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## Antecedents to Agenda Setting and Framing in Health News: An Examination of Priority, Angle, Source, and Resource Usage from a National Survey of U.S. Health Reporters and Editors

**Sherrie Flynt Wallington, Kelly Blake, Kalahn Taylor-Clark, and K Viswanath**

Harvard School of Public Health, Boston, Massachusetts, USA and Dana-Farber Cancer Institute, Boston, Massachusetts, USA

The influence of news media on audience cognitions, attitudes, and behaviors in the realm of politics, race relations, science, and health has been extensively documented (Finnegan & Viswanath, 2002; Zhou & Moy, 2007). Agenda setting and framing studies show that news media influence how people develop schema and place priorities on issues, with media stories serving as a major source of issue frames (Scheufele, 1999). News media are critical intermediaries for translating important health and science information into forms easily disseminated to and understood by the public (Viswanath et al., 2008). Dorothy Nelkin (2001) suggested that the media serve as brokers between science and the public, framing the public's social reality and shaping public consciousness about science-related events.

Shoemaker and Reese (1996) identified several factors contributing to the making of news. Factors include social norms and values of journalists, organizational constraints such as deadlines and limits of time and space, pressures from social movement organizations and interest groups, and reliance on government and community leaders through journalistic beat systems that often demarcate established hierarchies for source and resource usage in newsgathering. Early research primarily studied general assignment and public affairs reporters; the work of journalists who report on health and medicine is understudied, with a few exceptions (Kaiser Family Foundation, 1999; Ranshoff & Ranshoff, 2001; Schwitzer et al., 2005).

Recent health journalism work has begun to bridge research gaps using systematic explorations of occupational practices of health and medical reporters (Viswanath et al., 2008). We seek to build on this area of research to examine how certain organizational and individual characteristics of health reporters and editors differentially may influence factors that act as antecedents to media agenda setting and framing in health and medical science news (McCombs & Ghanem, 2001). Based on the premise that the sources, resources, priorities, and angles that journalists use in their reporting act as antecedents to media agenda setting and framing, our study examines how source and resource reliance and the

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Address correspondence to Sherrie Flynt Wallington, Lombard Comprehensive Cancer Center, Georgetown University Medical Center, Research Bldg., W326A, 3970 Reservoir Road, NW, Washington DC 20057. sfw49@georgetown.edu.

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selection of angles and priorities are differentially influenced both by journalists' individual characteristics and the structure of the news organizations in which they work.

## Theoretical Frameworks

Agenda setting and framing are two serviceable frameworks for examining both the occupational practices of media professionals and the audience effects resultant from media exposure. Therefore, it is instructive to examine factors that contribute to the agenda and frames used in health and medical science reporting. One set of factors that potentially influences the media agenda and media frames has been discussed in research on community structure and its influence on the press. Developed by the Minnesota community media studies team of Tichenor, Donohue, and Olien (1973, 1980), and advanced by others (Demers, 1996; Demers & Viswanath, 1999; Hindman, 1999; Pollock, 2007; Pollock & Yulis, 2004), the community structure approach suggests that local mass media, for the most part, are supportive of and dependent upon local institutions, and they are reflective of the balance of power and status of different social groupings within the community (Olien, Donohue, & Tichenor, 1995). By drawing attention to how news media interact with and constitute a subsystem within the larger community system, this approach identifies important antecedents of news reporting, specifically the role of community characteristics as antecedents of news reporting (Riffe, Lacy, & Fico, 2005). Pollock (2007) further suggests that the community structure approach goes beyond simply exploring the impact of media on society by also exploring the impact of society on media. The idea that the social context in which reporting occurs influences health and medical science reporters' and editors' occupational practices and values forms a critical backdrop for this study. We add further nuance by simultaneously looking at individual-level factors and contextual factors for independent influences on media agenda setting and framing.

## Agenda Setting

Agenda setting scholarship has focused mostly on the transfer of the salience of topics covered in the media to the priorities people place on those topics (McCombs & Shaw, 1972). Agenda setting may be categorized into three distinct but related themes that examine the link between (a) *public agenda setting*—issues portrayed in the media and the public's priorities, (b) *policy agenda setting*—media coverage and its influence on the legislative agenda of policymaking bodies, and (c) *media agenda setting*—antecedents such as institutional roles and processes that are influential in the selection of issues and content covered in the media (Kosicki, 1993). We focus on the latter, media agenda setting, to examine the “who” and “what” that influence U.S. health journalists' coverage of health and medical topics, and how those influences may be differential across organizational and individual characteristics of reporters and editors.

