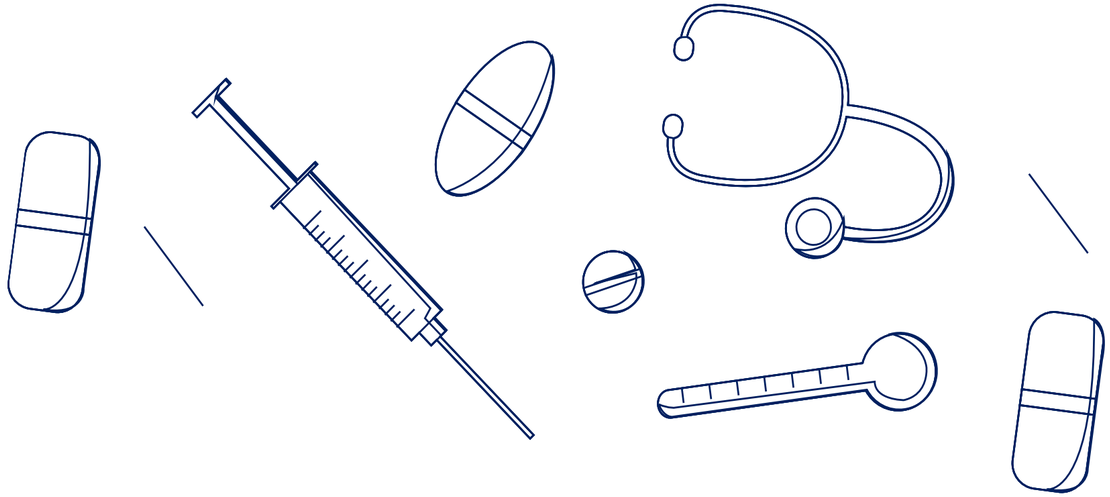
NEURONETIX EXPLORE THE FUTURE | COMPUTOPIA ACADEMY | HCODE HER CODE | AIESEC | IEEE Benha University SB

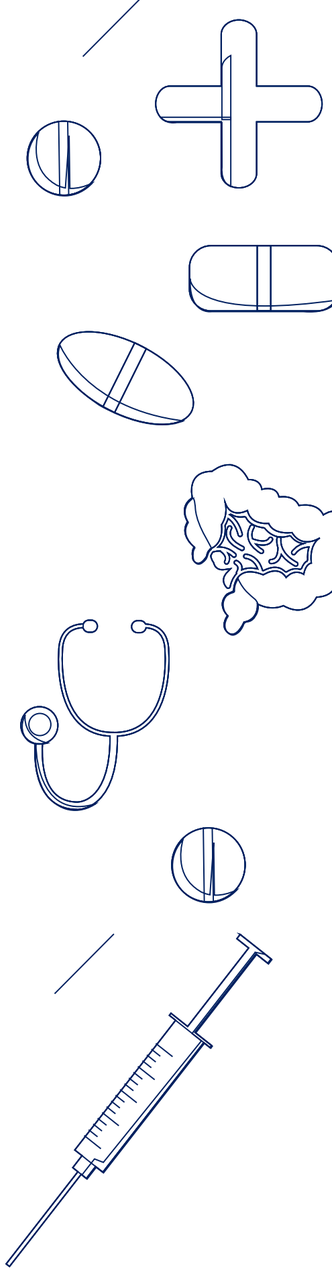


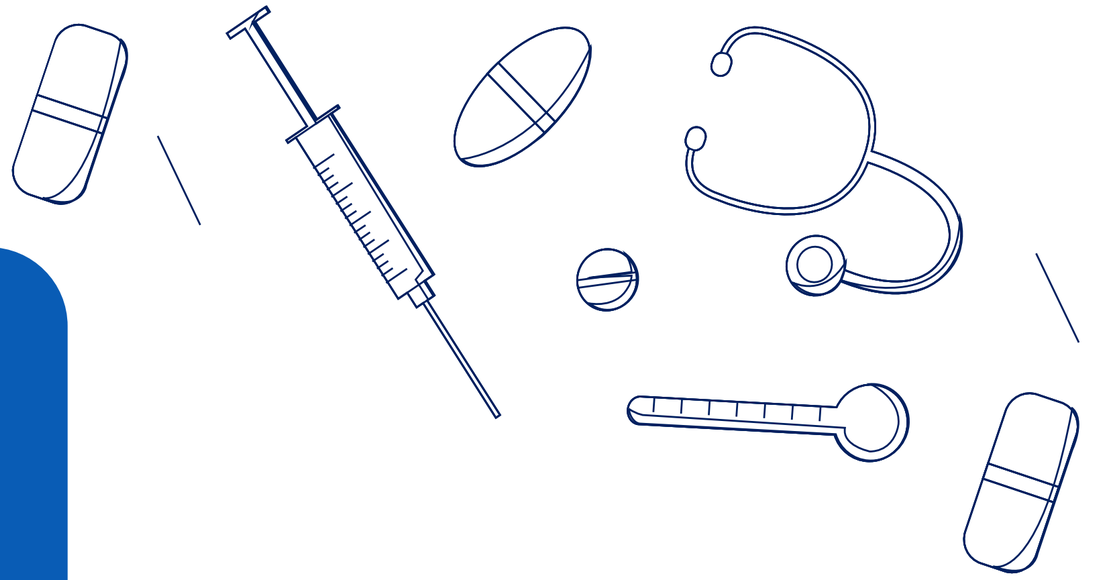
Hackathon Project

Cause of Death (1990-2019)

Agenda

1. About Us
2. Purpose of Analysis
3. Preparing for Analysis
4. Overview Analysis
5. Diseases Analysis
6. Distribution of Diseases





