NABH APEX

CASE STUDY SUBMISSION

Digital Health Transformation

Digitization of Clinical Assessment and Documentation

in Dialysis Centres for Improved Patient Safety, Continuity of Care, and Operational Efficiency

Organisation: DCDC Health Services Pvt. Ltd.

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

Year of Implementation: 2025–2026

Setting	Beneficiaries	Scope	Compliance
Multi-centre Dialysis	**All Dialysis Patients**	**Clinical Documentation**	**NABH Standards**

01 PROBLEM STATEMENT

Background

Dialysis patients require continuous monitoring and accurate clinical documentation throughout their treatment journey. At DCDC Health Services Pvt. Ltd., all patient assessments and treatment-related documentation — including vital signs, medication records, nursing notes, technician observations, and discharge summaries — were maintained manually in paper-based records prior to this initiative.

Key Challenges Identified

- Incomplete or missing documentation due to manual entry errors and illegibility
- Delayed access to patient information across shifts and multidisciplinary teams
- Limited traceability of clinical interventions; difficulty auditing care episodes
- Inefficient data retrieval for audits, quality monitoring, and regulatory reviews

- Excessive paperwork burden consuming valuable clinical staff time
- Inconsistent documentation practices across multiple dialysis centres
- No standardised template for routine assessment parameters such as vitals, UF targets, or heparin dosing

NABH Standard Alignment

These challenges directly impacted compliance with NABH standards related to Care of Patient (COP), Management of Medication (MOM), and Patient Safety & Quality (PSQ). The absence of a structured digital record created measurable gaps in patient safety and quality of care.

02 INTERVENTION / SOLUTION

Solution Overview

DCDC developed and implemented a comprehensive Online Assessment Sheet integrated into its digital clinical workflow platform. The solution replaces paper-based records with a structured, role-specific, and real-time digital documentation system accessible by all multidisciplinary team members during a patient's dialysis session.

Digital Assessment Sheet — Captured Data Domains

Patient Demographics	Name, age, UHID, contact number, bed/machine number, nephrologist
Clinical History	Diagnosis, CKD type, access type (AVF/Catheter), known allergies
Pre-session Parameters	Dry weight, SRE status, dialysis frequency, vulnerability flags
Vital Signs (Hourly)	BP, Pulse, SpO_2, Temperature, Respiratory Rate — time-stamped
Treatment Parameters	BFR, DFR, UF Target, UF Removed, Dialyzer type and re-use count, Kt/V, FBV
Medication Records	Drug, dose, route, frequency, staff name, employee ID, timestamp
Doctor's Notes	Real-time intra-session prescriptions and clinical decisions
Nursing/Tech Notes	Observations, access patency checks, adverse event flags
Adverse Events	Structured capture of complications with interventions recorded
Discharge Summary	Dietary advice, post-discharge instructions, emergency contacts, next appointment

Evidence: Sample Filled Online Assessment Sheet

The extract below represents an actual filled assessment sheet from the digital system, demonstrating real-time multi-parameter documentation in a single patient encounter:

SAMPLE RECORD — RE-ASSESSMENT SHEET (Extracted from Digital System)

DCDC | DCDC KIDNEY CARE

RE-ASSESSMENT SHEET

Branch Name:		**Date of admission:**	16-06-2026	**Patient Name:**	
Age/Sex:		**UHID:**		**BED/Machine:**	2
Contact No.:		**Nephrologist:**		**Time of Admission:**	13:00:00

Patient Assessment

Pain Assessment (Visual Analogue Scale)	No Pain 0 1 2 3 4 5 6 7 8 9 Moderate Pain Worst Pain 10  0 2 4 6 8 10	**VULNERABLE:**	Yes ☐ No ☑	**PEDAL OEDEMA:**	Yes ☐ No ☑
DRY WEIGHT:	65.00	**SRE. STATUS:**	Negative	**KNOWN ALLERGY:**	N/A
DIALYSIS FREQUENCY:	Twice/week				
Hepar FREE:	☐	**K+ FREE:**	☐	**Ca++ FREE:**	☐
Dext FREE:	☐				

DIAGNOSIS:CKD Type 5	**Access Type:**A.V.F	**Access Site Infection:** Yes ☐ No ☑	
Dialysis Nurse/Technician Notes: Proposed 4 hour Dialysis		**Pre**	**Post**
Doctor's Notes:	**Temperature**	97.50	97.20
	Resp. Rate	17	17
INJ. HEPARIN (5000 I.U.)	**Access Patent**	Yes No	Yes No
	RBS(id Done)	0	0
Staff Name:Mr. Singh	**Emp ID:**DC00001	**Time:** 01:54 PM	

