Chapter 14
Designing a Real-Time Dashboard for Pandemic Management: COVID-19 Using Qlik Sense

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ABSTRACT

COVID-19 is very dynamic in nature, and it is varying drastically with time, and this requires continuous monitoring of the situation for better resource management during the pandemic such as medical facilities and daily necessities. The situation needs to be evaluated on a regular interval by all the stakeholders such as all the government officials for making strategic decisions such as lockdown or lifting lockdown in a phase-wise manner. In order to manage pandemics such as COVID-19, the administration needs to know statistical information, trends, forecasting, and overall aggregated real-time information, and this can be achieved through a well-designed dashboard. A dashboard is used for efficient monitoring of continuously evolving situations, and it provides an overall picture in addition to historical information. This chapter proposes a real-time dashboard design for COVID-19, and it will provide insight about different elements such as design and application of the dashboard in pandemic management.

COVID -19 OUTBREAK

Covid-19 stands for Coronavirus diseases. “Co” stands for Corona, “Vi” stands for virus, “d” stands for diseases and “19” stands for 2019 because the first case was confirmed in 2019. Talking of the first case, it was identified in Wuhan, Hubei, China in December 2019. Initially also referred to as “Wuhan Coronavirus”. SARS-Cov-2 (Severe accurate respiratory syndrome coronavirus 2) was the official name given by WHO (World Health Organization) on February 11, 2020. It is believed to be an animal origin disease. The first identified patient was named as “Patient Zero”.

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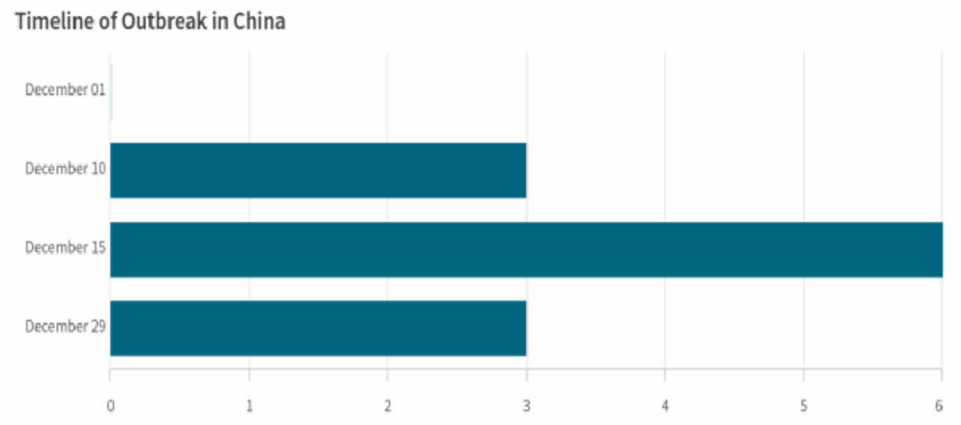
From China it travelled to several countries and reached India on January 30 through a student from Wuhan in Kerala. The first three cases identified in India were all through students who returned from Wuhan and all the three cases were in Kerala only. The fourth case was identified in Delhi and the patient had returned from Italy. Similarly, the fifth case was identified in Hyderabad with a travelling history from UAE (United Arab Emirates). The sixth and the seventh both cases were identified in Jaipur, Rajasthan and both were with a travelling history from Italy. And from there it started spreading all across the nation.

SARS-CoV-2 originated in bats and is also responsible for MERS (Middle East respiratory syndrome) and SARS (Severe accurate respiratory syndrome). Coronavirus was first identified in humans in 1965. It was named Coronavirus after its crown-like appearance. SARS first emerged in Southern China in 2002 and MERS started in Saudi Arabia in 2012 According to "COVID-19 pandemic in India"(2021).

Coronavirus has mutated over time. Alpha was found in late 2020 in Southern England and USA. These mutations make the virus 70% more transmissible. The mutation was on the spike protein and the COVID-19 targeted this spike protein mutation. Beta was found in South Africa and Nigeria. It spreads more easily but worsens the illness. Gamma, Founded in January 2021. It travelled from Brazil to Japan and by the end of the month reached the USA. It is more contagious than the earlier strains. Infected people who have already had COVID-19. Delta, It was spotted in India in December 2020. The surge in the second wave in mid April 2021 was caused because of this mutation. Currently found in 43 countries including the USA, UK, Singapore, Australia etc. Earlier mutations were mostly in aged people but this mutation was causing more in young people According to "Variants of Coronavirus"(2021).

Figure 1.



GROWTH OF COVID-19 FROM ORIGIN TO 1ST LOCKDOWN

Covid-19 originated from China and the first case of the Covid-19 in India was found on January 30, 2020. After that the cases increased day by day at a rapid speed. This increment has affected us so badly because there wasn't any remedy to stop it. Every sector was affected badly by it, the most affected were the lives of people who relied on daily wages. At the initial stages no one really thought it would be out of our hands to control that we will have to declare a nationwide lockdown.