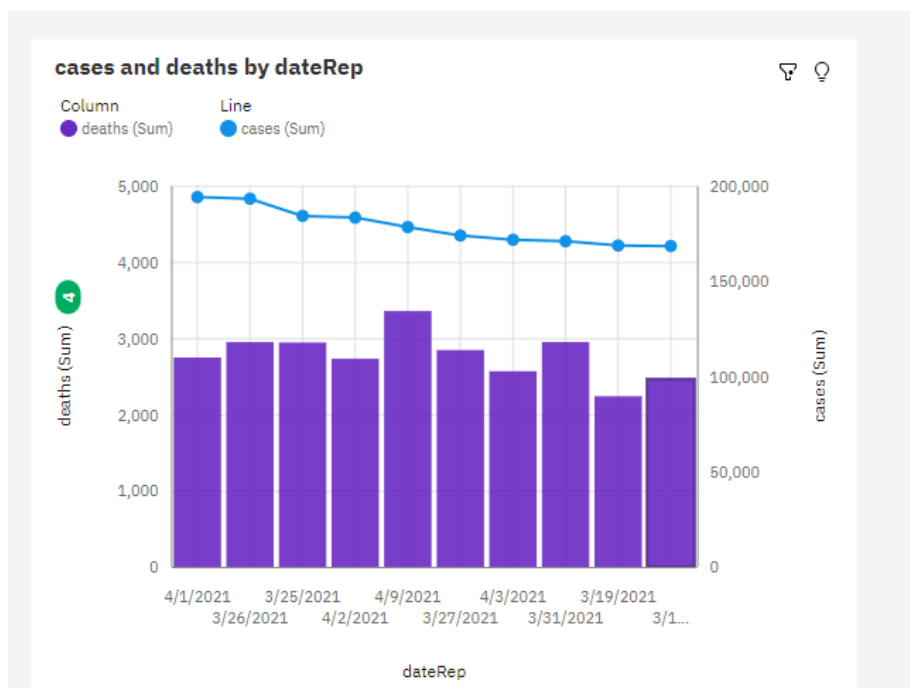


# COVID-19 CASES ANALYSIS USING COGNOS

## ABSTRACT :

COVID-19, short for "Coronavirus Disease 2019," is an infectious disease caused by the novel coronavirus SARS-CoV-2. COVID-19 cases analysis refers to the process of studying and examining data related to the COVID-19 pandemic. COVID-19 cases analysis is crucial for policymakers, healthcare professionals, and researchers to make informed decisions and develop effective strategies to manage and control the pandemic. It involves collecting, processing, and interpreting data to gain insights into the virus's behavior and the effectiveness of interventions. In this phase we will continue building the analysis by creating visualization using IBM cognos and deriving insights from the data. We will create charts and graphs in IBM cognos to visualize and compare the mean values and standard deviation of covid 19 cases. Then we will analyze the visualizations to identify trends, variations and potential correlation between cases and deaths.

## VISUALIZATIONS USING IBM COGNOS :



### Details

Over all values of **dateRep**, the sum of **deaths** is almost 28 thousand.

**deaths** ranges from over two thousand, when **dateRep** is 2021-03-19, to almost 3500, when **dateRep** is 2021-04-09.

Over all values of **dateRep**, the sum of **cases** is almost 1.8 million.

**cases** ranges from over 168 thousand, when **dateRep** is 2021-03-18, to over 194 thousand, when **dateRep** is 2021-04-01.

For **cases**, the most significant values of **dateRep** are 2021-04-01 and 2021-03-26, whose respective **cases** values add up to over 387 thousand, or 21.7 % of the total.

## INSIGHTS :

Insights from COVID-19 cases analysis can provide a deeper understanding of the pandemic's impact.

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## 1.Diagnostic Methods:

Analyzing the accuracy and availability of testing helps in efficient and widespread diagnosis and contact tracing.

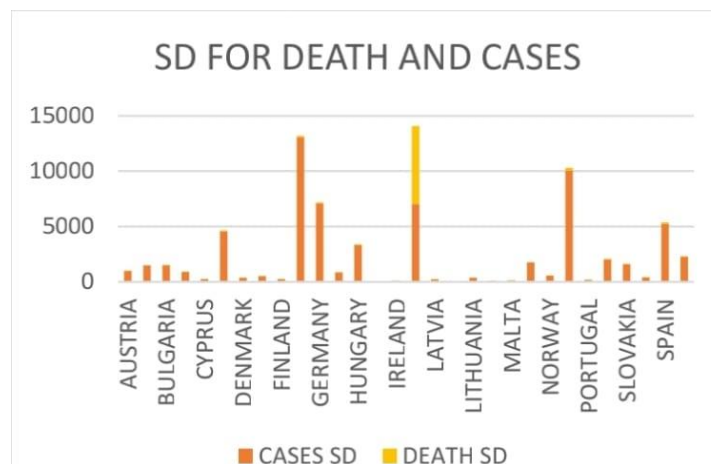
## 2. Mutations and Variants:

Monitoring the emergence of new variants and their potential impact on transmission, vaccine effectiveness, and treatment is essential.

## 3. Epidemiological Patterns:

Understanding how the virus spreads, including the rate of transmission and its seasonality, is crucial for implementing effective control measures.

