Association of Physician Organization–Affiliated Political Action Committee Contributions With US House of Representatives and Senate Candidates' Stances on Firearm Regulation

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Abstract

IMPORTANCE Many physician professional organizations have endorsed public policies, such as expanded background checks, to reduce firearm-related injury. It is not known whether physician organizations' political giving aligns with these policy endorsements.

OBJECTIVES To compare physician organization–affiliated political action committee (PAC) campaign contributions with US House of Representatives and Senate candidates' stances on firearm safety policies and analyze whether physician organization endorsement of firearm safety policies is associated with contribution patterns.

DESIGN, SETTING, AND PARTICIPANTS This cross-sectional study compared contributions from the 25 largest physician organization–affiliated PACs during the 2016 election cycle (January 1, 2014, to December 31, 2016) with US House of Representatives and Senate candidate support for firearm regulation. Physician organization endorsement of firearm safety policies was defined by endorsement of the 2015 Firearm-Related Injury and Death in the United States: A Call to Action From 8 Health Professional Organizations and the American Bar Association.

MAIN OUTCOMES AND MEASURES Contributions to US House of Representatives and Senate candidates by stance on firearm safety legislation measured by (1) voting history on US Senate Amendment (SA) 4750, which proposed background check expansion; (2) cosponsorship of US House Resolution (HR) 1217, which sought to expand background checks and strengthen the national criminal background check system; and (3) an A rating (vs not A) by the National Rifle Association Political Victory Fund (NRA-PVF), a measure of overall candidate support for firearm regulation.

RESULTS This study examined the 25 largest physician organization–affiliated PACs during the 2016 election cycle. Twenty of 25 PACs (80%) contributed more in total to incumbent Senate candidates who voted against SA 4750 (n = 21) than to those who voted for it (n = 8), and 24 of 25 PACs (96%) contributed more in total to incumbent US House of Representatives candidates who did not cosponsor HR 1217 (n = 227) than to those who cosponsored it (n = 166). A total of 21 of 25 PACs (84%) contributed more total dollars to US House of Representatives and Senate candidates rated A by the NRA-PVF (n = 386) than to those not rated A (n = 546). Twenty-four of 25 PACs (96%) contributed to a greater proportion of candidates rated A by the NRA-PVF than candidates not rated A. Among PACs whose affiliated organizations endorsed the Call to Action, 8 of 9 (89%) supported a greater proportion of candidates rated A by the NRA-PVF than candidates not rated A, whereas 16 of 16 PACs affiliated with nonendorsing organizations supported a greater proportion of candidates rated A by the NRA-PVF. After adjustment for other political factors, the 9 PACs that endorsed the 2015 Call to Action spent more money on candidates rated A by the NRA-PVF than the 16 nonendorsing PACs.

Key Points

Question Do US physician organization–affiliated political action committees make campaign contributions to US House of Representatives and Senate candidates whose stances on firearm regulation align with their own?

Findings This cross-sectional study of the 25 largest physician organization–affiliated political action committees during the 2016 election cycle compared candidate contributions from the committees and US House of Representatives and Senate candidates' support for firearm regulation. Physician organization–affiliated political action committees contributed more money and to a higher proportion of candidates who voted against expanding firearm background checks, an evidence-based policy to reduce firearm-related injury and death.

Meaning The findings suggest that contribution patterns of most physician organization–affiliated political action committees are inconsistent with their policy recommendations for evidence-based firearm regulation and may pose a barrier for effective advocacy on this issue.

Invited Commentary

Supplemental content

Author affiliations and article information are listed at the end of this article.
Call to Action had a lower likelihood of donating to NRA-PVF A-rated candidates compared with PACs that did not endorse the Call to Action (odds ratio, 0.76; 95% CI, 0.58-0.99; \( P = .04 \)).

**CONCLUSIONS AND RELEVANCE** Physician organization-affiliated PACs included in this study donated more funds to more US House of Representatives and Senate candidates who oppose firearm safety policies than to candidates in support of such policies. Although endorsement of the Call to Action was associated with a lower likelihood of donating to candidates who oppose firearm safety policies, the overall pattern was not consistent with professional societies' advocacy for firearm safety.

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**Introduction**

Firearm violence, the third leading cause of injurious death in the United States, is an increasing public health problem. Firearms were responsible for 39,773 deaths in 2017.\(^1\) Firearm-related injuries lead to significant health care utilization, amounting to $25 billion in emergency department and inpatient hospitalization charges from 2006 to 2014.\(^2,3\)

In response to the magnitude of firearm violence and numerous high-profile mass shootings, many health care organizations have endorsed policy recommendations to reduce firearm-related morbidity and mortality. In 2015, a total of 8 health care professional organizations and the American Bar Association wrote *Firearm-Related Injury and Death in the United States: A Call to Action From 8 Health Professional Organizations and the American Bar Association* (hereafter referred to as the Call to Action), which was later endorsed by more than 40 additional organizations.\(^4\) The Call to Action includes recommendations for universal background checks for firearm purchases, removing laws that prohibit physicians from discussing firearm safety with patients, promotion of firearm-related research, restrictions on military-style assault weapons, and more recommendations.

