

# Evaluation of a Communications Campaign to Increase Physician Reporting to a Surveillance System

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## SYNOPSIS

While all states have regulations requiring reporting of diseases from health-care professionals and facilities, underreporting is substantial. To improve reporting to the New York State (NYS) Occupational Lung Disease Registry (OLDR), the NYS Department of Health's Bureau of Occupational Health initiated a multimedia campaign to increase case ascertainment and establish communication channels and partnerships for conducting prevention. The outreach campaign was successful in raising physician awareness about the OLDR, familiarizing physicians with reporting forms and procedures, and increasing physician reporting. It also raised awareness of the contribution of occupational factors to respiratory illness and other conditions. However, while our evaluation indicated it is possible to affect short-term outcomes, such as knowledge, attitudes, and behavior among health-care providers, the campaign was not as successful in promoting sustained reporting.

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Timely and complete reporting is fundamental to establishing a successful physician-based public health surveillance system.<sup>1</sup> As a consequence, states have regulations requiring reporting from health-care professionals and facilities.<sup>2-4</sup> Nevertheless, underreporting is substantial for some conditions, suggesting that in the absence of communications efforts and/or strict enforcement, regulations themselves do not necessarily lead to better reporting of health conditions.<sup>5</sup> Although underreporting is a cross-cutting issue in public health surveillance, it is of particular relevance to the surveillance of occupational health conditions.<sup>6,7</sup> Surveillance for occupational conditions has not experienced the advances that have occurred in surveillance for communicable diseases and other conditions.<sup>8</sup> However, the existence of robust, state-based surveillance systems for certain occupational conditions suggests that successful occupational health surveillance systems can exist with the establishment of proven methods and models to encourage health-care providers to report.<sup>8,9</sup>

In 2000, the National Institute for Occupational Safety and Health (NIOSH) issued a funding opportunity for states with established or developing occupational health surveillance systems to develop and implement a core occupational surveillance program. The cooperative agreement was expected to result in the translation of “successes and lessons learned from the surveillance of targeted diseases, injuries, and hazards . . . to assist NIOSH . . . in developing models for core occupational surveillance program[s] that should be undertaken in every state.”<sup>10</sup> States were permitted to specify the occupational conditions under surveillance and the emphasis of their core programs. As part of the cooperative agreement, the states evaluated their programs using standard Centers for Disease Control and Prevention (CDC) guidelines.<sup>1</sup>

In 2001, the New York State Department of Health (NYSDOH) Bureau of Occupational Health (BOH) received this funding from NIOSH to develop a core occupational surveillance program around its Occupational Lung Disease Registry (OLDR). The OLDR was established in 1981 by Sections 22.4 and 22.5 of the New York State (NYS) Sanitary Code to reduce morbidity and mortality due to exposure to respirable toxic materials in the work environment.<sup>11</sup> These regulations state that physicians, health facilities, and clinical laboratories attending to individuals with clinical evidence of occupational lung disease are required to report them to NYSDOH within 10 days.

Since its inception, obtaining consistent reporting to the OLDR has been an ongoing challenge. In the first five years, outreach was directed to physicians and pulmonary function laboratories in NYS, urging

compliance with the reporting requirements. While the full extent of morbidity of occupational lung diseases in NYS is unknown, it was recognized that the limited number of reports being received was an under-ascertainment of cases. In subsequent years, communication with potential reporting sources decreased, resulting in fewer cases of occupational lung disease being reported. To improve physician reporting to the OLDR, the BOH developed, implemented, and evaluated a model program for communicating with reporting sources about occupational safety and health surveillance and, in particular, surveillance for occupational lung diseases.

## METHODS

### Development of communications campaign

**Logic model.** The BOH developed a logic model to describe components of the communications campaign and its expected outcomes. The long-term objective of the campaign was to enhance NYSDOH’s surveillance for occupational lung diseases by improving surveillance attributes, as described by CDC: data quality, acceptability, sensitivity, representativeness, and timeliness.<sup>1</sup> We expected that improving these attributes would lead to the identification of new occupational exposures, an improved ability to track statewide trends in occupational lung diseases, increased opportunities for worksite interventions, and an increase in prevention activities to reduce unhealthy workplaces and improve the health status of workers.

