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Improving Patient Experience through a Multi-Intervention Approach in ER and OPD at Prince Sultan Military Hospital – Taif

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Abstract Patient experience is a key measure of healthcare quality and performance. At Prince Sultan Military Hospital – Taif, baseline feedback in Quarter 2 of 2025 revealed long waiting times, inconsistent communication, and limited patient engagement across the Emergency Department (ER) and Outpatient Clinics (OPD). A comprehensive quality improvement project was implemented between Quarter 2 and Quarter 3 of 2025 using six interventions: interactive visits emphasizing active listening and empathy, modern communication tools (WhatsApp and QR-code posters), structured staff coaching, welcoming and marketing posters in the ER, post-visits calls, and celebrating successes. Patient experience data were collected using Press Ganey's validated survey system. The ER score rose from 64.24% to 72.98% (+8.74 points), while OPD increased from 66.84% to 69.19% (+2.35 points). The most significant improvements were observed in communication, empathy, and personal issues domains. Integrating human, digital, and feedback-driven touchpoints produced measurable improvements in patient experience. Continued leadership support, staff motivation, and systematic feedback review are essential to sustain and expand these achievements.

Keywords: *Patient Experience, Communication, Coaching, Feedback, Healthcare Quality, WhatsApp, QR Code, Prince Sultan Military Hospital, Saudi Arabia*

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1. Introduction

Over the past 15 years, patient experience has emerged as a central element in evaluating the quality of healthcare systems worldwide [1]. Within the National Health Service (NHS), patient feedback has driven policy and quality frameworks, as reflected in initiatives such as the National Service Frameworks and the Quality and Outcomes Framework [2]. Across healthcare systems globally, translating patient feedback into tangible service improvement has proven complex. Recurring themes such as waiting times, communication gaps, and insufficient involvement of patients in decision-making erode trust and satisfaction even when technical quality of care is high [1,3].

At Prince Sultan Military Hospital – Taif, both the Emergency Department and Outpatient Clinics represent critical access points for patients. Baseline feedback collected in Quarter 2, 2025 revealed serious problems across the patient journey. The Emergency Department showed very low scores: waiting time before treatment (54.00%), being informed about delays (54.12%), and waiting in the treatment area (55.56%). The Outpatient Department also showed major gaps: waiting time evaluation (60.34%), information about delays (61.75%), and likelihood of recommending the hospital (64.43%). These findings highlighted the urgent need for structured, patient-centered interventions.

To understand the underlying causes, a fishbone (cause-and-effect) diagram was developed, revealing that most issues were linked to staffing shortages, weak communication, long waiting times, limited coordination between departments, and the absence of digital follow-up systems. A subsequent Pareto analysis revealed that six primary factors accounted for approximately 84% of patient dissatisfaction: long waiting times, poor communication about delays, inadequate discharge instructions, limited patient involvement, insufficient staff

empathy, and facility issues. This guided the selection and design of the six interventions implemented in this project.

To better understand the underlying causes of patient experience challenges at Prince Sultan Military Hospital – Taif, a cause-and-effect (fishbone) diagram was developed. This diagramhelps visualize the main categories contributing to variations in patient satisfaction, including people, processes, environment, machines, materials, and measurements.

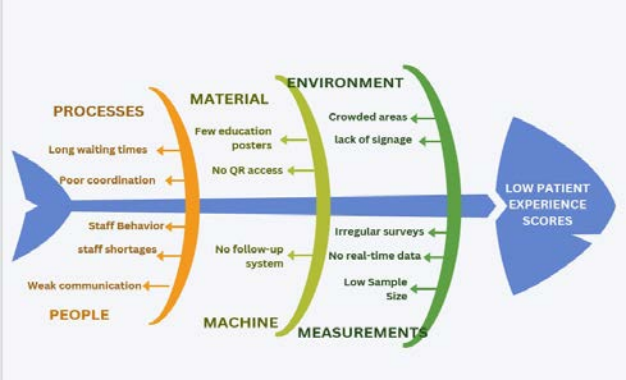

Figure 1. Baseline Fishbone Diagram Showing Root Causes of Low Patient Experience (Prince Sultan Military Hospital – Taif)

To prioritize which root causes required immediate attention, a Pareto analysis was conducted using baseline patient feedback from Quarter 2, 2025 (Figure 2). The analysis revealed that six primary factors accounted for approximately 84% of patient dissatisfaction: long waiting times, poor communication about delays, inadequate discharge instructions, limited patient involvement, insufficient staff empathy, and facility issues. This finding guided the selection and design of the six interventions implemented in this project.

