



1. Project Lead/Key Contact

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2. Why are you interested in participating in the Improvement Scholars Program?

I hope to participate in the Improvement Scholars Program to expand my skills as a quality and process improvement leader and to connect with others involved in healthcare improvement work throughout UNC. My interest in quality improvement has evolved with my nursing career at UNC Health over the past 20 years, especially as a nurse practitioner since 2009 and since participating in a UNC Purple Belt project focused on the clinic intake process in 2016. Since then, I have led projects within my division focused on improving postoperative recovery and clinical implementation of patient-reported outcomes, which was published in *The Journal for Nurse Practitioners*.¹ I have a strong interest in improving the value of care from the patient perspective.

In August 2022, I completed my MHA at the UNC Gillings School of Global Public Health. My education together with my NP experience position me to leverage both business and clinical perspectives to shape fiscally responsible, patient-centered change. I currently chair the APP Center Mentoring Subcommittee and serve on the APP Education and Professional Development Subcommittee and APP Steering Committee. I serve as the Orthopaedic Department APP Education and Quality Coordinator. The Improvement Scholars Program would help me to better lead in these roles. My professional goal is to use my education and experience to lead interdisciplinary teams to improve care delivery at UNC Health. The Improvement Scholars Program is an exciting opportunity to improve care on a larger scale while continuing my clinical practice. I hope to use the experience and connections acquired through the program to continue to improve care delivery and lead clinicians from multiple disciplines to do the same.

3. Which UNC Health improvement priority will your project address?

Outpatient care improvement: Our project will help to ensure that patients are medically optimized for surgery, have appropriate education regarding risks and benefits of surgery and expectations for recovery, and have the support needed to safely recover following surgery. Individuals at higher risk for postoperative complications will be identified prior to surgery and will receive additional postoperative support from the care team.

Patient harm prevention: Appropriate medical optimization, preoperative patient education, and promoting safety at home is expected to decrease postoperative falls, wound complications, and infections, which are three common reasons related to surgery that foot and ankle patients present to

the Emergency Department (ED) and are readmitted in the 30 days following surgery. Proactive outreach to high-risk patients is expected to further prevent patient harm.

Reducing avoidable ED visits/readmissions: Over the past year, the most common reason for presenting to the ED within 30 days of surgery was postoperative pain. These visits are largely avoidable through preoperative education, appropriate pain management, and postoperative communication with the care team. Preoperative education will help to ensure that patients have appropriate expectations for their recovery and know how to reach the team with questions, likely decreasing unnecessary ED visits.

Health equity promotion: ED visits and readmissions within 30 days of surgery disproportionately impact individuals of a racial or ethnic minority, those residing in health professional shortage areas, and individuals with financial barriers to care. Over the past 6 months, 47% of UNC Faculty Physicians Orthopaedic Foot & Ankle patients presenting to the ED and 32% of patients requiring readmission within 30 days of surgery were members of a racial or ethnic minority. Forty percent of ED visits and 42% of readmissions were patients residing greater than 40 miles from Chapel Hill. Medicaid makes up 7% of the outpatient Orthopaedic Foot & Ankle surgery payer mix but 13% of ED visits and 28% of readmissions within 30 days of surgery. Fifteen percent of our surgery patients have no insurance but 30% of ED visits and 18% of readmitted patients are uninsured. Sixty percent of patients presenting to the ED and 42% of readmitted patients over the past 6 months have diabetes. Diabetic foot disease disproportionately impacts members of racial and ethnic minority groups.² Among Medicare beneficiaries, African Americans and Native Americans are 1.8-1.9 times more likely to undergo major amputation due to diabetic foot disease than white individuals.³ Residing in a health professional shortage area in North Carolina is a risk factor for amputation, independent of age, sex, and comorbidities.⁴ By routinely ensuring that patients' medical, home safety, and preoperative education needs are met prior to surgery and proactively reaching out to high-risk patients following surgery, we will promote health equity.

Patient experience promotion: Improving our preoperative patient optimization process is expected to ensure that patients feel prepared for surgery and supported in their postoperative recovery.

4. What is the problem or gap in quality you seek to improve?

Orthopaedic Foot and Ankle surgery patients do not consistently have medical optimization, preoperative education, and appropriate support at home prior to surgery. This likely increases the risk of patient harm and adversely impacts patient experience.

5. Describe the patient population affected, scope, and impact of the problem.

Our population includes patients who undergo surgery with our two orthopaedic foot & ankle surgeons, Dr. Tennant and Dr. Lalli. Over the past year, this included 612 surgeries, primarily adults. Suboptimal preoperative preparation likely adversely impacts patient experience both prior to and when recovering from surgery and increases the risk of unmet expectations, postoperative falls, wound complications, and infections.

Of the 612 UNC Orthopaedic Foot & Ankle surgery patients over the past year, 4.5% presented to the ED within 30 days of surgery and 14.4% were readmitted. The primary reasons for ED visits and

readmissions within 30 days surgery related to the procedure were pain, wound concerns or infection, and difficulty with mobility or fall. Details regarding reason for ED visits and readmissions within 30 days of surgery are provided in [Appendix A](#). Given that 60% of patients presenting to the ED within 30 days of surgery were diabetic, this population stands to benefit from standardizing and improving our preoperative optimization process. Processes developed through our project are expected to benefit patients within other divisions of Orthopaedics and other surgical departments.

6. What do you think are the underlying causes of the problem?

Many of our orthopaedic foot and ankle surgery patients have multiple medical comorbidities and are at high risk for postoperative complications. We address patient needs on a case-by-case basis without a standardized process, making it difficult to ensure that the needs of every patient are consistently met. Please see [Appendix B](#) for a process map highlighting standard processes, non-standard processes, and opportunities to improve. During the preoperative clinic visit, patients receive verbal education about the risks and benefits of surgery and expected recovery. Our preoperative patient information sheet ([Appendix C](#)) is helpful but not consistently used. Necessary preoperative tests and requests for medical clearance are ordered by the provider. When not completed at UNC, results are not consistently available in the medical record for provider review. Staff are helpful in coordinating testing and consults but are hindered by the lack of a standardized process for preoperative medical optimization or process for ensuring and documenting that tests are completed, reviewed by the provider, and the patient is safe to proceed with surgery. Staff members request that outside imaging is uploaded into Epic so it will be easily available during surgery. However, there is no process for following up to ensure that it is available prior to the start of surgery. We typically do not ask about social determinants of health unless a patient raises a concern.