To examine media agenda setting in health and science news, it is useful to understand journalists' reliance on news sources. Gans (1979) likened the journalist-source relationship to a dance, with sources seeking access to journalists and journalists seeking access to sources. Gandy (1982) considered information provided by sources as a form of journalistic subsidy that influences what and how journalists report. Journalists rely heavily on governmental or elite sources (Schudson, 2006). This primarily is due to reporters' perceptions that official sources know more and have more accurate information (Tuchman, 1972), accessibility of these source types, and the source's ability to articulate and provide credible information (Fico, 1984).

Daily newsgathering realities and tight deadlines make journalists heavily dependent on resources for reporting (Curtin, 1999). Having ready reporting resources is part of “routinizing” newsgathering (Tuchman, 1997). A study of a television network affiliate

found that the amount of available resources to cover a story was as strong a determinant in deciding news coverage as standard news judgment (Berkowitz, 1991). Thus, it is important to examine how news organizations' structural characteristics may differentially affect the resources available to and used by health and medical science reporters and editors.

One monumental change in the available toolbox of journalistic resources in the past decade has been the use of the Internet (Hachigian & Hallahan, 2003). Internet resources have made journalists' jobs easier and improved their work quality (Callison, 2003). Journalists use Internet resources to identify experts, gather background information, provide context, find facts and ready references, access government and company information, stay abreast of current events, and identify story ideas (Middleberg & Ross, 2002). Print journalists indicate that the Internet allows them to compete with radio and television breaking news (Middleberg & Ross, 2002). To date, no other study has examined differential source and resource usage as critical antecedents to media agenda setting in health and medical science news.

## Framing

Some suggest that early agenda setting literature, by focusing only on the transfer of an issue's salience, was too limiting, and instead have argued that news media influence how people should think about specific topics, thus "framing" issues for the public (Iyengar, Peters, & Kinder, 1982). Framing literature largely explains the news media's role not just in amplifying issues, but also in defining issues for the public, thereby expanding agenda setting from merely drawing attention to a topic to actually articulating points of view regarding that topic (Weaver, 2007). Reese (2001) characterizes frames as organizing principles that are socially shared and persistent over time, working symbolically to meaningfully structure the social world. Reese's definition provides a useful framework for examining several priorities and angles (antecedents to framing) that health reporters and editors say they use when reporting on health. We argue that antecedents to news framing may include priority setting by reporters and editors, and the angles or lenses through which journalists choose to tell a story. That is, health and medical science news may be constructed using a priori ideas about the goals of their reporting (priorities) and how stories should be told in order to garner the most impact (angles).

Although relatively unexamined, some research has been published on decision-making styles of editors and reporters. Early inquiries note that organizational and personal background factors influence how media managers view decision making, as well as the priorities they place on reporting (Hartman, Lundberg, & White, 1990). Research examining the media's "gatekeeping" function reveals that reporters and editors institute a set of shared news values when determining priorities for reporting and newsworthiness. These news values, or priorities, typically have included prominence, human interest, conflict, novelty, timeliness, and proximity or local appeal (Gans, 1979). Sylvie and Huang's (2008) study of 341 editors and managerial staff from U.S. dailies revealed that several sets of values underlie journalistic decision making and priority setting, including social values (e.g., tradition, group conflict); journalistic values (e.g., objectivity, responsibility); organizational values (e.g., motivation, company goals); and audience values (e.g., impact, timeliness).

Our study builds on these broad categories to examine what factors predict differential usage of selected priorities often used in health journalism as a way to explore priority setting as an antecedent to news framing. Additionally, we explore other angles that health reporters and editors may use to shape their stories as a way of extending the exploration of differential usage of news frames. To date, no other study has examined differential priority and angle selection as critical antecedents to framing in health and medical science news.

The activities of interest groups, policymakers, and others interested in shaping media agendas and issue frames may impact both the volume and character of news messages about a particular issue (Scheufele & Tewksbury, 2007). Moreover, structural characteristics of newsrooms and the journalists that comprise them may differentially impact the usage of sources and resources in reporting, as well as the priorities and angles that shape news coverage of a topic. Our study examines antecedents to agenda setting and framing in health and medical science news to explore how journalists' individual and organizational characteristics differentially impact their choice of news sources and resources (factors that contribute to media agenda setting), and priorities and angles (factors that contribute to framing).

## Methods

### Data

Study data were drawn from a 2005 national survey of U.S. health and medical science reporters and editors supported by the National Cancer Institute, a component of the National Institutes of Health. The sampling frame was developed using Bacon's MediaSource, a comprehensive database of more than 80,000 national and local print and broadcast media outlets, which includes contact information for media newsroom personnel. The target population was editors and reporters working in the following media: news services and syndicates, radio and television programs, community newspapers, daily newspapers, magazines, radio stations/ networks, cable television stations/networks, and television stations/networks.

