Evaluating the effect of prior authorizations in patients with complex dermatologic conditions

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Background: In dermatology, prior authorizations can delay treatment, decrease patient adherence, and deter providers from advocating for their patients. Patients with complex dermatologic conditions, often requiring off-label treatments, may face particularly significant insurance barriers.

Objective: Evaluate the effect of prior authorizations in patients with complex dermatologic conditions.

Methods: This prospective cohort study assessed patients treated by a dermatologist during 5 months who specialized in complex dermatology. Patients included were older than 18 years, treated at V.P.W.'s rheumatology-dermatology clinic, and prescribed a medication or ordered a diagnostic procedure that elicited an insurance prior authorization. Data on prior authorization outcome, administrative time, and delay to treatment were collected.

Results: Of 51 prior authorizations, 51% were initially denied, with systemic medications more likely denied than topical ones ($P < .001$). Total administrative time spent on 50 prior authorizations tracked was 62.5 hours (median time per prior authorization 30 minutes [interquartile range 17-105 minutes]). Time to access treatment was tracked for 80% of prior authorizations; median delay was 12 days [interquartile range 5.5-23 days].

Limitations: Single-center, single-provider patient panel.

Conclusion: Patients with complex dermatologic conditions face a significant barrier to care because of prior authorizations. The administrative burden for provider practices to address these prior authorizations is substantial and may warrant a streamlined system in collaboration with insurers. (J Am Acad Dermatol 2020;83:1674-80.)

Key words: complex medical dermatology; health care delivery; prior authorizations.

INTRODUCTION

Prescription drug prices are one of the fastest-growing health care expenditures. In the setting of these increasing costs, insurers have begun to use prior authorization requirements to promote cost-effective prescribing practices. However, these requirements can increase administrative burdens and limit timely access to appropriate treatments. For

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instance, in 2006 the average practice devoted 1 hour of physician time, 13.1 hours of nursing time, and 6.3 hours of clerical time to the prior authorization process per week.[1]

In dermatology, prior authorizations represent a particularly heavy burden, in part because prices for dermatologic drugs have increased disproportionately in recent years.[2,3] For patients, a circuitous prior authorization process may impair access to treatment; approximately 20% of patients cite prior authorizations as a reason for primary nonadherence to acne medications.[4] Indeed, dermatologists cite prior authorizations as one of the greatest barriers to their patients' receiving necessary medications.[5] Physicians may respond by no longer even prescribing some medications or refusing to address prior authorizations to avoid the administrative costs of completing the prior authorization process.[5] Although potentially reducing total health care costs by limiting unnecessary prescriptions or diverting prescriptions to lower-cost alternatives, prior authorizations might also lead to additional costs for patients because of increased out-of-pocket spending and insurance premiums, as well as for provider practices, who need to hire administrative staff to address such authorizations.[6-8]

For patients with complex or uncommon dermatologic conditions such as dermatomyositis or systemic lupus erythematosus, prior authorizations are particularly common, given frequent off-label prescriptions for these conditions; for example, approximately 60% of patients with systemic lupus erythematosus receive at least 1 off-label prescription.[9] In addition, patients with these conditions may become acutely ill, and delays in care caused by the prior authorization process could result in worse clinical outcomes. Particularly if these prior authorizations are often ultimately approved, the administrative burden and delays in accessing therapy may be inefficient for the health system. The purpose of this study was to evaluate the outcomes of prior authorizations for patients with complex dermatologic conditions and to quantify their administrative burden and clinical effect.

CAPSULE SUMMARY

- Although prior authorizations serve an important clinical role, for patients with complex dermatologic conditions, they may delay access to appropriate care, particularly for systemic medication prescriptions.
- The administrative burden for provider practices to address these prior authorizations is substantial and warrants developing a streamlined system in collaboration with insurers.

METHODS

Study population

The study was approved by the University of Pennsylvania Health System institutional review board. To be included in the study, patients had to be older than 18 years, have received a diagnosis of a skin condition, and have been prescribed a medication or ordered a diagnostic procedure when treated by a dermatologist (V.P.W.) at a clinic focusing on patients with complex rheumatologic/dermatologic conditions at the University of Pennsylvania Health System from October 2018 to April 2019.