We rely on patients to reach out with questions and concerns via phone or MyChart, which fails to serve some of our more vulnerable patients who may be uncertain when to reach out for assistance or find it difficult to do so. Patients sometimes are unable to comply with weightbearing restrictions leading to wound complications and infections. We typically consider physical therapy during the 5-6 week postoperative visit, which fails to serve patients having difficulty with weightbearing restrictions and at risk for falls in the immediate postoperative period. Patients sometimes present to the ED due to postoperative pain when concerns could be addressed by a phone call, virtual visit, clinic visit, or by better anticipatory guidance prior to surgery.

7. What work will your proposed improvement build on?

From February through May 2021, the Orthopaedic Foot and Ankle Division conducted a QI project intended to improve postoperative care through routine outreach calls to patients from the care team. Prior to our intervention, 29% of 38 postoperative patients called and 50% sent MyChart messages to the care team during the first 6 weeks after their surgery. We intended to better anticipate patient needs and concerns through routinely calling postoperative patients. Sixty-four percent of the 32 patients who were reached with a routine post-op call had no concerns. Of those with questions or concerns, common questions were regarding pain management and the postoperative weightbearing protocol. Based on the results of this project, we identified the need to refine and consistently use a preoperative patient education document, which addresses both weightbearing restrictions and pain

control. We felt that routine postoperative calls were not necessary for most patients but were important for those at higher risk for postoperative issues. Through our preoperative optimization project, we plan to identify high-risk patients who would benefit from a postoperative call. Additionally, we plan to refine our preoperative patient education sheet and develop a process for consistent use.

In addition to the QI work within our division, our project will build on extensive work within the Orthopaedic Total Joint Division on preoperative optimization. The Orthopaedic Department has recently added its first social worker to support Total Joint. The division has implemented social determinant of health screening for all preoperative patients. Epic smart tools have been developed with an extensive list of resources for patients with social needs. An Epic pathway was developed to track patients as they progress through the Total Joint preoperative optimization process.

Unfortunately, this required double documentation and was not useful. The team currently tracks preoperative optimization through Epic specialty notes. We plan to work closely with our Total Joint colleagues as we develop our preoperative optimization process, learning from their successes and challenges and defining a process that will benefit the Orthopaedic Department as a whole.

Once we refine our optimization process, we hope to integrate a checklist into Epic, building on the work that has been done within the OB/GYN Department. OB/GYN developed and refined a pregnancy checklist through the Epic patient problem list and has now built it into Epic to limit clicks, facilitate communication, promote continuity of care, and protect patient safety.

The Orthopaedic Foot & Ankle Division is currently obtaining PROMIS Physical Function and Pain scores for clinic patients. While not a primary measure for this project, we anticipate that our preoperative optimization project will positively impact these patient-reported outcomes.

8. Measures Table

Measure/Type/Source/Collection Frequency	Calculation (Numerator/Denominator)	Exclusion	Baseline/Goal
Patient perceived preparedness for surgery/ Outcome/ PPS Survey /1 st post-op visit, evaluated monthly	# patients completing PPS survey who indicate they somewhat agree, agree, or strongly agree with all statements in the PPS Survey/# patients who complete PPS Survey	Patients without a pre-op clinic visit with a UNC FP Ortho Foot & Ankle Provider**. Patients unable to complete survey	TBD 90%
30-day readmission rate/Outcome/ EHR/Monthly	Readmissions including all admissions (ED, Observation, IP) to a UNC System hospital on Epic that occur within 30 days of discharge after surgery with FP Ortho Foot & Ankle providers/# patients who had surgery with FP Ortho Foot & Ankle providers	Patients without a pre-op clinic visit with a UNC FP Ortho Foot & Ankle Provider **	14.4% 11.2%
ED visits within 30 days of surgery/Outcome/EHR/Monthly	# patients presenting to a UNC system ED on Epic within 30 days of surgery with FP Ortho Foot & Ankle providers/# patients who had surgery with FP Ortho Foot & Ankle providers	Patients without a pre-op clinic visit with a UNC FP Ortho Foot & Ankle Provider **	4.5% 3.9%
Team experience/ Balancing/ Team Experience Survey (TES)/Monthly	# team members who strongly agree, somewhat agree, or agree with #1 and #2 on the TES/ # team members completing the TES	Team members not involved in the project	N/A 85%
Checklist completion/Process/ EHR/Monthly	# patients with pre-op checklist completed/ # patients who had surgery with a UNC FP Ortho Foot & Ankle Provider	Patients without a pre-op clinic visit with a UNC FP Ortho Foot & Ankle Provider **	N/A 85%

**Patients who are not seen in the Foot & Ankle clinic prior to surgery will be initially excluded from measures to first refine the preoperative optimization process in the clinic setting. We plan for eventual implementation across clinical settings. We will obtain data on patient perceived preparedness for surgery for all patients to better understand the impact of a preoperative clinic visit and checklist completion.

9. What ideas do you have for changes that will result in improvement?

We intend to develop and refine a standardized preoperative process to ensure that patients are consistently medically optimized, are provided with appropriate verbal and written preoperative education, and have the support at home necessary to have a smooth, safe recovery. We anticipate that we may achieve this through a checklist similar to the prototype provided in [Appendix D](#). Operating room teams are familiar with checklist use through implementation of World Health Organization Guidelines for Safe Surgery.⁵ We anticipate that implementing a checklist earlier in the care episode will help to ensure that patients are optimized when they present for surgery. Through our project, we aim to achieve goals 1-5 below.

- 1. Define a standard preoperative workup.** We plan to address medical conditions as well as access to the durable medical equipment, education, and social support necessary for a safe recovery at home.
- 2. Develop a standard preoperative process.** We will refine our process to ensure that requested imaging is uploaded into Epic, preoperative clearance is obtained when indicated, and all necessary studies or referrals are completed. We will refine our preoperative information sheet ([Appendix C](#)), translate it into common languages, and explore ways to ensure that it is consistently used for all patients, including those who are evaluated in the ED and do not have a preoperative clinic visit. We will consider if and when additional preoperative educational materials are needed.
- 3. Identify high-risk patients and provide extra support as needed.** We will use the checklist to identify patients at high risk for postoperative issues. We will develop a process for tracking these patients and will likely provide a call between surgery and the initial postoperative clinic visit.
- 4. Improve interdisciplinary collaboration & strengthen referral pathways.** We plan to work with colleagues from other departments to ensure that patients get the care they need without unnecessary expense or delays in care.
- 5. Automate and disseminate improvements.** We will develop a process for managing the checklist within Epic as we refine it, collaborating with our Total Joint and OB/GYN colleagues. After developing and refining our checklist, we intend to investigate ways to incorporate it more formally into Epic. Full integration into Epic would escalate this improvement to the top of the Patient Safety Intervention Hierarchy by automating referrals, simplifying documentation, and forcing clinicians to address items deemed critical for patient safety.⁶

We believe a preoperative checklist will help us to proactively address patient needs, increasing safety and improving the patient experience. Throughout the project, we will measure patient perceived preparedness for surgery and team experience using our Patient Perceived Preparedness Survey ([Appendix E](#)) and Team Experience Survey ([Appendix F](#)) respectively, with modifications as recommended by our team. Through data-driven Plan-Do-Study-Act (PDSA) cycles, we will ensure that our checklist positively impacts patient care without compromising our team experience.

