

Selecting a Quality Improvement Project: 5 Questions for Trainees and Mentors

Molly J. Horstman[Ⓢ], MD, MS

Anne M. Tomolo[Ⓢ], MD, MPH

Blake Webb, MD

Lindsay Vaclavik[Ⓢ], MD

In the United States, the Accreditation Council for Graduate Medical Education's Clinical Learning Environment Review (CLER) Pathways to Excellence emphasize engaging residents and fellows in quality improvement efforts that address improvement priorities for their clinical learning environment.¹ Alignment of trainee-led improvement projects with health system priorities leads to better projects with more sustainable outcomes.²⁻⁴ These projects often receive support from facility leadership, which can help trainees gain buy-in from frontline staff and access resources. Mentors play a key role in helping residents and fellows identify improvement priorities for their clinical learning environment. However, not all health system priorities lead to good improvement projects for trainees (TABLE). We have seen numerous trainee-led quality improvement projects aligned with system priorities that fail to gain traction.

Project selection is a critical skill in quality improvement. Residents and fellows are frontline clinicians with unique perspectives on how health care systems can be improved.^{5,6} Yet there is limited guidance to help trainees select among potential improvement opportunities.⁵ Residents and fellows lack the power, authority, and time to overcome barriers to change.⁷ Faculty mentors can help identify project barriers and facilitators, but they often rely on their experience or intuition to guide project selection.^{7,8} Poor project selection limits trainees' effect on the clinical environment and can lead to trainee discontent with quality improvement work.^{5,8} A standardized approach to project selection could help trainees and mentors identify projects that align with system priorities and have the greatest potential for success.

We propose 5 questions to help trainees and mentors choose among potential quality improvement projects (online supplementary data). Each question addresses a common barrier to project completion. Questions were modified following written feedback

from 41 site directors from the Veterans Affairs Chief Resident in Quality and Patient Safety and Advanced Fellowship in Patient Safety programs. The final set of questions are presented here.

Question 1: Is There an Opportunity for Improvement?

Not all system priorities have room for quantifiable improvement. A thorough problem analysis using process maps, fishbone diagrams, and Pareto charts, along with a review of baseline performance data, are the first steps to understanding if improvement is possible. There are several red flags that may suggest insufficient opportunity for a trainee to make an improvement. For example, prior projects may have already reduced system inefficiencies and implemented evidence-based practices.⁹ For other projects, the way performance is measured may make it hard to show that change has occurred. Projects aimed at reducing rare events may take months or years to demonstrate a change in system performance. If there is limited opportunity for improvement, mentors and trainees can reframe the problem to focus on clinical areas where there is more opportunity for change.

Question 2: Is There Buy-In From Frontline Staff?

Quality improvement often requires behavior change from frontline health professionals.^{8,10} Before starting a project, trainees need to identify all frontline staff who may affect or will be affected by the project. Trainees often find success with projects in which residents or fellows are one of the groups most affected by the change. Mentors can ensure that additional clinical groups, including patients and caregivers, that are critical to project implementation are included. If the needs and priorities of these groups are unknown, trainees will need to talk to representatives from each group to understand their interest and motivation for change. We direct trainees to local opinion leaders who are receptive to working with residents and fellows. Once a trainee

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Editor's Note: The online version of this article contains a diagram of the project selection process.

TABLE

Examples of Health System Priorities for Quality Improvement Projects

Health System Priority	Project Selection Questions	Why Is It a Challenging Project for Trainees?	What Can You Do Instead?
Reduce device-related infections	Is there an opportunity for improvement? Maybe not	▪ Device-related infections may be rare events ▪ Many facilities have implemented evidence-based practices to reduce device-related infections	Reframe project ▪ Use problem analysis tools to identify part of the process with greater room for improvement, such as reducing the number of device days
Reduce the time patients are boarded in the emergency department	Is there buy-in from critical frontline staff? Often not	▪ Involves many frontline groups who are in different departments and have competing priorities	Get buy-in ▪ Talk with staff to identify needs and priorities ▪ Create “win-wins” in the intervention design
Improve patient satisfaction	Can the problem be measured easily? No	▪ Existing satisfaction surveys are often aggregated by quarter and have low response rates ▪ Conducting a new survey requires expertise and manpower	Revise data plans ▪ Identify objective measures that contribute to patient satisfaction and can be more easily measured
Reduce the risk of patient elopement	Are the resources needed available? Often not	▪ Strongest interventions may require structural changes to the facility or additional technology that are costly	Access available resources ▪ Use an effort-impact matrix to organize change ideas ▪ Start with an intervention that utilizes existing resources
Reduce 30-day hospital readmissions	Can you complete the project in the time available? No	▪ The 30-day readmission rates are reported quarterly ▪ Many microsystems are involved in care transitions	Rescope project ▪ Focus on one part of evidence-based care, such as medication reconciliation ▪ Limit the project to one microsystem

