

Before the Time-Out: Retiring Paper Consent in Procedural Cardiology

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PURPOSE

At present, TEE and cardioversion consent forms are completed on paper and scanned into Epic after the workday ends. Consequently, signed consent documents are **unavailable in the EMR during the pre-procedural time-out**.

The process is also vulnerable to **documentation errors**:
Missing Initials & Signatures | Incorrect Dates & Times
Illegible Entries | Out-of-Sequence Signatures
Zero Peri-Procedural Code Status Capture

This project integrates existing Epic eConsent functionality into the procedural cardiology workflow.

METHODS

- Baseline characterization using Epic SlicerDicer
- Structured stakeholder interviews @ 5 operational roles
- Workflow mapping and qualitative analysis
- Enterprise governance and pilot planning
- eConsent Pre-Post QI intervention design

BASELINE SETTING

1,806

TEE studies over 13 months

423

DCCV-involving procedures

139

Mean TEEs per month (119–163)

0%

Consents electronically available at the time-out

Monthly procedural volume

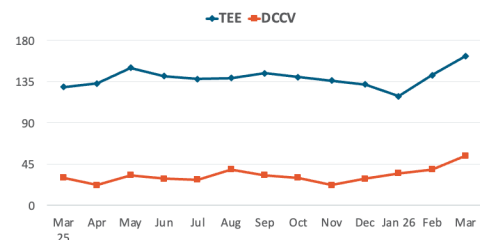
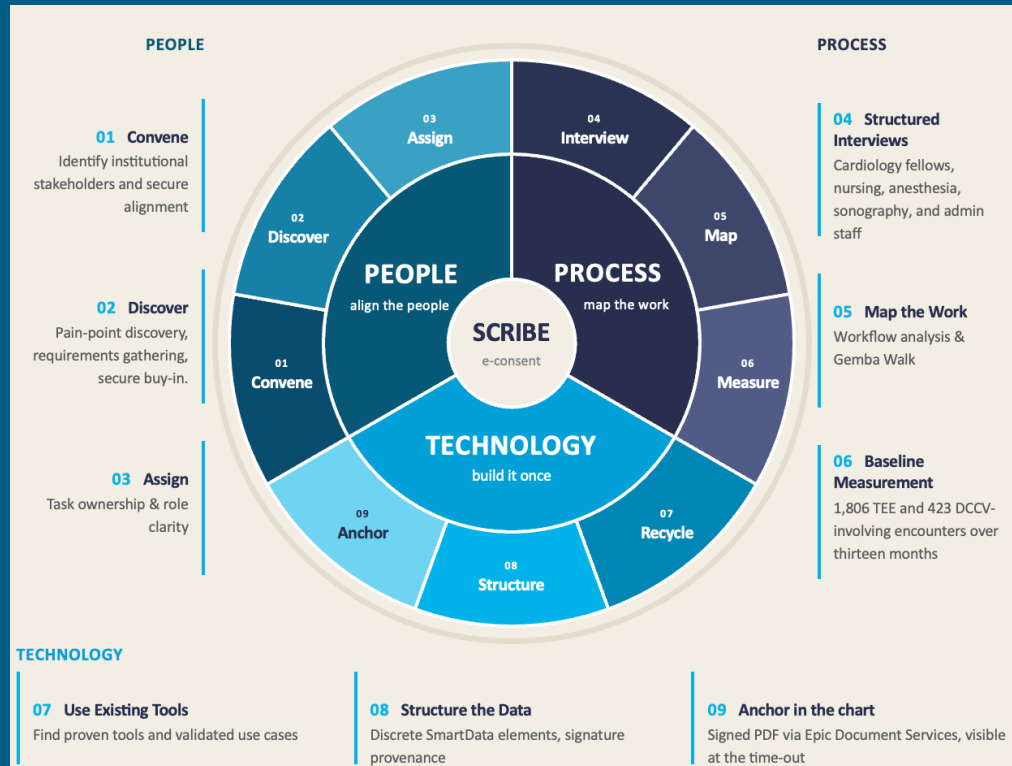


Figure 1. Monthly TEE studies and DCCV-involving procedures from March 2025–March 2026 (Epic SlicerDicer). Counts reflect encounter-level aggregation. Consent is collected once per encounter regardless of the number of procedures performed.

Care Setting

Outpatient 1,107 (61%) | Inpatient 698 (39%)

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PROJECTED ANNUAL DIRECT SAVINGS

	ECHO LAB PILOT 7–10 consents/day	SERVICE LINE 300 consents/day	ENTERPRISE 800 consents/day
Pages / year	9,100–13,000	~390,000	~1,040,000
Paper (reams)	18–26	~780	~2,080
Back-end labor	121–260 h	5,200–7,800 h	13,867–20,800 h
Labor cost	\$2,420–\$7,800	\$104,000–\$234,000	\$277,340–\$624,000
Printing cost	\$455–\$650	~\$19,500	~\$52,000
DIRECT ANNUAL SAVINGS	\$2,900–\$8,500	\$123,500–\$253,500	\$329,340–\$676,000

Specific Aims

AIM 1 — Availability at the time-out

Increase the proportion of TEE and DCCV procedures with a fully executed, legally compliant consent available in Epic prior to the pre-procedural time-out, within 8 weeks of go-live.

0% → >90%

AIM 2 — Code status documentation

Achieve full documentation of peri-procedural code status at the time of consent during the pilot period, demonstrating process reliability.

Not captured → 100%

AIM 3 — Retrieval time

Reduce median clinician consent retrieval time compared to baseline paper workflows.

Paper retrieval → <30 seconds

Secondary measures: e-consent adoption rate, pages and reams eliminated, estimated cost savings, and pre/post clinician workload on the NASA Task Load Index.

IMPLEMENTATION

- P0 Charter creation, scope definition, KPIs, sponsor sign-off
- P1 Physician builder program, consent language approval, enterprise roadmap integration
- P2 Epic Build, legal and compliance review, go / no-go, User acceptance testing
- P3 Pilot go-live | TEE lab, one fellow per month, KPI dashboard [AY 2026–2027]
- P4 PDSA iteration, Pilot Completion, Pre/post analysis
- P5 Scale to service line; integrate signature pads and tablets

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