Study design

We evaluated patients' prior authorization requests by using real-time documentation of full-time work hours by administrative staff, as well as our existing electronic medical record and ordering system (PennChart, Epic Systems Corporation, Verona, Wisconsin). Both quantitative review of study outcomes and qualitative review of specific patient cases (see "Narrative Summary" section) were planned.

We used a prospective time-motion study to evaluate the administrative time spent on addressing these prior authorizations. Start and stop time for administrative activities associated with prior authorizations such as form completion, telephone calls, and peer-to-peer dialogue was tracked. Start and stop times were self-recorded in real time on a standardized data collection form by a licensed practical nurse and certified registered nurse practitioner as they executed each of these tasks. Faxes containing third-party payer decisions and the electronic medical record were evaluated to determine prior authorization outcome of approval versus denial. In cases that were initially denied, administrative time spent on any ensuing appeals process continued to be measured until the conclusion of the study period. In cases that were either initially or ultimately approved after an appeal, the length of time from initial prescription or diagnostic procedure order to date of approval was measured.

Estimation of cost to the hospital system according to prior authorization was calculated according to the mean hourly wage for a licensed practical

nurse and certified registered nurse practitioner in the Philadelphia metropolitan area.[10] To compare the administrative cost of addressing a prior authorization with the revenue of an outpatient specialist appointment, a sensitivity analysis using multiple benchmarks for reimbursement rates was conducted. Reimbursement rates for outpatient visits vary considerably across geographic markets and depend on negotiated rates between individual insurers and health systems.[11,12] One approach to estimating reimbursement per outpatient visit was based on the hospital system's standard charges, prices each hospital publishes as required by the Centers for Medicare & Medicaid Services. However, these published prices undergo substantial negotiation in contracts between insurer and hospital system and thus are significantly inflated compared with what insurers ultimately pay.[12] Another approach was to base reimbursement estimates on the Medicare fee schedule. Because Medicare fees are standardized across the country and accurately reflect reimbursement rates for patients covered by Medicare, this proxy was selected to provide increased generalizability to the analysis. Cost of an outpatient specialist appointment was conservatively estimated according to the national payment amount in the Medicare fee schedule using Current Procedural Terminology codes 99213 (office/outpatient visit with an established patient) and 99214 (office/outpatient visit with an established patient, with medical decision making of moderate complexity). The codes were searched with the Physician Fee Schedule available from the Centers for Medicare & Medicaid Services, selecting the National Payment Amount at the Non-Facility Price, given that all appointments took place in the office setting.[13]

Statistics

Demographic characteristics were summarized by standard descriptive summaries: means and standard deviations for continuous variables such as age, percentages for categoric variables such as sex, and medians and interquartile ranges for administrative time spent and delay to treatment. Fisher's exact test was used to analyze the relationship between drug class and prior authorization outcome, and insurance coverage type and prior authorization outcome. All statistical analyses were performed with Prism GraphPad (GraphPad, San Diego, CA).

RESULTS

Demographics

During the study period, 450 unique patients were treated in V.P.W.'s dermatology clinic (Perelman Center for Advanced Medicine, Philadelphia, Pennsylvania) between October 2018 and April 2019, and of these, 51 prior authorizations resulted for 48 patients. The demographic characteristics of patients included are outlined in Table I. Our sample represented a specialized population as a result of the clinic's emphasis on autoimmune dermatologic conditions, with approximately half of patients with a primary diagnosis of dermatomyositis and approximately one-quarter with a primary diagnosis of systemic lupus erythematosus. Table II summarizes the primary associated diagnosis for each patient and the medications and diagnostic procedures that resulted in a prior authorization. Of the 42 prior authorizations for medications prescribed, all medication prescriptions were considered off label in accordance with Food and Drug Administration labels.

