

Public Roles of US Physicians

Community Participation, Political Involvement, and Collective Advocacy

Russell L. Gruen, MBBS, PhD

Eric G. Campbell, PhD

David Blumenthal, MD, MPP

FOR MANY YEARS, THERE HAS BEEN debate about the degree to which physicians should assume public roles, that is, their degree of social responsibility for addressing health-related matters beyond providing care to individual patients.¹⁻⁵ Physician leaders, social commentators, and professional organizations' mission statements have often supported the physicians' assumption of public roles.^{1-4, 6} These are at odds, however, with some education and practice environments that do not foster physicians' engagement with broader public health issues.^{7,8}

Currently, little is known about practicing physicians' attitudes about, or the extent to which they participate in community, political, or advocacy activities. A previous attempt to define and operationalize public roles included a 1998 survey of junior family practice physicians who regarded relevant components to be assimilating into the community and its organizations, identifying and intervening in community health problems, coordinating local community health resources, and responding to particular issues of local cultural representatives when caring for patients.⁹

Recently, we defined physicians' public roles to be "advocacy for and participation in improving the aspects of

Context Whether physicians have a professional responsibility to address health-related issues beyond providing care to individual patients has been vigorously debated. Yet little is known about practicing physicians' attitudes about or the extent to which they participate in public roles, which we defined as community participation, political involvement, and collective advocacy.

Objectives To determine the importance physicians assign to public roles, their participation in related activities, and sociodemographic and practice factors related to physicians' rated levels of importance and activity.

Design, Setting, and Participants Mail survey conducted between November 2003 and June 2004 of 1662 US physicians engaged in direct patient care selected from primary care specialties (family practice, internal medicine, pediatrics) and 3 non-primary care specialties (anesthesiology, general surgery, cardiology).

Main Outcome Measures Rated importance of community participation, political involvement, collective advocacy, and relevant self-reported activities encompassing the previous 3 years; rated importance of physician action on different issues.

Results Community participation, political involvement, and collective advocacy were rated as important by more than 90% of respondents, and a majority rated community participation and collective advocacy as very important. Nutrition, immunization, substance abuse, and road safety issues were rated as very important by more physicians than were access-to-care issues, unemployment, or illiteracy. Two thirds of respondents had participated in at least 1 of the 3 types of activities in the previous 3 years. Factors independently related to high overall rating of importance (civic-mindedness) included age, female sex, underrepresented race/ethnicity, and graduation from a non-US or non-Canadian medical school. Civic mindedness, medical specialty, practice type, underrepresented race/ethnicity, preceptors of physicians in training, rural practice, and graduation from a non-US or non-Canadian medical school were independently related to civic activity.

Conclusions Public roles are definable entities that have widespread support among physicians. Civic-mindedness is associated primarily with sociodemographic factors, but civic action is associated with specialty and practice-based factors.

JAMA. 2006;296:2467-2475

www.jama.com

communities that affect the health of individuals."¹⁰ We also identified a range of office-based and out-of-office tasks that may define physicians' involvement in public roles and that are compatible with busy medical practices. These activities are health-related and may be undertaken by phy-

Author Affiliations: Department of Surgery, University of Melbourne, Royal Melbourne Hospital, Melbourne, Australia and Department of Health Policy and Management, Harvard School of Public Health, Boston, Mass (Dr Gruen); and Institute for Health Policy, Massachusetts General Hospital and Harvard Medical School, Boston (Drs Campbell and Blumenthal).

Corresponding Author: Russell L. Gruen, MBBS, PhD, Department of Surgery, University of Melbourne, Royal Melbourne Hospital, Parkville, Victoria, 3050 Australia (rgruen@unimelb.edu.au).

sicians either individually or as part of physician organizations.¹⁰

If calls for social responsibility are to be promoted, it is important to understand the degree to which practicing physicians are supportive of assuming public roles and the sociodemographic and practice factors that influence their attitudes and activity in this regard. In this study, we addressed these issues using data from the Institute on Medicine as a Profession's (IMAP) Survey on Medical Professionalism. The IMAP survey collected data about attitudes toward and participation in activities related to physician professionalism from a nationally representative sample of physicians in 3 primary care specialties (general internal medicine, family practice, and pediatrics) and 3 nonprimary care specialties (general surgery, anesthesiology, and cardiology).

METHODS

Dependent Variables: Measures of Public Roles

We operationalized the concept of social responsibility by explicating 3 types of public roles in which physicians may engage: community participation, political involvement as an individual, and collective advocacy through professional organizations.¹⁰ Survey questions were developed that assessed physicians' ratings of importance of each of these dimensions on a 4-point scale (1, not at all important; 2, not very important; 3, somewhat important; and 4, very important) and assessed whether or not each physician had acted in each of the 3 dimensions in past 3 years (for which responses were yes or no).

