

Advanced Workflow Assessment and Redesign Project

Supply Tracking & Advance Readiness for Timeliness (START) Project

Stephanie L. McNeese

School of Nursing, Texas Tech University Health Sciences Center

NURS 5334 – Informatics IV

Dr. Steph Hoelscher

March 13, 2026

AGENDA

- | | |
|-----------|--|
| 01 | Problem Statement |
| 02 | Aim Statement & Project Team |
| 03 | Failure Mode & Effect Analysis (FMEA) |
| 04 | Current State Workflow Swimlane |
| 05 | Proposed Intervention |
| 06 | Future State Workflow Swimlane |
| 07 | PDSA Cycle & Outcome Evaluation |
| 08 | PDSA Gantt Chart |
| 09 | Evaluation Plan: Control Charts |
| 10 | Conclusion |

Problem Statement

The Problem

Required supplies for scheduled procedures are frequently not available at the scheduled start time, forcing procedural staff to expedite supplies last-minute and resulting in delays.

Current Workflow Process

- Order received; case created in Epic
- CST pulls supplies on morning of procedure
- Supplies are opened and verified just prior to procedure
- Missing supplies cause disruptions and case-delays

Trigger Events

All scheduled procedural events

Baseline Late-Start Rate

7.9%

Supply-related delays (12-week period)

Wasted Staff Hours per Week

27 hours

Expediting last-minute supplies

Average Annual Staffing Cost Waste

≈ \$53,200

RN + CST time lost to expediting supplies

Pilot Site: Interventional Radiology (IR)
High volume • Specialty supplies

Aim Statement & Project Team

AIM STATEMENT

By October 31, 2026, reduce scheduled procedure on-time start delays related to missing or incomplete supplies on the date of service (DOS) by 30% (target: $\leq 5.5\%$) across participating procedural areas through implementation of a standardized pre-procedure Epic-based supply verification workflow.

Outcome Measure

% procedures late-started
due to supply issues
(Target: $\leq 5.5\%$)