Because the campaign was not expected to have a measurable impact on these outcomes during the five-year observation period, we also specified short-term goals in the model. These included achieving psycho-educational (knowledge, attitudes) and behavioral changes that would contribute to achieving the long-term outcomes. The targeted psycho-educational outcome was to increase awareness among health-care providers about occupational illness and injury, the BOH, and the OLDR. The desired behavioral outcomes were to improve recognition and reporting of occupational illness among health-care providers and increase utilization of occupational health resources available through the BOH.

**Formative research with target audiences.** We identified health-care providers as the primary target audience of the outreach campaign. We conducted formative research—a literature review, key informant interviews with four physicians currently reporting, physician focus groups, and a survey of physicians—to determine reasons why physicians do not report conditions to

public health authorities and to learn techniques for improving reporting. The literature review suggested the primary reasons for underreporting are physicians' lack of awareness regarding reporting requirements, concerns about patient confidentiality, the time and effort involved in reporting, and the lack of benefits from reporting.<sup>6,12-15</sup> We also learned that occupational health surveillance is dependent on medical care providers being able and willing to recognize and document the workplace factors contributing to an illness or injury.<sup>7</sup> Research on changing physician performance suggested that multifaceted communications campaigns that included written materials and incorporated patient-mediated strategies were most effective.<sup>16</sup>

From June 2003 through September 2003, we held nine focus group sessions to obtain advice about improving recognition of work-related asthma (WRA), increasing reporting to the OLDR, and communicating effectively with physicians. Fifty-two health-care providers representing six geographic regions in NYS participated. The focus groups identified five barriers to reporting to the OLDR: (1) lack of awareness about the OLDR, (2) concerns about costs for patients, (3) difficulties with diagnosis, (4) concerns about lack of benefits of reporting, and (5) concerns about costs for physicians. Suggestions for encouraging reports included simplifying the reporting form, offering online reporting, clarifying the information to be reported, and communicating the public health benefits of the OLDR. We also surveyed a random sample of 2,000 medical care providers with questions paralleling the discussion topics covered in the physician focus groups; 376 responded. The survey results replicated the findings from the focus groups in identifying awareness of the OLDR and its reporting requirement and difficulties diagnosing WRA as the two most prominent barriers to reporting to the OLDR.

**Identification of key messages and communication techniques.** To simultaneously address barriers to reporting to the OLDR identified through formative research, we developed an Occupational Lung Disease Toolkit for health-care providers.<sup>17</sup> The toolkit was the main focus of a multifaceted campaign that also included publishing articles in medical newsletters, sending personal correspondence to physicians, and developing multiple Web pages on the NYSDOH website. We expected the toolkit to support the ongoing efforts to raise awareness of the OLDR and occupational health among physicians, improve physicians' recognition of occupational lung disease, and increase reporting to the OLDR. We also hoped it would help establish an identity for the program within NYSDOH and with external asthma programs.

The toolkit allowed us to present information concerning the OLDR, occupational health, and WRA together in a single package. Information about each content area was compartmentalized into a separate pocket within a three-pocket folder, allowing the items on a specific topic to remain together. We included items addressing each of the identified barriers to reporting. WRA materials were included as part of a larger effort integrating occupational lung disease surveillance with other NYSDOH public health activities addressing asthma in NYS. The NYS Asthma Plan assisted with development, review, promotion, and distribution. For example, a focus group of 10 physicians from its Medical Guidance Working Group provided input on the toolkit's list of occupational asthmagens and at-risk workers.