Community Participation. To assess attitudes toward community participation, physicians were asked, "How important is it for physicians to provide health-related expertise to local community organizations (eg, school boards, parent-teacher organizations, athletic teams, and local media)?" To assess whether physicians had been involved in any related activities they were asked, "In the past 3 years have you provided health-related expertise to local community organizations?"

Political Involvement. Participants were asked, "How important is it for physicians to be politically involved (other than voting) in health-related matters at the local, state, or national level?" and "In the past 3 years have you been politically active (other than voting) on a local health care issue?"

Collective Advocacy. Participants were asked, "How important is it for physicians to encourage medical organizations to advocate for the public's health?" and "In the past 3 years, have you encouraged your professional society to address a public health or policy issue that is not primarily concerned with physician welfare?"

The Importance of Issues for Physician Advocacy. Participants were presented with a list of health-related issues and asked to rate how important it is that physicians, individually or collectively, advocate for each of them. The issues included health insurance for the uninsured, reduction in obesity and better nutrition, reduction in unemployment, reduction in air pollution, prevention of teenage substance abuse, increased basic literacy levels, culturally sensitive responsiveness of health services in ethnically diverse areas, tobacco control, seat belt use, gun control, and complete immunization of eligible populations. The response categories ranged from 1 to 4 (not at all important to very important).

Independent Variables

We asked about personal characteristics including sex and race/ethnicity, classified into underrepresented minorities according to the Association of American Medical Colleges' definition.¹¹ Professional characteristics on which we collected data included medical specialty, professional age (years since graduation from medical school), non-US and non-Canadian medical school graduate status, and whether or not the physician was a preceptor of physicians in training. Practice characteristics about which we inquired included primary practice type, patient demographics (percentage of patients insured by Medicaid or uninsured and

unable to pay), and number of hours of clinical patient contact per week (which was subsequently divided into 2 approximately equal groups of <50 hours and \geq 50 hours).

Also requested was the ZIP code of primary practice location. This information was used to link the following additional independent variables that were hypothesized to potentially influence physicians' public engagement: (1) Location of practice, whether each physician's practice was located in a metropolitan statistical area or in a non-metropolitan statistical area based on the US Department of Agriculture Rural-Urban Continuum Codes¹²; (2) County mean life expectancy obtained from the US Burden of Disease and Injury Project¹³ (combined male and female) in each physician's county of practice, as a surrogate measure of local burden of illness; (3) Comprehensive Social Capital Index (CSCI), from the 2000 Social Capital Community Benchmark Survey, which was associated with Robert Putnam's book *Bowling Alone: The Collapse and Revival of American Community*,¹⁴ we obtained for each physician's state the CSCI, an index derived from measures of the general public's participation in community organizational life, engagement in public affairs, community volunteerism, informal sociability, and social trust.

Survey Sample

This study used data from the IMAP Survey on Medical Professionalism. The sampling frame for the IMAP survey was the list of physicians in the American Medical Association (AMA) Masterfile in 2003. From that list, we selected all physicians in the 50 states in primary care specialties (internal medicine, family practice, pediatrics), a medical specialty (cardiology), a surgical specialty (general surgery), and an inpatient specialty (anesthesiology).

From this group of physicians we excluded all doctors of osteopathy, resident physicians, physicians in federally owned hospitals, physicians who had no address in the AMA Masterfile,

those who specifically requested that they not be contacted by mail sourced from the AMA Masterfile, and those who were retired. This provided a sampling frame of 271 148 physicians from which 3504 physicians were randomly selected with the same sample size (584) in each specialty. The sample size was calculated to provide 80% power to detect specialty-related differences of 10% for estimates around 0.50 at a significance level of .05, and assuming a response rate of 66.5%. Under these same specifications, the achieved respondent counts can detect a difference of 12% to 13%.

Survey Development and Administration

The survey instrument was developed based on 4 individual interviews with physicians and a review of the extant literature. An initial draft of the survey was pretested using 4 additional cognitive interviews conducted by professional interviewers at Mathematica Policy Research. A revised survey was again pretested using 4 cognitive interviews with physicians, and a final version was developed using the results of those interviews. The final survey instrument was approved by the institutional review board of Massachusetts General Hospital.

The survey was mailed to physicians between November 2003 and June 2004 with a cover letter, a fact sheet describing the study, a postage-paid return envelope, a separate identifying postage-paid postcard, and a prepaid incentive check for \$20. To track who responded to the survey and who did not while preserving anonymity of survey respondents, physicians were asked to mail back the postcard separately from the completed survey instrument, which contained no individual identifiers. When the postcard with the respondent's name was received, the physician was considered to have responded to the survey.

