Publishing Quality Improvement Work in *Clinical Practice in Pediatric Psychology*: The “Why” and “How To”

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Quality improvement (QI) is an iterative process designed to make controlled changes within the health care delivery system to provide patients with high-quality care that meets both their expectations and needs. *Clinical Practice in Pediatric Psychology (CPPP)* is actively soliciting QI studies to further its mission to promote and support the evidence-based clinical work of pediatric psychologists. This article (a) provides a basic introduction to what QI is and how it fits within ethical health care practice, (b) briefly describes the historical context of QI in health care, (c) discusses how QI serves as a complement to routine evidence-based care, and (d) gives guidance for writing up and publishing QI work. The overarching aim of this article is to promote the submission and acceptance of high-quality QI studies to *Clinical Practice in Pediatric Psychology*.

**Keywords:** ethics, evidence-based practice, quality improvement

Understanding quality improvement is becoming crucial for health care providers. The delivery of health care services in America is dependent on the insurance, payer, and reimbursement structures—all of which are in the midst of change. Additionally, payment systems are becoming increasingly tied to quality. How can providers adapt to the changes? One answer is learning and utilizing the science of quality improvement (QI). Our goal here is to provide a basic introduction to QI, its history and current application in health care, and how QI can complement the existing evidence-based practice movement in pediatric psychology. We also will present basic design and publication considerations that diverge from traditional research. Although we cannot hope in a single article to make readers expert in QI, we do hope to inspire enthusiasm and direct the interested reader toward additional resources to support completion and dissemination of QI work in the future.

**The History of QI**

The most basic definition of quality is “how good or bad something is” ("Quality," n.d.), whereas improvement refers to “. . . the act or process of making something better” ("Improvement," n.d.). QI in health care may be defined as “the combined and unceasing efforts of everyone—health care professionals, patients and their families, researchers, payers, planners, and educators—to make the changes
that will lead to better patient outcomes (health), better system performance (care), and better professional development” (Batalden & Davidoff, 2007). The roots of modern QI science can be found in both health care and industry. In 1910, Dr. Ernest Codman proposed the idea of standardizing health care through systematic review of outcomes, which he termed “the end result system of hospital standardization” (Dew, Horine, & Schulingkamp, 2014). The American College of Surgeons, and later The Joint Commission (TJC), soon adopted the “end result” system to ensure improved outcomes and took the lead on developing minimum standards for health care facilities in the United States (“The Joint Commission History,” n.d.). A few decades later, in non–healthcare industries, Walter Shewhart, W. Edwards Deming, and Joseph M. Juran developed a more scientific, data-driven approach to standardizing work processes. Although developed for industrial uses, the concepts they introduced to American industry between the 1920s and 1940s apply to almost any work process and continue to be used today. Consequently, Shewhart, Deming, and Juran are considered key figures in the development of QI science.

The QI movement gained additional momentum midcentury, with Congress passing the Social Security Act Amendments in 1965 that linked Medicare and Medicaid participation to accreditation through TJC (Social Security Act, 1965). In 1970, TJC standards were “recast to represent optimal achievable levels of quality, instead of minimum essential levels of quality,” while, in 1992, yet another change in standards further emphasized performance improvement concepts (“The Joint Commission History,” n.d.). Accreditation, and TJC’s bond to QI as a part of the accreditation process, continue to affect the view of QI in health care. Although the accreditation process is at times viewed by providers as a “necessary evil,” it is an interactive approach used to strategically identify and address problems, and it has helped drive positive changes in a variety of health care settings (e.g., improved care for heart attack and stroke patients nationwide; The Joint Commission, 2013).

More recently, public recognition of health care quality problems were cemented through the Institute of Medicine (IOM) publications To Err Is Human (Kohn, Corrigan, & Donaldson, 1999) and Crossing Quality Chasm (Committee on Quality of Health Care in America, 2001). These publications highlight evidence of failures within the United States health care system, attribute habits and environment for the industry’s under-delivering, and emphasize the potential for QI science to be applied as a remedy. These publications certainly increased awareness and stimulated interest in QI science; however, more than a decade after publication, the health care industry is still known to be flawed (Leape & Berwick, 2005; Leistikow, Kalkman, & de Bruijn, 2011). The need to deliver safe, effective, efficient, timely, patient-centered, and equitable care to patients is still ever-present, and the responsibility falls on the shoulders of individual providers. This is as true for pediatric psychologists as it is for our physician colleagues.

