

Perceptions of prior authorization burden and solutions

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Abstract

The prior authorization (PA) process consumes time and money on the part of patients, providers, and payers. While some research shows substantial possible savings in the PA process, identifying what different groups can do is not as well known. Thus, organizations have struggled to capture this opportunity. To understand different perspectives on PA burden and receptivity to possible changes in the PA process, we surveyed 1005 patients, 1010 provider employees, and 115 private payer employees. Patients reported the longest perceived wait times but indicated the highest perceived approval rates and lowest perceived burden. The relatively low burden for patients is because most do not have to engage in PA directly. Provider respondents reported spending time equivalent of more than 100 000 full-time registered nurses per year on prior authorization. Artificial intelligence (AI) represents a possible solution: 65% of private payer respondents reported that their organizations planned to incorporate AI into the process in the next 3 to 5 years. Intended adoption by provider respondents is much smaller (11%). Private payer respondents cited cybersecurity concerns and a lack of technical infrastructure as barriers; provider respondents cited lack of budget and limited trust in the technology.

Key words: access to care; patients; private health insurance; physicians; nurses; cost of healthcare.

Introduction

Prior authorization (PA), defined as the process by which payers determine the medical necessity of specific procedures before allowing clinicians to provide the service, is estimated to account for \$35 billion of US health care administrative spending.^{1,2} Prior authorization acts like a check and balance for payers to ensure the medical necessity of treatments prescribed by clinicians before they are completed. From the payer perspective, the primary goal of PA is to flag newer and better treatments for patients, improve the quality of care, and prevent excess and unnecessary utilization and spending, thereby improving the overall cost–quality balance of care. This is done by assessing the medical necessity and coverage of services and procedures requested by providers.^{3,4} In the United States, private payers attach codes to procedures, diagnostics, drugs, and sites of care, which trigger PAs to initiate before the service is rendered. There are approximately 5000 PA codes used across private payers.⁵ The average cost of PA is \$40 to \$50 per submission for private payers and \$20 to \$30 for providers.⁵

Providers report high or very high levels of burden related to PA, including large financial expense as well as delays in care rendered and inferior care provided (as judged by physicians).⁶⁻²¹ However, the research on PA burden has largely been conducted within a specific specialty or a specific group.^{6-12,22-25} Further, solutions have not been well examined. For example, electronic prior authorization can reduce time to PA decisions, but it has

not produced the expected benefits in reduced provider burden or lower cost of filling out forms.²⁴⁻²⁶

We surveyed 1005 patients, 1010 provider employees, and 115 private payer employees to understand the burden of PA and explore possible solutions. With our large sample, we were able to make comparative observations about where PA is most and least burdensome and how many resources (eg, staffing, time, technology tools) in total are devoted to it. In addition, we gauged each group's appetite for solutions such as artificial intelligence (AI) that might lower the PA burden.

Data and methods

Survey instrument development

We developed surveys for patients, employees of provider organizations, and employees of private payer organizations. To identify questions and metrics for these surveys, we conducted a thorough literature review of previous studies on the PA process.^{6-14,22-25} After review, we developed our own standard set of metrics and questions to ask across all 3 surveys as well as survey-specific questions applicable to the population of respondents.

All respondents were asked to estimate a standard set of metrics, including overall approval rate inclusive of appeals, overall time to approval taking longer than 5 days, and level of reported burden from the PA process. We asked further questions pertaining to perceived clinical impacts, experience with PA, and potential solutions for all groups. Provider and

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private payer respondents were also asked about their organizations' plans to incorporate AI in the PA process, solutions they have tried and believe should be tried, and the top 3 barriers to implementing AI in the PA process. The [Technical Appendix](#) has more details, including the survey questions.

Survey administration and sample design

Full details of survey administration and sample design are available in the [Technical Appendix](#). In brief, we used Intellisurvey to administer a web-based survey for patients, providers, and private payers. This study received institutional review board approval for human subjects but was determined to be exempt from further review by Harvard University. Intellisurvey presented a disclaimer to all participants completing the survey that noted its voluntary nature, and Intellisurvey anonymized responses to be used and published for research purposes.

The patient survey was fielded from April 25 to May 18, 2023. A total of 5766 patient respondents completed the screening questions, and 1005 respondents (17%) met criteria to participate (such as having dealt with PA). Patients were asked about age, race, sex, number of times PA was required, specialties and treatments requiring PA, and insurance types (any private, Medicaid, Medicare Advantage, Medicare fee-for-service, and any other public insurance). Respondents were asked about PA burden in any area they had experienced care; this could include multiple PAs across different specialties and treatments if a patient has experienced more than 1 PA. Respondents completed 45 to 63 questions, depending on skip logic.