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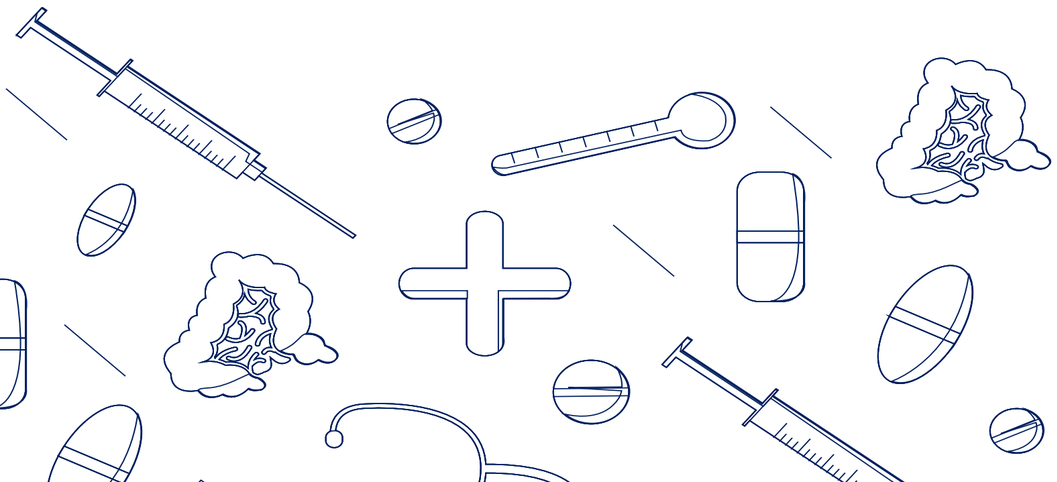
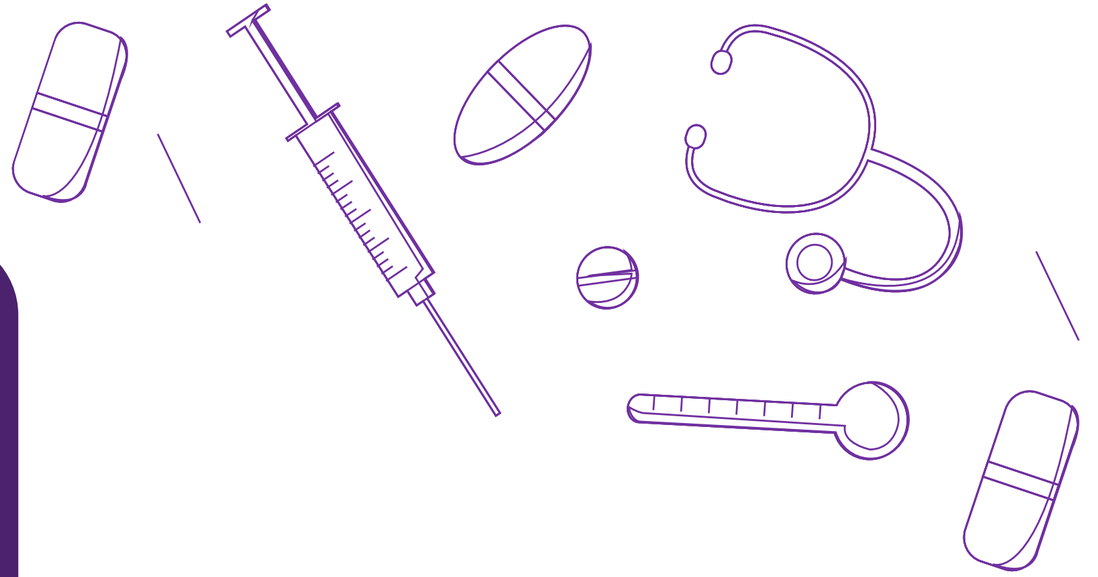
About Us



The Analysts is a professional data analytics firm, offering cutting-edge solutions to empower businesses and organizations across various industries to maximize the value of their data. We believe that data is the driving force behind informed and strategic decision-making.

The Analysts combines a team of experienced experts with advanced analytical tools to provide precise and comprehensive insights. Our solutions help clients enhance performance, boost efficiency, and achieve sustainable growth, positioning them ahead in today's competitive market.

Cause of Death (1990-2019)



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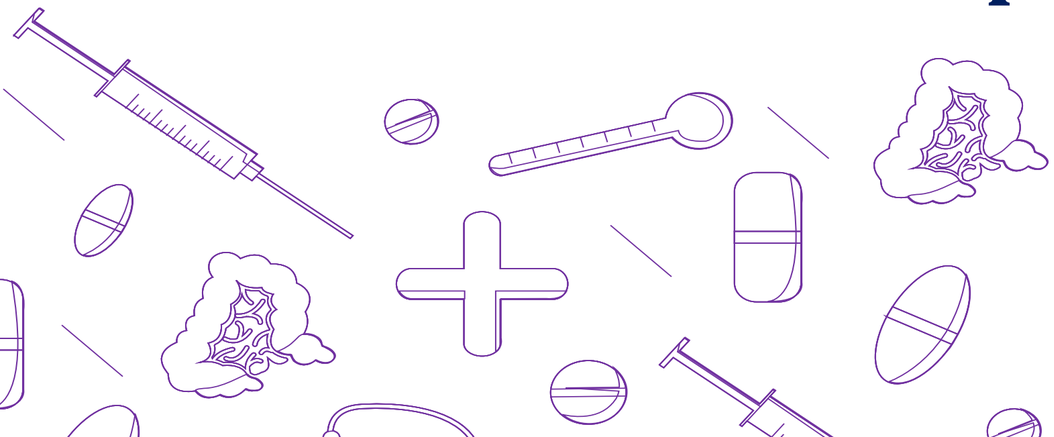
Purpose of Analysis

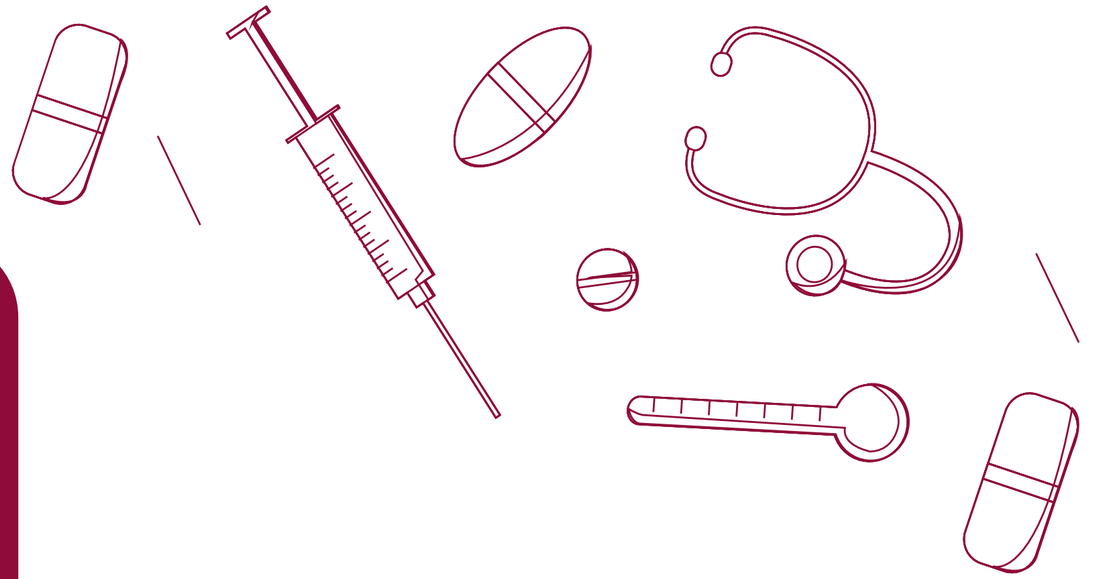


A medical team interested in the field of medical research held a meeting with **The Analysts team** and requested a comprehensive analysis of the causes of death around the world from 1990 to 2019 And answers to several questions including:

