An Effective Program to Reduce Malpractice Claims and Payments in a Large Orthopaedic Practice

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Background: High reliability in health care requires a balance between intentionally designed systems and individual professional accountability. One element of accountability includes a process for addressing clinicians whose practices are associated with a disproportionate share of patient complaints. This study aimed to evaluate the impact of the Patient Advocacy Reporting System (PARS), a tiered intervention model to reduce patient complaints about clinicians.

Methods: A retrospective cohort study was conducted involving a southeastern U.S. orthopaedic group practice. The study assessed the implementation of the PARS program and subsequent malpractice claims from 2004 to 2020.

Results: The implementation of PARS was associated with an 83% reduction in malpractice claims cost per high-risk clinician after intervention ($p = 0.05$; Wilcoxon rank sum test). The overall practice group experienced an 87% reduction in mean annual claims cost per clinician ($p = 0.007$; segmented regression). The successful adoption required essential elements such as PARS champions, peer messengers, an Office of Patient Affairs, and a clear statement of practice values and professionalism expectations at the time of onboarding.

Conclusions: The PARS program was successfully adopted within a surgical specialty group as a part of ongoing risk prevention and management efforts. The period following PARS was associated with a retrospectively measured reduction in malpractice claim costs. The PARS program can be effectively implemented in a large, single-specialty orthopaedic practice setting and, although not necessarily causal, was, in our case, associated with a period of reduced malpractice claim costs.

Clinical Relevance: We have learned in previous research that there are clear links between professionalism and patient outcomes (e.g., surgical complications), but agree that the focus here on medical malpractice is not directly clinical.

High reliability in health care requires a balance between intentionally designed systems and individual professional accountability[1-3]. A key component of professional accountability is clinicians who model professionalism, defined as maintaining competency in their fields, committing to safe and equitable care, modeling respect, and practicing self-regulation and group regulation[1,4-7]. One factor particularly shown to threaten high reliability and safe care is unprofessional behavior in the clinical setting, which is associated with an increased risk of surgical complications[3,8,9] and malpractice claims[10].

An important source of information about clinicians who exhibit unprofessional behavior is the observations of patients and families who may share their concerns with a practice in the

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form of unsolicited patient complaints[10-12]. The Patient Advocacy Reporting System (PARS) is a system designed to capture, code, and aggregate unsolicited patient complaints to identify those clinicians who stand out from their peers, accompanied by a tiered intervention model using clinician peers to share feedback for high-risk clinicians. PARS has been shown to reduce unsolicited patient complaints[13,14]. To this point, the program had been introduced only within large health systems[15], but not in a large, geographically distributed, single-specialty network whose clinicians deliver care in multiple outpatient clinics and nonlinked hospital sites. This retrospective cohort study evaluated PARS implementation in a southeastern U.S. orthopaedic surgical group, focusing on identifying high-risk clinicians and assessing reductions in patient complaints and malpractice claims post-intervention.

Materials and Methods

Study Design and Setting

We conducted a retrospective cohort study to describe the introduction, adoption, and launch of the PARS program, including monitoring unsolicited patient complaints to identify high-risk professionals, and the association of the program with malpractice claims for an independent orthopaedic group practice in the southeastern United States. The study cohort included clinicians (defined as physicians and physician assistants) who practiced in the group for at least 1 year. The cohort grew substantially over the study period, from 44 to 142 physicians and 13 to 118 physician assistants (Table I). Clinicians practice in both outpatient and inpatient settings and take calls at 3 area hospitals, and they collectively provide care in >1 million patient encounters annually.

The study followed the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) reporting guidelines[16]. The study was reviewed by the institutional review board at Vanderbilt University Medical Center (which employs 6 authors of this study [W.O.C., T.W.D., G.B.H., T.F.C., H.J.D, and J.W.P.]), and it was determined that it did not qualify as human subject research because the analysis was conducted on a deidentified data set. Malpractice claims data and PARS data were linked by a computer analyst at Vanderbilt University Medical Center in a way that no study subject could be identified. The computer analyst was not involved in the conduct of the research.

