

Innovative Models of Care Delivery in a Small Hospital Setting

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INTRODUCTION

- Healthcare is rapidly transforming due to advancements in technology, evolving patient demographics, and increased demand for high-quality, cost-effective care.
- Small hospitals, crucial for rural and underserved populations, face unique challenges such as limited resources, workforce shortages, and restricted access to specialized care.
- Addressing these challenges is vital for enhancing care quality, operational efficiency, and financial sustainability. This research explores innovative care delivery models tailored for small hospitals, using Prem Niketan Hospital as a case study.

Purpose of the Research

- The core purpose of the study is to innovate and analyse models of care delivery tailored to suit a small hospital setup. The rationale of such research studies in general is to find an effective strategy to improve patient care, operational efficiency, and the financial bottom line of small hospitals

Research question

1. What are the most effective innovative models of care delivery for small hospitals?
2. How do these models impact patient outcomes and operational efficiency at Prem Niketan Hospital?

Objective

- To establish new models of care delivery currently being implemented in other small hospitals.
- To examine how models increase patient footfall, quality of care, operational efficiency, and financial performance.

Review of Literature

1. Hoffer-Hawlik MA, Moran AE, Burka D, Kaur P, Cai J, Frieden TR, Gupta R

Title: Leveraging Telemedicine for Chronic Disease Management in Low- and Middle-Income Countries During Covid-19

Description: This study highlights how LMICs have used telemedicine to sustain essential health services, particularly for chronic diseases, during the Covid-19 pandemic. It emphasizes the need for training, digital literacy, and supportive government regulations to ensure continued care and reduce healthcare disparities.

2. John JR, Jani H, Peters K, Agho K, Tannous WK

Title: The Effectiveness of Patient-Centred Medical Home-Based Models of Care versus Standard Primary Care in Chronic Disease Management: A Systematic Review and Meta-Analysis of Randomised and Non-Randomised Controlled Trials

Description: This systematic review and meta-analysis found that patient-centered medical home (PCMH) models significantly improve health outcomes in chronic disease management compared to standard GP care. The study underscores the need for integrated, patient-focused care teams and highlights the advantages of PCMH in clinical practice and health policy.

3. Kumar, D

Title: India's Rural Healthcare Systems: Structural Modeling

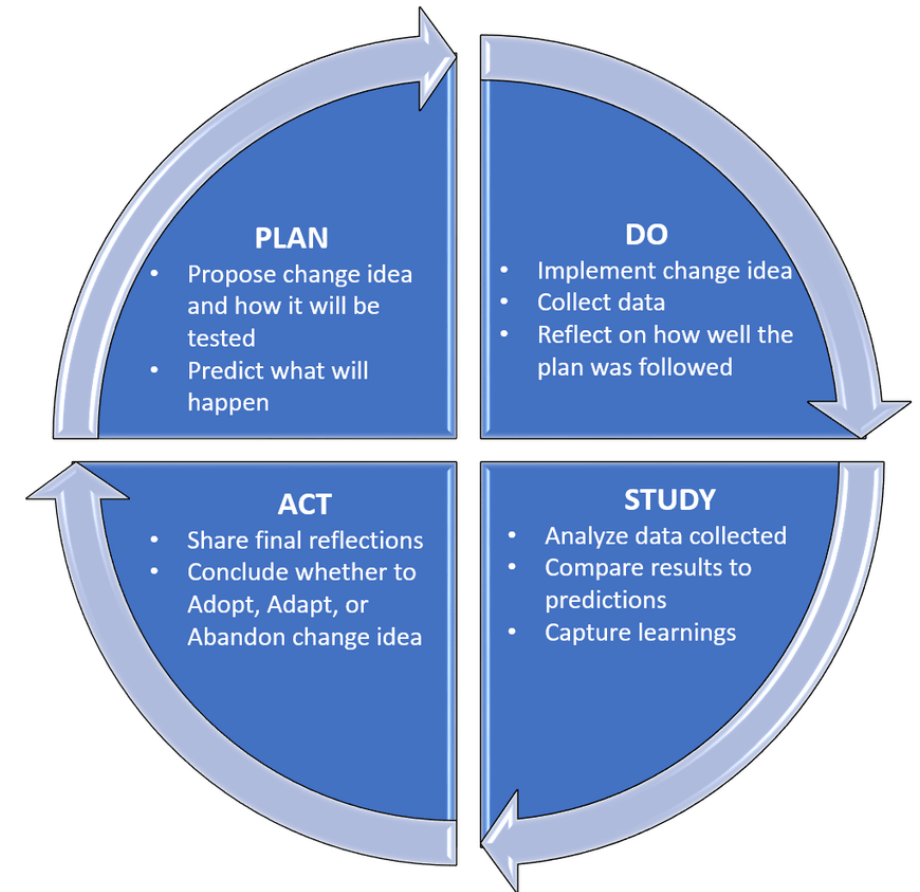
Description: This research explores the complexities of India's rural healthcare system, emphasizing the need for adequate funding, infrastructure, and coordination with village-level administration. It uses Interpretive Structural Modelling (ISM) to understand the interrelationships among various enablers and barriers, providing insights for informed decision-making and policy formulation.