One way that physician professional organizations can exert influence on policy at national and state levels is through their affiliated political action committees (PACs). The role of a PAC is to raise and spend money to elect candidates whose policy stances align with their own or to oppose candidates with differing stances. Combined, health care professional-affiliated PACs contributed a mean of $25.4 million dollars per 2-year legislative cycle to federal campaigns during 2012 to 2016, accounting for more than 5% of all PAC contributions in this period.\(^5\) Although analysis in 1994 found that the American Medical Association's (AMA's) affiliated PAC contributed more money to candidates who opposed handgun control than to those in support,\(^6\) to our knowledge, no contemporary research has described the association between physician organization-affiliated PAC contributions and candidates' stances on firearm regulation and whether these stances align with the policies supported by the professional organizations.

To evaluate this question, we analyzed contributions from the 25 largest physician organization-affiliated PACs to US House of Representatives and Senate candidates (hereafter referred to as candidates) during the 2016 election cycle and compared these with candidate support for firearm regulation. We assessed candidates' support for firearm regulation by analyzing voting records on key firearm safety bills and ratings by the National Rifle Association Political Victory Fund (NRA-PVF), the PAC affiliated with the NRA. We also analyzed whether physician organization endorsement of the 2015 Call to Action was associated with contribution patterns and hypothesized that endorsing organizations would be less likely to contribute to candidates rated A by the NRA-PVF.
Methods

We conducted a retrospective, cross-sectional study of the association between contributions from the 25 largest physician organization–affiliated PACs to candidates in the 2016 federal congressional general election (January 1, 2014, to December 31, 2016) and candidate support for firearm regulation. The largest 25 PACs were defined by total campaign contributions in the 2016 federal congressional general election cycle. We assessed candidates’ stances on firearm regulation using the following measures: voting records on key firearm safety legislation proposed during the 114th congressional term and ratings given by the NRA-PVF. The study was deemed exempt from institutional review board review by Brigham and Women’s Hospital. This report follows Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline for cross-sectional studies.

Data Sources

We obtained data on PAC candidate contributions from Open Secrets, an independent, nonpartisan website that aggregates data from the Federal Election Commission. We obtained data on legislator voting records from the US Congress website. We obtained other candidate data, including party affiliation, state, district, incumbent status, NRA-PVF ratings, general election vote share (percentage of vote received), and election outcome, from Project VoteSmart, a nonpartisan, independent organization that aggregates information on political candidates. We determined physician organization public policies on firearms policy by searching their websites (eAppendix 1 in the Supplement).

Exposure

The exposures we used to determine candidates’ support or opposition to firearm safety policies included support for specific legislation in the US Senate and US House of Representatives in the 114th US Congress that proposed expanding background checks and candidate ranking by the NRA-PVF. We chose background checks because research demonstrates that they are associated with reducing firearm violence, and most of the physician specialty societies that have public positions on firearm regulations endorse them (eAppendix 1 in the Supplement). US Senate Amendment 4750 (SA 4750) sought to expand background checks for firearm transactions and was the most comprehensive background check expansion bill that received a vote during the study period, getting voted down in 2016. Because no House bill featuring background checks underwent a vote in the 114th US Congress, we evaluated US House Resolution 1217 (HR 1217), the bill supporting background checks that received the most cosponsorship. Cosponsorship is a formal endorsement of a congressional bill and is recorded in the Congressional Record. Introduced in 2015, HR 1217 aimed to extend background checks to all commercial firearm sales, strengthen state cooperation with the national criminal background check system, and authorize a commission to study mass violence.

An alternate measure of candidate support for expanding firearm safety policies was candidate rating by the NRA-PVF. The NRA-PVF is a single-issue PAC that ranks political candidates, irrespective of party affiliation, on their support for the NRA’s mission. The NRA-PVF has opposed expansion of background checks, limitations on assault weapons, and both SA 4750 and HR 1217. Ratings range from A+ to F (eAppendix 2 in the Supplement). We grouped candidates rated A (A+, A, A−, or Aq [an A rating given because of a questionnaire vs a voting record]) vs not A (B+ through F) by the NRA-PVF because the ratings are bimodal (94% are A or F), and A ratings are only given to politicians who have consistently voted with the NRA-PVF’s position.

To account for the association of other political factors with contributions from PACs to candidates, we also assessed incumbency, vote share, and party affiliation. Historically, PACs are more likely to support candidates who are more likely to win because it improves their influence, and incumbency is the strongest determinant of electoral success. Vote share tracks closely with preelection polling that is available to PACs. Party affiliation is linked to candidates’ positions on other...
health care–related topics that may influence PAC contributions, including physician reimbursement, malpractice reform, and repeal of the Patient Protection and Affordable Care Act.