A second reason for using the toolkit format was the value and impact of developing a product that would be highly visible, unique to state-based surveillance for occupational lung disease, and easily identifiable with the BOH and the OLDR. Physicians who participated in the earlier focus group sessions stated that they were unlikely to respond to correspondence from NYSDOH unless it was distinguishable from the standard correspondence they received. We determined that a professionally produced toolkit with color graphics and a sophisticated layout would distinguish itself from other NYSDOH correspondence and attract physicians' attention. Furthermore, we expected the toolkit to function as a physical representation of the OLDR and the BOH, which could simultaneously advertise the program and serve as a resource.

Another factor in selecting the toolkit format was the research literature regarding the effectiveness of toolkits and treatment guidelines in changing physician attitudes and behaviors. Past studies suggest that mailing an informational toolkit, particularly when it is done as part of a more comprehensive outreach campaign, can be effective in altering physician knowledge and, in some instances, changing clinical practice.<sup>18,19</sup>

#### **Implementation of communications campaign**

The key messages of the campaign and the identified channels of communication and partners for distribution are presented in Figure 1.

**Newsletters.** Through medical society and managed care association newsletters, we distributed information about the OLDR and its reporting requirements, WRA, and the diagnosis of occupational diseases to a broad range of medical care providers. This technique for conveying information to physicians about public health programs and the basis for disease reporting

**Figure 1. Key messages, communication channels, and partners outlined for the NYSDOH BOH communications campaign to increase physician reporting to the NYS OLDR, 2003–2006**

Key messages	Channels/items	Partnerships for development and distribution
<ul style="list-style-type: none"> <li>• OLDs are reportable in NYS.</li> <li>• An occupational and environmental history can be used to identify OLDs.</li> <li>• Reporting is allowed under HIPAA; patient data are confidential.</li> <li>• The NYS Occupational Health Clinic Network can be used for consultation regarding diagnosis, treatment, and filing workers' compensation.</li> <li>• Physician reports support efforts to identify and prevent causes of OLDs in NYS.</li> </ul>	<ul style="list-style-type: none"> <li>• Newsletter articles               <ul style="list-style-type: none"> <li>— "What is work-related asthma?"</li> <li>— "Diagnosing occupational diseases"</li> </ul> </li> <li>• Personal correspondence</li> <li>• Enhanced Web page</li> <li>• Follow-up on hospital reports</li> <li>• Health-care provider toolkit               <ul style="list-style-type: none"> <li>— Workplace asthmagens</li> <li>— HIPAA compliance statement</li> <li>— OLDR rolodex</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• American Lung Association of NYS               <ul style="list-style-type: none"> <li>— NYS Thoracic Society</li> </ul> </li> <li>• NYS Asthma Plan               <ul style="list-style-type: none"> <li>— Regional asthma coalitions</li> </ul> </li> <li>• Community health centers               <ul style="list-style-type: none"> <li>— Community Health Care Association of NYS</li> </ul> </li> <li>• NYS Occupational Health Clinic Network</li> <li>• NYS medical societies</li> <li>• NYS-based managed care associations</li> </ul>

NYSDOH = New York State Department of Health

BOH = Bureau of Occupational Health

NYS = New York State

OLDR = Occupational Lung Disease Registry

OLD = occupational lung disease

HIPAA = Health Insurance Portability and Accountability Act

requirements has been used for more than 30 years.<sup>20</sup> By taking this approach, we saved costs related to printing and mailing and capitalized on already established channels of communication with physicians.<sup>21</sup>

We developed two, one-page articles describing diagnostic techniques for WRA and occupational diseases.<sup>22,23</sup> Both articles included information about the OLDR reporting requirement, the address of the OLDR Web page, and artwork from the OLDR brochure for product recognition. These articles were published in a variety of managed care organization and physician newsletters throughout NYS. They were also posted on NYSDOH's OLDR and asthma Web pages.

