Kelly Devine ISP Application 03/13/26

Project Lead/Key Contact

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Why are you interested in the Improvement Scholars Program?

We are interested in participating in the Improvement Scholars Program to strengthen our clinical improvement leadership skills and to lead a structured, system-level improvement initiative within Interventional Radiology (IR). This program offers mentorship, project management support, and an improvement framework necessary to address complex, interdisciplinary challenges that directly impact patient safety, efficiency, and team performance. Through this experience, we aim to develop sustainable solutions that can be scaled across services and aligned with institutional quality and safety priorities.

Problem Statement: What is the problem you are looking to solve?

Breakdowns in external communication between the VIR department and inpatient care teams have contributed to multiple patient safety events and Root Cause Analyses (RCAs), including wrong lines placed, unavailable or incorrect inventory, missed or mishandled specimens, and unclear post-procedure plans. Findings from the VIR Communication Survey demonstrate inconsistent “close-the-loop” communication related to consult disposition, schedule changes or delays, and post-procedure next steps, with notable variation by role and frequent reports of delayed or absent follow-up to inpatient teams.

This project is intentionally scoped to address external communication workflows between VIR services and inpatient teams, rather than internal VIR communication processes, to improve shared situational awareness and care coordination across services. These communication gaps most often occur within the Interventional Radiology environment and affect inpatient, outpatient, and urgent cases across VIR, Neuro-IR, and Heart & Vascular IR. The problem impacts nurses, technologists, APPs, trainees, attending physicians, and anesthesia providers who rely on timely, accurate communication between departments to safely coordinate patient care.

Importance Statement: Why is this project important?

Benefit to patients:

Establishing a standardized communication and handoff process will reduce preventable errors, decrease delays and rescheduled procedures, and improve procedural readiness. This work directly supports patient safety, efficiency, and overall patient experience.

Potential downside for patients:

No significant downside is anticipated. The proposed interventions focus on standardization and reliability and are expected to reduce risk rather than introduce burden.

Background information supporting this effort:
Data from the *Measuring What Matters: VIR Response & Handoff Quality* survey demonstrate inconsistent acknowledgement of consultations, unclear preparation instructions, and unreliable loop-closure back to inpatient teams.

Responses across roles (RNs, APPs, residents, fellows, and attendings) show frequent ratings of "Rarely" and "Sometimes" for timely acknowledgment, clarity of expectations, and communication of consult disposition.

Peer-reviewed literature supports the use of TeamSTEPPS tools in procedural, academic settings to improve teamwork and safety climate. Evidence from an academic interventional imaging practice demonstrates improvements in communication reliability and safety culture following implementation of TeamSTEPPS-based interventions (Gupta et al., 2015). Additional procedural safety improvement work has shown that structured TeamSTEPPS tools are associated with enhanced patient safety outcomes and closed-loop communication (Shi et al., 2024). Furthermore, systematic review evidence confirms the effectiveness of TeamSTEPPS-based training and structured communication tools, including briefs, debriefs, and checklists, across acute and procedural healthcare environments (Buljac-Samardžić et al., 2020).

Alignment with organizational goals:
This project supports UNC Health priorities to:

- Enhance patient safety and experience
- Support and retain teammates through reliable systems
- Implement system-level fixes for known communication gaps

Prior work and feedback:
As part of early problem exploration, the project team conducted a multidisciplinary VIR Communication Survey to assess external communication between the VIR department and inpatient teams across consult, scheduling, and post-procedure workflows. Feedback from nurses, APPs, residents, fellows, and attending physicians revealed inconsistent "close-the-loop" communication related to consult disposition, schedule changes or delays, and post-procedure next steps, with inpatient

nurses and trainees reporting higher rates of delayed or absent follow-up. These findings reinforced themes previously identified through patient safety events and Root Cause Analyses and were shared with VIR clinical and operational leaders to refine project scope. While it is unclear whether a similar standardized consult communication pathway exists elsewhere at UNC, comparable efforts at other academic medical centers have demonstrated improvements in safety and efficiency through clearly defined roles, consult expectations, and pre- and post-procedure communication standards. Together, this feedback and baseline data informed the decision to focus improvement efforts on standardizing external communication workflows between VIR and inpatient teams, positioning the project for structured testing through the Improvement Scholars Program

Project Scope

In Scope:

- **Patient population:** Inpatients undergoing Vascular Interventional procedures
- **Approximate population size:** All IR procedural volumes during the pilot period
- **Settings:** The Interventional Radiology procedural area and inpatient units interacting with VIR consult services

Out of Scope:

- Non-interventional radiology procedural services
- Scheduling systems outside of consult communication and handoff workflows

Measures: (Process, Balancing, Structure)

Measure Name	Measure Type	Measure Calculation	Measure Exclusion	Data Source	Baseline	Goal	Collection Frequency
Reliable VIR consult & prep communication	Outcome	% of VIR consults with timely acknowledgment, clearly communicated prep requirements, and documented disposition shared with sending team	Non-VIR consults	Staff survey; SAFE events	Inconsistent across roles	≥90% reliable	Quarterly
IR cancellations or same-day reschedules related to communication gaps	Outcome	% of cancellations/reschedules attributed to incomplete prep or failed handoff communication	Patient-initiated cancellations	Scheduling data; SAFE	Variable	≥50% reduction	Quarterly
Consult acknowledgment within agreed timeframe	Process	% of consultations acknowledged with next steps and anticipated timeline communicated	Emergent exceptions	Survey audit	Variable	≥90%	Monthly