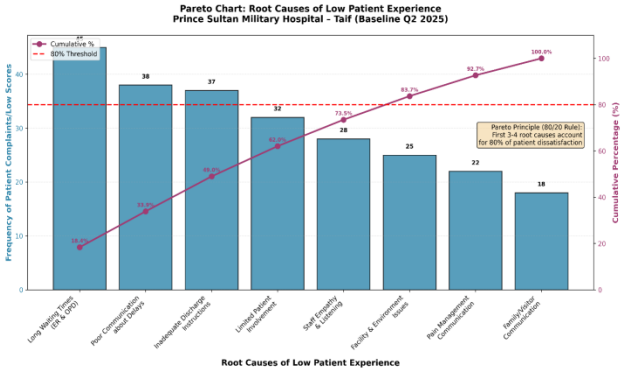

Figure 2. Pareto Chart (root causes of low patient experience)

1.1. Specific Aims

This quality improvement project aimed to improve patient experience scores in the Emergency Department and Outpatient Clinics at Prince Sultan Military Hospital – Taif by 2–4 percentage points within six months (Q2 to Q3, 2025) through systematic implementation of six patient-centered interventions. Specific objectives included: (1) improving communication and patient engagement scores, targeting ≥8-point improvement in communication-related domains; (2) increasing ER patient satisfaction from baseline 64.24% to ≥66%; and (3) increasing OPD patient satisfaction from baseline 66.84% to ≥69% by end of Quarter 3, 2025.

2. Methodology

2.1. Study Design and Context

Prince Sultan Military Hospital – Taif is a secondary care hospital located within King Fahad Airbase, primarily serving military personnel, their families, and the wider surrounding community. This study adopted an interventional, pre–post comparative design. Patient experience was assessed by a third party (Press Ganey) using a structured survey covering domains including arrival, environment, nursing and doctor care, radiology services, family involvement, communication, pain control, teamwork, overall satisfaction, and likelihood of recommendation. Data collection was conducted at two time points: Quarter 2, 2025 (baseline, pre-intervention) and Quarter 3, 2025 (post-intervention).

2.2. PDSA Framework

This project followed the Plan-Do-Study-Act (PDSA) cycle. In the **Plan phase** (Q2, 2025), baseline data were collected and root cause analysis guided development of six targeted interventions, with a predicted improvement of 5–10 points. In the **Do phase** (Q3, 2025), six interventions were implemented sequentially in four phases. In the **Study phase**, post-intervention data were collected using the same Press Ganey instrument. In the **Act phase**, decisions will be made regarding which interventions to sustain, expand, or modify in subsequent cycles.

2.3. Interventions

(1) Interactive Visits: Physicians and nurses were guided to adopt a structured approach to consultation, emphasizing active listening, empathy, and two-way communication. Patients were given more space to express concerns, while staff explained diagnoses, investigations, and treatment plans in clear and accessible language. A follow-up component extended communication beyond the immediate hospital visit.

(2) Modern Communication Tools: A dedicated WhatsApp number was established for patient communication. QR codes were introduced throughout outpatient and emergency waiting areas, linking directly to hospital resources, educational materials, service directories, and feedback portals [4, 5].

(3) Staff Coaching: A structured coaching program for 230 physicians, nurses, and support staff was introduced, emphasizing empathy, active listening, clear communication, and shared decision-making. The INSAN framework was implemented with reminder cards distributed to all staff. Supervisors and senior clinicians served as mentors [6, 7].

(4) Welcoming and Marketing Posters in the ER: Posters were strategically displayed in waiting areas, reception, and beside each bed to create a reassuring environment, communicate hospital quality initiatives, and

inform patients about follow-up text message surveys.

(5) Post-Visits Call: Trained members of the Patient Experience Team contacted patients randomly within three days of their visit or discharge. Staff thanked patients for choosing the hospital, confirmed care instructions were clear, and addressed any unresolved issues. When no problems were identified, patients were encouraged to complete the Press Ganey survey delivered 7–14 days after the visit.

(6) Celebrating Successes: A structured recognition system acknowledged departments and individuals demonstrating measurable improvement in patient experience scores or receiving exceptional patient feedback. Leadership conducted unannounced appreciation visits and shared success stories through internal communication channels.

2.4. Measurement Strategy

Three types of measures were used. **Outcome measures:** Press Ganey survey scores in Q2 (baseline) and Q3 (post-intervention). **Process measures:** Staff coaching completion rate (target ≥70%), post-visits call completion rate (target ≥20% of eligible patients), and digital tool utilization (target ≥50 interactions/month by Phase 4). **Balancing measures:** Staff overtime hours per week (target ≤5 hours) and average visit duration (target <10% increase from baseline). The survey applied a 0–100 scoring scale, with higher values indicating a more positive patient experience.

