The role of information dashboards as a business intelligence tool for managing the Corona virus pandemic

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**A B S T R A C T**

Information dashboards were one of the best ways to manage Covid-19 disease. The concept of information dashboards and their important benefits are explained in the present study.

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DEAR EDITOR

As one of the most terrible public health crises over the past hundred years, Coronavirus 2019's (COVID-19) outbreak has challenged healthcare organizations to use resources most efficiently and provide patients with healthcare services according to the latest treatment protocols [1]. Given that each new crisis are an opportunity for improving the previous processes, healthcare organization managers must follow a procedure that makes it possible to collect the required data such as the prevalence of the disease, mortality rate, and preventive measures to respond to the crisis easily and in the shortest time possible [2]. Traditional methods of data collection in organizations were inadequate to manage and fight against COVID-19, and new methods, as well as modern and cost-effective technologies with the smallest need for human and technical resources, had to be used for a timely response. Hence, various countries (such as Canada and England) employed specific initiatives to develop accurate reports and visualize the number of patients and those suspected of COVID-19 infection aiming to give timely responses to this disease [3, 4]. Using information dashboards at international, national, and state levels was among these initiatives. An information dashboard is an interactive management tool and a graphical interface used to monitor the most significant performance indicators online or near real-time [5]. Dashboards developed for monitoring COVID-19 infection provide us with a set of data used to manage the COVID-19 pandemic [6]. For instance, WHO's COVID-19 dashboard indicates official daily frequency of COVID-19 cases and deaths in various countries [7]. The Dutch Ministry of Health, Welfare, and Sport has also developed a COVID-19 dashboard. This dashboard contains updated information on COVID-19 management measures such as intensive care,
vaccination, hospitals, definite cases, mortalities, and nursing homes [6]. Dixit et al. developed a visualize dashboard to improve knowledge on innovations in the field of remote visiting for COVID-19 diagnosis [8]. The Department of Neurology at Columbia University designed a dashboard to facilitate neurology service provision during the pandemic [9]. As a business intelligence tool in social, clinical, and research areas, dashboards ended up assisting countries and healthcare organizations in COVID-19 pandemic management through the following capabilities:

1. Immediate identification of COVID-19 epidemic clusters and patterns, and demonstration of the real time and place of the epidemics that enabled the managers to make informed decisions for improving the healthcare system during epidemic crises such as in the case of COVID-19.

2. Timely access to robust and accurate laboratory and clinical epidemiological data that facilitate the detection of COVID-19 outbreaks, modeling efforts, and preventive measures during the outbreak.

3. Control and evaluation of various geographic areas’ demands from the healthcare systems due to socio-economic and demographic inequalities in the areas, which helped resource and capacity redistribution of hospitals and care prioritization, and resulted in the fair distribution of healthcare resources.

4. Visualization of disease prevalence, real time data on mortality and infection cases, disease’s evolution over time, and prediction of its future behavior, which helped policymakers in preparing and making decisions for better healthcare, identification of high-risk areas for testing, and more aggressive tracking of the infection to quarantine, reduce transmission, and fight the social crises caused by the disease.

5. Monitoring the implementation of preventive measures in metropolises with limited access to resources so that policymakers visualized the risk of gatherings of various sizes and reconsidered the type of some events being held, holding them online and in a safer context.

6. Raising community awareness to support national preventive measures, so that people would be encouraged to take more preventive measures against infection such as social distancing, washing hands, and wearing masks after receiving real information regarding the risks of the disease in real-time.

7. The dashboard shows a list of hashtags related to the illegal sales of personal protection products and drugs during the Coronavirus pandemic and prevents illegal activities in social media such as illegal sales posts and visualize their location. It raises consumers' awareness and helps create a safe online environment by recording the images of suspected products and displaying them.

8. The aggregation of results from conducted clinical trials in dashboards can help researchers and doctors use such evidence-based results for effective treatment of the disease.

9. Considering that COVID-19 is an infective and contagious disease, clinical dashboards protect healthcare service providers against the disease by helping doctors review the clinical symptoms and vital signs recorded by the patients and take the necessary treatment measures without in-person encounters with the patients.

CONCLUSION

By timely access to data on COVID-19 prevalence during the crisis, officials can review the capacities of healthcare centers and make accurate predictions which helps them manage the resources available in healthcare centers accurately and give accurate and correct responses to new demands made by these centers. Therefore, accurate design of this decision-making tool according to key indicators enables policymakers to make decisions in the shortest time and contribute to global transparency in responding to the COVID-19 pandemic by real-time accountability and policymaking.

AUTHOR’S CONTRIBUTION

All authors contributed to read and approved the final manuscript.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding the publication of this study.

FINANCIAL DISCLOSURE

No financial interests related to the material of this manuscript have been declared.
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