Prior authorization outcomes

Fig 1 summarizes the process for addressing prior authorizations and the outcomes (approval, initial denial, and continued denial) of the 51 prior authorizations evaluated. The rate of initial approval was 49% and initial denial was 51%; some pursued an appeals process, and of those, 56% eventually received approval, culminating in a total ultimate approval rate of 69%. Table III summarizes these initial outcomes according to medication class or diagnostic procedure. Prior authorizations were significantly more likely to be initially denied if for a systemic medication compared with a topical medication ($P < .001$). Whether patients had public (Medicare or Medicaid) or commercial insurance was not statistically significantly related to initial approval or denial ($P > .78$).

Delay to treatment

Time to treatment receipt was measured from the date of the medication prescribed or diagnostic procedure ordered to the date of approval or procurement of the medication via alternate methods (free medication programs or out-of-pocket payment). Of the 51 prior authorizations tracked, an exact date of approval or denial was documented for 41 (80%), the remainder lacking a documented decision date because of variable receipt of faxed decision letters; in the cases lacking documentation, approval or denial was directly confirmed with patients. Median time to access the prescribed medication or diagnostic procedure was 12 days (interquartile range 5.5-23 days).

Administrative burden

Administrative time was tracked for 50 of 51 prior authorizations (98%). A dedicated licensed practical

Table I. Demographic characteristics of patients with prior authorizations

Demographic characteristic	Patients (n = 48), no. (%)
Mean age (range), y	53 (25-87)
Female patients	42 (88)
Race	
Black/non-Hispanic/non-Latino	10 (21)
White/non-Hispanic/non-Latino	30 (63)
White/Hispanic/Latino	2 (4)
Not specified	6 (13)
Healthcare coverage	
Medicare	12 (25)
Medicaid	5 (10)
Commercial	
Blue Cross Blue Shield	14 (29)
Aetna	10 (21)
United Healthcare	4 (8)
Horizon	3 (6)

Table II. Clinical characteristics of patients with prior authorizations

Primary associated diagnosis	Patients (n = 48), no. (%)
Dermatomyositis/suspected dermatomyositis	25 (52)
Lupus	13 (27)
Overlapping (lupus vs dermatomyositis, lupus/rheumatoid arthritis overlap, dermatomyositis and morphea)	4 (8)
Bullous pemphigoid	2 (4)
Psoriasis	1 (2)
Granuloma annulare	1 (2)
Rosacea	1 (2)
Vitiligo	1 (2)
Medication	**Prescriptions or orders placed (n = 51), no. (%)**
Topicals (tacrolimus ointment, pimecrolimus, clobetasol, fluocinolone triamcinolone)	21 (41)
Mycophenolate/mycophenolic acid	12 (24)
Biologics (tofacitinib, omalizumab, secukinumab)	4 (8)
Lenalidomide	2 (4)
Methotrexate	2 (4)
Azathioprine	1 (2)
Imaging (MRI/CT/echocardiogram)	9 (18)

CT, Computed tomography; *MRI*, magnetic resonance imaging.

nurse and certified registered nurse practitioner spent a total of 62.5 hours addressing these prior authorizations and a median of 30 minutes per prior authorization (interquartile range 17-105 minutes). Activities documented were filling out prior authorization forms, calling payers to clarify patient or pharmacy information, calling patients regarding prior authorization progress, writing appeal letters, calling peer to peer, and faxing documents. Based on the mean hourly salaries of a licensed practical nurse and certified registered nurse practitioner of $26.12 and $49.60, respectively, total administrative cost for these 50 prior authorizations was $1690.76, with an average administrative cost per prior authorization of $33.82. According to Medicare fee schedules, compared with the reimbursement rate for a typical outpatient specialist appointment during which these medications or diagnostic procedures were ordered ($75.32 to $110.28 per visit for a 99213 and 99214 encounter, respectively), this cost per prior authorization constituted 31% to 45% of the visit gross revenue billed per visit.[13] According to the hospital system's standard charge of $384 for an outpatient visit for an established patient, which may be assumed to be inflated compared with the actual reimbursement received per visit, the cost per prior authorization would account for at least 9% of the visit's gross revenue.[14]

Narrative summary

Although the majority of prior authorizations were ultimately approved and required a median of 30 minutes of administrative time, several "outlier" patients required exceptional administrative time and experienced a greater delay to receiving appropriate medications or diagnostic procedures. Next, we present selected vignettes of these patients.

