

SYNOPSIS

Name – Chandrapal Singh Panwar

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Under the supervision and guidance of college mentor – Dr. Sudhinder Singh Chouhan

1. TITLE:

Hospital Acquired Infection: A Study to Measure Its Impact on Increased Average Length of Stay and Cost of Care in Krishiv Khandaka Multispecialty Hospital, Jaipur

2. INTRODUCTION:

Hospital-acquired infections (HAIs) are among the leading causes of morbidity and mortality in hospitalized patients. Globally, studies estimate that 5% to 10% of admitted patients contract at least one HAI during their stay. High-risk groups include immunocompromised patients, elderly individuals, those with underlying illnesses, and patients undergoing invasive procedures, particularly in ICUs.

This study highlights the incidence of HAIs—specifically CAUTI (Catheter-Associated Urinary Tract Infections), CLABSI (Central Line-Associated Bloodstream Infections), SSI (Surgical Site Infections), and VAP (Ventilator-Associated Pneumonia)—and analyzes their impact on the average length of stay (ALOS) and financial costs for both patients and the hospital. The findings aim to support hospital leadership in resource prioritization, infection control, and healthcare policy development.

3. RESEARCH QUESTIONS:

- What is the incidence rate of HAIs at Krishiv Khandaka Multispecialty Hospital, Jaipur?
 - How do different types of HAIs (CAUTI, CLABSI, SSI, VAP) impact the average length of stay?
 - What is the financial burden of HAIs on patients and the hospital?
 - How can improved infection control practices reduce HAI-related costs and duration of stay?
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4. OBJECTIVES:

- To determine additional costs incurred by patients due to hospital-acquired infections.
 - To calculate the total cost incurred by the hospital due to HAIs.
 - To determine the HAI incidence rate among hospitalized patients.
 - To provide data that can help in policy and strategy formulation to reduce HAIs.
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5. HYPOTHESIS:

Hospital-acquired infections significantly increase both the average length of stay and the cost of care for patients and healthcare facilities. The implementation of proper infection prevention and control measures can reduce the burden of HAIs.

6. MATERIAL AND METHODS:

STUDY DESIGN:

- **Study Type:** Retrospective analytical and prospective observational study
- **Study Setting:** Krishiv Khandaka Multispecialty Hospital, Jaipur
- **Sample Size:** 90 HAI cases from the year 2025
- **Departments Covered:** ICU and general wards
- **Inclusion Criteria:** Patients diagnosed with HAI after admission
- **Exclusion Criteria:** Patients with infections at the time of admission

DATA COLLECTION:

Data was collected through hospital records maintained by the Infection Control Department and verified through interviews with doctors, intensivists, infection control nurses (ICNs), and caretakers.

7. DATA ANALYSIS PLAN:

- Data from 2025 shows:
 - **CAUTI:** 31 cases
 - **CLABSI:** 17 cases
 - **SSI:** 28 cases (including 2 VRE and 1 MRSA)
 - **VAP:** 14 cases

- **ALOS after infection:**
 - CAUTI = 6.8 days
 - CLABSI = 14.7 days
 - VAP = 29.7 days
 - Multiple infections = 17.9 days
 - **Overall ALOS:**
 - CAUTI = 17.4 days
 - CLABSI = 19.3 days
 - VAP = 44.17 days
 - Multiple infections = 30.4 days
 - (Typical days were recorded for SSI)
 - **Financial Analysis:**

Cost comparisons between HAI and non-HAI patients were performed to assess direct and indirect cost burdens.
 - **Statistical Tools:** Descriptive statistics, t-tests, and regression analysis to measure significance and relationships.
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8. ETHICAL CONSIDERATIONS:

- Informed consent obtained from hospital administration.
 - Patient data confidentiality and privacy strictly maintained.
 - Ethical use of data solely for academic and policy-making purposes.
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9. IMPLICATIONS OF RESEARCH:

This study offers insights into the burden of HAIs on hospital operations and patient outcomes. By quantifying their impact on cost and stay duration, it advocates for better staff training, stricter adherence to infection control protocols, and administrative reforms. Ultimately, the hospital can improve quality of care and reduce avoidable financial strain.

10. RECOMMENDATIONS:

- Strengthen healthcare worker training on infection prevention.
 - Increase monitoring and compliance with infection control practices.
 - Invest in hospital hygiene and equipment sterilization protocols.
 - Regular internal audits to track and address infection trends.
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11. KEYWORDS:

HAI, CAUTI, CLABSI, SSI, VAP, Infection Control, Cost of Care, Length of Stay