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Comparison of Industry Payments in 2017 With Annual Salary in a Cohort of Academic Oncologists

Direct payments from industry to academic physicians are common in the US and differ from payments to medical centers for clinical research.[1,2] Although most US medical schools have conflict of interest policies for faculty members,[3] the restrictions vary.[1] We compared industry payments with annual salary in a cohort of academic oncologists at US public medical schools.

Methods | From a 2016 study,[4] we obtained a list of 24 US medical schools that provide public employee salary data and recorded all faculty member names from the oncology departments' websites. We obtained 2017 annual salaries and job titles for faculty members with medical degrees from state-specific public salary databases. The eFigure in the Supplement shows the development of the analytical cohort of 630 faculty oncologists at 14 medical schools from 9 states; 5 schools were in California. We excluded faculty members not found in a 2017 salary database and those with salaries less than $100 000, because such salaries may represent incomplete reporting of pay or the pay of part-time or retired faculty members. We also excluded the faculty of medical schools with fewer than 10 oncology faculty members listed.

All study data were publicly available. The study was not considered human subjects research and did not require institutional review board approval, per Oregon Health and Science University policies. Similarly, informed consent was not required.

From the US Centers for Medicare & Medicaid Services (CMS) Open Payments database,[2] we obtained 2017 general payments. The CMS defines general payments as "payments or other transfers of value made that are not in connection with a research agreement or research protocol."[6] General payments include consulting fees, honoraria, serving as faculty or a speaker at an event other than a continuing medical education program, gifts, entertainment, food and beverage, and travel and lodging. For faculty members with general payments, we compared general payments with annual salaries. From university websites, we obtained conflict of interest policies for faculty physicians. We collected and analyzed the data in August 2019, using Excel 2016 (Microsoft).

Results | Of the 630 oncologists from 14 medical schools in the analytical cohort, 417 (66.2%) had general payments from industry in 2017. The **Table** shows the mean, median, and interquartile ranges of base salaries and general payments by academic rank for faculty with general payments. Chairs and directors within departments had the highest mean general payments (mean, $52 430; median, $1516 [interquartile range, $129-$13 744]).

When comparing general payments with base salary for the 417 faculty who received payments, 78 (18.7%) received payments of more than 10% of their annual salary, 45 (10.8%) received payments of more than 20%, 16 (3.8%) received payments of more than 50%, and 3 (0.7%) received payments of more than 100% (**Figure**). The general payments-to-salary

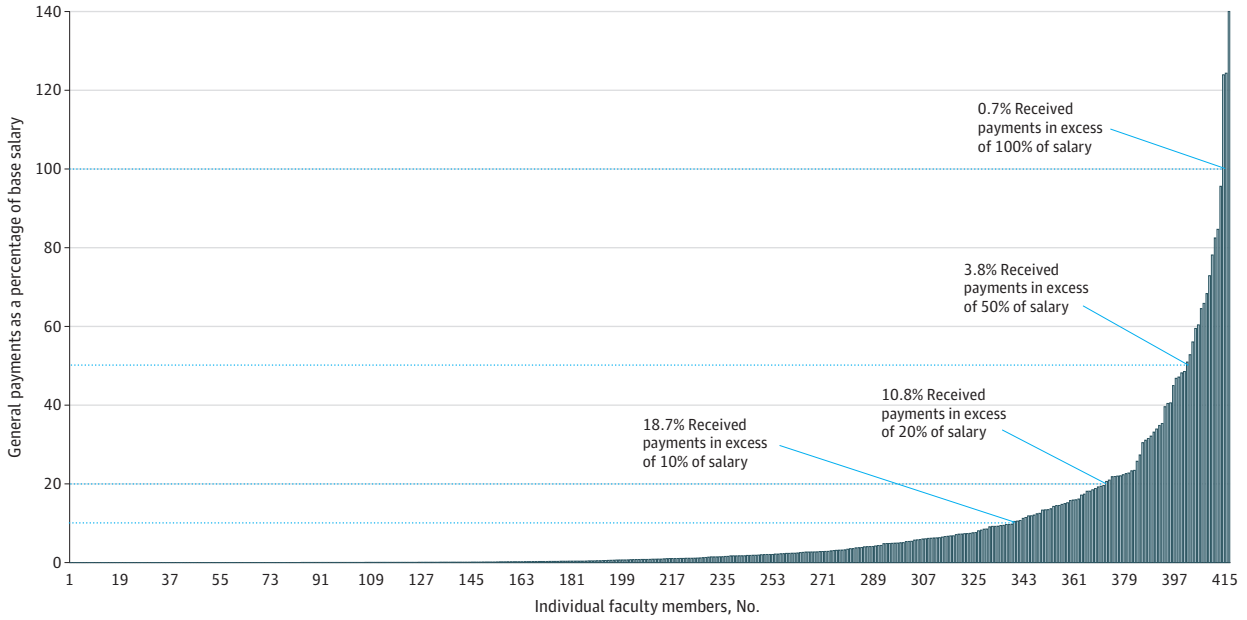
Table. Descriptive Statistics on 2017 Salary and General Payments for 417 Oncology Faculty Members Who Received General Payments, by Position Title[a]

Faculty by title	Faculty members with general payments, No.	Salary, $		General payment, $	
		Mean	Median (IQR)	Mean	Median (IQR)
All titles	417	240 209	214 810 (151 997-214 589)	15 479	1720 (129-13 744)
Chairs and directors within departments	24	436 069	433 819 (351 199-553 932)	52 430	1516 (129-13 744)
Professors	141	271 802	242 792 (166 300-336 179)	20 588	6721 (205-25 098)
Associate professors	111	211 114	210 232 (144 912-252 746)	12 264	2755 (134-13 960)
Assistant professors	136	200 107	204 000 (132 149-220 703)	6828	503 (108-5119)
Instructors	5	159 943	125 000 (120 292-139 067)	754	129 (73-279)

Abbreviation: IQR, interquartile range.