Nonrespondents were contacted by mail and telephone and encouraged to participate. Of the 3504 sampled physicians, 337 (9.6%) were considered in-

eligible because they were not providing direct patient care, deceased, out of the country, incorrectly classified or practicing a nonsampled specialty, non-English-speaking, or on leave. Of the remaining 3167 eligible physicians, 1662 returned a completed questionnaire yielding a weighted response rate of 57.8%. The weighted response rate was calculated as the weighted sum of the respondents (including the completed interviews and ineligible cases) divided by the weighted sum of the full sample. The weighted response rate by specialty was 42.6% among cardiologists, 52.6% among internists, 55.3% among family practitioners, 57.7% among general surgeons, 58.2% among anesthesiologists, and 65.8% among pediatricians.

Analyses

All analyses were conducted using Stata version 8.¹⁵ and were weighted to account for the differential probability of selection within the specialty we surveyed. Presented is the percent of physicians rating each of the 3 dimensions of public roles, and each topic for physician advocacy, as "important" (defined as somewhat important and very important combined) or as "very important" and the percent of respondents reporting activities in each of the 3 dimensions in the previous 3 years.

To capture the breadth of attitudes to and activities consistent with physicians' public roles as single variables, we combined the responses for the 3 dimensions of such roles. The sum of attitude scores to community participation, political involvement, and collective advocacy could range from 3 (if community participation, political involvement, and collective advocacy were all rated as "not at all important") to 12 (if all 3 dimensions were rated as "very important"). Respondents were defined as being civic minded if the total was 10 or greater (ie, at least 1 dimension was rated to be very important and, if any dimension was rated not very important, the other 2 were rated very important). Respondents were defined as undertaking civic

activity if they answered yes to activity in any of the 3 dimensions in the preceding 3 years.

Logistic regression models were estimated to assess the independent associations between civic mindedness and respondents' personal, professional, and practice characteristics. Again using a logistic regression model, we then examined which variables were significantly related to civic activity. We included civic-mindedness as a dichotomous variable in the latter model. Professional age and hours per week providing clinical care were dichotomized in bivariate analyses to facilitate interpretation, but were included as continuous variables in multivariate analyses. CSCI was treated as a continuous variable. Mean life expectancy was omitted from multivariate models due to its high correlation with CSCI ($r=0.385$; $P<.001$).

RESULTS

Characteristics of Respondents

The weighted characteristics of respondents are presented in TABLE 1. Approximately 80% of the physicians were men, more than 70% were white, and 74% were graduates of US or Canadian medical schools. More than half had been in professional practice for more than 20 years. Almost half reported their primary practice to be a group private practice, one quarter reported it to be a solo or 2-person practice, a 10th a hospital or public clinic, and a 10th a university or medical school practice. Almost 89% practiced in metropolitan areas. The characteristics of respondents were representative of all physicians in those specialties in the AMA Masterfile from which our sample was drawn.

Reported Importance of Public Roles

More than 90% of respondents overall, and more than 87% in each specialty, rated community participation, political involvement, and collective advocacy to be important (Table 1). Furthermore, 51.9%, 38.6%, and 61.9%

Table 1. Participant Response Characteristics, and Bivariate Analysis of Rated Importance and Activities Undertaken in the Dimensions of Public Roles*