**Outcome Measures**
The primary outcome was total contributions to candidates by support or opposition to firearm safety legislation, as measured by support of SA 4750 or HR 1217. The secondary outcome was proportion of and total contributions to candidates rated A (vs not A) by the NRA-PVF, a measure of overall candidate support for expanding firearm regulation.

**Statistical Analysis**
For the analysis of support of firearm safety bills, we included 2016 general election incumbent candidates who had legislative records on the bills. In the US Senate, there were 29 incumbent candidates with an SA 4750 voting record; in the US House of Representatives, there were 394 incumbent candidates with an opportunity to cosponsor HR 1217. We computed total and mean contributions stratified by candidate support of legislation for each PAC. Mean contribution was calculated by including only the candidates who received contributions from that PAC because most candidates received no contribution, which would skew the mean toward zero.

For the analysis of NRA-PVF ratings and contributions, we included all 2016 general election candidates who were rated by the NRA-PVF (932 of 1345). We excluded unrated candidates because their position on firearm policy was not clear to the NRA-PVF. These candidates were largely lower-profile candidates who were unlikely to win and received low vote shares (median vote share for nonrated candidates was 29.2%; highest was 38.4%). As such, they rarely received physician PAC contributions. We computed total and mean contributions stratified by candidate NRA-PVF rating (A vs not A) for each PAC, similarly including only those candidates who received any contribution in each PAC’s mean. We also computed the proportion of candidates receiving PAC support stratified by NRA-PVF ratings. This proportion was computed using only candidates who won the election or received the second highest vote share (N=818) to avoid including candidates who received no contribution because of low likelihood of winning. We did not calculate P values or report 95% CIs for these descriptive results because this was an enumeration of the data.

We constructed a multiple variable regression analysis to examine the association between society endorsement of the Call to Action and associated PAC contribution to candidates by NRA-PVF rating, accounting for other political factors that could influence PAC contributions. Our analytic sample was again candidates who won or received the second highest vote share. We constructed a logistic regression with the dependent variable of a PAC contribution (yes or no) and independent indicator variables for A vs not A rating by NRA-PVF, PAC endorsement of the Call to Action, and interaction of NRA-PVF rating and endorsement of Call to Action dummies. We calculated adjusted odds ratios accounting for vote share, incumbency, party affiliation, and legislative branch. The SEs were clustered at PAC and candidate levels (eAppendix 3 in the Supplement). All analyses were performed with Stata statistical software, version 13.1 (StataCorp). A 2-sided P < .05 indicates statistical significance.

**Results**
This study examined the 25 largest physician organization–affiliated PACs during the 2016 election cycle. All health care professional–related PACs contributed a total of $23.7 million dollars during the 2016 election cycle. The 25 largest physician-affiliated PACs contributed 57% of this sum ($13.6 million).

**Association With Congressional Bills**
The US Senate voted 44 for and 56 against SA 4750, an amendment that would have expanded background checks. Table 1 details physician organization–affiliated PAC support of the 29 Senate
incumbents running for reelection and the association with their vote on SA 4750. Overall, the 25 PACs contributed $500 000 more to Senate candidates who voted against SA 4750 than to those who voted for it ($1 025 500 vs $525 500). A total of 20 of 25 PACs (80%) contributed more in total to Senate candidates who voted against SA 4750 than to those who voted for it.

In the US House of Representatives, 189 representatives cosponsored HR 1217, a bill to expand background checks, and 246 did not. Table 2 details PAC support of 394 incumbent House candidates and the association with cosponsorship of HR 1217. Overall, the 25 PACs contributed $2 878 675 more to candidates who did not cosponsor HR 1217 than to cosponsors ($6 130 775 vs $3 252 100). A total of 24 of 25 PACs (96%) contributed more in total to House candidates who did not cosponsor HR 1217 than those who cosponsored it.

Association With NRA-PVF Ratings and Contributions
The NRA-PVF gave 379 House and Senate candidates A ratings, 13 B ratings, 8 C ratings, 35 D ratings, and 474 F ratings. Table 3 details PAC financial support of congressional candidates and the association with NRA-PVF rating. Overall, the 25 largest physician organization–affiliated PACs gave $5.6 million to candidates rated A by the NRA-PVF and $4.1 million to candidates not rated A, a

