Process Improvement

Michael S. Hayashi, MD FACS

Editorial Review: Joseph M Galante, MD
Stephanie Savage, MD
Clay Cothren Burlew, MD

Background

- Process Improvement or Quality Improvement is a continuous cycle of data gathering, critical analysis, followed by development and implementation of a corrective action plan.
- Positive results may be measured in a variety of ways including decreased frequency in adverse outcomes, reduced medical errors, improved/greater access to care, enhanced patient safety, or gains in quality metrics.
- By increasing quality or decreasing cost, Process Improvement can increase value in a systems-based approach.

Examples

- Peer Review can be performed in a number of ways including open forum discussion (such as Morbidity and Mortality Conference), general screening of all providers through standardized measures in Ongoing Professional Performance Evaluation (OPPE), or provider-specific education in a Focused Professional Performance Evaluation (FPPE) to address competency and judgment concerns.
- Trauma Performance Improvement and Patient Safety (PIPS) programs are founded on a commitment to Process Improvement and developing a culture of safety to prevent future adverse events.
- Process Improvement is essential to drive pay-for-performance initiatives in health care reform and value-based purchasing.
- Root cause analysis is an example of an in-depth systematic analysis employed to investigate sentinel events, such as wrong site surgery, and develop strategies to address provider, operational, and system factors that may have contributed to the event.

Key Components

- Establishing criteria for review, such as audit filters, can be helpful to identify potential opportunities for improvement when applied to a database/registry. Examples include Death, Major Complications, arrival time to CT Head >30 min for traumatic brain injury, unplanned return to the operating room, no brief intervention for patients screening positive for drug or alcohol abuse.
- Issues may also be identified through direct communication or correspondence. Having good relationships and open lines of communication across the multidisciplinary team (including administration) promotes the flow of information essential for both problem identification and resolution. Examples include rounding with providers, institutional safety and quality meetings, self-reporting through email or a suggestion box, and debriefing after major events.
- Opportunities to improve are often found even in cases without negative outcomes. For example, opportunities for improvement may be found in process measures, education and training, communication, availability of equipment or supplies, professionalism, or wastage.

- Once opportunities are identified, having clear expectations adds parity to the determination of whether or not quality standards are met. This also helps those involved with the process, meet the desired goals.
- Multidisciplinary success in process improvement requires shared goals, collaboration, trust, transparency, patient-centered focus, and clear communication.
- The rationale for change must be clear and supported by reliable evidence/data. Examples include local/institutional tracking efforts or national risk-adjusted benchmarking programs such as the National Surgical Quality Improvement Program (NSQIP) and Trauma Quality Improvement Progam (TQIP) from the American College of Surgoens. This data provides an objective reason for investing in a Performance Improvement project and also track the progress of these efforts.
- A non-punitive directive focused on education increases engagement and helps decrease defensiveness of those involved.
- Longitudinal success in the form of accountability, honesty, and a commitment to continuous re-evaluation are the basis of a Just Culture. Just Culture is safe environment that acknowledges our fallacies and potential for errors, allows for open reporting of issues without fear of retaliation, utilizes a non-punitive approach to event resolution, and encourages shared responsibility to improve patient safety.