[a] Means, medians, and interquartile ranges were calculated for salaries and general payments for each faculty position title among faculty who received general payments.

Figure. General Payments as a Percentage of Annual Base Salary in 2017 Among the 417 Academic Oncologists With Payments



General payments refer to payments that are not associated with a research study (as defined by CMS Open Payments database).[2] Three faculty members received general payments in excess of 100% of their salaries, specifically payments that were 124%, 124%, and 243% of their base salaries.

ratio for the 3 physicians with the highest ratios were 124% ($185 316/$149 532), 124% ($132 696/$106 706), and 242% ($923 938/$380 768).

Among the 14 medical schools, median general payment from industry-to-salary ratio was 0.8% for those physicians with payments. The 3 medical schools with the highest median general payment-to-salary ratios were University of California (UC) San Diego (16.0%), UC Davis (8.5%), and UC Irvine (4.6%).

Of the 14 medical schools, 6 had conflict of interest policies establishing specific limits on the amount of industry payments faculty receive annually.[5] The other 8 schools evaluated payment limits on a case-by-case basis. The 6 schools with fixed limits were the Ohio State University, with a limit of 20% of base salary, and all 5 California schools, with a limit of $40 000 or 40% of base salary, whichever is greater. At least one oncology faculty member from each of these 6 schools with fixed limits had general payments greater than stated limits.

Discussion | In a cohort of academic oncologists at US public medical schools, two-thirds (417 individuals) had general payments from industry in 2017. More than 10% of the oncologists with general payments received payments in excess of 20% of their annual salary. Our analysis complements a recent investigation by ProPublica into the UC medical school faculty with the highest industry payments, which found that many professors did not fully disclose payments and violated university limits on payments from industry.[5] Our analysis was limited by the inclusion of only

14 medical schools and potential inaccuracies in the salary and CMS Open Payments data. These limitations notwithstanding, our findings established that many oncologists at US public medical schools receive substantial payments from industry, which are often sizeable in comparison with their annual salaries. Medical schools should enforce their own policies with regard to payment limits.

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Correction: This article was corrected on July 6, 2020, to fix an error in the text. The sentence "Chairs and directors within departments and professors had the highest mean general payments (mean, $436 069; median, $433 819 [interquartile range, $351 199-$553 932])," should have instead said, "Chairs and directors within departments had the highest mean general payments (mean, $52 430; median, $1516 [interquartile range, $129-$13 744])." The error has been corrected.

Author Contributions: Dr Prasad had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
Concept and design: Gill, Herrera-Perez, Prasad.
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Use and Costs of Breast Cancer Screening for Women in Their 40s in a US Population With Private Insurance

Although professional society guidelines vary, most private insurance companies in the US will reimburse for the costs of mammography for women age 40 through 49 years.[1] While the clinical benefits and harms of screening women in their 40s have been widely discussed,[2,3] there is limited evidence regarding the cost implications of contemporary breast cancer–screening practices among this population. We estimated annual breast cancer screening–associated costs among US women in their 40s who have private insurance. We also assessed regional variation in these costs.

Supplemental content

Methods | We conducted a retrospective study of women aged 40 through 49 years who had private insurance using data from the 1Blue Cross Blue Shield Axis, a large commercial claims database accessed via a secure portal. We selected women between ages 40 and 49 years who were eligible to receive a screening mammography in 2017 and identified screening mammography in 2017 using a validated algorithm and relevant *Current Procedural Terminology* codes.[4] For each beneficiary screened, we identified subsequent evaluation tests in the 4 months after the initial screening mammography and calculated the total annual cost of screening based on use and unit costs of initial screening (2-dimensional mammography with or without digital breast tomosynthesis [DBT]), supplementary screening (screening ultrasonography), recall (diagnostic 2-dimensional mammography with or without DBT and ultrasonography), and other diagnostic tests (magnetic resonance imaging and biopsy). We then estimated the mean cost per beneficiary screened.

To estimate national screening costs, using a previously applied approach,[5] we multiplied the total national number of women with private insurance who were aged 40 through 49 years and eligible for breast cancer screening by the proportion of women screened and the mean per-beneficiary-screened cost of screening derived from our study. To examine regional variation, we estimated the mean total per-beneficiary-screened cost for each hospital referral region (HRR), and evaluated variation in these estimates across HRRs (eAppendix in the Supplement). The Human Investigation Committee of Yale School of Medicine approved this study as exempt (in a category for research with deidentified secondary data); thus, informed consent was not needed. Analyses were performed using SQL Server Management Studio version 17.0 (Microsoft), STATA/MP version 14.1 (StataCorp), and R version 3.5.3 (R Foundation for Statistical Computing).

Results | Our study cohort included 2 257 393 women aged 40 to 49 years. Of these women, 930 526 (41.2%) were screened with mammography in 2017, 543 380 (24.1%) with 2-dimensional mammography, and 387 146 (17.2%) with DBT (**Table**). Among the 930 526 women who had a screening mammography during the study period (either with or without DBT), 137 764 (14.8%) were recalled for diagnostic evaluation and 20 229 (2.2%) were referred for other diagnostic tests (Table).