TABLE I Characteristics of the Surgical Specialty Practice

Period	Physician Assistants per Year	Physicians per Year	Total per Year
Pre-PARS			
2004 to 2008	13	44	57
Post-PARS			
2009 to 2011	24	65	89
2012 to 2014	56	90	146
2015 to 2017	82	123	205
2018 to 2020	118	142	260

In 2009, the group practice implemented the PARS program, run by the Vanderbilt Center for Patient and Professional Advocacy (CPPA) at Vanderbilt University Medical Center. PARS is an evidence-based program that promotes professional accountability and self-regulation or group regulation through the identification of and intervention with professionals at increased risk for malpractice claims and adverse medical outcomes associated with a greater number of patient complaints[14]. The PARS program includes a reliable system to identify, code, and aggregate unsolicited observations from patients and their family members, providing comparative benchmarks within each specialty. A tiered intervention model uses peers to address the small proportion (approximately 3%) of clinicians whose practices are associated with a disproportionate share of patient complaints. Although 85% of individuals improve with the peer intervention, the tiered model calls for escalating interventions and consequences for those who do not or cannot improve[14]. The essential elements of a local PARS program include people (committed leadership, project champions, implementation teams), organization (clear values, policies and procedures, resources, a tiered intervention model), and systems (data and metrics, reliable review processes, and training) to support professional development and risk mitigation[1,14]. Costs to the organization include fees paid to CPPA for the PARS program, which includes processing and coding of complaints, preparation of benchmarking, training of leaders and messengers, and ongoing tracking of clinician progress following interventions. Most organizations are able to leverage existing patient relation functions, which provide data for the PARS interventions. Although PARS sites incur modest administrative costs (a mean time of <1 hour per week for the physician leader of the program) in support of the engagement, peer messengers and local PARS leaders typically choose to do the work because of their personal commitment to provide an important professional service to their colleagues and because of their commitment to the organization's values. Each high-risk clinician has an annual conversation with a trained peer messenger, around 30 minutes in length. Additional time spent by peer messengers would be 1 to 2 hours per year for peer conversations and training, and administrative assistant support would be required for around 10 to 15 hours per year.

Data Sources and Variables

A malpractice claims history, including open and closed claims, was provided by the group's insurance carrier, focusing solely on medical malpractice allegations. Claim records detailed the date of loss, status, and total costs, combining paid indemnity and expenses for each closed claim. The total cost for each claim was summed by year and was divided by the number of clinicians practicing that year to calculate a mean claim cost per clinician per year. Analyses included closed claims through 2020, considering the statute of limitations and potential reporting lags.

Patient complaint data were obtained from the multispecialty group's existing internal Office of Patient Affairs, which focused on clinicians' interactions with patients in practice-based care delivery sites, including ambulatory clinics, surgical centers, and hospitals. Wherever patients received services, they were able to share the concerns with the Office of Patient Affairs via a toll-free number. The staff at the Office of Patient Affairs are responsible for engaging in service recovery efforts and collecting and recording each patient or family complaint[10]. The staff at the Office of Patient Affairs typically identify the professional(s), if any, associated with alleged concerns, and create a narrative electronic report describing the concern(s) and resolution, if any. The group securely transferred reports to the CPPA for analysis. For comparison, the CPPA's PARS database contains patient complaint and specialty data for >100,000 physicians affiliated with >200 academic or community hospitals and medical groups across the United States[14].

Trained CPPA coders review and reliably categorize unsolicited patient complaints under 6 major categories: (1) care and treatment, (2) communication, (3) access and availability, (4) concern for patient and family, (5) safety of the environment, and (6) billing[14]. Billing complaints are included only if the report also alleges concerns about the patient's care and treatment. Annually, the CPPA calculates a PARS risk score for clinicians, weighted such that more recent and more severe patient complaints contribute to the score more than older and less severe patient complaints[14].

Study Outcome

The primary outcome was the mean annual malpractice cost per clinician from 2004 to 2020, adjusted for inflation using the Consumer Price Index[17]. State-level changes, including a 2011 tort reform limiting malpractice damages, influenced the malpractice marketplace during the study. In order to account for the impact of state-level factors, including the impact of tort reform, the Aon/ASHRM (American Society for Health Care Risk Management) Hospital and Professional Liability annual benchmarks were used to estimate state-level trends[18].