Process Measure

% cases with supply
verification ≥ 24 hrs
before case start

Balancing Measure

Average weekly minutes
staff spend resolving
DOS supply issues

START Project Team

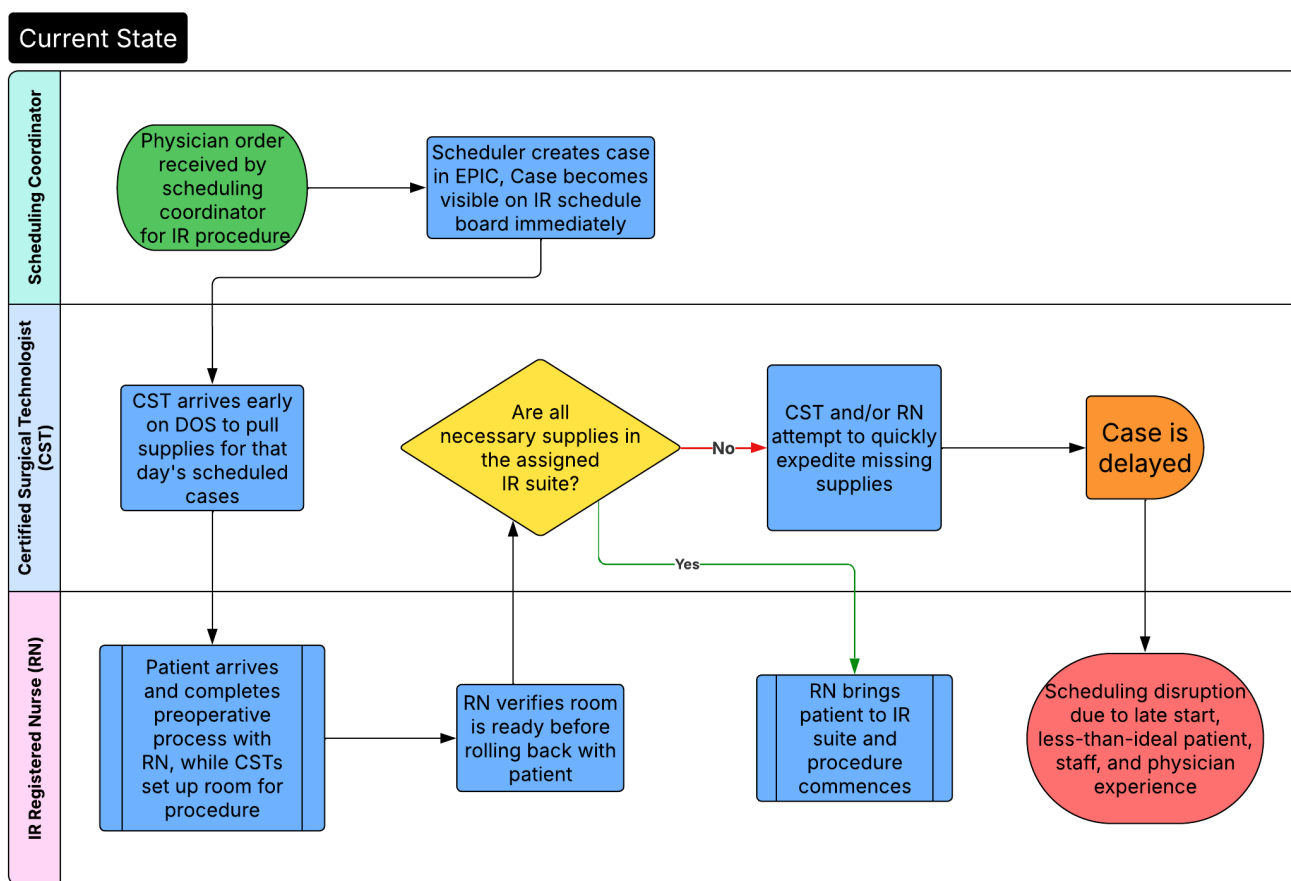
- Informatics Nurse (Project Lead)
- Scheduling Coordinator
- Procedural Nurse (RN)
- Certified Surgical Technologist (CST)
- Procedural Area Management
- Materials Management
- Central Supply Lead
- EHR Analyst

Failure Mode & Effects Analysis (FMEA)

| START Project – Failure Modes and Effects Analysis (FMEA) | | | | | | | |
|---|---|--|---------------------------------|--------------------------------|-----------------|------------|---|
| Failure Mode | Failure Causes | Failure Effects | Likelihood of Occurrence (1–10) | Likelihood of Detection (1–10) | Severity (1–10) | RPN | Actions to Reduce Occurrence of Failure |
| No standardized pre-case supply verification performed | No defined workflow; unclear role accountability for supply readiness | Supply gaps found on DOS; case delays; wasted staff time | 8 | 9 | 7 | 504 | Implement Epic-based 24-hr look-ahead supply verification (START core intervention) |
| Inconsistent or narrative-based preference card documentation | Preference cards use free-text fields for important info including some supplies; not maintained in structured format | Required supplies missed; verification unreliable; delays on DOS | 7 | 6 | 7 | 294 | Standardize Epic preference cards with all supply items contained within discrete structured supply fields; conduct card audits |
| Unclear accountability for who verifies supplies | No policy defining CST vs. RN responsibilities; variable staff engagement | Duplicated effort or gaps in coverage; staff friction; missed supplies | 7 | 6 | 6 | 252 | Define CST vs. RN accountability in Epic workflow; formalize in departmental policy |

Highest-priority failure: No standardized pre-case supply verification = highest combined RPN (504). Addressed by the START intervention.

Current State Workflow Swimlane



Proposed Intervention: Epic-Based Supply Verification

1 Daily Look-Ahead Review

CSTs perform Epic-based look-ahead review of upcoming IR cases ≥ 24 hours before scheduled DOS.

2 Preference Card Verification

CSTs verify all required supplies using Epic standardized preference cards — structured, discrete fields (not narrative text).