### Table 1. Contributions From Physician Organization–Affiliated PACs to US Senate Candidates Compared With Voting Record on SA 4750

| Physician Organization–Affiliated PAC | Total Contributions | Mean Contribution |
|--------------------------------------|--------------------|------------------|
|                                      | Candidates Voting for SA 4750, $ | Candidates Voting Against SA 4750, $ | Difference, $ |
|                                      | (No. of Candidates) | (No. of Candidates) | (No. of Candidates) |
| Total                                | Total 525 500 | 1 025 500 | −500 000 | 34 | 4821 (8) | 4498 (21) | 323 |
| American Association of Orthopaedic Surgeons | 27 000 | 111 000 | −84 000 | 20 | 4500 (6) | 5842 (19) | −1342 |
| American Medical Associationb | 58 000 | 109 000 | −51 000 | 35 | 7250 (8) | 7786 (14) | −535 |
| American Society of Anesthesiologists | 24 500 | 37 500 | −13 000 | 40 | 4687 (8) | 4083 (6) | 604 |
| American College of Emergency Physiciansb | 44 500 | 82 998 | −38 498 | 35 | 7416 (6) | 5533 (15) | 1883 |
| American College of Radiology | 24 500 | 72 000 | −47 500 | 25 | 4900 (5) | 5538 (13) | −638 |
| American Academy of Dermatology | 34 000 | 73 000 | −39 000 | 32 | 5666 (6) | 5615 (13) | 51 |
| American Academy of Ophthalmology | 15 500 | 34 500 | −19 000 | 31 | 3875 (4) | 4312 (8) | −437 |
| American College of Surgeonsb | 36 500 | 62 500 | −26 000 | 37 | 6083 (6) | 5208 (12) | 875 |
| American Academy of Family Physiciansb | 34 000 | 40 500 | −6500 | 46 | 5666 (6) | 4500 (9) | 1166 |
| American Congress of Obstetricians & Gynecologistsb | 29 000 | 23 000 | 6000 | 56 | 4833 (6) | 2300 (10) | 2533 |
| American Academy of Neurologyb | 13 500 | 20 500 | −7000 | 40 | 2250 (6) | 2928 (7) | −678 |
| American College of Cardiology | 28 500 | 40 000 | −11 500 | 42 | 5700 (5) | 4444 (9) | 1255 |
| American Association of Oral and Maxillofacial Surgery | 22 000 | 32 000 | −10 000 | 41 | 3200 (10) | 5500 (4) | −2300 |
| American Psychiatric Associationb | 19 500 | 17 500 | 2000 | 53 | 3900 (5) | 2187 (8) | 1713 |
| College of American Pathologists | 20 000 | 34 000 | −13 500 | 38 | 5125 (4) | 3091 (11) | 2034 |
| American Society of Plastic Surgeons | 13 500 | 87 000 | −73 500 | 13 | 4500 (3) | 5800 (15) | −1300 |
| American College of Rheumatology | 17 500 | 29 500 | −12 000 | 37 | 3500 (5) | 3278 (9) | 222 |
| American Academy of Otolaryngology | 13 000 | 6000 | 7000 | 68 | 3250 (4) | 3000 (2) | 250 |
| Society of Thoracic Surgeonsb | 14 500 | 12 500 | 2000 | 54 | 2900 (6) | 2083 (5) | 816 |
| American Society for Radiation Oncology | 18 500 | 14 500 | 4000 | 56 | 4625 (4) | 4833 (3) | −208 |
| American College of Physicians Servicesb | 8500 | 11 500 | −3000 | 42 | 2833 (3) | 2300 (5) | 533 |
| American Association of Neurologic Surgeons | 8500 | 29 500 | −21 000 | 22 | 4250 (2) | 3278 (9) | 972 |
| American Society of Interventional Pain Physicians | 0 | 17 500 | −17 500 | 0 | 0 (0) | 5833 (3) | −5833 |
| National Association of Spine Specialists | 0 | 23 500 | −23 500 | 0 | 0 (0) | 3916 (6) | −3916 |
| Society for Vascular Surgery | 0 | 4000 | −4000 | 0 | 0 (0) | 1000 (4) | −1000 |

Abbreviations: PAC, political action committee; SA, US Senate Amendment.

* From 2014 to 2016, including US Senate incumbents seeking reelection in 2016.

b Endorsed the 2015 Firearm-Related Injury and Death in the United States: A Call to Action From 8 Health Professional Organizations and the American Bar Association.4
difference of $1.5 million. Twenty-one of 25 PACs (84%) contributed more in total to candidates who were rated A by the NRA-PVF than to candidates who were not A rated. Eight of the 25 PACs (32%) contributed more per candidate to candidates rated A by the NRA-PVF than to candidates who were not rated A.

Table 4 details the proportion of House and Senate candidates receiving PAC support stratified by NRA-PVF ratings. A total of 24 of 25 PACs (96%) contributed to a greater proportion of the candidates who were rated A by the NRA-PVF than candidates who were not A rated.

