

Enhancing Operational Efficiency and Patient Care at Johns Hopkins Aramco Healthcare through a Business Intelligence Framework

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Abstract : Johns Hopkins Aramco Healthcare (JAHA), a joint venture between Saudi Aramco and Johns Hopkins Medicine, delivers comprehensive healthcare services to a diverse patient population. Despite achieving high patient satisfaction rates and surpassing several operational targets, JAHA faces challenges such as appointment delays and resource inefficiencies. These issues highlight the need for an advanced, integrated approach to operational management. This paper proposes a Business Intelligence (BI) framework to address these challenges, leveraging tools such as Epic electronic health records and Tableau dashboards. The framework focuses on data integration, real-time monitoring, and predictive analytics to streamline operations and enhance decision-making. Key outcomes include reduced wait times (e.g., a 23% reduction in specialty clinic wait times) and improved operating room efficiency (from 95.83% to 98% completion rates). These advancements align with JAHA's strategic objectives of optimizing resource utilization and delivering superior patient care. The findings underscore the transformative potential of BI in healthcare, enabling a shift from reactive to proactive operations management. The success of this implementation lays the foundation for future innovations, including machine learning models for more precise demand forecasting and resource allocation.

Keywords : business intelligence, operational efficiency, healthcare management, predictive analytics, patient care improvement, data integration, real-time monitoring, resource optimization, Johns Hopkins Aramco Healthcare, electronic health records, Tableau dashboards, predictive modeling, efficiency metrics, resource utilization, patient satisfaction

Conference Title : ICMHS 2024 : International Conference on Medical and Health Sciences

Conference Location : Dubai, United Arab Emirates

Conference Dates : December 23-24, 2024