Statistical Analysis

To assess the association of implementation of the PARS program with malpractice claims activity, we calculated a baseline of malpractice claims for the 5-year period prior to PARS implementation (2004 to 2008) compared with the subsequent 12 years after PARS implementation, 2009 to 2020. We calculated the annual mean malpractice cost per clinician (physicians and physician assistants) to account for growth of the practice. Pre-PARS data were used to produce an expected malpractice cost projection for each post-PARS year, and expected costs were compared with actual malpractice experience post-PARS. The adjusted annual malpractice costs per clinician, accounting for state trends and the Consumer Price Index, were compared between the pre-PARS and post-PARS periods using segmented regression[19]. Significance was set at $p < 0.05$. To test the robustness of the study assumptions, we conducted sensitivity analyses in which we only included physicians, calculated differences with no market adjustment, and capped pre-PARS and post-PARS malpractice claims at $2 million per occurrence. The findings from these sensitivity analyses were not materially different from those of our primary analysis, so we present the results from the primary analysis here. Cumulative claims expenses for high-risk clinicians pre-intervention and post-intervention were compared using the Wilcoxon rank sum test with continuity correction.

Results

Adopting the PARS Program at a Single Specialty Practice

To adopt the PARS program, the practice implemented several key infrastructure elements previously shown to be essential to support the pursuit of professional accountability[1]. The practice leaders identified a champion to shepherd the process and trained peer messengers to make individual clinicians aware of their status[11]. The practice aligned policies and procedures for escalation with the PARS tiered intervention model. Because the primary sources of patient complaints included both outpatient and inpatient settings, the practice developed an Office of Patient Affairs. The Office of Patient Affairs introduced a system for providing toll-free telephone numbers for any dissatisfied patients to share concerns, no matter where they originated. In addition, clinicians and local practice managers were trained to enter reports about patient complaints even if they were resolved immediately by the local practice manager or others. The practice also developed robust onboarding practices for new clinicians and practice staff, including an introduction to PARS as a means of addressing avoidable risk and a clear statement of the practice values and expectations.

Practice Growth and the PARS Experience

From 2004 to 2008 through 2018 to 2020, the practice group grew from 44 to 142 physicians and from 13 to 118 physician assistants (Table I). The mean patient complaint reports per year ranged from 101 reports in 2008 to 206 reports in 2020. During the study period, a total of 42 clinicians were identified as having high PARS index scores and therefore were at higher risk based on specialty-specific comparisons with their colleagues[14]. The PARS scores are calculated from the most recent 4 years of patient complaints, weighting more recent reports as well as those complaints listing more concerns more heavily. The PARS score for 38 (90%) of the high-risk clinicians improved following peer-delivered feedback; 2 (5%) did not improve and required leader-directed interventions under the PARS tiered intervention model. The remaining 2 (5%) did not improve, and these individuals chose to voluntarily depart from the group before demonstrating a reduction in PARS scores (Fig. 1).

Association of PARS Implementation with Malpractice Claims Costs

Prior to receiving their first peer-delivered feedback, the physicians and physician assistants who were PARS-identified as high-risk accounted for $95,592 in malpractice claims cost per clinician. Following intervention, PARS high-risk clinicians reduced their per-clinician malpractice claims cost by 83% to

