

NABH APEX
CASE STUDY SUBMISSION
Digital Excellence

Data-Driven Quality Monitoring in Dialysis Care
Transforming Data into Better Dialysis Outcomes



Organisation: DCDC Health Services Pvt. Ltd.

Accreditation Standard: NABH Allopathic Clinics 2nd Edition & Digital Health Standards

Year of Implementation: 2026

Setting Multi-centre Dialysis	Beneficiaries All Dialysis Patients	Scope Quality Monitoring & Operational Analytics	Compliance NABH Standards
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01 PROBLEM STATEMENT

Background

Monitoring clinical performance, patient safety, and quality indicators in dialysis centres requires continuous surveillance of critical parameters such as dialysis adequacy, infection rates, patient safety incidents, operational performance, and clinical outcomes.

Traditionally, quality indicators were maintained manually through paper-based records and Excel reports. This created challenges in timely reporting, data accuracy, trend analysis, and decision-making.

Major challenges included:

- Delayed reporting of quality indicators
- Limited visibility of centre-wise performance
- Delayed identification of adverse trends
- Reactive incident management
- Difficulty in benchmarking performance across centres
- Limited use of data for predictive planning and decision-making

As DCDC expanded across multiple dialysis centres, the need for a centralized real-time dashboard became essential to support clinical governance, patient safety, and data-driven management.

Objective

To establish a centralized digital dashboard for real-time monitoring of clinical quality indicators, patient safety events, operational performance, and predictive analytics across all dialysis centres.

Key objective Included

- Enable real-time clinical dashboard monitoring
- Improve quality indicator visibility
- Strengthen incident reporting and analysis
- Support predictive analytics for patient outcomes
- Improve resource planning and operational efficiency
- Enable data-driven decision-making in hospital management

NABH Standard Alignment

The initiative strengthened compliance with NABH standards related to PSQ, COP, and IMS by improving real-time monitoring, clinical governance, incident management, and performance tracking.

02 INTERVENTION / SOLUTION

Solution Overview

DCDC implemented an HMIS-integrated Quality Indicator Dashboard to digitally capture and monitor critical clinical, quality, safety, and operational indicators in real time across all dialysis centres.

a. Real-Time Clinical Dashboard for OPD and Dialysis Monitoring

The dashboard provides daily visibility of patient and dialysis activity.

Key operational indicators include:

- New Patient Added
- Patient Expired

- Patient Transfer
- Catheterization Cases
- Daily Patient Load Monitoring

This enables real-time monitoring of centre activity and operational performance.

b. Quality Indicator Dashboard

Clinical quality indicators are tracked digitally to monitor dialysis effectiveness and treatment outcomes. Indicators include:

- Number of Patients with KT/V Above 1.2
- Number of Patients with KT/V Below 1.2
- Not Reported Cases

This supports monitoring of dialysis adequacy and treatment quality.

c. Water Quality Monitoring Dashboard

Dialysis water quality is continuously monitored through the dashboard. Indicators include:

- Raw Water TDS
- Product Water TDS

This ensures compliance with dialysis water quality requirements and patient safety standards.

d. Patient Safety and Incident Reporting Dashboard

All incidents are reported directly through the portal for rapid escalation and closure. Indicators include:

- Access Site Infection
- Needle Stick Injury
- Adverse Drug Reaction
- Near Miss
- Patient Fall
- Medication Error
- Blood Spill
- Sentinel Events
- Blood Transfusion
- Blood Transfusion Reaction

This enables early identification of safety risks and supports timely RCA and CAPA.

e. Predictive Analytics for Patient Outcomes and Resource Planning

The dashboard supports predictive analytics by identifying patterns and trends across centres. This enables:

- Prediction of inadequate dialysis risk through KT/V trends
- Early infection risk identification
- Resource requirement forecasting

- Workload trend analysis
- Staff and operational planning optimization

f. Data-Driven Decision-Making

The dashboard enables leadership and operational teams to make informed decisions based on live data.

