

CK Birla Hospital
(RBH), Jaipur

QR-Based Digital Transformation in Linen Management

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Background

- The linen department plays a vital role in ensuring hospital hygiene, patient comfort, and smooth operations.
- Linen items include bed sheets, patient gowns, surgical drapes, towels, and staff uniforms.
- Proper linen management supports infection control, staff efficiency, and overall service quality.
- At CK Birla Hospital, maintaining operational excellence is a key priority, making the need for streamlined linen handling especially critical.

Problem Statement

Existing system

- Uniforms were sometimes given out incorrectly, causing confusion among staff.
- Linen distribution was not tracked promptly, so it was hard to know where items were at any time.
- Records for cleaning audits were unclear or incomplete, making it difficult to confirm if linens had been cleaned properly.

Proposed system

- Training Effectiveness:** After we started using the QR form, 94% of staff said it was easy to use, and 89% said it helped cut down wait times.
- Data Completeness:** Every record had the timestamp filled in, but only 38% of people added extra comments like “Size mismatch” or “Torn uniform.”
- Usage Trends:** In the first three days, we averaged about 7 transactions a day. By the fourth week, that number jumped to about 14 transactions a day, showing more people were using it.

Research Methodology

- **Research Design-** The research followed an applied observational design using both quantitative and qualitative methods.
- **Data Collection Methods-** Information was gathered through direct observations, staff interviews, and form-based data analytics.
- **Study Period-** The system was tested and analyzed over a continuous 4-week implementation phase.
- **Population-** All personnel engaged in linen handling—housekeeping staff, floor nurses, linen room supervisors, and administrative team.
- **Sample Size-** Over 400 responses were recorded across QR-coded Google Forms during the 4-week evaluation period.
- **Data Collection and Analysis-** Google Form responses were exported into Excel, cleaned, and analyzed. Pivot tables were used to analyze

Scanner



Uniform Distribution QR Code

*Make sure to scan this QR and fill form before
collecting uniform*

princetripathi583@gmail.com

[Switch accounts](#)



Not shared



** Indicates required question*

Employee Name *

Your answer

Employee ID *

Your answer



QR-Based Tools Developed:

- **Uniform Distribution Form**
- **Daily Updates per Shift**
- **Room Cleaning Checklist**
- **Staff Details, Size, Time Stamps**
- **RGHS Inquiry Form**

Key Findings - Uniform Transactions

- **Total transactions: 388**

A total of 388 uniform transactions were recorded during the period.

- **Nursing: 76.3% of activity:**

Nursing staff contributed to 76.3% of all uniform-related transactions.

- **Slightly more collections (57%) than submissions (43%):**

Collections accounted for 57% of transactions, slightly exceeding submissions at 43%.