**Personal correspondence to physicians.** We sent letters to physicians who were likely to treat patients with occupational lung disease and had not reported to the OLDR within the last year. Physicians targeted included: (1) NIOSH-certified B Readers practicing in NYS ( $n=20$ ); (2) members of the American College of Occupational and Environmental Medicine (ACOEM) practicing in NYS ( $n=278$ ); and (3) NYS doctors certified in preventive medicine, occupational medicine, or public health by the American Board of Preventive Medicine (ABPM) ( $n=107$ ). The letters reminded physicians of the OLDR reporting requirement and stated that a review of the OLDR data indicated they had not reported a patient within the past year. We included with the letters information emphasizing

both the legal and public health basis for reporting occupational lung diseases, based on the results of a substudy that indicated the inclusion of such materials in personal correspondence to physicians helps increase reporting.<sup>24</sup>

**Follow-up with physicians based on reports from hospitals.** In August 2003, we began reaching out to physicians identified by hospital reports as having provided care to patients with lung conditions reportable to the OLDR. Via mail correspondence, we requested reportable information about the patients identified in the hospital report and encouraged the physician to report other patients with occupational lung diseases to the OLDR in the future. We expected that requesting specific information about a patient would generate feelings of personal responsibility and encourage reporting. We also felt that a concrete request would familiarize physicians with the reporting process and encourage them to report subsequent patients—an expectation suggested by the research literature on both the diffusion of innovations and persuasion.<sup>20,25</sup>

**Enhanced Web pages for health-care providers.** The Internet has rapidly become an important source of health information for patients and health-care providers.<sup>26</sup> We developed multiple pages on the NYSDOH website to improve access to information about the BOH, including a main Occupational Health page with links to the various BOH programs. The OLDR page contained information aimed at increasing awareness of

the registry and its reporting requirements and promoting the recognition of occupational lung diseases.<sup>27</sup> All information developed as part of the communications campaign was posted on the site.

**Toolkit.** In February 2005, we mailed toolkits to 14,771 physicians in the following practice areas: allergy and immunology, emergency medicine, family practice, internal medicine, preventive medicine, public health, occupational health, and environmental medicine. We also placed the toolkit on the NYSDOH OLDR Web page.<sup>27</sup> Additional copies were distributed at various public health meetings.

To assess whether the expected outcomes from distribution of the toolkit were achieved, we conducted several evaluation activities. First, we tracked returns of the materials request form included with the toolkit and Web traffic to sites listed on the toolkit materials to quantify increased interest in occupational health. Second, we matched the names of the physicians receiving the toolkit against a list of physicians who reported for the first time in 2005 and were the sole reporting source for a report. Finally, we conducted a follow-up evaluation survey of those who received the toolkit.

We selected a random sample of 10% ( $n=1,477$ ) of the initial toolkit recipients to participate in the follow-up survey. Physicians in the sample were mailed a letter inviting them to participate in an anonymous survey about the previous toolkit mailing, along with a copy of the survey and a self-addressed postage-paid envelope. The survey was printed in color and included a picture of the cover of the toolkit to cue recall. The first survey question asked physicians if they recalled receiving the toolkit mailing. Physicians who did not recall the toolkit were instructed to skip to the end of the questionnaire to complete information about their practice, the frequency with which they take an

occupational history of their new patients, and their experience with work-related lung conditions. Physicians recalling the toolkit were asked to evaluate each of the toolkit items. Two weeks after the initial mailing, we sent a reminder postcard to those who had not yet returned the survey. Two weeks following the postcard mailing, we sent a second copy of the survey to physicians who still had not responded.

## RESULTS

### Evaluation of communications campaign

**Newsletters.** The two articles we developed were published in a variety of managed care organization and NYS physician newsletters with a combined circulation ranging from 75,000 to 168,500. Through December 2006, versions of the two articles posted on the NYSDOH website received more than 9,000 hits.

**Personal correspondence to physicians.** Two of the 20 NIOSH-certified B Readers, 12 of the 278 ACOEM members, and three of the 107 diplomats from the ABPM reported to the OLDR. Only seven physicians initiated reports in both years. Overall, through December 2006, approximately 4% of the physicians who received letters reported to the OLDR and only 3% ( $n=11$ ) submitted multiple reports.