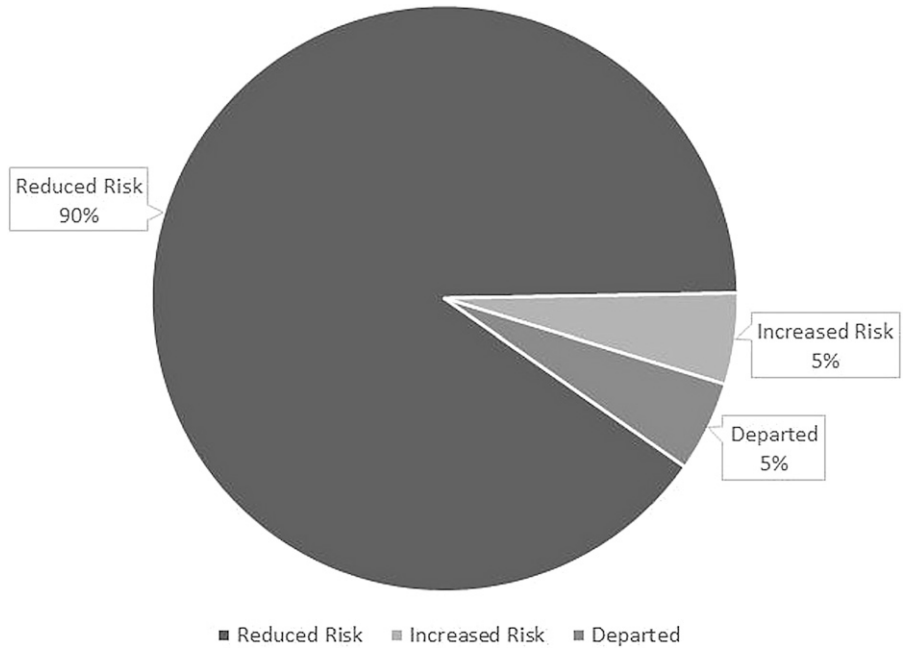

Fig. 1

Improvement in patient and professional advocacy system scores following interventions on 42 high-risk clinicians.

$16,368 per clinician (p = 0.05; Wilcoxon rank sum test with continuity correction) (Fig. 2).

For the overall group, the rolling 3-year mean malpractice claims cost per insured clinician (including physicians and physician assistants) was $12,088 prior to the implementation of PARS. After implementation, the first rolling 3-year mean malpractice claims cost decreased to $1,866 per insured clinician and, ultimately, there was a mean malpractice claim cost per insured clinician of $1,586 through the entire 12-year post-PARS period (Fig. 3). After accounting for state malpractice trends and tort reform, time, the number of clinicians, and the Consumer Price Index in a segmented regression model, the mean annual claims cost per clinician declined by 87% across the entire

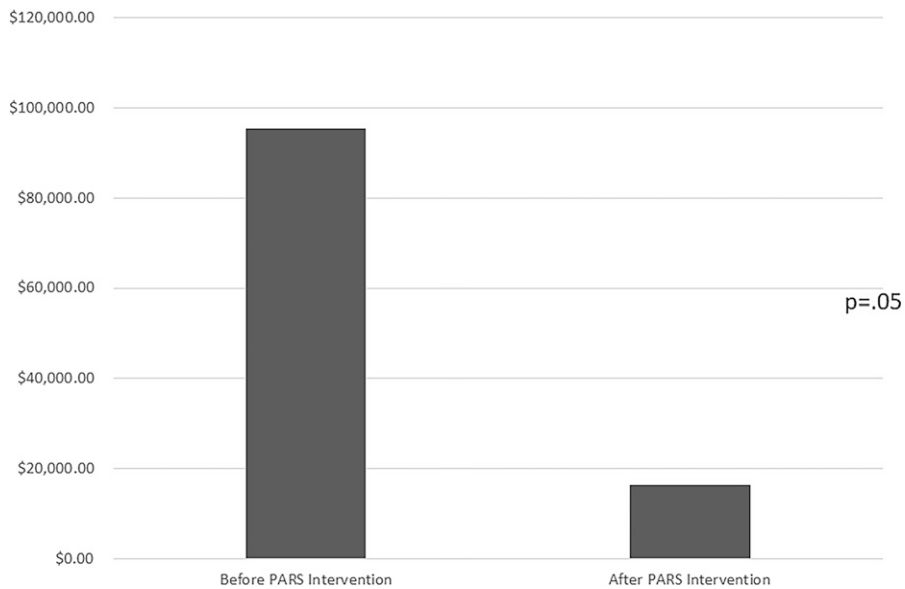

Fig. 2

High-risk clinicians' total claims costs before and after the PARS intervention. A significant difference was found between the costs before and after PARS (p = 0.05; Wilcoxon rank sum test with continuity correction). The totals represent the cumulative claims costs for each clinician for all years prior to and following the PARS intervention.