10. How has this problem has been addressed successfully elsewhere?

Nationally, total joint arthroplasty programs are leading the way with preoperative optimization, driven by the Medicare Comprehensive Care for Joint Replacement (CJR) model. A retrospective cohort study of 4,188 total joint arthroplasty patients between 2014 and 2016 at NYU Langone Orthopedic Hospital demonstrated that a standardized multidisciplinary approach to medical optimization may reduce the cost of care and improve patient engagement and perioperative outcomes.⁶ Delanois found that social factors may be more predictive of clinical outcomes following total hip arthroplasty than medical or implant related issues.⁷ Based on Medicare data for total hip arthroplasty patients between 2018 and 2019, social determinants of health account for nearly 50% of the variability in patient outcomes as measured by the Hip Disability and Osteoarthritis Outcome Score for Joint Replacement.⁷ Based on a retrospective review of 250 total joint arthroplasty patients, 44% of patients had a social need. Sixty-four percent of these needs were resolved through referrals. Ninety day readmissions were significantly higher in those with unresolved social needs.⁸ A surgeon-led screening and preoperative optimization pathway for total joint arthroplasty patients at NYU targeting modifiable risk factors demonstrated a 2.4 to 7.6% decrease in overall cost associated with total joint arthroplasty.⁶ While most of foot and ankle surgery reimbursement is fee-for-service, we can shape our improvement efforts based on experiences in the transition to value-based care for total joint arthroplasty. Inpatient total ankle replacements, performed within the Foot and Ankle Division, are eligible for the CJR program.

Hospital for Special Surgery (HSS) is at the top of the U.S. News & World Report list of best hospitals for orthopaedics.⁹ HSS has achieved reliable results for total hip and total knee arthroplasty with higher patient experience scores, lower readmission rates, and lower complication rates than the national average.^{10,11} Prior to total hip or knee arthroplasty at HSS, patients are evaluated by an internist at HSS.¹² They undergo standardized presurgical testing and have a preoperative physical therapy session. Patients attend a preoperative patient education class or webinar and receive instruction regarding the multimodal approach to postoperative pain management prior to surgery. They work with a preadmission discharge planning team to address any post-discharge needs. Patients receive a safety at home checklist to make their physical environment safer. They receive a detailed patient information packet including procedure specific information, a plan for deep vein thrombosis prevention, and expectations for activity level during recovery.¹²

11. How will [high performance management](#) tools be used?

High performance management tools will be embedded throughout the project. From the time of project inception and development of our team charter, we will foster an environment of psychological safety, inviting input from all team members. Identified gaps in quality and potential safety issues will be evaluated from a systems perspective as an opportunity to improve, utilizing SAFE reporting as appropriate. Team members will be provided with education regarding relevant TeamSTEPPS tools, especially those related to team structure and communication. We will employ the Situation-Background-Assessment-Recommendation (SBAR) strategy as PDSA cycles evolve, helping us to understand and appropriately consider recommendations of team members. Safety issues will be discussed as appropriate during daily huddles. Visual management boards will be used to synthesize ideas, identify potential solutions, and track progress toward our goals.

12. How project addresses the [Quintuple Aim for Health Care Improvement](#).

Health equality: As discussed in [item #3](#), patients of a racial or ethnic minority, those with no insurance or Medicaid, and those residing over 40 miles from Chapel Hill are at increased risk of ED visits and readmission within 30 days of surgery. The project will help us to consider medical and non-medical patient optimization to ensure that patients are set up for a successful recovery. Those with limited resources will particularly benefit as we screen for food and housing insecurity, appropriate help at home, transportation, and ability to safely comply with weightbearing restrictions. By proactively offering extra postoperative support to high-risk patients and connecting them with available resources compiled by the Orthopaedic social worker, we will promote health equality.

Improved health: Standardizing our preoperative workup will help us to ensure that patients are optimized prior to surgery and are less likely to experience avoidable complications. We anticipate that by ensuring that patients are safe at home and able to comply with weightbearing restrictions, we will decrease falls, wound complications, and infections. Consistent preoperative patient education will help us to ensure that patients are equipped for shared decision making, have appropriate expectations regarding surgery and recovery, and know when to reach out with questions or concerns. We expect this will translate into improved patient outcomes.

Enhanced patient experience: We anticipate that our project will help us to consistently provide patient education and proactively address patient concerns, improving patient experience before and following surgery. Relying on patients to reach out via phone or MyChart typically involves some delay between patient outreach to the care team and care team response. Our [Patient Perceived Preparedness Survey](#) will help us to monitor the impact of our checklist on patient experience.

Reduced costs: We anticipate that defining a standardized preoperative workup and developing a process to ensure results are in Epic and reviewed prior to surgery will decrease duplicated labs and imaging studies. More consistent preoperative education and optimization is expected to decrease the expense associated with avoidable ED visits and readmissions in the 30 days after surgery as well as the expense of extra clinic visits necessary for patient reassurance. While our high-risk Foot & Ankle population will likely have some costly wound complications and infections, we hope to reduce these through preoperative optimization.

Enhanced clinician and staff experience: We will monitor clinician and staff experience through our [Team Experience Survey](#). Improvements will be developed with input from the multidisciplinary team and regularly evaluated to ensure that the checklist facilitates the care we provide and is not an unnecessary administrative burden. Our checklist is intended to allow all team members to easily visualize what has and has not been done. We anticipate that a defined process will help us to eliminate both gaps in care and duplicated care, helping our team to provide more efficient care.

13. Support and engagement from leadership

The Orthopaedic Department leadership team has expressed support for and commitment to this project including Dr. Sanders (Chair), Dr. Berkoff (Vice Chair of Clinical Operations), Erik Robinette (Director of Clinical Operations), Stephen Scott (APP Manager), and Travis Wilds (Embedded Quality leader). Dr. Lalli (Division Chief) and Dr. Tennant, Foot & Ankle surgeons, are supportive and have contributed to the project design. I have discussed the project with Brendan Malay, MBA, Director of Care Redesign, who feels that the project is complementary to work being done in Care Redesign.

