Original Article

Undisclosed payments by pharmaceutical manufacturers to authors of inflammatory bowel disease guidelines in the United States

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Abstract:

Background: Payments from pharmaceutical drug manufacturers to authors of clinical practice guidelines (CPGs) may have an impact on their recommendations. In this study, we aimed to evaluate the accuracy of financial conflict of interest (FCOI) declarations among authors of Inflammatory Bowel Disease (IBD) guidelines.

Methods: We collected data on industry payments to authors of IBD guidelines published by the American Gastroenterology Association (AGA), American College of Gastroenterology (ACG) and American Society of Gastrointestinal Endoscopy (ASGE). We reported the accuracy of the authors' declarations by comparing their statements in the FCOI section of the guidelines with the data reported on the Centers for Medicare and Medicaid Services website (CMS-OP). We also investigated the adherence of IBD guidelines to the National Academy of Medicine (NAM) criteria for trustworthy guidelines.

Results: A total of eight clinical practice guidelines and 35 individual authors were included. Four authors had no profile identified at CMS-OP. The total payment to all included authors was $10,575,843.06, with a mean payment of $314,242.38 per author. A total of 28/35 authors (80%) received payment from pharmaceutical companies, 23/35 (65.7%) received $10,000 or more, 15/35 (42.8%) received $100,000 or more and 3/35 (8.57%) received $1,000,000 or more. Total discrepancies identified while comparing the authors' declaration of their FCOI and CMS-OP were 28: ACG had 12/14 (85.7%), AGA had 7/12 (53.8%) and ASGE had 9/10 (90%) discrepancies. None of the guidelines met all NAM criteria and 4/8 (50%) guidelines met none.

Conclusions: Discrepancies exist between authors' declarations in the FOCI section and data on CMS-OP. Poor compliance with the NAM criteria was prevalent among authors of IBD guidelines. More transparency in reporting and monitoring is needed.

Keywords: Conflict of interest, financial declaration, guidelines, inflammatory bowel disease

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INTRODUCTION

Clinical practice guidelines (CPGs) are developed to provide physicians with clinical pathways to optimize patients' care. The authors of CPGs are expected to consider the available scientific evidence in making their recommendations and not be influenced by their relationship with the industry. Recently, concerns were raised about the potential conflict between physicians' decisions while developing CPGs recommendations and their financial dealings with drug manufacturers.[1] Such relationships commonly exist among authors of CPGs. In a survey of more than 3,000 physicians, 94% reported that they had a relationship with pharmaceutical companies, 35% of them reported receiving fees for educational purposes, and 28% reported that they received a speaker's or consultancy fees.[2]

In the field of inflammatory bowel disease (IBD), a previous study suggested that there is an influence of pharmaceutical payment on Medicare spending on biological treatment. Physicians who received payment from companies that make biologics were more likely to prescribe these agents in their practice. Furthermore, there is a linear association between the amount of consultancy and speaking fees and the spending on biological treatment.[3]

To address these concerns, the Open Payments Provision "Sunshine Act" of 2011 requires physicians to declare all industry payments of more than $10. These payments need to be publicly available at the Centers for Medicare and Medicaid Services (CMS-OP).[4] Likewise, transparency and the accuracy of financial conflict of interest declaration were among the eight standard recommendations endorsed by the National Academy of Medicine (NAM), aiming to develop trustworthy CPGs.[1]

In this study, we aimed to evaluate the accuracy of financial conflict of interest (FCOI) declarations among authors of CPGs issued by three major American societies that publish guidelines in the field of IBD. We also evaluated the adherence of the published guidelines to the NAM criteria.

