CUMULATIVE EVALUATION REPORT

DRUG OVERDOSE SURVEILLANCE REGIONAL WORKSHOPS

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EXECUTIVE SUMMARY

Project Overview

Since 1999, the United States has experienced an increase in drug overdoses related to prescription, heroin, and synthetic derived opioids. In 2017, approximately 68% of the more than 70,000 drug overdose deaths in the U.S. involved a prescription or illicit opioid. In response, federal agencies such as the Centers for Disease Control and Prevention (CDC) and its National Center for Injury Prevention and Control (NCIPC) have enhanced efforts to support state agencies to initiate or expand their drug overdose surveillance.

The Council of State and Territorial Epidemiologists (CSTE) partnered with the NCIPC to provide additional epidemiological support for the jurisdictions and agencies operating programs for drug overdose surveillance. As a first step in this partnership, a capacity assessment was conducted by CSTE in 2018. Results indicated that skilled staff shortages and increasing demand for drug overdose data were prevalent throughout jurisdictions.

Lack of strong partner relationships hinder many jurisdictions from accessing data, receiving data quickly, and ultimately sharing key drug overdose data effectively. A need for data visualization tools was also expressed.

In partnership with NCIPC, CSTE used the concerns expressed in the capacity assessment to develop a series of opioid surveillance workshops. Each designed to enhance the capacity of public health professionals and their key partners to conduct opioid surveillance.

Four workshops were held between January and May of 2019. Participants evaluated each workshop and the key findings are present here:

- All workshops were successful in building capacity of participants to conduct opioid surveillance activities.
- Workshop participants highly valued opportunities to collaborate, both within their own public health agency and with other jurisdictions.
- Many participants plan to use workshop lessons to enhance stakeholder relationships, formalize opioid surveillance activities, and explore new data sources.
- All workshops should include extra time for discussion.
- Participants appreciated opportunities to learn about strategies that other jurisdictions are using for opioid surveillance.

In response to the evaluation findings, CSTE will engage in the following next steps:

1. Collaborate with participants who are implementing workshop principles of stakeholder engagement and data dissemination broadly among partners and local jurisdictions (i.e advise on adaption of workshop materials and findings for use with key partners and public health jurisdictions upon request).
2. Identify opportunities to convene and discuss common challenges and effective solutions for drug overdose surveillance teams unable to attend this workshop series including local jurisdictions.
3. Leverage existing CSTE member driven subcommittees and workgroup infrastructure to serve the diverse needs of public health practitioners navigating the emerging field of drug overdose surveillance.
4. Support drug overdose surveillance capacity building activities within jurisdictions by pursuing opportunities to provide tailored technical assistance to increase jurisdiction’s ability to use data to inform meaningful public health actions.

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1 CDC, National Center of Health Statistics *(https://www.cdc.gov/nchs/data/databriefs/db329-h.pdf)*
2 CDC *(https://www.cdc.gov/drugoverdose/epidemic/index.html)*
Background

- Overview
- Workshop Purpose
- Workshop Design
- Evaluation Design
- Learning Objectives
- Dates and Places
- Participant Invitations and Selection Process
Since 1999, the United States has experienced a marked increase in drug overdose cases. These trends have prompted many state, tribal, local, and territorial public health agencies to initiate or expand their surveillance programs to accommodate drug overdose surveillance. Federal agencies have supported these efforts including the Centers for Disease Control and Prevention (CDC) which has supplied additional funding for these public health efforts through the National Center for Injury Prevention and Control (NCIPC).

The Council of State and Territorial Epidemiologists (CSTE) has partnered with the NCIPC to provide additional epidemiological support for the jurisdictions and agencies operating programs for drug overdose surveillance.

In 2018, CSTE worked with an external consultant and its CSTE Technical Assistance Leadership Group to analyze the epidemiological capacity of state and local public health agencies and their ability to reliably measure the burden of opioid use, misuse, overdose and death within their jurisdictions.

The CSTE capacity assessment revealed that state and local public health agencies face many challenges related to collecting, analyzing, and effectively using data to monitor and assess the burden of opioid use, misuse, overdose, and death. A comprehensive analysis of the capacity assessment data led CSTE to make several recommendations related to the design and delivery of technical assistance and training resources for public health agencies.

Among the recommendations that emerged from the capacity assessment, one was to develop guidance for public health agencies to engage a diverse group of partners in their surveillance activities and data sharing activities. Another of the recommendations was to increase resources to assist public health agencies to display data and fulfill data requests from partners and other stakeholders.

CSTE consulted with key stakeholders including CDC and the CSTE Technical Assistance Leadership Group to operationalize these recommendations. CSTE set out to design a dynamic opportunity for epidemiologists and their partners to gather and discuss their common opioid overdose surveillance practices and challenges.

Along with external consultants, CSTE designed and delivered a series of opioid surveillance workshops. Participant experience was evaluated by CSTE internally. The focus of the workshops described in this report was on surveillance of opioid use, misuse, overdose, and death. Given the changing nature of opioid overdose trends and the increase in multi-drug involved overdoses, the workshops encouraged participants to adapt the principles of opioid surveillance to the broader concerns related to overdose surveillance efforts involving all drugs types. This report describes the opioid surveillance workshops and highlights the key findings from the workshop evaluations.
Workshop Purpose

The purpose of the CSTE Opioid Surveillance workshops was to enhance the capacity of public health professionals and their key partners to measure the burden of opioid use, misuse, overdose, and death.

The workshops aimed to offer drug overdose surveillance personnel a unique opportunity to engage with the diverse member of their own state teams and members of other nearby state surveillance programs. Participants were invited using a team-based, regional approach to engage teams operating in close proximity who may face similar concerns and barriers.

Workshop Design

The participants were invited using a team-based regional approach, strengthened the participant experience in two ways. Team participation allowed individuals from different divisions and agencies who are all involved with drug overdose surveillance to interact and collaboratively develop their action plans for opioid overdose surveillance. Additionally, the regional approach helped build inter-state relationships and share innovative tools and best practices.

Each workshop lasted nearly two full days. The first day included sessions on stakeholder analysis and mapping, data sources for opioid surveillance, and strategies for accessing and analyzing data from multiple sources. The first day also included a “regional spotlight” in which at least one public health jurisdiction shared their experience and insights related to opioid surveillance. In most workshops, a local Medical Examiner also spoke to participants about topics such as death investigations, determining cause and manner of death, and coding challenges related to opioid deaths.

The second day consisted of sessions on data visualization and data dissemination. At the end of this day, participants drafted their action plans for opioid surveillance, shared them with fellow participants, and received feedback.

The agenda was modified slightly after the first workshop to allow for more discussion time and then remained largely the same for the last three workshops.

Evaluation Design

At the end of each workshop, participants were asked to provide feedback on the extent to which the workshop satisfied the expectations of participants and met its learning objectives (shown on next page). As part of the evaluation, participants were also asked to provide feedback that CSTE and CDC could use to improve future workshops, technical assistance, and trainings.

The evaluation instrument was provided online to participants for three of the workshops and onsite for one workshop. The evaluation instrument underwent slight modifications after the first workshop and then remained largely consistent for the last workshops. All evaluation respondents did not complete all questions featured in evaluation tool.

A sample of the workshop agenda and evaluation instrument are included in the Appendices section of this report.
LEARNING OBJECTIVES

Each workshop was designed to meet priority learning objectives determined by CSTE and key stakeholders. The curriculum utilize successful adult learning concepts and applied them to drug overdose surveillance. Appropriate learning objectives were developed for each workshop session. Participants were guided through the following three-step process to meet learning objectives:

1. **Learn** new information and/or acquire new skills.
2. **Apply** the information and/or skills to their own work.
3. **Share** experience and insights gained while applying the information and/or skills to their own work.

