

## RESEARCH LETTER

## Trend Analysis of Industry Payments to Dermatologists in the United States from 2015-2022

Nicole J. Hardy, MS<sup>1</sup>, Christian Gronbeck MD<sup>2</sup>, Hao Feng MD, MHS<sup>2</sup>  
Author<sup>1</sup>

<sup>1</sup> University of Connecticut School of Medicine, Farmington, CT

<sup>2</sup> Department of Dermatology, University of Connecticut School of Medicine, Farmington, CT

### ABSTRACT

**Background:** Open Payments, established in 2013 to address concerns about industry-driven healthcare influence, aims to enhance transparency regarding financial relationships between industry and physicians. This study investigates trends in industry payments to dermatologists between 2015 and 2022, a topic that has not been explored since a prior characterization in 2014.

**Methods:** We conducted a retrospective review of United States dermatologists appearing in the Open Payments database between 2015 and 2022. A Joinpoint analysis was performed to calculate the average annual percentage change (AAPC) across study years. A sensitivity analysis excluding 2020-2021 data was conducted.

**Results:** This study reviewed 2,616,289 payments totaling \$494,271,790 made to dermatologists during the study period. The average annual percentage change (AAPC) across these years for the number of recipient dermatologists, total value of payments, and total number of payments were 1.5%, 5.5%, and 3.9%, respectively, with confirmed positive growth when excluding data from 2020-2021.

**Conclusions:** Payments per dermatologist have increased over the years, even when adjusting for inflation, but this growth is likely attributed to the overall expansion of the specialty. Most individual payments to dermatologists were less than \$50. However, a substantial proportion of dermatologists (60%) received total payments exceeding \$1000 during the study period. These findings suggest a longitudinal nature of industry-dermatologist relationships and emphasize the financial significance of payments over time. Notably, the impact of physician-industry relationships on patient care in dermatology remains debated.

Open Payments, established in 2013 in response to concerns regarding industry-driven healthcare influence, aims to promote transparency regarding industry-physician financial relationships.<sup>1</sup> Industry payments to dermatologists were characterized in 2014,<sup>2</sup>

yet *trends* of payments since that time remain unexplored and are important to consider given the potential for longitudinal industry-dermatologist relationships to impact healthcare.

We conducted a retrospective review of United States dermatologists appearing in the Open Payments database between 2015 and 2022,<sup>1</sup> using the National Plan and Provider Enumeration System (NPPES) for dermatologist verification purposes.<sup>3</sup> Primary study outcomes included inflation-adjusted total dollars of payments and total number of payments. A secondary study outcome included companies providing the highest payments. A Joinpoint analysis<sup>4</sup> was performed to calculate the average annual percentage change (AAPC) across study years. A sensitivity analysis excluding 2020-2021 data was conducted.

A total of 2,616,289 payments totaling \$494,271,790 were made to dermatologists between 2015-2022. The AAPCs (95% CI) for the number of recipient dermatologists, total value of payments, and total number of payments between 2015-2022 were 1.5% (-0.31%, 3.5%), 5.5% (-3.3%, 16.0%), and 3.9% (-5.7%, 17.9%), respectively. When excluding 2020-2021, the AAPCs for those outcomes confirmed positive growth (**Table 1**).

Across all study years, the median amount per payment was \$19.24 (IQR, \$13.55-\$26.93), with 83.8% of individual payments less than \$50 (**Table 2**). The highest proportion of payments related to “food and beverage” (88.6%), although payments to dermatologists for serving as faculty or speaking at a venue other than a continuing education program (CME) comprised the highest proportion of total payment value (47.8%). (**Supplemental Table**). Among 687 companies that made payments to dermatologists, the top 15 accounted for \$401,493,992, (81.2%) of the aggregate payment amount (**Supplemental Figure**). Supplemental data are available at <https://doi.org/10.17632/9c4fwxnhpf.1>.

The findings indicate that between 2015-2022, median per-dermatologist payments have increased despite adjusting for inflation. However, the growing number of dermatologists receiving payments is likely related to overall growth in the specialty. With 12,756 active dermatologists in 2021,<sup>5</sup> the proportion receiving any payments (~75%) remains consistent with a prior study.<sup>2</sup>

Although most individual payments to dermatologists were less than \$50 and were frequently related to food and beverage, a substantial proportion of dermatologists (60%) received total payments exceeding \$1000 over the study period. Nearly half of the aggregate payment value was comprised of non-CME related speaking fees to ~13% of dermatologists, averaging over \$100,000 per dermatologist throughout the study period. This suggests a longitudinal nature of industry-dermatologist relationships and underscores the financial significance of payments over time. The impact of physician-industry relationships on patient care in dermatology is debated and can have a positive effect by way of improved access to medications and more physician educational opportunities or a negative effect by influencing medical-decision making, leading to patient distrust.<sup>2</sup>

Limitations to the study include potential database inaccuracies and exempt entities and manufacturers. Additionally, only general payments data were analyzed; research and ownership data were not assessed. Despite these limitations, this study further delineates the longitudinal nature of industry payments to dermatologists.

