



Emerging Evidence

Industry Payments During the COVID-19 Pandemic to Cardiologists in the United States

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ABSTRACT

In the US, research has established that a funding relationship exists between pharmaceutical industries and physicians, particularly cardiologists. This study aimed to fill a research gap via an in-depth data analysis of the impact that the coronavirus 2019 restrictions had on this dynamic. The payments per cardiologist declined by 55.7% (95% confidence interval: 52.0%–59.0%, $P < 0.001$) in monetary amounts, and by 66.6% (95% confidence interval: 66.1%–67.1%, $P < 0.001$) in the number of payments right after the COVID-19 pandemic onset, respectively. Cardiologists must consider the ethical implications of the potential for their clinical practice to be influenced by industry payments.

RÉSUMÉ

Aux États-Unis, la recherche a établi l'existence d'une relation de financement entre l'industrie pharmaceutique et les médecins, particulièrement les cardiologues. Cette étude visait à combler une lacune dans la recherche grâce à une analyse approfondie des données concernant les répercussions des restrictions relatives à la COVID-19 sur cette dynamique. Les rétributions versées par cardiologue ont baissé de 55,7 % (intervalle de confiance [IC] à 95 % : 52,0 % à 59,0 %, $p < 0,001$) en argent et de 66,6 % (IC à 95 % : 66,1 % à 67,1 %, $p < 0,001$) en nombre de versements, juste après le début de la pandémie de COVID-19. Les cardiologues doivent considérer les implications éthiques liées à l'influence potentielle de ces versements sur leur pratique.

In the US, research has established that a financial relationship exists between pharmaceutical industries and physicians—particularly cardiologists¹—and this relationship is linked to their prescribing patterns. However, measures to contain the coronavirus disease 2019 (COVID-19) pandemic significantly restricted these industries from convening conferences and holding industry promotions. How this financial relationship was impacted by the restrictions has not been analyzed in depth. This study aimed to fill this research gap by evaluating the trend of financial relationships between pharmaceutical firms and cardiologists via a data-based appraisal.

Methods

This cross-sectional study compared the general payments data (from August 2013 to December 2021) among cardiologists in the US. The payment data were obtained from the Open Payments Database, involving the cardiologists registered in the National Plan and Provider Enumeration System database according to specialties, namely the following: adult congenital heart disease; advanced heart failure and transplant cardiology; clinical cardiac electrophysiology; cardiovascular disease; hypertension; and interventional cardiology. Cardiologists who were newly activated or deactivated after August 1, 2013 were excluded. Descriptive analyses were conducted for payments data in each year. To evaluate the payment trend before and during COVID-19, interrupted time-series analyses of panel-data of monthly payments were performed using population-averaged generalized estimating equation (GEE) models.² We considered the period before and after March 2020 to be the pre-COVID-19 period (until February 2020) and the COVID-19 period (March 2020 and thereafter), respectively. For the sensitivity analysis, the payment trends between 2014 and 2021 also were evaluated yearly. The payments in 2013 were partial disclosures from August to December, and they were excluded from the yearly sensitivity

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Ethics Statement: The Ethics Committee of the Medical Governance Research Institute approved this study.

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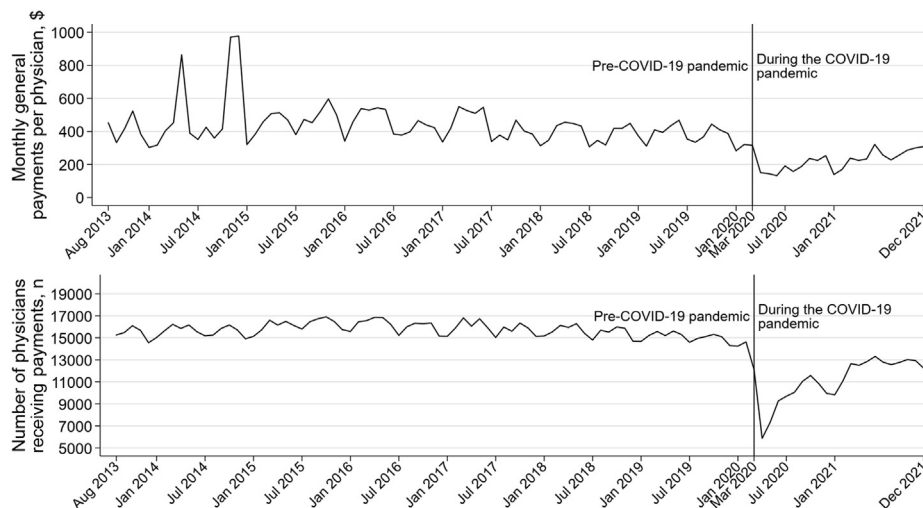


Figure 1. General payments per physician and number of physicians receiving payments before and during the COVID-19 pandemic, for cardiologists in the US between August 2013 and December 2021. Aug, August; Dec, December; Jan, January; Jul, July; Mar, March.

analysis. The Ethics Committee of the Medical Governance Research Institute approved this study.