	Responses, No. (%)	Community Participation, %†		Political Involvement, %†		Collective Advocacy, %†	
		Rated as Important	Activity in Past 3 y	Rated as Important	Activity in Past 3 y	Rated as Important	Activity in Past 3 y
Overall	1662 (100.0)	94.9	54.2	91.6	25.6	97.0	24.3
Sex							
Men	1248 (79.7)	95.9	55.3	93.2	20.6‡	97.7	25.4
Women	403 (20.2)	94.5	54.7	90.9	27.4‡	96.7	23.9
Race/ethnicity							
Non-underrepresented minority							
White	1194 (71.8)	94.1	56.6‡	91.5	27.6‡	96.8	23.9
Asian	248 (15.4)	96.8	36.7‡	90.1	15.0‡	97.2	28.5
Other non-underrepresented minority	53 (3.6)	96.7	42.4‡	95.9	22.4‡	97.6	24.0
Underrepresented minority							
Black	63 (4.2)	97.0	71.8‡	95.0	34.8‡	100.0	29.7
Hispanic	59 (3.7)	96.3	59.8‡	92.7	18.7‡	100.0	23.5
Other underrepresented minority	19 (1.4)	100.0	70.8‡	90.8	56.0‡	97.7	35.2
Professional age, y							
<10	282 (12.5)	96.2‡	59.3‡	91.9	21.7	97.7	16.3‡
10-19	516 (32.1)	96.1‡	60.0‡	92.0	24.6	97.2	23.6‡
20-29	473 (30.9)	92.3‡	53.6‡	90.8	30.4	96.4	29.3‡
>29	381 (24.5)	95.2‡	41.9‡	91.6	23.9	96.5	25.8‡
Location of medical school							
United States/Canada	1252 (74.4)	94.2	58.6‡	91.2	28.0‡	96.9	24.0
Other	402 (25.6)	96.8	41.7‡	92.7	18.3‡	97.2	24.7
Specialty							
Family practice	298 (11.0)	95.3‡	64.1‡	90.9	28.2‡	97.0	23.6
Internal medicine	256 (7.6)	93.3‡	47.8‡	90.2	19.1‡	97.2	22.6
Pediatrics	323 (14.3)	97.8‡	65.2‡	93.5	27.2‡	97.8	28.4
Anesthesiology	289 (20.7)	96.5‡	32.8‡	94.8	30.0‡	96.2	20.5
Cardiology	229 (36.5)	92.6‡	55.3‡	87.3	26.1‡	95.2	27.9
General surgery	267 (9.9)	93.2‡	57.0‡	94.0	32.4‡	96.6	26.4
Primary practice organization							
Hospital/clinic	167 (11.3)	93.4‡	46.5‡	92.7	23.8	96.7	22.2‡
Staff-model health maintenance organization	68 (5.6)	87.2‡	43.9‡	84.7	13.1	95.6	8.4‡
Group	776 (43.6)	96.6‡	59.3‡	92.5	27.2	97.2	25.1‡
Solo or 2-person	385 (24.1)	94.0‡	51.5‡	91.2	24.6	97.4	24.4‡
Other	67 (4.7)	100.0‡	45.0‡	93.3	22.8	97.0	22.4‡
University/medical school	199 (10.7)	93.6‡	57.1‡	90.3	30.5	95.9	31.8‡
Hours in clinical patient care per week							
<50	711 (46.2)	94.5	52.4	90.6	25.2	96.1	24.0
≥50	951 (53.8)	95.2	55.8	92.4	25.9	97.7	24.5
Preceptor of physicians in training							
No	619 (38.4)	94.4	41.5‡	91.2	20.9‡	96.1	18.8‡
Yes	1033 (61.6)	95.2	62.2‡	91.8	28.5‡	97.4	27.7‡
Location of practice							
Metropolitan statistical area	1382 (88.8)	94.8	52.4‡	91.4	25.4	97.1	23.8
Non-metropolitan statistical area	176 (11.2)	96.8	67.7‡	93.0	30.5	97.3	30.9
Percentage of patients in practice insured by Medicaid or uninsured							
<25	828 (56.4)	94.6	54.2	91.4	25.5	96.9	21.9‡
≥25	657 (43.6)	95.0	55.9	91.0	27.6	96.5	28.8‡

*All percentages weighted for probability of selection in survey sample and nonresponse.

†Community participation defined as providing health related expertise to local community organizations. Political involvement defined as being politically involved (other than voting) in health-related matters at the local, state, or national level. Collective advocacy defined as encouraging a medical organization to advocate on an issue of the public's health that is not primarily concerned with physician welfare.

‡Statistically significant intragroup differences ($P < .05$).

of physicians rated community participation, political involvement, and collective advocacy to be very important, respectively.

After summing the rated importance of each of the 3 dimensions, 1162 respondents (70.3%) were defined as civic-minded with a total score of greater than 9 out of 12. In logistic regression analysis, being of an underrepresented race/ethnicity, graduating from a non-US or non-Canadian medical school, being a woman, and increasing professional age were significantly related to civic-mindedness (TABLE 2).

The adjusted impact of specialty on rated importance of community participation, political involvement, and collective advocacy is shown in FIGURE 1. With family practitioners as the reference group, pediatricians and family practitioners were significantly more likely than internists and nonprimary care physicians to rate community participation as being very important, indicated by 95% confidence intervals (CIs) that do not overlap the point estimates. Anesthesiologists and general surgeons were significantly more likely to rate political involvement as being very important than were cardiologists and pediatricians. Pediatricians, however, were significantly more likely to rate collective advocacy as being very important than were internists, anesthesiologists, and general surgeons. There was no significant relationship between civic-mindedness and primary practice type, rural practice, or hours per week providing clinical care. Although a high CSCI was not independently related to civic-mindedness (odds ratio [OR], 0.91; 95% CI, 0.71-1.18; $P=.49$), or rated importance of community participation (OR, 0.92; 95% CI, 0.72-1.16; $P=.47$), increasing CSCI was inversely related to rated importance of political involvement (OR, 0.77; 95% CI, 0.61-0.98; $P=.04$), and rated importance of collective advocacy (OR, 0.79; 95% CI, 0.62-1.00; $P=.05$).

