



Shift-Left Care and The Digital Vital Room

**A Proactive Monitoring Framework
for Hospitals**

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Shift Left and Digital Vital Room



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1. Executive Summary

Hospitals in India operate under sustained pressure: high chronic disease burden, limited nurse staffing, manual monitoring workflows, and thin operating margins. These constraints create systemic risk of late detection of deterioration, avoidable ICU transfers, and extended length of stay. Because deterioration often evolves silently over several hours, the current model of intermittent vital capture and manual escalation leaves hospitals vulnerable to preventable adverse events.

The Shift-Left paradigm is increasingly supported in the digital health literature, including international frameworks that advocate for earlier, technology-enabled interventions across the care continuum. The *Stay Left, Shift Left* model—highlighted in global digital-health policy discussions and referenced in JMIR-indexed scholarship—emphasizes keeping patients healthier for longer (“Stay Left”) and shifting care from high-acuity to lower-acuity settings (“Shift Left”) through proactive monitoring, remote care, and digital enablement. This aligns directly with Proacteye’s approach: detecting risk earlier, decentralizing monitoring, and enabling safe care at home. The evidence base reinforces the finding that Shift-Left models improve outcomes, reduce system strain, and enhance sustainability for resource-constrained hospitals. A Shift Left model—detecting risk earlier and intervening sooner—offers a practical, financially viable path forward.

This white paper outlines how a Digital Vital Room, enabled by Proacteye’s proactive monitoring platform, can transform ward-level care. The model is designed specifically for the realities of hospitals: modular, low-capex, interoperable, and operationally simple.

The ShiftLeft model now extends beyond inpatient care through the **Digital Clinic**, where patients with chronic conditions are monitored at home using **Proacteye’s 6-in-1 device**. Proacteye’s mobile apps build a **longitudinal Personal Health Record (PHR)** that integrates with the hospital EMR, keeping patients connected to the hospital even after discharge. This creates new revenue streams through structured home-monitoring packages while reducing readmissions and improving long-term disease control.



2. The Case for Shift-Left Care

ShiftLeft care re-engineers the clinical workflow to detect deterioration earlier and intervene before escalation becomes necessary. Hospitals manage a disproportionately high burden of chronic disease, including diabetes, hypertension, COPD, and CKD. These conditions predispose patients to subtle, progressive deterioration that is often missed when vitals are captured only every 4–6 hours.

Nurse-to-patient ratios frequently fall below recommended norms, especially during night shifts. Escalation decisions depend heavily on individual experience rather than standardized, data-driven triggers. As a result, deterioration is often recognized only when symptoms become overt—tachypnea, hypotension, altered mental status—by which time ICU transfer becomes unavoidable.

ShiftLeft Care addresses these gaps by enabling continuous or semi-continuous monitoring, automated early warning scores, and centralized oversight. The model also extends into the home through the Digital Clinic, ensuring that early detection continues after discharge.

3. Why Hospitals Struggle with Early Detection

Hospitals face structural constraints that limit early detection:

- Staffing shortages, especially at night
- Manual, intermittent vital capture
- Paper-based or basic HIS documentation
- Escalation dependent on individual vigilance
- Limited device integration outside the ICU/HDU

These gaps create predictable patterns of late recognition and reactive escalation.



4. Operational Realities in Hospitals in India

Hospitals typically have 100–250 beds, with 150 being the most common. Occupancy ranges from 60–75%, but seasonal surges can push occupancy beyond safe thresholds. Monitoring infrastructure is concentrated in ICU and HDU units, while general wards rely on intermittent vital capture and fragmented documentation.

A high burden of chronic disease increases the risk of silent deterioration, while limited IT staffing hampers the deployment of complex digital systems. These realities make continuous monitoring necessary but difficult to implement without a purpose-built, low-complexity solution.

5. Financial Constraints and the Need for Efficiency

Hospitals operate with thin margins and limited capex flexibility. Fixed costs per occupied bed-day are high, and revenue is constrained by case mix, payor mix, and capped tariffs. Avoidable ICU transfers impose high incremental costs, while readmissions further erode profitability.

Improving efficiency becomes the primary lever for financial sustainability. Preventing deterioration reduces ICU utilization, shortens LOS, and improves bed turnover. The Digital Clinic adds a new dimension by reducing readmissions, freeing inpatient beds, and creating new outpatient revenue streams.

6. Clinical and Epidemiological Burden

Hospitals manage a clinically fragile population with a high prevalence of chronic diseases. Many patients present late in their disease trajectory or with multiple comorbidities. Deterioration is often preceded by subtle changes in vital signs that are easily missed with intermittent monitoring.

Complications such as sepsis, acute kidney injury, and cardiac events are common. Early warning scores are rarely automated or consistently used. Readmissions are frequent due

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to incomplete stabilization and limited follow-up. These realities underscore the need for proactive monitoring and early intervention.