The provider survey was fielded from April 25 to June 16, 2023. Provider respondents included clinical professionals (eg, physicians and nurse practitioners) and nonclinical professionals (eg, practice managers and billing or coding specialists). In addition, we obtained information on each respondent's organization type (eg, inpatient hospital, primary care) and size (by full-time equivalents, patients seen monthly, claims submitted monthly), hospital affiliations, and specialties. Provider respondents were grouped into a specialty based on the specialty they reported the most familiarity with. A total of 5659 provider respondents completed the screening questions, and 1010 respondents (18%) met criteria to participate (eg, to avoid oversampling some specialties). Respondents completed 67 to 78 questions, depending on skip logic.

The private payer survey was fielded from April 21 to May 26, 2023. Private payer respondents included employees from functions such as claims management, network development and management, and claims processing. We obtained information on the type of organization (eg, national, state-based, integrative delivery network, pharmacy benefit manager), insurance types sponsored, and organization size. A total of 261 private payer respondents completed the screening questions, and 115 respondents (41%) met criteria to participate (eg, to avoid oversampling some private payer types). Respondents completed 59 to 70 questions, depending on skip logic.

Outcomes and statistical analysis

We calculated descriptive statistics for each of the 3 surveyed groups. Summaries of each survey question were aggregated depending on response type (eg, Likert scale, free text, multiple choice) and compared across surveys where applicable. Two-tailed *t* tests were performed to assess statistical significance between responses from patient respondents, provider respondents, and private payer respondents.

To test the impact of insurance on 4 metrics—reported burden level of PA, reported favorable opinions of the PA process, perceived provider efficiency in handling the PA process, and perceived payer efficiency in handling the PA process—multivariate regressions were run. Each metric was converted into a binary variable and used as the dependent variable in a logistic regression: reported burden level of PA (4 or 5 on a 5-point scale considered “high”), reported favorable opinions of the PA process (4 or 5 on a 5-point scale considered “favorable”), perceived provider efficiency in handling the PA process (3 or 4 on a 4-point scale considered “efficient”), and perceived private payer efficiency in handling the PA process (3 or 4 on a 4-point scale considered “efficient”). Independent variables included age and insurance type. Insurance type was grouped into 6 options: only Medicare fee-for-service, only Medicare Advantage, only Medicaid, only 1 public insurance other than Medicare or Medicaid, multiple public insurances, or private insurance. All analyses were performed using Excel (Microsoft Corporation, Redmond, WA) for basic tabulations and R studio 4.3.0 (Posit, Boston, MA) for regressions.

Results

Characteristics of the survey respondents

Characteristics of the 3 samples are shown in [Appendix Table 1](#). Patient respondents reflected a variety of demographic factors across age, race, sex, and location. Provider respondents included clinical (81%) and nonclinical (19%) administrative professionals across 25 specialties and 19 different organization types. Private payer respondents came from various organizations and had diverse roles, most commonly in claims management.