Results

Of a total of 32,291 active cardiologists, 24,762 (76.7%) received one or more forms of nonresearch payment from the healthcare industries between 2013 and 2021. The payments per cardiologist declined by 55.7% (95% confidence interval [CI]: 52.0%-59.0%, $P < 0.001$) in monetary amounts, and by 66.6% (95% CI: 66.1%-67.1%, $P < 0.001$) in the number of payments due to COVID-19, respectively (Fig. 1). The number of physicians receiving payments also decreased by 42.3% (95% CI: 41.8%-42.9%, $P < 0.001$) right after the COVID-19 onset. However, the per-physician payments, the number of payments, and the number of physicians receiving payments all recovered monthly during the pandemic, with the relative monthly change being 2.8% (95% CI: 2.3%-3.2%, $P < 0.001$), 4.7% (95% CI: 4.6%-4.8%, $P < 0.001$), and 2.2% (95% CI: 2.2%-2.3%, $P < 0.001$), respectively.

Similarly, the sensitivity analysis of yearly payments indicated that the annual payments per cardiologist decreased by 50.2% (95% CI: 45.3%-54.8%, $P < 0.001$) in 2020, compared to those between 2014 and 2019. Median per-physician payments decreased from USD\$725 (interquartile range [IQR]: \$193.24-\$2368.63) in 2019 to \$356.37 (IQR: \$108.46-\$1237.27) in 2020. The annual number of cardiologists receiving payments decreased by 16.6% (95% CI: 15.7%-17.5%, $P < 0.001$), from 23,822 in 2019 to 20,653 in 2020. From 2014 to 2019, the number of cardiologists receiving payments declined slightly, from 25,106 in 2015 to 23,822 in 2019, with a significant annual change rate of -0.4% (95% CI: -0.5% to -0.3%, $P < 0.001$). Moreover, the per-physician payments decreased annually by 5.5% (95% CI: 1.4%-9.4%, $P = 0.009$) from \$846.91 (IQR: \$224.77-\$2,730.83) for median general payments in 2015 to \$725 (IQR: \$193.24-\$2,368.63) in 2019. Median per-physician payments increased by 20.5% (95% CI: 12.2%-29.8%, $P < 0.001$; median: \$487.99) and 2.5% (95% CI: 1.8%-3.1%, $P < 0.001$; 21,084

cardiologists) in 2021, compared to those in 2020. Also, the number of cardiologists receiving payments increased by 2.5% (95% CI: 1.8%-3.1%, $P < 0.001$; 21,084 cardiologists) in 2021, compared with the number in 2020.

Per-cardiologist payments and the number of cardiologists accepting payments sharply decreased during the COVID-19 pandemic. However, an increasing trend occurred in payments per cardiologist and number of cardiologists accepting payments after the sharp decrease at the onset of COVID-19, which may have reflected the shift of promotional activities from offline to online.

Discussion

Our study found that annual payments per physician significantly decreased among cardiologists between 2014 and 2019. This change was markedly different from previous findings, namely those in the oncology field, which saw a 4.9% annual decrease in the number of oncologists receiving payments, while per-physician payments increased by 4.9% yearly.³ This decrease in payments and number of cardiologists receiving payments might be due to physician hesitancy to accept direct marketing and to an increase in the healthcare industry's investment in research-linked payments.^{4,5} The association between industry payments and physicians' prescribing patterns, including those of cardiologists,⁶ is well established in the US.⁷ Considering how common industry payments are, all cardiologists must consider the ethical implications of the potential for their clinical practice to be influenced by such payments. Future study must assess whether COVID-19 also was negatively associated with a decrease in the influence of the medical industry on physician clinical practice.

This study has several limitations. It included only general payment trends that might not accurately evaluate the whole payment picture. Although physicians can review and dispute the inaccuracies in payment data in the Open Payments Database, the dispute process is onerous and lengthy. Additionally, whether the healthcare industry has accurately

disclosed the payment data is debatable, and inaccuracies in the Open Payments Database are possible.

Conclusion

In conclusion, our study showed that general payments to cardiologists from the healthcare industry decreased by more than half right after the onset of COVID-19 in the US. Further study is necessary to assess the association between industry payments to cardiologists and cardiologists' clinical practice during COVID-19.

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