

## **Abstract**

The COVID-19 pandemic has significantly impacted healthcare supply chains worldwide, exposing vulnerabilities and testing their resilience. This mixed-methods study examines the disruptions caused by the pandemic and the strategies employed to maintain supply chain continuity in healthcare systems. By combining quantitative analysis of supply chain performance data with qualitative interviews from healthcare supply chain managers, this research offers a comprehensive understanding of the pandemic's effects on healthcare logistics and the resilience strategies employed to mitigate these challenges.

The quantitative analysis evaluates key performance indicators such as supply shortages, delivery times, and inventory levels before and during the pandemic. Findings reveal substantial disruptions in the supply chain, particularly in the availability of critical medical supplies like personal protective equipment (PPE) and ventilators. However, healthcare organizations that implemented adaptive strategies, such as diversifying suppliers and increasing stockpiles, were better positioned to maintain continuity in care.

Qualitative interviews with supply chain managers and healthcare providers provide additional insights into the strategies used to navigate disruptions. Participants highlight the importance of flexibility, collaboration, and real-time data sharing in enhancing supply chain resilience. This study concludes by recommending strategies for strengthening healthcare supply chains, such as improving forecasting methods, investing in digital tools, and fostering collaboration across sectors to better prepare for future global health crises.