Moonlighting policies among US dermatology residency programs: A survey

To the Editor: Moonlighting during residency is a controversial practice, with potential advantages and disadvantages for residents, residency programs, and patients.[1,2] The Accreditation Council for Graduate Medical Education (ACGME) mandates that moonlighting "must not interfere with the ability of residents to achieve the goals and objectives of the educational programs."[3] Since dermatology residents average 46 duty hours per week,[4] they may have significant opportunities to moonlight without exceeding ACGME duty hour limits (an average of 80 hours/week over the course of 4 weeks).[3] However, moonlighting policies among dermatology residency programs have not been well characterized.[1]

We developed a confidential 12-question survey using REDCap[5] to assess US dermatology residency programs' moonlighting policies. This survey was emailed to all 126 program directors of ACGME-accredited dermatology residencies, with 2 follow-up reminders for nonrespondents. Questions addressed allowance of internal and external moonlighting throughout dermatology residency, rationales for these policies, general attitudes about moonlighting, and scope of practice or duty hour restrictions. All statistical analyses were conducted using Stata (StataCorp LLC, College Station, TX). This study was deemed exempt by the University of Pennsylvania Institutional Review Board.

Seventy-eight program directors (61.9% response rate) returned surveys. Overall, 46 of 78 programs (59%) allowed resident moonlighting at least in some cases (Table I), and 4 of 78 (5%) allowed it in all cases. Policies regarding both internal and external moonlighting varied by program year, with constraints decreasing throughout residency.

Programs that allowed moonlighting most commonly cited resident income supplementation and debt reduction (40/46, 87%) and additional clinical experience (25/46, 54%) as justification (Table II). Reasons given for prohibiting moonlighting included distraction from residency training (59/78, 76%) and resident well-being (37/78, 47%). In addition, 5 of 78 (6%) programs commented on institutional policies prohibiting moonlighting.

A plurality of programs were neutral toward moonlighting (36/78, 46%), while others discouraged (35/78, 45%) or encouraged (7/78, 9%) it. Of the 46 programs allowing moonlighting, 15 (33%) restricted moonlighting residents' scope of practice and 12 (26%) limited moonlighting residents' duty hours more strictly than ACGME requirements.

Thirty-two respondents offered additional comments. The most common themes relating to these comments included uncommon frequency of resident moonlighting (9/32, 28%) and a required level of clinical or in-training exam performance (5/32, 16%).

Our findings indicate that over half of US dermatology residency programs responding allow moonlighting in at least some cases and only a minority of programs encourage it. From program directors' perspective, the debate centers on additional earning potential and clinical experience versus distraction from training and diminished well-being. Moreover, our study suggests that programs are more likely to allow moonlighting as residency progresses. This trend seems to reflect a belief that additional training better qualifies senior residents to practice autonomously.

These conclusions are limited by the extent to which responses represent all dermatology residency programs. Future studies should determine the prevalence and scope of moonlighting among dermatology residents and evaluate its impact on performance and well-being.

Table I. Dermatology residency programs' policies regarding moonlighting

	Internal			External				
Policy	PGY-2	PGY-3	PGY-4	PGY-2	PGY-3	PGY-4	Any	All
Allow	8	21	30	8	28	38	46	4
Prohibit	70	57	48	70	50	40	74	32

PGY, Postgraduate Year.

Table II. Rationales for dermatology residency programs' policies regarding moonlighting

Policy and rationales	Programs
Allow (n = 46)	
Supplement income and reduce debt	40
Provide additional clinical experience	25
Provide opportunity to manage patients independently	17
Improve patient access to care	14
Prohibit (n = 74)	
Prevent distraction from residency training	59
Protect resident well-being	37
Maintain quality of care and patient safety	28
Avoid medical liability risk	17

Kishore L. Jayakumar, BS,[a] *and Jules B. Lipoff, MD*[b]

From the Perelman School of Medicine at the University of Pennsylvania, Philadelphia, Pennsylvania[a]*; and Department of Dermatology, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, Pennsylvania*[b]

Funding sources: None.

Conflicts of interest: None declared.