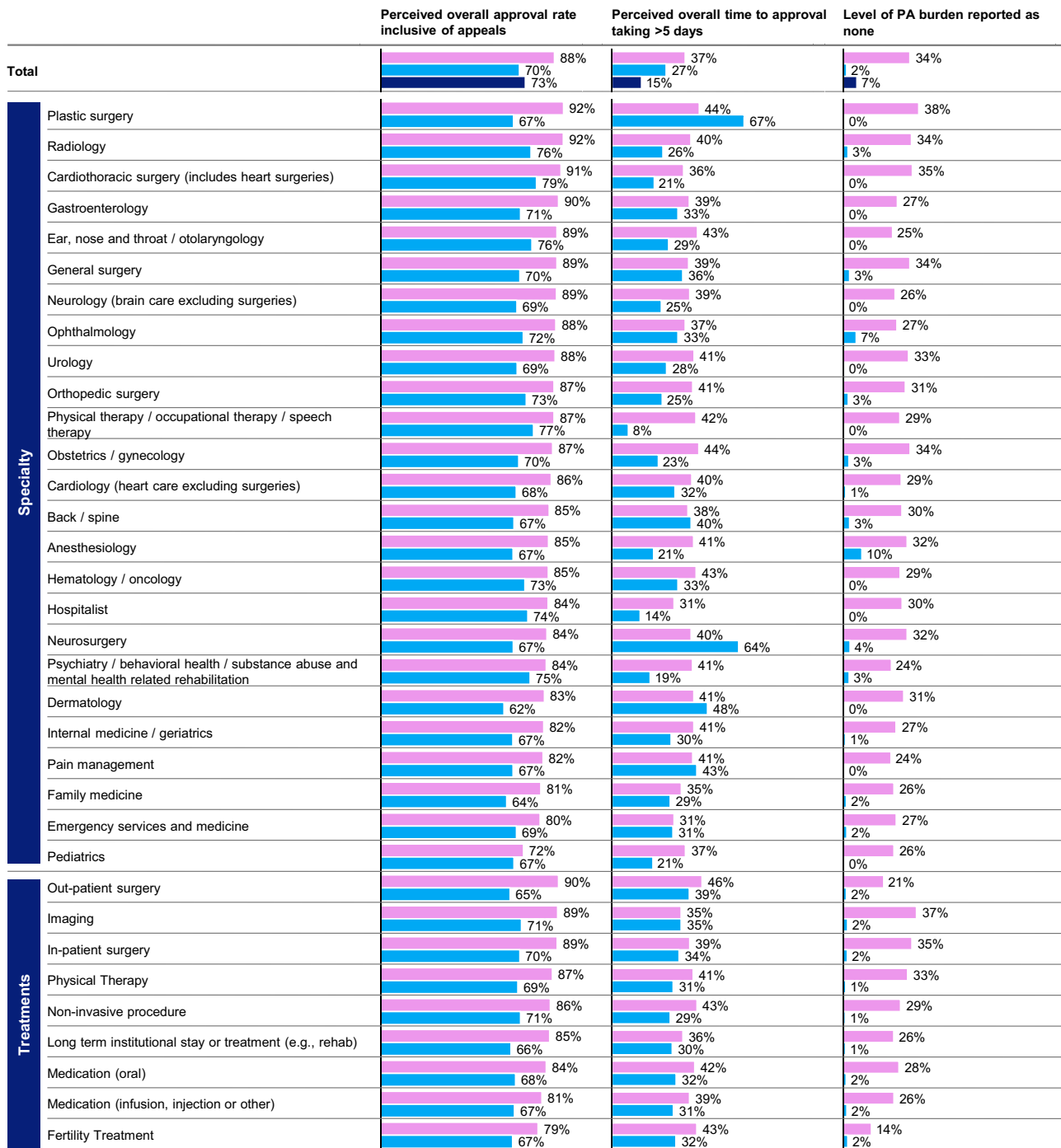
Perceptions of and experiences with prior authorization

Differences in overall reported burden

Perceived approval rates and approvals taking more than 5 days including appeals were greatest for patient respondents ([Figure 1](#)). Eighty-eight percent of patient respondents reported PA approval, including 11% that required appeal. Thirty-seven percent reported that it took more than 5 days. For both metrics, the reported averages were statistically different than the results for provider respondents (70%, including 18% that required appeal; 27% taking >5 days) and private payer respondents (73% approval, including 23% that required appeal; 15% taking >5 days). No burden from the PA process was reported most often for patient respondents (34%), which was significantly greater than the share for provider respondents (2%; $P < .01$) and private payer respondents (7%; $P < .01$). Provider respondents were also statistically significantly less likely to report less burden than private payer respondents ($P < .01$).

More than half (51%) of patient respondents reported not assisting at all in the PA process, and another 39% reported spending less than 1 hour. Patient respondents also reported more often having no miscommunication in the PA process (38%) compared with provider (1%) and private payer (0%) respondents ($P < .01$ for difference between patient and provider/private payer respondents). Further, when determining if a PA was needed, both patient (26%) and private payer (21%) respondents reported less difficulty in determining if a PA was needed than provider respondents (57%; $P < .01$ for difference between

■ Patient respondents
■ Provider respondents
■ Private payer respondents



Notes: [Patient respondents] Perceived overall approval rate inclusive of appeals calculated by using Q25 "Of the prior authorizations you or your practitioner were required to submit, to your knowledge, how often did they result in [approval]," taking the sum of 2 options with "approved prior authorization" divided by total number of prior authorizations reported, and then averaged across provider respondents with each respondent receiving equal weighting; Perceived overall time to approval taking >5 days calculated by using Q31 "On average, how long did the prior authorization(s) take to be approved (including appeals if they were required)?", taking the percent of patient respondents who selected an option which was greater than 5 days; Level of PA burden reported as none calculated by using Q49 "How would you rate the burden experienced with prior authorizations?", taking the percent of patient respondents who selected "Not at all burdensome"; for all three metrics, specialty and treatment, patient respondents sorted based on their answer to Q16 "Which specialty areas / settings did [you / the person you care for] interact with when seeking treatment that required prior authorization?" and Q15 "For which types of medical interventions have [you / the person you care for] ever required a prior authorization in your lifetime?"; and respondents selecting multiple options were grouped into each option and averages were taken for patient respondents in that group with equal weighting.