Rated Importance of Topics for Public Advocacy

FIGURE 2 shows a conceptual model of physicians' public roles in which socioeconomic, political, environmental, and behavioral issues are organized into domains reflecting their proximity to the concerns a physician may have for an individual patients' health.¹⁰ The model hypothesized that physicians would rate as most important those factors, such as access to health care, that appear most directly

relevant to the health of individual patients. Other influences and behaviors that have less obvious or less direct apparent influence on individual health care, labeled "broad socioeconomic issues in the model," would be rated less important as topics for public involvement by physicians.¹⁰

The percent of respondents in the IMAP survey who rated items within each domain as being very important for physician advocacy are overlaid on this model (Figure 2). Overall, most

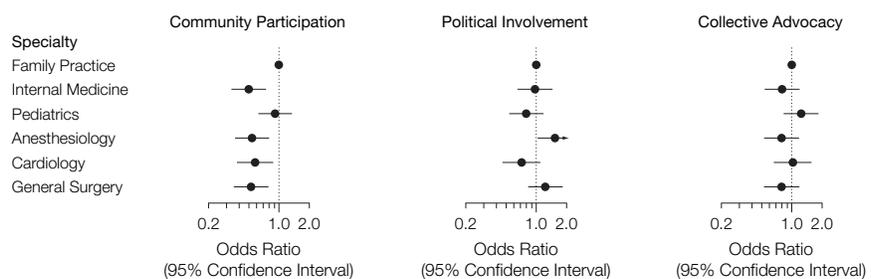
Table 2. Associations Between Physician or Practice Characteristics and Civic-Mindedness (Multivariate Analyses)

Physician or Practice Characteristic	Adjusted OR (95% CI)	P Value
Female sex	1.54 (1.07-2.22)	.02
Underrepresented minority	1.86 (1.05-3.28)	.03
Professional age, per year*	1.03 (1.01-1.04)	<.001
Graduate of a non-US or non-Canadian medical school	1.46 (1.01-2.12)	.046
Specialty		
Family practice	1.00	
General surgery	0.81 (0.53-1.23)	.32
Pediatrics	1.03 (0.67-1.58)	.89
Cardiology	0.70 (0.45-1.10)	.12
Internal medicine	0.72 (0.47-1.09)	.12
Anesthesiology	0.86 (0.57-1.31)	.49
Primary practice type		
Group practice	0.99 (0.58-1.68)	.96
University/medical school	1.06 (0.56-1.99)	.86
Solo/2-person practice	0.74 (0.42-1.30)	.30
Staff-model health maintenance organization	0.58 (0.25-1.34)	.20
Hospital/clinic	1.00	
Preceptor of physicians in training	1.31 (0.96-1.77)	.08
Rural practice location	1.19 (0.78-1.82)	.42
Percentage of patients uninsured/unable to pay*	1.00 (0.99-1.01)	.55
Comprehensive social capital index*	0.91 (0.71-1.18)	.49
Hours per week of clinical contact*	1.00 (0.99-1.01)	.74

Abbreviations: CI, confidence interval; OR, odds ratio.

*Continuous variables (odds ratio based on a 1-unit increase).

Figure 1. Effect of Physician Specialty on Attitudes to Public Roles Being Very Important (Multivariate Analyses)



Odds ratios indicate likelihood, by specialty, of a rating of very important relative to family practitioners (reference group).

physicians rated issues related to risky behaviors and proximal causes of illness and injury, such as obesity and poor nutrition, immunization, substance abuse, and road safety, which are labeled as direct socioeconomic influences in the model, as very important. Approximately half rated access-to-care issues (universal health insurance or culturally appropriate care) as being very important, fewer than half rated air pollution or illiteracy as being very important, and only 22.6% rated unemployment as being very important, each of which was hypothesized to be more distal causes of illness or injury.

Activities Consistent With Public Roles

Table 1 shows the overall percentage of respondents who reported providing health-related expertise to local community organizations (54.2%), being politically active (other than voting) on a local health care issue (25.6%), and encouraging a professional society to address a public health or policy issue that