<table>
<thead>
<tr>
<th>Workshop Session</th>
<th>Learning Objective Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess the Stakeholder Landscape</td>
<td>Explain the value of including non-traditional stakeholders in your opioid surveillance plan.</td>
</tr>
<tr>
<td>Assess the Data Landscape</td>
<td>Identify common and less common data sources and indicators for opioid surveillance.</td>
</tr>
<tr>
<td>Access and Analyze Data and Indicators</td>
<td>Describe at least one situation in which a data sharing agreement is necessary and one in which it is not necessary.</td>
</tr>
<tr>
<td>Transform and Visualize Data</td>
<td>Apply the principles of data storytelling to extract key messages and transform data into information.</td>
</tr>
<tr>
<td>Use and Disseminate Data</td>
<td>Prepare a dissemination plan that can be used to share your opioid surveillance data with others.</td>
</tr>
</tbody>
</table>
Workshop Dates and Places

Atlanta, GA
Southeastern Region
January 23-24, 2019

Oklahoma City, OK
Central Region
March 12-13, 2019

Baltimore, MD
Northeastern Region
March 26-27, 2019

Portland, OR
Western Region
May 23-24, 2019

Participant Invitations and Section

The team-based, regional approach for the workshops increased the value of the learning opportunities for participants. This model allowed participants the opportunity to collaborate with their neighboring states, enhance understanding of common surveillance strategies utilized in their region, and discuss challenges and opportunities related to interstate data sharing.

For the purpose of workshop planning, CSTE designated four regions of the United States (northeast, southeast, central, and western) comprised of 12 to 13 state public health jurisdictions each.

CSTE defined four national regions with 11-13 state jurisdictions including Washington, DC in each. Invitations were sent by CSTE to potential workshop participants. Potential workshop participants in each region included known drug overdose surveillance personnel receiving funding from the CDC Enhanced State Opioid Overdose Surveillance (ESOOS) cooperative agreement as well as those operating in unfunded state public health jurisdictions.

Invitees who were interested but unable to participate in their assigned regional workshop were allowed to participate in a subsequent workshop offered in a different region.

Southeastern Region Participant Jurisdictions: Georgia, Florida, S. Carolina, Washington DC, Virginia, Kentucky, Tennessee, Missouri, Louisiana

Central Region Participant Jurisdictions: Oklahoma, Kansas, Minnesota, Indiana, Michigan


Western regional Invitees: Utah, Washington, Oregon, N. Mexico, Wyoming, Wisconsin

<table>
<thead>
<tr>
<th>REGION</th>
<th>MEETING LOCATION</th>
<th>JURISDICTIONS INVITED</th>
<th>JURISDICTIONS ATTENDED</th>
<th># ATTENDEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeastern</td>
<td>Atlanta, GA</td>
<td>13</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td>Central</td>
<td>Oklahoma City, OK</td>
<td>14</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Northeastern</td>
<td>Baltimore, MD</td>
<td>11</td>
<td>9</td>
<td>42</td>
</tr>
<tr>
<td>Western</td>
<td>Portland, OR</td>
<td>13</td>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>
Themes and Insights

- Overarching Themes
- Atlanta Workshop
- Oklahoma City Workshop
- Baltimore Workshop
- Portland Workshop
OVERARCHING THEMES

Across all workshops, there was a great deal of variability in participant experience and prior expertise in opioid surveillance. Among the 111 participants who attended one of the four workshops, most participants reported being in their current positions for less than five years. However, each workgroup included many participants who had been in their current position for less than one year and some participants who had been in their current position for more than six years. This variability made it imperative for each workshop to be flexible in its approach to meeting the learning objectives.

Participants who responded to the evaluation questions reported high levels of satisfaction with nearly all the workshop sessions offered at each of the workshops. The regional spotlight sessions were highly rated by participants at each of the workshops, which confirmed that participants value opportunities to learn about strategies other jurisdictions are using for opioid surveillance.

*It was great to learn what other states are doing and spend time working with others in our same state since we do not usually get time to work together directly.*

- Atlanta workshop participant

Other workshop sessions that received especially high ratings from participants across all four workshops included stakeholder analysis and mapping, data transformation and visualization, and accessing and analyzing data from multiple sources. Notably, all sessions were very well received by the majority of participants.

The vast majority of all participants indicated that the workshop did a good or excellent job of meeting its overall objective, which was to enhance the capacity of public health professionals to measure the burden of opioid use, misuse, overdose, and death.

Participant responses to open-ended evaluation questions underscored and reaffirmed the expectations of the workshop planners that networking and collaboration within and across states are highly valued by participants.
Nearly all participants who responded to the evaluation questions agreed or strongly agreed that the workshop presentations and discussions were relevant, the workshop materials were useful, the workshop agenda was appropriate for meeting the learning objectives, and that the workshops were well-organized. Nearly all participants indicated that they would recommend the workshop to others.

Although the vast majority of participants across all four workshops indicated that the workshop facilitators encouraged discussion and were flexible in their facilitation approach, a common theme across all workshops was that participants desired additional time for networking and discussion. Based on the responses to open-ended evaluation questions and discussions with participants during the workshops, it is clear that participants highly value time spent learning from other participants in different jurisdictions. In addition, many participants expressed gratitude for workshop time that allowed them to work with their internal partners and colleagues.

One of the goals of the workshops was to assist participants to identify new tools and resources that could be used for opioid surveillance. The majority of participants across all four workshops indicated that this goal was met. In addition, most participants across all workshops indicated that the networking and sharing during the workshops helped them to identify areas in which their jurisdiction is doing well.

Workshop participants were asked about their plans for using the information from the workshop to improve their opioid surveillance activities. They were also asked to describe perceived challenges to implementing newly acquired knowledge or skills.

“One of the best things about the workshop was that it connected me with my counterparts across the region and internally.”

- Baltimore workshop participant

Participants across all workshops indicated plans for enhancing stakeholder relationships, formalizing opioid surveillance activities, and exploring new data sets. Perceived implementation challenges were also similar across workshops, with limited resources and data sharing challenges being frequently noted by participants.

Across all workshops, participants expressed similar ideas about how they would apply what they learned.
Atlanta, GA

Southeastern Region
Workshop #1

January 23-24, 2019
The Atlanta workshop offered the facilitators, partners, and participants an important opportunity to test and refine the workshop design, content, and materials.

The Atlanta workshop was attended by 32 participants who represented nine public health jurisdictions (DC, FL, GA, LA, MO, KY, SC, TN, and VA). Among all Atlanta workshop participants, 41% reported being in their current position for one year or less, 47% one-and-a-half to five years, and 12% for six or more years.

The evaluation was completed by 13 workshop participants. Among the evaluation respondents, 38% reported working in applied epidemiology for less than one year, 31% for one to five years, and 31% for six or more years.

Participants were asked to indicate their level of satisfaction with each of the sessions offered during the workshop. Results indicated that all participants were satisfied or extremely satisfied with the regional spotlight and lunchtime discussion with the Fulton County Medical Examiner (Figure 1). The vast majority of participants were also satisfied or extremely satisfied with the sessions related to stakeholder assessment and data dissemination. One participant reported being dissatisfied with the session that provided a general overview of the opioid crisis, but all other sessions received favorable ratings from the majority of respondents.

Following the workshop, stakeholders conducted a formal review of the evaluation results and overall participant experience.

Future iterations of the workshop integrated this feedback into the agenda. The opioid overview portion was significantly shortened and an additional section was added to share data dissemination tools.

Participants were asked to provide feedback on the extent to which the workshop accomplished its key objectives. Eighty-five percent of respondents indicated that the workshop did a good or excellent job of meeting its overall objective, which was to enhance the capacity of public health professionals to measure the burden of opioid use, misuse, overdose, and death (Figure 2).