[Provider respondents] Perceived overall approval rate inclusive of appeals calculated by using Q26 "Of the prior authorizations you or others in your practice were required to submit, to your knowledge, how often did they result in one of the following...," taking 2 options with "approved prior authorization" divided by total number of prior authorizations reported, and then averaged across provider respondents with each respondent receiving equal weighting; Perceived overall time to approval taking >5 days calculated by using Q21 "On average, how long does a single prior authorization case, regardless of level, take to be approved after your organization has submitted the initial prior authorization form to a payer?" excluding 61 respondents who selected "not sure," taking the percent of provider respondents who selected an option which was greater than 5 days; Level of PA burden reported as none calculated by using Q26 "How would you rate the burden experienced with prior authorizations?"; taking the percent of provider respondents who selected "Not at all burdensome"; for all three metrics, specialty and treatment, provider respondents sorted based on their answer to Q11 "Which of the following best represents your medical specialty or the specialty with which you are the most familiar?" and Q43 "Which treatments are most commonly subject to prior authorization?" with provider respondents selecting a single option for specialty and those selecting multiple options for treatments were grouped into each option and averages were taken for provider respondents in that group with equal weighting.

[Private payer respondents] Perceived overall approval rate inclusive of appeals calculated by using Q16 "To your knowledge, when a prior authorization is required, what portion of the time do the following occur?"; taking the sum of 2 options with "approved prior authorization" divided by total number of prior authorizations reported, and then averaged across private payer respondents with each respondent receiving equal weighting; Perceived overall time to approval taking >5 days calculated by using Q22 "On average, how long does a single prior authorization case, regardless of level, take to be approved after your organization has received an initial prior authorization form from a provider?"; taking the percent of private payer respondents who selected an option which was greater than 5 days; Level of PA burden reported as none calculated by using Q41 "How would you rate the burden [you / the person you care for] has experienced with prior authorizations?"; taking the percent of private payer respondents who selected "Not at all burdensome"; for all three metrics, specialty and treatment specific data could not be cut because private payer respondents were not affiliated with any specific specialty or treatment.

Statistical significance for each metric reported in Appendix table 4.

Figure 1. Perceived approval rate, approvals taking more than 5 days, and prior authorizations with no reported burdens. Source: Authors' analysis of data from a patient survey conducted from April 25 to May 18, 2023; provider survey conducted from April 25 to June 16, 2023; and private payer survey conducted from April 21 to May 26, 2023. N = 1005 patient respondents, 1010 provider respondents and 115 private payer respondents.

provider and patient/private payer respondents) (Appendix Tables 2–4).

In regression analyses controlling for age, patient respondents with multiple forms of public insurance were significantly less likely to report favorable opinions of the PA process as compared with those with private insurance ($P < .01$), although other insurance types were not statistically significantly different from each other. Further, insurance types were not correlated with the other outcome metrics—reported burden of PA, perceived provider efficiency in handling the PA process, and perceived payer efficiency in handling the PA process. Importantly, age itself was a significant predictor of higher reported burden, in addition to higher reported perceived provider and private payer efficiency (Appendix Table 5).

The majority (65%) of provider respondents along with 79% of private payer respondents reported experiencing a growth in PA volumes over the last 3 years. For provider respondents, 46% answered “yes” when asked if PAs are necessary; for private payer respondents, 94% answered “yes” (Appendix Tables 3 and 4).

Key metrics by specialty and treatment

When broken down by specialty, approval rates (including those approved after appeal) ranged from 72% (pediatrics) to 92% (plastic surgery) for patient respondents, and 62% (dermatology) to 77% (physical therapy/occupational therapy/speech therapy) for provider respondents. When broken down by treatment, approval rates ranged from 80% (fertility treatment) to 90% (outpatient surgery) for patient respondents and 65% (noninvasive procedures) to 71% (inpatient surgery) for provider respondents. Overall, while the burden of PA was most common in certain specialties and treatments, it extended widely throughout all specialties and treatments (Figure 1).