Weight(Last sess.):	70.6	**Dialyzer Type:**	Re-Use	**UF Target:**	3.00		
Weight(Pre):	68.6	**Dialyzer Use:**	3	**UF Removed:**	2.90		
Weight(Gain):	2.0	**FBV:**	80	**Total Duration:**	4.00		
Weight(Post):	65.70	**Kt/V:**	1.2	**Heparin Given(Total):**	5000		

Duration	TIME	BP	Pulse	SPo2	BFR	DFR	STAFF NAME	Emp ID
Pre	13:00:00	153/75	78	98			Mr. Singh	DC00001
00:30	13:30:00	150/82	75	98	250	500	Mr. Singh	DC00001
01:00	14:00:00	156/80	81	98	250	500	Mr. Singh	DC00001
01:30	14:30:00	150/78	86	98	250	500	Mr. Singh	DC00001
02:00	15:00:00	146/76	80	98	250	500	Mr. Singh	DC00001
02:30	15:30:00	140/78	87	98	250	500	Mr. Singh	DC00001
03:00	16:00:00	150/81	80	98	250	500	Mr. Singh	DC00001
03:30	16:30:00	138/75	83	98	250	500	Mr. Singh	DC00001
Post	17:00:00	170/90	81	98			Mr. Singh	DC00001

S.No	Time	MEDICATION		Dose	Route	Frequency	Staff Name	Emp ID
1	13:00:00	Inj.	INJ. HEPARIN (25000 I.U.)	5000 IU	I.V.	Infusion	Mr. Singh &	DC00001
2	17:00:00	Inj.	INJ. ERYTHROPOITIN 4000 IU	4000 IU	S.C.	STAT	Mr. Kumar Mr. Singh	DC00002

DISCHARGE SUMMARY

Discharge Note(Dietary/Medication/Infection etc.)	**Contact us immediately in case of:**	
All vaitals are normal	-Loss of Thrill/Vibration/leakage from AVF/AVF. -Bleeding/Extraction/Sutures Broken of Dialysis Catheter. -Redness/swelling/pain/warmth/Pus Discharge from AVF/Catheter.	-Breathing Difficulties (SPO2=›94%). -Low BP(‹100/70 mmhg),High BP(›170/100 MMHG), -Chills/Rigors/ Fever › 100°F -Rescheduling Dialysis Session.
	OR **In Case of any emergency, please visit any nearby hospital**	
Investigations/Procedure (if any): No	**Next Appointment:** 18-06-2026	**Date & Time of Discharge:** 16-06-2026 17:10:00
Patient is: Fit To Discharge ☑ Unfit To Discharge ☐	**Emergency Person Name:** Ms. Yadav	**Designation & Contact No.:** Center Manager ( )
Doctor's Name: Dr. Shukla	**Doctor's Emp ID:** DC00003	**Date & Time:** 18-06-2026 17:10:00

03 IMPLEMENTATION STRATEGY

The project was executed in four structured phases to ensure clinical integrity and staff adoption:

PHASE 1 Workflow Assessment	Existing documentation processes were audited across all centres. Key gaps were identified including missing mandatory fields, incomplete vital sign records, and inconsistent medication logging. A clinical workflow map was created to anchor form design.
PHASE 2 Digital Form Development	Online assessment sheets were designed in collaboration with clinicians. Mandatory fields were configured to enforce completeness (e.g., vital signs, UF parameters, staff ID). Standardised templates were rolled out across all centres to ensure uniform documentation.
PHASE 3 Staff Training & Adoption	Role-specific training was conducted for doctors, staff nurses, and dialysis technicians. Hands-on demonstrations using live patient scenarios were provided. Super-users were identified at each centre to provide peer support during transition.
PHASE 4 Monitoring & Optimisation	Documentation compliance rates were monitored weekly. User feedback was systematically collected and actioned. Iterative improvements were made to form layout, field logic, and alert configurations.