Why QI?

Improving quality within complex health care systems can be deceptively challenging. In other words, what may seem like a simple “fix” often isn’t. As pediatric psychologists intuitively understand from both our research and clinical work, we all operate within systems, and health care is no different. Whether you’re trying to synchronize a long series of traffic lights, get hundreds of people to wash their hands, or get staff at one primary care office to routinely use evidence-based pain prevention for childhood vaccinations, any change you make will affect other parts of your system in unexpected ways. Life is messy and nonlinear. Whereas traditional research addresses this problem through creation of “idealized” environments—carefully controlled settings and samples to reduce noise and maximize ability to detect treatment effects—such conditions do not often present in the real world. This leads to what is widely recognized as the research-practice gap: that is, we know what should work under ideal circumstances, but getting it to actually work in the setting of clinical practice can be challenging, if not nearly impossible. In some ways, this mirrors the ever-present question of efficacy (i.e., could it work?) versus effectiveness (i.e., does it work?) for evidence-based treatments.

QI takes a different approach. Instead of strictly controlling internal and external condi-
tions in the system, QI embraces and uses existing variability in planning and implementing interventions. Continuous measurement of outcome, process, and balancing variables (i.e., all parts of the system that may be influenced by implemented changes) is intended to aid in the discovery of what works best within the system(s) already in place. QI can approach a project differently because it is grounded in the primary goal of enacting lasting change within a performance system. Ultimately, a QI project is only a success insofar as the prespecified goal is met (e.g., 80% of children receiving at least one evidence-based pain prevention technique prior to vaccination within 6 months) or improvement is made toward a difficult to attain (i.e., “stretch”) goal. Unlike research methodologies with a predetermined beginning and end point, QI allows the use of as many intervention cycles as needed, each of which is derived from information gained during the previous cycle. There can be no research-practice gap within QI, as research and practice are inherently intertwined; knowledge gained immediately feeds back into the clinical system from which it was derived. In other words, QI effectively narrows the gulf between efficacy and effectiveness for evidence-based interventions by addressing the pivotal question of “how can I make it work?”

In this way, QI provides pediatric psychologists with flexible and powerful tools to bring the evidence into the practice setting and, ultimately, ensure consistent implementation of high-quality health care.

Equally as important, QI shortens the “time to market” for tested interventions. According to Morris, Wooding, and Grant (2011), “it is frequently stated that it takes an average of 17 years for research evidence to reach clinical practice.” Other studies have found similar averages, even despite different methods and definitions (Balas & Boren, 2000; Grant, Green, & Mason, 2003; Wratchko, 2009). This long duration may be attributable, at least in part, to the time required for grant application/reapplication, execution of multiple independent and sequential projects, and successful uptake of research findings within clinical practice. As mentioned earlier, QI compresses several stages of translation and feeds back immediately into the clinical system from which it was derived. Although this reduces time lag within a system, publication of QI also can speed potential adoption more broadly by offering lessons learned that may encourage and ease implementation in other clinical settings.

Uptake of QI Within Pediatric Health Care

The uptake of QI tools and perspectives within pediatric medicine is reflected in the sheer volume of recent publications with a QI focus in Pediatrics, the flagship journal of the American Academy of Pediatrics (AAP). A simple search for the term “quality improvement” in the title or abstract yielded 400 results covering the period of 1990–2014, with numbers gradually increasing over time (see Figure 1). This volume increase may be attributable, at least in part, to that journal moving to specifically solicit “quality reports” as a separate article type and to the targeted guidance they now provide both on what falls within the definition of a quality report and on how to write up these projects for publication. One only has to look at the Journal of Pediatric Psychology, the parallel flagship journal for the Society of Pediatric Psychology (SPP; Division 54 of the American Psychological Association), however, to see that the leap of QI to pediatric health has not yet been made to pediatric psychology. Outside of a single special issue focused on the topic in 2010, no other manuscript could be located with a simple search for “quality improvement” in the Journal of Pediatric Psychology archives.

Multiple factors potentially contribute to the relatively low adoption of QI in the pediatric psychology literature. Front-line pediatric psychologists might lack the time to study QI conceptually or become trained in its implementa-

Figure 1. Number of quality improvement reports published annually in pediatrics over past decade (1991–2013).
PUBLISHING QI IN CPPP

Skepticism about QI methods—which may appear less rigorous or internally valid than traditional research methods—could be particularly pronounced in the psychology profession.