Correspondence to: Jules B. Lipoff, MD, University of Pennsylvania, Department of Dermatology, Penn Medicine University City, 3737 Market St, Suite 1100, Philadelphia, PA 19104

E-mail: jules.lipoff@pennmedicine.upenn.edu

REFERENCES

1. Garg A, Grant-Kels JM. Ethical considerations in dermatology residency. *Clin Dermatol*. 2012;30(2):202-209.
2. Mirkes C, Myers JD, Song J, Cable C, McNeal TM, Colbert CY. Examining the relationship between internal medicine resident moonlighting and IM-ITE performance. *Am J Med*. 2014;127(2):163-167.
3. *Common Program Requirements*. Accreditation Council for Graduate Medical Education; 2017. Available from: http://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/CPRs_2017-07-01.pdf. Accessed August 14, 2017.
4. FREIDA Online. https://freida.ama-assn.org/Freida/user/specStatisticsSearch.do?method=viewDetail&pageNumber=2&spcCd=080. Accessed June 14, 2017.
5. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research Electronic Data Capture (REDCap) - a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377-381.

https://doi.org/10.1016/j.jaad.2017.09.041

Incidence and risk of developing photosensitivity with targeted anticancer therapies

To the Editor: Photosensitivity has been reported anecdotally and inconsistently with targeted cancer therapies, such that the incidence and risk are unknown.[1] We conducted a PubMed search for studies published during January 1966-February 28, 2016, combining 2 concepts using the operator and generic name of the drug and the study phase. Further, we performed an independent search with the Web of Science database for studies published during 1945-February 28, 2016, using the same aforementioned PubMed search terms.

We selected all trials that met the following criteria for systematic review and meta-analysis: study was a prospective phase 2 or 3 clinical trial conducted in human cancer patients available in the English language, participants were assigned treatment with targeted agents at their approved doses, data regarding the occurrence of photosensitivity was reported, and the targeted therapy was a single agent.

We found 47,750 eligible published reports regarding targeted anticancer therapies (Fig 1). A total of 10 clinical trials met our inclusion criteria: 6 phase 2 and 4 phase 3 trials totaling 2938 enrolled patients. Among these trials, 8 involved the treatment of solid tumors, 1 hematologic malignancies, and 1 both tumor types (Table I).

Photosensitivity was only reported with vandetanib, vemurafenib, and nivolumab agents. The calculated overall incidence of all-grade photosensitivity when using the random-effects model (heterogeneity Q 95.355, $I^2 = 91.61$, $P < .001$) was 21.5% (95% confidence interval [CI] 14.2%-31.2%). The incidence was lowest for nivolumab (1.5%, 95% CI 0.5%-4.4%) in a phase 3 melanoma trial.[2] Incidence was highest with vemurafenib (53.1%, 95% CI 44.5%-61.5%) in a phase 2 trial in melanoma.[3] Data for all-grade photosensitivity was available for 9 studies of nivolumab, vemurafenib, and vandetanib.

Based on a fixed-effects model (heterogeneity test, Q = 5.801, I^2 = 48.285, P = .122), vemurafenib has an increased risk for all-grade photosensitivity with a relative risk of 2.14 (95% CI 0.52-8.91, Fig 2). The calculated overall incidence of high-grade photosensitivity with the random-effects model (heterogeneity, Q = 5.801, $I^2 = 48.285$, $P = .122$) was 2.1% (95% CI 0.8%-5.4%). Trials involving vemurafenib (n = 3) and vandetanib (n = 1) were included, and the incidence was highest (4.1%, 95% CI 1.3%-12.0%) in a phase 2 double-blind placebo-controlled trial of vandetanib in thyroid cancer.[4] Seven other trials reported no high-grade events of photosensitivity. High-grade photosensitivity was not reported in 1 vemurafenib trial in which all-grade events were reported.[5]

This is the first systematic review to report the incidence and risk for photosensitivity with targeted cancer drugs. We found that vemurafenib, vandetanib, and nivolumab were associated with an increased incidence and risk of developing photosensitivity. A limitation of the study is that only published data from trials was included, as raw data from trials was not available. Although most cases are not high grade, photosensitivity might cause morbidity, affecting quality of life and consistent dosing of cancer agents. Education on photoprotection and management of established photosensitivity are therefore key in the optimization of agents associated with this adverse event.