- **How are affected groups (such as children, the elderly) affected by the quality of health care?**
- **What parts of the body are most affected according to each disease?**
- **How have death rates from diseases evolved over the years in certain countries?**
- **Are there differences in the impact of diseases based on the affected group (such as age or gender) in different countries?**

Cause of Death (1990-2019)

To understand the requirements deeper, we discussed them with **Dr. Gamal** who played the role of **business analyst**, who facilitated us in **understanding the requirements between the decision makers and the data analysis team.**



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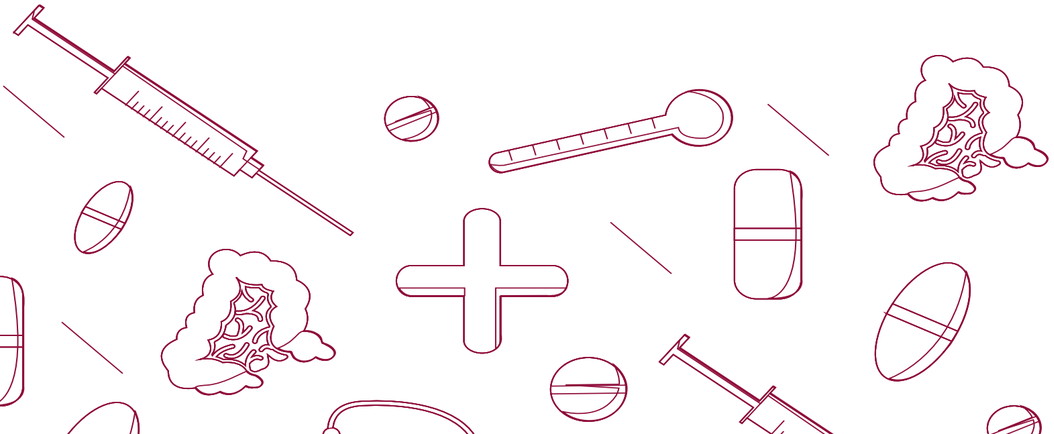
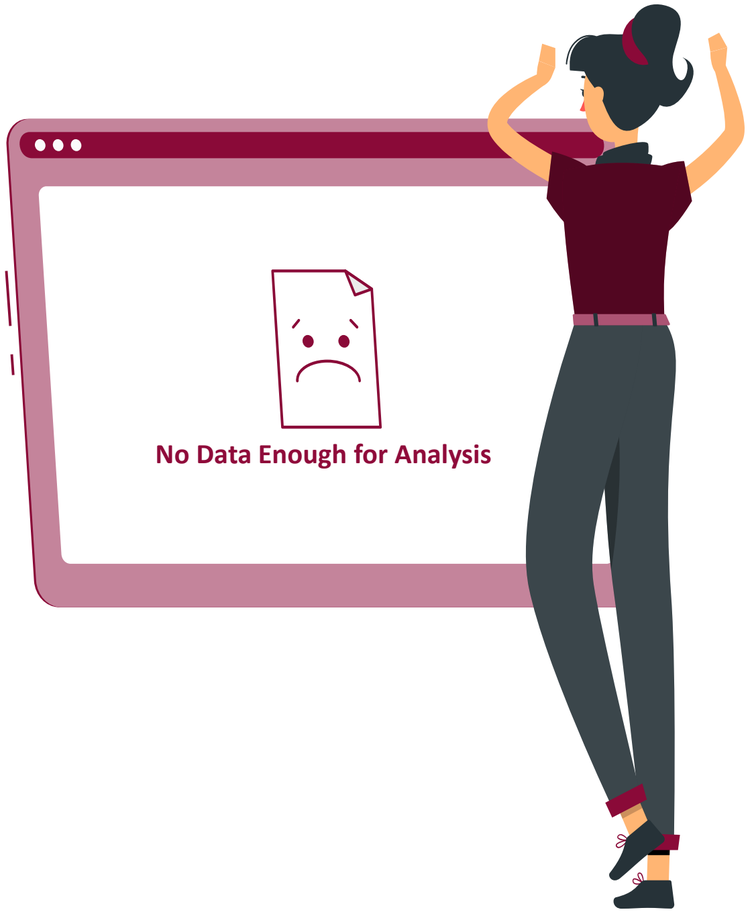
Preparing for Analysis



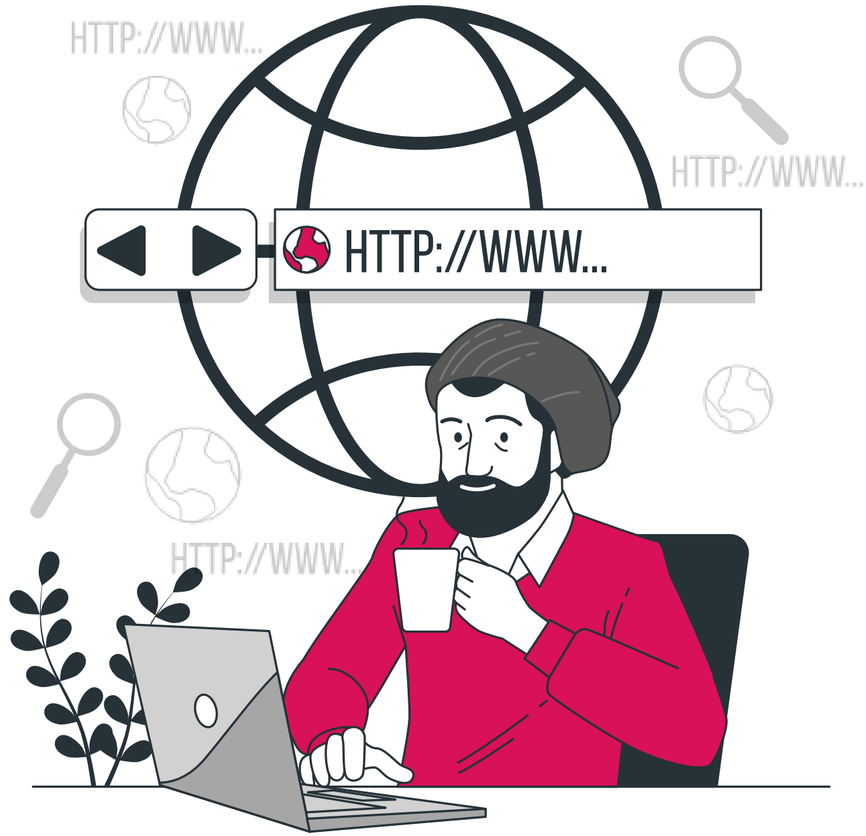
One of the problems we faced was the lack of data necessary for the analysis process and extracting important information