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**Table 1.** Trends in the number and value of industry payments to dermatologists in the United States, 2015 to 2022.

	2015	2016	2017	2018	2019	2020	2021	2022	AAPC (95% CI)	AAPC w/o 2020-2021 (95% CI)
Unique dermatologists (n = 15,096) receiving payments, No. (%)	9,383 (62.2)	9,783 (64.8)	10,047 (66.6)	10,104 (66.9)	10,355 (68.6)	8,977 (59.5)	9,547 (63.2)	10,628 (70.4)	1.5 (-0.31,3.5)	1.8 (1.36, 2.1)
Total Payments: Value, \$	51,196,783	59,078,426	67,255,943	69,104,762	76,941,186	40,324,387	51,135,198	79,235,104	5.5 (-3.3,16.0)	6.7 (5.3,8.0)
Total Payments: No.	293,176	34,0181	346,506	375,894	370,995	198,983	293,980	396,574	3.9 (-5.7, 17.9)	3.9 (2.5, 5.3)
Per-dermatologist value of payments, \$ Mean (SD)	5,456 (29,523)	6,039 (33,408)	6,694 (36,202)	6,839 (37,104)	7,430 (39,490)	4,492 (23,215)	5,356 (38,470)	7,455 (116,668)	3.9 (-2.5, 10.8)	4.8 (3.8,5.8)
Per-dermatologist value of payments, \$ Median (IQR)	444 (131-1,326)	437 (137-1,321)	461 (139-1,362)	466 (141-1,312)	483 (142-1,351)	257 (87-827)	362 (107-1,138)	448 (121-1,306)		

This table displays the number of dermatologists accepting payments, total dollar amount of payments, total number of payments, mean and median per-dermatologist payment amounts for each year between 2015-2022. The average annual percentage change is provided for all years alongside a 95% confidence interval. Additionally, the average annual percentage change is provided without 2020-2021 data along with the corresponding 95% confidence interval. Lastly, the percentage of dermatologists out of the total number of unique dermatologists is provided per year.

Abbreviations: AAPC, average annual percent change; CI, confidence interval; No., number, SD, standard deviation; IQR, interquartile range.

**Table 2.** Summary and trends in general industry payments to dermatologists by aggregate per-dermatologist value and payments received, 2015 to 2022.

Aggregate per-dermatologist value over the study period, \$	Dermatologists receiving aggregated amount over study period, No. (%)	Total number of payments all years, (%)	Total value of payments all years, \$ (%)	Median payment amount per dermatologist, \$ (IQR)	Mean payment amount per dermatologist, \$ (SD)
0-10	4 (0.03)	446,783 (17.23)	2,303,141 (0.47)	9 (8-9)	8 (3)
10.01-50	944 (6.25)	1,725,825 (66.54)	35,073,599 (7.1)	25 (18-35)	27 (11)
50.01-100	633 (4.19)	82,436 (3.18)	6,217,826 (1.26)	75 (61-88)	75 (15)
100.01-500	2,878 (19.06)	197,523 (7.62)	35,338,569 (7.15)	246 (157-353)	263 (115)
500.01-1000	1,641 (10.87)	30,384 (1.17)	21,642,793 (4.38)	710 (601-850)	726 (146)

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1000.01-5000	4,388 (29.07)	96,605 (3.72)	251,604,750 (50.9)	2,283 (1,550-3,359)	2,521 (1,114)
5000.01-10000	1,823 (12.08)	12,072 (0.47)	7,850,0373 (15.88)	6,960 (5,934-8,291)	7,147 (1,406)
10,000.01-15,000	797 (5.28)	1,033 (0.04)	12,212,823 (2.47)	11,926 (10,863-13,209)	12,130 (1,439)
15,000.01-20,000	382 (2.53)	324 (0.01)	5,549,209 (1.12)	16,964 (15,955-18,275)	17,137 (1,388)
20,000.01-25,000	211 (1.4)	158 (0.01)	3,550,938 (0.72)	22,558 (21,117-23,507)	22,444 (1,394)
25,000.01-50,000	419 (2.78)	327 (0.01)	11,195,417 (2.27)	34,288 (29,268-40,314)	35,056 (6,913)
50,000.01-100,000	294 (1.95)	98 (0)	6,353,289 (1.29)	70,477 (58,805-84,192)	71,629 (14,701)
>100,000	682 (4.52)	58 (0)	24,729,062 (5)	304,308 (169,253-690,465)	603,319 (827,598)

This table displays the number and proportion of dermatologists accepting payments based on aggregate amount between 2015-2022. Additionally, it shows the total number of payments, the total dollar payment amounts, their respective proportions, and the median and mean payment amount per dermatologist in each aggregate value category.

Abbreviations: No., number, SD, standard deviation; IQR, interquartile range.

#### Corresponding Author:

Hao Feng, MD, MHS  
21 South Rd, 2<sup>nd</sup> Floor, Farmington, CT 06032  
Phone: 860-679-7546  
Fax: 860-679-7534  
Email: [haofeng625@gmail.com](mailto:haofeng625@gmail.com)

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