**Follow-up with physicians based on reports from hospitals.** We used information from the OLDR database to track follow-up letters mailed to physicians. Table 1 summarizes the outcome of this mailing. Of the 324 physicians who identified themselves as inappropriate providers to receive such a request, 78 (24%) identified another provider and 27 (8%) forwarded the request to the appropriate provider.

The primary goal of the follow-up campaign was

**Table 1. Physician response to patient reporting follow-up mailing from the NYSDOH BOH (based on reports from hospitals to the NYS OLDR), by year**

Physician response	2004 N (percent)	2005 N (percent)	2006 N (percent)	Total N
Physicians contacted	691 (100.0)	1,133 (100.0)	1,253 (100.0)	3,077
Physicians responding to letter	359 (52.0)	464 (41.0)	440 (35.1)	1,263
Responded with patient report	281 (40.7)	342 (30.2)	316 (25.2)	939
Responded wrong doctor <sup>a</sup>	78 (11.3)	122 (10.8)	124 (9.9)	324
Physicians not responding to letter	332 (48.0)	669 (59.0)	813 (64.9)	1,814

<sup>a</sup>Physicians returned the form and indicated they were not the appropriate doctor.

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**Table 2. Physicians reporting to the NYS OLDR and number of reports received, by year**

Variable	2002	2003	2004	2005	2006	Total
Number of physicians reporting	9	65	294	315	308	991
Prompted to report <sup>a</sup>	0	21	214	262	284	781
Initiated a report	9	44	80	53	24	210
New physicians initiating a report <sup>b</sup>	NA	41	70	44	13	168
Number of reports received	147	119	449	531	457	1,703
Received due to prompt	0	31	306	407	360	1,104
Received without a prompt	147	88	143	124	97	599

<sup>a</sup>Physicians reporting to the OLDR after receiving a letter regarding a patient

<sup>b</sup>Physicians who did not previously report to the OLDR and did not receive a letter regarding a patient

NYS = New York State

OLDR = Occupational Lung Disease Registry

NA = not applicable

to increase physician reporting. Table 2 details the number of physicians submitting reports to the OLDR and the total number of reports received from 2002 through 2006. Since the initiation of the follow-up campaign in 2003, the number of physician reports and physicians reporting to the OLDR increased until 2006, when there was a 2% decline in the number of physicians reporting to the OLDR and a 14% decline in the number of reports received. A related goal was to encourage physicians to report to the OLDR without having to prompt them with a hospital report. The number of physicians who initiated a report increased 389% from 2002 to 2003, followed by an 82% increase from 2003 to 2004, but began to decline in 2005 and 2006. A third goal of the follow-up campaign was to establish sustained physician reporting. On average, 18% of the physicians initiating reports in a given year reported the following year. Of the 44 physicians initiating reports in 2003, only four (10%) also initiated reports in both 2004 and 2005.

**Enhanced Web pages for health-care providers.** In addition to serving as a means of disseminating information, Web pages also helped quantify the extent to which other outreach activities generated interest in occupational lung diseases and the OLDR. From January 2003 through December 2006, the OLDR Web page received 16,558 hits. The average number of monthly hits increased during this period from 155 in 2003 to 579 in 2006. The monthly increase for the 42-month period was linear and statistically significant ( $b=11.4$ ,  $p<0.0001$ ) with an average increase of 11 Web hits per month.

**Toolkit.** Twenty-five of the 14,771 (0.2%) physicians who received toolkits requested additional materials about occupational health. Since being posted on the NYS-DOH website, the online version of the toolkit received

8,849 hits through December 2006, with an average of 184 hits per month. In addition, the American Lung Association of New York requested 125 toolkits.

There was no substantial increase in reporting following the toolkit mailing. Of the 44 physicians initiating reports in 2005, half received the OLDR toolkit prior to their reporting.