For all analyses, the news organization was the unit of analysis, and the units of observation were reporters and editors. We identified 1,482 news organizations that represented local and national print and broadcast media outlets of varying size. Findings reflect responses from 468 reporters and editors from 463 news organizations, yielding a response rate of 31.2%. Although the response rate may seem low, post hoc analyses revealed that nonrespondent organizations were similar to respondent organizations in terms of media type and size, with local television showing only a small difference. Survey methodology is outlined further in an earlier study using this dataset (Viswanath et al., 2008).

### Measures

**Dependent Variables**—To explore antecedents to media agenda setting, we chose outcome variables that reflect a variety of possible sources and resources journalists may use when gathering news and developing health and medical science stories for publication or broadcast. News media organizations rely on sources and resources for diversity in perspectives to bring in views from those likely to lend insights to events or issues (Reese, Grant, & Danielian, 1994). Respondents were asked how often they rely on obtaining information from each of the following sources: (a) government scientist or official, (b) industry scientist or spokesperson, (c) other scientist or researcher, (d) health care provider, and (e) patient or advocacy organization representative. In addition, respondents were asked how often they rely on each of the following tangible or electronic resources when working on a health or medical science story: (a) government websites, (b) other websites, (c) news releases, and (d) scientific journal articles.

To explore antecedents to framing in health and medical science news, we chose outcome variables reflecting a variety of possible priorities and angles that may be used in reporting. Respondents were asked how important each of the following priorities are when developing a story: (a) disseminating new, accurate information; (b) educating the public so people can make more informed decisions; (c) providing entertainment; (d) developing public health

and scientific literacy; and (e) influencing the public's health behavior. Also, respondents were asked how often they choose the following angles: (a) public impact, (b) economic impact, (c) controversial new information, (d) human interest, and (e) need to change personal behavior.

Item responses for all outcome variables employed a scale of 1 to 5, with 5 being "very often" and 1 being "not at all." For data analysis using logistic regression, scales were dichotomized such that responses of 4 and 5 represented the response of "often."

**Independent Variables**—Media studies utilizing a structural approach to examine journalistic practices and media effects have documented that organizational characteristics may influence journalists' newsgathering in several ways (Demers & Viswanath, 1999; Tichenor et al., 1980; Weaver & Wilhoit, 1996). While there is considerable controversy over the mechanisms through which the nature of news organization ownership (e.g., private versus public) influences journalism, it is widely agreed that media ownership matters (Bagdikian, 2000). The nature of ownership structure likely influences media coverage through the provision of resources for reporting and socialization in the newsroom.

We used three indicators as predictor variables characterizing the types of media organizations represented in the survey: (a) whether the respondents' media organization is owned by a public corporation whose shares are traded on an exchange, (b) whether the organization is owned by a group or chain, and (c) the number of full-time news and editorial staff employed by the organization. In addition to organizational structure, individual characteristics of respondents were included as predictor variables in our analyses of media agenda setting and framing. We utilized four survey questions to reflect individual characteristics of respondents: two were demographic variables (education level and years working as a journalist), and two represented respondents' perceptions of occupational autonomy. Below, we offer background and explanations for the inclusion of selected demographic and occupational autonomy variables.

We also dichotomized the education variable in order to examine how specialization may affect source and resource usage, as well as choice of news priorities and angles. Seventy percent of respondents to our survey had a bachelor's degree; as such, we examined the role of education as a predictor of media agenda setting and framing by assessing differential responses between respondents who had a bachelor's degree or less compared with those with a master's degree or more, with the assumption that advanced degrees offer greater specialization.

Researchers consistently have explored journalism's organizational culture and occupational autonomy (Johnstone, Slawski, & Bowman, 1976; Weaver, Beam, Brownlee, Voakes, & Wilhoit, 2006; Weaver & Wilhoit, 1986, 1996). Scholars characterize journalistic autonomy as journalists' freedom to shape their work without being controlled by internal and external powers (Scholl & Weischenberg, 1999). Pollard's (1995) work illustrated that journalists reported higher job satisfaction if they had autonomy, authority, and control over their work. Shoemaker and Mayfield (1987) suggest, however, that the news media are far from autonomous, and content decisions are swayed by social and institutional pressures within and outside the news organization, by a desire to maintain the status quo, and by sources that have social power within the community (Olien et al., 1995; Pollock, 2007). We sought to explore the role of occupational autonomy in media agenda setting and framing by examining the following predictor variables: (a) whether the respondent has the freedom to select the stories that he or she thinks are important, and (b) whether the respondent has the freedom to determine which aspects of the story should be emphasized. Responses employed a 5-point Likert scale, with 1 being "do not agree" and 5 being "strongly agree."