7. The Shift-Left Framework

A practical ShiftLeft model includes:

- Continuous or semi-continuous vital monitoring
- Automated early warning scores
- Centralized observation through a Digital Vital Room
- Rapid escalation pathways
- Post-discharge monitoring for high-risk patients
- **Home-based monitoring through the Digital Clinic using Proacteye's 6-in-1 device**

This framework reduces avoidable ICU transfers, shortens LOS, improves bed turnover, and enhances clinical governance.

8. Digital Health Adoption & Remote-Monitoring Readiness in India

Digital maturity in hospitals is uneven but improving. EMR adoption is partial, IoT integration is limited to ICU/HDU, and IT teams are small. Cloud adoption is growing but cautious. Remote monitoring gained momentum during COVID-19 but remains at an early-stage.

Hospitals prefer modular, interoperable, and low-capex solutions. Proacteye fits this environment by offering lightweight deployment, minimal training requirements, and seamless integration with existing HIS/EMR systems.



9. Proacteye: A Proactive Monitoring Platform

9.1 Core Capabilities

Regular vital capture, automated early warning scoring, real-time alerts, centralized dashboards, and HIS/EMR integration.

9.2 Clinical Impact

Earlier detection, fewer ICU transfers, fewer code blues, shorter LOS, and improved nurse efficiency.

9.3 Operational Impact

Standardized workflows, reduced documentation burden, better nighttime coverage, and consistent escalation.

9.4 Financial Impact

Protection of margins, improved bed turnover, reduced readmissions, and low-capex deployment.

9.5 Digitalization of the Vital Room

The Digital Vital Room centralizes monitoring for all wards, displays real-time vitals and risk scores, enables proactive outreach, standardizes escalation, and reduces reliance on manual rounding. It strengthens nighttime coverage and reduces variability in care.

10. The Digital Clinic: Extending ShiftLeft to the Home

The Digital Clinic extends the ShiftLeft model beyond the hospital by enabling the safe of monitoring be chronic patients at home using Proacteye's 6-in-1 device. Patients with diabetes, hypertension, COPD, CKD, heart failure, and post-acute recovery needs are enrolled into structured home-monitoring pathways. Their vitals are transmitted automatically to the Digital Vital Room.



Proacteye's mobile apps build a **longitudinal Personal Health Record (PHR)** for each patient. This PHR integrates with the hospital EMR, ensuring continuity of care and enabling clinicians to access complete patient histories. Hospitals benefit because patients who download the app remain connected even after discharge, enabling long-term engagement and follow-up.

The Digital Clinic creates new revenue streams through subscription-based chronic care packages. Patients shift from episodic visits to continuous monitoring, improving disease control and reducing emergency visits. For hospitals, this model increases outpatient revenue while reducing inpatient burden.

11. KPI Improvements Enabled by ShiftLeft + Digital Clinic

Bed Occupancy Ratio (BOR)

Fewer chronic readmissions and shorter LOS free beds for higher-acuity cases. **Improvement: 3–7% in effective BOR.**

Average Revenue Per Occupied Bed (ARPOB)

Beds shift from low-revenue chronic cases to higher-revenue acute and surgical cases. **Improvement: 5–12% uplift in ARPOB.**

Return on Capital Employed (ROCE)

Revenue increases without additional capex; Digital Clinic adds recurring outpatient revenue. **Improvement: 4–9 percentage-point increase in ROCE.**



12. Implementation Roadmap

- Deploy in high-risk wards (medicine, HDU)
- Expand to surgical and step-down units
- Integrate with HIS/EMR
- Add post-discharge monitoring
- Activate the Digital Vital Room
- Launch the Digital Clinic for chronic patients

13. Expected Outcomes

- 20–40% fewer avoidable ICU transfers
- 10–20% shorter LOS
- 15–30% reduction in readmissions
- 5–12% increase in ARPOB
- 3–7% improvement in effective BOR
- 4–9 percentage-point improvement in ROCE
- Improved nurse efficiency and reduced burnout
- Higher patient satisfaction and long-term engagement

14. Strategic Fit for Hospitals

The ShiftLeft + Digital Clinic model aligns with realities: low-capex deployment, rapid ROI, minimal IT burden, clinically meaningful improvements, and scalability across multiple facilities. It strengthens both inpatient and outpatient performance, creating a sustainable, future-ready care model.



15. Conclusion

Hospitals in India face a unique combination of clinical fragility, operational constraints, and financial pressure.

A ShiftLeft model powered by proactive monitoring, a Digital Vital Room, and a Digital Clinic offers a practical, scalable, and high-impact solution.

Proacteye enables earlier detection, faster intervention, and safer, more efficient care—inside the hospital and at home—while creating new revenue streams and strengthening long-term patient relationships.