Meaningful and Accurate Disclosure of Conflict of Interest at the ASTRO National Meeting: A Need for Reassessment of Current Policies


QUESTION ASKED: Are presenters at the American Society for Radiation Oncology (ASTRO) national meetings presenting their conflicts of interest (COI) disclosures in a comprehensible and accurate manner?

SUMMARY ANSWER: Of 401 presentations delivered by 364 presenters at three ASTRO meetings from 2014 to 2016, 34% of presenters had COI slides displayed too fast (> 4 words per second [wps]) for the average audience to comprehend. When compared with the public Centers for Medicare and Medicaid Services Open Payments (OP) database, 16.3% of US physicians incorrectly under-reported industry funding.

WHAT WE DID: We examined videos of presentations and slides from the ASTRO annual meetings to evaluate whether a speaker presented a COI slide, the duration that the slide was displayed, and the number of words and disclosures on the slide to assess how many COI slides were presented at speeds of > 4 wps. Disclosures were cross-referenced with the OP database for discrepancies.

WHAT WE FOUND: Approximately a third of presenters displayed their COI slides in a manner that is not comprehensible by the average audience. A surprising number of US physician speakers (16.3%) incorrectly reported COIs with discrepancies including not having a COI slide (32.6%), failing to disclose any COI (39.5%), or only partially disclosing COIs (27.9%). The mean monetary amount in question was $30,300 (range, $96 to $488,931). On multivariate regression, the wps was correlated to having a discrepancy (odd ratio, 1.08; 95% CI, 1.01 to 1.80). There were no significant changes over time.

BIAS, CONFOUNDING FACTORS, AND REAL-LIFE IMPLICATIONS: Session timing such as start delays could bias physicians to rush through their slides, presenting their COI slide at a faster rate than they would otherwise. There are also inherent limitations in the OP database including lack of reporting on non-US physicians and foreign companies, and previous studies have noted errors and inaccuracies that physicians may not be aware of disputing. This study reveals a need for more accurate and reliable methods of COI disclosure. Professional societies may provide information on the available public databases with explicit instructions for speakers to review the data. Organizers may even prepopulate a list of COIs for speakers to confirm or dispute. National meetings may require a minimum time for COI slide display, define monetary thresholds for significant COIs, and make available printed handouts for the audience in an effort to minimize discrepancies and encourage efficient and complete disclosure.
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Abstract

Purpose
Conflict of interest (COI) disclosure is essential to research integrity. The average reading comprehension in English is 3.8 words per second (wps). This study examines presenters at the American Society for Radiation Oncology (ASTRO) national meeting over a recent 3-year period to determine whether disclosure is presented accurately and in a manner that allows the audience to comprehend the content.

Methods
We examined videos of presentations as well as slides from 2014 to 2016 from the ASTRO virtual meeting, noting whether a COI slide was presented, the duration the slide was visible, and the number of disclosures. Disclosures were cross-referenced for discrepancies with the publicly reported Centers for Medicare and Medicaid Services Open Payments database. Using a cutoff of 4 wps, we noted how many presentations were presented at speeds of $\leq 4$ wps and $> 4$ wps.

Results
The final data set consisted of 401 presentations delivered by 364 presenters. Using a threshold of 4 wps, 34.0% of presenters had COI slides shown too fast for the average audience to comprehend. Moreover, 16.3% of US physicians incorrectly underreported industry funding received. Of these presentations with discrepancies, 32.6% did not have a COI slide, 39.5% failed to disclose any COI, 27.9% partially disclosed COIs, and 11.6% contained multiple discrepancies. The number of wps were correlated with having a discrepancy on multivariable regression ($P = .046$; odds ratio, 1.08; 95% CI, 1.01 to 1.19).

Conclusion
A substantial minority of presentations at ASTRO lack meaningful disclosure, and a surprising number incorrectly reported COIs. Additional guidance may be needed to promote more meaningful and accurate disclosure of COIs at major national meetings in oncology.
INTRODUCTION

