

Advanced Practitioners as Agents of Change: Leveraging Quality Improvement to Improve Practice

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Abstract

Scientific innovation in hematology and oncology is constant and increasingly complex, requiring individual clinicians and institutions to effectively integrate standards of care across the diverse hematology and oncology landscape into practice. Effective integration of evolving diagnostics, risk models, new therapeutics and novel treatment strategies, and practice regulation requirements requires ongoing practice improvement efforts and an infrastructure to implement change. Advanced practitioners (APs) are poised to serve as agents of change based on their clinical presence, clinical expertise, familiarity with critical members of the interdisciplinary team, communication skills, and ability to envision and actualize optimized workflows. Through practice analysis, workflow optimization, role delineation, and effective utilization and tailoring of documentation in the electronic health record, APs can lead implementation strategies to improve patient outcomes. In this article, we will review the essential role APs play as agents of change to implement best practice models using quality improvement (QI) processes. The principles of QI as a strategy for practice improvement, including strategies and tools for successful practice analysis, workflow optimization, outcome analysis, implementation, and sustainability of change, will be reviewed. Proposed elements of a QI and practice integration toolkit for APs and a series of QI exemplars, including an Advanced Practitioner Society for Hematology and Oncology (APSHO)-led QI initiative and AP-led QI initiatives, will be summarized.

Quality outcomes are a pillar of successful health-care organizations, drive strategic health-care initiatives, and require structured processes for effective actualization of quality improvement (QI) efforts. Most organizations maintain departments focused on quality outcomes to manage risk, meet regulatory and accreditation guidelines, and improve the safety, efficiency, and cost effectiveness of clinical processes. However, organizational quality structures rarely address the challenges faced by hematology and oncology clinicians and practices to integrate ever-changing and complex clinical practice guidelines effectively and continuously into interdisciplinary workflows characteristic of most hematology and oncology programs.

Advanced practitioners (AP) are ideal agents of change. As core members of the clinical and administrative team with familiarity of workflows across disciplines, APs can effectively optimize interdisciplinary clinical processes and workflows. Leveraging established QI processes to meet the constant change inherent in oncology practice requires buy-in from key stakeholders, familiarity with QI tools and strategies, and a commitment to change. Here, we review the principles of QI, including tools and strategies to guide QI processes, describe the role of hematology and oncology APs as agents of change, and provide exemplars illustrating AP-led QI initiatives.

PRINCIPLES OF QI

Opportunities for safety and quality initiatives in health care often come informally from front-line provider experiences (Chartier et al., 2018). Advanced practitioners are critical to clinical processes and, as such, are ideally positioned to identify qualitative initiatives that will improve processes for clinicians and patients. Chartier and colleagues (2018) suggest improvement initiatives should commonly occur, be of importance, be within the scope of the clinical practitioner, and demonstrate a current and/or optimal performance gap in comparison to a benchmark or standard. Once an opportunity initiative has been identified, methods such as the Plan-Do-Study-Act (PDSA) method can be utilized to drive structured improvements in health-care quality.

Quality Improvement Methods: PDSA

The PDSA method can be described as a pragmatic four-stage cyclic approach to improvement in complex systems (Taylor et al., 2014). The “plan” stage identifies a targeted change aimed at improvement, the “do” stage tests the change, the “study” stage examines the change, and finally the “act” stage identifies revisions or modifications designed for the next cycle of improvement based on the findings noted within the current cycle (Taylor et al., 2014).

Within this approach, there are three key theoretical principles to aid in the success of the PDSA methodology in practice that include: small-scale testing, continuous data collection over time, and iterative cycles. Small-scale testing ensures the planned changes were tested on a smaller scale before large-scale implementation has begun. This tactic allows for an “act and learn” approach that will minimize risk to the patients and organization while building evidence and confidence in the intervention (Taylor et al., 2014). Data should be collected over time to boost knowledge of the impact of a change on the outcome of interest; it can also aid in understanding variation in complex health-care systems. Lastly, Knudsen and colleagues (2019) describe the iterative cycle as linked knowledge from one PDSA cycle to the next; the accumulated knowledge builds or abandons interventions assessed throughout cycles for informed futuristic cycles. This strategy is aligned with realistic and real-world integration of rapidly changing treatment guidelines and regulatory processes inherent in hematology and oncology practices.