For analysis, we dichotomized responses of 4 and 5 to reflect “agree,” which allowed us to create binary outcomes that could be used in logistic regression.

## Data Analysis

We used multivariable logistic regression to model the fitted odds that survey respondents’ organizational and individual characteristics independently and differentially predict the sources and resources journalists use to work on health news stories (factors that may be considered antecedents to media agenda setting) and the priorities and angles used in reporting (factors that may be considered antecedents to framing). Complete case analyses were utilized for each outcome variable ( $n = 419\text{--}421$ , depending on survey item), and one logistic regression model was run per outcome variable. All independent variables were included in each model to control simultaneously for the contribution of organizational and individual characteristics of respondents. Analyses also controlled for potential confounding by respondent gender and age. Weights were added to reflect differential probabilities of selection per stratum (e.g., national outlets were sampled with certainty, while local television and radio were sampled using a simple random sampling method). Statistical significance was tested at 95% confidence levels.

## Results

### Characteristics of the Sample

The largest numbers of respondents were from local, rather than national, media outlets; local newspapers with a circulation of  $\geq 28,300$  composed 30.6% of the sample, while smaller local newspapers (with a circulation of  $<28,300$ ) composed 23.9% of the sample. Respondents from local television stations made up 14.3% of the sample, and local magazines with a circulation of  $>280,000$  composed 11.8% of the sample (see Table 1). Other sample characteristics and descriptive statistics have been reported elsewhere (Viswanath et al., 2008).

### Media Agenda Setting: News Sources

Our analyses revealed several differences among U.S. health and medical science reporters and editors in the likelihood of using news sources from several sectors (see Table 2). Individual characteristics such as education and years working as a journalist were independent predictors of sourcing. Respondents with a bachelor’s degree or less were 2.24 times more likely than respondents with a master’s degree or higher to use health care providers as sources ( $p < 0.0001$ ), and 2.33 times more likely to use patient or advocacy organization representatives ( $p < 0.0001$ ). Additionally, health reporters and editors with a bachelor’s degree or less were significantly more likely than respondents with a master’s degree or more to use government scientists and officials (OR = 1.52;  $p < 0.01$ ), and significantly less likely to use “other” scientists or researchers (OR = 0.56;  $p < 0.0001$ ). Those respondents with 1–15 years’ experience working as a reporter or editor were significantly less likely than those working 16 or more years to use “other” scientists or researchers (OR = 0.70;  $p < 0.01$ ), but 31% more likely than the more seasoned respondents to use patient or advocacy organization representatives (OR = 1.31;  $p < 0.05$ ). Perceived occupational autonomy did not seem to contribute independently to sourcing in this analysis.

Organization size, a structural characteristic, significantly and differentially contributed to news sourcing in several areas. Health reporters and editors working for small media organizations (defined as  $<30$  full-time news and editorial staff) were significantly less likely to use government scientists and officials (OR = 0.75;  $p < 0.05$ ) and “other” scientists or researchers (e.g., university-based; OR = 0.62;  $p < 0.0001$ ), as compared with reporters and editors working at larger organizations. In addition, respondents from small media

organizations were significantly less likely than respondents from large media organizations to use health care providers (OR = 0.51;  $p < 0.0001$ ). There were no significant differences by individual or organizational characteristics in the use of industry scientists or spokespersons as sources; all health reporters and editors in our survey were equally likely or unlikely to use industry scientists and spokespersons.

### Media Agenda Setting: Resources

Results indicate several differences among U.S. health and medical science reporters and editors in the likelihood of using several types of resources (including government websites, news releases, and scientific journal articles) in their reporting (see Table 3). Individual characteristics such as education and years of experience were associated with resource usage such that respondents with a bachelor's degree or less were significantly less likely than those with a master's degree or higher to use "other" websites (OR = 0.70;  $p < 0.05$ ) and scientific journal articles (OR = 0.50;  $p < 0.0001$ ), and they were significantly more likely to utilize news releases (OR = 1.39;  $p < 0.05$ ). Those respondents working for 1–15 years as a reporter or editor were approximately 40% more likely than respondents working for 16 or more years to use other websites (OR = 1.44;  $p < 0.01$ ) and news releases (OR = 1.40;  $p < 0.01$ ).