3 Early Materials Notification

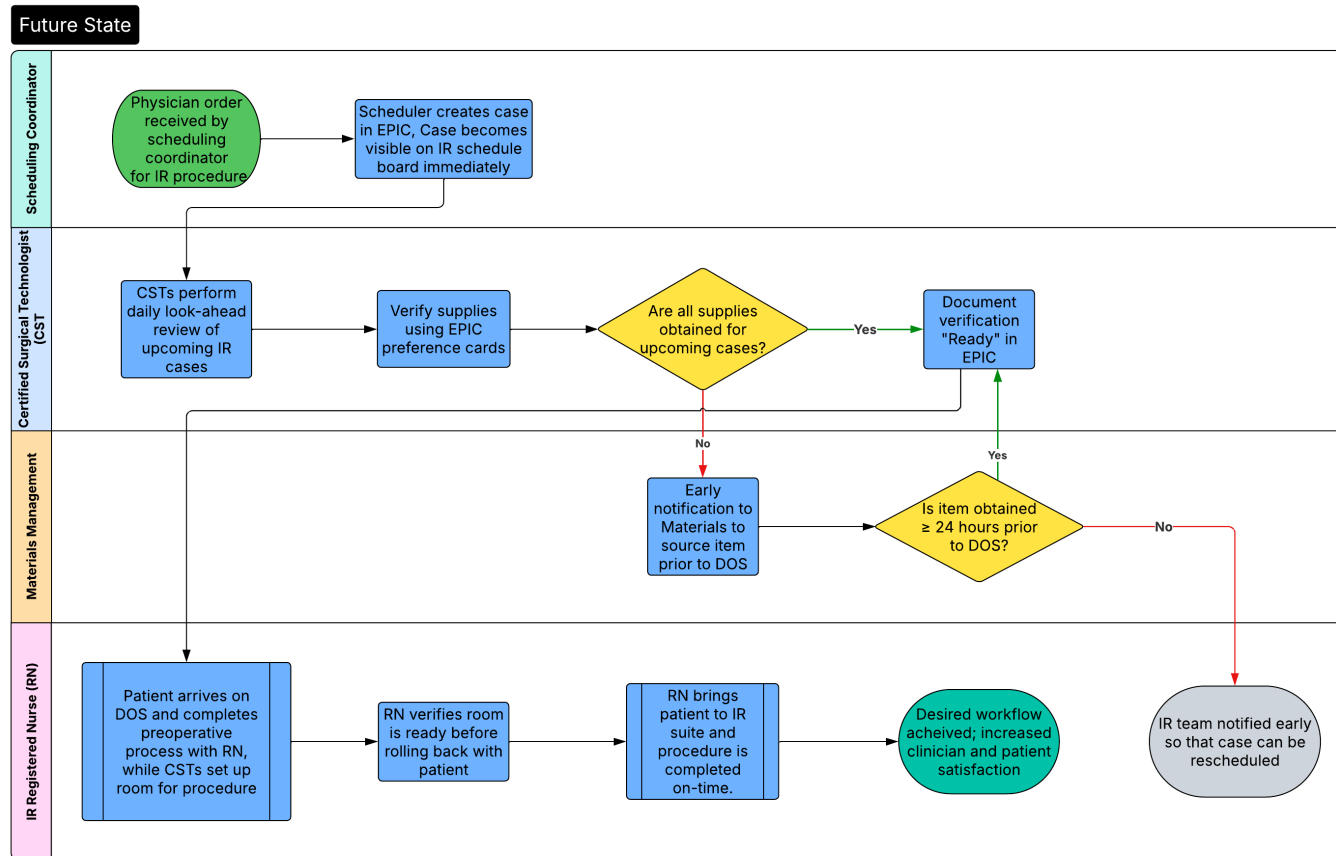
If supplies are missing, Materials Management is notified early to source items prior to DOS, allowing time to prevent delays.