To this end, one key mission of the recently launched Clinical Practice in Pediatric Psychology (CPPP) is to support applications of evidence-based interventions in “real-world” settings with particular attention to potential barriers and solutions and considerations of diverse populations (Clinical Practice in Pediatric Psychology description, n.d.). Further, CPPP aims to illustrate the reciprocity between research and practice (Tynan & Pendley, 2013), a defining feature of QI work. The suitability to changing environments with small populations and sample sizes appears to make QI a perfect fit for use by pediatric psychologists within clinical health care settings. For example, pediatric psychologists could be leveraging QI approaches to quickly examine the effects of novel ideas—big or small—within the health care environment and, ultimately, hasten the spread of important and useful innovations. Pediatric psychologists also could be employing QI methods to bolster translational efforts, supporting initial implementation and routine use of evidence-based practices within the clinical realm, and effectively building a bridge across the research-practice gap. QI methods can be used to assess almost any problem related the degree to which patients are receiving evidence-based care (e.g., type, quality, quantity, by whom, to whom, etc.), the impact of changes to the clinic process on care provision and/or outcomes, and the impact of changes to care provision on other parts of the clinic’s functioning. For example, projects may include assessing the degree to which evidence-based assessment tools are being utilized, patients are followed-up appropriately, and crisis events are handled properly and consistently. One need only to look at the special issue of Journal of Pediatric Psychology referenced earlier or search through the Pediatrics archives to see the diverse application of QI methods. Recent QI projects looked at improving the quality and quantity of airway clearance therapy per day cystic fibrosis patients are receiving (Ernst et al., 2010), increasing rates of short-term newborn screening follow-up (e.g., Hinton et al., 2012), and standardizing use of a validated instrument for assessing pain-related disability in a clinic (e.g., Lynch-Jordan et al., 2010), among others.

Just as important as the implementation of these projects is publication of findings and methodology. Publication of QI projects in pediatric psychology creates forum for discussion of QI issues and ideas, builds on our knowledge bank as a field, and provides a resource for QI novices on designing and implementing successful projects. Ultimately, increased access to knowledge, support, and publication opportunities may provide a necessary scaffold to increase use of QI tools and methods within pediatric psychology: this article is intended as a first step.

QI Design Considerations

As pediatric psychologists tend to be rigorously trained in traditional research methods, approaching a QI study requires both understanding where QI and traditional research are aligned and where their methods diverge. Methodological commonalities between traditional research and QI include analyzing the effect of an intervention on a defined outcome, using baseline testing to ensure a stable estimate of data before intervention, and only introducing one variable (or change) at a time. Despite these basic similarities, several important differences exist between QI and traditional research that warrant discussion here.

Differences in methodological design between QI and traditional research stem from differences in their mission. As described above, the mission of QI is to make direct changes in clinical care to close a gap between quality standards and quality in practice. This is distinct from the aim of traditional research to further scientific knowledge. Traditional research might ask a question such as, What is the optimal hemoglobin A1c level for children with...
What is the best way to minimize pain associated with pediatric immunization? In contrast, a related QI project might aim for 80% of pediatric patients with diabetes to demonstrate hemoglobin A1c levels within the medically recommended range on 80% of finger sticks within 6 months or 90% of pediatric patients to have at least one evidence-based pain prevention strategy documented in the electronic medical record as being offered and/or used during routine childhood immunizations.

Flowing from the mission of translating standards into care, QI methods focus on identifying and overcoming systematic barriers to perpetuate meaningful and lasting change. To do so, QI predefines multiple categories of measurement, including outcome, process, and balancing measures to accurately describe and track the outcome variable and changes within the system. As the name implies, “outcome” measures represent the voice of the patient or the ultimate goal of the intervention (e.g., average hemoglobin A1c, receipt of evidence-based pain prevention strategy with immunization). “Process” measures represent the working of the system and typically reflect the intervention components (e.g., the percentage of patients receiving evidence-based diabetes care, the percentage of staff receiving training in the use of evidence-based pain control measures for immunization, availability of topical anesthetics/other relevant supplies). Finally, “balancing” measures quantify unintended consequences in other parts of the system to help determine whether parts of the system are improving at the expense of others (e.g., Does the number of glucose finger sticks each patient must undergo every day increase? Can the same number of patients be seen during a 4-hr clinic block? What happens to the rate of accidental needle sticks during immunization? What is the financial cost to the patient/health system?). All three categories are critical to the ultimate success and permanent adoption of a practice change; thus, all three are important to consider when determining what to measure in a QI project.