2.5. Ethical Considerations

This study was conducted in accordance with ethical principles outlined in the Declaration of Helsinki and institutional regulations of Prince Sultan Military Hospital – Taif. Approval was obtained from the hospital's ethics and research committee prior to data collection. Participation was voluntary, and no personally identifiable information was collected. Completion of the survey was considered implied consent. Data were stored securely and accessible only to the research team.

3. Results

Table 1. Baseline Patient Experience Scores – Key Problem Areas (Q2, 2025)

Domain / Question	Dept.	Baseline Q2 2025
How well kept informed about delays	ER	54.12%
Waiting time before treatment	ER	54.00%
Comfort of waiting area	ER	58.00%
Evaluation of wait time at clinic	OPD	60.34%
Likelihood of recommending hospital	OPD	64.43%

3.1. Emergency Department (ER)

The Emergency Department demonstrated strong improvement in overall patient experience during Quarter 3, 2025. The mean score increased from 64.24 in Quarter 2 to 72.98 in Quarter 3, showing a gain of +8.74 points. More than half of respondents (50.6%) rated their experience as Very Good, while lower ratings (Bad and Very Poor) accounted for less than 15% of responses. This was the largest increase among all hospital services, reflecting the direct impact of coaching, interactive visits, modern communication tools, welcoming posters, early post-follow-up calls, and an ER renovation in Q3 that improved waiting area, signage, and triage layout.

Domain-level results showed clear overall improvement. Nurses improved from 69.8 to 77.5 (+7.7) and Doctors from 70.1 to 78.5 (+8.4), indicating that coaching and communication training had a positive impact on patient interactions. House Staff achieved the largest increase (68.9 to 86.8, +17.9). Personal Issues (59.1 to 72.2, +13.1) and Overall Assessment (63.9 to 75.5, +11.6) showed significant gains. Arrival (56.1 to 63.6, +7.5) and Facilities (55.0 to 68.6, +13.6) also improved. Family or Friends (68.3 to 76.2, +7.9) showed moderate progress. Tests (82.6 to 81.3, −1.3) remained high overall but slightly decreased, highlighting the need to review diagnostic workflow.

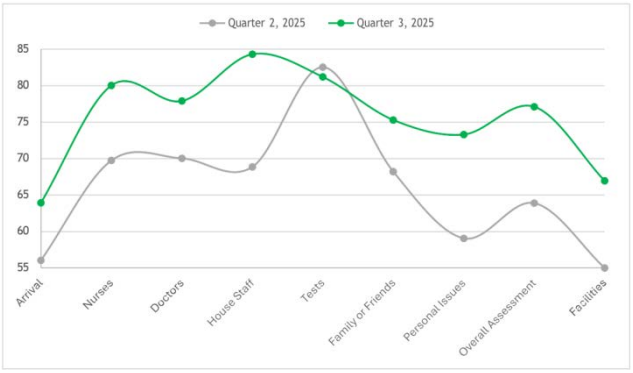

Figure 3. ER KPI Domain Scores (Quarter 2 vs Quarter 3, 2025).

3.2. Outpatient Department (OPD)

The Outpatient Department showed a steady improvement in overall patient experience during Quarter 3, 2025. The mean score increased from 66.84 in Quarter 2 to 69.19, a gain of +2.35 points. Nearly half of respondents (49.4%) rated their experience as Very Good, while lower ratings accounted for only about 20% of responses.

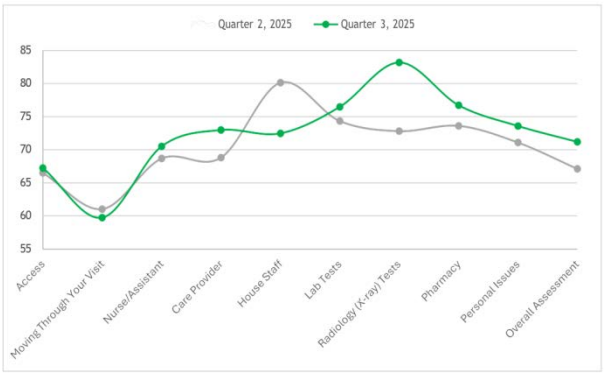

Figure 4. OPD KPI Domain Scores (Quarter 2 vs Quarter 3, 2025)

Radiology (X-ray) Tests achieved the highest increase (72.8 to 83.2, +10.4), indicating smoother patient flow and better coordination. Care Provider (68.8 to 73.0, +4.2), Nurse/Assistant (68.7 to 70.5, +1.8), Pharmacy (73.6 to

76.7, +3.1), Lab Tests (74.4 to 76.5, +2.1), Personal Issues (71.1 to 73.6, +2.5), and Overall Assessment (67.1 to 71.2, +4.1) all showed positive changes. Access (66.5 to 67.3, +0.8) remained nearly stable, while Moving Through Your Visit (61.1 to 59.8, −1.3) declined slightly. House Staff (80.2 to 72.5, −7.7) showed a mild decline, possibly linked to changes in patient preference or reduced trust.