Private payer respondents were given the option to select the top 3 to 7 specialties they most frequently interact with when involved with a PA. Common specialties for which they saw PA requests included hematology/oncology (54% selected as 1 of the top 3 to 7), general surgery (50%), and cardiothoracic

surgery (44%). With regard to specific treatments requiring PA, 82% of private payer respondents reported seeing it required for surgery, 77% for medication administered nonorally (eg, via injection or infusion), 75% for long-term institutional stays, and 70% for imaging (Appendix Table 4).

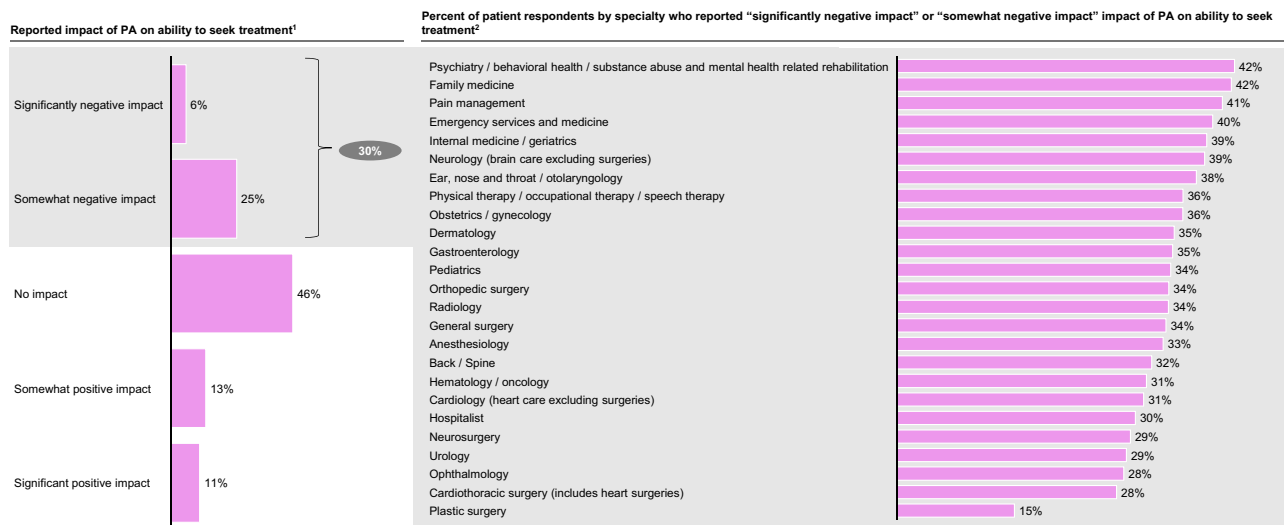
Efficiency of the PA process and impact on seeking treatment

When asked about the efficiency of the PA process, patient respondents reported that providers (85%) and private payers (76%) handled the PA process efficiently or very efficiently. However, private payer respondents reported their own PA process to be the same level of efficiency less often (62%), and provider respondents reported their own PA process to be efficient or very efficient much less often (34%) (Appendix Tables 2–4).

Forty-two percent of provider respondents and 13% of private payer respondents marked PAs as a high contributor to burnout. When asked about specific steps of the PA process contributing to burnout, the step most commonly ranked first for both groups was follow-ups with the other party (35% of private payer respondents ranked “follow-ups with providers for more information” first and 20% of provider respondents ranked “follow-ups with payer for approval, redirect, denial, or appeal” first) (Appendix Tables 3 and 4).

In addition, 31% of patient respondents reported some negative impact on their ability to seek treatment, predominantly resulting in additional stress (85% of those reporting negative impacts) and delays in care (84% of those reporting negative impacts). This varied by treatment, with the greatest negative impact on psychiatry/behavioral health/substance abuse and mental health related rehabilitation (42%) and the lowest negative impact on plastic surgery (15%) (Figure 2).

Among provider respondents, 92% reported that patient care was delayed due to PAs and 14% reported that care was delayed longer than 2 weeks due to PAs. Of provider respondents reporting delayed care, 62% reported requiring additional doctors’ visits and 60% reported more severe symptoms and conditions (Appendix Table 3).



Notes: (1) Q38: “How have prior authorizations impacted [your / the person you care for’s] ability to seek treatment?”; (2) to breakdown by specialty, patient respondents were sorted based on their answer to Q16 “Which specialty areas / settings did [you / the person you care for] interact with when seeking treatment that required prior authorization?”, and those selecting multiple options were grouped into each option and averages were taken for patient respondents in that group with equal weighting; specialties not shown due to low number of responses include: homecare, skilled nursing facilities, and fertility

Figure 2. For patient respondents, the reported impact of prior authorization (PA) on ability to seek treatment. Source: Authors’ analysis of data from a patient survey conducted from April 25 to May 18, 2023. N = 1005.