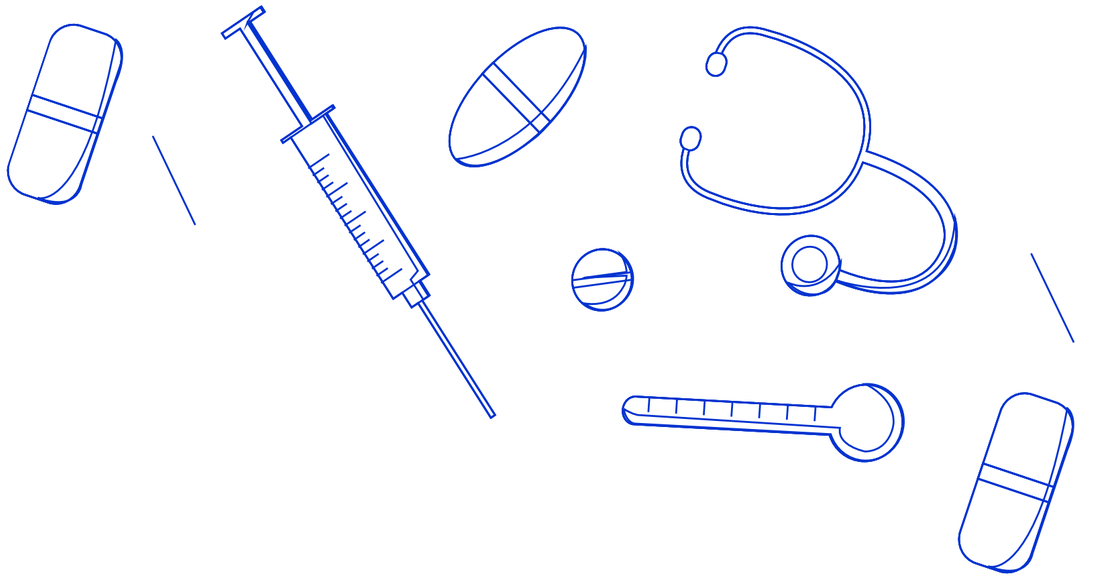


Therefore, we researched **to collect data from diverse and reliable sources to help us process and analyze data in more detail.**

And we got like

- **The Affected Body Part**
- **Treatment Likelihood**
- **Affected Groups**
- **Type of Disease**
- **Developed / Developing regions**





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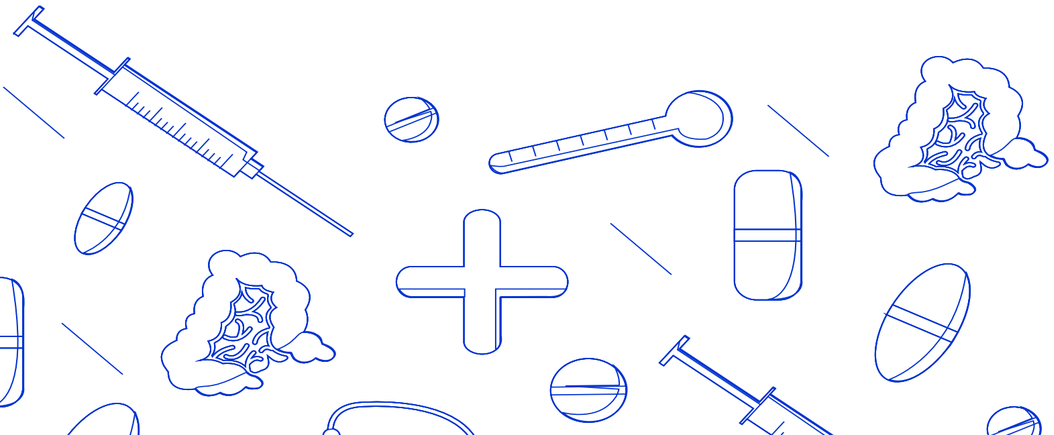
Overview Analysis



The analysis team conducted a comprehensive study on

- **203 countries**
- **covering the period from 1990 to 2019**
- **The focus was on 31 diseases and**
- **their impact across all age groups, from infants to the elderly.**

❖ After completing the data cleaning and processing stages, and ensuring data accuracy, the following findings emerged:

Cause of Death(1990-2019)

During the analysis process, the following key findings were observed:

➢ **Continuous Increase in Deaths:**

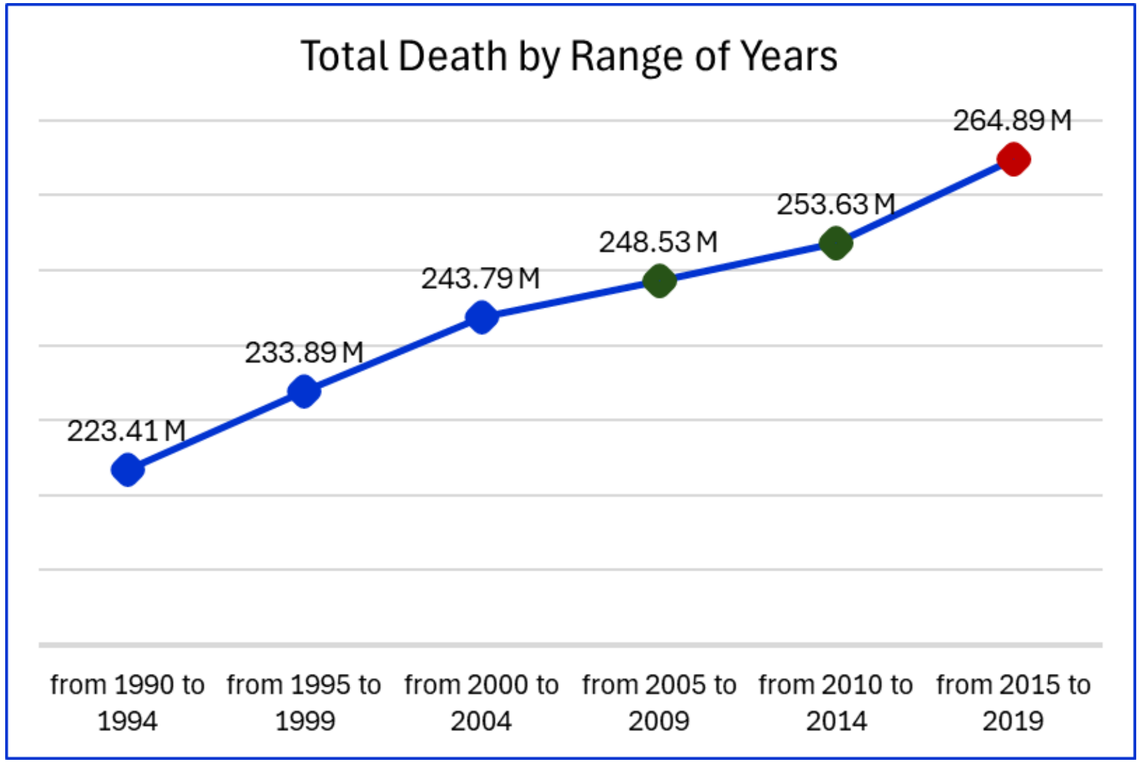
There has been a **steady rise in the total number of deaths** across the analyzed time periods. The number increased from **223.41 million in 1990-1994 to 264.89 million in 2015-2019. This consistent increase highlights a clear upward trend in mortality over the decades.**