Methodology

- **Research Design:** Descriptive study using quantitative and qualitative tools
- **Study Setting:** Prem Niketan Hospital, a 50-bedded multispecialty hospital
- **Study Population:**
 - Healthcare managers
 - Healthcare providers
 - Patients
- **Sampling Method:** Convenience sampling
- **Sample Size:** 50 participants
 - 20 healthcare administrators and providers
 - 30 patients

PDSA Cycle

- **Plan:** Develop care model and outline objectives and resources
- **Do:** Implement the care model on a small scale and train staff
- **Study:** Collect and analyse data to assess the model's impact
- **Act:** Adjust the model based on findings and scale up for broader implementation



Innovative Models of care delivery

1. Integrated Care Pathways:

Standardizes care processes for chronic conditions

2. Patient-Centered Care:

Engages patients and families in care decisions

3. Chronic Disease Management Programs:

Comprehensive management for diseases like hypertension and diabetes

4. Lean Management and Process Improvements:

Streamlines processes to reduce waste and improve efficiency

Demographic Data of Participants

- Of the 50 participants recruited for this study, 20 represent health administrators and providers, and 30 represent patients.

Characteristic	Administrators and Providers (n=20)	Patients (n=30)
Sex	12 males, 8 females	16 males, 14 females
Age (years)	Mean: 40, Range: 30-60	Mean: 50, Range: 20-80
Experience (years)	Mean: 15, Range: 5-30	N/A
Medical Conditions	N/A	Diabetes: 10, Hypertension: 8, Other: 12

Analysis of Innovative Models

- **Patient Outcomes for Integrated Care Pathways:**

Condition	Pre-Implementation HbA1c (%)	Post-Implementation HbA1c (%)
Diabetes (n=10)	Mean: 8.5	Mean: 7.2
Hypertension (n=8)	Mean BP: 150/90 mmHg	Mean BP: 130/80 mmHg

- **Patient Satisfaction Mean Scores :**

Aspect	Pre- Implementation	Post- Implementation
Communication	3.5	4.5
Involvement	3.0	4.2
Overall	3.8	4.6

- **Health Outcomes for Chronic Disease Management Programs:**

Condition	Pre-Implementation	Post-Implementation
Diabetes Control	18 (HbA1c < 7.5%)	24 (HbA1c < 7.5%)
Hypertension Control	16 (BP < 140/90)	23 (BP < 140/90)

- **Lean Management and Process Improvement:**

Lean management principles were adopted that instrumentalized process streamlining, reduction of waste, and improvement in operational efficiency at the Prem Niketan Hospital.

Results

- **Operational Efficiency (N=50)**

Aspect	Pre-Implementation	Post-Implementation
Patient Flow	60%	85%
Resource Utilization	70%	90%