Conflicts of interest (COIs) by researchers and clinicians in medicine have been the subject of numerous reports.\(^1\)\(^-\)\(^4\) Although a COI can be any situation or relationship in which a physician may be biased because of personal gain, financial relationships between health care professionals and industry sponsors are particularly scrutinized because of their potentially lucrative nature. These relationships can render research susceptible to errors in methodology.\(^5\) They can also bias outcomes by leading to the withholding of negative results\(^5\) and producing outcomes that favor the sponsor. This can, in turn, adversely affect medical decision making and standards of care.\(^5\) Academic societies and journals have policies that promote full disclosure of any potential COIs,\(^6\) and although large efforts have been made by governmental organizations, universities, and professional societies to better address COIs, it is important to acknowledge that disclosure is not a panacea for COIs in medicine.\(^7\) Generally, COIs have been addressed by requiring stricter disclosures policies; however, policies requiring the removal of the COI and/or selective exclusion of medical professionals from research related to COIs have also been implemented.\(^8\) For example, institutions that received COI disclosures from researchers were annually required to evaluate and report to the National Institutes of Health whether COIs could affect the researcher’s work and determine the extent to which investigators needed to disclose COIs in publications or limit their involvement in projects.\(^9\) ASCO also identifies financial relationships that are problematic and cannot merely be managed by disclosure. Specifically, explicit restrictions are placed on committee members involved in guideline recommendations; these include forbidding the majority of panel members, including the panel chair, from holding relationships with relevant companies, as well as not accepting industry funding toward clinical practice guidelines.\(^6\) Similarly, the Association of American Medical Colleges (AAMC) prohibits financial relationships in research when potential conflicts may pose a significant risk to human participants. Previous studies have examined the accuracy of disclosure of COI statements at medical conferences\(^10\) and whether disclosure protocols establish useful disclosure.\(^11\) The medical field is moving toward preventing biases from financial COIs by educating medical students and encouraging development of guidelines in professional medical associations.\(^12\)\(^-\)\(^13\) In an effort to improve disclosures, the Centers for Medicare and Medicaid Services has instituted an online public database for reporting of payments made to US physicians as part of the Physician Payments Sunshine Act.\(^14\) Readability of COI slides at the ASCO national meeting was examined using 4 words per second (wps) as the threshold for readability (ie, the speed representing the cutoff above which most readers are unlikely to comprehend what they are reading).\(^11\) We sought to examine the nature and accuracy of COI disclosure at the American Society for Radiation Oncology (ASTRO) national meeting over the last 3 years to determine whether disclosures are displayed at a speed adequate for comprehension for most readers and the accuracy of disclosures, as determined by cross-referencing the Centers for Medicare and Medicaid Services Open Payments database.

METHODS

Video presentations from 2014 to 2016 from the ASTRO virtual meeting were examined. The first presentation of each educational session was arbitrarily selected and reviewed; 435 presentations delivered by 389 speakers were reviewed; 34 presentations were unable to be viewed or showed a nonspecific COI slide as part of a group and hence were excluded. The final data set consisted of 401 presentations delivered by 364 presenters. For each presenter, the following were noted: whether a COI slide was presented, the number of disclosures, the duration that the COI slide was visible, and the number of words per COI slide. A speed of 4 wps was used as the threshold for readability, and this methodology is consistent with a prior study reviewing the nature of COI disclosure at ASCO meetings.\(^11\) The year of the presentation and presenter characteristics were also recorded; Table 1 lists the extracted variables. A second analysis examined only US physicians for comparison with Open Payments data, because the Open Payment database is limited to US physicians. For this secondary analysis, the type and amount of payments received the year before the presentation were recorded. This was only completed for payments categorized as consulting fees, faculty speaking compensation, and research payments. For each US physician, the COI slide presented was cross-referenced with data on the Open Payments webpage; a binary variable represented the presence or absence of a discrepancy (ie, not disclosing a payment reported on the Open Payments database). This online database was previously used to cross-reference self-reported COIs by other specialties to look for discrepancies.\(^15\)\(^-\)\(^16\) Binomial and Poisson regression evaluated end points as appropriate for
RESULTS
Over time, there was no significant difference in the number of presenters with a COI slide (66% and 71% in 2014 and 2016, respectively; \( P = .39 \)) or the number of presenters having at least one disclosure (26% and 31% in 2014 and 2016, respectively; \( P = .63 \)). Likewise, there was no significant change in the number of disclosures over time (mean, 1.13 and 1.40 in 2014 and 2016, respectively; \( P = .12 \)). The time taken by speakers to present a COI slide increased from a mean of 5.31 seconds in 2014 to 9.53 seconds in 2016 (OR, 1.40; \( P < .001 \)). The number of words increased from a mean of 14.2 in 2014 to 21.3 in 2016 (OR, 1.205; \( P < .001 \)), as did the wps (mean, 3.54 and 5.31 in 2014 and 2016, respectively; \( P < .001 \); OR, 1.23). A wps waterfall plot for all presenters is shown in Figure 1. Using a threshold of 4 wps, 93 presenters (34.0%) had COI slides shown too fast for the average audience to comprehend.

There were 264 presentations by US physicians; 61 of these physicians (23.0%) were reported as having received at least one payment in the year before the presentation. Over time, no significant change in this number was noted (\( P = .20 \)). Cross-referencing COI slides with Open Payments data for the year before presentation revealed 43 presentations with at least one discrepancy (16.3%); no significant changes were noted over time (\( P = .51 \)). Of these presentations with discrepancies, 32.6% (14) were by presenters who did not have a COI slide, 39.5% (17) consisted of presenters who reported they had no COIs to disclose despite having payments reported on the public database, and 27.9% (12) were made up of presenters who partially disclosed COIs. When speakers failed to disclose relationships, the monetary amount in question ranged from $96 to $488,931 (mean, $30,300), on the basis of the Open Payments data.