3.3. Process and Balancing Measures

All three process measures met or exceeded targets. Staff coaching completion reached 73.8% (ER: 75%, OPD: 72%), exceeding the 70% target. Post-visits calls achieved a 25% completion rate. Digital tool interactions totaled 502 during Quarter 3, with monthly utilization growing from 45 (Month 3) to 189 (Month 6), exceeding the target of 100 interactions per month. Both balancing measures remained within acceptable thresholds: staff overtime increased minimally from 4.2 to 4.8 hours per week; ER length of stay rose by +5.6%, and OPD visit duration increased by +8.3%, both within the <10% target. These results confirmed that interventions improved quality without creating excessive staff burden or operational delays.

Table 2. Process and Balancing Measures Summary (Q3, 2025)

Indicator	Target	Result	Status
Staff coaching completion	≥70%	73.8%	Met
Post-visit call completion	≥20%	25%	Met
Digital tool interactions	≥100/month	125/month avg	Exceeded
Staff overtime hrs/week	≤5 hrs	4.8 hrs	Acceptable

4. Discussion

This project showed that targeted interventions can lead to real improvements in patient experience. The Emergency Department achieved the largest improvement (+8.74 points), with gains especially strong in communication, personal issues, and overall assessment. The Outpatient Department also improved (+2.35 points), with strongest increases in care provider communication, radiology, and overall assessment. All process measures met or exceeded targets, and balancing measures confirmed that improvements were achieved without creating excessive staff burden.

Our results align with evidence that communication-focused interventions and environmental redesign are strongly associated with better patient experience. Recent studies show that patient-centered communication significantly improves patient engagement and perceived quality of care [8], while targeted communication training for nurses and physicians similarly enhances satisfaction outcomes [9]. Within emergency care, a 2024 QI project that coached ED clinicians using Press Ganey criteria reported measurable satisfaction improvements, echoing our ER pattern [10]. Qualitative analyses of ED survey comments further underscore that how clinicians communicate is a primary driver of ED experience [11].

The ER improvement also coincided with a physical renovation (waiting area, signage, triage layout). Literature suggests that front-end changes and waiting-room enhancements positively influence ED experience by improving wayfinding, privacy, and perceived crowding [12]. The digital tools used in this project (QR codes, WhatsApp line, follow-up calls) are also supported by the literature. Reviews of social media and messaging platforms in healthcare report that these tools enhance access to information and timely updates [13]. Studies on QR-code-based health information show improved knowledge transfer and positive user reception [14].

Regarding waiting times and flow, our modest OPD movement and remaining ER/OPD bottlenecks mirror prior evidence: perceived waiting and communication about delays often predict satisfaction more strongly than raw elapsed time [15]. Within the Saudi context, benchmarks frequently cite 20–30 minutes as an acceptable clinical waiting target, aligning with our use of service standards and the continued need for operational solutions beyond communication alone [16].

4.1. Limitations

Several limitations should be considered. The project covered only two quarters, so long-term sustainability could not be fully assessed. Some departments had small sample sizes, which may reduce the generalizability of results. Operational challenges like waiting times and patient flow were beyond the project's direct control, depending on system capacity rather than communication alone.

5. Conclusion

This project successfully enhanced patient experience through simple, low-cost, and sustainable interventions combining staff coaching, digital communication, structured post-call feedback, staff recognition, and environmental improvement. The ER showed the largest improvement (+8.74 points), driven by coaching, interactive visits, post-visits calls, and physical renovation. OPD demonstrated steady gains (+2.35 points), particularly in radiology and care provider communication.

For practice, hospitals should prioritize regular staff coaching, consistent feedback review, and small environmental upgrades as part of routine quality improvement. The approach has strong potential for spread to other contexts, given its low cost and reliance on staff engagement and existing infrastructure. Future research could explore the long-term effects of communication-based interventions, evaluate digital tools in different cultural settings, assess how recognition programs such as 'Celebrating Successes' sustain quality improvement, and examine how structured post-visit communication contributes to long-term patient loyalty and trust.

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