4 Epic 'Ready' Documentation

Once supplies are confirmed, CST documents verification as 'Ready' in Epic scheduling workflow using a discrete status field.

For same-day add-on cases: rapid critical-supply verification & immediate Epic scheduling visibility for procedural and materials teams

Future State Workflow Swimlane



PDSA Cycle & Outcome Evaluation

P Plan

- Finalize project scope, aim, metrics, and secure leadership approval
- Conduct stakeholder kickoff; engage interprofessional team
- Map current-state workflow; validate baseline delay data
- Review Epic preference cards
- Design standardized verification process; define role accountability

D Do

- Build Epic verification workflow and rapid add-on process
- Train pilot department staff
- Go-live in IR and monitor compliance
- Collect post-implementation data

S Study

- Evaluate outcome, process, and balancing measures
- Gather staff workflow feedback
- Refine workflow and processes

A Act

- Present results to leadership
- Evaluate plan for broader rollout

Overall Evaluation

Mock data projects a 33.5% reduction in supply-related late starts (7.9% → 5.2%), exceeding the 30% target. Staff workflow feedback indicates improved role clarity and reduced day-of-procedure burden. The intervention is considered ready for broader rollout pending leadership approval.

PDSA Gantt Chart

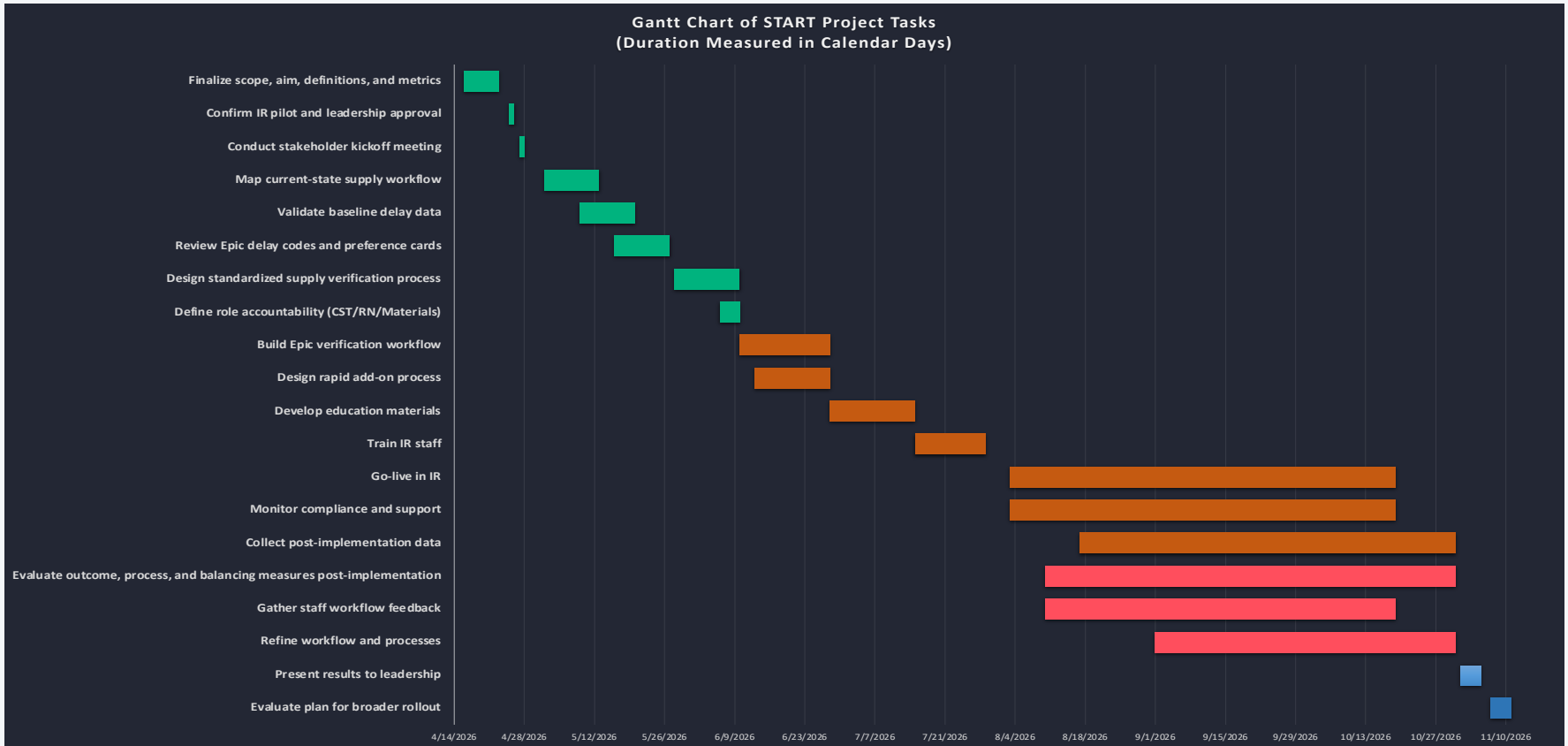
PLAN

DO

STUDY

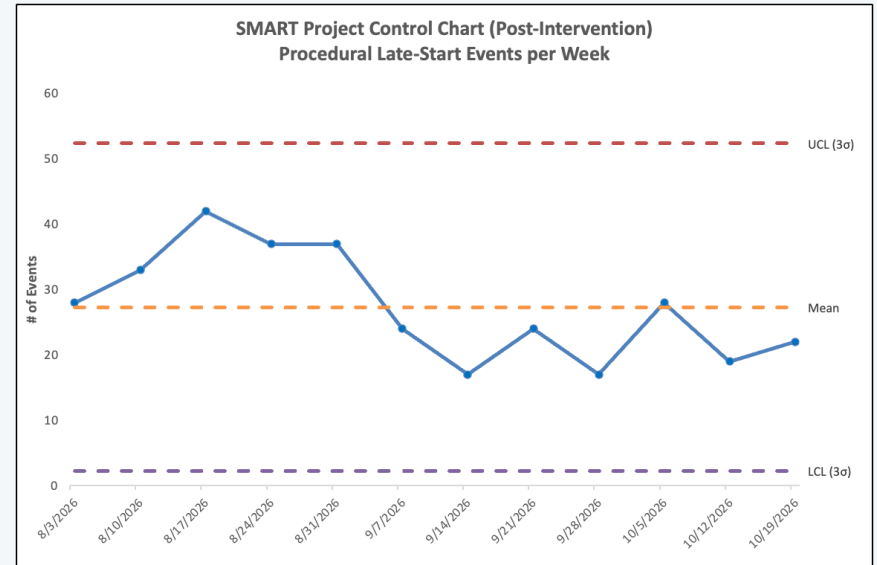
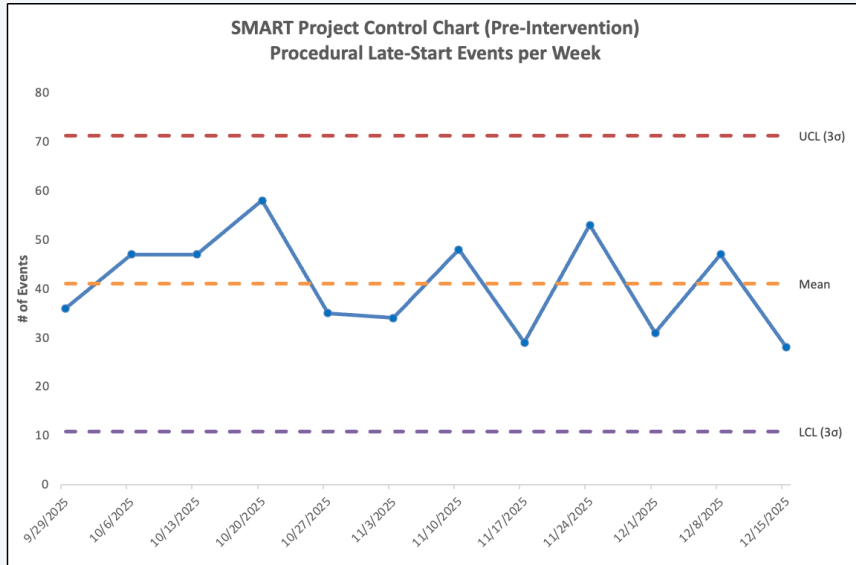
ACT