Plan-Do-Study-Act is an ideal method for the integration of continuous innovation in hematology and oncology if the appropriate steps are applied and monitored. Varied utilization of PDSA compromises the effectiveness of the tool, resulting in skewed data. Documentation of each stage of PDSA is imperative to support quality data capture and ensure memory as well as transferability of learning to other health-care settings in the future (Knudsen et al., 2019).

INITIATING A QI PROJECT

An organized and thoughtful approach to all project work starts with the project team and stakeholders defining a problem or specific aim. For

example, if the goal is to better describe the problem, then a tool such as a project summary form or SBAR (Situation, Background, Association, Recommendation) will guide the development of a problem statement. A strong, clear problem statement is concise in describing what is wrong, not what caused the problem, and is essential in framing possible solutions. Subsequently, the project team and stakeholders will need to fully understand the current situation and background of the problem. Health-care systems are complex with internal components, external components, interdisciplinary stakeholders, and varied workflows. Standardized tools are most effective in serving health-care teams to create strategic, intentional, and well-organized projects and to achieve the most favorable outcomes.

The utilization of standardized QI tools such as process mapping with diagrams, run charts, and fishbone diagrams can help maximize project organization, implementation, and communication (Table 1). Each standardized tool has a specific purpose or use. Selecting the best tool for the

intended purpose or project will optimize the QI process. Tools to map workflows and all elements of the process of interest allow a more focused evaluation of the problem.

Process mapping or workflow analysis can assist the team in visualizing components or a process by using a driver diagram (Antonacci et al., 2018). The fishbone diagram is a type of driver diagram used to list relevant components that may identify opportunities for improvement. Lastly, measures of improvement are based on data captured at frequent intervals from the QI tools and can be focused on outcomes, processes, or balancing of one process to another.

With a problem defined, measured, and analyzed, it is time to action plan. The project stakeholders should agree upon which countermeasures to implement. Countermeasures are initiatives implemented to counteract the problem. An impact effort matrix is a useful exercise to identify the effort and impact of each counter measure proposed by the project team and stakeholders. Once the countermeasures are implemented, a

Table 1. Quality Improvement Tools for Workflow Optimization and Communication

Tool	Features/Uses
Process maps	Depict a sequence of actions.
Value stream maps	Depict a service or product path.
8 Forms of Waste tool	Identifies areas of waste, inefficiency, cost, or threat to quality.
Kaizen cards/boards	A tool to help better define/display and track problem-solving efforts. It is structured to identify the problem and explore ideas for solutions.
SBAR template	A structure for organizing information for review by key stakeholders (Situation, Background, Association, Recommendation) to structure a problem for consideration of a quality improvement process.
Huddle board	Dry-erase boards located in designated areas to provide daily updates and improve communication across team members.
Fishbone analysis	Use of a cause and effect diagram to identify root causes and facilitate workflow or practice analysis.
5 Whys analysis	Used to investigate why a problem occurred through in-depth questioning and analysis. Keep asking why until you identify the root cause. Can be used with the fishbone tool.
Pareto principle	Applying the 80/20 rule to identify targets (the 20%) that are likely to result in successful changes.
Run chart	A line chart of data plotted over time that graphically depicts the process performance or data values in time order. Viewing data over time gives a more accurate conclusion rather than just summary statistics.
Visual graphics	Charts and graphs used to illustrate processes.
Impact effort matrix	Exercise to identify the effort and impact of each countermeasure proposed by the project team and stakeholders.

run chart can be an effective tool to track a metric or outcome from the implementation or change.

Identifying attributes of key stakeholders, including the role they bring to addressing the problem at hand, their level of engagement, perspectives on the project, technical expertise, or role of an advisor, will be critical to building an effective team. Identifying the team lead is a critical first step to provide leadership and oversight for the project. Role delineation ensures an improvement team maintains a balance of expertise, leadership, and knowledge (Silver et al., 2016). Team members and their roles on the team may change as the improvement project evolves. The teams should be representative of the stakeholders who perform or are familiar with the work under focus with representation from multidisciplinary areas.

IMPLEMENTING CHANGE

Implementing the action plan requires a dynamic interplay across the health-care system, organization, and people involved (Kapadia et al., 2022). Once the improvement team has decided on benchmarks, a written action plan is developed. This document lists goals, priority initiatives, a description of resources needed, implementation strategies and timeline, and how progress and outcomes will be measured. Outcome and process measures are critical to determining the effect of interventions and modifying the process over time. Successful implementation requires facilitators to tailor or align the action plan to the proposed improvement.