**Toolkit evaluation survey.** Four hundred physicians (29% of the eligible sample) responded to the follow-up survey; 146 (37%) of the respondents recalled the toolkit, and 137 (34%) rated the individual items in the toolkit. Allergy and immunology physicians and pulmonologists were significantly more likely to recall receiving the toolkit than physicians in other specialty areas. Of the physicians who rated the toolkit, 23% rated it excellent, 26% very good, 44% good, 13% fair, and 5% poor. Of the 11 items included in the toolkit, the five pertaining to diagnosis of occupational conditions and WRA—which we developed in response to our formative research—were the most highly rated. Eighty-three percent of physician respondents reported that the items on the diagnosis of occupational conditions would improve their ability to recognize work-related conditions and WRA. The physician comment that appeared most often was that the toolkit was not appropriate for the physician's line of practice.

## DISCUSSION

The outreach campaign was successful in raising physician awareness about the OLDR, familiarizing physicians with reporting forms and procedures, and increasing physician reports. Moreover, because physicians completing the reporting form were asked to make a determination as to whether or not a case was occupational, it raised awareness of the contribution

of occupational factors to respiratory illness and other conditions. In contrast, the campaign has been less successful in establishing reporting from physicians in the absence of follow-up letters and in promoting sustained reporting. We expect that even with the increase in reporting, complete case ascertainment was not achieved. Individual aspects of the campaign varied in their ability to achieve these goals.

Managed care organization and medical society newsletters were receptive outlets for occupational health articles and have been a useful conduit for distributing information about occupational health to a broad range of health-care providers. However, sending personal correspondence about the OLDR and its reporting requirement to physicians in certain specialty areas was relatively unsuccessful. Overall traffic to the pages on the NYSDOH website with content about the OLDR has increased in the last three years, suggesting that the Internet is an effective method for sharing information with key audiences. Because the pattern of increasing Web hits over time is consistent with what we have observed for other BOH pages, it is not possible to attribute the increased Web traffic strictly to the outreach campaign.

The toolkit was effective in raising awareness about the OLDR, occupational health, and the BOH. The practice-oriented materials were the highest-rated items, underscoring the value of using brief, practical outreach materials to communicate with physicians. Physicians in certain specialty areas, most notably emergency medicine, found little use for the toolkit in their practice. Based on responses received through the evaluation, the toolkit also appeared to be successful in generating favorable attitudes toward the BOH and the OLDR. One implication is that physicians receiving the toolkit may be more receptive to additional outreach efforts (e.g., requests to report patients).

We found little evidence that the toolkit mailing itself contributed to increases in physician reporting. One reason is that physician reporting had already increased substantially during the previous two years. Another reason is that, while we expected the toolkit to improve recognition of occupational lung disease, we knew it would have no influence on whether physicians encountered patients with an occupational lung disease. A third reason is that administrative barriers outside a physician's control (e.g., limited or uncooperative staff) also contribute to whether a patient is reported.

The toolkit was meant to communicate with other stakeholders, including federal agencies, other states

conducting surveillance for occupational disease, and interested parties within NYS. We found substantial evidence that the toolkit achieved this communications goal as indicated by the multiple requests for and presentations about the toolkit from various public health agencies.

## IMPLICATIONS FOR PRACTITIONERS

There are several challenges inherent to evaluating the success of a communications campaign.<sup>28</sup> Changes in key indicators, including short-term outcomes such as knowledge, attitudes, and behavior, occur gradually. The data needed to evaluate a campaign often become available after resources have been depleted. Even with these caveats in mind, it is useful to consider the status of the progress that has been made.

### Psycho-educational and behavioral outcomes

Figure 2 outlines the expected outcomes of the communications campaign and classifies them based on the extent to which data are available to evaluate whether they have been achieved. Categories include (1) outcomes for which there is evidence of progress, (2) outcomes for which progress can be inferred, and (3) outcomes for which data are not collected and that will require additional data collection to track.

