

**Building Capacity for State-Based Occupational Health Surveillance**

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## List of Terms and Abbreviations

American Public Health Association (APHA)  
Association of Occupational and Environmental Clinics (AOEC)  
Behavioral Risk Factor Surveillance System (BRFSS)  
Blood lead levels (BLLs)  
U.S. Bureau of Labor Statistics (BLS)  
Centers for Disease Control and Prevention (CDC)  
Council of State and Territorial Epidemiologists (CSTE)  
Health Hazard and Evaluation (HHE)  
Industry and Occupation (IO)  
National Institute for Occupational Safety and Health (NIOSH)  
NIOSH National Occupational Research Agenda (NORA)  
NIOSH Surveillance Coordination Group (SCG)  
North American Association of Central Cancer Registries (NAACCR)  
Occupational Health (OH)  
Occupational Health Indicators (OHIs)  
Occupational Health Internship Program (OHIP)  
Occupational Safety and Health Administration (OSHA)  
Reportable Conditions Knowledge Management System (RCKMS)  
Southeastern States Occupational Network (SouthON)  
Western States Occupational Network (WestON)

## Abstract

Work-related injuries and illnesses are a significant public health problem in the United States. These injuries and illnesses are largely preventable. State-based surveillance systems that provide information about the magnitude and distribution of work-related injuries and illness and the circumstances in which they occur are essential to developing effective prevention programs. The Council of State and Territorial Epidemiologists (CSTE) conducted this project to address an identified need to increase state capacity to conduct occupational health (OH) surveillance. The aims of this proposal were to 1) Maintain and develop the Occupational Health Indicators (OHIs) as a surveillance tool; 2) Develop and disseminate communication strategies including guidance, success stories, and enhance access to state occupational health information via the CSTE website; 3) Update technical guidance for conducting occupational health surveillance, including assessment, policy development, and assurance; 4) Plan, organize, conduct, and evaluate annual scientific meetings and workshops to support NIOSH funded and unfunded state occupational health surveillance programs; 5) Support travel and assistance to attend national forums including CSTE occupational health Subcommittee meetings; and 6) Promote state, regional, and nationwide collaboration to increase occupational health surveillance capacity in the U.S., including partnership with NIOSH Surveillance Steering Group, consultations, and mentoring.

This project had a significant impact on the collection and distribution of work-related injury, illness, intervention, and exposure data; and created a forum for states and national organizations to meet on key issues in occupational safety and health. Key results of this project include:

- Twenty-two OHIs for the years 2008-2012 were collected, evaluated and disseminated. These represent a core set of state level data that assist in the development of public health programs to prevent workplace injuries and illnesses.
- The CSTE website was enhanced to serve as a repository to share state-based occupational health surveillance information including data, methodological guidance, publications, success stories, links to state websites, tools, and other related resources.
- Several annual working meetings were convened with states and national partners with the goal of increasing capacity to protect the health and safety of workers by improving collaboration between state occupational public health programs and national organizations. CSTE ensures representation from multiple unfunded states at CSTE and other national meetings/trainings to promote knowledge transfer and improved practices in NIOSH-funded and unfunded states.
- CSTE OH Subcommittee members authored five influential CSTE OH Position Statements, which focused on strengthened national surveillance through updated blood lead level reporting, increased collection of work information elements, and improved access to case-level information in national data systems.

This project enabled states to share pertinent information, build epidemiology and occupational health surveillance expertise, and establish more effective relationships among epidemiologists working in states and other agencies. Additionally, successful approaches to making workplaces safer and healthier begin with having the data necessary to understand the problem, which this project significantly contributed to through the collection of state-based occupational health indicator data and continued collaboration with NIOSH. All of these results have led to improvements in state epidemiological capacity to improve worker safety and health in the US.