A patient with erosive discoid lupus erythematosus/systemic lupus erythematosus had been previously treated with multiple agents, including methotrexate, hydroxychloroquine, quinacrine, and prednisone, without success. The next best step was deemed to be a trial of lenalidomide, approval for which was continually denied. Despite approximately 10 hours of administrative work, including an appeal letter and peer-to-peer conversation, this patient ultimately became septic through denudation of the skin, requiring a 39-day hospital course. Lenalidomide was finally approved 70 days after initial prescription, to which the patient responded favorably. Four months later, coverage was abruptly discontinued, forcing additional written appeals in an ongoing review until the study conclusion.

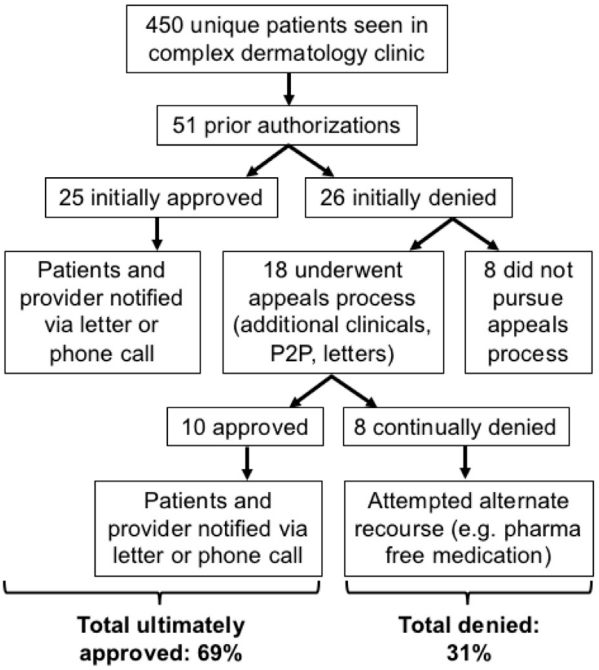

Fig 1. Prior authorization work flow and outcomes.

One patient with type 2 diabetes mellitus received a new diagnosis of urticarial bullous pemphigoid. Omalizumab was selected in accordance with studies demonstrating efficacy in urticarial bullous pemphigoid, but because the drug was not on the insurance company's formulary as indicated for bullous pemphigoid, the patient was continually denied coverage despite appeals. The patient began receiving prednisone to manage symptoms, leading to hyperglycemia, reported worsening vision, and a subsequent 4-day hospital admission. Omalizumab was finally approved 22 days after initial prescription, after 3.5 hours of administrative work, but the patient switched providers before the new medication could be tested.

The barriers to care were not only restricted to patients requiring advanced therapies. For a 54-year-old patient with dermatomyositis, a computed tomographic scan of the abdomen and pelvis was ordered, given the risk for malignancy. The patient's insurance would not cover the procedure, requiring initial ultrasonography. Provider-to-provider review and multiple telephone calls between nursing staff, the physician, and the patient amounted to approximately 5 hours spent addressing this insurance barrier. Ultimately, the patient received a computed tomographic scan 84 days after it was originally ordered.

