



Co-creating Pathways To Move Forward In Limb Preservation: A Quality Improvement Approach

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Abstract: Quality improvement (QI) work is key to limb preservation work. A structured approach should be taken to QI to avoid project failures and prevent clinical team and/or patient frustrations. This presentation provides an introduction and overview of the QI process and when and how to implement it within an organization.

Key words: *quality improvement, limb preservation, implementation, data collection, patient care.*

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Quality improvement (QI) work is key to limb preservation work, and can be defined as collaborations of clinicians, patients/caregivers, researchers, health-care funders and educators to better not only patient outcomes, but also health-care systems and professional development.¹ The Institute of Medicine has defined six domains of health-care quality:

1. Safe (avoiding harm);
2. Timely (reducing waits and delays);
3. Effective (Evidence based);
4. Efficient (Avoiding waste);

5. Equitable (eliminating systemic disparities to provide fair and just opportunities for health care for all individuals) and
6. Patient Centred (care respectful of and responsive to patient preferences, needs and values).²

Quality improvement projects in limb preservation should address one or more of these six domains.

Selecting a QI project may seem overwhelming. There is so much to improve in health care. It is helpful to take a structured approach to project selection.³ First look at the scope of the problem and do a baseline gap analysis to ensure it is a fre-

quent and severe issue in need of improvement. Then see if there has been any similar work in the literature you can learn from and/or practice guidelines you can adapt or use in your local setting. Consider implementation issues such as the cost and complexity of the project, support for your work (e.g., project team, funding, leadership buy-in) and whether it may have unintended consequences. To show improvement, you will also need access to data to measure change.³

Once you have selected your QI project and collected some baseline data, set an aim statement defining what you are trying to accomplish. An aim statement has three components answering the following questions:

1. What you are trying to improve?;
2. By how much? and
3. By when?.

Choose a 'SMART' aim; an aim that is Specific, Measurable, Attainable, Relevant, and Time-based. A well selected aim statement can focus QI team efforts and should be tied to your primary outcome of interest. An example aim statement for a limb preservation project may be: increasing rates of completed diabetic foot checks in a dialysis outpatient unit by 50% by December 2024. As your project evolves and you learn more about your QI issue, you may change the aim statement.

It is important to collect data frequently in QI work to demonstrate you are making a meaningful change, and to detect when QI projects may not be working as anticipated. QI projects have three types of measures:

1. Outcome Measures;
2. Process Measures and
3. Balancing Measures.

Impacts on patients and health-care systems are outcome measures; e.g., the number of diabetic foot screens completed, and number of patients referred for vascular assessment as a result of foot screens. Process measures track if interventions are being done as designed; e.g., a diabetic foot screen checklist being used, or a new wound care measurement tool completed. Unintended consequences or adverse effects of QI interventions are defined as balancing measures; e.g., increased

workload on nursing staff to complete diabetic foot check forms. Typically, outcome measures are tracked over time to show change in a run chart or a control chart.

One of the biggest QI project mistakes is beginning with a solution before knowing the contributing factors causing the issue.⁴ There are many QI tools you can use to understand why there is a gap in care and then link improvement interventions appropriately.⁵ Commonly used tools include: '5 Whys' Analysis, the Fishbone/Ishikawa Diagram and Process Mapping.⁵ 'Five Whys' is a simple tool based on asking "why?" five times to get to the root causes of a QI issue. This can be done anywhere and should be done with multiple involved parties such as clinicians, patients/caregivers, administrative staff, managers, etc. The Fishbone Diagram allows structured brainstorming of root causes and grouping them under categories such as clinician, patient/caregiver, equipment, policies/procedures and organizational. A Process Map is a visual way to determine how a system works and what individuals are responsible for tasks. Process Mapping can identify system redundancies, sources of wait times and variability in patient care. All QI tools enable better understanding of the QI problems and help identify interventions to improve.

It is important to engage diverse patient populations in your limb preservation QI work. Kiran et al. have developed a framework for engaging patients in a meaningful way.⁶ This framework includes four phases:

1. Share;
2. Consult;
3. Involve and
4. Partner.

Share the QI issue and project using easy to understand information in the form of educational flyers/pamphlets, websites, emails or informal conversations. Consult with patients/caregivers to get feedback and learn how the issue impacts them and also their experiences in the health-care system. Consultation may be done by quick surveys, suggestion boxes, online comments on a webpage, focus groups and/or community group meetings.

Patients/caregivers should be involved in QI issue discussions and exploration of potential solutions. You could consider having patient representatives on the QI team. The best QI interventions are co-created, resulting from partnering with patients/caregivers and community groups.

In summary, QI work is a necessary component of limb preservation. A structured approach should be taken to avoid project failures and can prevent clinical team and/or patient frustrations. Key elements of QI success are understanding the QI issue before developing solutions, and then developing solutions that address the root causes of the QI issue. Ensure you collect data frequently to see if improvement is occurring and QI solutions are working as you anticipated. Throughout the project, engage all involved parties including patients and caregivers so that the project is effective in changing your health-care system and patient outcomes in a meaningful way. ■

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