Through an open-ended evaluation question, participants were encouraged to provide feedback about the most valuable components of the workshop. The responses to this question revealed that respondents greatly valued networking, sharing ideas, learning about the opioid surveillance strategies being used in other public health jurisdictions, and collaborating with their own colleagues and those from other jurisdictions.

“The open discussions were invaluable to my understanding of how other states do similar work. It also made me aware of process improvements that I could implement to improve my opioid surveillance activities.”

- Atlanta workshop participant
Figure 1. Participant Satisfaction with Specific Workshop Sessions (N=13)

<table>
<thead>
<tr>
<th>Session Description</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting the Stage: An Overview of the Opioid Crisis</td>
<td>8%</td>
<td>15%</td>
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<td>46%</td>
<td></td>
<td></td>
<td>31%</td>
</tr>
<tr>
<td>Regional Spotlight</td>
<td>31%</td>
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<td></td>
<td></td>
<td>69%</td>
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<td></td>
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</tr>
<tr>
<td>Lunch Speaker (Medical Examiner)</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>69%</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Action Plan for Opioid Surveillance</td>
<td>23%</td>
<td>31%</td>
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<td></td>
<td>54%</td>
<td></td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assess the Stakeholder Landscape</td>
<td>8%</td>
<td>38%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>54%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access and Analyze Data and Indicators</td>
<td>23%</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>54%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transform and Visualize Data</td>
<td>31%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>54%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use and Disseminate Data</td>
<td>15%</td>
<td>38%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>54%</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Share the Plan and Identify Next Steps</td>
<td>23%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>54%</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

- Extremely Dissatisfied or Dissatisfied
- Neither Satisfied nor Dissatisfied
- Satisfied
- Extremely Satisfied
ATLANTA, GA

Figure 2. Participant Rating of the Workshop’s Ability to Accomplish Key Learning Objectives for Each Session (N=13)

- Explain the unique challenges and opportunities related to opioid surveillance: 8% Very Poor or Poor, 38% Average, 54% Good, 0% Excellent
- Recall the overall approach and challenges to opioid surveillance shared by the Regional Spotlight speaker(s): 31% Very Poor or Poor, 38% Average, 62% Good, 69% Excellent
- Describe the four-step process used during the workshop to develop an action plan for opioid surveillance: 8% Very Poor or Poor, 62% Average, 31% Good, 0% Excellent
- Explain the value of including non-traditional stakeholders in your opioid surveillance plan: 8% Very Poor or Poor, 62% Average, 31% Good, 0% Excellent
- Identify common and less common data sources and indicators for opioid surveillance and limitations of ICD codes: 8% Very Poor or Poor, 54% Average, 46% Good, 0% Excellent
- Describe at least one situation in which a data sharing agreement is needed, and one in which it is not: 17% Very Poor or Poor, 50% Average, 33% Good, 0% Excellent
- Explain the process to request data from at least one new data source: 8% Very Poor or Poor, 46% Average, 38% Good, 0% Excellent
- Apply principles of data storytelling to extract key messages and transform data into information: 8% Very Poor or Poor, 46% Average, 38% Good, 0% Excellent
- Prepare a dissemination plan: 15% Very Poor or Poor, 46% Average, 38% Good, 0% Excellent
- Create an action plan to develop, update, or enhance approach to opioid surveillance: 31% Very Poor or Poor, 46% Average, 23% Good, 0% Excellent
- Enhance capacity to measure the burden of opioid use, misuse, overdose, and death: 15% Very Poor or Poor, 31% Average, 54% Good, 0% Excellent
ATLANTA, GA

Figure 3. Participant Satisfaction with Specific Aspects of the Overall Workshop (N=13)

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agenda was appropriate for the workshop objectives</td>
<td>8%</td>
<td>31%</td>
<td></td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>The materials distributed with the workshop were useful</td>
<td>15%</td>
<td></td>
<td>85%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The presentations and discussion in the workshop were relevant to my public health practice</td>
<td>8%</td>
<td>38%</td>
<td>62%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The objectives of the workshop were clearly communicated</td>
<td>8%</td>
<td>46%</td>
<td></td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>The workshop was well organized</td>
<td>8%</td>
<td>31%</td>
<td></td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>The workshop content was useful and applicable to my work</td>
<td>8%</td>
<td>38%</td>
<td></td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>The use of a facilitator was beneficial to the meeting</td>
<td>23%</td>
<td>8%</td>
<td></td>
<td>69%</td>
<td></td>
</tr>
<tr>
<td>The facilitators were flexible and adjusted the agenda, as needed, to respond to participant needs</td>
<td>8%</td>
<td>15%</td>
<td>15%</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>The length of the workshop was appropriate</td>
<td>31%</td>
<td></td>
<td>46%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>Travel accommodations were easily met</td>
<td>23%</td>
<td>31%</td>
<td></td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>There was adequate time for discussion</td>
<td>8%</td>
<td>15%</td>
<td></td>
<td>62%</td>
<td>15%</td>
</tr>
<tr>
<td>Discussions were encouraged in this workshop</td>
<td>15%</td>
<td>15%</td>
<td>23%</td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>Overall, the workshop met my expectations</td>
<td>8%</td>
<td>8%</td>
<td>23%</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>I would recommend this workshop to others</td>
<td>8%</td>
<td>23%</td>
<td></td>
<td>69%</td>
<td></td>
</tr>
</tbody>
</table>

Note: The chart shows the percentage of participants who strongly disagreed, disagreed, were neutral, agreed, or strongly agreed with each aspect of the workshop.
In addition to providing feedback on specific workshop sessions and learning objectives, participants shared their impressions about overall aspects of the workshop. All respondents agreed or strongly agreed that the workshop presentations and discussions were relevant and the workshop materials were useful (Figure 3). The vast majority of respondents also indicated that the workshop was well-organized with an agenda that was appropriate for the learning objectives. All but one respondent indicated that they would recommend the workshop to others.

Respondents also identified some areas for improvement. For example, three respondents (23%) indicated that there was not enough time for discussion. Responses to an open-ended follow-up question also revealed suggestions to provide more discussion time and/or extend the workshop to two full days.

CSTE and the workshop facilitators responded to this feedback by increasing the amount of time in subsequent workshops devoted to discussion and sharing among public health jurisdictions.

All respondents reported that the networking and sharing that occurred during the workshop helped them identify new surveillance resources and tools. The majority of respondents also noted that networking and sharing helped them recognize their strengths and identify new surveillance methods.

“I learned a lot about data, ranging from access to linking and dissemination.”

- Atlanta workshop participant

Benefits of Networking and Sharing, as Identified by Participants During the Workshop (N = 13) 100%
Workshop participants plan to apply the workshop information to enhance their opioid surveillance activities, but realize that they will face some challenges.

As part of the Atlanta workshop evaluation, participants were asked about their plans for using the information from the workshop to improve their opioid surveillance activities. They were also asked to describe perceived challenges to implementing newly acquired knowledge or skills.

In response, several participants described plans to apply the lessons from the stakeholder analysis, data visualization, and to share the workshop materials with others. Common challenges included those related to data sharing and initiating work with new partners and stakeholders. The table at right provides a synthesis of the responses to these two questions.

<table>
<thead>
<tr>
<th>Planned Follow-Up Actions</th>
<th>Perceived Implementation Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete stakeholder analysis and reach out to new stakeholders</td>
<td>Issues and concerns related to data sharing and data privacy</td>
</tr>
<tr>
<td>Use data visualization training in choosing what data to display and to whom</td>
<td>Non-standardized coroner-based data collection and reporting system</td>
</tr>
<tr>
<td>Share new knowledge and workshop resources with others</td>
<td>Forming relationships with new stakeholders</td>
</tr>
<tr>
<td>Formalize an opioid surveillance plan</td>
<td>Time and resource limitations</td>
</tr>
<tr>
<td>Leverage workshop materials to create a guide for accessing data from different data sources</td>
<td>Obtaining “buy-in” from important and influential stakeholders</td>
</tr>
<tr>
<td>Use tools and resources to respond to CDC Notification of Funding Opportunities</td>
<td>Convening and coordinating numerous offices within the state health department</td>
</tr>
</tbody>
</table>
Oklahoma City, OK

Central Region
Workshop #2

March 12-13, 2019
The Oklahoma City workshop devoted increased time for discussion among participants and an opportunity to share data visualization tools and dashboards was added.