Nurse-to-nurse handoff reliability (IR↔ Unit)	Process	% of nurses reporting "Often/Always" clarity regarding prep status, transport readiness, and post-procedure plan	N/A	Survey	Variable	≥90%	Quarterly
Provider-to-provider communication clarity (IR ↔ consulting teams)	Process	% of providers reporting clear expectations for procedure plan, timing, and disposition	N/A	Survey	Variable	≥90%	Quarterly
Loop closure after procedure or reschedule	Process	% of cases with documented post-procedure or reschedule communication back to primary team/unit	N/A	Chart Audit; Survey	Variable	≥90%	Quarterly
Staff workload or perceived burden	Balancing	% reporting increased workload or delays related to new communication processes	N/A	Staff Feedback	TBD	No Increase	Quarterly

Root Cause Analysis

- No consultation acknowledgement, or handoff expectations

- Role ambiguity across VIR, inpatient teams, and trainees
- Reliance on individual workarounds rather than reliable systems
- Limited shared understanding of timelines, prep requirements, and ownership

Ideas for Improvement

- Standardized VIR consultation acknowledgment with defined response expectations
- Clear role delineation and responsibility matrix
- Standard handoff and loop-closure communication template
- Use of huddles and visual management to reinforce expectations
- Feedback loops using survey and SAFE data
- Radiant Optimization: Developing VIR checklist or pop up within the EMR accessible by all teams with patients going to VIR. Checklist to outline what needs to be performed prior to VIR procedure based on consult note.
- Radiant Optimization: Scheduling view available in the EMR to all teams with patients undergoing VIR procedures. This will allow teams to have a real-time view of when their patient is scheduled/ estimated to be scheduled in VIR. Also will allow teams to know when patients have been rescheduled.

Risks and Opportunities

Opportunities:

- Strong alignment with safety and quality priorities
- Clear frontline recognition of the problem
- Existing survey data to establish baseline

Challenges:

- Change fatigue
- Variability across services and provider roles
- Sustaining reliability across shifts and trainees

Stakeholders and Project Team Members

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- *Who are the key stakeholders in your system and processes?*
- *Who are the key project team leaders to design and implement change?*

Name	Role
David Mauro	*Sponsor(s)*
Lourens Du Pisanie	*Team Lead*
Juliana Baca Roman	*Subject Matter Expert*
Terri McGarr	*Subject Matter Expert*
Kelly Devine	*Data Lead*

Impact on the Quintuple Aim

- **Improved health:** Reduced preventable errors
- **Patient experience:** Fewer delays and clearer communication
- **Clinician/staff experience:** Reduced frustration and rework
- **Health equity:** More reliable processes for all patients
- **Cost:** Reduced inefficiencies, repeat work, and delays

Sustainment Plan

- Embed standards into orientation and ongoing education
- Ongoing monitoring through surveys and SAFE reporting
- Leadership accountability through quality councils
- Visual management and regular review of performance

Carolina Quality Tools

This project will leverage Just Culture principles, SAFE reporting trends, TeamSTEPPS communication tools, structured huddles, and visual management boards to support adoption, learning, and sustainment.

References

- Sponsor letters – acknowledgement of support for this project (attached to email with application)

- Buljac-Samardžić, M., Doekhie, K. D., & van Wijngaarden, J. D. H. (2020). *Interventions to improve team effectiveness within healthcare: A systematic review*. Human Resources for Health, 18, Article 2. doi.org/10.1186/s12960-019-0411-3
- Gupta, R. T., Sexton, J. B., Milne, J., & Frush, D. P. (2015). *Practice and quality improvement: Successful implementation of TeamSTEPPS tools into an academic interventional ultrasound practice*. American Journal of Roentgenology, 204(1), 105–110. doi.org/10.2214/AJR.14.12775
- Microsoft. (2025). *Copilot* [Large language model]. https://copilot.microsoft.com/
- Shi, Y., Miao, S., Fu, Y., et al. (2024). *TeamSTEPPS improves patient safety*. BMJ Open Quality, 13, e002669. doi.org/10.1136/bmjoq-2023-002669

School of Medicine

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To the Improvement Scholars Program Review Committee,

As Vice Chair for Quality and Safety in the Department of Radiology, I am pleased to support this improvement project focused on strengthening communication between the Division of Vascular and Interventional Radiology (VIR) and inpatient teams. From a systems standpoint, this work addresses a well-recognized vulnerability at the interface between procedural services and inpatient care.

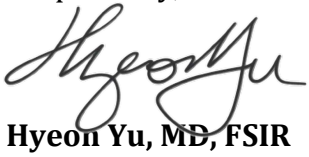
Recent reviews of patient safety events, Root Cause Analyses, and findings from the multidisciplinary VIR Communication Survey consistently highlight variation in how consults, scheduling changes, and post-procedure information are communicated. Feedback, particularly from nursing and trainee groups, underscores that missed or delayed updates create uncertainty for inpatient teams and elevate the risk of error. These issues reflect system-level variability rather than individual performance, reinforcing the need for more reliable workflows.

I strongly support the team's decision to focus this project on external communication processes. Clear expectations, defined roles, and standardized communication practices are fundamental to high-reliability care and align with effective approaches used at other academic medical centers to improve cross-service coordination.

This proposal demonstrates thoughtful use of data, engagement of frontline stakeholders, and meaningful learning from prior safety events. Participation in the Improvement Scholars Program will provide the structure and coaching required to translate these insights into testable, sustainable improvements. From a quality leadership perspective, this work is well positioned to enhance patient safety and care coordination for patients receiving interventional radiology services.

Thank you for your consideration.

Respectfully,



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