This supports:

- Centre performance benchmarking
- Risk-based decision-making
- Faster escalation of adverse trends
- Improved quality governance
- Better operational planning

d. Leadership Monitoring Dashboard

The dashboard provides management with centralized visibility of compliance performance across centres.

This supports:

- Centre-wise compliance benchmarking
- Risk-based decision-making
- Faster escalation
- Improved governance
- Better operational planning

03 IMPLEMENTATION STRATEGY

The project was executed in four structured phases to ensure clinical integration and staff adoption.

PHASE 1 KPI Identification & Standardization	• Key indicators were identified • Clinical and quality metrics were standardized • Reporting requirements were defined
PHASE 2 Dashboard Development	• HMIS dashboard designed • Automated data capture configured • Real-time reporting enabled
PHASE 3 Training & Rollout	• Doctors, nurses, technicians, and quality teams trained • Centre-wise rollout completed • User adoption supported
PHASE 4 Continuous Monitoring	• Daily dashboard review initiated • Trends monitored regularly • Continuous improvements implemented

Enablers of Successful Rollout

- ▶ Strong leadership commitment
- ▶ Standardized KPI framework
- ▶ HMIS integration across centres
- ▶ Cross-functional collaboration
- ▶ Continuous monitoring and review

04 OUTCOMES

Clinical Outcomes

Dialysis Adequacy Monitoring	Real-time KT/V tracking improved visibility of dialysis adequacy and enabled faster intervention for patients with inadequate dialysis.
Infection Surveillance	Continuous monitoring of access site infection and adverse clinical events strengthened infection prevention and control.
Patient Safety Monitoring	Digital incident reporting improved visibility of patient safety risks and accelerated response actions.

Operational Outcomes

Real-Time Visibility	Leadership gained centralized visibility of all centre performance through live dashboards.
Resource Planning	Improved patient load forecasting supported better manpower and resource allocation.
Faster Escalation	Incident reporting and dashboard visibility enabled quicker escalation and response.

Quality Outcomes

Quality Governance	Improved monitoring strengthened quality review and decision-making.
Incident Reporting Culture	Digital reporting improved reporting compliance and transparency.
Compliance Readiness	Dashboard-based monitoring improved audit readiness and regulatory compliance.

05 IMPACT

Organisational Impact

DCDC’s digital dashboard initiative transformed quality monitoring from retrospective reporting into real-time intelligence-driven management.

Impact

Before	After
Manual reporting with delayed visibility	Real-time dashboard with instant access to quality indicators
Limited trend analysis and delayed intervention	Proactive identification of adverse trends and faster action
Reactive incident management	Improved incident reporting, RCA, and CAPA
Limited resource planning	Better forecasting and optimized resource utilization
Fragmented quality monitoring	Centralized organization-wide quality governance

06 SUSTAINABILITY & FUTURE SCOPE

Sustainability

The dashboard has become an integral part of routine clinical and operational management across DCDC centres.

- ▶ Daily dashboard monitoring established
- ▶ Monthly management review integrated
- ▶ Regular quality indicator reviews conducted
- ▶ Continuous performance benchmarking enabled

Future Enhancements Planned

AI-Based Predictive Analytics	Advanced predictive models for patient risk identification and clinical decision support.
Automated Critical Alerts	Automatic alerts for adverse clinical trends and critical incidents.
Advanced Benchmarking	Enhanced centre-wise comparative analytics.
Real-Time Risk Monitoring	Dynamic dashboards for risk visibility and proactive mitigation.

Conclusion

DCDC's digital dashboard transformation demonstrates how real-time analytics can improve clinical quality monitoring, strengthen patient safety, and enable data-driven decision-making in dialysis care.

By integrating clinical indicators, operational metrics, incident reporting, and predictive analytics into a centralized dashboard, DCDC has built a future-ready quality monitoring system that improves patient outcomes and operational excellence.

Submitted by:

Dr. Bharati Sood
Sr. VP – Quality & Business Excellence
DCDC Health Services Pvt. Ltd.

Authorised Signatory: _____



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