**Project Title**

Building Capacity for State-Based Occupational Health Surveillance

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## Section 1

### ***Significant Key Findings***

The Council of State and Territorial Epidemiologists (CSTE) conducted this project to address an identified need to increase state capacity to conduct occupational health (OH) surveillance. The Specific Aims of the project with key activities are highlighted below. These activities were performed by state and local-level members of the CSTE OH Subcommittee, NIOSH staff, and CSTE National Office staff led primarily by the occupational health associate research analyst.

- 1. *Maintain and develop the Occupational Health Indicators (OHIs) as a surveillance tool***
  - CSTE with NIOSH support annually collected, performed quality assurance, distributed, and evaluated state and national surveillance data from 25 states for the majority of the 22 OHIs.
  - The technical document to provide OHI surveillance and analysis instructions, 'A Guide for Tracking Occupational Health Conditions and Their Determinants' is updated annually.
  - Since the last award, the OH Subcommittee has developed four new OHIs, creating a current total of 23 OHIs: Work-related low back disorder hospitalizations, Asthma among adults caused or made worse by work, Work-related severe traumatic injury hospitalizations, and Influenza vaccination coverage among hospital personnel.
- 2. *Develop and disseminate communication strategies including guidance, success stories, and enhance access to state occupational health information via the CSTE website***
  - In addition to the published "Putting Data to Work for Worker Safety and Health: Successes in the States," 16 OH Success Stories are posted on the CSTE website and social media.
  - NIOSH State-based Occupational Health Surveillance Clearinghouse promotional materials and a dissemination/outreach plan have been developed.
  - At least two occupational health webinars have been conducted every year (2011-2015). Webinar recordings and presentation slides are available on the CSTE Webinar Library.
  - The CSTE-NIOSH BRFSS I/O Workgroup leads developed a CSTE BRFSS I/O webpage to share resources. Twenty-five states added the NIOSH I/O module in the 2015 BRFSS.
  - CSTE maintains both an OHI distribution list and an OH point of contact (POC) list in collaboration with NIOSH and states ([www.cdc.gov/niosh/statosh.html](http://www.cdc.gov/niosh/statosh.html)).
- 3. *Update technical guidance for conducting occupational health surveillance, including assessment, policy development, and assurance***
  - CSTE Occupational Health members have authored/co-authored several CSTE Position Statements, such as 15-EH-01 "Public Health Reporting and National Notification for Elevated Blood Lead Levels," 14-OH-02 "Inclusion of Work Information as Data Elements in CDC Surveillance Systems," and 14-OH-01 "Access to Census of Fatal Occupational Injuries Case-Level Data for Public Health Purposes."
  - CSTE OH Subcommittee members served as subject matter experts for the lead reporting module for the Reportable Conditions Knowledge Management System (RCKMS) project.
  - CSTE formally convened and announced an Oil and Gas Workgroup with members from the CSTE Environmental Health, Occupational Health, and Injury Subcommittees.
  - The aforementioned OHIs "How-to" guide and state reporting template continues to be updated every year for technical guidance. The Sub-state Measures Workgroup is also developing a similar guidance document for various sub-state level analyses.
- 4. *Plan, organize, conduct, and evaluate annual scientific meetings and workshops to support NIOSH funded and unfunded state occupational health surveillance programs***
  - For each CSTE Annual Conference, a planning committee of the CSTE OH Subcommittee and NIOSH organizes a full-day pre-conference workshop as well as agendas for the breakout, rapid fire, and roundtable sessions of the 3 full days of the conference.
  - CSTE continues to plan for Fall and Spring OH Subcommittee meetings as well as annual regional meetings to support state-based occupational health capacity building.