MATERIALS AND METHODS

We collected data on the authors of IBD guidelines published by the three major American societies: The American College of Gastroenterology (ACG), the American Gastroenterological Association (AGA), and the American Society for Gastrointestinal Endoscopy (ASGE). Our search was limited to the guidelines published between 2013 and 2019. This was the time frame for which data were publicly available on the CMS-OP website. We limited our search to the American guidelines since only U.S.-based physicians are obliged to declare their financial dealings with pharmaceutical companies based on the Open Payments Provision "Sunshine Act" of 2011. For each set of guidelines, we collected data from the year of publication and the preceding year, as the estimated guidelines development time is 1 year. The authors are generally advised to avoid receiving money from pharmaceutical companies in the year following the guidelines development to avoid any potential conflict of interest.

Identification of authors

For each author, we collected the author's profile including name, gender, primary institutional affiliation, and profession. We obtained the authors' self-reporting declaration from the FCOI section for each set of guidelines, and collected them in an Excel sheet. We looked at the role of each author and whether they were a committee chair. Then, we searched the CMS-OP website for each author by "name" criteria, using the last name. If duplicate results were encountered, we used the middle name and initials. We confirmed the identity using the author profile. If we did not find a match for the search, we considered the author to have no profile on the website.

Identification of industry payments

For each author, we collected all different types of industry-related payments reported on the CMS-OP website. We calculated the sum, mean, and median for total payments as well as for each payment category per author as well as per each society.

CMS-OP categorized payments as the following:

1. General payments: Including consulting fees, speaking fees, food and beverage, travel and lodging, education, honoraria and gifts

2. Research payments: Funding for a research study, including basic and applied research, and product development

3. Associated-research payments: Money provided for a study where the physician is considered as a principal investigator

4. Ownership payments: This includes both, the total dollar amount invested and the value of the investment interest

The next step, to assess the accuracy of authors' financial declarations, was to compare the published statement with FOCI guidelines and what is reported

on the CMS-OP website. We reported all discrepancies, and we subcategorized them to partial discrepancy if the author declared some of the companies, and to inaccurate reporting if the author did not declare any; total discrepancies refer to the sum of both partial and inaccurate discrepancies.

The National Academy of Medicine criteria

We examined the authors' compliance with NAM recommendations for CPGs development. All the three criteria were to be met:

1. CPG committee chairs must not have any FCOI.
2. Less than 50% of the total authors are allowed to receive FCOI.
3. All authors must declare all the potential FCOI in the original paper or as supplementary documents pertaining to the published guidelines.[5]

If the committee chair was not mentioned, the CPG document did not state any FOCI; or if the committee chair had no profile with CMS-OP, we considered that Criterion 1 was met.

The King Fahad Specialist Hospital–Dammam (KFSH-D) Institutional Review Board exempted the study from further review as it relies on publicly available data.

Statistical analysis

Descriptive statistics were used. The mean and/or the median and range were used for continuous variables as appropriate. The percentage and count were used for categorical variables. As some authors participated in more than one CPG, each author's appearance was analyzed separately.

RESULTS

Payments received by the authors

A total of eight CPGs and 35 authors were included in our analysis. Among the included authors, four had no profile identified in the CMC-OP; a total of 28/35 (80%) authors received some amount of money from pharmaceutical companies, 23/35 authors (65.7%) received $10,000 or more, 15/35 authors (42.86%) received $100,000 or more, and 3/35 (8.57%) received more than $1,000,000. The mean payments received by the authors was $314,242, and the median was $93,480 [Figure 1].

The total payment to all included authors between 2013 and 2019 was $10,575,843. The total payment received by the ACG, AGA, and ASGE authors was $7,530,487, $1,720,236, and $1,312,602, respectively [Table 1].