Workforce

For provider respondents, lower licensure roles were reported to take on more of the PA burden (Figure 3). On a weekly basis, this ranged from a median of 9.0 hours for billing or coding specialists and 5.0 hours for practice managers. Among clinical roles, the greatest burden was for registered nurses (RNs), reporting, on average, 2.5 hours. If PAs did not take up as much time, provider respondents reported that time would be used to spend more time with each patient (38%), to see more patients per day (31%), for personal recovery/breaks in the day (20%), and to read clinical journals (10%) (Appendix Table 3).

Private payer respondents reported having employees who work exclusively on PAs at a much higher rate than provider respondents (98% vs 51%, respectively). Provider respondents reported a median of 3 employees working on a single PA case (36% reported >3 employees) and individuals working on a median of 10 different PA cases weekly. Private payer respondents similarly report a median of 3 employees working on a single PA case (45% reported >3 employees) and that individuals were involved with a median of 20 different cases per week (Appendix Tables 3 and 4).

Automation and solutions

Private payer respondents reported having processes that were more automated than provider respondents' processes (27% vs 17%, with processes >50% automated). These values are statistically significantly different ($P < .01$). Provider and private payer respondents both reported trying a number of solutions to streamline PA, with the most common being electronic prior authorization.

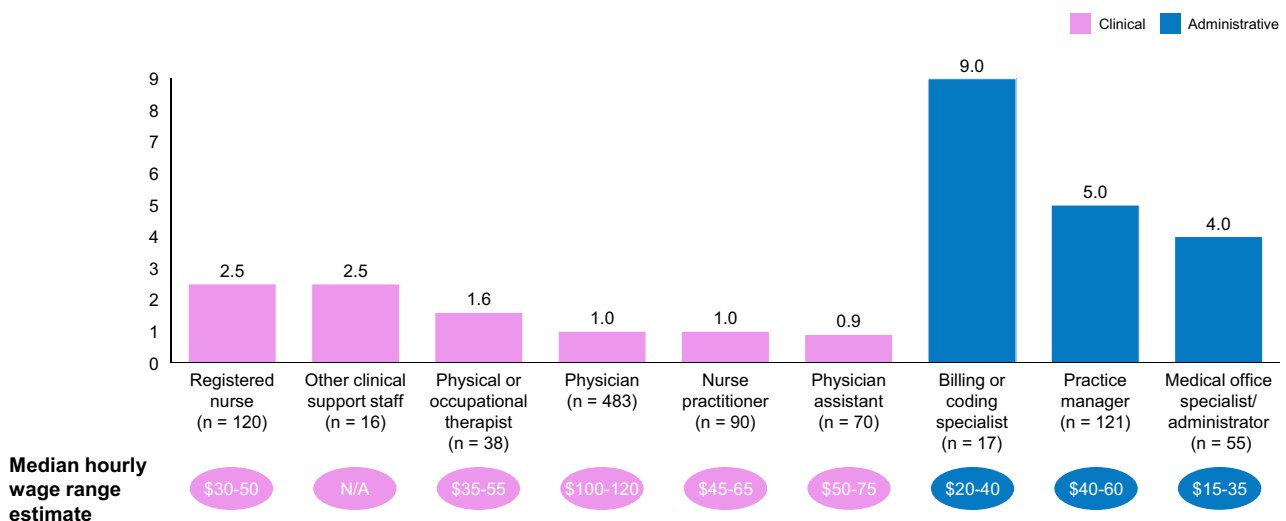
Focusing specifically on AI, 65% of private payer respondents reported that their organizations were considering incorporating AI into the PA process over the next 3 to 5 years, compared with 11% for provider respondents ($P < .01$) (Figure 4). There was greater reported comfort with AI assisting administrative portions of care than clinical portions (92% vs 86% for private payer respondents, 67% vs 43% for provider respondents, and 57% vs 48% for patient respondents). The

top barriers to using AI among private payer respondents were concern for cybersecurity (29%) and a lack of technical infrastructure (24%); for provider respondents, leading barriers were lack of budget (26%) and lack of trust in advanced-tech tools/AI (26%) (Appendix Tables 3 and 4).