- In close collaboration with NIOSH, two technical trainings regarding analyses of BRFSS IO data in SAS have been successfully conducted within the last two years.
- 5. Support travel and assistance to attend national forums including CSTE occupational health Subcommittee meetings**
- CSTE traveled 46 state representatives to the 2015 CSTE Annual Conference, which includes an OH workshop and NIOSH Partners' and CSTE OH Subcommittee Meetings.
  - CSTE supported 27 state representatives for the 2014 Winter NIOSH-CSTE OH Meetings.
  - CSTE consultations provided peer assistance in NIOSH grant writing, an OH voice in an OH-underrepresented health field, and technical guidance to improve surveillance methods.
- 6. Promote state, regional, and nationwide collaboration to increase occupational health surveillance capacity in the U.S., including partnership with NIOSH Surveillance Steering Group, consultations, and mentoring**
- CSTE collaborates with the Association of Occupational and Environmental Clinics (AOEC) to annually fund two students for the Occupational Health Internship Program (OHIP).
  - States continue to publish state-based surveillance articles in the monthly NIOSH e-Newsletter (30 submissions in 2014-15 budget period) and NIOSH science blog.
  - CSTE continues to hold representation on the NIOSH Surveillance Coordination Group (SCG) and share bidirectional updates between NIOSH and states via CSTE.
  - CSTE provided approximately eleven consultations over three months to assist states in grant writing for the 2015 State-Based Surveillance Program Announcement Review.

### ***Translation of Findings***

This project enabled states to share pertinent information, build epidemiology and occupational health surveillance expertise, and establish more effective relationships among epidemiologists working in states and other agencies. Additionally, successful approaches to making workplaces safer and healthier begin with having the data necessary to understand the problem, which this project significantly contributed to through the collection of state-based occupational health indicator data and continued collaboration with NIOSH. All of these results have led to improvements in state epidemiological capacity to improve worker safety and health in the US.

### ***Outputs***

This project had significant impact and improvements in state occupational health surveillance capacity and collaboration on issues of national concern for worker safety and health.

- CSTE solicited and compiled data from states and national data stewards, compiled select national data to be sent to states, calculated select national data statistics, performed data quality checks, and disseminated data for up to 22 OHIs from up to 27 states for 2008-2012 data. These Indicators represent a core set of state-level data for characterization of OH injuries, fatalities and other factors. These data inform public health programs and/or recommendations to prevent workplace injuries, illnesses, fatalities, and harmful exposures.
- The CSTE website has been enhanced with new subpages and content updates to serve as a repository to share state-based occupational health surveillance information including data, methods, publications, links to state websites, tools, and other resources.
- Hosted annual working meetings to bring together states and national organizations with the overall goal of increasing capacity to protect the health and safety of workers by improving collaboration between state occupational public health programs and national organizations.
- Mentored 11 states through remote consultations to assist in grant writing for the 2015 NIOSH State-Based Surveillance Program Announcement Review.
- Developed five influential CSTE OH Position Statements, focusing on strengthened national surveillance via updated blood lead level reporting, increased collection of work information elements, and improved access to case-level information in national data systems.

## Section 2

### *Scientific Report*

#### **Background**

Work-related injuries and illnesses are a significant public health problem in the United States. These injuries and illnesses are largely preventable. State-based surveillance systems that provide information about the magnitude and distribution of work-related injuries and illness, and the circumstances in which they occur are essential to developing effective prevention programs. CSTE works to establish effective relationships among state and other health agencies and provides technical assistance to partner organizations like the Centers for Disease Control and Prevention (CDC). CSTE also promotes the effective use of epidemiologic data to guide public health practice and improve health. CSTE accomplishes this by supporting the use of effective public health surveillance and good epidemiologic practice through training, capacity development, peer consultation, and policy development.

#### **Specific Aims**

From 2011-2015, the specific aims for this project were to: 1) Maintain and develop the Occupational Health Indicators as a surveillance tool; 2) Develop and disseminate communication strategies including guidance, success stories, and enhance access to state occupational health information via the CSTE website; 3) Update technical guidance for conducting occupational health surveillance, including assessment, policy development, and assurance; 4) Plan, organize, conduct, and evaluate annual scientific meetings and workshops to support NIOSH funded and unfunded state occupational health surveillance programs; 5) Support travel and assistance to attend national forums including CSTE occupational health Subcommittee meetings; and 6) Promote state, regional, and nationwide collaboration to increase occupational health surveillance capacity in the U.S., including partnership with NIOSH Surveillance Steering Group, consultations, and mentoring.