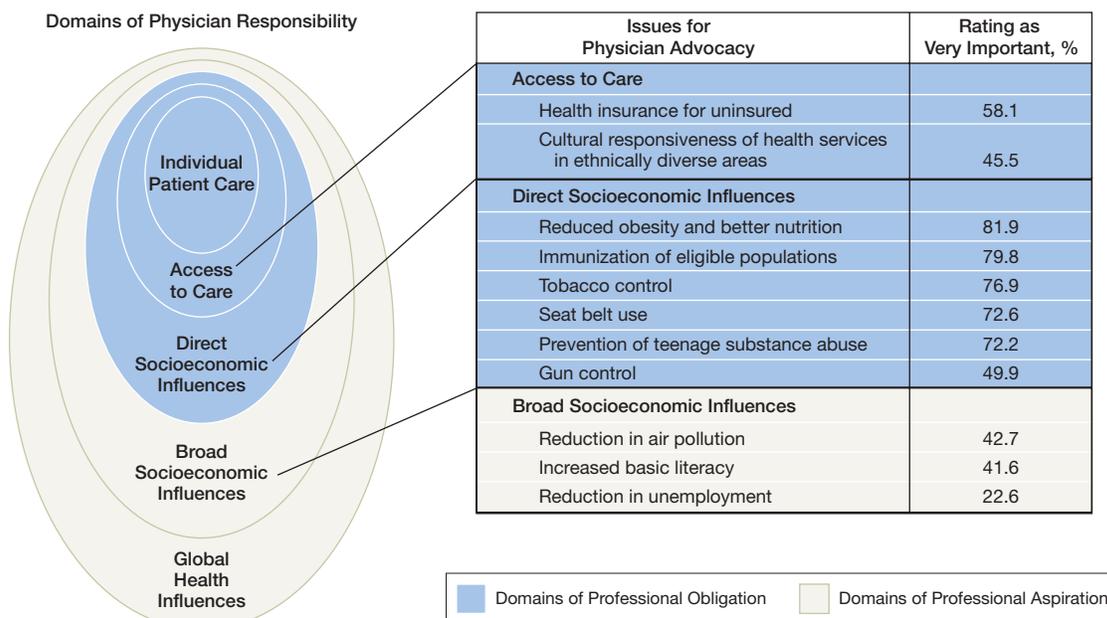
is not primarily concerned with physician welfare (24.3%) within the past 3 years. There were 1077 (65%) who had been active in at least 1 of the 3 dimensions. Civic-minded physicians were more likely to have been active in at least 1 dimension than those who were not (70.7% v 53.2%; $P < .001$).

Compared with other specialties, more family practitioners (64.1%), more pediatricians (65.2%), and fewer anesthesiologists (32.8%) reported participating in community organizations ($P < .05$). Anesthesiologists also reported the lowest percentages active in collective advocacy (20.5%). On the other hand, anesthesiologists (30.0%) and general surgeons (32.4%) more often reported being politically involved than other physicians ($P < .05$).

Variation in civic activity was correlated with other physician characteristics. Rural physicians tended to be more active in pursuits in each of the 3 dimensions than physicians in metropolitan areas, and significantly more so in community participation. A higher percentage of physicians of underrep-

resented race/ethnicity than those not of underrepresented race/ethnicity tended to be active in each dimension (statistically significant for community participation and political involvement), and a significantly smaller percentage of Asian physicians had been active in community organizations and had been politically active. Older physicians were significantly less active in community organizations, but significantly more involved in collective advocacy through their professional societies. Physicians who were graduates from non-US or non-Canadian medical schools were significantly less active in community organizations and politics. Physicians in staff model health maintenance organizations were significantly less active in all 3 dimensions than were physicians working in other settings. Physicians who were preceptors of physicians in training were significantly more active than those who had not precepted physicians in training. Physicians with a greater proportion of patients insured by Medicaid or uninsured and unable to pay were sig-

Figure 2. Attitudes About the Extent of Physicians' Public Responsibilities Showing the Percentage Rating as Very Important



Socioeconomic influences, including their environmental, political, and behavioral associations, are shown as expanding domains depicting proximity to physicians' core responsibility for individual patient care. Direct socioeconomic influences were more often rated as very important by physicians than were access-to-care issues, followed by broad socioeconomic influences. Adapted from Gruen et al.¹⁰

nificantly more active in collective advocacy, but not more individually active in community participation or politics. Number of hours spent in clinical patient contact was unrelated to levels of activity in each of the 3 dimensions.

The results of multivariate analyses are shown in TABLE 3. Civic activity was significantly associated with civic-mindedness (OR, 2.37; 95% CI, 1.75-3.30; $P < .001$). Other characteristics independently associated with civic activity included being a physician from an underrepresented race/ethnicity, being a preceptor of physicians in training, having rural practice location, and being a graduate of a US or Canadian medical school.

In multivariate analysis, the odds of family practitioners and general surgeons being active were significantly greater than they were for anesthesiologists. The odds of activity were significantly greater for physicians whose primary practice was in a group, a solo or 2-person practice, or an academic practice than for physicians whose primary practice was a non-university hospital or public clinic. The number of clinical contact hours per week, the percentage of patients insured by Medicaid or uninsured and unable to pay, and the CSCI had no significant association with activity, nor did sex or professional age after including civic mindedness in the model.

