Major limitations of our study include the small sample size and the inability to calculate a response rate because of the sources leveraged to distribute the survey link. Our methods replicate those of several of the largest studies measuring burnout in dermatologists, including the Medscape study, which sampled a similar number of dermatologists.[5] In addition, our respondents were predominantly academic dermatologists and self-identified as white, which may limit the generalizability of our findings.

Our findings support that burnout among this sample of dermatologists affects men and women similarly. This is in contrast to other studies.[1] Although some limitations (small sample size, academic focus) may impact our findings, the generally high levels of burnout we found are equivalent to national averages, supporting the general validity of our results.[1,2] Women are inequitably affected by the impact of raising children, and women physicians spend an additional 8.5 hours per week on family life.[4] Additional support for all with young families may be an important factor in mitigating burnout. We conclude that when addressing burnout among dermatologists, it is important to consider the impact of children and take work-life balance into account, regardless of sex.

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Enhancing the process for care delivery in a dermatology specialty clinic

To the Editor: Dermatology specialty clinics provide access to disease-oriented specialists who enhance research and the care of people with complex skin conditions. The referral process is a critical facet of care delivery for patients with complex dermatologic conditions. Although previous research has revealed inefficiencies in the specialty-referral process,[1-3] interventions to improve referrals to dermatology specialty clinics are lacking, particularly those designed to address the needs of referring providers.

We conducted a quality improvement study, exempt from institutional review board approval, to optimize the referral process at a specialty clinic at the Massachusetts General Hospital that focuses on care delivery to patients at high risk of developing keratinocyte carcinomas (KCs). Prior studies have supported the value of specialized skin cancer clinics in dermatology care delivery,[4] supporting the selection of the high-risk skin cancer clinic for an intervention aimed at improving the referral process.

We gathered 24 months of information on referring practices (2014-2016), including the numbers and reasons for referral. We conducted semistructured, open-ended qualitative interviews with providers in the top 2 referring practices (2016-2017) to understand provider needs and barriers. Qualitative analysis of the interviews identified several barriers, including lack of understanding of how to initiate a specialty clinical referral and a lack of knowledge

Fig 1. High-risk skin cancer clinic educational resource. Patient educational brochure with information about referral criteria, skin cancer risk factors, and unique services provided.

regarding appropriate referral criteria. These barriers were addressed by developing written materials that described the unique services provided by the clinic, delineated a step-by-step guide on making referrals, and included patient-facing skin cancer educational materials (Fig 1).

Next, we targeted 5 high-volume referring clinics in 2017 with an intervention consisting of an in-person visit by the skin cancer specialty clinic providers with referring providers and staff to introduce the newly developed written materials. We then compared the number of referrals before and after the intervention, along with the reason for referral (categorized as appropriate, inappropriate, and not specified/unknown).

The average number of monthly referrals increased from 11.9 during the preintervention period (January through November 2016) to 25.2 in the postintervention period (December 2017 through December 2018) (Fig 2). The monthly referral data show that the referral trends are nonlinear with seasonal variation, as shown by increased referrals during the summer months, but the average number of referrals changed approximately 2-fold after the intervention. The intervention resulted in an increased number of appropriate referrals (ie, immunosuppression, hereditary disorders with increased KC risk, ≥4 KCs/year) and fewer inappropriate referrals (ie, skin cancer screening, family history of skin cancer, suspicious lesion).

Our study focused on identifying and addressing the needs of the referring provider, a key stakeholder in the patient care delivery process.[5] Implementing an intervention rooted in referring providers' articulated needs enhanced overall referrals, with a rise in appropriate referrals. Future studies should assess the potential consequences of increased referrals on other metrics, such as patient access. Although this study was performed within a specific specialty clinic at a single academic medical center, which may limit generalizability to other settings, our findings suggest

