

A Dashboard Approach to Quality Assurance for Dialysis centres

Category: Digital Excellence

Focus Area: Digital dashboards and analytics for clinical and quality decision-making

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Problem Statement

As our Apex Kidney Care dialysis network expanded to 230+ geographically distributed centres, ensuring consistent oversight of clinical outcomes, patient-safety indicators, biomedical compliance and operational performance became increasingly difficult through paper-based and fragmented systems.

Dialysis patients require continuous monitoring of treatment adequacy, complications, laboratory parameters, hospitalisation, vaccination status, mortality trends and treatment adherence. With data scattered and reviewed only retrospectively, adverse trends were identified late “delaying interventions and weakening quality-improvement efforts.

Every stakeholder felt this gap “patients, nephrologists, dialysis technicians, nurses, quality teams, biomedical engineers, operations and management. The absence of real-time visibility limited effective monitoring of quality indicators, Root Cause Analysis/Corrective Action and Preventive Action closure, centre-wise benchmarking and proactive risk management.

The challenge was clear: unify clinical documentation, quality analytics, patient-safety monitoring, biomedical maintenance, training, inventory and operations into a single, scalable platform “one that could deliver real-time

clinical governance and data-driven decisions across a large, multi-centre network,

strengthening indicators such as dialysis adequacy (Kt/V, URR), dry-weight achievement, complication and mortality review, infection surveillance, Hepatitis-B vaccination compliance, hospitalisation and missed-dialysis tracking, patient-safety events, biomedical compliance and Corrective Action and Preventive Action monitoring.

Objectives

AXIS EMR is a proprietary, in-house-developed dialysis-management and quality-governance platform, first launched in 2012 and continuously evolved since. It serves as a centralised ecosystem that integrates clinical, quality, biomedical, operational, financial, inventory, maintenance and training workflows. Today it supports the real-time monitoring of over 10,000+ dialysis patients and more than 95,000 dialysis sessions/month across 230+ centres.

Clinical care & documentation:

- “ Patient registration, appointment and billing management
- “ Comprehensive patient EMR and structured dialysis documentation
- “ Kt/V, URR, dry-weight and dialysis-frequency tracking
- “ Laboratory and vaccination
- compliance monitoring

Quality, safety & governance

- “ Real-time quality dashboards and KPI monitoring
- “ Patient-safety event and complication monitoring
- “ Automated mortality root-cause analysis (RCA) generation

â€“ Digital CAPA and risk-management tracking

â€“ Hospitalization and missed-dialysis surveillance

â€“ Centre-wise benchmarking and analytics

Operations, biomedical & people

â€“ RO-plant and biomedical maintenance monitoring

â€“ Staff training and competency tracking

â€“ Supply-chain and financial-management modules

Intervention & Methodology

AXIS Electronic Medical Record supports the complete patient journey â€“ from registration and billing, through clinical documentation and dialysis-treatment monitoring, to patient-safety surveillance, quality analytics, biomedical compliance, inventory and operational governance â€” within one integrated digital ecosystem.

AXIS EMR was built internally and rolled out progressively across 230+ centres under the joint leadership of the Quality Assurance, IT, Clinical and Operations teams. A phased implementation strategy ensured a smooth transition and strong user acceptance.

Comprehensive training was conducted for every stakeholder group â€“ nephrologists, nurses, dialysis technicians, quality teams, biomedical engineers, finance, supply-chain, maintenance and operations staff â€” so that adoption was uniform across roles and locations.

The Quality Assurance team played a defining role, specifying the quality indicators, dashboard requirements, RCA/CAPA workflows, risk-monitoring processes and reporting structures. Continuous user feedback drove regular enhancements, and the platform matured into an enterprise-wide governance system supporting real-time monitoring, performance benchmarking, accreditation readiness, quality improvement and patient-safety surveillance across the organization.

Results & Impact

Measured outcomes

- Real-time monitoring of 10,000+ patients and 95,000+ dialysis sessions per month on a single platform.
- Standardized quality monitoring across 230+ centres, with consistent indicators and definitions network-wide.
- Improved visibility of dialysis-adequacy indicators - Kt/V (>95%), CBV (>95%) and dry-weight (>80%) achievement.
- Stronger oversight of mortality, hospitalization, missed dialysis, complications and vaccination compliance(>80%)
- Earlier identification of adverse trends, enabling timely, preventive patient-safety interventions.
- Faster, more reliable RCA, CAPA, risk-management and indicator monitoring through digital workflows.
- Greater accountability through Centre-wise benchmarking and dashboard analytics.
- Improved documentation traceability and audit readiness.
- Unified patient registration, billing and receivables, reducing duplicate data entry and improving efficiency.
- Better, faster decisions through real-time quality and operational dashboards.

Independent validation

NABH Digital Health Standards assessments conducted at 30 centres recently demonstrated strong alignment with digital-health requirements, achieving 100% compliance in Core Standards and over 90% in Commitment Standards.

RECOGNITION

- “India’s Most Trusted, Valuable & Technology-Driven Patient-Centric Dialysis Provider” 16th Annual Healthcare Leadership Summit
- “India’s Top Quality Service Provider of the Year 2024” Indo-Global Business excellence Summit

Challenges & Critical Success Factors

The success of AXIS EMR was driven by strong leadership commitment, a dedicated in-house IT team, centralized quality governance and the active engagement of multidisciplinary stakeholders.

The core innovation is a single integrated platform that combines clinical care, quality management, patient-safety monitoring, biomedical compliance, training, supply-chain, maintenance and financial workflows in one ecosystem. Unlike conventional EMRs focused mainly on documentation, AXIS EMR delivers real-time quality analytics and governance through:

“ Live quality dashboards

“ Automated mortality Root Cause Analysis (RCA) generation

- Digital CAPA monitoring
- Risk-based monitoring
- Centre-wise benchmarking
- Missed-dialysis surveillance
- Vaccination-compliance tracking
- Biomedical & RO compliance monitoring
- Quality-indicator analytics

Crucially, the platform operationalizes quality tools – RCA, CAPA, trend analysis, benchmarking, risk assessment, indicator monitoring and performance review – on live data rather than after the fact. This integrated digital approach has strengthened patient safety, improved accountability and enabled proactive quality improvement across a large dialysis network.

Key Learnings

The initiative demonstrated that real-time visibility of clinical and quality indicators significantly improves patient safety, quality governance and operational effectiveness. Early identification of complications, compliance gaps and adverse trends allows timely, preventive action.

A central learning was that successful digital transformation needs equal emphasis on technology, leadership commitment, user engagement and continuous training. Integrating clinical, quality, biomedical, operational and financial workflows into one platform improved adoption and removed duplication of effort.

Sustainability is assured through continuous enhancement by the in-house IT team, periodic staff training, regular quality reviews and ongoing alignment with accreditation requirements. Since its launch in 2012, AXIS EMR has continuously evolved to meet emerging clinical and operational needs.

The model is scalable and readily replicable “ across dialysis networks, chronic-disease-management programmes and multi-site healthcare organizations seeking to strengthen patient safety and quality governance.

Reference Sources (If Applicable)

This case study is based on the in-house development and implementation of the AXIS EMR platform at Apex Kidney Care Pvt. Ltd. Supporting evidence includes internal Quality Dashboards, Standard Operating Procedures (SOPs), Quality Indicator Reports, RCA/CAPA records, Biomedical Monitoring Reports, and organizational performance data.