Stakeholder engagement and communication are critical to achieving the goals set for QI initiatives. Regular communication and visibility of facilitators of the QI process will build stakeholder buy-in. Creating a culture of workflow optimization and continuous improvement is essential to ongoing practice improvement.

Electronic health records (EHRs) dictate most workflows in oncology practice and are one of the primary contributors to clinician burnout. Changes in the EHR do not happen easily or quickly, but they can be accomplished with the right processes and engagement of both clinical and IT stakeholders. Documentation of all components of care in areas with clear delineation so that all team members can locate the information promotes a more

efficient and agile team. Incorporating EHR optimization is critical to most quality initiatives.

EXEMPLARS OF AP-LED QI PROJECTS

AP-led QI initiatives will vary in focus and scope based on the problem or opportunity identified. A series of exemplars are presented here to illustrate this concept.

APSHO-Sponsored Multi-Site AP-Led QI Project

Title of the Project: Building Best Practice for Oral Antineoplastic Therapy Programs: A Model for Multi-Site, Advanced Practitioner-Led, Quality Care Initiatives—End of Project

Identified Situation/Problem: Thirty-five percent of all new US Food and Drug Administration-approved antineoplastic therapies over the past 2.5 years are oral agents. This trend is expected to continue. Oral antineoplastic therapies require a unique infrastructure and dedicated workflows to effectively integrate them into practice.

Background: Although there are distinct advantages to oral antineoplastic agents, adherence to oral antineoplastic regimens, key to achieving the outcomes demonstrated in clinical trials, remains suboptimal, with estimated rates of adherence between 30% and 70%. Dedicated oral antineoplastic agent programs (OAPs) can improve adherence, minimize symptom severity, and reduce emergency department, urgent care, or hospital visits.

Assessment: Advanced practitioners (APs) are poised to serve as agents of change to transform practice using quality improvement processes. Advanced practitioners are charged with integrating new therapies, including oral antineoplastic agents, into everyday workflows on a regular basis, often without a structure for effective practice analysis and workflow optimization.

Recommendation/Program Objectives: This multi-site AP-led quality improvement (QI) initiative aimed at developing an Advanced Practitioner Society for Hematology and Oncology (APSHO)-led practice transformation initiative focused on the development or optimization of an OAP using an OAP blueprint as a tool for practice analysis and program development or optimization.

Methods: The Plan-Do-Study-Act (PDSA) method guided this quality initiative. An iterative cyclic method, continuous data collection, and project adaptation based on analysis of each PDSA phase were performed. The principles of evidence-based practice provided a theoretical foundation for this project. This project was granted IRB exempt status by the WCG IRB on May 13, 2022. APSHO is registered with WCG IRB as a study sponsor. Tools were developed by the primary investigator and informed by aims and objectives, extant literature, the PDSA iterative process, site lead surveys, and working group and 1:1 meetings with site leads.

APSHO partnered with AstraZeneca in the debut of the APSHO Quality of Care Initiatives by utilizing a blueprint produced by AstraZeneca highlighting elements of best practice for oral adherence. An APSHO AP team was tasked with evaluating the usefulness of this blueprint within both academic and community practices. While utilizing this blueprint, the AP team analyzed their individual practice for deficits and opportunities for practice change.

A pre-project, retrospective chart review identified gaps in current practice, EHR inconsistencies in documentation, process overlap and deficits, and more. Individual APs were mentored by the AP project leader on methods to achieve the identified best practices. Monthly meetings were held for group mentoring and support. An end-of-project survey was completed to assess changes in the practices.

Results/Outcomes: Five practices participated in the initial project. One practice withdrew due to competing commitments and staffing issues. Among the four practices completing the 11-month project, only one practice had an established OAP at baseline. Each site lead completed a practice analysis, collected baseline data to identify gaps in the documentation process for oral antineoplastic agents, and developed a preliminary optimized workflow.

Across all sites, gaps in documentation of the OAP process, primarily among data that does not have a discrete field in the EMR, were noted. In addition, members of the interdisciplinary team could not locate documentation critical to the OAP process across team members.

Advanced practitioners improved processes on a practice level. Practice improvement was evident in the number of changes made or planned across practices. Barriers included burnout and staffing issues, lack of time, and siloed organizations. The AP working group was invaluable for networking and support, exchange of ideas, overcoming barriers, and creating solutions.