A second methodological difference between QI and traditional research lies in how and when the intervention is developed. QI interventions are not specified a priori, but instead emerge in response to information collected as part of the iterative QI process. The QI process involves four phases—Plan, Do, Study, and Act, also referred to as PDSA—that occur in repeated cycles until the project aim is met or determined to be unreachable (Deming, 1986; Moen & Norman, 2006; see Figure 2 for a visual depiction of the PDSA cycle with important components outlined for each step). Each PDSA cycle starts at the Plan stage, which involves defining the problem to be addressed, developing ideas about what would mitigate or fix the problem, and creating an intervention plan based on this information. Several tools are available to help identify the root cause of the target performance gap and, thus, identify appropriate points of intervention. One such tool is a fishbone diagram, which is a visual display capturing brainstormed causes of a defined problem (Simon, 2010). Fishbone diagrams allow for both primary and secondary causes of the identified problem to be identified while encouraging both broad based thinking and team participation. Fishbone diagrams have a long history in QI, having first been introduced in the 1960s (Ishikawa, 1968). Another technique often employed in the Plan stage is the 5-Whys tool, which is a questioning technique used to uncover the root cause of a problem through its symptoms (“Determine the Root Cause,” n.d.). As Plan phases are returned to throughout the project, using QI tools such as the above, and updating them based on progress and information obtained up to that point, continuously
guides the improvement process forward. In other words, the PDSA process is dynamic and allows the project to adapt based on learning that occurs over time.

A third methodological difference involves the study approach. For a QI study, the traditional scientific method is fine-tuned into a specific series of steps structured by the PDSA cycle. A single intervention (or intervention component) is introduced on a small scale within each Do phase. A new intervention or component may be introduced only after the preceding cycle is complete and learning from that cycle has been taken into consideration. This approach of testing small interventional changes repeatedly is a trademark of PDSAs and a distinguishing factor from traditional research methods. Although single-subject and small n designs often share this focus on testing small interventional changes one at a time, and might appear similar to QI on the surface, both the project goal (i.e., does the intervention work?) and manner in which the intervention is developed (i.e., before the start of the project) continue to separate these research designs from true QI. Ultimately, the driving force for a QI project is achieving the aim. Testing the effect of an intervention is not the goal, but merely the process through which the need for additional changes can be ascertained and planned.

A fourth, and final, difference lies in the approach to data collection and analysis. For QI studies, small tests of change are used repeatedly to steer the subsequent steps of the project itself. Thus, multiple observations are conducted sequentially on a relatively small sample (or set of samples), and temporal trending analysis is used to infer effect strength and, most importantly, to identify out-of-bounds values during the Study phase. Typical temporal trending analysis tools include run charts, which plot a defined measure against time, and control charts, which plot a defined measure against time while also including statistically computed upper and lower “control limits.” Both run and control charts allow application of rules to detect signals (e.g., trend, shift, common, or special cause variation). Trends or shifts can indicate sustained improvement or decline in the outcome measure, whereas identified out-of-bounds values can be used to trigger review and/or to identify further opportunities for change in subsequent cycles. The goal for each PDSA cycle is not to collect information on everything and anything that could change, but instead to gather “just enough” information to learn and inform another improvement cycle. This fits with the primary emphasis of QI on achieving the project aim, rather than on isolating the effect of any individual intervention or intervention component. Data analysis is a method employed to propel the project forward in real time; traditional significance testing, as often conducted to document findings at study end in research, simply is not relevant in QI. More information on all of the tools described in this manuscript can be found on the American Society for Quality website (http://www.ASQ.org).

Collecting “just enough” information also is important given that QI is meant to promote self-sustaining, system-level change. Data monitoring is likely to continue beyond the duration of the improvement cycle, at least until the outcome improvement has proven indefinitely sustainable. Obviously, low-burden data monitoring increases the likelihood that data will continue to be collected beyond achievement of the project aim and will enable out-of-control processes to be caught and addressed earlier. Given that any burden of monitoring might extend long-term, data collection should be made automated and error-proof whenever possible. If long-duration data collection is unrealistic or impractical due to limitations on time, energy, equipment, or funding, techniques of sampling smaller can be deployed for periodic review.