Organizational characteristics also were independently and differentially associated with resource usage. Respondents from small media outlets were significantly less likely than those from large outlets to use government or other websites (OR = 0.74 and 0.76, respectively;  $p < 0.05$ ) and scientific journal articles (OR = 0.57;  $p < 0.0001$ ), and they were significantly more likely to utilize news releases (OR = 1.33;  $p < 0.05$ ). Respondents from media organizations not owned by a public corporation were significantly less likely than respondents from public organizations to use other websites (OR = 0.66;  $p < 0.01$ ), news releases (OR = 0.72;  $p < 0.05$ ), and scientific journal articles (OR = 0.73;  $p < 0.05$ ).

### Framing: Priorities

Respondents were equally likely or unlikely to say that influencing the public's health behavior is an important priority for their health reporting; there were no significant differences by organizational or individual characteristics regarding that particular priority (see Table 4).

Structural characteristics of respondent organizations were significant predictors of differential priority setting among respondents to the survey (see Table 4). Respondents from private organizations were 3.5 times more likely than respondents from organizations owned by a public corporation to say that educating people to make informed decisions is an important priority in their health reporting (OR = 3.57;  $p < 0.0001$ ). They were also more than twice as likely to say that providing entertainment is important (OR = 2.35;  $p < 0.0001$ ). Respondents from small media organizations were almost 70% more likely than respondents from large organizations to say that developing the health and scientific literacy of the public is an important priority (OR = 1.69;  $p < 0.0001$ ), and they were significantly less likely than respondents from large organizations to say that disseminating new, accurate information and providing entertainment are important (OR = 0.61;  $p < 0.05$  and OR = 0.69;  $p < 0.05$ , respectively).

Individual characteristics of respondents played a significant role in some areas of priority setting for health and medical science news (see Table 4). Respondents with a bachelor's degree or less were almost two times as likely as respondents with a master's degree or higher to say that educating the public to make informed decisions is an important priority when reporting on health (OR = 1.96;  $p < 0.01$ ). Less seasoned reporters (those with 1–15

years working as a journalist) were significantly more likely to say that providing entertainment is an important priority (OR = 1.46;  $p < 0.05$ ). Occupational autonomy was a strong predictor of differential priority setting across priorities. Respondents who said that they do not have freedom to determine which aspects of a story should be emphasized were about half as likely to say that any of the given priorities were important.

### Framing: Story Angles

In examining possible angles that health and medical science reporters could choose to shape and frame their stories, we found some interesting differences in usage by both organizational and individual characteristics of respondents (see Table 5). Journalists from small media organizations and respondents with a bachelor's degree or less were significantly less likely than respondents from large organizations (OR = 0.76;  $p < 0.05$ ) and respondents with a master's degree or more (OR = 0.70;  $p < 0.05$ ) to say that economic impact is an angle they use in reporting. They are also 40% less likely to say that controversial news information is an important angle to pursue (OR = 0.60;  $p < 0.0001$  for both organization size and education level). Respondents with a bachelor's degree or less were 2.5 times more likely than respondents with a master's degree or more to say that a human interest angle is important ( $p < 0.0001$ ). Respondents from small organizations were 80% more likely than respondents from large organizations to say they pursue human interest as an angle (OR = 1.83;  $p < 0.01$ ).

Other individual characteristics proved to be independent and differential predictors of angle selection in multivariable models. Those respondents working 1–15 years and those with low occupational autonomy were significantly less likely than more seasoned journalists (OR = 0.76;  $p < 0.05$ ) and journalists with occupational autonomy (OR = 0.49;  $p < 0.0001$ ) to say that “need to change personal health behavior” is an important angle.

### Discussion

Although news media are an important intermediary in the translation of scientific knowledge to different publics, little is known about the production of health news and factors that may predict media agenda setting and framing in health journalism. This study focused on antecedents of media agenda setting and framing, specifically how selected sources, resources, priorities, and story angles differentially may be influenced by news organization structure and individual characteristics of journalists. Understanding these determinants may provide a better grasp of media agenda setting and framing in health journalism, which may, in turn, help to inform interactions between public health and medical practitioners and the press.

Journalists who focus on only one subject are mostly found in larger media organizations that can afford larger staffs and resources for reporting, whereas reporters in smaller media organizations often have to cover multiple beats and may be less able to specialize on any given topic. They also may not have the ready availability of sources with backgrounds and expertise in science. Our data reflect that journalists working at smaller media organizations were overwhelmingly less likely to utilize many of the common sources and resources typically used in health and medical science reporting, with the exception of news releases. Knowing about these and other structural constraints may enhance public health agencies' and practitioners' communication with journalists from smaller, local outlets by emphasizing the importance of issuing clear, accurate news releases and making available expert sources and resources for interview and background. Connections to these sources and resources can be made via news releases or other toolkits and by developing relationships with local reporters.