Prior to the Oklahoma City workshop, CSTE and CDC stakeholders met to discuss the first workshop. The evaluation results confirmed that many aspects of the workshop design were successful including the team approach, appropriate content for both experienced and novice practitioners, and opportunities for interaction between states.

The Oklahoma City workshop was attended by 17 participants who represented five public health jurisdictions (IN, KS, MI, MN, and OK). The evaluation was completed by 14 workshop participants. Among the evaluation respondents, 14% reported working in applied epidemiology for less than one year, 64% for one to five years, and 21% for six or more years. The majority of respondents (71%) described their primary role as being related to data collection and analysis.

Participants were asked to indicate their level of satisfaction with each of the sessions offered during the workshop. Evaluation results indicated that all participants were satisfied or extremely satisfied with the majority of sessions, including the overview of the opioid crisis, the regional spotlight, and the sessions related to stakeholder analysis and mapping, data visualization, data dissemination, and developing an action plan (Figure 4).

Participants were asked to provide feedback on the extent to which the workshop accomplished its key objectives. Eighty-nine percent of respondents indicated that the workshop did a good or excellent job of meeting its overall objective, which was to enhance the capacity of public health professionals to measure the burden of opioid use, misuse, overdose, and death (Figure 5). The vast majority of respondents indicated that every workshop session did a good or excellent job of meeting its specific learning objectives.

Through an open-ended evaluation question, participants were encouraged to provide feedback about the most valuable components of the workshop. The responses to this question revealed that respondents valued the workbook and other reference materials provided during the workshop, the activities and exercises completed during the workshop, and the opportunities that the workshop provided to collaborate within their own teams and with other participants.

“I learned new strategies for identifying and thinking about stakeholders, and I learned new strategies for analyzing data and conducting opioid surveillance.”

- Oklahoma City workshop participant
Figure 4. Participant Satisfaction with Specific Workshop Sessions

- Setting the Stage: Overview of the Opioid Crisis (n=12): 62% Satisfied, 38% Extremely Satisfied
- Regional Spotlight (n=12): 42% Satisfied, 58% Extremely Satisfied
- Lunch Speaker (Medical Examiner) (n=14): 14% Satisfied, 71% Extremely Satisfied
- Action Plan for Opioid Surveillance (n=14): 7% Satisfied, 50% Extremely Satisfied
- Assess the Stakeholder Landscape (n=14): 57% Satisfied, 43% Extremely Satisfied
- Assess the Data Landscape (n=14): 14% Satisfied, 50% Extremely Satisfied
- Access and Analyze Data and Indicators (n=13): 8% Satisfied, 62% Extremely Satisfied
- Transform and Visualize Data (n=11): 38% Satisfied, 64% Extremely Satisfied
- Data Visualization: Lessons from Field (n=11): 45% Satisfied, 55% Extremely Satisfied
- Use and Disseminate Data (n=11): 55% Satisfied, 45% Extremely Satisfied
- Developing an Action Plan (n=11): 64% Satisfied, 36% Extremely Satisfied
- Pair and Share (n=8): 63% Satisfied, 38% Extremely Satisfied
Figure 5. Participant Rating of the Workshop’s Ability to Accomplish Key Learning Objectives for Each Session

- Discuss the relationship between opioid surveillance and drug overdose surveillance (n=14)
  - Very Poor or Poor: 7%
  - Average: 50%
  - Good: 43%
  - Excellent: 43%

- Recall the overall approach and challenges to opioid surveillance shared by the Regional Spotlight speaker(s) (n=13)
  - Very Poor or Poor: 38%
  - Average: 62%

- Describe the four-step process used during the workshop to develop an action plan for opioid surveillance (n=14)
  - Very Poor or Poor: 7%
  - Average: 43%
  - Good: 50%
  - Excellent: 5%

- Explain the value of including non-traditional stakeholders in your opioid surveillance plan (n=14)
  - Very Poor or Poor: 7%
  - Average: 50%
  - Good: 50%
  - Excellent: 5%

- Identify common and less common data sources and indicators for opioid surveillance and limitations of ICD codes (n=14)
  - Very Poor or Poor: 7%
  - Average: 43%
  - Good: 50%
  - Excellent: 5%

- Describe at least one situation in which a data sharing agreement is needed, and one in which it is not (n=14)
  - Very Poor or Poor: 7%
  - Average: 50%
  - Good: 36%
  - Excellent: 36%

- Explain the process to request data from at least one new data source (n=14)
  - Very Poor or Poor: 7%
  - Average: 50%
  - Good: 36%
  - Excellent: 36%

- Apply principles of data storytelling to extract key messages and transform data into information (n=10)
  - Very Poor or Poor: 10%
  - Average: 20%
  - Good: 70%

- Prepare a dissemination plan (n=10)
  - Very Poor or Poor: 10%
  - Average: 30%
  - Good: 60%

- Create an action plan to develop, update, or enhance approach to opioid surveillance (n=10)
  - Very Poor or Poor: 10%
  - Average: 40%
  - Good: 50%

- Enhance capacity to measure the burden of opioid use, misuse, overdose, and death (n=9)
  - Very Poor or Poor: 11%
  - Average: 22%
  - Good: 67%
The agenda was appropriate for the workshop objectives
The materials distributed with the workshop were useful
The presentations and discussion in the workshop were relevant to my public health practice
The objectives of the workshop were clearly communicated
The workshop was well organized
The workshop content was useful and applicable to my work
The use of a facilitator was beneficial to the meeting
The facilitators were flexible and adjusted the agenda, as needed, to respond to participant needs
The length of the workshop was appropriate
Travel accommodations were easily met
There was adequate time for discussion
Discussions were encouraged in this workshop
Overall, the workshop met my expectations
I would recommend this workshop to others

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agenda was appropriate for the workshop objectives</td>
<td>9%</td>
<td>45%</td>
<td>45%</td>
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</tr>
<tr>
<td>The materials distributed with the workshop were useful</td>
<td>45%</td>
<td></td>
<td></td>
<td>55%</td>
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<tr>
<td>The presentations and discussion in the workshop were relevant to my public health practice</td>
<td>36%</td>
<td>64%</td>
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<tr>
<td>The objectives of the workshop were clearly communicated</td>
<td>45%</td>
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<tr>
<td>The workshop was well organized</td>
<td>36%</td>
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<td>64%</td>
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<tr>
<td>The workshop content was useful and applicable to my work</td>
<td>55%</td>
<td></td>
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<td>45%</td>
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<tr>
<td>The use of a facilitator was beneficial to the meeting</td>
<td>36%</td>
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<td></td>
<td>64%</td>
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</tr>
<tr>
<td>The facilitators were flexible and adjusted the agenda, as needed, to respond to participant needs</td>
<td>36%</td>
<td></td>
<td></td>
<td>64%</td>
<td></td>
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<tr>
<td>The length of the workshop was appropriate</td>
<td>9%</td>
<td>36%</td>
<td></td>
<td>55%</td>
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<tr>
<td>Travel accommodations were easily met</td>
<td>9%</td>
<td>36%</td>
<td></td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>There was adequate time for discussion</td>
<td>9%</td>
<td>18%</td>
<td>36%</td>
<td>36%</td>
<td></td>
</tr>
<tr>
<td>Discussions were encouraged in this workshop</td>
<td>27%</td>
<td></td>
<td>36%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>Overall, the workshop met my expectations</td>
<td>9%</td>
<td>18%</td>
<td>36%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>I would recommend this workshop to others</td>
<td>9%</td>
<td>36%</td>
<td></td>
<td>55%</td>
<td></td>
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</tbody>
</table>
In addition to providing feedback on specific workshop sessions and learning objectives, participants shared their impressions about overall aspects of the workshop. All respondents agreed or strongly agreed that the workshop presentations and discussions were relevant, workshop materials were useful, objectives were clearly communicated, workshop content was useful and applicable to public health practice, and that the workshop was well organized (Figure 6).