- **Average TAT: 3.8 minutes (goal < 5 min):**

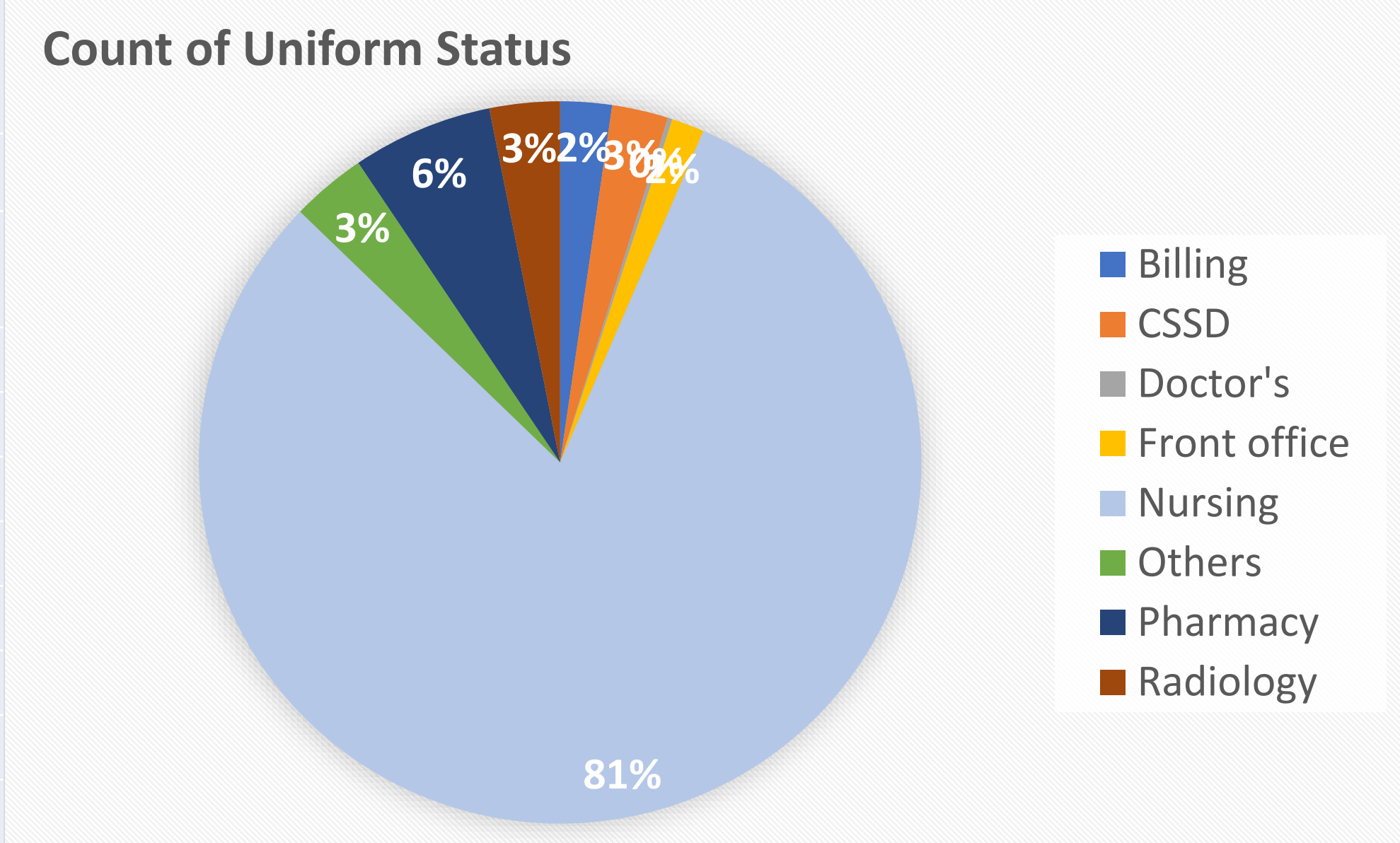
The average turnaround time per transaction was 3.8 minutes, successfully meeting the target of under 5 minutes.

Department	Collected n (%)	Submitted n (%)	Total n (%)
Nursing	171 (44.1)	125 (32.2)	296 (76.3)
Pharmacy	17 (4.4)	12 (3.1)	29 (7.5)
Radiology	7 (1.8)	5 (1.3)	12 (3.1)
Billing	6 (1.6)	9 (2.3)	15 (3.9)
CSSD (Sterilization)	6 (1.6)	6 (1.6)	12 (3.1)
Front Office	3 (0.8)	3 (0.8)	6 (1.5)
Doctor's (OPD)	0 (0.0)	2 (0.5)	2 (0.5)

On-Time Delivery Performance

- Over all on-time performance: 88.1%
- ICU, OT, ER, Maternity: 100% on-time
- General wards: 90% on-time
- Morning rounds critical to success

Ward/Dept	Avg. Delivery Time	On-Time Days* (%)
ICU	7:30 AM	10/10 (100 %)
OT (Operation Theatre)	7:35 AM	10/10 (100 %)
Ward 1	7:45 AM	9/10 (90 %)
Ward 2	7:50 AM	9/10 (90 %)
Ward 3	7:55 AM	9/10 (90 %)
Ward 4	7:50 AM	10/10 (100 %)
Ward 5	8:05 AM	9/10 (90 %)
ER (Casualty)	7:40 AM	10/10 (100 %)
Maternity	7:55 AM	10/10 (100 %)
Others (Lab, etc.)	8:00 AM	9/10 (90 %)



Staff Feedback & Adoption

- 94% found QR process easy
- 89% said it reduced wait times
- Daily form submissions doubled over 4 weeks
- Challenges: Same-time entries, low night shift compliance

Impact & Discussion

- Improved traceability and staff accountability
- Reduced disputes on uniform issues
- Created audit-ready digital logs
- Strengthened real-time monitoring via dashboards

Recommendations

- **Expand QR tools to all floors**
- **Monthly digital training + Hindi support**
- **Use feedback loops with supervisors**
- **Link dashboards to hospital MIS**
- **Scale QR system to waste tracking, food trays, etc.**

Thank You