14. Project Team

Project Sponsor: Jim Sanders, MD. Chair of the Orthopaedic Department. Will support interdisciplinary collaboration within and outside of the Orthopaedic Department and dissemination of improvements.

Core Team

Jennifer Woody, MSN, FNP, MHA	Project lead. Will coordinate PDSA cycles, collaborating with the core team, adjunct team members, and the project sponsor.
Trapper Lalli, MD	Division Chief. Will contribute expertise regarding medical optimization of Foot & Ankle patients and serve as liaison to department leadership.
Josh Tennant, MD, MPH	Brings valuable experience in quality improvement, patient-reported outcomes, and cost-effectiveness of care. Holds UNC Yellow, Purple, and Blue Belts.
Alise Erental-Fernandes, RN, Kim Jenckes, ATC	Responsible for coordination of care and answering patient questions before and after surgery. Will share key insight into ways to improve our processes without delaying care or compromising clinic throughput.
Benedict Harrison, Gary Hall, Jadia Lindsey-Cooley, ortho techs	Responsible for DME and casting. Facilitate clinic flow. Will help to shape improvements regarding DME, casts/splints, and clinic throughput.
Greg Van Ausdal	Surgery scheduler and often first contact of patients with perioperative concerns. Will contribute valuable insight into ways to improve processes.
Erik Robinette, MBA	Director of Clinical Operations. Will provide an administrative perspective regarding feasibility of improvement ideas, facilitate change, encourage clinical staff buy-in, and facilitate dissemination of improvement efforts.
Paul Dunneback, PA	Inpatient APP Coordinator. Will facilitate implementation for ED patients.

Adjunct team

Dave Berkoff, MD	Vice Chair of Clinical Operations. Will support process improvement efforts and promote interdisciplinary buy-in.
Travis Wilds, MBA	Orthopaedic Department Quality and Organizational Excellence Leader. Will facilitate data access and share insights from his work with the Total Joint Division.
Stephen Scott, DNP	APP manager and Spine Center provider. Will help to develop a process that can be adapted and disseminated to other Orthopaedic Department divisions.
Sofia Benavides, MSW, LCSWA	Social worker supporting the Total Joint Division. Will share knowledge from the Total Joint preop optimization project, resources, and social work expertise.
Beth Soileau, RN	Total Joint Division RN. Will share nursing insight regarding work that has been done toward a total joint preop pathway.
Susan Wenger	Will provide a patient perspective regarding the preoperative checklist and interventions intended to improve patient experience and outcomes.
Kelsey Divers, MS, LAT, ATC, MHI	OB/GYN Operational Project Manager and former Embedded Epic Professional. Will facilitate integration of the checklist into Epic.

15. How will you ensure sufficient time to dedicate to the project?

As Orthopaedic Department APP Education and Quality Coordinator, 20% of my time can be used for Improvement Scholars work as needed. The Foot and Ankle Division has 30 minutes allocated to team meetings each month. This will provide regular opportunities for our core team to meet with other meetings arranged before and after clinic and within administrative/academic time.

16. What factors do you anticipate will foster and hinder improvement?

Under the leadership of Dr. Sanders, the Orthopaedic Department is developing a culture of continuous improvement. Orthopaedics is currently working with Care Redesign to develop a Non-Operative Management of Hip and Knee Osteoarthritis Pathway. While this work does not directly apply to foot and ankle patients, our team is gaining experience with a system-wide evidence-based improvement initiative. The Orthopaedic Foot & Ankle Division is experienced with QI projects. Foot and Ankle Division staff and providers are excited to explore ways to improve care delivery. Department leaders are engaged in improvement efforts and facilitate change. Data regarding ED visits, readmissions, and reoperation within 30 days of surgery are available via existing Tableau dashboards. The Foot & Ankle Division team members are accustomed to reviewing these data monthly during division meetings, facilitating application of data to improvement efforts. Also fostering improvement, this project builds on prior work within our division and the Total Joint Division.

We anticipate the primary barrier to improvement will be time and team member bandwidth. As we screen more consistently for safety issues prior to surgery, we will likely identify more patients in need of extra support. Many of our patients at highest risk for complications, ED visits, and readmissions have multiple medical problems and limited resources. Addressing concerns will be a challenge without a dedicated care coordinator or social worker. We plan to use the resources compiled by the Total Joint Division social worker and focus on thoughtful implementation, addressing barriers so the checklist does not become a meaningless checkbox, but instead a tool to improve efficiency and quality of care. Strengthening referral channels and existing relationships within UNC will be important but require additional time and support of leaders within and outside of the Orthopaedic Department. Due to great variability in preoperative workup, determining elements that should be standardized and those appropriate for variability will likely be a challenge. Additionally, we anticipate challenges involved in implementing our change across multiple locations and formally translating the checklist into Epic. Given that integration into Epic will be important for improvement dissemination and sustainability, we will collaborate with OB/GYN, learning from their experiences with the pregnancy checklist.

17. What ideas do you have for sustaining the improvement?

An interdisciplinary team including key leaders and stakeholders will be involved in decisions, and all perspectives will be considered to foster buy-in and develop a practical and efficient process. Starting PDSA cycles at the beginning of Q2 will allow the process to become routine by Q4. We will share our successes and challenges with others in the department, disseminating improvements as appropriate before the end of Q4. We hope to capitalize on growing UNC Health System interest in Epic checklists. We believe that the checklist can help to broaden clinician perspective of preoperative optimization to include the many factors that shape patient experience and outcomes. We hope to use tools available through Epic to automate much of this process, increasing efficiency, efficacy, and sustainability.⁶ We anticipate Epic integration will facilitate dissemination of our improvement throughout Orthopaedics and other surgical departments. Following the project year, we will plan regular core team meetings to continue to adapt our process as needed and track sustained improvement.