The majority of discrepancies were in reporting research funding (26), followed by consulting (13) and speaking (10); five speakers had discrepancies in multiple categories. On univariable analysis, having at least one disclosure (OR, 2.62; 95% CI, 1.02 to 5.24) and male sex (OR, 3.76; 95% CI, 1.45 to 12.8) were associated with having a discrepancy. On multivariable regression, only the number of wps was correlated to having a discrepancy (OR, 1.08; 95% CI, 1.01 to 1.80); Table 2 lists these results.

DISCUSSION
In this study, 16.3% of presentations by US physicians at ASTRO under-reported industry funding received in the form of financial and educational support. The discrepancy rates were lower than reported in previous studies, which may be due to the use of mandatory COI disclosures and a more transparent presentation environment. The increase in time and words presented may reflect a desire to provide more detailed and comprehensive information to attendees. The significant discrepancies in research funding and consulting highlight the need for improving the accuracy and completeness of COI disclosures. Further research is needed to understand the factors that contribute to these discrepancies and to develop strategies to improve disclosure accuracy.

Table 1. Characteristics of Presentations and COI Disclosures at American Society for Radiation Oncology Meetings, 2014 to 2016

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Male</th>
<th>Female</th>
<th>Degrees</th>
<th>COI slide</th>
<th>Yes</th>
<th>No</th>
<th>Sex</th>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>264</td>
<td>127</td>
<td></td>
<td></td>
<td>117</td>
<td>134</td>
<td>150</td>
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<tr>
<td>At least one disclosure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>121</td>
<td>153</td>
<td></td>
<td></td>
<td>127</td>
<td>153</td>
<td>153</td>
</tr>
<tr>
<td>No disclosures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>153</td>
<td>127</td>
<td></td>
<td></td>
<td>127</td>
<td>153</td>
<td>153</td>
</tr>
<tr>
<td>Seconds of duration, mean/median</td>
<td>6.94/4</td>
<td></td>
<td></td>
<td></td>
<td>127</td>
<td>153</td>
<td></td>
<td></td>
<td>127</td>
<td>153</td>
<td>153</td>
</tr>
<tr>
<td>No. of disclosures, mean/median</td>
<td>1.28</td>
<td></td>
<td></td>
<td></td>
<td>18.9/10</td>
<td></td>
<td></td>
<td></td>
<td>18.9/10</td>
<td>18.9/10</td>
<td>18.9/10</td>
</tr>
<tr>
<td>Words per second, mean/median</td>
<td>4.6/2.7</td>
<td></td>
<td></td>
<td></td>
<td>93 (34.0)</td>
<td>181 (66.1)</td>
<td></td>
<td></td>
<td>93 (34.0)</td>
<td>181 (66.1)</td>
<td>181 (66.1)</td>
</tr>
<tr>
<td>US physicians</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>264</td>
<td>66</td>
<td>71</td>
<td></td>
<td>264</td>
<td>66</td>
<td>71</td>
</tr>
<tr>
<td>US physicians Open Payment v COI slide, No. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>43 (16.3)</td>
<td>5 (1.9)</td>
<td>13 (4.9)</td>
<td>10 (3.8)</td>
<td>26 (9.8)</td>
<td>43 (16.3)</td>
<td>5 (1.9)</td>
</tr>
</tbody>
</table>

Abbreviation: COI, conflict of interest.

P values and odds ratios (ORs); for changes over time, the year was treated as an independent variable. All statistical analysis was performed using R, version 3.2.2.
of consulting fees, speaking fees, or research payments. Approximately one third (34%) of COI slides were presented at a pace deemed too fast for audience comprehension. One limitation is that we did not examine factors such as session timing. It is possible that in sessions running late, presenters may have rushed through the COI slide at a faster rate than would otherwise occur; still, for the first speaker in any given session, this risk should have been minimized, and our results should generally reflect the duration of disclosure provision in practice at the meeting overall. There are also limitations to the reporting in the Open Payments database, which relies on companies to accurately record payments with review by physicians themselves.\textsuperscript{14} The reports are also limited to US companies and US nontrainee physicians and do not encompass payments from foreign sponsors to the speakers, payments to international physicians, or nonphysicians employed by physicians. In addition, inconsistencies in the Open Payments database have been reported,\textsuperscript{17} and there are other databases, such as Propublica’s database, that are available for review. Nonetheless, the Open Payments database requires companies to disclose all disbursements to physicians, making it compulsory, using methodical and consistent reporting procedures linking each disbursement to the respective doctor recipient, with payments classified accordingly.\textsuperscript{18} As such, it is currently the best source for this type of analysis.