Gantt Chart of START Project Tasks
(Duration Measured in Calendar Days)



Evaluation Plan: Control Chart Methodology

Control chart — tracking the number of procedural late-start events per week. Pre-intervention baseline (Sept–Dec 2025) compared to post-intervention future performance (Aug–Oct 2026), utilizing mock data provided with the assignment scenario.



Pre-Intervention
Average Weekly Late-Start Events

≈ **41 (7.9%)**

Post-Intervention
Average Weekly Late-Start Events

≈ **27 (5.2%)**

Reduction Achieved

33.5%

Target Met?

✓ YES (≤ 5.5%)

Conclusion

- ❖ Supply delays = preventable & high-impact improvement opportunity
- ❖ Epic-based verification workflow addresses the FMEA root cause
- ❖ Projected data supports a > 30% reduction in late starts, *exceeding aim*
- ❖ Wider rollout to additional procedural areas is recommended

Thank You

Questions & Discussion

Name: Stephanie L. McNeese, BSN, RN

Email: smcneese@ttuhsc.edu

Org: TTUHSC School of Nursing

Generative AI Attestation



I attest that I used a generative AI tool in accordance with course guidelines and assignment-specific permissions. I used Claude (Anthropic, 2026) on March 1, 2026, to generate an interesting and attractive PowerPoint template for informatics presentations. The prompt(s) used included: “Can you create me a blank power point template to use for an informatics presentation? Use Lorem Ipsum as place fillers, and I need some slides for a table, a three-column list comparison, etc.,” and “I need to present this PowerPoint to my classmates in ten minutes or less. please help me develop slide notes to act as a script of sorts.” Additionally, on March 8, 2026, I asked Claude to help me compare my presentation to the assignment rubric.

All AI-generated content was critically reviewed, edited, and appropriately integrated with my own academic and clinical reasoning.

References

- Anthropic. (2026). Claude (Sonnet 4.6, March 1 version) [Large language model]. <https://claude.ai>
- Knox, C., Harper, J., McMillan, L., Vining, B., & White, T. (2024). Increasing first case on-time starts in the operating room using an electronic readiness dashboard: A quality improvement project. *Perioperative Care and Operating Room Management*, 35, 100412. <https://doi.org/10.1016/j.pcorn.2024.100412>
- Pappada, S. M., Papadimos, T. J., Khuder, S., Mack, S. T., Beachy, P. Z., & Casabianca, A. B. (2022). Contributing factors to operating room delays identified from an electronic health record: A retrospective study. *Anesthesiology Research and Practice*, 2022, 8635454. <https://doi.org/10.1155/2022/8635454>
- Saul, B., Ketelaar, E., Yaish, A., Wagner, M., Comrie, R., Brannan, G. D., Restini, C., & Balancio, M. (2022). Assessing root causes of first case on-time start (FCOTS) delay in the orthopedic department at a busy level II community teaching hospital. *Spartan Medical Research Journal*, 7(2), 36719. <https://doi.org/10.51894/001c.36719>
- U.S. Bureau of Labor Statistics. (2025a, August 28). *Occupational outlook handbook: Surgical assistants and technologists*. United States Department of Labor. <https://www.bls.gov/ooh/healthcare/surgical-technologists.htm#tab-5>
- U.S. Bureau of Labor Statistics. (2025b, August 28). *Occupational outlook handbook: Registered nurses*. United States Department of Labor. <https://www.bls.gov/ooh/healthcare/registered-nurses.htm>