➢ **Rate of Increase Between Periods:**

In earlier periods, such as **1990-1994 to 1995-1999**, the total number of deaths **rose by approximately 10.48 million, a significant jump.**
In later periods, like 2010-2014 to 2015-2019, the increase was around 11.26 million, indicating a continuation of the upward trend but with a slightly larger increase in recent years.

➢ **Relative Slowdown in Certain Periods:**

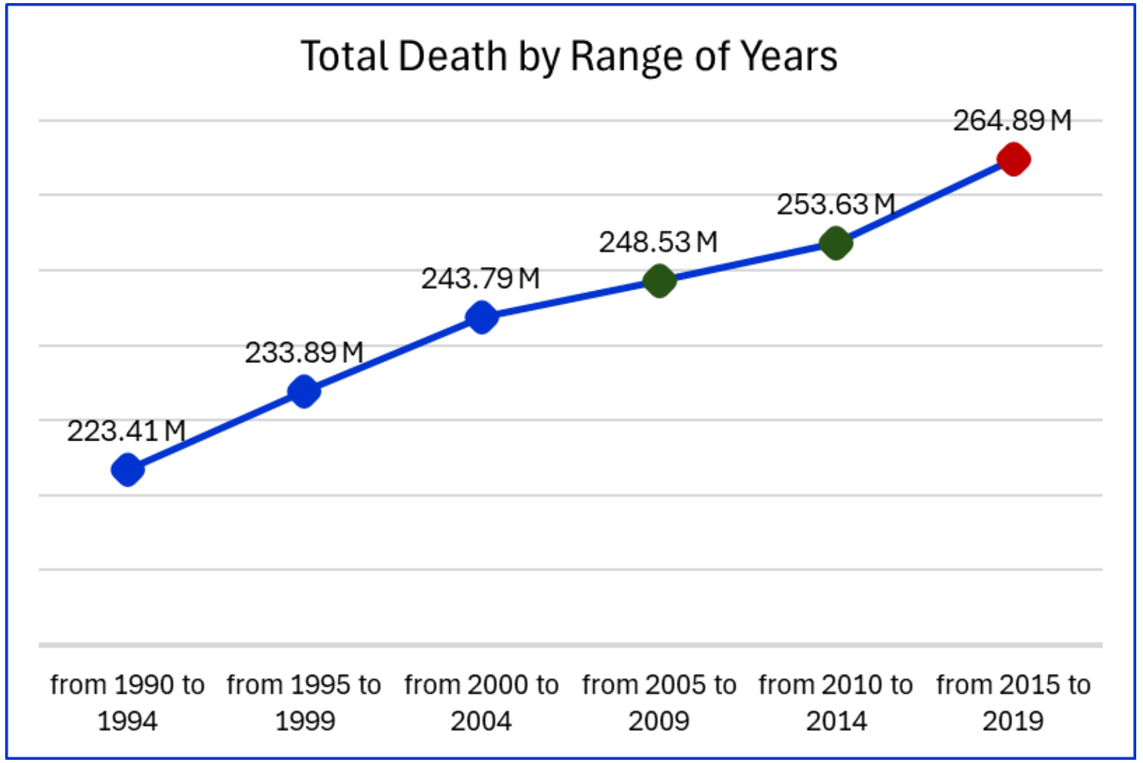
Despite the overall upward trajectory, there was a relative **slowdown in the increase of deaths during specific periods**. For instance, between **2005-2009 and 2010-2014**, the rise in deaths was approximately **5.1 million**, **which is notably smaller than the increases observed in other periods.**



During the analysis process, the following key findings were observed:

Possible Influencing Factors:

- **Population Growth**: The rising number of deaths could be linked to global population growth over the years.
- **Demographic Changes**: As the global population ages, higher death rates are expected, particularly among older age groups.
- **Shifts in Causes of Death**: These trends might reflect an increase in the spread of specific diseases, pandemics, or the broader impact of global health crises.



During the analysis process, the following key findings were observed:

Top 5 Countries

China
265,41 M

India
238,16 M

USA
71,20 M

Russia
59,59 M

Indonesia
44,05 M

During the analysis process, the following key findings were observed:

China
265,41 M

1. High Impact of Non-Communicable Diseases (NCDs):

•**Elderly**: The leading causes of death in the elderly are non-communicable diseases. Cardiovascular diseases account for **100.51 million** deaths, making it the largest contributor to mortality. This is followed by **neoplasms** (cancer) at **61.06 million** and **chronic respiratory diseases** at **36.68 million**.

2. Injury-Related Deaths Across Age Groups:

•**Adults**: Road injuries represent a significant number of deaths in adults, with **8.35 million** deaths. This highlights the need for improved road safety and traffic regulations.

•**Self-harm and violence**: There are also high mortality rates from interpersonal violence (**0.78 million**) and self-harm (**5.08 million**), suggesting underlying social or mental health issues.

•**Children and Infants**: Drowning is a major concern with **2.87 million** deaths, indicating possible safety and environmental risks for younger populations.

During the analysis process, the following key findings were observed:

India
238,16 M

- **Infectious diseases in children**: Diarrheal diseases caused 26.24 million deaths, and lower respiratory infections accounted for 16.42 million deaths, indicating an urgent need to improve healthcare for children.

- **Heart diseases in the elderly**: Heart diseases caused 52.99 million deaths, making them the leading cause of mortality in this age group and reflecting a significant burden on the healthcare system.

- **Infant mortality**: Neonatal disorders led to 20.91 million deaths, highlighting the importance of enhancing care for newborns and maternal health.

During the analysis process, the following key findings were observed:

USA
71,20 M

- **Heart Diseases:**

  Number of Deaths: **26.44 million**.
  Heart diseases are the leading cause of mortality among adults, highlighting the need for enhanced prevention and treatment efforts.