18. Implementation Timeline

	September	October	November	December	January	February	March	April	May	June	July	August
Develop team charter	█											
QI/TeamSTEPPS training for team members	█											
Identify standard for preop labs, tests, referrals	█	█										
Refine checklist items	█	█	█									
Refine pre-op patient education sheet, translate into Spanish	█	█										
Refine Team Experience Survey	█	█										
Refine Patient Perceived Preparedness Survey	█	█										
Refine current and ideal state process map			█									
Team training			█									
Implement at Weaver Crossing & Panther Creek				█								
PDSA cycles				█	█	█	█	█	█	█	█	█
Post-op phone calls for those with identified needs							█	█	█			
Develop process map for patients starting in ED						█	█	█				
Train APPs/residents							█	█				
Start using checklist in ED								█	█	█	█	█
Include those with and without pre-op clinic visit								█	█	█	█	█
Establish plan for sustainability & dissemination							█	█	█	█	█	█
Plan for potential expansion throughout department										█	█	█
Identify/strengthen referral pathways to Endocrinology, Vascular, Mental Health services, Nutrition			█	█	█	█	█	█				
Collaborate with OB/GYN on progress with pregnancy checklist						█	█	█				
Evaluate potential to integrate into Epic					█	█	█	█	█	█	█	█
Present project												█

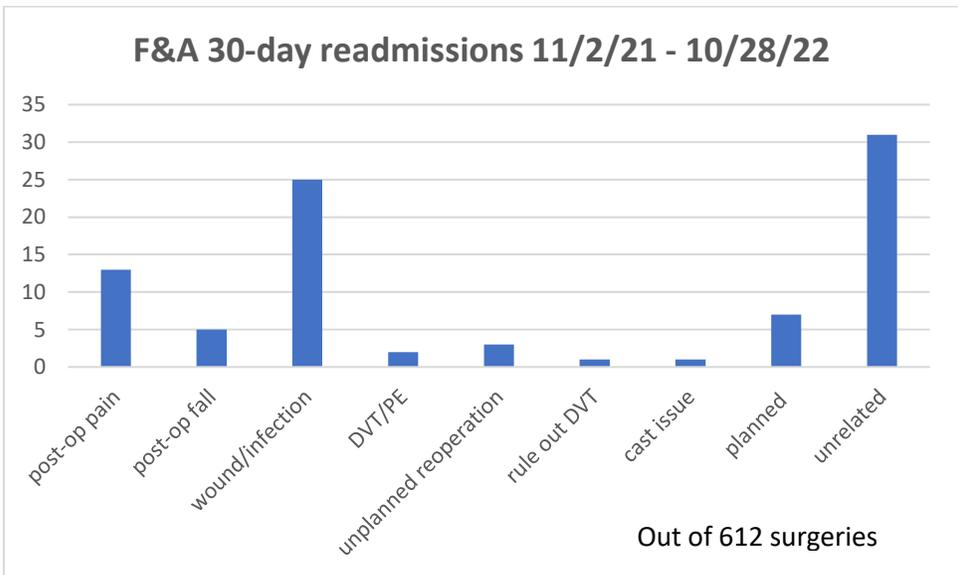
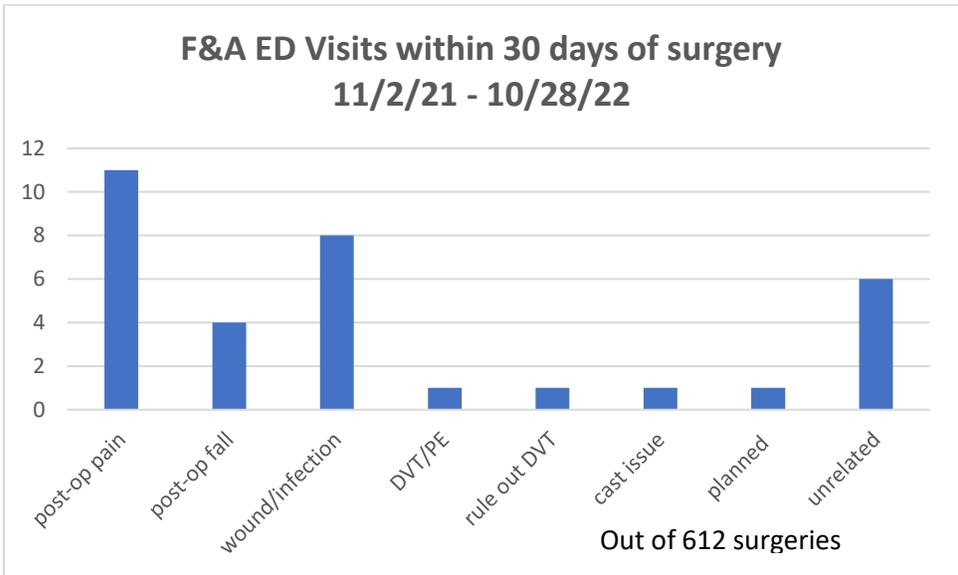
For the first quarter, our focus will be on team preparation and buy-in, refining the preoperative education sheet, Patient Perceived Preparedness Survey, and the Team Experience Survey. The Q2 focus will transition to PDSA cycles, improving our checklist process in the clinic. During Q3, we will explore options to better prepare patients for surgery starting in the ED to serve those who may not have a preoperative clinic visit. In Q4 we will focus on refining our plan for sustainability and dissemination of our process to other Orthopaedic Divisions. We anticipate an opportunity to transition the checklist formally into Epic to facilitate documentation and interdisciplinary communication. Throughout the project period, we will work on building relationships with interdisciplinary colleagues and strengthening referral pathways to Endocrinology, Vascular, Mental Health services, and Nutrition.

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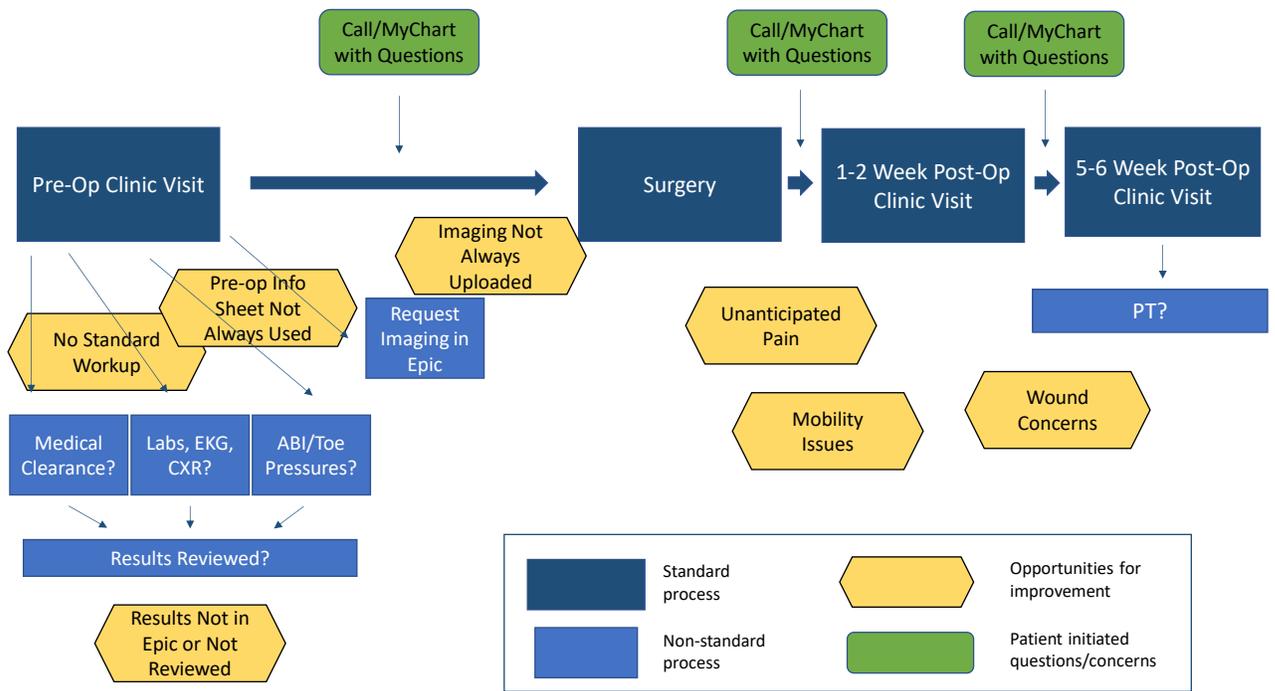
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Appendix A
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Appendix B
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Foot and Ankle Division
Encounter Provider: @ENCPROVNMITLE@
Date of Service: @ED@