DISCUSSION

Our study describes the burden caused by prior authorizations in a patient population with complex dermatologic conditions treated at a single clinic. By quantifying the delay to treatment and associated cost of these barriers to care, we demonstrate that in this patient population, prior authorizations represent a far-reaching burden, from the delay patients experience to the administrative time spent handling prior authorization requirements. These patients experience significant delays to treatment, and in extreme cases may be hospitalized before receiving the appropriate medications. Compared with a reported 64% initial approval rate in a general dermatology setting and 68% in a primary care setting, only 49% of prescriptions and orders were initially approved among this patient population, with a preponderance of these being topical medications.[6,15] Our estimate of the labor costs associated with each prior authorization, solely based on salary, is similar to or higher than prior estimates; in primary care and subspecialty nondermatologic settings, the estimated direct labor cost including benefits in addition to salary was $12.79 to $37.50 per prior authorization, respectively.[15,16] Furthermore, our estimate is likely conservative because the effective cost burden on physician practices should include indirect costs such as employee benefits in addition to salary, the materials cost of printed pages required to address each prior authorization, and the opportunity cost of spending time addressing prior authorizations rather than participating in revenue-generating activities such as direct patient care. This suggests that the clinical complexity of these patients may lead to a relatively higher administrative burden, a lower likelihood of initial approval, a more frequent need to undergo an appeal process, and thus a longer delay to treatment for patients. This study was limited by its relatively narrow patient population from a single region of the country, which may limit generalizability, and selection from a single provider's clinic schedule during a limited timeframe, leading to smaller sample size. Future studies could be conducted in other populations to validate generalizability.

Although prior authorizations may serve an important role in monitoring appropriate care and curbing overall health care spending, this study suggests that the process may incur unintended costs, both direct and indirect. In 2 instances, patients faced continued denial of their prescribed medications such that they were ultimately hospitalized, incurring additional, perhaps unnecessary, hospital expenditures during their inpatient stays, as well as causing distress for the patients and their families. Intangible yet important additional costs include the time burden on patients and their families that is caused by calling the provider's office or insurance

Table III. Prior authorization outcome based on medication class, diagnostic order, and insurance type

Medication class or diagnostic order	Initial approval (n = 25), no. (%)	Initial denial (n = 26), no. (%)
Topicals (tacrolimus ointment, pimecrolimus, clobetasol, fluocinolone, triamcinolone)	18 (86)	3 (14)
Immunosuppressives (mycophenolate/methotrexate/azathioprine)	3 (20)	12 (80)
Biologics (tofacitinib, omalizumab, secukinumab)/lenalidomide	0	6 (100)
Imaging	4 (44)	5 (55)
Insurance type		
Public (Medicare/Medicaid)	10 (53)	9 (47)
Commercial	15 (47)	17 (53)

company, the distress experienced because of repeated denials, the downstream costs associated with any progression of disease while insurance coverage is awaited, and the opportunity cost of time spent by providers on these insurance claims rather than direct patient care.

The prior authorization burden is currently borne by provider practices and patients. Provider practices do not currently receive reimbursement for the time spent on addressing prior authorizations, which in our study population was found to absorb at least one-tenth—but more likely a third to a half—of the hospital system's gross revenue from the clinic visit. Future directions based on these findings include investigating potential ways to streamline this process, particularly for patients with complex dermatologic conditions, whether through reconsidering the prior authorization process for the individual provider practice or instituting "checks and balances" to realign incentives between provider, payer, and patient. For example, as described, delays to care for patients who are very sick can lead to increased risk of serious harm and possible hospitalization; an expedited prior authorization process that takes into account the clinical urgency of individual patient cases would be in the financial interest of payers. Additional process improvement strategies could include stratifying patients according to complexity of dermatologic diagnosis such that they are triaged to an immediate peer-to-peer process; stratifying providers such that those with frequent approval after appeals are granted a status that does not require prior authorizations for certain medications; improving the "electronic prior authorization" that can be completed when prescribing or placing the diagnostic test order; expanding drug formularies to more thoroughly address dermatologic diagnoses; retroactively increasing reimbursement for visits involving medication prescriptions or diagnostic orders that later result in a prior authorization; or, as an incentive to expedite decisions and reduce treatment delays, requiring payers to retrospectively reimburse patients for out-of-pocket medication costs accrued during the appeals process if a prior authorization is eventually approved.[17] Although administratively challenging, these latter solutions would provide negative feedback on the broad use of prior authorizations, for which there is currently minimal downside for payers. Ultimately, understanding the effect and cost of prior authorizations on patients, providers, and health care systems will help to inform decisions surrounding health policy, reimbursement, and health care administration.

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