- **Cancer:**

  Number of Deaths: **18.91 million** due to neoplasms.
  This figure indicates the significant burden posed by cancer, necessitating improved early detection and treatment strategies.

- **Injuries from Accidents:**

  Number of Deaths: **1.36 million** due to road injuries and **0.60 million** due to interpersonal violence.
  These numbers emphasize the importance of enhancing public safety and implementing policies to reduce road accidents and violence.

During the analysis process, the following key findings were observed:

Russia
59,59 M

➢ Main Causes of Death:

- Cardiovascular diseases are the leading cause of death, accounting for **33.90 million**.seitilataf
- This is followed by neoplasms (cancer) with **9.08 million**.shtaed
- Diseases of the digestive system rank third with **2.40 million**.shtaed

➢ Age Groups:

- Non-communicable diseases are particularly deadly among the elderly, especially cardiovascular diseases and cancers.
- Children are significantly affected by infectious diseases, such as lower respiratory infections.
- Adults suffer from a variety of causes, including injuries and non-communicable diseases.

➢ Injuries:

- Interpersonal violence (1.22 million) and road injuries (1.07 million) are among the leading causes of injury-related deaths.

➢ Infectious Diseases:

- Lower respiratory infections are the deadliest among infectious diseases, causing **1.11 million**.shtaed
- Tuberculosis ranks second with **0.53 million**.shtaed

During the analysis process, the following key findings were observed:

Indonesia
44,05 M

➢ Main Causes of Death:

•**Cardiovascular diseases** are the leading cause of death, accounting for **13.59 million** deaths.
•**Cancers (Neoplasms)** rank second with **4.67 million** deaths.
•**Digestive diseases** and **tuberculosis** share the third position, each causing **3.20 million** deaths.

➢ Infectious Diseases:

•**Tuberculosis** is the most lethal among infectious diseases for adults, causing **3.20 million** deaths.
•**Diarrheal diseases** pose a significant threat to children, leading to **2.59 million** deaths.
•**Lower respiratory infections** result in **1.82 million** deaths among children.

➢ Non-communicable Diseases:

•In addition to cardiovascular diseases and cancers, notable diseases include **liver cirrhosis** (2.25 million) and **diabetes** (1.89 million).

➢ Injuries:

•**Road injuries** are the primary cause of deaths related to injuries, accounting for **1.33 million** deaths.

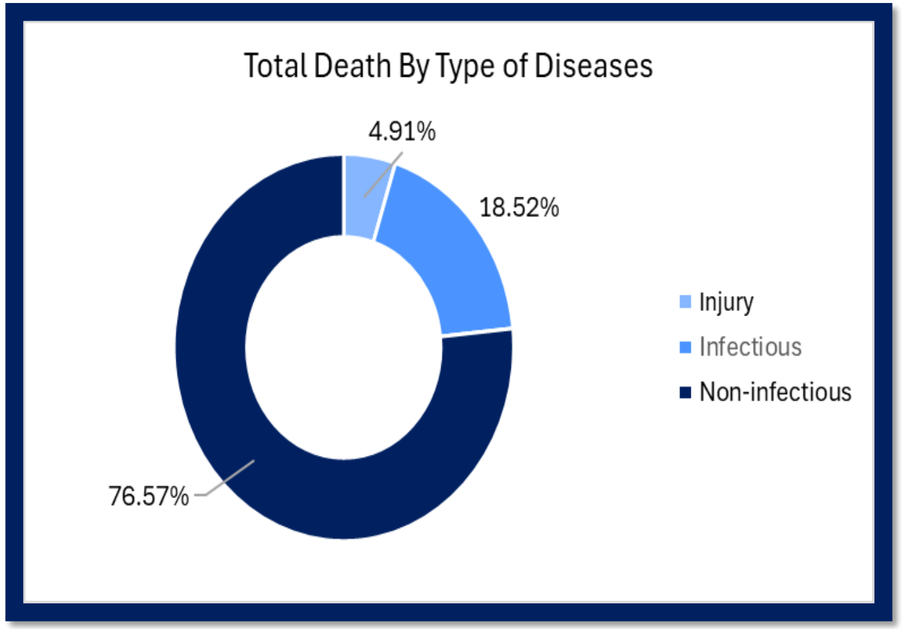
➢ Child and Maternal Health:

•**Neonatal disorders** contribute to **2.24 million** deaths.
•**Maternal disorders** lead to **0.38 million** deaths.

During the analysis process, the following key findings were observed:

Non-infectious diseases represent the highest number of deaths by a substantial margin, indicating a critical area of concern in public health. This suggests that chronic conditions, lifestyle diseases, or environmental factors play a major role in mortality rates.

- **The number of deaths from infectious diseases** is also considerable, highlighting ongoing public health challenges, especially in regions where such diseases are prevalent.
- **Injuries**, while serious, result in far fewer deaths compared to the other categories, though the impact can still be significant in specific populations or demographics.

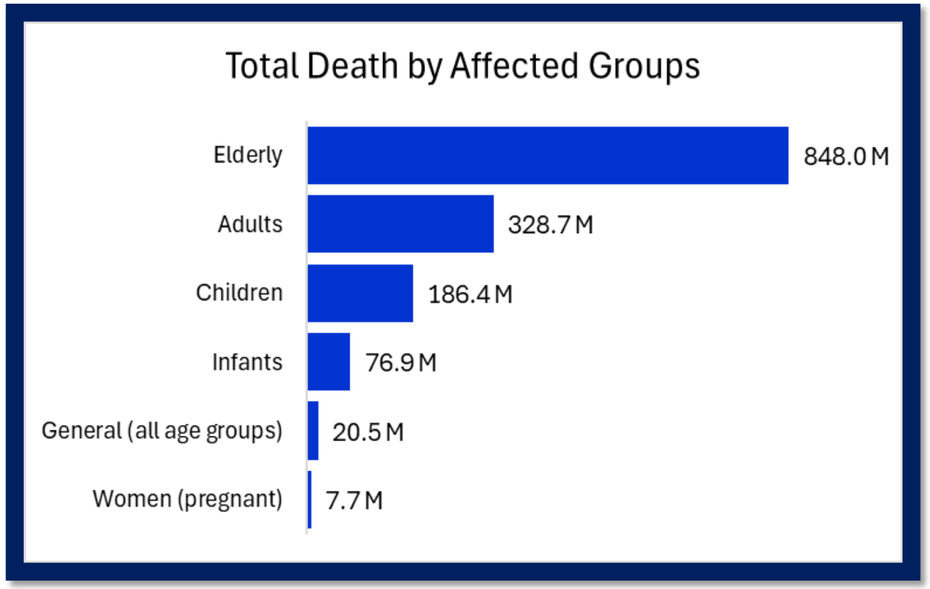


➢ Health Focus Areas:

- The data suggests a need for targeted health interventions focusing on **non-infectious diseases** to address the high mortality rate. This could include strategies for preventing chronic diseases, improving healthcare access, and promoting healthier lifestyles.
- Continued efforts to combat **infectious diseases** are also necessary, particularly in vulnerable populations, to reduce their considerable impact on mortality.
- **Injury prevention** programs should still be maintained, as they can contribute significantly to overall health outcomes, even if the death toll is lower compared to the other categories.