**Association With the 2015 Call to Action**

The Figure shows PAC contribution patterns comparing total donations to NRA-PVF A-rated candidates with those to non–A-rated candidates and whether each organization endorsed the 2015 Call to Action. Among the 9 PACs whose affiliated organizations endorsed the Call to Action, 8 (89%) supported a greater proportion of candidates rated A by the NRA-PVF than candidates not rated A, whereas all 16 PACs affiliated with nonendorsing organizations supported a greater proportion of candidates rated A by the NRA-PVF (Table 4). After adjustment for other political factors, the 9 PACs...
that endorsed the Call to Action had a lower likelihood of donating to NRA-PVF A-rated candidates compared with PACs that did not endorse the Call to Action (odds ratio, 0.76; 95% CI, 0.58-0.99; \(P = .04\)) (eAppendix 3 in the Supplement).

Discussion

During the 2016 election cycle, the 25 largest PACs affiliated with physician professional organizations contributed to candidates whose voting history and stances on firearm regulation did not align with evidence-based firearm policy, such as expanding background checks. These PACs contributed to more than twice as many incumbent US Senate candidates who voted against an amendment to expand firearm background checks compared with candidates who voted for the amendment. There was a similar pattern of giving by these PACs in the US House of Representatives, with candidates not cosponsoring HR 1217, a bill to expand background checks, receiving more than $2.8 million more than cosponsors. In addition, these physician PACs were more than twice as likely

Table 3. Physician Organization–Affiliated PACs’ US House of Representatives and Senate Campaign Contributions Compared With Candidate NRA-PVF Rating

| Physician Organization–Affiliated PAC | Total Contributions | Candidates Rated B-F by the NRA-PVF, $ | Candidates Rated A by the NRA-PVF, $ | Difference, $ | Candidates Rated B-F by the NRA-PVF, % | Contributions to Candidates Rated A by the NRA-PVF, $ (No. of Candidates) | Candidates Rated A by the NRA-PVF, $ (No. of Candidates) | Difference, $ |
|-------------------------------------|---------------------|----------------------------------------|----------------------------------------|-------------|---------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------|
| Total                               | 4 089 550           | 5 361 375                              | 1 471 825                              | .04         | 4 422 (176)                           | 4 459 (209)                                                                                      | 4 459 (209)                                                                                      | 3.48        |
| American Association of Orthopaedic Surgeons | 416 500           | 597 125                               | −180 625                               | .04         | 4 580 (76)                           | 3 331 (112)                                                                                      | 3 331 (112)                                                                                      | .684        |
| American Medical Associationb       | 420 500           | 574 500                               | −154 000                               | .04         | 4 163 (101)                          | 4 488 (128)                                                                                      | 4 488 (128)                                                                                      | .324        |
| American Society of Anesthesiologists | 380 600           | 594 700                               | −214 100                               | .04         | 4 537 (70)                           | 6 194 (96)                                                                                      | 6 194 (96)                                                                                      | .757        |
| American College of Emergency Physiciansb | 344 500           | 716 900                               | −372 400                               | .04         | 4 053 (85)                           | 5 233 (137)                                                                                     | 5 233 (137)                                                                                     | .1178       |
| American College of Radiology       | 190 000           | 382 000                               | −192 000                               | .03         | 4 634 (41)                           | 5 617 (68)                                                                                      | 5 617 (68)                                                                                      | .983        |
| American Academy of Dermatology     | 284 000           | 306 500                               | −22 500                                | .03         | 4 529 (54)                           | 4 715 (65)                                                                                      | 4 715 (65)                                                                                      | .543        |
| American Academy of Ophthalmology   | 128 500           | 239 000                               | −110 500                               | .03         | 4 431 (29)                           | 4 267 (56)                                                                                      | 4 267 (56)                                                                                      | .163        |
| American College of Surgeonsb       | 185 500           | 257 500                               | −72 000                                | .03         | 5 621 (33)                           | 5 597 (46)                                                                                      | 5 597 (46)                                                                                      | .23         |
| American Academy of Family Physiciansb | 357 700           | 262 000                               | 95 700                                  | .03         | 5 338 (67)                           | 4 678 (56)                                                                                      | 4 678 (56)                                                                                      | .660        |
| American Congress of Obstetricians & Gynecologistsb | 247 000           | 179 500                               | 67 500                                  | .03         | 3 383 (73)                           | 3 202 (56)                                                                                      | 3 202 (56)                                                                                      | .178        |
| American Academy of Neurologyb      | 142 500           | 135 000                               | 7 500                                  | .03         | 3 653 (39)                           | 3 139 (43)                                                                                      | 3 139 (43)                                                                                      | .514        |
| American College of Cardiology      | 133 500           | 142 200                               | −8700                                  | .03         | 5 804 (23)                           | 4 587 (31)                                                                                      | 4 587 (31)                                                                                      | .1217       |
| American Association of Oral and Maxillofacial Surgery | 109 000           | 180 000                               | −71 000                                | .03         | 3 406 (32)                           | 4 285 (42)                                                                                      | 4 285 (42)                                                                                      | .879        |
| American Psychiatric Associationb   | 154 500           | 172 500                               | −18 000                                | .03         | 3 678 (42)                           | 3 317 (52)                                                                                      | 3 317 (52)                                                                                      | .361        |
| College of American Pathologists    | 103 750           | 118 250                               | −14 500                                | .03         | 3 289 (32)                           | 3 111 (38)                                                                                      | 3 111 (38)                                                                                      | .177        |
| American Society of Plastic Surgeons | 45 500            | 119 700                               | −74 200                                | .03         | 2 527 (18)                           | 3 627 (33)                                                                                      | 3 627 (33)                                                                                      | .1099       |
| American College of Rheumatology    | 66 000            | 71 500                                | −5500                                  | .03         | 3 763 (19)                           | 3 300 (20)                                                                                      | 3 300 (20)                                                                                      | .463        |
| American Academy of Otolaryngology  | 65 500            | 73 000                                | −7500                                  | .03         | 3 852 (17)                           | 3 173 (23)                                                                                      | 3 173 (23)                                                                                      | .679        |
| Society of Thoracic Surgeonsb       | 69 500            | 54 500                                | 15 000                                 | .03         | 2 482 (28)                           | 2 595 (21)                                                                                      | 2 595 (21)                                                                                      | .113        |
| American Society for Radiation Oncology | 55 000            | 57 000                                | −2000                                  | .03         | 2 894 (19)                           | 2 850 (20)                                                                                      | 2 850 (20)                                                                                      | .44         |
| American College of Physicians Servicesb | 154 500           | 172 500                               | −18 000                                | .03         | 3 678 (42)                           | 3 317 (52)                                                                                      | 3 317 (52)                                                                                      | .361        |
| American Association of Neurologic Surgeons | 28 500            | 77 500                                | −49 000                                | .03         | 3 166 (9)                            | 2 672 (29)                                                                                      | 2 672 (29)                                                                                      | .494        |
| American Society of Interventional Pain Physicians | 10 000            | 95 000                                | −85 000                                | .03         | 10 000 (1)                           | 5 937 (16)                                                                                      | 5 937 (16)                                                                                      | .4062       |
| National Association of Spine Specialists | 26 500            | 37 500                                | −11 000                                | .03         | 2 409 (11)                           | 2 343 (16)                                                                                      | 2 343 (16)                                                                                      | .65         |
| Society for Vascular Surgery        | 32 000            | 40 000                                | −8000                                  | .03         | 2 133 (15)                           | 3 076 (13)                                                                                      | 3 076 (13)                                                                                      | .943        |