#### **Methodology**

##### *1. Maintain and develop the Occupational Health Indicators (OHIs) as a surveillance tool*

Approximately 27 states have contributed OHI data for the majority of the 22 indicators for 2008-2012 data, which are now posted on the CSTE OH webpage (<http://www.cste.org/OH/OHmain.asp>). CSTE collaborated with states and national partners including NIOSH, U.S. Bureau of Labor Statistics (BLS), Occupational Safety and Health Administration (OSHA), and The North American Association of Central Cancer Registries (NAACCR) to provide national occupational injury and illness data. Each year, state and national data are systematically reviewed by members of the CSTE Occupational Health Surveillance Subcommittee. A method for quality assurance and communication with data providers with support from NIOSH staff was established at the beginning of the project period and maintained throughout the 5 years of this project.

The “How-to” guide, ‘A Guide for Tracking Occupational Health Conditions and Their Determinants,’ which provides instructions for generating the OHIs, is updated each year with highlighted changes. Since the last award, the Subcommittee developed four new OHIs, creating a current total of 23 OHIs. Three of these indicators have begun data collection: Work-related low back disorder hospitalizations, Asthma among adults caused or made worse by work, and Work-related severe traumatic injury hospitalizations. The last new OHI, Influenza vaccination coverage among hospital personnel, will begin data collection in the next award

period. One proposed indicator was approved to pilot further, as it did not yet meet the criteria necessary to be included for state and national surveillance: Occupational heat-related Emergency Department visits. The OHI Workgroup will continue to work with NIOSH regarding issues arising with the change to ICD-10-CM medical data coding, including the loss of external cause of injury codes (E-codes). CSTE has posted guidance on state-to-state and state-national comparisons on the CSTE website, provided permission to the Agency for Healthcare Research & Quality (AHRQ) for inclusion of the OHIs in AHRQ's national quality measures clearinghouse, and is updating the list of indicator issues and workgroup activities to be completed.

Several workgroups continue to address OHI issues, specifically guidance on trend/temporal analysis and sub-state level analysis of OHIs. The latter has been formalized into the Sub-state Measures Workgroup to more accurately capture the various types of sub-state analyses that states have conducted. The CSTE Sub-state Level Measures workgroup is in current development of a guidance document to instruct state and local partners on how to conduct various sub-state level analyses. The measures currently included in the guidance are elevated blood lead levels, work-related hospital and emergency department visits, work-related poisoning, percentage of workers employed in industries at high risk for occupational morbidity, severe traumatic injury hospitalizations, and workers' compensation. Over the past year, the workgroup has pilot-tested four of the six measures with state partners. At the 2015 CSTE Annual Conference, the workgroup was able to meet in-person with pilot testers, other interested state partners, and NIOSH. The workgroup was previously known as the 'County-Level OHI Workgroup;' however, at the meeting, the name was officially changed to the 'Sub-state Measures Workgroup.' Formalizing the name of the workgroup was important to capture the various types of sub-state analyses that various states conducted (e.g., county-level, district-level, state regions, zip code-level) as well as the limitations of the measures (e.g., consciously using the term "measures" as opposed to "indicators" to accurately capture the current stage of development). The workgroup has continued a close collaboration with NIOSH throughout the development process, primarily through the involvement of an active NIOSH participant on the workgroup and through guidance of the greater OHI Workgroup co-chairs. There was significant discussion at the 2015 CSTE Annual Conference regarding further analyses and possible trainings with these set of measures.

*2. Develop and disseminate communication strategies including guidance, success stories, and enhance access to state occupational health information via the CSTE website*

In addition to the May 2012 Publication of "Putting Data to Work for Worker Safety and Health: Successes in the States," sixteen Occupational Health Success Stories have been posted on the CSTE website and highlighted on CSTE social media. The Success Stories instructions document, template, and webpage have been all been updated, including the addition of a sortable table to easily find success stories of interest by data, state, or title. All of the Success Stories and related materials are accessible on the CSTE Occupational Health Subcommittee website (<https://cste.site-ym.com/?SuccessStories>).