Discussion

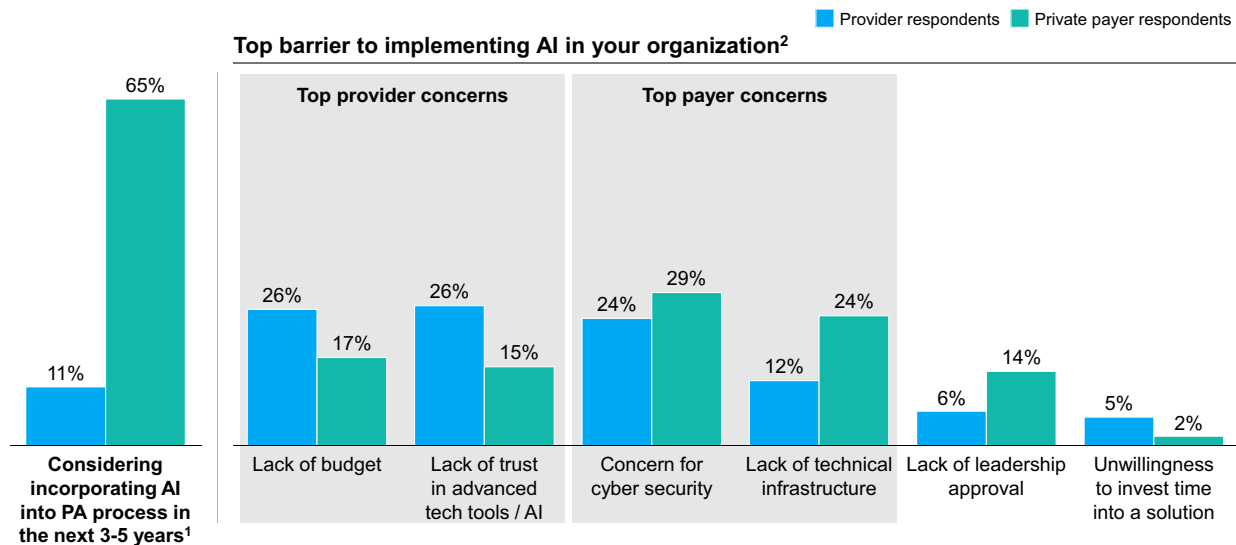
Prior authorization accounts for approximately \$35 billion of total health care administrative spending in the United States.^{1,2} Estimates suggest that one-third of the costs to execute PAs could be saved in the next 3 years with today's technology.^{1,2} History suggests a number of challenges to capturing these operational savings, including difficulty accessing the necessary data, complexity of insurance products and associated rules, and issues tracking a PA through the system.² There is a clear need to understand the burden and operational metrics regarding the PA process across groups. Further, it is critical to understand the barriers preventing the adoption of specific solutions for providers and private payers.

Using a survey of 1005 patients, 1010 provider employees, and 115 private payer employees, we found that the perception of the PA process varies across these groups. Patients are generally not dealing with PA often, let alone daily like many providers and private payers. Effectively, patients shift much of the effort to providers and private payers. As a result, patients' perceived burden is less (no burden reported for 34% of patient respondents vs 7% for private payer respondents and 2% for provider respondents) and patient respondents' perceived efficiency of the process is greater (patient respondents' perceived efficiency of 76% for private payers relative to self-reported efficiency of 62%; patient respondents' perceived efficiency of 85% for providers relative to self-reported efficiency of 34%). In addition, patient respondents reported higher approval rates (88% vs 73% for private payer respondents and 70% for provider respondents), although they reported generally waiting longer for approval (37% of patient respondents reported waiting >5 days vs 15% for private payer respondents and 27% for provider respondents). Thus, patients



Notes: Role determined by Q6 "What is your role?"; weekly hours calculated by multiplying together responses by role from Q17 "On average, how many hours a week do you spend in the following types of work? Administrative (e.g., scheduling, billing)" and Q18 "What portion of your hours spent on administrative tasks per week are dedicated to assisting in the prior authorization process?"

Figure 3. For provider respondents, weekly hours spent on prior authorization. Source: Authors' analysis of data from a provider survey conducted from April 25 to June 16, 2023, and Bureau of Labor Statistics Occupational Employment and Wage Statistics (May 2022). Abbreviation: N/A, not available. N = 1010; median hours for each role.