Abbreviations: NRA-PVF, National Rifle Association Political Victory Fund; PAC, political action committee.

a From 2014 to 2016, including US House of Representatives and US Senate candidates with NRA-PVF ratings.

b Endorsed 2015 Firearm-Related Injury and Death in the United States: A Call to Action From 8 Health Professional Organizations and the American Bar Association.

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to contribute to and gave almost $1.5 million dollars more to candidates rated A by the NRA-PVF, a group that publicly opposes most of the evidence-based firearm policies endorsed by health care professional organizations.15-18

Firearm injury is a major public health problem in the United States, causing death, injury, productivity losses, and significant medical expenditures.20 Firearm injuries are uniquely morbid and lethal; the mean case fatality rate has been estimated at 85% for firearm-related self-harm, 19% for intentional assaults, and 5% for unintentional injuries.20 An estimated 10% of resulting deaths occur at the scene of the shooting, and 97% of deaths occur in the first 24 hours after injury.21 Because of the severity of injuries associated with firearms, many are not amenable to medical care; prevention is essential to improve health outcomes.

A number of legislative actions and public policies have been reported to effectively prevent firearm injuries.10 Expansion of background checks, which is supported by the general public and licensed firearm retailers,22,23 is associated with a reduction in suicide, homicide, and unintentional firearm injury.24,25 Evidence supports the association of permit-to-purchase laws, child-access prevention laws, and minimum purchasing ages with reduction in rates of firearm injuries.10,26,27 There is also limited evidence to support that a minimum purchasing age of 21 years may be associated with reduced suicides involving firearms among youths and to support prohibiting the sale of firearms to individuals who have previously been involuntarily committed to a psychiatric facility.10 Other policies, including those that seek to curb firearm trafficking, restrict firearms in public places, and ban military-style assault weapons, lack strong evidence of efficacy.10 However,