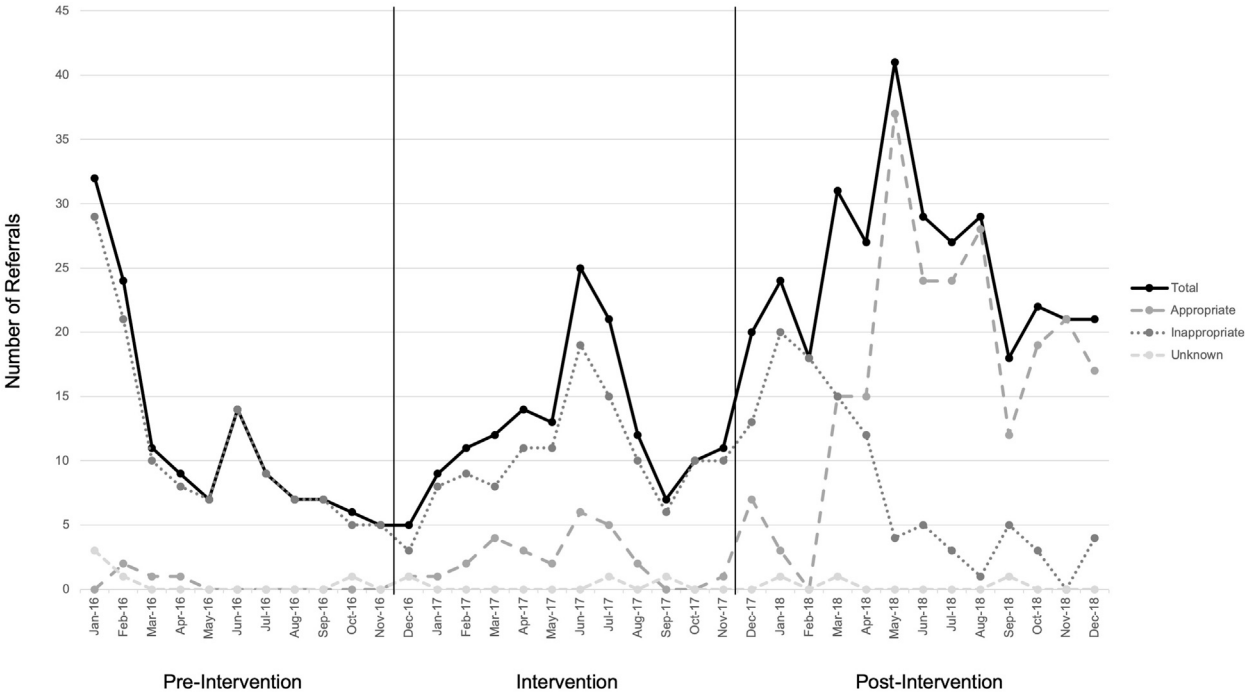

Fig 2. Number of referrals to the high-risk skin cancer clinic before and after the intervention. Shown are the total number of patients referred to the high-risk skin cancer clinic per month during the preintervention period (January 2016 through November 2016), the qualitative interview and intervention period (December 2016 through November 2017), and the postintervention period (December 2017 through December 2018), along with the number of appropriate (ie, immunosuppression, hereditary disorders increasing KC risk, ≥4 KCs/year) and inappropriate (ie, skin cancer screening) referrals during each of these periods. Referral reasons that were not specified (ie, reason not listed) were classified as *unknown*.

that working directly with referring providers to address barriers to referrals may improve the referral process and specialty care delivery.

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Antibiotic utilization in Medicare beneficiaries receiving Mohs micrographic surgery

To the Editor: Antibiotic overuse can lead to bacterial resistance and place patients at risk of complications.[1,2] Dermatologists frequently prescribe oral antibiotics, and antibiotic use is increasing among visits associated with dermatologic procedures.[3] There is significant geographic variation in this use.[4] Although prior studies have evaluated geographic variation at the level of census division among commercially insured patients, little is known about physician-level variation in antibiotic prescribing associated with Mohs micrographic surgery among patients receiving Medicare benefits.

To evaluate antibiotic prescribing among surgeons performing Mohs surgery in Medicare beneficiaries, we merged data from the 2013-2016 Medicare Public Use File With Physician Compare.[5] *Mohs surgeons* were defined as dermatologists with at least 200 annual claims for Current Procedural Terminology codes 17311/17312. Antibiotic claims included amoxicillin, cephalexin, clindamycin, doxycycline, minocycline, and trimethoprim-sulfamethoxazole. Median (interquartile range [IQR]) annual Mohs stage 1 claims, antibiotic claims, total days' supply of antibiotics, and antibiotic claims per Mohs procedure were recorded. Results were stratified by Mohs surgeons in the top 5% of antibiotic prescribers by volume versus all Mohs surgeons. Geographic variation in mean annual antibiotic claims per Mohs procedure per clinician was plotted by US state. Moran's *I* was used to assess for spatial autocorrelation (nonrandom association by geographic location).

A total of 2,923,028 Medicare beneficiaries received Mohs procedures from 2013 through 2016 (Table I). The top 5% of antibiotic prescribers had a median of 469 (IQR, 359-674) antibiotic claims compared with 101 (IQR, 49-200) among all Mohs surgeons. The top 5% of antibiotic prescribers had significantly more antibiotic claims per Mohs stage 1 claim (median, 0.8; IQR, 0.5-1.2) than all Mohs surgeons (median, 0.2; IQR, 0.1-0.5). Median course duration was similar between the top 5% of prescribers (8.7 days; IQR, 6.9-11.9) and all Mohs surgeons (10.2 days; IQR, 7.3-17.8). The top 5% of prescribers were higher-volume surgeons (median, 819 cases; IQR, 508-1251) than all Mohs surgeons (median, 543 cases; IQR, 337-859).

Table I. Antibiotic prescribing patterns of Mohs surgeons, 2013-2016*

Characteristic	All Mohs surgeons (n = 1559)	Top 5% of prescribers (n = 258)	Ratio
Annual antibiotic claims per clinician, median (IQR)	101 (49-200)	469 (359-674)	4.6
Annual antibiotic claims per Mohs stage 1 claim, median (IQR)	0.2 (0.01-0.4)	0.7 (0.4-1.0)	3.5
Annual antibiotics per unique Mohs stage 1 beneficiary, median (IQR)	0.2 (0.1-0.5)	0.8 (0.5-1.2)	4.0
Total beneficiaries attributed to Mohs stage 1 claims	2,923,028	220,822	0.1
Annual Mohs stage 1 claims per clinician, median (IQR)	543 (337-859)	819 (508-1251)	1.5
Annual Mohs stage 1 beneficiaries per clinician, median (IQR)	443 (274-692)	687 (438-1056)	1.6
Annual days' supply per antibiotic claim, median (IQR)	10.2 (7.3-17.8)	8.7 (6.9-11.9)	0.9
Type of antibiotic, total claims (%)			
Amoxicillin	27,399 (3.1)	5095 (3.1)	1.0
Cephalexin	506,245 (56.7)	90,105 (54.1)	1.0
Clindamycin	59,999 (6.7)	10,492 (6.3)	0.9
Doxycycline	181,386 (20.3)	30,305 (18.2)	0.9
Minocycline	74,960 (8.4)	19,507 (11.7)	1.4
Trimethoprim-sulfamethoxazole	43,241 (4.8)	11,180 (6.7)	1.4

IQR, Interquartile range.
*Shown are median (IQR) values of Mohs stage 1 and antibiotic claims. The breakdown of particular oral antibiotics is shown further, and all statistics are stratified by the top 5% of antibiotic prescribers. Ratios of statistics between stratifications (top 5%: all surgeons) are shown in the third column.