APSHO-Sponsored AP-Led QI Project: Site Lead Summary

Title of Project: AP-Led QI Initiative for the Development of an Oral Adherence Program in a Community Oncology Practice

Identified Situation/Problem: This was an outpatient community-based medical oncology practice without a defined oral adherence program. The practice specifically identified gaps regarding oral antineoplastic therapies, including having no consistent documentation, either within the EHR or patient note.

Background: As a practice, we decided to implement a more formal oral adherence program to allow for consistent documentation among providers and various outpatient office locations. Administration and physician leadership agreed that such a program would improve overall patient satisfaction, ensure compliance, provide for increased opportunities to discuss treatments and related symptoms in a more patient-centered approach, and improve overall education for the patient.

Assessment: The field of medical oncology is changing at a rapid pace, and APs are leading the way to improve practice workflows. Advanced practitioners routinely integrate new therapies and processes, including oral antineoplastic therapies, into practice. They are perfectly positioned to initiate practice change. Advanced practitioners participate in various aspects of oral adherence, however, often without a well-defined workflow or process.

Recommendation/Program Objectives: The objective of this QI project was to pilot a more defined oral adherence program within the community setting involving our multidisciplinary team. The APSHO workgroup committee and the blueprint toolkit provided step-by-step guidance on how to create an oral adherence program.

Methods: We kicked off our OAP initiative by participating in the APSHO QI project. Objectives included completing practice-specific data collection, conducting appropriate follow-up, forming a multidisciplinary OAP committee, and identifying key stakeholders. Practice-specific data collection identified gaps in oral adherence at various levels, which was used to implement change within our documentation, HER, and patient delivery.

Results/Outcomes: APs in various subspecialties within the practice piloted an oral adherence program. Several enhancements to the electronic processes for oral adherence were created and integrated into the EHR: (1) New electronic orders for oral adherence and follow-up appointments were created; (2) An oral adherence section was inserted into each provider's patient note template; (3) A formal oral therapy new-start assessment was created; (4) A specific consent form for oral antineoplastic therapies was created; and (5) Oral adherence order sets were created. Next steps involved having personnel positions created and approved to include an OAP navigator and an OAP AP. Next steps will be to evaluate for consistent documentation and for improved workflow optimization. The pilot will expand to more practice-wide APs over time to request appropriate EHR enhancements.

Practice-Based AP-Led QI Project

Title of the project: Advanced Practice Provider Centralized Telephone Triage Pilot

Identified Situation/Problem: Significant delays in patient-initiated symptom management communications time to resolution related to delayed response time from the primary oncology provider teams back to the centralized nurse triage team were causing delays in patient care.

Background: As a practice, patient-initiated communications regarding new symptoms and ongoing symptom management should be resolved within 2 hours of the initial communication at least 80% of the time. The timely responses back to patients were a challenge to the primary oncology care team. In addition, delays in responses were resulting in increased patient emergency department (ED) visits and hospitalizations.

Assessment: APs can provide elevated care and support directly to patients as a part of the

centralized nurse triage team to improve patient symptom communication response times. This level of care can be done remotely and includes direct contact with the patient or communication and real-time delegation through the triage nursing team.

Recommendation/Program Objectives: This multi-site AP-led QI initiative was aimed at supplying oncology and hematology support directly and in real time to telephone triage nurses and patients to improve symptom management response times and decrease patient ED visits and related hospitalizations.

Methods: The PDSA methodology guided this quality initiative using a plan for change, designing a 6-week pilot program that would continuously collect data, and later evaluate response for project adaptation and deciding if this would be a long-term and ongoing service to patients within the practice. A theoretical foundation of evidence-based practice was applied. Tools developed by the pilot program team, including symptom management algorithms for triage nurses and the triage AP, as well as updated basic practice workflows for patient communications, were developed by the team. This pilot program was approved by the practice executive leadership board made up of multiple stakeholders within the practice.

Results/Outcomes: Two practice site locations participated in the initial project. During the 6 weeks of the pilot program, all patient communications that were received by these practices regarding symptom management were immediately responded to by a centralized nursing triage team. Pre- and post-project surveys were sent to the triage team and the primary oncology care providers.

Throughout the initial project, patient phone check-ins, telehealth visits, in-clinic visits, and local community health service lines were used to provide prompt care and symptom resolution to patients to avoid delays in care and ED/hospital visits. Following established algorithms for the project, the nursing team would either address the symptom and advise the patient directly or elevate the communication to the AP assigned to the triage team for that day. Documentation of the patient's concern and ongoing response communications were kept in real time.