Table 4. Physician Organization–Affiliated PACs’ Relative Support of Candidates Rated A vs Not Rated A by NRA-PVF

| Physician Organization–Affiliated PAC | Support of Candidates by NRA-PVF Rating | | | |
|---|---|---|---|---|
| | Candidates Rated A by the NRA-PVF, No./Total No. (%) | Candidates Rated B-F by the NRA-PVF, No./Total No. (%) | Difference, % |
| American Association of Orthopaedic Surgeons | 109/348 (31.3) | 76/470 (16.2) | 15.2 |
| American Medical Associationa | 126/348 (36.2) | 101/470 (21.5) | 14.7 |
| American Society of Anesthesiologists | 92/348 (26.4) | 70/470 (14.9) | 11.5 |
| American College of Emergency Physiciansa | 135/348 (38.8) | 85/470 (18.1) | 20.7 |
| American College of Radiology | 67/348 (19.3) | 41/470 (8.7) | 10.5 |
| American Academy of Dermatology | 63/348 (18.1) | 54/470 (11.5) | 6.6 |
| American Academy of Ophthalmology | 55/348 (15.8) | 29/470 (6.2) | 9.6 |
| American College of Surgeonsa | 44/348 (12.6) | 33/470 (7.0) | 5.6 |
| American Academy of Family Physiciansa | 54/348 (15.5) | 67/470 (14.3) | 1.2 |
| American College of Obstetricians & Gynecologistsa | 55/348 (15.8) | 73/470 (15.5) | 0.3 |
| American Academy of Neurologya | 42/348 (12.1) | 39/470 (8.3) | 3.8 |
| American College of Cardiology | 30/348 (8.6) | 23/470 (4.9) | 3.7 |
| American Association of Oral and Maxillofacial Surgery | 42/348 (12.1) | 32/470 (6.8) | 5.2 |
| American Psychiatric Associationa | 50/348 (14.4) | 42/470 (9.0) | 5.4 |
| College of American Pathologists | 38/348 (10.9) | 32/470 (6.8) | 4.1 |
| American Society of Plastic Surgeons | 32/348 (9.2) | 18/468 (3.9) | 5.3 |
| American College of Rheumatology | 18/348 (5.2) | 19/468 (4.1) | 1.1 |
| American Academy of Otolaryngology | 21/348 (6.0) | 17/470 (3.6) | 2.4 |
| Society of Thoracic Surgeonsa | 20/348 (5.8) | 28/470 (6.0) | -0.2 |
| American Society for Radiation Oncology | 19/348 (5.5) | 19/468 (4.1) | 1.4 |
| American College of Physicians Servicesa | 30/348 (8.6) | 26/470 (5.5) | 3.1 |
| American Association of Neurologic Surgeons | 28/348 (8.1) | 9/470 (1.9) | 6.1 |
| American Society of Interventional Pain Physicians | 16/348 (4.6) | 1/468 (0.2) | 4.4 |
| National Association of Spine Specialists | 16/348 (4.6) | 11/470 (2.4) | 2.3 |
| Society for Vascular Surgery | 12/348 (3.5) | 15/470 (3.2) | 0.2 |

Abbreviations: NRA-PVF, National Rifle Association Political Victory Fund; PAC, political action committee.

*a Endorsed 2015 Firearm-Related Injury and Death in the United States: A Call to Action From 8 Health Professional Organizations and the American Bar Association.4

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most of these interventions have not been rigorously studied because of limitations on federally funded research, a restriction supported by the NRA-PVF.18

Organized physician leadership can play an important role in public health efforts to prevent firearm violence. Physicians witness first hand the physical and emotional damage experienced by patients injured by guns and have authority in advocating for health-related policy change. Many physician professional societies have embraced this role by endorsing the 2015 Call to Action, publishing policy positions on firearms, hosting advocacy training, and supporting research. However, our analysis indicates that most of the largest physician organizations' PACs contribute more to candidates whose stances on firearm policy are in direct opposition to evidence-based firearm policies and to their organization's stances.

Providing direct care for patients who experience firearm violence does not appear to be associated with organizations' contribution patterns. Those PACs affiliated with the professional societies of specialties that provide frontline care for patients who experience firearm violence, including emergency medicine, general surgery (which includes trauma surgeons), orthopedic surgery, neurosurgery, anesthesiology, and radiology, gave more total dollars to incumbent candidates with records against expanding background checks in the House and the Senate, and all supported a higher proportion of candidates rated A by the NRA-PVF than those not rated A. Among the 9 organizations that endorsed the 2015 Call to Action, all but 1 gave more to candidates opposed to policies endorsed in the Call to Action. After adjusting for other political factors that influence PAC contributions, we found that endorsement of the Call to Action was associated with a smaller relative likelihood of contributing to candidates who received an A rating from the NRA-PVF than those rated B to F. Therefore, although endorsement of firearm safety policies may reflect a small difference in political giving, it does not mean that a physicians' organization has elevated firearm policy to the level of a contribution criteria for the PAC.