During the analysis process, the following key findings were observed:

- **Elderly** individuals are the most affected, accounting for **848.0 million** deaths. This large number indicates that chronic diseases associated with aging, such as cardiovascular diseases, cancer, and degenerative diseases, are the primary causes of death in this age group.
- **Adults** account for **328.7 million** deaths, a significant figure but much lower than that of the elderly. The main causes of death in this age group are likely to be injuries, accidents, non-communicable diseases such as heart disease and cancer, along with factors like smoking and alcohol addiction.
- **Children** (186.4 million) and **infants** (76.9 million) make up a large portion of mortality cases. Infectious diseases such as respiratory infections, diarrhea, and malnutrition are likely the leading causes.
- **Pregnant women** represent **7.7 million** deaths, which is lower compared to other categories, but these deaths are still significant. Causes related to pregnancy and childbirth (such as hemorrhage or infections) are likely the primary contributors.



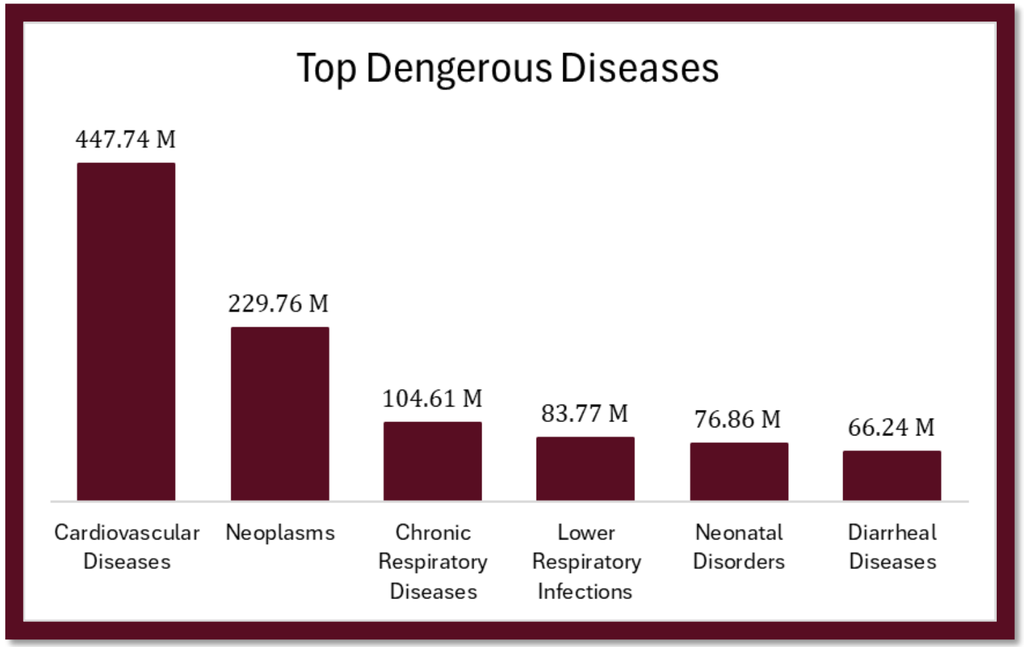
5

Diseases Analysis

Cause of Death(1990-2019)

During the analysis process, the following key findings were observed:

- **Cardiovascular diseases**: 447.74 M deaths are the top global killer, emphasizing the need for prevention through lifestyle changes like better diet and exercise.
- **Neoplasms (cancers):** 229.76 M deaths rank second, highlighting the importance of early detection, research, and treatment innovations.
- **Chronic respiratory diseases:** 104.61 M deaths point to smoking and air pollution as major health risks, underscoring the need for cleaner air.
- **Lower respiratory infections:** 83.77 M deaths , mostly affecting children and the elderly, call for improved vaccination and healthcare.
- **Neonatal disorders:** 76.86 M deaths and diarrheal diseases 66.24 M deaths stress the need for better maternal care, sanitation, and clean water access in developing regions.



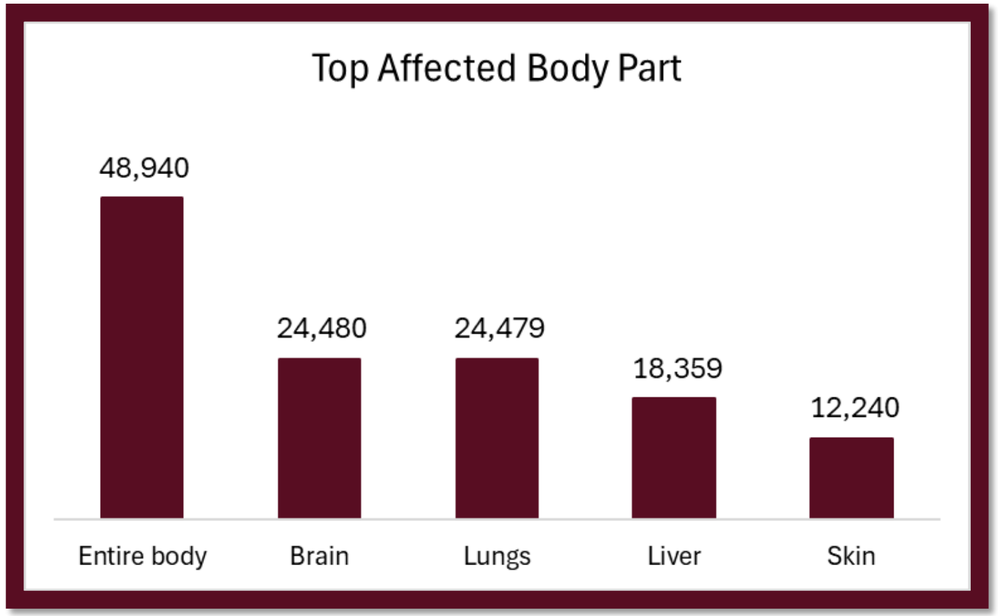
During the analysis process, the following key findings were observed:

- **High Impact on the Entire Body**: The largest number of cases (48,940) affect the entire body, indicating that systemic diseases or conditions (such as infections, autoimmune disorders, or multi-organ failures) are a significant health concern.