SURGERY INSTRUCTIONS AND INFORMATION

Patient Appointments: (919) 962-6637
Clinic Team: (919) 843-1000 (medical issues)
Alise RN, CMSRN, Kim, ATC
Gary, ortho tech, Benedict, ortho tech
Jennifer Woody, NP-C
Secretary: Julie (919) 966-9446 (administrative issues)
Surgery Scheduling: Greg (984)974-5716
Financial Counselor: Luke (984)974-5717
Fax: 919-966-6730
Interpreter Voicemail: 984-974-1293

Surgery Center Address:

See in box below:

<p>Procedure: @RULEVALUEONLYDATA(2100702800)@ @RULEVALUEONLYDATA(2100702803)@ Planned Date: @RULEVALUEONLYDATA(2100702805)@ Medical/Anesthesia concerns to address prior to surgery: @RULEVALUEONLYDATA(2100702804)@ Anesthesia: @RULEVALUEONLYDATA(2100702807)@ Planned Location: @RULEVALUEONLYDATA(2100702801)@ Disposition: @RULEVALUEONLYDATA(2100702802)@</p>

THINKING ABOUT SURGERY

Thinking about Goals

In general, the goal in orthopaedic surgical treatment is to improve your physical function and quality of life.

Thinking about Likelihood of Success

No surgical treatment can be a 100% guarantee for success. Most treatments have good likelihood of success in the range of 85-90%.

Thinking about Alternatives

All physical ailments have nonoperative alternatives for treatment. Some of these may be curative, some are temporary, and some are not desirable. We generally try nonoperative measures prior to discussing surgeries. In situations where clear benefit exists for surgery as a first step (for example, a severely displaced fracture that could not be treated well in a cast), we would discuss surgery as an early treatment option. **Alternatives for this surgery: *****

Thinking about Risks

All surgeries, even minor procedures in the office, have risks. Some of the main risks are infection, bleeding, neurovascular damage, and risks of undergoing anesthesia, including death in rare cases. Amputation of toes or the leg can exist as a rare complication of elective foot and ankle surgery as well. The careful use antibiotics, anesthesia, and surgical techniques help to avoid these risks. See the methods for decreasing the risk of blood clots below. For most people undergoing foot and ankle surgery these risks are less than 1%.

Additional specific risks for this surgery: {Risks:57773::"nerve injury/numbness", "recurrence", "wound healing issues", "swelling for 6-9 months", "symptomatic hardware", "stiffness"}

We discussed the additional risks related to undergoing a procedure during the COVID19 pandemic, including:

The lack of information on the true risks during this pandemic.

The uncertain (but likely increased) risk of nosocomial infection with COVID-19 given the hospital environment and the inability to social distance during a procedure.

The possible impact of pandemic-associated resource shortages and changes in hospital operations on the postoperative care and experience.

The possible complications from a COVID-19 infection.

I also explained that undergoing a procedure during the COVID19 pandemic presents the risk of COVID-infection.

Proceed PRIORITY

We discussed the risks of of delaying the procedure. The risks of delaying I specifically discussed were: continued pain***

After considering the risks of delaying and the risks of having the procedure at this time, the patient wishes to proceed with the procedure.

The patient has had an opportunity to ask questions, and these questions were answered to satisfaction.

The patient expressed understanding. Verbal consent obtained, plan for day of surgery signed verification: {YES/NO:21013::"Yes."}

Thinking about Costs

You should discuss the projected costs to you for your potential surgical procedure with your medical insurance company. Your responsibility for your health insurance deductible is an initial monetary figure to consider. A bill for most types of surgery in an inpatient or outpatient setting can range from \$10,000 to upwards of \$100,000, with more expensive bills generally involving longer inpatient stays and expensive surgical tools and equipment. These costs involve many components including hospital fees, anesthesia fees, and implant and equipment costs. Surgeon fees and reimbursement are always a small portion of the total bill. Our financial counselor is available to address financial questions and concerns at (984) 974-5717.

INFORMATION ABOUT PLANNING FOR YOUR SURGERY

THE WEEK BEFORE YOUR SURGERY

- You will bleed less during surgery if you **STOP** taking anti-inflammatory medications at least one week before surgery. These include:
 - ASPIRIN,
 - IBUPROFEN (Motrin, Advil),
 - NAPROXYN (Naprosyn),
 - NAPROXEN SODIUM (Aleve),
 - INDOMETHACIN (Indocin),
 - CELEBREX and
 - several other prescription anti-inflammatories commonly prescribed for arthritis or other musculoskeletal conditions.
- Discontinue FISH OIL supplements as well.
- Ask your prescribing physician before discontinuing any medication.

Surgery Date

- Your surgery will be **SCHEDULED** by our surgery scheduling office within 2-3 business days. They will contact you regarding your surgery date.
- If you have not received a phone call within 2 business days, please contact our surgery scheduling office at (919) 957-6633.
- If you need to **CANCEL** your surgery for any reason please call the scheduling office as soon as possible.

Surgical Time

- A preoperative nurse will call you between 11:00am -3:00pm on the last business day before your scheduled surgery. They will inform you of your scheduled surgery time as well as the time you should arrive for surgery.
- If you have not been called by 3:00pm the day before your surgery, you may call
 - **Precare at (984) 974-0250 or ACC PreOp Phone Nurse at (984) 974-5906 or Hillsborough PreOp Phone Nurse at (984) 215-2436.**
- If you will not be staying at your home address the night before surgery, please call Precare or the PreOP Nurse to let them know where you can be reached.