Regarding educational specialization, our study showed that reporters with a bachelor's degree or less rely on press releases, local health care providers, and patient advocacy organizations more often than reporters with master's degrees or higher. We posit that the differential usage of these sources and resources may have to do with the literal and figurative accessibility of press releases and local sources; both may be easily accessible under tight deadlines and may also do a good job of explaining complex scientific information and jargon in layman's terms and with a local or human interest angle (which was indicated as another important frame for less specialized journalists). It is possible that reporters and editors with a master's degree or higher have more experience with scientific journal articles as a result of their training, and therefore may be better equipped to decipher a given study and its meaning before interviewing scientists or researchers about its implications. It was certainly borne out in our data that those with a master's degree or higher were more likely to use scientific journal articles in their reporting and to seek out "other" (nongovernment or industry) scientists as sources. We are not, however, equating the possession of advanced degrees with clear writing and effective communication to news audiences. While advanced degrees and ensuing training in research design potentially could be helpful in making reporters more critical consumers of scientific studies, the actual translation of research to a more readily understandable language is an entirely different skill. Whether this skill differs among reporters with or without advanced degrees is a question for further empirical research.

The recent consumerist movement in health for greater involvement of patients in medical decision making, reflected in the ideas of shared decision-making and informed decision making, places a heavier burden on publics and patients to be more knowledgeable about health. This parallels nicely with the movement of public or civic journalism that argues for greater involvement of citizens in state activities and encourages more robust discussion and public participation in civic affairs. The fundamental assumption underlying the two movements is the notion that greater knowledge, deliberation, and participation will lead to higher satisfaction and better decision making. It is, however, widely acknowledged that there are significant health disparities among different social groups (Berkman & Kawachi, 2000) and that part of the explanation for health disparities lies in communication inequalities, as well as differences in access to, attention to, processing of, and ability to act on information (Viswanath, 2006). Examining whether choice of sources, resources, priorities, and angles and resultant framing could lead to a more or less informed citizenry regarding health issues deserves more attention. An equally important area of investigation is to understand how differential framing by news media may contribute to equity in public health.

This study has some limitations. The 31.2% is low, but it is not unusual. The literature documents concern for declining survey research response rates in general (Curtin, Presser, & Singer, 2005). Response rates significantly increase when respondents are paid cash incentives (Beebe, Davern, McAlphine, Call, & Rockwood, 2005). Our low response rate was, perhaps, due to our inability to capitalize on this common recruitment practice. Further, U.S. journalistic codes of ethics require journalists and editors to detach themselves from potential news sources to ensure impartial reporting. This code of ethics also precludes journalists and editors from accepting any payment or reimbursement, so no cash or nonmonetary incentives were offered for survey completion. Close post hoc analysis, however, showed no differences in the type of media organization of responding and nonresponding journalists; we are, therefore, confident that response bias is not a significant issue.

Media institutions are being affected by critical issues such as new technology, low profits, layoffs, and media fragmentation. Future examinations should continue to explore the

occupational practices of health and medical science reporters and editors. Research also should examine how changing technologies and resources may blunt or enhance the effects of organizational size and journalists' education on sourcing and framing in health news. Future surveys also may address the power dynamics of news organizations and the decision-making ability of journalists within their institutions amidst a changing media landscape. Finally, the fact that source and resource selection are influenced by news organization complexity warrants deeper exploration of how the characteristics of the community and organizational structure interact to influence agenda setting and framing in health news (Demers & Viswanath, 1999; Pollock, 2007).

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**Table 1**

Distribution of respondents by medium and geographic level 2005 NCI survey of U.S. health and medical science reporters and editors

Strata	Respondents		# of news organizations in each stratum
	<i>n</i>	%	<i>N</i>
National TV broadcast	12	2.6	27
National radio broadcast	1	0.2	5
National news services	7	1.5	44
National newspapers	14	3.0	13
Newspaper publishers, circulation $\geq 100$ K	5	1.1	10
Local television	67	14.3	326
Local radio	9	1.9	48
Local newspapers, circulation $< 28.3$ K	112	23.9	373
Local newspapers, circulation $\geq 28.3$ K	143	30.6	373
Local magazines, circulation $\leq 280$ K	43	9.2	131
Local magazines, circulation $> 280$ K	55	11.8	132
Total	468	100.0	1,482