Notes: (1) Data from Q69/58 "Is your organization considering incorporating A.I. into your prior authorization process over the next 3-5 years?"; (2) Data from Q70/60 "Rank top 3 barriers to implementing AI in your organization" with results shown for option ranked as 1

Figure 4. Respondents' views on their organization's plan to incorporate artificial intelligence (AI) in next 3–5 years and top barriers to implementation. Source: Authors' analysis of data from a provider survey conducted from April 25 to June 16, 2023, and private payer survey conducted from April 21 to May 26, 2023. Abbreviation: PA, prior authorization. N = 1010 provider respondents; 115 private payer respondents.

may not be as invested in changing the PA process as providers or private payers. That said, provider and private payer respondents reported the number of PAs increasing in the last 3 years.

For provider and private payer respondents, our results showed that there is a substantial burden of time and money in the PA process. Among nonclinical roles at providers, billing or coding specialists spent the most time (11 hours per week on PAs), followed by practice managers (5 hours per week) and medical office specialists/administrators (4 hours per week). Among clinicians, nurses spent the most time (3 hours per week on PAs), and physicians spent 1 hour per week.

In general, the time involved by clinical staff is substantial. For example, based on these estimates, if the PA process could be automated and half of the RNs' time refocused, this would be the equivalent of introducing a little more than 100 000 RNs into the workforce. With an expected shortage of RNs ranging from 200 000 to 450 000 in 2025, and substantial shortages estimated for physicians, automation of the PA process could help lead to better patient care.^{27,28}

Additional effects of the PA process were reported both on workforce and care. Prior authorization is cited as a high contributor to burnout (42% of provider respondents and 13% of private payer respondents), with follow-ups with the other party as the top factor. In addition, patients and providers reported frequent delays in care (26% of patient respondents and 92% of provider respondents).

To address the savings opportunity in PA, solutions generally focus on automating manual work. Based on survey responses, the most popular approaches include electronic prior authorizations, payer integration with providers' electronic health record platforms, and real-time eligibility solutions. A more recent, less tested, and possibly more impactful approach is the application of AI to PA.^{29,30} Artificial intelligence could present a unique opportunity to reduce costs while improving experience, such as reducing workforce burnout.

Our surveys show that these solutions are more likely to be used by private payers (65% of respondents reported being likely to try AI in the next 3 to 5 years) compared with

provider respondents (11%). Further, there was greater reported comfort with AI with administrative portions of care than clinical portions (92% vs 86% for private payer respondents, 67% vs 43% for provider respondents, and 57% vs 48% for patient respondents).

When queried about barriers to the use of AI in PA, provider respondents most commonly cited not having the budget required for implementation (26%) and trust concerns with the technology (26%) as top barriers. Private payer respondents indicated concerns about cybersecurity (29%) and lack of technical infrastructure (24%) as top barriers. These concerns illuminate the need for concrete data on the impact of using fully automated AI-enabled PA solutions and demonstrations to show how organizations can effectively and safely deploy them.

Limitations

Our study had several limitations. First, data are self-reported and are thus subject to recall bias and human error. Questions asked about perceptions of PA—such as of burden, efficiency, and impact on care—may be subject to some description interpretation.

Second, while we tried for equal distribution across demographics, health conditions, organizations, and roles, the number of respondents was limited, and some categories may be better represented than others. We surveyed patients only who had required a PA for themselves or someone for whom they are a caregiver to gain deeper insights about the PA process and burden. A large portion of patients will not have, to their knowledge, had a PA in their lives. Thus, patient responses may skew towards representing more burden related to PA than the full population.

Third, convenience samples of respondents recruited by monetary incentive may limit data quality as respondents rush to finish surveys to earn compensation.

Finally, we asked specifically about AI and its impact. We acknowledge that there have both been previous attempts with various types of AI by different stakeholders such as private payers as well as ongoing discussions about how to regulate AI in health care, which may play a role in its future potential.

Conclusion

The PA process is ripe for improvement, yet barriers of various kinds continue to slow improvement initiatives. Our research points to challenges with perceptions: patient respondents generally perceive higher approval rates and less burden than private payer and provider respondents. Given the growth of PA, organizations have an incentive to pursue improvements in the PA process that can help address workforce burden and reported delays in care. Patient, provider, and private payer respondents alike reported a willingness to try new approaches, and providers and private payers will need help to implement such technologies.

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Supplementary material

Supplementary material is available at *Health Affairs Scholar* online.

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Conflicts of interest

N.R.S. reported receiving equity from Kyruus. B.I. and C.S. report no conflicts. D.C. reported receiving personal fees from multidistrict litigation outside the submitted work. No other disclosures were reported.

Please see ICMJE form(s) for author conflicts of interest. These have been provided as [supplementary materials](#).

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