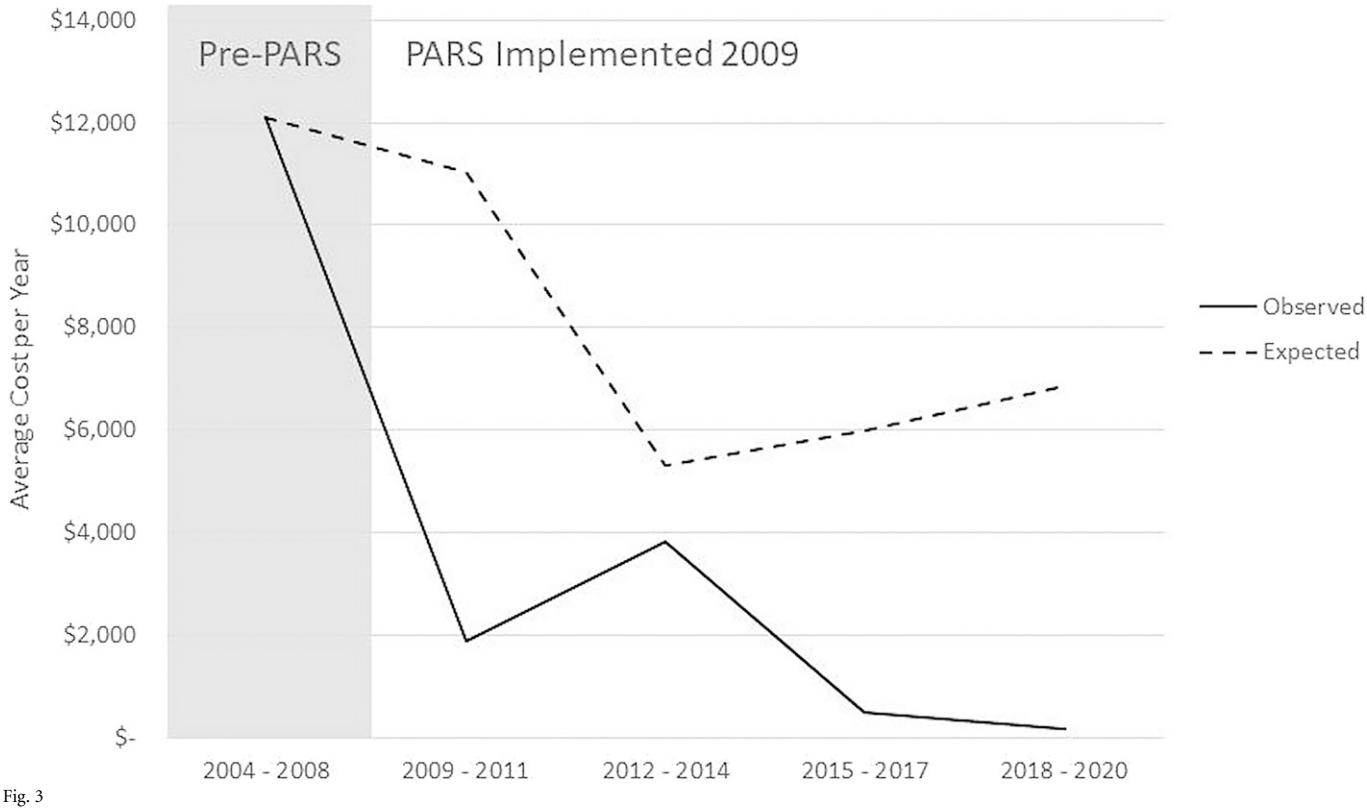

Fig. 3

Annual malpractice costs per clinician: pre-PARS to post-PARS implementation. The dashed line is a projection based on the pre-PARS data and indicates the costs that would have been expected if the PARS program had not been implemented.

practice group (p = 0.007). In a sensitivity analysis restricted to physicians only, there was an 84% reduction in malpractice claims following the implementation of PARS (p = 0.048; Wilcoxon rank sum test).

Discussion

We found that successful adoption and implementation of the PARS program in a single surgical network was associated with a significant decrease in malpractice claims costs for individuals identified as high risk and for the overall practice as a group, and these results were sustained for 12 years. Segmented regression models accounting for growth in the number of clinicians, tort reform, and inflation demonstrated a significant 83% reduction in malpractice claims risk for clinicians who received interventions. In addition to the reduction in costs for clinicians identified through PARS, the practice experienced an overall 87% reduction in the mean malpractice claim expense per clinician.