The Night Before Your Surgery

- **DO NOT EAT AFTER MIDNIGHT.**
- If you are diabetic, check with your primary care physician for special instructions concerning your insulin dosage prior to surgery.
- **CLEAR** liquids (water and black coffee) are generally OK in small amounts the morning of your surgery (no milk, no cream, no juices that you cannot see through).
- Take your usual medications as prescribed, unless otherwise instructed.

These limitations are for your safety with anesthesia.

The Morning of Your Surgery

- You should wear loose fitting clothes that will not be restrictive to your surgical site.
- Do not wear any piercings, nail polish, make-up, or metal hair clips on the day of surgery. Contact lenses, glasses, and dentures must be removed before surgery. Please make sure to bring a case to store these items in during surgery.
- Please leave jewelry, credit cards, cash, and other valuables at home.

- You may take your usual medications as prescribed with a small sip of water, unless otherwise instructed. Do NOT drink a full glass of water.
- A RESPONSIBLE ADULT (OVER 18) MUST ACCOMPANY YOU ON THE DAY OF SURGERY AND BE AVAILABLE THROUGHOUT YOUR PROCEDURE IN THE EVENT QUESTIONS OR ISSUES ARISE. THEY ALSO MUST BE AVAILABLE TO TAKE YOU HOME FOLLOWING YOUR PROCEDURE AS IT WILL NOT BE SAFE FOR YOU TO DRIVE OR TAKE PUBLIC TRANSPORTATION ALONE.

Blood Clot Prevention Protocol

For all wounds, injuries, and surgeries in which your weightbearing is limited, to prevent blood clots:

- You should elevate your foot above the level of your heart to prevent swelling when you are not up and about.
- You should get up and ambulate (with crutches, walker, or assistance as needed or instructed) at least once per hour during daytime hours.
- For leg, ankle, and midfoot injuries and surgeries: You should do gentle foot and toe squeezing exercises (flexing the toes up and down; foot "crunches").
- For forefoot or toe injuries and surgeries, you should move your ankle up, down and around.
- You should take an 81 mg aspirin daily after a surgery or injury until you are weightbearing without difficulty or allowed to bear weight. If you have a history of blood clotting disorder or history of previous use of an anticoagulant (like Lovenox, Coumadin, or other similar medications), make sure you notify your surgeon or a member of the care team to see if this would be indicated for your current care and prevention of blood clots.

Cast Care/Post-Operative Splint Instructions

If you will have a cast, please read the following.

- Unless instructed otherwise, you should be non-weightbearing on your cast. Weightbearing casts require a use of a special shoe to protect the bottom of the cast.
- Keep the cast clean, dry and intact.
- Elevate your foot **ABOVE** the level of your heart to prevent swelling within your cast.
- You should do gentle range of motion exercises and "foot pump" exercises (repetitions of 10 every 30 minutes) to help prevent blood clots and keep your blood moving within your foot, even though you have restricted motion within the cast (your muscles will help pump the blood through your foot and ankle).

POST-OPERATIVE MEDICATIONS

We will manage your pain post-operatively, with a combination of local or regional anesthesia (in the first 10-48 hours after surgery), and oral medications (both narcotic, for a limited time period, and non-narcotic). The typical prescription regimen is as follows:

- Tylenol (acetaminophen) 650 mg tablet by mouth every 8 hours scheduled
- **NARCOTICS:** (usually ~20 tablets per prescription)
 - Oxycodone 5 mg tablet by mouth every 6 hours as needed for pain >> if needed,
 - Convert to Norco 5/325 (5mg Hydrocodone, 325 mg acetaminophen) by mouth every 8-12 hours at first post-operative visit (2 weeks)>> if needed
- Gabapentin (Neurontin) 100 mg by mouth 3 x/day, for 3 days only (9 tablets total)
- Phenergan (anti-nausea)

- Colace (stool softener, to be used while taking narcotics)
- Vitamin D
- Calcium
- Vitamin C
- Extra or unused medication can be discarded as described here: <https://www.fda.gov/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/EnsuringSafeUseofMedicine/SafeDisposalofMedicines/ucm186187.htm>

Recovery

- Timeline of weightbearing limitations*:
 - {FA WB limitations:77998}
- Follow-up Appointment Plan:

Week	Provider	Clinic vs. Phone	Plan
{Blank single:19197::"1","2","4"}	{"Dr. Tennant", "Dr. Lalli", "Jennifer Woody, NP":78612}	{Blank single:19197::"PHONE", "Clinic"}	***
{Blank single:19197::"2","4","5","6","8"}	{"Dr. Tennant", "Dr. Lalli", "Jennifer Woody, NP":78612}	{Blank single:19197::"PHONE", "Clinic"}	***
{Blank single:19197::"3","4","5","10"}	{"Dr. Tennant", "Dr. Lalli", "Jennifer Woody, NP":78612}	{Blank single:19197::"PHONE", "Clinic"}	***

- Plans for {Blank single:39441::"school","work"} (***): *** weeks no {Blank single:39441::"school","work"}; expect to be at normal {Blank single:39441::"school","work"} capacity: {Blank single:19197::"2 weeks","6 weeks","3 months","6 months"}
- Durable medical equipment (DME) expectations: ***{Blank multiple 2:57773::"crutches","walker","CAM boot with 2 cm heel lift","CAM boot","post-op shoe"}; {Blank single:39441::"medically necessary today","already has","to be delivered on day of surgery"}.

FOLLOW-UP APPOINTMENTS

Your return appointment will be scheduled between 5 and 15 days after surgery depending on your surgery type. Our scheduling office will schedule your follow-up appointments when scheduling your surgery. (In the box above you will note the set follow-up plan prior to scheduling your surgery).

- If you need to reschedule this appointment or have questions as to the time of your appointment please call (919) 962-6637.

WORK STATUS/PAPERWORK/FMLA

- All paperwork should be faxed to Cindy, our administrative assistant at 919-966-6730.
- We require a 5 business day **MINIMUM** to complete all paperwork. (This timeline could take longer if your provider is out of the office).
- If you require a **WORK NOTE** for restrictions or limitations please make sure your work duties are discussed at each visit and a work note is provided with any changes.

- Workers Comp should send a **FAXED WRITTEN** request to 919-966-6730. Please provide your workers compensation agent with this number.
- If you have questions regarding your paperwork please contact Cindy at 919-966-9446.