Use of an AP as a part of the nursing triage team improved symptom management response times to under 2 hours and increased overall satisfaction of the triage team as well as the primary oncology care team. An initial project data review showed definite improvement in symptom management response time under 2 hours more than 80% of the time. In addition, the triage team and primary oncology care team providers both reported improved overall satisfaction. The triage team experienced prompt communication with the AP on triage, increased work completion, and decreased time spent on each individual patient case. Physicians and the primary oncology care team reported decreased overall communications and overall time spent per day on these communications. Results from the initial project were used to gain approval for expansion of this AP-led proj-

ect across other practice sites. In addition, retrospective review of the project showed a decrease in patient ED visits and hospitalizations, although this decrease was not considered significant.

DISCUSSION

The exemplars presented here describe the value of the AP as an agent of change to create or optimize workflows. Projects with a broad scope, such as the APSHO sponsored, multi-practice OAP, may not be the norm, but highlight the potential for collaborative QI initiatives. The site-specific exemplars illustrate the process of building stakeholder support, tailoring processes and tools to the practice, and identifying next steps using the PDSA process. Conducting a pilot is an important strategy for testing proposed changes and an important component of the iterative

Table 2. APSHO Quality Improvement Toolkit

1. Establish a steering committee or QI project team.	<ul style="list-style-type: none"> • Include representatives from all key stakeholders and obtain buy-in
2. Agree on a QI process or method from analysis to implementation and evaluation.	<ul style="list-style-type: none"> • Ask what the essential steps are to process improvement. You might use the Plan-Do-Study-Act Cycle or consult institutional-driven processes or committees • Familiarize yourself with QI tools
3. Define the problem or opportunity.	<ul style="list-style-type: none"> • What are you trying to accomplish? • Define your aims or outcomes and work from there • Define a manageable scope and timeline • Define measurable outcomes, including sources of data <ul style="list-style-type: none"> » Reports can be generated from aggregate data, discrete fields, or general documentation in the EMR • Collect pre- and post-implementation data to measure change
4. Perform process mapping and practice analysis	<ul style="list-style-type: none"> • Plan workflows relevant to the problem and desired outcomes <ul style="list-style-type: none"> » Define primary and secondary drivers » Identify stakeholders involved in each element • Identify key stakeholders in the process for improvement, including administrative (leadership, financial, data) and clinical stakeholders
5. Address institutional compliance	<ul style="list-style-type: none"> • Does the project require IRB approval? Most will be granted exemption if not designated as research • Are there IRB approval processes?
6. Plan for implementation	<ul style="list-style-type: none"> • Establish steering committee oversight for timing and methods for rollout <ul style="list-style-type: none"> » Consider pilot testing on a smaller scale • Establish a communication plan <ul style="list-style-type: none"> » Including education of stakeholders and methods and frequency of meetings • Establish an interim analysis plan • Allow for a process revision plan based on the interim analysis • Establish plans for sustaining change
7. Present project outcomes	<ul style="list-style-type: none"> • Share your findings within your practice, oncology department, health-care system, etc. • Submit a poster at institutional, local, regional, national, or international meetings and/or publish an article • Define next steps to build on your success and overcome continued barriers

Note. IRB = Institutional Review Board; QI = quality improvement; EMR = electronic medical record. Information from Antonacci et al. (2018); Chartier et al. (2018); de la Perrelle et al. (2020); Silver et al. (2016); Taylor et al. (2014).

PDSA method. The AP-led centralized telephone triage pilot illustrates the advantage of engaging key members of the interdisciplinary team to optimize each role in the creation of a solution for practice improvement. Identification of barriers and a continued commitment to overcome these is critical to the QI process. The APSHO Research and QI Committee has developed a QI toolkit as a guide for APs considering QI projects (Table 2).

SUMMARY

Creating a culture that emphasizes continuous workflow optimization using continuous improvement processes is essential to effective and efficient cancer care. Facilitating an organic process that empowers team members to ask questions, suggest solutions, and take part in QI initiatives relevant to their workflow will enhance team member engagement and reduce burnout (Kurtin et al., 2023). Sustaining change requires a commitment to continuous improvement that includes reevaluation of implemented changes as new data or guidelines emerge that require further optimization. Consistent and open communication between team members is the most critical tool for successful change. Setting regular check-in meetings after a change is implemented to update the team and identify any gaps in processes will improve the sustainability of the change. Advanced practitioners, as agents of change, are poised to optimize workflows and improve clinical practice through QI efforts. ●

Disclosure

The authors have no conflicts of interest to disclose.

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