During the study period, the group expanded from 57 to 260 clinicians, with the proportion of physician assistants rising from 23% to 45% (relative to physician assistants plus surgeons). Sensitivity analysis with only physicians (excluding physician assistants) demonstrated a similar 84% reduction in malpractice claims costs. The state also instituted tort reform in 2011, which may have influenced malpractice claims trends. Amid these changes, the introduction of the PARS program was 1 element of the group's malpractice prevention and management strategy. Although historical factors such as tort reform and the increasing proportion of physician assistants were accounted for in the research design and analysis, the complex interplay of factors underscores the importance of considering a multifaceted approach to understanding and addressing malpractice risks in a growing practice.

The findings of this study have important implications, as they demonstrate for the first time the ability of the PARS program to be implemented in a single-specialty, geographically distributed practice network and to improve clinician performance for the small proportion of clinicians whose practices are associated with a disproportionate share of unsolicited patient complaints. The findings of this study related to malpractice claims reduction in a single surgical specialty group are similar to the findings reported for physicians in large academic health systems[13,15]. Diraviam et al.[15] described a 50% reduction in total claims experience for a large academic health system. The system described by Diraviam et al.[15] also included several specific malpractice risk prevention initiatives in addition to PARS. The specialty group in the current study similarly implemented several strategies to reduce malpractice claims risk.

It is noteworthy that the malpractice claims experience for the group of high-risk clinicians showed a sharp decline following their receipt of an intervention. However, there were also overall reductions in the malpractice claims experience across the organization. It is possible that the organization-wide commitment

to professional accountability and approaches to developing the essential infrastructure to support the program, including increasing identification of sources of patient dissatisfaction; leaders' recognition of the value of addressing individual and system improvements; and other cultural emphasis on high reliability and patient experience had an impact on the overall claims experience.

The study had limitations that should be considered when interpreting the findings. First, the state in which the practice operates had a decrease in overall claims following the implementation of statewide malpractice tort reform 3 years after implementation of the PARS program. However, it is noteworthy that the adjusted analysis accounting for tort reform and statewide claims variation across the entire study period demonstrated a sustained decrease in malpractice claims[20].

Second, the study spanned a period of substantial practice growth, with >200 new providers joining. Over the 16-year period, there were numerous changes within the practice and the broader health-care landscape that could have contributed to this trend. This included demographic shifts in the clinician population, evolving health-care policies, and industry-wide trends toward improved risk management practices. These changes presented a methodological challenge, as comparing malpractice rates between the original group of providers (primarily orthopaedic surgeons) and the newer, more diverse cohort (with a lower percentage of surgeons) might not have provided a direct, like-for-like comparison. The potential for differences in risk profiles between these groups, along with the evolving nature of the practice environment, added complexity to our analysis. Although segmented regression models included practice size, state tort reform, and inflation, we acknowledge that the many changes in the practice and practice environment could have impacted the interpretation of our results, and we emphasize the need for cautious extrapolation of our findings.

In addition, we recognize that many malpractice claims are without obvious merit. However, many are avoidable and, to the extent that we can identify clinicians with more than their fair share (who appear prone to malpractice suits) and provide them insight into a component of "why," this feedback fulfills a professional responsibility toward professional self-regulation. Although malpractice claims and payments reflect aspects of patient dissatisfaction or perceived errors, there are malpractice cases in which care was appropriate, as well as instances of poor care that do not result in legal claims[21].

In conclusion, the successful implementation of a peer-driven tiered intervention for high-risk clinicians in a large, single practice setting requires essential infrastructure elements to elevate professional accountability, such as establishing PARS champions and peer messengers, an Office of Patient Affairs, and integration into the onboarding process. Although not necessarily causal, the period following implementation was associated with a reduction in malpractice claims costs for individuals identified as high-risk clinicians and for the specialty group overall, and those reductions were maintained over time. Future studies might focus on whether other sources of malpractice claims, such as hospital-based claims, had a similar decline following PARS. ■

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