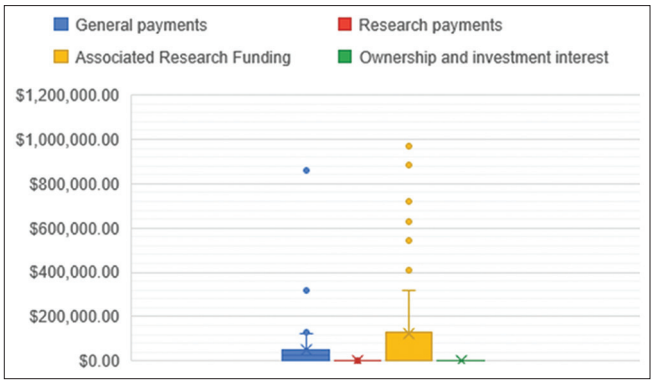

Figure 1: Box and whisker plots showing interquartile range, median, and outliers for different types of payment from industrial companies to clinical practice guidelines authors in the field of inflammatory bowel disease

CMS-OP payment categories

An examination of the different payment types received by the authors indicated that 28 authors received general payments totaling $3,136,662 with a mean of $51,420 and median of $25,345; 17 authors received research payments totaling of $44,467, with a mean of $728.98 and a median of 0; 17 authors received associated-research payments totaling $7,379,724, with a mean of $120,979 and median of $279; only one author received an ownership payment of $14,988 [Table 1].

Accuracy of authors' declarations

Examining the discrepancies identified while comparing the authors' declaration of their FCOI in CPGs and with CMS-OP, we defined partial discrepancy if the author declared some but not all of the companies from which they received money, and inaccurate reporting if the author did not declare any; total discrepancies refer to the sum of both partial and inaccurate discrepancies.

A total of 28 discrepancies were identified among the three societies.

Table 1: The sum, mean, and median of different payment types to the authors of IBD guidelines in the three American societies

	Guidelines Payment (in $)		
	ACG	AGA	ASGE
General Payment	1,601,478	266,117	1,269,066
Mean	57,195	17,741	70,503
Median	43,421	11,757	8,920
Research Payment	21,101	17,301	8,535
Mean	2,110	2,471	1,707
Median	1,925	2,324	649
Research-Related Payment	5,907,906	143,6817	35,000
Mean	281,328	159,646	17,500
Median	223,855	101,745	17,500
Total Payment	7,530,487	1,720,236	1,312,602

ACG=The American College of Gastroenterology, AGA=The American Gastroenterological Association; ASGE=The American Society for Gastrointestinal Endoscopy; IBD=inflammatory bowel disease

For the ACG authors, 2/14 (14.3%) had accurate declarations, whereas 12/14 (85.7%) partially reported their FCOI, and none had inaccurate reporting. The total discrepancies were 12/14 (85.7%).

For the AGA authors, 5/12 (41.7%) accurately reported FCOI, none had partial reporting, whereas 7/12 (58.3%) had inaccurate reporting. The total discrepancies were 7/12 (58.3%).

For the ASGE authors, 1/10 (10%) accurately reported declarations, 5/10 (50%) had partial discrepancies, and 4/10 (40%) had inaccurate reporting. The total discrepancies were 9/10 (90%) [Table 2].

CPGs' compliance to NAM

None of the guidelines met all the NAM criteria. The committee chairs were not stated in four (50%) guidelines. For the remaining four guidelines, two (50%) of the committee chairs received payments from the industry. Only one set of guidelines complied with the criterion that requires that less than 50% of the authors should receive FOCI. None of the guidelines met the criterion that mandates all authors to declare all potential FOCI [Table 3].

Regarding the six authors who have been identified as committee chairs/co-chairs, four received payments from the industry, the total of which was $1,839,905, with a mean of $735,962 and a median of $184,947.

DISCUSSION

Our study aimed to investigate the accuracy of financial disclosures of authors who took part in the development of IBD guidelines in the United States. We found that the authors received considerable payments from the drug manufacturers. There were significant discrepancies between the authors' self-reporting declarations in the guidelines and the data identified on the CMS-OP website. Furthermore, the adherence of IBD guidelines to the NAM criteria for trustworthy guidelines was poor.