Pitfalls

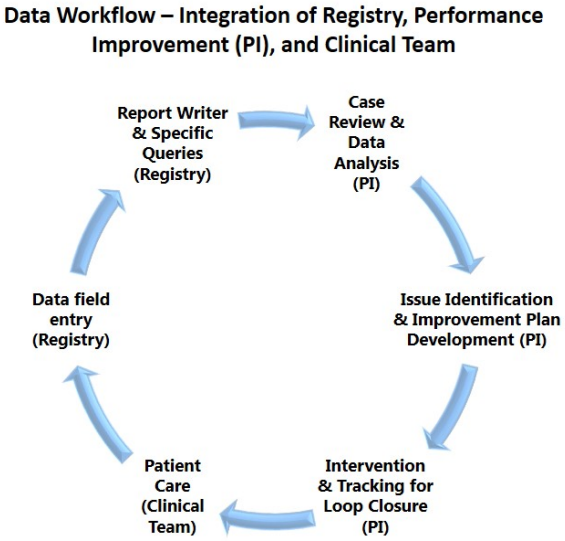
- A focus on blame and punishment for mistakes creates defensiveness and emotional reactiveness that can de-rail productive and objective discussions.
- Lack of involvement/participation of constituents or groups affected by any proposed change may result in resistance or non-compliance.
- The chain of logic must be consistent; the root problem/issue is investigated with an appropriate question, answered with accurate data, and addressed through a plan that resolves the root problem/issue. Deviation from this chain may result in decreased return from the initiative.
- Negative human factors such as defensiveness, selfishness, interpersonal conflict, resistance to change, skepticism, cynicism, and competing interests are examples of realistic obstacles that may need to be resolved or diffused in order for the focus of improvement efforts to be recognized and/or prioritized.
- With change, the effect on costs and outcomes must be balanced against each other. Disregard for one at the expense of the other will diminish the value or threaten the sustainability of any change.

Tools

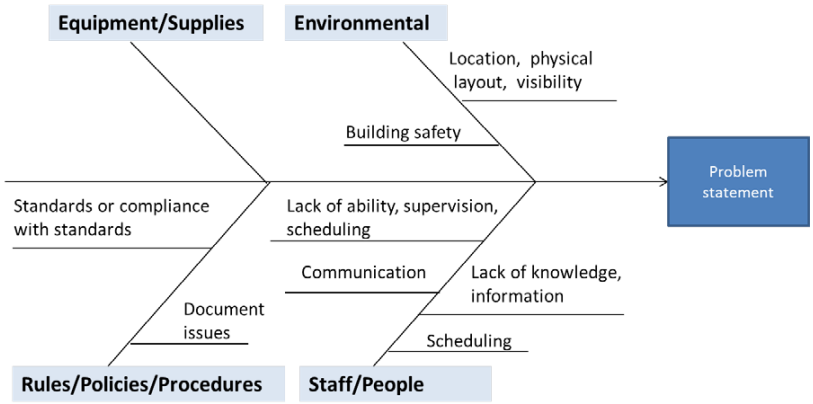
- Numerous tools are available to assist in Process Improvement; the following are just a few examples.
- Development of checklists can help standardize operations, improve communication, and ensure critical steps are not missed.
- Clinical care guidelines utilize evidence-based recommendations to decrease variation and improve quality, safety, and/or cost efficiency.
- Situation, Background, Assessment, Recommendation format for problem solving may help organize an issue for communication and promote clear messaging.

- The JCAHO patient safety taxonomy is a method for patient safety event classification to analyze near misses and adverse events utilizing 5 primary classifications: impact, type, domain, cause, and prevention and mitigation. This helps standardize characterization of event factors and identify common themes to target improvement efforts.
- Venn or Fishbone diagrams can offer a visual representation of how various factors are associated with one another or contribute to observed outcomes. Courses such as the Society of Trauma Nurses TOPIC course or the American College of Surgeons

Example of PI Feedback loop in a Trauma Program:



From CMS "How to Use the Fishbone Tool for Root Cause Analysis":



- Application of advanced tools such as Lean or Six Sigma methodology, Change management, and Just Culture may be valuable investments. These are advanced quality courses that teach dedicated individuals the skills necessary to be successful in Quality or Process Improvement.

Suggested Readings

1. American College of Surgeons Committee on Trauma. Resources for Optimal Care of the Injured Patient 2014 (6th edition).
2. American College of Surgeons Optimal Resources for Surgical Quality and Safety
3. Centers for Medicare and Medicais Services (www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/qapiresources.html)
4. Institute for Healthcare Improvement (www.ihi.org)