

## Executive Summary

The COVID-19 pandemic has put immense pressure on healthcare systems worldwide. It has disrupted the functioning of our societies and has affected several million people. The rapid spread of the virus caused a sharp rise in COVID cases and within the first three months, hospitals were struggling to meet the surge in demand. The rising demand also shifted the focus towards treating patients with COVID, overshadowing the suffering of non-COVID patients. Hospital closures, conversion to COVID exclusive facilities, fear of contracting COVID, lockdown measures and lack of resources were some of the main reasons for the neglect of non-COVID patients.

The main purpose of this project is to study Canada's healthcare infrastructure and understand the reason for its collapse during the COVID-19 pandemic. Factors such as ICU utilization, appointment scheduling, ventilator capacity and availability of inpatient and outpatient facilities in Ontario, British Columbia and Quebec were studied to identify the shortcomings of the Canadian healthcare system. Furthermore, findings from countries such as the United Kingdom, India and Singapore were used to understand where Canada's health system stands. Results from the analysis suggest that there is a need for clearing up non-COVID patient queues and optimization of auxiliary processes.

The following recommendations for healthcare and hospital executives are described within this report: electronic ICUs, proactive patient care, flexible layout designs, designated quarantine facilities, healthcare engineering solutions, and identifying and managing staffing bottlenecks. The implementation of these recommendations could help to clear waitlists, avoid future bottlenecks, and relieve the pressure on our healthcare systems.

In conclusion, many lessons were learned in completing this report. It is important for healthcare and hospital executives to learn from the various interventions taken in response to the pandemic and implement solutions that will better prepare hospitals for a future pandemic or other difficult capacity-straining scenarios. For operations management (OM) professionals reading this report, it is important to recognize the complexity of hospital environments and processes. Hospitals require a sociotechnical approach when considering their design and potential OM solutions.