To our knowledge, this is the first study to examine the financial declarations among the authors of IBD guidelines. Previous studies were conducted in other fields of gastroenterology and medicine. In a study that aimed to investigate authors' FCOI in the field of advanced gastrointestinal endoscopy, a total of 37 CPGs and 569 unique authors were included. As with our findings, there were significant discrepancies between authors' self-disclosure and that identified on the CMS-OP website. Likewise, none of these guidelines met all the NAM standards.[6]

In our study, the majority of authors received a considerable amount of money. The total payment to all authors between 2013 and 2019 was $10,575,843. About half of the authors received $100,000 or more. In a study looking at the accuracy of authors' declarations in dermatology guidelines between 2013 and 2015, 49 included authors receiving a total of $7,701,681 from drug companies, and there were major discrepancies in their FCOI reporting.[7] It is estimated that $2.18 billion was paid by the drug industry to the U.S. physicians in 2018 alone.[8]

Although receiving financial compensation may cast a shadow on the impartiality of the authors of guidelines, it is conceivable that these authors underestimated the influence such payments could have on their decisions. In a survey of obstetricians and gynecologists in the United States, the majority of respondents thought that it was proper to receive incentive items from representatives of pharmaceutical companies. Interestingly, respondents thought that the average clinician was more likely to be influenced by such incentives than they themselves would be.[9]

In reality, preventing the influence of pharmaceutical payments from affecting the physician's decision appears to be difficult, and such influence might be present even with minor rewards and could be outside the physician's own conscious awareness. Accepting even an industry-sponsored meal could increase the prescription rate of the promoted brand name of a particular agent. This was demonstrated in a large cross-sectional study looking at 279,000 physicians who received a single

Table 2: Number of authors per guidelines with discrepant disclosure statement compared with payments registered in CMS-OP

Guidelines	Authors accurately reporting *n* (%)	Authors with partly discrepant disclosure statements *n* (%)	Authors Inaccurately reporting no FCOIs *n* (%)	Total discrepancies *n* (%)	Years within Open payment searched, range
ACG (*n*=14)	2 (14.3%)	12 (85.7%)	–	12 (85.7%)	2016-2019
AGA (*n*=12)	5 (41.7%)	–	7 (58.3%)	7 (58.3%)	2016-2019
ASGE (*n*=10)	1 (10%)	5 (50%)	4 (40%)	9 (90%)	2014-2015
Total	8	17	11	28	

Partial discrepancy=If the author declared some but not all of the companies from which he received money; inaccurate reporting, if the author did not declare any. Total discrepancy=The sum of both partial and inaccurate discrepancies. ACG=The American College of Gastroenterology; AGA=The American Gastroenterological Association; ASGE=The American Society for Gastrointestinal Endoscopy; FCOI=financial conflict of interest; CMS-OP=Centers for Medicare and& Medicaid Services

Table 3: CPGs' compliance to NAM criteria

Society	CPG	No. of chairs with payments/total no. of chairs	No. of authors with payments/total no. of authors	No. of NAM standards met/total no. of NAM standards
ACG	Management of Crohn's Disease in Adult[17]	1/1	6/6	0/3
ACG	Preventive Care in Inflammatory Bowel Disease[18]	2/2	4/4	0/3
ACG	Ulcerative Colitis in Adult[19]	1/1	3/4	0/3
AGA	Management of Crohn's Disease After Surgical Resection[20]	N/A	3/6	1/3
AGA	Therapeutic Drug Monitoring in Inflammatory Bowel Disease[21]	N/A	2/5	2/3
AGA	Management of Mild-to-Moderate Ulcerative Colitis[22]	N/A	4/6	1/3
ASGE	SCENIC international consensus statement on surveillance and management of dysplasia in inflammatory bowel disease[23]	1/2	5/6	0/3
ASGE	The role of endoscopy in inflammatory bowel disease[24]	N/A	4/4	2/3