### Table 2. Univariable and Multivariable Regression of Factors Correlated With Having at Least One Discrepancy

<table>
<thead>
<tr>
<th>Regression End Point</th>
<th>Univariable</th>
<th>Multivariable</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 1 Discrepancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$P$</td>
<td>$P$</td>
<td></td>
</tr>
<tr>
<td>Odds Ratio (95% CI)</td>
<td>Odds Ratio (95% CI)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Univariable</th>
<th>.049</th>
<th>2.62 (1.02 to 5.24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one disclosure*</td>
<td>.84</td>
<td>1.00 (0.95 to 1.02)</td>
</tr>
<tr>
<td>Duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (female reference)*</td>
<td>.01</td>
<td>3.97 (1.52 to 13.6)</td>
</tr>
<tr>
<td>Word count</td>
<td>.97</td>
<td>1.00 (0.98 to 1.02)</td>
</tr>
<tr>
<td>Year</td>
<td>.50</td>
<td>1.15 (0.77 to 1.74)</td>
</tr>
<tr>
<td>Words per second</td>
<td>.08</td>
<td>1.04 (0.99 to 1.08)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multivariable</th>
<th>.07</th>
<th>2.20 (0.95 to 5.32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one disclosure</td>
<td>.78</td>
<td>1.00 (0.96 to 5.32)</td>
</tr>
<tr>
<td>Duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (female reference)</td>
<td>.23</td>
<td>2.02 (0.70 to 7.38)</td>
</tr>
<tr>
<td>Word count</td>
<td>.09</td>
<td>0.97 (0.93 to 1.00)</td>
</tr>
<tr>
<td>Year</td>
<td>.25</td>
<td>1.37 (0.81 to 2.39)</td>
</tr>
<tr>
<td>Words per second*</td>
<td>.046</td>
<td>1.08 (1.01 to 1.19)</td>
</tr>
</tbody>
</table>

*Statistically significant ($P < 0.05$).
Our results were similar to those seen in medical oncology (38% > 4 wps). The novel contribution of this work is the additional observation that a greater number of words presented in a shorter amount of time was correlated with underreporting of COIs. Notably, results may have underestimated discrepancies, as we limited COIs to one of three types (consulting fees, speaking fees, or research payments). There are other categories and forms of COIs, however, we felt that three these were sufficient for the purposes of this analysis. Industry-funded oncological research has increased over time, with a greater proportion coming from North America, and a large proportion of radiation oncologists, including academic chairs, receiving some form of payment from industry. Collaboration between industry and researchers can be beneficial, but guidance may be needed to manage COIs and ensure full and meaningful disclosure. Our report is in agreement with others that show that self-reported financial COI disclosures may not be accurate or reliable because of their own biases regarding the definition and nature of COIs. One potential solution to improve the content of disclosures may be for professional societies to provide authors with a link to the Open Payments database and explicit instructions to every presenter to review the data. Perhaps organizers can preemptively list a COIs extrapolated from the public database and ask each speaker to either confirm or dispute the payment, with justification, before their presentation. Speakers should also be provided with clear guidelines of the minimum time to display their COI slide before their presentation as well as specific definitions of COIs, including monetary thresholds, predetermined time frames, and type of disclosures that are considered significant. To avoid the possibility of comprehension error by speed reading from the audience, professional societies can make available printed handouts of COI disclosures at each presentation or as part of the meeting brochure. Development of guidelines by leadership, with a greater emphasis on efficient and complete disclosure, may help the audience better understand the degree of potential conflicts of interest, elucidate dynamics that may influence research, and ultimately reduce bias in these presentations.

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A.A.A. and S.K.Y. contributed equally to this work.

**Authors’ Disclosures of Potential Conflicts of Interest**
Disclosures provided by the authors are available with this article at jop.ascopubs.org.

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**References**
1. Institute of Medicine (US) Committee on Conflict of Interest in Medical Research Education, and Practice: Conflict of Interest in Medical Research Education, and Practice. Washington, DC, National Academies Press, 2009
18. Fleischman W, Ross JS: Why the Open Payments Program is likely to provide systematic and transparent data on financial relationships with industry. Am J Med 129:e193, 2016

Downloaded from ascopubs.org by Oregon Health & Science University on September 28, 2018 from 137.053.241.006


23. Rothenburg ML, Johnson DH: Conflict of interest, conflicting interests, and effective collaboration between academia and industry on preclinical and clinical cancer research. JAMA Oncol 3:1621-1622, 2017


25. Pizzo PA, Lawley TJ, Rubenstein A: Role of leaders in fostering meaningful collaborations between academic medical centers and industry while also managing individual and institutional conflicts of interest. JAMA 317:1729-1730, 2017


AUTHORS’ DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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