Seventy-nine percent of respondents reported that the networking and sharing that occurred during the workshop helped them identify new surveillance resources and tools, and helped them to identify opioid surveillance challenges that they had not previously recognized.

The vast majority of respondents (91%) also agreed or strongly agreed that the workshop met their expectations with an agenda that was appropriate for the objectives. Ninety-one percent of respondents indicated that they would recommend the workshop to others. Although all respondents agreed or strongly agreed that discussions were encouraged, responses indicated that participants still desired additional time for discussion.

Respondents described several challenges that they expected to face when trying to implement strategies learned during the workshop. These challenges included limited staff time, concerns about legal issues, data sharing constraints, and difficulty encouraging others to “think outside the box” related to opioid surveillance.

“It will be a challenge to educate leadership about the need to expand overdose surveillance efforts.”

- Oklahoma City workshop participant
In Baltimore, the workshop content and materials were used with a large group of participants who varied widely in their level of applied epidemiology experience and opioid expertise.

The Baltimore workshop was attended by 42 participants who represented 10 public health jurisdictions (CT, DC, MA, MD, MN, NC, NJ, OH, PA, and VT). Among all Baltimore workshop participants, 49% reported being in their current position for one year or less, 36% one-and-a-half to five years, and 15% for six or more years.

The evaluation was completed by 22 workshop participants. Among the respondents, 23% reported working in applied epidemiology for less than one year, 45% for one to five years, and 32% for six or more years. The majority of respondents (64%) described their primary role as being related to data collection and analysis.

Participants were asked to indicate their level of satisfaction with each of the sessions offered during the workshop. Results indicated that all respondents were satisfied or extremely satisfied with the sessions related to stakeholder assessment, data sources, accessing and analyzing data, and data visualization (Figure 7). The vast majority of respondents were also satisfied or extremely satisfied with the regional spotlight presentation and sessions related to data dissemination and developing an action plan.

Participants were asked to provide feedback on the extent to which the workshop accomplished its key objectives. All respondents indicated that the workshop did a good or excellent job of meeting its overall objective, which was to enhance the capacity of public health professionals to measure the burden of opioid use, misuse, overdose, and death (Figure 8). Other sessions that were perceived by all respondents as doing a good or excellent job of meeting objectives included the regional spotlight, assessing the data landscape, and data visualization.

Through an open-ended evaluation question, participants were encouraged to provide feedback about the most valuable components of the workshop. The responses to this question revealed that respondents greatly valued collaborating and sharing ideas with other jurisdictions, participating in workshop exercises and activities, learning about relevant resources, and the overall workshop structure.

“I valued sharing the challenges our respective organizations are facing and being able to offer and receive advice on how to overcome those challenges.”

- Baltimore workshop participant
Baltimore, MD

Figure 7. Participant Satisfaction with Specific Workshop Sessions (N=22)

<table>
<thead>
<tr>
<th>Session</th>
<th>Extremely Dissatisfied or Dissatisfied</th>
<th>Neither Satisfied nor Dissatisfied</th>
<th>Satisfied</th>
<th>Extremely Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting the Stage: Overview of the Opioid Crisis</td>
<td>9%</td>
<td>50%</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td>Regional Spotlight</td>
<td>5%</td>
<td>36%</td>
<td>59%</td>
<td></td>
</tr>
<tr>
<td>Action Plan for Opioid Surveillance</td>
<td>9%</td>
<td>36%</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>Assess the Stakeholder Landscape</td>
<td>9%</td>
<td>36%</td>
<td>59%</td>
<td></td>
</tr>
<tr>
<td>Assess the Data Landscape</td>
<td>41%</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access and Analyze Data and Indicators</td>
<td>41%</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transform and Visualize Data</td>
<td>41%</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Visualization: Lessons from Field</td>
<td>41%</td>
<td>59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use and Disseminate Data</td>
<td>5%</td>
<td>45%</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Developing an Action Plan</td>
<td>5%</td>
<td>50%</td>
<td>45%</td>
<td></td>
</tr>
<tr>
<td>Pair and Share</td>
<td>5%</td>
<td>59%</td>
<td>36%</td>
<td></td>
</tr>
</tbody>
</table>
Figure 8. Participant Rating of the Workshop’s Ability to Accomplish Key Learning Objectives for Each Session (N=22)

- Summarize the history of the opioid crisis and explain challenges and opportunities related to opioid surveillance: 5% Very Poor or Poor, 41% Average, 55% Good, 64% Excellent
- Recall the overall approach and challenges to opioid surveillance shared by the Regional Spotlight speaker(s): 36% Very Poor or Poor, 45% Average, 46% Good, 64% Excellent
- Describe the four-step process used during the workshop to develop an action plan for opioid surveillance: 9% Very Poor or Poor, 45% Average, 46% Good, 41% Excellent
- Apply the principles of stakeholder mapping and analysis: 9% Very Poor or Poor, 41% Average, 50% Good, 59% Excellent
- Identify common and less common data sources and indicators for opioid surveillance and limitations of ICD codes: 9% Very Poor or Poor, 50% Average, 59% Good, 59% Excellent
- Describe at least one situation in which a data sharing agreement is needed, and one in which it is not: 36% Very Poor or Poor, 41% Average, 55% Good, 41% Excellent
- Explain the process to request data from at least one new data source: 9% Very Poor or Poor, 41% Average, 50% Good, 50% Excellent
- Apply principles of data storytelling to extract key messages and transform data into information: 5% Very Poor or Poor, 27% Average, 68% Good, 68% Excellent
- Recall data visualization and dissemination techniques: 36% Very Poor or Poor, 64% Average, 64% Good, 64% Excellent
- Prepare a dissemination plan: 9% Very Poor or Poor, 36% Average, 55% Good, 55% Excellent
- Create an action plan to develop, update, or enhance approach to opioid surveillance: 9% Very Poor or Poor, 32% Average, 59% Good, 59% Excellent
- Enhance capacity to measure the burden of opioid use, misuse, overdose, and death: 36% Very Poor or Poor, 64% Average, 64% Good, 64% Excellent
Baltimore, MD

Figure 9. Participant Satisfaction with Specific Aspects of the Overall Workshop (N=22)

- The agenda was appropriate for the workshop objectives: 36% Strongly Agree, 64% Agree, 23% Neutral, 7% Disagree, 5% Strongly Disagree
- The materials distributed with the workshop were useful: 36% Strongly Agree, 64% Agree, 23% Neutral, 7% Disagree, 5% Strongly Disagree
- The presentations and discussion in the workshop were relevant to my public health practice: 32% Strongly Agree, 68% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
- The objectives of the workshop were clearly communicated: 32% Strongly Agree, 68% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
- The workshop was well organized: 27% Strongly Agree, 73% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
- The workshop content was useful and applicable to my work: 27% Strongly Agree, 73% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
- The use of a facilitator was beneficial to the meeting: 27% Strongly Agree, 73% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
- The facilitators were flexible and adjusted the agenda, as needed, to respond to participant needs: 5% Strongly Agree, 36% Agree, 41% Neutral, 9% Disagree, 5% Strongly Disagree
- The length of the workshop was appropriate: 9% Strongly Agree, 41% Agree, 32% Neutral, 23% Disagree, 9% Strongly Disagree
- Travel accommodations were easily met: 14% Strongly Agree, 23% Agree, 36% Neutral, 23% Disagree, 9% Strongly Disagree
- There was adequate time for discussion: 14% Strongly Agree, 9% Agree, 36% Neutral, 23% Disagree, 9% Strongly Disagree
- Discussions were encouraged in this workshop: 27% Strongly Agree, 73% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
- Overall, the workshop met my expectations: 32% Strongly Agree, 68% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
- I would recommend this workshop to others: 32% Strongly Agree, 68% Agree, 27% Neutral, 9% Disagree, 5% Strongly Disagree
In addition to providing feedback on specific workshop sessions and learning objectives, participants shared their impressions about overall aspects of the workshop. All evaluation respondents agreed or strongly agreed that the workshop materials were useful, presentations and discussions were relevant, objectives were clearly communicated, and content was applicable to public health practice (Figure 9). All respondents also indicated that the workshop was well-organized with an agenda that was appropriate for the learning objectives. All respondents indicated that the workshop met their expectations and they would recommend the workshop to others.

