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Nonresearch Industry Payments to Radiologists: Characteristics and Associations With Regional Medical Imaging Utilization

Nima Kokabi, MD[a], Jacqueline C. Junn, MD[b], Minzhi Xing, MD[c], Jennifer Hemingway, MS[d], Danny R. Hughes, PhD[d, e], Richard Duszak Jr, MD[b]

Abstract

Purpose: To evaluate characteristics of nonresearch industry payments to radiologists and associations with regional diagnostic imaging utilization.

Methods: Using 2014 CMS Open Payment data, all disclosed nonresearch-related industry payments to radiologists were identified. Health Resources and Services Administration Area Health Resources Files were used to identify actual and population-weighted numbers of radiologists by state. Utilizing the 5% random beneficiary sample CMS Research Identifiable Files from 2014, average Medicare imaging spending per beneficiary in each state was calculated. Average frequency and dollar amounts of nonresearch nonroyalty payments to radiologists were calculated at the state level. Using the Pearson correlation coefficient, the relationship between frequency and amounts of nonresearch payments to radiologists versus per-beneficiary Medicare imaging spending was evaluated at the state level.

Results: Overall, 2,008 radiologists (1,670 diagnostic, 338 interventional) received nonresearch nonroyalty payments from industry, representing 5.2% of all 38,857 radiologists nationwide. A total of 4,975 individual transfers translated to 2.5 ± 1.3 discrete payments per receiving radiologist with a mean of $\$432 \pm \$1,976$ (median $26; range $1-$34,050). Food and beverage expenses constituted the vast majority of disclosed transfers (4,111; 83%), followed by travel and lodging (444; 9%), consulting fees (279; 6%), and educational expenses (51; 1%). Considerable geographic variation in payments was observed, ranging from 0% of radiologists in Vermont to 12.9% in the District of Columbia. No correlation was identified between average per-beneficiary Medicare imaging spending and the proportion of nonresearch-funded radiologists in each state ($r = 0.06$). Similarly, no correlation was identified between average per-beneficiary Medicare imaging spending and the average nonresearch transfer amount to radiologists in each state ($r = -0.08$).

Conclusions: In 2014, only a small minority of United States radiologists received nonresearch payments from industry. At the state level, medical imaging utilization does not seem to be influenced by such financial relationships.

Key Words: Open payment database, Sunshine Act, Medicare imaging expenditure

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[a]Interventional Radiology, Department of Radiology and Biomedical Imaging, Yale School of Medicine, New Haven, Connecticut.

[b]Department of Radiology and Imaging Sciences, Emory University School of Medicine, Atlanta, Georgia.

[c]Johns Hopkins School of Public Health, Baltimore, Maryland.

[d]Harvey L. Neiman Health Policy Institute, Reston, Virginia.

[e]Department of Health Administration and Policy, George Mason University, Fairfax, Virginia.

Corresponding author and reprints: Nima Kokabi, MD, Division of Interventional Radiology, Department of Radiology and Biomedical Imaging, Yale School of Medicine, P.O. Box 208042, 333 Cedar Street, New Haven, CT 06510; e-mail: nima.kokabi@yale.edu.

INTRODUCTION

Financial relationships between physicians and industry continue to engender both scrutiny and debate. Although physician and industry partnerships may foster and accelerate innovation, such relationships can also drive financially incentivized service utilization [1], which may serve as an impetus for increasing unnecessary health care costs. In previous studies, industry payments to physicians have been associated with higher rates of prescribing brand name drugs [2] and overall higher pharmaceutical spending [3]. Nationally, considerable regional variation exists in the utilization of and spending on not just pharmaceuticals, but nearly all

health care services across the United States [4,5]. Such variation has been attributed, at least in part, to physician preferences and behavior [6,7]. Because industry payments may influence both preferences and behavior, it is possible that such payments could explain some of this observed variation.

To increase the transparency of such relationships, the Physician Payments Sunshine Act was passed by Congress as a component of the Affordable Care Act [8]. This law requires drug manufacturers and medical suppliers to release information about any payments made to health care providers in excess of $10, as well as any arrangements in which providers acquire company ownership [9]. CMS released its first 5 months of data (August 2013 through December 2013) in September 2014, and just recently released its first full year (2014) of data through its Open Payments program.

Using initial 2013 part-year data, Harvey et al [10] described nonresearch-related (NRR) financial relationships between radiologists and industry. During that 5-month study period, they found that only 7.4% of radiologists received nonresearch industry funding, and fewer than 4% of radiologists received more than $10 per month. It was postulated that such relatively small figures reflects little substantive or deleterious effects of these relationships on radiologists' decision making or the utilization of medical imaging. However, such associations were not specifically examined.

Given the relative infrequency of such payments and the small dollar amounts, as well as the fact that radiologists in many circumstances are themselves prohibited by Medicare from ordering medical imaging [11], we hypothesized that the impact of such payments on regional variation in imaging spending is negligible, if present at all. Using 2014 CMS Open Payments data and Research Identifiable Files claims data, we sought to investigate the association between nonresearch payments to radiologists and the regional utilization of medical imaging in the Medicare population.

METHODS

Data Sources and Selection

The first complete year of Open Payments data (2014) was obtained from CMS. This first public-use file dataset released on June 30, 2015 contained all nonresearch-related industry payments to physicians. Such payments included consultation and speaker fees, honoraria, travel reimbursement, payments for food and beverages, and gifts. The Open Payments dataset has both the dollar amount and nature of each payment made to each physician, each physician's information (name, specialty, subspecialty, state of licensure), and each company's identity. Using this dataset, all disclosed nonresearch industry payments made to radiologists were identified and the patterns and nature of those payments were evaluated.

To identify actual and population-weighted numbers of radiologists by state, the most recent (2013) public-use Department of Health and Human Services Health Resources and Services Administration Area Health Resources Files was obtained [12].

Finally, under a data-usage agreement with CMS and under the exemption from the Institutional Review Board of the ACR, the most updated Part B Research Identifiable Files (2014) from CMS were acquired. These data include all claims for a 5% random sample of all Medicare fee-for-service beneficiaries [13].

Data and Statistical Analysis

Based on our preliminary analysis indicating that royalty payments were extremely infrequent (n = 4) and overall far greater (mean $62,351.49) than all other payments, and often related to prior research, these rare outliers were excluded from our analysis. Using the Open Payments dataset, the frequency, median, and average dollar amounts of all other nonresearch-related payments to radiologists were calculated both nationally and for each state. By using the Health Resources and Services Administration Area Health Resources Files, payment values were analyzed for the radiologist workforce at the state level. The Medicare 5% Research Identifiable Files were used to calculate average Part B Medicare imaging spending per beneficiary for each state.

Using the Pearson correlation coefficient, we evaluated the relationship between nonresearch-related payments to radiologists and, at the state level, the frequency of radiologists supported by industry versus average per-beneficiary Medicare imaging spending. Additionally, we calculated standard descriptive statistics, including the median and mean with standard deviation (SD) and proportion with 95% confidence interval (CI). Significance was set at $P < .05$ for all statistical analyses. All database programming, statistical analysis, and data management were performed using SAS (version 10, SAS Software, Cary, NC).

RESULTS

In 2014, 2,008 radiologists (1,670 diagnostic, 338 interventional) received nonresearch-related payments