COMMENT

Physician participation in public roles—defined as community participation and individual and collective health advocacy—was strongly supported by US physicians in our sample. More than 90% regarded public roles as important. Furthermore, more than half regarded community participation and collective advocacy to be very important, and more than one third regarded individual political involvement to be very important. Approximately two thirds of all physicians reported participating in at least 1 public role in the previous 3 years.

Table 3. Associations Between Physician or Practice Characteristics and Civic Activity (Multivariate Analyses)

Physician or Practice Characteristic	Adjusted OR (95% CI)	P Value
Civic-mindedness	2.37 (1.75-3.30)	<.001
Female sex	0.86 (0.61-1.23)	.41
Underrepresented minority	2.34 (1.35-4.08)	.003
Professional age, per year*	0.99 (0.98-1.01)	.33
Graduate of a non-US or non-Canadian medical school	0.71 (0.51-0.99)	.049
Specialty		
Family practice	1.00	
General surgery	0.97 (0.61-1.53)	.89
Pediatrics	0.83 (0.54-1.27)	.39
Cardiology	0.70 (0.43-1.13)	.14
Internal medicine	0.69 (0.45-1.07)	.10
Anesthesiology	0.52 (0.34-0.80)	.003
Primary practice type		
Group practice	2.13 (1.30-3.48)	.003
University/medical school	1.94 (1.06-3.55)	.03
Solo/2-person practice	1.77 (1.03-3.02)	.04
Staff-model health maintenance organization	1.15 (0.51-2.62)	.73
Hospital/clinic	1.00	
Preceptor of physicians in training	2.10 (1.55-2.85)	<.001
Rural practice location	1.81 (1.15-2.87)	.01
Percentage of patients uninsured/unable to pay*	1.00 (0.99-1.01)	.85
Comprehensive social capital index*	1.03 (0.78-1.38)	.82
Hours per week of clinical contact*	1.00 (0.99-1.01)	.76

Abbreviations: CI, confidence interval; OR, odds ratio.

*Continuous variables (odds ratio based on a one unit increase).

These results indicate a high degree of consensus and previously undocumented willingness of physicians to engage in addressing US public health concerns.

Our findings suggest that many physicians believe they have professional responsibilities to health-related issues outside their direct clinical practice, and that these are considered to be responsibilities of individual physicians, expressed through community participation and individual political involvement, as well as of their professional associations. These findings are consistent with a view of professionalism in which physicians are responsible in their areas of expertise to contribute to helping the society that grants them professional status.^{3,8,16} If physicians subscribe to this view, then they likely perceive a point where their responsibilities as experts end, and their civic responsibilities are no greater than those of other members of society. We had previously suggested that this dis-

inction lies between advocacy on issues that are perceived to be closely connected to individual patients' health (such as tobacco control, nutrition, immunization, substance abuse, and seat belt use), and broader population health concerns that physicians may perceive to be less clearly linked to the health of individual patients (such as unemployment, illiteracy, and air pollution).¹⁰ The finding that 72% to 82% of physicians regarded involvement in issues closely connected to individual patients' health to be very important but only 22% to 43% regarded involvement in issues less clearly linked to individual patient health to be very important, was consistent with our previous hypothesis.¹⁰

Given estimates of over 60 million uninsured and underinsured Americans,¹⁷ and the impact that access to care has on receipt of quality health care,¹⁸ it is worth considering why only 58% and 46% of our respondents regarded universal health insurance

and culturally sensitive care to be very important concerns, respectively. It may be that physicians don't perceive the link between access to care and health as strongly as other issues, that they don't believe they have a role in addressing these issues, or that they don't perceive themselves to be able to exert as much influence on access concerns as they can on smoking policy, for example. Another possibility is that the question of universal insurance has become linked to partisan debates and ideological positions in ways that make physicians feel uncomfortable. Gun control is similarly linked to ideology and partisanship, which may explain why only 50% of physicians regarded it to be a serious public health issue.

We determined respondents' civic mindedness based on the extent to which they rated particular public roles as being very important. By this standard, more than 7 out of every 10 respondents were civic-minded. Our multivariate analysis showed that civic mindedness varied with sociodemographic characteristics, such as being of an underrepresented race/ethnicity, a graduate of a non-US or non-Canadian medical school, sex, and professional age, and was independent of specialty and other professional and practice factors that we took into account. This suggests that civic mindedness is heavily influenced by physicians' personal characteristics, and perhaps less by professional and practice attributes. Nevertheless, other unmeasured professional and practice factors could have influenced civic mindedness.