Respondents identified some areas for improvement. For example, two respondents (9%) indicated that the workshop was not of the appropriate length and comments suggested that it should have lasted at least two full days. Despite the fact that all respondents indicated that discussion was encouraged, three respondents (14%) indicated that the amount of time for discussion was insufficient.

The vast majority of respondents (91%) reported that the networking and sharing that occurred during the workshop helped them identify new surveillance resources and tools. The majority of respondents indicated that networking and sharing helped them to recognize their strengths and identify new surveillance methods.

“I found it very valuable to learn about what other states are doing and the data sources they are using for opioid surveillance.”

- Baltimore workshop participant
Workshop participants plan to apply the workshop information to enhance their opioid surveillance activities, but realize that they will face some challenges.

As part of the Baltimore workshop evaluation, participants were asked about their plans for using the information from the workshop to improve their opioid surveillance activities. They were also asked to describe perceived challenges to implementing newly acquired knowledge or skills.

In response, several participants described plans to engage stakeholders, develop or enhance their opioid surveillance plans, and improve data collection, analysis, and dissemination. Common challenges included those related to data sharing, stakeholder engagement, perceived legal or political barriers, and issues that interfere with data dissemination and use. The table at right provides a synthesis of the responses to these two questions.

<table>
<thead>
<tr>
<th>Planned Follow-Up Actions</th>
<th>Perceived Implementation Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and reach out to new stakeholders</td>
<td>Obtaining “buy-in” from key stakeholders (internal and external)</td>
</tr>
<tr>
<td>Improve understanding of stakeholder needs and interests</td>
<td>Decentralized approach to opioid surveillance within the public health department</td>
</tr>
<tr>
<td>Engage entire work team in the development of an opioid surveillance action plan</td>
<td>Convening and coordinating numerous offices within the state health department</td>
</tr>
<tr>
<td>Create an analytic plan</td>
<td>Obtaining data from new sources and developing data governance policies</td>
</tr>
<tr>
<td>Explore new databases and sources</td>
<td>Political climate inconducive to coordinated approach to surveillance</td>
</tr>
<tr>
<td>Increase focus on data analysis, presentation, and dissemination</td>
<td>Limited staff and funding</td>
</tr>
</tbody>
</table>
As the final workshop in the series of four, the Portland workshop allowed the facilitators and planners the opportunity to apply some of the suggestions offered by previous participants.

The Portland workshop was attended by 20 participants who represented six public health jurisdictions (NM, OR, UT, WA, WI, and WY). Among all Portland workshop participants, 45% reported being in their current position for one year or less, 50% one-and-a-half to five years, and 5% for six or more years.

The evaluation was completed by 15 workshop participants. Among the respondents, 57% reported working in applied epidemiology for one to five years, 29% for six to ten years, and 14% for 11 or more years. The majority of respondents (60%) described their primary role as being related to data collection and analysis.

Participants were asked to indicate their level of satisfaction with each of the sessions offered during the workshop. Results indicated that all respondents were satisfied or extremely satisfied with the sessions related to stakeholder assessment, data sources, accessing and analyzing data, action plan for opioid surveillance, regional spotlight, and data visualization lessons from the field (Figure 10). The vast majority of respondents were also satisfied or extremely satisfied with the sessions related to data visualization, data dissemination, an overview of the opioid crisis, and developing an action plan.

Participants were asked to provide feedback on the extent to which the workshop accomplished its key objectives. All respondents indicated that the workshop did a good or excellent job of meeting its overall objective, which was to enhance the capacity of public health professionals to measure the burden of opioid use, misuse, overdose, and death (Figure 11). Other sessions that were perceived by all respondents as doing a good or excellent job of meeting objectives included the regional spotlight, developing an action plan for opioid surveillance, assessing the stakeholder landscape, accessing and analyzing data, and data use and dissemination.

Through an open-ended evaluation question, participants were encouraged to provide feedback about the most valuable components of the workshop. The responses to this question revealed that respondents greatly valued networking and sharing ideas with other jurisdictions, conducting stakeholder analysis and mapping, and creating a surveillance plan.

“The discussion and interaction with other states was invaluable!”

- Portland workshop participant
PORTLAND, OR

Figure 10. Participant Satisfaction with Specific Workshop Sessions (N=13)

- **Setting the Stage: Overview of the Opioid Crisis**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 60%
  - Satisfied: 33%

- **Regional Spotlight**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 53%
  - Satisfied: 47%
  - Extremely Satisfied: 33%

- **Action Plan for Opioid Surveillance**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 50%
  - Satisfied: 47%
  - Extremely Satisfied: 50%

- **Assess the Stakeholder Landscape**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 50%
  - Satisfied: 50%
  - Extremely Satisfied: 50%

- **Assess the Data Landscape**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 57%
  - Satisfied: 43%
  - Extremely Satisfied: 47%

- **Access and Analyze Data and Indicators**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 53%
  - Satisfied: 47%
  - Extremely Satisfied: 47%

- **Transform and Visualize Data**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 47%
  - Satisfied: 47%
  - Extremely Satisfied: 47%

- **Data Visualization: Lessons from Field**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 47%
  - Satisfied: 47%
  - Extremely Satisfied: 47%

- **Use and Disseminate Data**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 47%
  - Satisfied: 47%
  - Extremely Satisfied: 47%

- **Developing an Action Plan**
  - Extremely Dissatisfied or Dissatisfied: 7%
  - Neither Satisfied nor Dissatisfied: 71%
  - Satisfied: 21%
  - Extremely Satisfied: 43%

- **Pair and Share**
  - Extremely Dissatisfied or Dissatisfied: 14%
  - Neither Satisfied nor Dissatisfied: 50%
  - Satisfied: 43%
  - Extremely Satisfied: 43%
PORTLAND, OR

Figure 11. Participant Rating of the Workshop’s Ability to Accomplish Key Learning Objectives for Each Session (N=14)