QI Publication Considerations

The beauty of QI interventions, once deemed effective, is that the insights learned throughout the QI study are likely highly applicable in other institutions. Sharing results with other providers in the form of publications, although different than with traditional research results, is encouraged to spread the knowledge of innovative ideas and avoid duplicate work (or mistakes). As with traditional research manuscripts, publication holds authors accountable for their efforts and contributes to the “collective memory,” providing context for interpreting new findings properly (Davidoff, Kirsh, & Ogrinc, 2008). However, unlike traditional research manuscripts, findings based on QI are context-dependent and indicative of performance
change driven by experiential or adaptive learning (Davidoff, Kirsh, & Ogrinc, 2008), and likely a result of unanticipated challenges of the project itself. Thus, the write up of QI must be adapted to these issues.

Fortunately, a set of publication guidelines have been produced to assist authors in the setup and compilation of QI manuscripts: the Standards for Quality Improvement Reporting Excellence (SQUIRE; Ogrinc et al., 2008). As the name implies, the guidelines are intended for the reporting and publication of QI work. The user-friendly checklist style (see Table 1 with illustrative examples added) enables an author to formulate his thoughts in a logical fashion, while also ensuring the manuscript content reflects context-dependent details and complexities. The guidelines, overall, help ensure submission completeness, precision, as well as transparency in work. Although first drafted in 2005, the guidelines already have been adopted as the author guidelines for multiple journals (e.g., Pediatrics, Journal of Quality and Patient Safety) and represent the current best practice to follow when engaging in QI write up. A few important points of divergence from the write up of traditional research are highlighted here by manuscript section, but more complete guidelines can be found online (Ogrinc et al., 2008).

**Title and Abstract**

The words “quality,” “quality improvement,” or “patient safety” should appear in the title and abstract of any QI manuscript to allow correct classification in scholarly databases. Readers searching scientific databases are typically provided with only the title of the work and the abstract; as a result, communicating these paramount project details in this format becomes critical to draw readers interested in work focused on clinical application.

**Introduction**

The introduction should clearly delineate the quality gap being addressed by the QI project and state the primary improvement aim in concrete language. Contrasting current practice standards with a description of how local practices failed to meet this benchmark highlights the importance of using QI methodology while establishing a sound project rationale. Factors unique to the organization, along with specific data that support the need for change, should be included here to provide the reader with context related to generalization of the intervention to other unique practice settings.

**Method**

The critical components of the intervention planning process should be clearly documented in the method section. As in traditional research, it is important here to break down the intervention into individual components with enough detail provided that a novice reader could recreate the intervention. Additionally, factors contributing to the choice of specific intervention components and the plans developed for implementation should be explained, including relevant aspects of the specific environment in which the QI project took place. A description of how improvement or change was measured, the rationale behind the measures chosen, and the process by which data were obtained also should be provided.

**Results**

A unique challenge for pediatric psychologists utilizing a QI approach is the integration of both quantitative and qualitative methods to arrive at their conclusions. The inclusion of the intervention sequence, phases of implementation, and level of participation at critical points within the intervention process are all critical in communicating the change process to readers. Flowchart diagrams or timelines often can be helpful in guiding the reader through the intervention process and each PDSA cycle. “Lessons learned” from the project evolution also can be helpful information to communicate. Unique aspects of the environment (e.g., resources used, location, cultural elements, history of previous change effort, organizational structure, staff) likely to influence the overall outcomes of the QI intervention and to impact the generalizability of the intervention to other settings should be noted.