Materials promoting the NIOSH State-based Occupational Health Surveillance Clearinghouse have been finalized and are in the process of being disseminated to state-based surveillance programs and a broad group of OH partners. These promotional materials are available on the CSTE OH Resources webpage (<http://www.cste.org/group/OHResources>).

At least two occupational health webinars have been conducted every year of the budget period. Webinar recordings and presentation slides are available on the CSTE Webinar Library

(<http://www.cste.org/?page=WebinarLibrary>). In the 2014-2015 budget period, the following webinars were conducted:

- Feb 27: “Assessing and Responding to the Health and Safety Needs of Workers in the Temporary Services Industry.” 70 attendees.
- April 23: “American Community Survey 101: Overview and Application in Occupational Health Surveillance.” 46 attendees.
- May 27: “BLS Resources for Epidemiologists: Helping You with Your Detective Work.” 38 attendees.

Other topics in the budget period have included: use of social media in government, NIOSH Health Hazard Evaluation program, linking Poison Center data with hospitalization data, use of Workers’ Compensation data for occupational health and safety, NIOSH Industry & Occupation Computerized Coding System, and discussion of the NIOSH State-based Occupational Health Surveillance Clearinghouse.

CSTE in continued collaboration with the NIOSH BRFSS I/O Workgroup leads has developed a new BRFSS I/O webpage under the CSTE Occupational Health Subcommittee website (<http://www.cste.org/group/BRFSS>).

CSTE maintains both an OHI distribution list and an OH point of contact (POC) list in collaboration with NIOSH and states. The POC list is accessed via the CSTE website ([www.cdc.gov/niosh/statosh.html](http://www.cdc.gov/niosh/statosh.html)), which links to the NIOSH state contacts page. Each list is updated several times each project period.

CSTE has significantly increased its use of social media (e.g., Facebook, Twitter, CSTE Blog Features) to promote website use and increase dissemination of various CSTE resources and activities. Posts from colleagues are shared and reposted, including posts from NIOSH. Examples include a blog repost of California’s palm tree trimmer fatality prevention efforts, reminders of upcoming and archived webinars, and announcements of newly posted materials and reports.

Dissemination of data and products and increased partnerships and outreach evolve based on individual needs of subcommittees and audiences of specific outputs. Strategies to do so are discussed at in-person meetings with appropriate follow-up actions by identified state participants. In the last budget period, CSTE has developed outreach materials and a plan for disseminating information to worker advocates, industry, health and safety professionals, and other stakeholders about the NIOSH state-based clearinghouse, which is a repository of all state-developed reports and materials.

### *3. Update technical guidance for conducting occupational health surveillance, including assessment, policy development, and assurance*

CSTE Occupational Health and Environmental Health members authored the 2015 CSTE Position Statement 15-EH-01 “Public Health Reporting and National Notification for Elevated Blood Lead Levels” to provide an update to BLL criteria and reporting procedures.

The first workgroup call regarding CSTE Position Statement 14-OH-02 “Inclusion of Work Information as Data Elements in CDC Surveillance Systems” was held on Sept 8th with representation from CSTE and CDC. This workgroup includes subject matter experts in surveillance, occupational health, infectious disease, and non-infectious disease programs. More information on addressing the requests in the position statement is being collected. The

next I/O Position Statement Workgroup call will occur in November, and an in-person meeting is anticipated to occur in January.

Regarding CSTE Position Statement 14-OH-01 "Access to Census of Fatal Occupational Injuries Case-Level Data for Public Health Purposes," the CSTE OH Subcommittee and position statement leads (3 in person; 1 by phone) met with the BLS Commissioner in Spring 2015 to discuss improve CFOI data and access. NIOSH, OSHA, and other BLS representatives were also present at the meeting. BLS provided updated on action items at the OH Subcommittee Meeting at the 2015 CSTE Annual Conference. Follow up actions are to be continued into the next project period.