- **Summarize the history of the opioid crisis and explain challenges and opportunities related to opioid surveillance**: 7% Very Poor or Poor, 33% Average, 60% Good, 60% Excellent
- **Recall the overall approach and challenges to opioid surveillance shared by the Regional Spotlight speaker(s)**: 53% Very Poor or Poor, 47% Average, 100% Good, 0% Excellent
- **Describe the four-step process used during the workshop to develop an action plan for opioid surveillance**: 47% Very Poor or Poor, 53% Average, 60% Good, 60% Excellent
- **Apply the principles of stakeholder mapping and analysis**: 71% Very Poor or Poor, 21% Average, 7% Good, 0% Excellent
- **Identify common and less common data sources and indicators for opioid surveillance and limitations of ICD codes**: 57% Very Poor or Poor, 43% Average, 73% Good, 43% Excellent
- **Describe at least one situation in which a data sharing agreement is needed, and one in which it is not**: 57% Very Poor or Poor, 43% Average, 47% Good, 43% Excellent
- **Explain the process to request data from at least one new data source**: 57% Very Poor or Poor, 43% Average, 47% Good, 43% Excellent
- **Apply principles of data storytelling to extract key messages and transform data into information**: 13% Very Poor or Poor, 40% Average, 47% Good, 47% Excellent
- **Recall data visualization and dissemination techniques**: 7% Very Poor or Poor, 53% Average, 40% Good, 40% Excellent
- **Prepare a dissemination plan**: 73% Very Poor or Poor, 27% Average, 0% Good, 0% Excellent
- **Create an action plan to develop, update, or enhance approach to opioid surveillance**: 57% Very Poor or Poor, 57% Average, 29% Good, 29% Excellent
- **Enhance capacity to measure the burden of opioid use, misuse, overdose, and death**: 47% Very Poor or Poor, 53% Average, 53% Good, 53% Excellent
Figure 12. Participant Satisfaction with Specific Aspects of the Overall Workshop (N=14)

- The agenda was appropriate for the workshop objectives
- The materials distributed with the workshop were useful
- The presentations and discussion in the workshop were relevant to my public health practice
- The objectives of the workshop were clearly communicated
- The workshop was well organized
- The workshop content was useful and applicable to my work
- The use of a facilitator was beneficial to the meeting
- The facilitators were flexible and adjusted the agenda, as needed, to respond to participant needs
- The length of the workshop was appropriate
- Travel accommodations were easily met
- There was adequate time for discussion
- Discussions were encouraged in this workshop
- Overall, the workshop met my expectations
- I would recommend this workshop to others
In addition to providing feedback on specific workshop sessions and learning objectives, participants shared their impressions about overall aspects of the workshop. All evaluation respondents agreed or strongly agreed that the workshop materials were useful, presentations and discussions were relevant, objectives were clearly communicated, and the agenda was appropriate for the workshop objectives, (Figure 12). All respondents also indicated that the workshop was well-organized. All respondents indicated that the workshop met their expectations and they would recommend the workshop to others.

Respondents also identified some areas for improvement. For example, one respondent (7%) indicated that the workshop was not of the appropriate length and comments suggested that it should have lasted at least two full days. Despite the fact that all respondents indicated that discussion was encouraged, one respondent (7%) indicated that the amount of time for discussion was insufficient.

The vast majority of respondents (80%) reported that the networking and sharing that occurred during the workshop helped them identify new surveillance resources and tools, as well as new surveillance methods to enhance current activities. The majority of respondents also indicated that networking and sharing helped them to recognize their strengths and identify new challenges that had not previously been seen.

“I loved the work on stakeholders and the overall organization of the workshop.”
- Portland workshop participant
Workshop participants plan to apply the workshop information to enhance their opioid surveillance activities, but realize that they will face some challenges.

As part of the Portland workshop evaluation, participants were asked about their plans for using the information from the workshop to improve their opioid surveillance activities. They were also asked to describe perceived challenges to implementing newly acquired knowledge or skills.

In response, several participants described plans to engage stakeholders, develop or enhance their opioid surveillance plans, and improve data collection, analysis, and dissemination. Common challenges included those related to data sharing and governance, stakeholder engagement, organizational culture, and limited staff and resources. The table at right provides a synthesis of the responses to these two questions.

<table>
<thead>
<tr>
<th>Planned Follow-Up Actions</th>
<th>Perceived Implementation Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explore the possibility of applying for ESOOS funding</td>
<td>Data governance issues</td>
</tr>
<tr>
<td>Improve understanding of stakeholder needs and interests</td>
<td>Pulling internal stakeholders together</td>
</tr>
<tr>
<td>Encourage internal staff to collaborate on the development of an opioid surveillance action plan</td>
<td>Limited staff and resources</td>
</tr>
<tr>
<td>Create an analytic plan</td>
<td>Data sharing challenges</td>
</tr>
<tr>
<td>Explore new tools and resources that can enhance opioid surveillance</td>
<td>Organizational culture and changing &quot;business as usual&quot;</td>
</tr>
<tr>
<td>Share resources and lessons from the workshop with peers and leadership</td>
<td>Implementing a timely internal data dashboard</td>
</tr>
</tbody>
</table>
Recommendations

- Recommendations for Future Opioid Surveillance Workshops
- Recommendations for Future Drug Overdose Training and Technical Assistance
- Next Steps
RECOMMENDATIONS

As part of each workshop evaluation, participants were asked to provide recommendations to further enhance the training and technical assistance provided by CSTE to state, tribal, local, and territorial public health agencies.

Specifically, the following three questions were asked:

- How could the opioid surveillance workshop be improved for the future?
- What other topics would you like to see covered in future workshops or trainings related to opioid surveillance?
- What additional topics would help your agency with CDC-funded drug overdose surveillance efforts?

The responses to these open-ended questions and other suggestions offered by workshop participants were synthesized for the purpose of identifying themes and frequently mentioned recommendations.

When given the opportunity to provide recommendations for future workshops and future technical assistance opportunities, the responses had similar concern and common themes.

Participant recommendations addressed future opioid surveillance workshops or more broad drug overdose surveillance training and also made recommendations for future technical assistance concerns and desires. This report presents both types of recommendations by the common themes that emerged. Recommendations for future training. Recommendations for future technical assistance.

Recommendations for future opioid surveillance workshops are focused on the themes of data sharing, data quality, data visualization, collaboration, and workshop logistics. Recommendation for future workshops could apply to CSTE led endeavors or applied to other partners offering similar training opportunities.

Recommendations for future drug overdose surveillance training and technical assistance are focused on these same themes except for workshop logistics. These suggestions provide a pool of topics related to drug overdose surveillance that can be addressed in future CSTE subcommittee activities and convenings. These topics may also lend themselves to a variety of technical assistance opportunities and formats that could include online learning, in person convenings and specialized learning sessions. See Next Steps section for additional information.

The following two sections of this report highlight the common themes and recommendations that emerged from the collection of participant responses.
**RECOMMENDATIONS FOR FUTURE OPIOID SURVEILLANCE WORKSHOPS**

<table>
<thead>
<tr>
<th>Data Sharing</th>
<th>Data Quality</th>
<th>Data Visualization</th>
<th>Collaboration</th>
<th>Logistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Feature practical applications of data linkage</td>
<td>▪ Provide examples of effective interventions</td>
<td>▪ Offer more practical tips on infographics development</td>
<td>▪ Provide more time for collaboration within and across jurisdictions</td>
<td>▪ Expand the time for the workshop from 1.5 to 2 days</td>
</tr>
<tr>
<td>▪ Provide examples of how to share data to drive action</td>
<td>▪ Discuss the link between opioid use and mental health</td>
<td>▪ Include more discussion of data dissemination tools and strategies</td>
<td>▪ Allow more time for states to learn from one another</td>
<td>▪ Allow states to “drive the agenda”</td>
</tr>
<tr>
<td>▪ Provide examples of how to obtain surveillance data from law enforcement groups</td>
<td>▪ Differentiate intentional and unintentional opioid overdose deaths</td>
<td>▪ Demonstrate how to build a dashboard in Tableau or Microsoft Power BI</td>
<td>▪ Provide more time to respond to workshop invitation</td>
<td>▪ Provide more breaks, especially on longer first day</td>
</tr>
<tr>
<td>▪ Discuss developing partnerships to support data sharing</td>
<td>▪ Provide examples of best practices to enhance data quality</td>
<td></td>
<td>▪ Increase time and opportunities for “pair and share”</td>
<td></td>
</tr>
</tbody>
</table>
RECOMMENDATIONS FOR FUTURE DRUG OVERDOSE TRAINING AND TECHNICAL ASSISTANCE