Table 2

Media agenda-setting: sources

Independent variables	Government scientist or official (n = 420)		Industry scientist or spokesperson (n = 420)		Other scientist or researcher (n = 419)		Health care provider (n = 420)		Patient or advocacy organization representative (n = 420)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Organization not owned by public corporation whose shares are traded on an exchange	1.16~	(0.89, 1.51)	0.87~	(0.65, 1.16)	<b>0.62</b> ***	<b>(0.48, 0.81)</b>	1.25~	(0.87, 1.77)	1.15~	(0.88, 1.51)
Organization not owned by a group or chain	1.01~	(0.78, 1.31)	1.16~	(0.88, 1.55)	<b>1.47</b> **	<b>(1.12, 1.91)</b>	0.82~	(0.58, 1.15)	<b>0.63</b> **	<b>(0.48, 0.82)</b>
Small media organization (<30 full-time news and editorial staff)	<b>0.75</b> *	<b>(0.59, 0.95)</b>	1.12~	(0.87, 1.46)	0.62***	<b>(0.49, 0.79)</b>	<b>0.51</b> ***	<b>(0.37, 0.70)</b>	1.09~	(0.85, 1.38)
Bachelor's degree or less	<b>1.52</b> **	<b>(1.15, 2.03)</b>	1.24~	(0.91, 1.68)	<b>0.56</b> ***	<b>(0.42, 0.75)</b>	<b>2.24</b> ***	<b>(1.74, 3.36)</b>	<b>2.33</b> ***	<b>(1.77, 3.06)</b>
1-15 years working as a reporter or editor	0.99~	(0.79, 1.25)	1.10~	(0.86, 1.41)	<b>0.70</b> **	<b>(0.56, 0.88)</b>	1.20~	(0.89, 1.62)	<b>1.31</b> *	<b>(1.04, 1.65)</b>
Do not have freedom in selecting stories to work on	0.86~	(0.63, 1.18)	0.79~	(0.55, 1.12)	1.14~	(0.83, 1.57)	1.53~	(0.99, 2.39)	1.22~	(0.88, 1.67)

2005 NCI survey of U.S. health and medical science reporters and editors.

Odds ratios and 95% confidence intervals for weighted, multivariable fitted logistic regression models that describe the odds of saying that a given source is used "very often/often" for information when working on a health story, by organizational and individual characteristics of reporters and editors.

~  $p > .06$

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .0001$ .

Referent categories: Organization owned by a public corporation; organization owned by a group or chain; large media organization; master's degree or more; 16+ years working as reporter or editor; does have freedom to select stories.

Table 3

Media agenda-setting: resources

Independent variables	Government website (n = 421)		Other website (n = 421)		News releases (n = 421)		Scientific journal articles (n = 421)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Organization not owned by public corporation whose shares are traded on an exchange	0.96~	(0.74, 1.26)	<b>0.66**</b>	<b>(0.49, 0.88)</b>	<b>0.72*</b>	<b>(0.56, 0.93)</b>	<b>0.73*</b>	<b>(0.56, 0.95)</b>
Organization not owned by a group or chain	1.03~	(0.79, 1.33)	1.10~	(0.84, 1.46)	0.85~	(0.66, 1.10)	<b>1.71***</b>	<b>(1.31, 2.23)</b>
Small media organization (defined as <30 full-time news and editorial staff)	<b>0.74*</b>	<b>(0.58, 0.94)</b>	<b>0.76*</b>	<b>(0.59, 0.98)</b>	<b>1.33*</b>	<b>(1.05, 1.68)</b>	<b>0.57***</b>	<b>(0.45, 0.73)</b>
Bachelor's degree or less	0.83~	(0.63, 1.10)	<b>0.70*</b>	<b>(0.51, 0.96)</b>	<b>1.39*</b>	<b>(1.06, 1.83)</b>	<b>0.50***</b>	<b>(0.38, 0.66)</b>
1-15 years working as a reporter or editor	1.15~	(0.92, 1.45)	<b>1.44**</b>	<b>(1.13, 1.85)</b>	<b>1.40**</b>	<b>(1.12, 1.75)</b>	1.06~	(0.85, 1.33)
Do not have freedom in selecting stories I want to work on	0.90~	(0.66, 1.23)	<b>0.56**</b>	<b>(0.43, 0.81)</b>	1.15~	(0.84, 1.55)	0.76~	(0.57, 1.06)

2005 NCI survey of U.S. health and medical science reporters and editors.

Odds ratios and 95% confidence intervals for weighted, multivariable fitted logistic regression models that describe the odds of saying that a given *resource* is used "very often/often" for information when working on a health story, by organizational and individual characteristics of reporters and editors.

~  $p > .06$

\*  $p < .05$

\*\*  $p < 0.01$

\*\*\*  $p < .0001$ .

Referent categories: Organization owned by a public corporation; organization owned by a group or chain; large media organization; master's degree or more; 16+ years working as reporter or editor; does have freedom to select stories.