CPGs=Clinical practice guidelines; NAM=The National Academy of Medicine; ACG=The American College of Gastroenterology; AGA=The American Gastroenterological Association; ASGE=The American Society for Gastrointestinal Endoscopy; SCENIC=Surveillance for Colorectal Endoscopic Neoplasia Detection and Management in Inflammatory Bowel Disease Patients International Consensus; NAM=National Academy of Medicine

promotional meal with a mean value of less than $20.[10] In a systematic review, aimed at evaluating the impact of pharmaceutical companies' payments on physicians' decisions to prescribe medications, investigators included 36 studies from various medical fields published between 1992 and 2020. A consistently positive relationship was found between the payment and the physicians' decisions.[11] Another systematic review of 21 scientific papers including guidelines, narrative reviews, and advisory committee reports reached the same conclusion.[12]

One can speculate that the effect of financial rewards to experts will go beyond the direct beneficiary, to a wider audience of clinicians who might attend this person's presentation or read their scientific writings.[13] Although the peer-review process of CPGs may minimize the influence of financial rewards, it does not offer a watertight mechanism against subconscious bias. It has been suggested that implicit bias based on an author's gender, geographical location, or fluency in English may subconsciously affect the decision delivered on their scientific work.[14] On the other hand, public sources of funding have a positive effect on the accuracy of reporting compared with guidelines that had been funded by nongovernmental entities.[15]

The findings of the present study of the authors of IBD guidelines replicate the findings of similar studies in other medical fields. It appears that current strategies to limit the potential influence of industry may not be effective. Under-reporting is also common and not unique to IBD guidelines. In a North American cross-sectional study, under-reporting of financial declarations was frequently encountered among 14 diabetes and dyslipidemia guidelines.[15] These studies demonstrate that more monitoring is needed.

Several strategies have been introduced to monitor the financial relationship between pharmaceutical industries and physicians. The Open Payments Provision "Sunshine Act" is one such strategy. Since 2013, all physicians who practice in the United States are mandated to declare any industry-related payments of more than $10 on an open-access website.[4] The NAM criteria is another strategy that was established in 2010. It consists of eight recommendations that the guidelines must adhere to: "establishing transparency, management of conflict of interest, guideline development group composition, clinical practice guideline–systematic review intersection, establishing evidence foundations for and rating strength of recommendations, articulation of recommendations, external review and updating."[5] In our study, the adherence to NAM criteria was poor, and none of the eight guidelines met all criteria. Another proposed method to mitigate the influence of industry payments on authors is for journals to apply stringent criteria for guidelines developers, similar to what is required for publishing clinical trials. Such criteria should place emphasis on the transparency of FOCI, the need for representation from patient groups, and the involvement of an information scientist.[16]

Our study has several limitations. First, it relied solely on the CMS-OP, which may contain inaccurate or missing data. The CMS-OP allows physicians to declare any payments within a 45-day time frame, which may lead to potential missed payments during the search. We included payments received in the year of publication of the guidelines, and it is difficult to ascertain if payments were received by the author after the development of the guidelines. Second, our study findings cannot be generalized to all IBD guidelines since we were limited to societies and physicians in the United States. Third, although we identified substantial payment discrepancies, the cause of the discrepancies was not evaluated in the present study. Furthermore, it is not clear how FCOI affected the development of recommendations. Nonetheless, our study sheds light on the degree of transparency in authors' self-reporting of potential financial conflicts in IBD guidelines. Recognizing

the growing number of competing IBD drugs, the long-term requirement for therapy, and the high cost of these agents, there is a pressing need for more transparency in the relationship between industry and the authors of CPGs.

In conclusion, the lack of accuracy of FCOI reporting is highly prevalent among authors of IBD guidelines in the United States. Therefore, additional strategies are required to scrutinize authors' declarations.

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Conflicts of interest

Dr. AlAmeel is a speaker and an advisor for AbbVie, Janssen Pharmaceuticals, Takeda Pharmaceutical Company, Pfizer, Hikma, and Amgen. Other authors report no conflict of interest.

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