In early 2015, several members of the CSTE OH Subcommittee with experience in blood lead surveillance participated as subject matter experts for the RCKMS project on their development of a lead reporting module.

CSTE and NIOSH continue to work together on the CSTE-NIOSH BRFSS IO Workgroup for information dissemination and to provide technical assistance to states over email and regular conference calls. Twenty-five states will be adding the NIOSH-sponsored I/O module in the 2015 BRFSS, which is the highest number of state participation to date.

CSTE has formally convened and announced an Oil and Gas Workgroup with the subcommittees under the Environmental Health, Occupational Health, and Injury (EOI) Steering Committee. The workgroup will examine and provide support and technical guidance to states who face this growing public health concern related to the oil and gas drilling and extraction industry.

As aforementioned under Specific Aim 1, the OHIs "How-to" guide, 'A Guide for Tracking Occupational Health Conditions and Their Determinants,' continues to be updated each year as well as the reporting template states use to collect and report OHI information to CSTE and NIOSH. The Sub-state Measures Workgroup is also developing a similar guidance document to provide technical guidance to states interested in conducted similar analyses.

*4. Plan, organize, conduct, and evaluate annual scientific meetings and workshops to support NIOSH funded and unfunded state occupational health surveillance programs*

Planning for the CSTE Annual Conference (AC) begins in the preceding Fall of each year with at least once monthly conference calls with the Occupational Health AC Planning Committee until the Spring. The planning committee includes state and federal representatives who assist in planning the all-day Sunday pre-conference workshop, the agenda for all of the breakout, rapid fire, and roundtable sessions of the 3 full-days of the conference, and any additional networking or social activities that will occur at the conference with colleagues in occupational health, injury, and environmental health. A workshop-only evaluation report is developed shortly after the conference has concluded in addition to an overall conference evaluation report.

The Fall and Spring OH Subcommittee Meetings are organized similarly with a small planning committee, led by the two OH Subcommittee co-chairs. Topics of these meetings vary, but consistently include OH Subcommittee updates and discussion, such as identification of next steps for position statement follow-up. The 2014 CSTE OH Winter Meeting, which is regularly in conjunction with the NIOSH Partners' Grantee Meeting, highlighted OH integration in public health infectious disease programs, Ebola response and coordination, and the new OSHA reporting rule on work-related hospitalizations, amputations, and enucleations. Meeting

evaluations are conducted on an ongoing, as-needed basis, largely to inform agenda planning for future meetings and follow up actions.

In close collaboration with NIOSH, two technical trainings regarding analyses of BRFSS IO data in SAS have been successfully conducted within the last two years. The 2015 CSTE-NIOSH Technical BRFSS Users' Workshop by Dr. Donna Brogan on "Using SAS SurveyLogistic for Logistic Regression Analyses of BRFSS Data with Industry and/or Occupation Variables" had a total of 79 participants, from which 20 were in-person (10 NIOSH, 10 state) and 59 were live webinar (5 NIOSH, 54 state representatives), with additional interest in the recorded materials (at least 6 other state individuals). Workshop materials are available upon request.

*5. Support travel and assistance to attend national forums including CSTE occupational health Subcommittee meetings*

CSTE plays a key role in consistently assisting both NIOSH-funded and unfunded states to attend national meetings, including CSTE OH Subcommittee meetings. For the 2015 CSTE Annual Conference, which includes a full-day workshop on occupational health as well as an abbreviated NIOSH Partners' Meeting and a CSTE OH Subcommittee meeting, CSTE traveled 46 state representatives (21 full sponsorship, 7 two-night, 18 registration only) with approximately 80 attendees for the Sunday OH Workshop, one of the most highly attended workshops at the CSTE Annual Conference. For the 2014 Winter OH Subcommittee Meeting, also in conjunction with NIOSH Partners' Meeting, CSTE supported 27 state representatives (partial- 23 grantees, full- 4 unfunded states).