**Discussion**

Authors should think of this section as a chance to tell the story of their project, highlighting not only the results directly relevant to the project aims, but also the successes and
Table 1
SQUIRE Reporting Guideline Checklist With Examples From a Select Manuscript Published in the Journal of Pediatric Psychology

<table>
<thead>
<tr>
<th>Manuscript section</th>
<th>Unique information for QI studies to include</th>
<th>Example article in <em>Journal of Pediatric Psychology</em> (Ernst et al., 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Words referencing QI should appear, such as “quality,” “quality improvement,” or “patient safety”</td>
<td>Using Quality Improvement Science to Implement a Multidisciplinary Behavioral Intervention Targeting Pediatric Inpatient Airway Clearance</td>
</tr>
<tr>
<td>Abstract</td>
<td>Make QI nature of study clear</td>
<td>Objective clearly stated Brief description of methods, results, and conclusions</td>
</tr>
<tr>
<td>Introduction</td>
<td>Background information on care problem and population affected</td>
<td>Description of airway clearance therapy (ACT) as standard of care for patients with cystic fibrosis (CF) Institution currently falling short of recommendations Articulated goal of patients with CF receiving standard of care QID best practice ACT 80% of the time during inpatient hospitalizations</td>
</tr>
<tr>
<td>Method</td>
<td>Description of setting, staff, and target population for intervention</td>
<td>Description of several PDSA cycles (i.e., educational workshops, one-on-one training, behavioral tools) Fishbone diagram of team-identified barriers/key drivers Diagram of PDSA cycles for implementing child rewards and staff ACT logs Description of measures and data collection process Description of analytic procedures</td>
</tr>
<tr>
<td>Results</td>
<td>Demonstration of a stable baseline</td>
<td>Annotated control charts showing baseline and tracking implementation of ACT with marks of study events</td>
</tr>
<tr>
<td>Discussion</td>
<td>Outcomes of project</td>
<td>Threefold increase in occurrence of best practice ACT Maintenance for one year Most substantial change occurred with implementation of whole program rather than pieces Cost of prizes</td>
</tr>
</tbody>
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(¶ continues)
challenges encountered along the way. This unique aspect of the discussion should be integrated with more traditional elements of a Discussion section in a research manuscript.

**Challenges and Ethical Issues in QI**

No introduction to QI would be complete without at least a brief discussion of the ethics inherent to this type of work. First, conducting QI is—in the most basic sense—an essential part of ethical practice. The imperative to provide safe, effective clinical care necessitates the use of QI as part of a pediatric psychologist’s routine clinical practice. Recent findings within the broader health care field suggest that the quality of health care in the United States is not matching the science base and the quality of care that is possible. Several indicators of this discrepancy between potential and reality include high numbers of medical errors, disparities in quality by characteristics such as location and socioeconomic status, and disparity in use of medical services resulting in both the underuse and overuse of services (U.S. Department of Health & Human Services, 2002). Bridging this research–practice gap by supporting implementation of the evidence base in day-to-day clinical operations is the very heart of QI. In fact, pediatricians and pediatric subspecialists are now required to document participation in QI as part of Maintenance of Certification through the American Board of Pediatrics (ABP). Engaging in QI work allows health care workers and organizations to fulfill their ethical responsibility to assure that the clinical care they provide is both safe and effective.

Despite both the inherently ethical nature of improving quality and QI’s growth within health care, ethical guidelines for conducting QI are largely still developing. One complicating factor is the confusion of ethical standards for QI with those for traditional research. As QI methods and techniques become more sophisticated and broadly applied, there has been a push to develop the field further through dissemination of information and public dialogue on QI initiatives. This push for public discussion has increased the number of institutions and practitioners performing QI, but also has led to QI projects facing scrutiny from entities that are knowledgeable about ethical guidelines for traditional research processes (i.e., IRBs) but lack experience regarding ethical practice of QI.

The Hastings Center Report (Baily, Bottrell, Lynn, & Jennings, 2006) and articles by many others (e.g., Casarett, Karlawish, & Sugarman, 2000; Lynn et al., 2007; Kofke & Rie, 2003) have stressed that in its basic form, QI is not research and should not be treated as such. Research aims to generate knowledge about enduring qualities of humans, whereas QI endeavors to translate existing knowledge of standards of care into practice within a given institution. Differences between QI and research also exist along the core aspects of research ethics, particularly the distribution of risks and benefits in the population. In research, participants often assume risks of testing a novel drug or treatment; the fruits of research often benefit a larger population, rather than the individual participants in the study. In comparison, QI initiatives aim to directly benefit the majority of individual participants while not imposing additional risks or burdens (Casarett, Karlawish, & Sugarman, 2000). Furthermore, a research study terminates when the data is published or when funding stops, but the intention behind QI is to integrate change into the system so that achievement of a higher standard of care is self-perpetuating.