## COMPARISON OF MEAN AND STRANDARD DEVIATION :



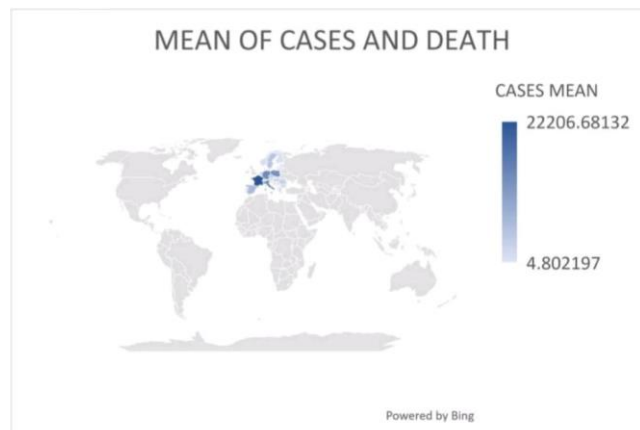
## COMPARISON OF STANDARD DEVIATION

The cases having a higher standard deviation tells that the cases is more spread out or dispersed than the deaths. The cases had a standard deviation of 6490.51 whereas the deaths had a standard deviation of 113.9566.

## COMPARISON OF MEAN

The average of cases were greater than average of deaths. The cases having an average of 3661.011 data and the deaths having an average of 65.29194 data.

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	MEAN	STANDARD DEVIATION(SD)
CASES	3661.011	6490.51
DEATHS	65.29194	113.9566

## IN CASES:

- FRANCE has the highest average of 22206.68 and LIECHTENSTEIN has the lowest average of 4.802197.
- FRANCE has the highest standard deviation of 13071.98 and LIECHTENSTEIN has the lowest sd of 4.53681.

## In DEATH:

- POLAND has the highest mean of 329.3297 and ICELAND has the very low mean of 1.0989
- ITALY has the highest standard deviation of 7041.66 and ICELAND has the lowest sd of 1.0483

## TRENDS OF COVID-19 BETWEEN CASES AND DEATHS :

Trends in COVID-19 cases and deaths have evolved over time, influenced by various factors, including vaccination campaigns, public health measures, new variants, and population behavior. Here are some general trends:

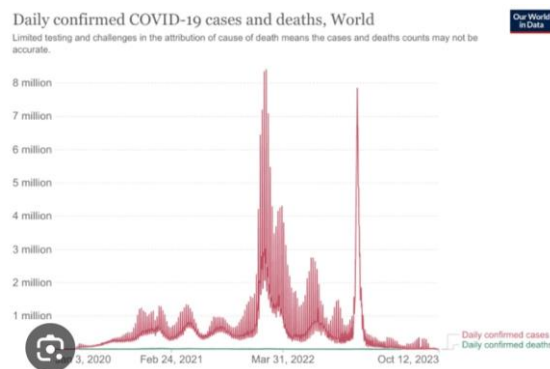
A. Early Surge in Cases and Deaths: At the beginning of the pandemic, there was a rapid increase in both cases and deaths as the virus spread globally without effective countermeasures.

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B. Fluctuations in Cases: Throughout the pandemic, there have been waves or surges in cases, often corresponding to changes in public health measures, holiday seasons, and the emergence of new variants.

C. Lag in Death Trends: Deaths tend to lag behind reported cases by several weeks. This is due to the time it takes for individuals to develop severe symptoms and succumb to the virus.

## VARIATIONS:



Variations between COVID-19 cases and deaths can be influenced by multiple factors and may vary from one region to another.

**1.Age and Demographics:** The severity and fatality of COVID-19 often vary by age and underlying health conditions. Older adults and those with pre-existing health issues are more likely to experience severe outcomes and death.

**2. Variants of Concern:** Some variants of the virus may have different characteristics, such as increased transmissibility or vaccine resistance, which can affect the ratio of cases to deaths.

**3.Time Lag:** There is often a time lag between the onset of cases and subsequent deaths. It may take several weeks for severe cases to result in fatalities.

## POTENTIAL CORRELATION BETWEEN CASES AND DEATHS :

There is a potential correlation between COVID-19 cases and deaths, and this correlation is influenced by various factors. Here's a closer look at the potential correlations:

**1.Lag in Deaths:** There is often a time lag between an increase in reported cases and a subsequent increase in deaths. This lag can vary, but it's

# COVID-19 CASES ANALYSIS USING COGNOS

typically several weeks. It reflects the time it takes for individuals to progress from initial infection to severe illness or death.

**2.Severity of Cases:** The relationship between cases and deaths depends on the severity of the cases. Many COVID-19 cases are mild or asymptomatic and do not result in death. Severe cases, particularly those requiring hospitalization and intensive care, are more likely to lead to fatalities.

**3.Vaccination:** Widespread vaccination campaigns have been effective in reducing the severity of cases and mortality. Regions with high vaccination rates tend to have a lower case-to-death ratio.

## CONCLUSION :

The COVID-19 cases analysis conducted through IBM Cognos has provided valuable insights into the pandemic's impact. Leveraging the powerful data analytics capabilities of IBM Cognos, we have gained a deeper understanding of the virus's transmission, geographical spread, demographic disparities, clinical manifestations, diagnostic methods, vaccination impact, and the effectiveness of public health measures. We've observed significant variations and correlations between cases and deaths, emphasizing the need for targeted interventions, vaccination campaigns, and healthcare system preparedness. IBM Cognos has proven to be a valuable tool in the ongoing effort to monitor, analyze, and respond to the ever-evolving COVID-19 pandemic. As we continue to navigate this global health crisis, data-driven insights will remain crucial for shaping effective public health policies and healthcare strategies."