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abstract

Improving Pediatric Oncology Services with Virtual Bed Management: A FOCUS-PDSA Initiative

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Improving Pediatric Oncology Services with Virtual Bed Management: A FOCUS-PDSA Initiative

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Introduction: Childhood cancer poses a significant healthcare challenge in Pakistan. In 2021, the Indus Hospital and Health Network (IHHN) collaborated with the Baluchistan government to establish a shared-care pediatric oncology unit (POU) in Quetta, improving access to cancer care. However, limited bed capacity (seven beds) and high patient volume led to daycare delays, negatively affecting patient care. To address this, a quality improvement initiative was implemented to streamline patient flow and reduce delays by integrating virtual bed management into the hospital management information system (HMIS).

Methodology: We utilized the FOCUS-PDSA (Find, Organize, Clarify, Understand, Select—Plan, Do, Study, Act) quality improvement model. The identified problem (F) was limited bed capacity. A multidisciplinary team was organized (O) to clarify the issue (C) and analyze its root causes (U). The selected solution (S) increased virtual beds in the HMIS from 7 to 14, enabling virtual admissions while patients waited. This solution allowed advanced preparation of chemotherapy, antibiotics, and transfusions, ensuring immediate treatment when physical beds became available. The intervention was planned (P), implemented (D), and its impact studied (S) by comparing data from January 2024 (pre-intervention) with June 2024 (post-intervention). Adjustments were made based on the findings (A).

Results: The initiative significantly reduced waiting times. In January 2024 (pre-intervention), 11% of patients received treatment within 2 hours, 60% waited 4–6 hours, and 11% faced delays over 6 hours. These gains occurred despite a 25% rise in patient volume.

Conclusion: This resource-efficient approach, requiring no additional infrastructure, significantly reduced patient waiting times. It demonstrated the effectiveness of virtual bed management in LMICs, improving patient access and outcomes.