has spoken with group representatives, mentors can help identify potential project champions who will advocate for the project. Project champions from frontline staff are critical for successful implementation.¹¹ If there is limited buy-in from frontline groups, mentors and trainees can use principles from change management to develop a vision for change, create a value proposition, and share short-term wins to build momentum.¹⁰

Question 3: Can the Problem Be Measured Easily?

Access to data is a frequent challenge for quality improvement projects.^{5,8} Identifying up front whether there is a reliable and accurate data source is critical for project completion. Trainees create conceptual and operational definitions for their process, outcome, and balancing measures. Each measure needs a data collection plan that includes what data will be collected, how data will be collected, who will collect the data, and where the data will be stored. Mentors

need to determine whether the data collection plan is feasible. Ideally, there will be data that is already collected by the facility that can be used by trainees. Data collection plans that require burdensome and repeated chart reviews are challenging for trainees to complete and delay project progress.¹² If the problem cannot be measured easily, mentors and trainees should revise the measures to create feasible data collection plans before moving forward with the project.

Question 4: Are the Resources Available?

Quality improvement projects often require protected time and physical resources.¹³ Even when new resource investment is possible, gaining access to resources can add delays to a project. Instead of focusing on a single, high-resource change idea, trainees should brainstorm as many change ideas as possible before committing to a project. Mentors can use an effort-impact matrix to help trainees organize their ideas and identify opportunities that utilize existing resources. An effort-impact matrix is a 2 × 2 grid to organize change ideas as low

or high effort and low or high impact. The potential impact can be determined from published interventions. Although the goal is for high-impact change ideas, trainees may start with low-impact, low-effort change ideas to gain momentum and support for their project. Mentors can discourage trainees from pursuing projects with only low-impact, high-effort change ideas. If the resources needed for a change idea are not available, mentors and trainees should determine if there are change ideas that use available resources.

Question 5: Can You Complete the Project in the Time Available?

All trainees have time constraints. Clinical responsibilities and residency and fellowship graduation limit the time trainees have to complete quality improvement work. A project timeline is necessary to determine if the project is feasible in the time available. Institutional priorities reflect complex problems that influence the entire health care system. Rather than starting a system-wide improvement effort, trainees should start with small tests of change within a single microsystem. Microsystems are the small, functional frontline units that provide care and are where quality, safety, outcomes, satisfaction, and staff morale are created.¹⁴ Examples include outpatient clinics or inpatient units. Mentors can use the process map to help trainees identify relevant microsystems and opportunities to break a larger project into smaller, more manageable ones. If the proposed project cannot be completed in the time available, mentors and trainees can work together to rescope the project to reduce the number of interdependent microsystems involved in the project.

Conclusions

Project selection is a critical, yet underdeveloped skill in quality improvement. Participating in a quality improvement project is a core feature of quality improvement education for residents and fellows.^{5,15} Working on the right project can be a transformative experience by enabling residents and fellows to participate in meaningful health care improvement. The proposed questions provide one framework to help trainees and mentors standardize project selection discussions with the goal of identifying projects that improve health care systems for patients, health professionals, and trainees.

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Molly J. Horstman, MD, MS, is an Investigator, Center for Innovations in Quality, Effectiveness, and Safety, Michael E. DeBakey VA Medical Center, and an Assistant Professor, Department of Medicine, Baylor College of Medicine; **Anne M. Tomolo, MD, MPH**, is a Physician Educator, Veterans Health Administration National Center for Patient Safety, an Associate Professor, Department of Medicine, Emory University, and an Associate Editor, *Journal of Graduate Medical Education*; **Blake Webb, MD**, is a Physician Executive, Veterans Health Administration National Center for Patient Safety; and

Lindsay Vaclavik, MD, is an Investigator, Center for Innovations in Quality, Effectiveness, and Safety, Michael E. DeBakey VA Medical Center, and an Assistant Professor, Department of Medicine, Baylor College.

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Corresponding author: Molly J. Horstman, MD, MS, Michael E. DeBakey VA Medical Center, molly.horstman@bcm.edu, Twitter @mjhorstman