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**Table 1 (continued)**

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<tr>
<th>Manuscript section</th>
<th>Unique information for QI studies to include</th>
<th>Example article in <em>Journal of Pediatric Psychology (Ernst et al., 2010)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Processes in place to minimize diminishing gains over time</td>
<td>Impact on staff burden</td>
<td>Future directions with younger population and enhancing frequency of ACT further</td>
</tr>
<tr>
<td>Discrepancies between anticipated and actual outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggestions for improvement and future directions</td>
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These characteristics clearly mark QI as an intrinsic part of health care delivery and health care institutions, whereas not undertaking QI when gaps in quality are known puts patients at risk and constitutes unethical practice.

Despite the distinction between QI and traditional research, navigating the institution’s IRB remains a challenge for many. Disagreement often exists—even among quality officers, institutional review board chairs, and journal editors—about whether or not QI projects should undergo IRB review (Lindenauer et al., 2002). The Hastings Center Report provides some guidance on this issue by stating that QI procedures should be conducted carefully and thoughtfully, and outcomes should be monitored with the same high attention as currently done with all aspects of patient care. This report states that IRBs should adjust their procedures to accommodate QI projects and provide quality-appropriate review. Specifically, this report suggests that low-risk QI initiatives undergo review by the same processes as typical health care delivery mechanism, while higher-risk QI projects undergo review by a formal advisory group put together for this purpose. Although this debate over the handling of QI in ethical review continues to unfold, psychologists conducting QI projects should consult with the IRB Chair at one’s own home institution for guidance before beginning any QI work to ensure compliance with current standards. Considering the journal outlet for any planned QI work, and consulting its specific policies on QI publication, also can be a wise upfront investment of time and energy.

**Additional Resources**

For those who have no previous background in QI, this overview will be insufficient as a “how-to” guide. Next steps for those interested in executing QI projects include contacting QI experts and/or teaming up with other health care providers already engaged in implementing QI projects at your home institution. Connecting with experts in QI methodology at other institutions, utilizing online resources such as those for the SQUIRE Guidelines (http://squire-statement.org) and Six Sigma (http://www.isixsigma.com), or obtaining additional QI training through the Institute for Health care Improvement (IHI) Open School (http://www.ihi.org/education/ihiopenschool/Pages/default.aspx) also are excellent options for broadening your knowledge of QI methods and tools. Finally, The Team Handbook (Scholtes, Joiner, & Streibel, 2003) provides advice on team management, an important consideration when embarking on a QI project involving change to the health care system.

**Summary**

Quality improvement is a part of what pediatric psychologists try to do every day. In fact, many of us already engage in activities that could easily convert into a QI project with a little reframing. Questions such as *How can we reduce no-shows to our clinic?*, *How can I get my office staff to be more efficient?*, or *How can we better identify our patients at risk for suicide?* arise frequently in practice, but providers often do not approach these issues systematically or collect enough data to draw meaningful conclusions. By simply defining our goal in these situations as closing the known practice gap (e.g., failing to identify depression in children with inflammatory bowel disease at the estimated population rate) and collecting relevant data in a systematic and continuous way, we open up a process of adaptive learning that can yield meaningful and sustained change for our patients. This is true even if the first intervention or tool we thought would work does not. This makes QI different that research, even when they may appear similar on the surface. For example, both research and QI may embark on a “pilot” study to see if a particular intervention or tool is helpful (e.g., *Does X measure help us to identify more patients with depression?*); however, finding an answer to that single question would be the end of a research study, whereas the answer would simply be one part of a larger iterative process in QI. We learn and move forward with each PDSA cycle, better informed by our successes and failures, and better able to help others succeed (or avoid similar mistakes along the way). These QI projects are not only suitable for publication, but essential to give voice to efforts underway to close the research-practice gap and advance our collective ability to provide our clients with the most advanced and ethical care.

Like our medical colleagues have done with *Pediatrics*, we hope at *CPPP* to solicit and
support increasing publication of QI work within pediatric psychology. This introductory article is the first step in that process. Hopefully, this article has served the role of highlighting similarities and differences between QI and the traditional research that will be more familiar to most readers, piquing interest in the use of QI within pediatric psychology practice, and directing the interested reader to one of the many resources already available to help health care providers get started in QI. In addition, in the coming months, look for the development of QI publication standards on the CPPP website and a special section of the journal devoted to the publication of this important work.

References


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