IF YOU HAVE QUESTIONS or CONCERNS

- During normal business hours (8am-4pm):
 - **Medical Issues:** Call our clinic team at **919-843-1000**
 - **Administrative Issues:** Call our secretary Cindy at **919-966-9446**

- During nights/weekends (after 5pm and Saturday/Sunday),
 - Call UNC Hospital at **919-966-4131** and ask for the on-call orthopaedic surgery resident.

- **NON-EMERGENCY Questions:** You can also send a message on **MyChart** message to your provider. These messages are received by our clinic team and will be discussed with your provider. MyChart messages should be non-emergent questions as they are only answered Monday-Friday (8am-4pm).

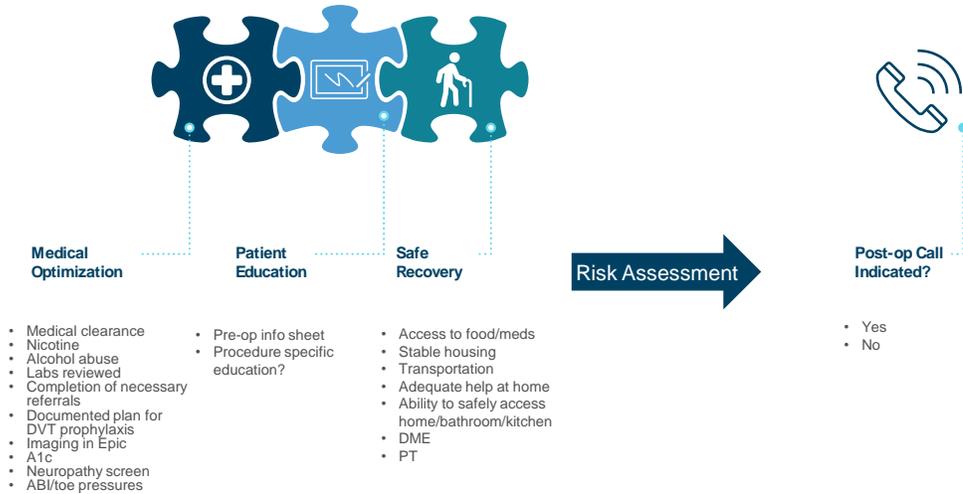
MyChart Login/Sign-up: <https://www.myuncchart.org/MyChart/>

Adapted from preoperative patient education sheet by Josh Tennant, MD, MPH and

Kelsey Divers, MS, LAT, ATC, MHI

Appendix D
[\(Return to text\)](#)

Possible checklist (double click to enlarge)



Patients identified in need of close follow up from medical, patient education, or safety at home standpoints will be referred by pre-op F&A provider or staff for a scheduled phone call in the week following surgery.

Appendix E

[\(Return to text\)](#)

F&A Patient Perceived Preparedness (1st post-op visit)

Were you seen in the clinic prior to your surgery?

Yes No

Please circle your level of agreement with the following statements

Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
-------------------	-------	-------------------	----------------------	----------	----------------------

1. I understand the expected benefits of the surgery
2. I understand the risks of the surgery
3. I know what to expect in my recovery
4. I know who to contact if I have questions or concerns
5. I have the help I need either at home or at a rehabilitation facility
6. I have the equipment I need (walker, crutches, bedside commode etc.)
7. I feel safe where I am living
8. My care team spent enough time preparing me for surgery
9. Overall, I feel I was prepared for surgery

Please share any suggestions you have of how we can better prepare patients for surgery

Adapted from Patient Preparedness Survey by Kenton et al. ¹³

F&A Pre-op Checklist Team Experience Survey

1. Please circle your level of agreement with the following statement. The pre-op checklist provides value in patient care

Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
-------------------	-------	-------------------	----------------------	----------	----------------------

2. Please circle your level of agreement with the following statement. Checklist completion is efficiently coordinated between team members

Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
-------------------	-------	-------------------	----------------------	----------	----------------------

3. Compared to the time spent in care of surgical patients without the checklist, care with the pre-op checklist requires

Much less time	A little less time	About the same	A little more time	Much more time
-------------------	-----------------------	-------------------	-----------------------	-------------------

4. What is going well with the pre-op checklist?
5. What would you change about the pre-op checklist or the use of it?
-



January 27, 2023

Dear selection committee:

This is a strong letter of support for Jennifer Woody, MSN, FNP – C, MHA who is applying to the Improvement Scholars Program to create a well-organized pathway for medical optimization of patients requiring foot and ankle surgery. This is a very challenging area with patients having multiple comorbidities, frequent postoperative presentations to the emergency department, and readmissions. It is also a population with a large proportion of historically disadvantaged populations.

The proposal is well considered, and I believe it is highly likely to markedly improve care to these patients with challenging problems orthopedically, medically, and socially. As the department chair, Jennifer Woody will have strong backing from our department to make this succeed.

She has the training, drive, and ability to team build to provide this project the high likelihood of success. Please feel free to reach out to me if you have any questions or concerns.

Sincerely yours,

A handwritten signature in black ink, appearing to read "J. O. Sanders".

James O. Sanders, MD
Frank C. Wilson Distinguished Professor
Chair, Department of Orthopaedics
University of North Carolina School of Medicine



STEPHEN M. SCOTT, DNP
DEPARTMENT OF ORTHOPAEDICS
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
1350 RALEIGH RD
CHAPEL HILL, NORTH CAROLINA 27517

January 11, 2023

SUBJECT: Letter of Support for Jennifer Woody, MSN, FNP-C, MHA

To whom it may concern,

It is with great pleasure that I highly recommend Jennifer Woody for her IHQI proposal. The UNC Orthopaedics department fully supports her in this initiative.

Project sponsor: Dr. James Sanders, MD has volunteered to serve as Jennifer's project sponsor. He will commit to supporting change within the organization and will work to facilitate changes outside the organization as needed.

Supervisor: Stephen Scott, DNP is Jennifer's immediate supervisor. He commits to ensuring that Jennifer will have sufficient time to conduct the improvement project and attend IHQI meetings and just-in-time training (3 half day learning sessions, 2 hours per week).

Your program will greatly benefit from Jennifer's commitment to excellence and her leadership. She will make an excellent addition to your quality improvement program and will undoubtedly go on to do great things with this project.

Should you have any questions or require further information, please feel free to contact me at stephen.scott@unchealth.unc.edu.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen Scott".

Dr. Stephen Scott, DNP, RN, AGACNP-BC
Advanced Practice Provider Manager, UNC Orthopaedics
Assistant Clinical Professor, School of Nursing, UNC-CH