Enablers of Successful Rollout

- Leadership commitment from centre management and clinical leads
- Phased rollout allowing centre-by-centre stabilisation before full scale-up
- Integration with existing clinical workflows — minimal disruption to care delivery
- Designated super-users at each centre providing on-the-floor support

04 OUTCOMES

Clinical Outcomes

Care Continuity	All treating clinicians access real-time, complete patient records across shifts and centres — eliminating handover gaps previously caused by illegible or missing paper records.
Clinical Decision Making	Immediate access to trends in vitals, UF parameters, and Kt/V values enables faster and evidence-based intra-session decisions by nephrologists and nursing staff.
Adverse Event Capture	Structured adverse event fields ensure all complications (hypotension, access issues, rigors) are documented at point of care and traceable in post-session review.
Medication Safety	Time-stamped dual-staff medication logging with dose, route, and employee ID ensures full MOM traceability and reduces medication error risk.

Operational Outcomes

Paper Reduction	Significant reduction in paper-based documentation; clinical records now maintained entirely digitally within the session.
Time Efficiency	Staff report reduced time spent on end-of-shift documentation; data is entered once at point of care and auto-populates relevant sections.
Record Retrieval	Patient records retrievable in seconds; compared to manual filing searches that previously took 10–15 minutes per record.
Multi-centre Standardisation	Uniform documentation templates enforced across all DCDC centres — eliminating inter-centre variation in record quality.

Quality & Compliance Outcomes

Documentation Completeness	Mandatory field logic prevents submission of incomplete records — improving completeness rates significantly post-implementation.
Audit Readiness	Digital records with timestamps, staff IDs, and structured data fields enable rapid internal and external audit responses.
NABH Compliance	Strengthened compliance with NABH standards: COP (Care of Patient), MOM (Management of Medication), and PSQ (Patient Safety & Quality).
Traceability	Every clinical intervention — from vital sign entry to medication administration — carries a staff ID, timestamp, and centre identifier.

05 IMPACT

Organisational Impact

- Standardised clinical documentation language and structure across all dialysis centres under DCDC Health Services Pvt. Ltd.
- Improved multidisciplinary communication — doctors, nurses, and technicians operate on a single shared record
- Enhanced data availability for quality indicator monitoring and NABH reporting
- Stronger compliance posture for NABH accreditation assessment
- Increased organisational readiness for integration into broader digital health ecosystems (e.g., ABDM, EHR, PMNDP)

Patient Safety Impact

Before	After
Manual, paper-based records prone to illegibility and loss	Digital, structured records with mandatory fields and real-time access

No standardised vital sign monitoring template	Half Hourly vitals captured with time-stamps and staff IDs
Medication records incomplete or unverifiable	Full MOM trail: drug, dose, route, time, staff — dual verification
Audit preparation required days of manual compilation	Audit reports generated from structured digital data within hours
High paperwork burden on clinical staff	Point-of-care digital entry; no duplication of effort

06 SUSTAINABILITY & FUTURE SCOPE

Sustainability

The digital documentation platform has been fully embedded into routine clinical operations at all DCDC dialysis centres. The solution is no longer a project — it is standard operating procedure. Key sustainability factors include:

- Digital-first documentation policy mandated for all clinical staff as part of onboarding
- Continuous monitoring of documentation compliance with feedback loops to centre managers
- Regular system updates informed by clinical staff feedback and evolving NABH requirements
- Super-user network sustains peer-to-peer support and reduces dependence on central IT

Future Enhancements Planned

Advanced Clinical Dashboards	Centre-level and patient-level dashboards visualising trends in Kt/V, UF, BP, and haemoglobin to support proactive clinical management.
Automated Alerts	System-triggered alerts for abnormal clinical parameters (e.g., SpO_2 < 94%, BP > 170/100 mmHg) to enable immediate nursing response.
Predictive Analytics	AI-assisted risk stratification for early identification of patients at risk of adverse events or hospitalisation.
Quality Indicator Integration	Automated extraction of NABH quality indicators from digital records to enable real-time QI monitoring dashboards.
ABDM Integration	Integration with Ayushman Bharat Digital Mission (ABDM) infrastructure for patient health record interoperability across healthcare providers.
PMNDP Compliance	Supports digital patient tracking, dialysis monitoring, compliance reporting, and quality outcome management for efficient PMNDP implementation.

Conclusion

The implementation of digital assessment sheets transformed clinical documentation at DCDC Health Services from a fragmented, paper-based system to a structured, real-time, and standardised digital workflow. This initiative has demonstrably enhanced patient safety, improved continuity of care, increased operational efficiency, and strengthened compliance with NABH quality standards.

By digitising the full dialysis care episode — from pre-session assessment through to discharge documentation — DCDC has established a scalable, replicable model of digital health transformation in specialised dialysis care delivery.

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