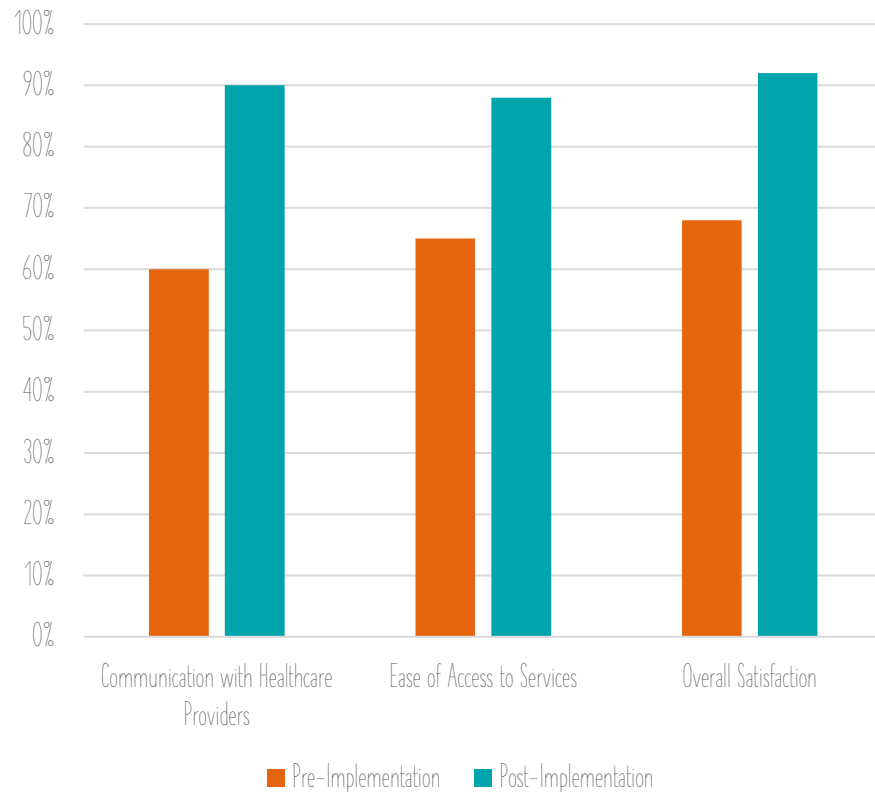
- **Financial Performance**

Cost savings resulted from lean management and process improvements, while an increase in the financial returns occurred due to increased volumes of patients and better utilization of resources.

Metric	Pre-Implementation	Post-Implementation
Monthly Revenue	Rs. 50,000	Rs. 65,000
Cost Savings	Rs.10,000	Rs. 15,000

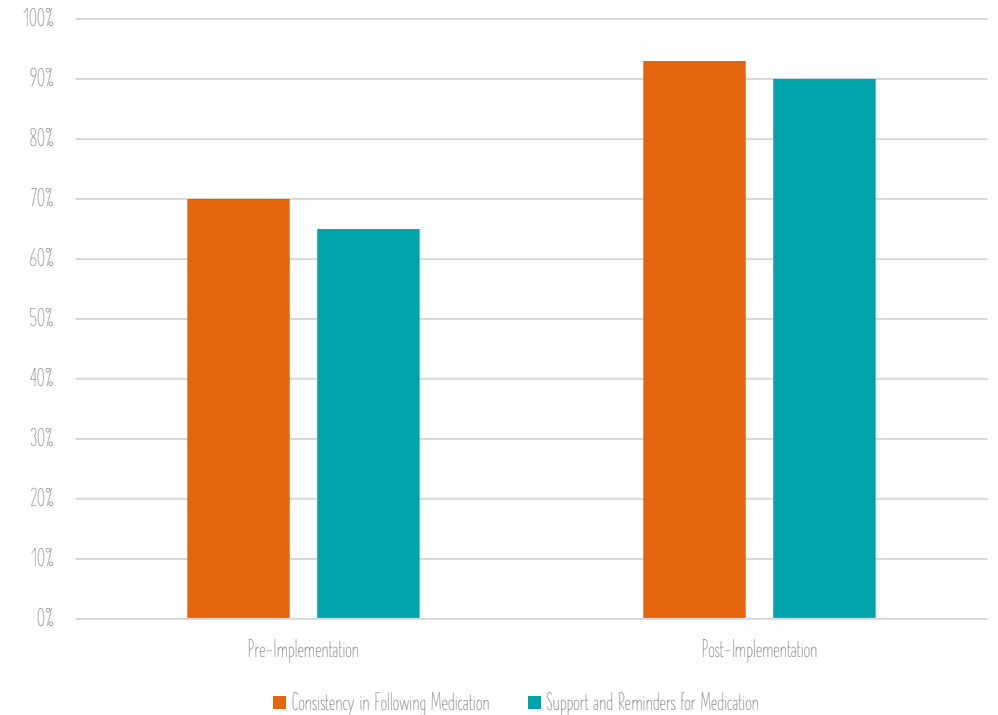
Patient Satisfaction

Patient satisfaction was measured in 30 patients



Medication Adherence

Medication adherence was assessed through interviews within 30 patients,



Conclusion

➤ **Summary of Findings:**

- Significant improvement in patient outcomes, operational efficiency, and financial performance
- Effective models: Integrated Care Pathways, Patient-Centered Care, Chronic Disease Management, Lean Management

➤ **Implications:**

- Evidence supports the utility of these models in small hospitals
- Provides a framework for similar institutions to follow

Recommendations

Based on the findings of this study, the following recommendations are made for small hospitals aiming to improve their care delivery:

➤ **Integrated Care Pathways**

- Standardize care processes to enhance consistency and effectiveness of care delivered.

➤ **Patient-Centred Care:**

- Set the patient and their families in the decision-making process of care.
- Improve communication between all health professionals and patients.