Table 4

Framing: Priorities

Independent variables	Disseminating new, accurate information (n = 420)		Educating, so people can make informed decisions (n = 421)		Providing entertainment (n = 421)		Developing the health and scientific literacy of the public (n = 420)		Influencing the public's health behavior (n = 421)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Organization not owned by public corporation whose shares are traded on an exchange	0.99~	(0.61, 1.61)	<b>3.57</b> ***	(2.17, 5.89)	<b>2.35</b> ***	(1.57, 3.52)	0.81~	(0.62, 1.05)	1.00~	(0.77, 1.30)
Organization not owned by a group or chain	1.09~	(0.68, 1.77)	<b>0.27</b> ***	(0.16, 0.44)	<b>0.59</b> **	(0.41, 0.88)	1.16~	(0.90, 1.51)	1.01~	(0.77, 1.30)
Small media organization (defined as <30 full-time news and editorial staff)	<b>0.61</b> *	(0.39, 0.95)	0.91~	(0.59, 1.40)	<b>0.69</b> *	(0.48, 0.98)	<b>1.69</b> ***	(1.33, 2.16)	1.18~	(0.93, 1.50)
Bachelor's degree or less	1.18~	(0.72, 1.94)	<b>1.96</b> **	(1.28, 3.00)	0.97~	(0.64, 1.47)	0.97~	(0.74, 1.27)	1.27~	(0.97, 1.66)
1-15 years working as a reporter or editor	1.07~	(0.70, 1.62)	1.30~	(0.86, 1.96)	<b>1.46</b> *	(1.05, 2.05)	0.94~	(0.75, 1.17)	1.08~	(0.86, 1.36)
Do not have freedom in determining which aspects of the story should be emphasized	<b>0.51</b> **	(0.31, 0.84)	<b>0.40</b> ***	(0.26, 0.63)	<b>0.56</b> *	(0.32, 0.99)	<b>0.55</b> ***	(0.41, 0.76)	0.86~	(0.63, 1.18)

2005 NCI survey of U.S. health and medical science reporters and editors.

Odds ratios and 95% confidence intervals for weighted, multivariable fitted logistic regression models that describe the odds of saying that a given priority is "very important/important" when reporting on a health story, by organizational and individual characteristics of reporters and editors.

~ p > .06

\* p < .05

\*\* p < .01

\*\*\* p < .0001.

Referent categories: Organization owned by a public corporation; organization owned by a group or chain; large media organization; master's degree or more; 16+ years working as reporter or editor; does have freedom to determine emphasis.



Table 5

Framing: Angles

Independent variables	M1 (n = 419) Public impact		M2 (n = 421) Economic impact		M3 (n = 421) Controversial new information		M4 (n = 420) Human interest		M5 (N = 420) Need to change personal behavior	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Organization not owned by public corporation whose shares are traded on an exchange	0.70~	(0.48, 1.04)	0.79~	(0.60, 1.04)	<b>0.65</b> ***	(0.50, 0.85)	1.00~	(0.68, 1.47)	1.14~	(0.88, 1.49)
Organization not owned by a group or chain	<b>0.65</b> *	(0.45, 0.93)	1.12~	(0.86, 1.49)	<b>1.72</b> ****	(1.32, 2.23)	<b>0.50</b> ****	(0.34, 0.72)	0.99~	(0.76, 1.29)
Small media organization (defined as <30 full-time news and editorial staff)	1.16~	(0.83, 1.63)	<b>0.76</b> *	(0.59, 0.98)	<b>0.60</b> ****	(0.47, 0.76)	<b>1.83</b> **	(1.29, 2.60)	1.03~	(0.82, 1.32)
Bachelor's degree or less	1.30~	(0.91, 1.87)	<b>0.70</b> *	(0.53, 0.92)	<b>0.60</b> ****	(0.46, 0.79)	<b>2.54</b> ****	(1.81, 3.55)	1.30~	(0.99, 1.71)
1-15 years working as a reporter or editor	0.90~	(0.65, 1.24)	1.04~	(0.82, 1.32)	<b>0.70</b> **	(0.56, 0.88)	<b>0.63</b> **	(0.45, 0.86)	<b>0.76</b> *	(0.60, 0.95)
Do not have freedom in determining which aspects of the story should be emphasized	<b>0.41</b> ***	(0.28, 0.60)	0.80~	(0.57, 1.13)	0.75~	(0.55, 1.03)	0.67~	(0.45, 1.00)	<b>0.49</b> ***	(0.36, 0.67)

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~ p < .10

\* p < .05

\*\* p < .01

\*\*\* p < .0001.

Referent categories: Organization owned by a public corporation; organization owned by a group or chain; large media organization; master's degree or more; 16+ years working as reporter or editor; does have freedom to determine emphasis.