There is clear evidence that the onset of the communications campaign was associated with an increase in reporting from physicians. Getting physicians to report once is an indication that they may continue to report. Theories of behavior change suggest the extent to which a behavior can be attempted on a trial basis is critical to whether it becomes adopted in the future.<sup>21,25</sup> Because it has been demonstrated that individuals adjust their attitudes to be consistent with their actions, getting an individual to perform a specific behavior is a useful way to get them to develop a favorable attitude about it.<sup>29</sup> Also, receiving a report from a physician implies that several communications goals were achieved, including physician awareness of the reporting requirement to the OLDR, knowledge of how to report, and perception that it is important to report. A report also signifies that a physician made a determination about whether or not a lung condition was occupational. The onset of the campaign also coincided with an increase in Web hits and phone calls to OLDR staff from physicians and the general public, suggesting progress was made toward the goals of increasing communication with OLDR staff and knowledge of resources available.

**Figure 2. Status of progress made toward expected outcomes of the NYSDOH BOH communications campaign to increase physician reporting to the NYS OLDR, 2003–2006**

<i>Psycho-educational targets</i>	<i>Expected outcomes</i>	<i>Status of outcomes</i>
Awareness and attitudes about occupational illness	<ul style="list-style-type: none"> <li>• Awareness of occupational illness</li> <li>• Ability to diagnose occupational illness</li> <li>• Perceived importance of occupational illness</li> <li>• Knowledge of exposure, symptom prevention, and at-risk workers</li> </ul>	<ul style="list-style-type: none"> <li>Progress can be inferred</li> <li>Data are needed</li> <li>Data are needed</li> <li>Data are needed</li> </ul>
Behaviors concerning occupational illness	<ul style="list-style-type: none"> <li>• Occupational health history-taking</li> <li>• Discussion of occupational health</li> <li>• Diagnosis of occupational lung disease</li> <li>• Prevention and management techniques</li> </ul>	<ul style="list-style-type: none"> <li>Data are needed</li> <li>Data are needed</li> <li>Progress can be inferred</li> <li>Data are needed</li> </ul>
Awareness and attitudes about the BOH	<ul style="list-style-type: none"> <li>• Knowledge about resources, activities, and partners</li> </ul>	<ul style="list-style-type: none"> <li>Progress can be inferred</li> </ul>
Behaviors concerning the BOH	<ul style="list-style-type: none"> <li>• Referrals to occupational health clinics</li> <li>• Use of BOH resources</li> <li>• Communication</li> </ul>	<ul style="list-style-type: none"> <li>Data are needed</li> <li>Evidence of progress</li> <li>Evidence of progress</li> </ul>
Awareness and attitudes about the OLDR	<ul style="list-style-type: none"> <li>• Awareness of reporting requirement</li> <li>• Knowledge of how to report</li> <li>• Knowledge of benefits of reporting</li> <li>• Perceived importance of reporting</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of progress</li> <li>Progress can be inferred</li> <li>Data are needed</li> <li>Progress can be inferred</li> </ul>
Behaviors concerning the OLDR	<ul style="list-style-type: none"> <li>• Reporting from hospitals and physicians</li> <li>• Timeliness of reports</li> <li>• Acceptance of interviews</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of progress</li> <li>Data are needed</li> <li>Data are needed</li> </ul>

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OLDR = Occupational Lung Disease Registry

## CONCLUSIONS

We expected the communications campaign to enhance surveillance by influencing the OLDR's acceptability, data quality, sensitivity, representativeness, and timeliness.<sup>1</sup> At this juncture, we can only draw conclusions about changes in the acceptability of the OLDR as defined by the extent to which relevant groups participate in it. With physicians participating in greater numbers since the onset of the communications campaign, we can conclude that the acceptability of the OLDR has improved; however, continued outreach needs to occur to sustain these improvements.

We expected the campaign would translate into improved ability to identify new exposures and track trends in occupational lung disease, as well as increased opportunities for company and industry interventions to decrease unhealthy workplaces and improve the health of workers. One common characteristic of each of these long-term outcomes is that they require reliable, consistent reporting from potential reporting sources. Therefore, although it is unrealistic to conclude that these outcomes have been achieved, it is reasonable to claim that progress toward these goals has been made.

This research was funded in part by Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health Cooperative Agreement #5U01 OH07308.

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