CSTE also supported two consultations in the last budget period. CSTE member, Justine Weinberg (CA), represented CSTE OH at the inaugural Organizational Meeting of the Conference for the Model Aquatic Health Code (CMAHC) and was selected as the official CSTE representative to CMAHC. Arkansas, an unfunded state for state-based occupational health surveillance, was supported to attend the fourth annual SouthON meeting in April 2015.

*6. Promote state, regional, and nationwide collaboration to increase occupational health surveillance capacity in the U.S., including partnership with NIOSH Surveillance Steering Group, consultations, and mentoring*

The three CSTE Position Statements previously described above under Specific Aim 3 all demonstrate the nationwide collaboration taken by CSTE to increase OH surveillance capacity in the US in partnership with NIOSH and other federal and state partners. All three position statements have also received positive responses from the noted requested agencies for response with ongoing action items being taken to address the respective position statement.

CSTE collaborates with the Association of Occupational and Environmental Clinics (AOEC) for the Occupational Health Internship Program (OHIP) to annually fund two students for an 8.5-week summer internship. The OHIP program is a national, summer internship program to help medical, nursing, public health, and other students learn more about the field of occupational safety and health through direct, on-the-ground experiences with workers. The selected 2015 OHIP host site is the National Guestworker Alliance in partnership with the Louisiana Department of Health and Hospitals to assess occupational conditions faced by immigrant ironworkers in Southeast Louisiana. Note that at each Fall OH Subcommittee meeting, the students from the preceding summer present on their OHIP experience and findings to help share their work with a larger professional audience. The projects of the OHIP students have consistently been well-received by AOEC and CSTE OH Subcommittee members.

CSTE continues to solicit and facilitate state publications of state-based surveillance articles in the monthly NIOSH e-Newsletter (30 submissions in 2014-15 budget period) and the NIOSH science blog.

In addition to the aforementioned consultations noted under Specific Aim 5, CSTE has provided approximately eleven consultations over three months to assist states in grant writing for the 2015 State-Based Surveillance Program Announcement Review.

As continued from the previous award, there is continued, consistent CSTE OH Subcommittee representation on the NIOSH Surveillance Coordination Group (SCG), which meets through monthly conference calls. The two CSTE liaisons solicit CSTE updates to share with other members of the SCG. They then facilitate sharing of the SCG meeting notes to the states through CSTE OH distribution lists on a monthly basis.

## Results and Discussion

### *1. Maintain and develop the Occupational Health Indicators (OHIs) as a surveillance tool*

The generation and collection of OHIs has been effective in educating states in how to access and use a variety of data sources and has led to improvements in occupational health surveillance and to new working relationships among agencies in states. OHIs have been particularly valuable as a major capacity building tool in states with newly developing occupational health programs. Through the process of formulating the indicators and developing instructions for their collection, a collaborative working relationship has been fostered among staff at CSTE, NIOSH, and funded and unfunded state health departments.

### *2. Develop and disseminate communication strategies including guidance, success stories, and enhance access to state occupational health information via the CSTE website*

CSTE communicates scientific information to policymakers, partners, and members through email, press releases, newsletters, and reports. The CSTE website includes information on occupational health publications, tools, resources, news, upcoming meetings, and significant contributions by the CSTE Subcommittee. This information is readily accessible to public health practitioners and other interested parties. CSTE publications have been written with the goal of building capacity for occupational health surveillance and to provide information to public health and other health and safety practitioners on critical issues.

### *3. Update technical guidance for conducting occupational health surveillance, including assessment, policy development, and assurance*

CSTE has provided states with technical assistance to build occupational health capacity and promote the use of state surveillance data by providing a central repository for state-based OH surveillance information and data. CSTE has enhanced its website to provide all states with access to the OHI data, inform states with minimal or no capacity about the ease and utility of generating indicator data, and share contact information and links to state OH programs and their reports and materials. Content-based and technical webinars enable states from a wide range of backgrounds to build skills for conducting occupational health surveillance. Most notably, CSTE OH members author several CSTE Position Statements (as aforementioned), highlighting the national level impact of CSTE OH members' work.