We found that physicians' civic mindedness was an important influence on civic engagement, but that attitude did not always predict action. For example, 28% of those identified as being civic minded had not been active in public roles in the past 3 years, and 53% of those considered not to be civic-minded had participated in civic activities. In multivariate analysis, a number of factors other than civic mindedness were significantly related

to civic activity including professional and practice characteristics such as specialty, practice setting, being a preceptor of physicians in training, rural practice location, and being a physician of an underrepresented race/ethnicity or a graduate of a US or Canadian medical school.

We can only speculate on the reasons for these associations. Physicians from underrepresented race/ethnicity groups and those employed in academic environments may have been more civic minded and more active in public roles because of their greater direct experience with social influences on health or greater awareness of the evidence of the health effects of some socioeconomic characteristics. Teaching students (independent of academic practice setting) may be an extra factor that motivates physicians to be active in public roles, or it may be an indicator of a civic-oriented practice. Rural physicians may be more active because, historically at least, members of rural communities were more often involved in community projects and organizations.

The potential reasons why organizational setting was associated with civic activity are less clear. Group practice environments seem to be independently associated with much greater levels of civic activity than hospital or public clinic environments. The reasons for this observation, if confirmed in future research, seem worth exploring in more detail. The phenomenon does not appear related to physicians in groups having more time to pursue outside roles since group practice physicians who worked in clinical care more than 50 hours per week were just as active in public roles as those who worked less than 50 hours. Furthermore, there was no significant association between civic activity and the proportion of all patients receiving care from the practice who are poor, the life expectancy of local residents, or measures of statewide social capital. One possibility is that physicians who are temperamentally comfortable in

group settings are also comfortable with the relationships that mediate public activity. Further research might investigate if there are measurable characteristics that mark the civic-minded physician and, if so, whether they should be selected for and cultivated.

Results of this study should be interpreted with caution given their reliance on self-reported beliefs and behaviors, and if nonresponders regard public roles differently than responders. Nonresponders may be less civic-minded and, if so, these results overestimate physician civic mindedness in general. Our findings may also not be generalizable to specialties that were not surveyed. Furthermore, there may have been associations with civic mindedness or civic activity that were not measured but that might be influential, such as socially oriented medical school programs or personal experiences of hardship.

Nonetheless, this study provides some important evidence for professional leaders and organizations, policy makers, and educators who may want to engage more physicians in public health and health policy concerns. First, the majority of physicians are supportive of such engagement through community participation, political involvement, and collective advocacy. Second, the perceived importance physicians assign to involvement in any particular issue appears to be, at least in part, related to how directly the issue concerns individual patients' health. Clarifying the evidence of such causative links may therefore be critical in influencing physician participation in public roles. Third, a variety of personal, professional, and practice characteristics may influence physicians' civic mindedness and civic activity. Confirming and understanding these potential influences could provide important guidance to leaders and policy makers who want to enlist the positive energy of physicians in promoting public health at a societal level.

Author Contributions: Dr Gruen had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Gruen, Campbell, Blumenthal. *Acquisition of data:* Campbell, Blumenthal. *Analysis and interpretation of data:* Gruen, Campbell, Blumenthal. *Drafting of the manuscript:* Gruen, Campbell, Blumenthal. *Critical revision of the manuscript for important intellectual content:* Gruen, Campbell, Blumenthal. *Statistical analysis:* Gruen. *Obtained funding:* Campbell, Blumenthal. *Administrative, technical, or material support:* Campbell. *Study supervision:* Campbell, Blumenthal. **Financial Disclosures:** None reported.

Funding/Support: This research was funded by a grant from the Medicine as a Profession Project of the Open Society Institute. Dr Gruen reports being a 2002-2003 Harkness Fellow in Health Policy at the Harvard School of Public Health, receiving support from The Commonwealth Fund, and a being a Fellow in Medical Ethics at Harvard Medical School.

Role of the Sponsors: The sponsors had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; or preparation, review, or approval of the manuscript.

Acknowledgment: We thank Paul D. Cleary PhD, Yale School of Public Health, for advice on earlier drafts of the manuscript, Manju Ghokale, formerly of the Institute of Health Policy, Massachusetts General Hospital, Susan Regan PhD, Division of General Medi-

cine, Massachusetts General Hospital and Harvard Medical School for assistance with data processing and analysis, and Janice Ballou and Frank Potter at Mathematica Policy Research Inc. Use of the US Burden of Disease and Injury Project data were provided by Catherine Michaud, MD, PhD, Center for Population and Development Studies, Harvard School of Public Health. The Social Capital Community Benchmark Survey data used in this study were collected by Robert D. Putnam of the Saguro Seminar Civic Engagement in America, a project of the John F. Kennedy School of Government at Harvard University and numerous community foundations nationwide, and made available through the Roper Center for Public Opinion Research. None of the individuals listed in this acknowledgment received additional compensation for their work on this article.

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