- **Brain and Lungs**: Both the brain (24,480) and lungs (24,479) are nearly equally affected, highlighting the critical need for attention to neurological and respiratory health. Conditions such as strokes, dementia, respiratory infections, and chronic lung diseases may be major contributors.

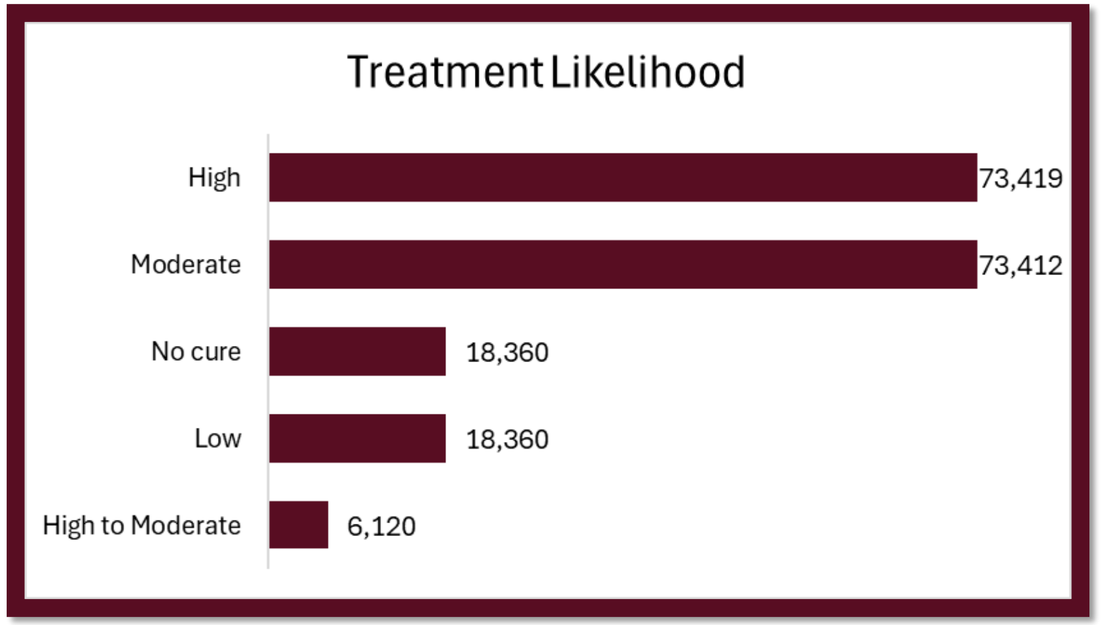
- **Liver Issues**: The liver is affected in 18,359 cases, suggesting liver diseases like cirrhosis, hepatitis, or liver failure are also significant concerns, potentially linked to alcohol use, viral infections, or metabolic conditions.

- **Skin**: With 12,240 cases, skin conditions are less common but still notable, possibly due to environmental factors, autoimmune disorders, or skin infections.



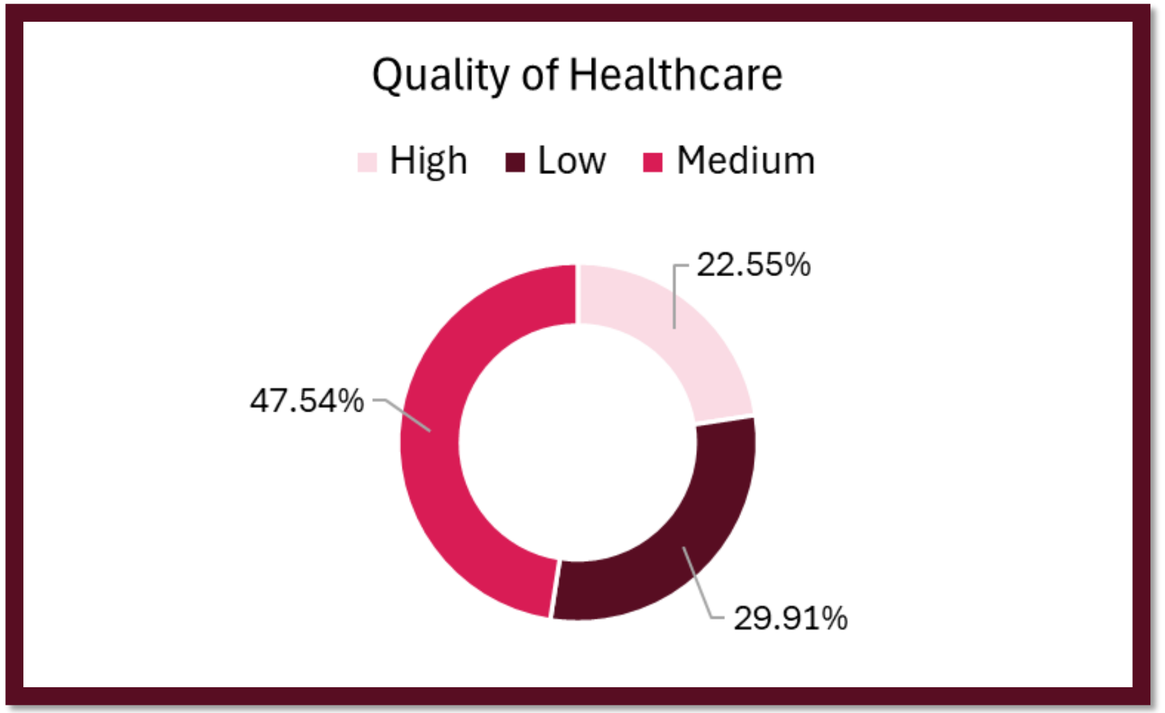
During the analysis process, the following key findings were observed:

- **High and Moderate Likelihood**: A large portion of affected individuals may benefit from effective treatments, indicating a positive outlook for many cases.
- **No Cure**: The presence of cases classified as "no cure" highlights the urgent need for research and management strategies for these conditions.
- **Low Treatment Likelihood**: Some cases are difficult to treat, suggesting a need for additional resources and alternative care options.
- **High to Moderate Likelihood**: This category shows variability in treatment outcomes, emphasizing the importance of personalized medicine.



During the analysis process, the following key findings were observed:

- **Medium Quality (47.54%)**: Almost half of the healthcare cases are rated as medium quality. This indicates that while many patients receive adequate care, there is significant room for improvement in service delivery and outcomes.
- **Low Quality (29.91%)**: A substantial portion of healthcare cases fall into the low-quality category. This raises concerns about the effectiveness and accessibility of healthcare services, suggesting the need for immediate interventions to enhance patient care and safety.
- **High Quality (22.55%)**: Although this group represents the smallest percentage, it highlights that a significant number of patients do receive high-quality care. This could be attributed to well-resourced facilities or effective healthcare practices.



The Analysts

Your Data Speaks

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Thanks for Watching