*4. Plan, organize, conduct, and evaluate annual scientific meetings and workshops to support NIOSH funded and unfunded state occupational health surveillance programs*

CSTE-supported meetings enable states to implement projects and provide input to NIOSH regarding state-based OH surveillance activities. Subject-specific meetings bring together states, national partners, and other stakeholders to discuss issues of relevance to occupational safety and health. The objectives of these meetings are to improve collaboration, share information on particular topics of interest, and to produce a meeting outcome, including a summary report or white paper. By facilitating these meetings, CSTE promoted the development of technical skills, leadership among participants, and the sharing of pertinent information to improve worker safety and health at a national level. Additionally, CSTE has encouraged the advent of regional occupational health and safety meetings where states are able to network with occupational safety and health professionals in their region and collaborate on joint epidemiologic projects. CSTE has demonstrated this through its other NIOSH Cooperative Agreements to support the regional WestON and SouthON meetings.

*5. Support travel and assistance to attend national forums including CSTE occupational health Subcommittee meetings*

CSTE ensures representation from multiple unfunded states at CSTE and other national meetings and trainings to ensure knowledge transfer and improved practices in both NIOSH-funded and unfunded states. Improved knowledge transfer is evidenced by the increased number of applications (new or expanded) for the NIOSH state-based surveillance in occupational health and Workers' Compensation programs. Another example is how an unfunded state for occupational health surveillance (Arizona) was able to complete its first occupational health indicators report using the guidelines and resources provided by CSTE. Arizona presented their work at the Western States Occupational Network (WestON regional meeting), which is also supported by CSTE, to further disseminate OH successes and best practices.

*6. Promote state, regional, and nationwide collaboration to increase occupational health surveillance capacity in the U.S., including partnership with NIOSH Surveillance Steering Group, consultations, and mentoring*

The purpose of CSTE consultations are to build occupational health capacity and provide technical assistance and state mentorship. For example, CSTE has provided approximately eleven consultations over three months to assist states in grant writing in the last State-Based Surveillance PAR, having a clear impact on national occupational health and surveillance. Other types of consultations include ensuring that the occupational health and safety perspective is represented in various health arenas, such as development of the Model Aquatic Health Code , providing technical advice on improved methods for surveillance, such as BLL reporting in an RCKMS module.

The CSTE OH Subcommittee facilitates state participation in the NIOSH SCG on a monthly basis to ensure that public health information is shared with NIOSH leadership as well as shared updates back to the states. This participation allows for timely sharing of information and collaboration among federal and state OH partners.

On a larger, systemic level, a workgroup has been formed with the goal of increasing the inclusion of industry, occupation, and other work-related information in national surveillance

data systems through the CDC (based on aforementioned CSTE Position Statement 14-OH-02). This workgroup includes subject matter experts in surveillance, occupational health, infectious disease, and non-infectious disease programs with representatives from CSTE and various CDC centers, including NIOSH. The occupational health and safety impact of this initiative is unprecedented and is a major goal to accomplish under the new occupational capacity award.

## **Conclusion**

The overall goal of the CSTE Occupational Health Surveillance Subcommittee is to promote state, regional, and nationwide collaboration to increase state occupational health surveillance capacity. CSTE serves as a vehicle for state input to NIOSH regarding future directions for state-based surveillance. The CSTE OH Subcommittee has provided recommendations and input to NIOSH on issues related to occupational health including: goals for occupational health surveillance, the importance of state data and its funded support, and guidelines for states occupational health surveillance programs. Over the last five years, the Building Capacity for State-Based Occupational Health Surveillance project has successfully promoted state, regional, and nationwide collaboration to increase state occupational health surveillance capacity.

This project has provided an opportunity for states to share pertinent information, build epidemiology and occupational health surveillance expertise, and establish more effective relationships among epidemiologists working in states and other agencies in a supportive environment. Additionally, successful approaches to making workplaces safer and healthier begin with having the data necessary to understand the problem, which this project significantly contributed through the collection of state-based occupational health indicator data and continued collaboration with NIOSH.

## Publications

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