Figure. Physician Organization Political Action Committee Contributions Compared With National Rifle Association Political Victory Fund (NRA-PVF) Rating, 2016

Line represents equality of donations to A-rated and non–A-rated candidates. Circle sizes are proportional to total political action committee contributions, in dollars. AAD indicates American Academy of Dermatology; AAENT, American Academy of Otolaryngology; AAFP, American Academy of Family Physicians; AAN, American Academy of Neurology; AANS, American Association of Neurologic Surgeons; AAO, American Academy of Ophthalmology; AAOMFS, American Association of Oral and Maxillofacial Surgery; AAOS, American Association of Orthopaedic Surgeons; ACC, American College of Cardiology; ACEP, American College of Emergency Physicians; ACOG, American Congress of Obstetricians & Gynecologists; ACP, American College of Physicians Services; ACR, American College of Radiology; ACRh, American College of Rheumatology; ACS, American College of Surgeons; AMA, American Medical Association; APA, American Psychiatric Association; ASA, American Society of Anesthesiologists; ASIPP, American Society of Interventional Pain Physicians; ASPS, American Society of Plastic Surgeons; ASTRO, American Society for Radiation Oncology; CAP, College of American Pathologists; NASS, National Association of Spine Specialists; STS, Society of Thoracic Surgeons; and SVS, Society for Vascular Surgery.
The conflict between public health advocacy and political giving is not new. In 1994, Sharfstein and Sharfstein published research highlighting the discrepancy between the AMA's call to regulate the tobacco industry and their affiliated PAC contributing nearly 3 times more money to senators who voted against a proposal that would have increased cigarette taxes and granted the US Food and Drug Administration authority to regulate tobacco than to supporters of the proposal. In a response, AMA leaders argued that "contrast[ing] public health goals and AMPAC [American Medical Political Action Committee] contributions is 'to compare not apples and oranges but apples and hippopotamuses.'" However, we believe that physician leadership—in the form of public statements and financial support—is important in shaping policy on public health issues. Such advocacy is more likely to be effective when political contributions are aligned with organizations' policy statements.

Limitations
This analysis has several limitations. First, we included only the 25 physician organization PACs with the largest total contributions not the largest organizational membership. Although there are more physician organization–affiliated PACs, we believe this is a reasonable group to analyze because the largest 25 PACs include many groups that endorsed the Call to Action and many specialties that provide initial care for patients who experience firearm violence. Of note, this group does not include some large professional organizations, such as the American Academy of Pediatrists, which does not have an affiliated PAC.

Second, use of the NRA-PVF endorsement as a measure of opposition to firearm safety legislation may be questioned. The NRA is a large organization that pursues a wide variety of activities, including gun safety education programs, such as the NRA Carry Guard, which provides comprehensive gun training to owners. The NRA-PVF, the NRA's affiliated PAC, is a legally separate entity, with a political agenda in opposition to many evidence-based policies endorsed by the Call to Action. Because there have been few votes on firearm-related legislation in the US Congress recently, the NRA-PVF rating is the most comprehensive summary of candidates’ positions available.

Third, correlation is not causation. This study only examines the association between PAC contributions to political candidates and their support for firearms. It is unlikely that physician organization–affiliated PACs contribute to candidates because they are opposed to firearm regulation. Instead, physician organization–affiliated PACs consider many factors when deciding which candidates to support, such as stance on malpractice reform, physician payment policies, and the Patient Protection and Affordable Care Act as well as chance of winning and incumbent status. Some of these factors, such as stance on malpractice reform, may correlate with a candidate's position on firearm safety regulation because support for medical malpractice reform and NRA-PVF A ratings are correlated with the Republican party. In addition, in the 2016 election cycle, Republicans had majorities in the US House of Representatives and the US Senate, and incumbency is a strong determinant of PAC contribution. Nonetheless, even if candidates' stance on firearm safety legislation is not the reason for contribution patterns, these contributions may have the unintended consequence of helping elect candidates whose stances run counter to the organizations’ public health goals.

Fourth, few bills that propose firearm regulation have come to a vote in recent congressional sessions, which limits the power of this analysis. We analyzed the Senate and House bills that most closely aligned with the language in the Call to Action surrounding the expansion of background checks and received the most legislative activity and found differential contribution patterns.

Fifth, classification of lack of cosponsorship for HR 1217 as opposition to firearm safety legislation can be questioned because candidates could have supported the legislation without cosponsoring. We think cosponsorship is a reasonable proxy for support because this amendment was the most high-profile firearm safety bill in the House during the 114th US Congress.
Conclusions

Gun violence is the leading cause of preventable injury and death in the United States. National physician professional organizations are well positioned to lead in advocating for public policies that reduce firearm-related morbidity and mortality, and many have taken public positions in favor of such policies. However, our findings suggest that these organizations’ associated PACs contribute more often and give more money to candidates who oppose evidence-based firearm regulation than to those who support it. This donation pattern appears to be inconsistent with and a barrier to effective public health advocacy for firearm safety.

ARTICLE INFORMATION

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SUPPLEMENT.
eAppendix 1. Organizational Policies on Firearm Regulation of Physician Organizations Affiliated With 25 Largest PACs, as of Election Day 2016

eAppendix 2. Description of National Rifle Association Political Victory Fund (NRA-PVF) Ratings

eAppendix 3. Odds Ratios of Support of A-Rated Candidates by All Top 25 Physician Organization-Affiliated PACs, Adjusting for Endorsement Status and Other Confounders