Data Sharing
- Discuss strategies for accessing data in “real time”
- Provide examples of practical strategies for linking data
- Demonstrate how to use syndromic surveillance data
- Discuss how to work effectively with stakeholders
- Explain how to access data from PDMPs

Data Quality
- Discuss strategies for data cleaning
- Discuss strategies for validating data
- Review advanced analytical approaches
- Discuss predictive modeling
- Encourage discussion of novel uses of existing data sources for overdose surveillance

Data Visualization
- Provide infographics training
- Include more discussion of data dissemination tools and strategies
- Demonstrate how to build a dashboard in Tableau or Microsoft Power BI

Collaboration
- Highlight more state-specific examples of innovative drug overdose surveillance methods
- Discuss best practices in use by other jurisdictions
- Allow additional time for jurisdictions to have discussions and share information
NEXT STEPS

Based on the cumulative evaluation findings and insights gained from the four opioid surveillance workshops, CSTE will take the following steps:

1. Collaborate with participants who are implementing workshop principles of stakeholder engagement and data dissemination broadly among partners and local jurisdictions (i.e. advise on adaption of workshop materials and findings for use with key partners and public health jurisdictions upon request).

2. Identify opportunities to convene and discuss common challenges and effective solutions for drug overdose surveillance teams unable to attend this workshop series including local jurisdictions.

3. Leverage existing CSTE member driven subcommittees and workgroup infrastructure to serve the diverse needs of public health practitioners navigating the emerging field of drug overdose surveillance.

4. Support drug overdose surveillance capacity building activities within jurisdictions by pursuing opportunities to provide tailored technical assistance to increase jurisdiction’s ability to use data to inform meaningful public health actions.
Appendices

- Sample Workshop Agenda
- Sample Evaluation Instrument
## Appendix A. Sample Workshop Agenda

### Day 1:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 – 8:00</td>
<td>Check-in and Networking</td>
</tr>
<tr>
<td>8:00 – 8:45</td>
<td>Welcome and Opening Remarks</td>
</tr>
<tr>
<td>8:45 – 9:00</td>
<td>Setting the Stage: Overview of the Opioid Crisis</td>
</tr>
<tr>
<td>9:00 – 10:10</td>
<td>Regional Spotlight</td>
</tr>
<tr>
<td>10:10 – 10:30</td>
<td>Break</td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td>Action Plan for Opioid Surveillance</td>
</tr>
<tr>
<td>11:00 – 12:00</td>
<td>Assess the Stakeholder Landscape</td>
</tr>
<tr>
<td>12:00 – 1:00</td>
<td>Lunch (Speaker = Medical Examiner)</td>
</tr>
<tr>
<td>1:00 – 2:30</td>
<td>Assess the Data Landscape</td>
</tr>
<tr>
<td>2:30 – 2:50</td>
<td>Break</td>
</tr>
<tr>
<td>2:50 – 4:00</td>
<td>Access and Analyze Data and Indicators</td>
</tr>
<tr>
<td>4:00 – 4:15</td>
<td>Debrief and Prepare for Day #2</td>
</tr>
<tr>
<td>4:15 – 5:00</td>
<td>Group Discussion or Team Work Time</td>
</tr>
</tbody>
</table>

### Day 2:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 – 8:00</td>
<td>Check-in and Networking</td>
</tr>
<tr>
<td>8:00 – 8:30</td>
<td>Welcome Back and Review Day #1</td>
</tr>
<tr>
<td>8:30 – 9:30</td>
<td>Transform and Visualize Data</td>
</tr>
<tr>
<td>9:30 – 10:00</td>
<td>Data Visualization: Lessons from the Field</td>
</tr>
<tr>
<td>10:00 – 10:20</td>
<td>Break</td>
</tr>
<tr>
<td>10:20 – 11:00</td>
<td>Use and Disseminate Data</td>
</tr>
<tr>
<td>11:00 – 12:00</td>
<td>Putting it All Together: Developing an Action Plan</td>
</tr>
<tr>
<td>12:00 – 1:00</td>
<td>Lunch (no speaker)</td>
</tr>
<tr>
<td>1:00 – 2:00</td>
<td>Pair-and-Share</td>
</tr>
<tr>
<td>2:00 – 2:45</td>
<td>Group Discussion</td>
</tr>
<tr>
<td>2:45 – 3:00</td>
<td>Debrief and Closing Remarks</td>
</tr>
</tbody>
</table>
Appendix B. Sample Evaluation Instrument (page 1 of 2)

1. How long have you been working in applied epidemiology?
2. Is your state funded by ESOOS?
3. If not, are you more likely to apply for similar funding after attending this workshop?
4. Are you a CSTE member?
5. Please rate your level of satisfaction with each session’s content: (select from extremely dissatisfied, dissatisfied, neither satisfied or dissatisfied, satisfied, or extremely satisfied)
   a. Setting the Stage: An Overview of the Opioid Crisis
   b. Regional Spotlight
   c. Lunch Speaker (if applicable)
   d. Action Plan for Opioid Surveillance
   e. Assess the Stakeholder Landscape
   f. Assess the Data Landscape
   g. Access and Analyze Data and Indicators
   h. Transform and Visualize Data
   i. Use and Disseminate Data
   j. Putting it All Together: developing an Action Plan
   k. Pair-and-Share
6. Please rate the meeting’s ability to accomplish the following objectives from each session: (select from very poor, poor, average, good, or excellent)
   a. Setting the Stage: Summarize the history of the opioid crisis and explain the role of synthetic opioids
   b. Regional Spotlight: Recall the approach and challenges of the reporting region
   c. Action Plan: Describe the four-step process used during the workshop to develop or enhance an action plan for opioid surveillance
   d. Stakeholder Landscape: Explain the value of including non-traditional stakeholders in your opioid surveillance plan
   e. Data Landscape: Identify common and less common data sources and indicators for opioid surveillance and the limitations of ICD codes
   f. Access and Analyze Data and Indicators: Describe at least one situation in which a data sharing agreement is necessary and one situation in which it is unnecessary
   g. Transform and Visualize Data: Apply the principles of data storytelling to extract key messages and transform data into information
   h. Use and Disseminate Data: Prepare a data dissemination plan
   i. Pulling it All Together: Create an action plan to develop or enhance opioid surveillance
   j. Overall: Enhance the capacity of public health professionals to measure the burden of opioid use, misuse, overdose, and death
7. What was the most valuable component of the workshop?
8. What was the least valuable component of the workshop?
9. How do you plan to use the information you learned at the workshop now that you’ve returned to your home office?
10. What implementation challenges do you foresee?
11. Do you intend to touch base with another state surveillance team that you met at the CSTE regional workshop for follow-up or further discussion?
Appendix B. Sample Evaluation Instrument (page 1 of 2)

12. Please indicate your level of agreement with the following general statements about the overall workshop: (select from strongly disagree, disagree, neutral, agree, or strongly agree)

   a. The agenda was appropriate for the workshop objectives
   b. The materials distributed with the training were useful
   c. The presentations and discussion in the training were relevant to my public health practice
   d. The objectives of the training were clearly communicated
   e. The training was well organized
   f. The training content was useful and applicable to my work
   g. The use of a facilitator was beneficial to the meeting
   h. The facilitators were flexible and adjusted the agenda, as needed, to respond to participant needs
   i. The length of the training was appropriate
   j. Travel accommodations were easily met
   k. There was adequate time for discussion
   l. Discussions were encouraged in this training
   m. Overall, the regional training met my expectations
   n. I would recommend this training to others

14. If you disagreed with any of the above statements, please explain so that we may improve our training for future fellows.

15. How could the training be improved for the future?

16. Would you like to have training/discussion on any of the following topics? (select all that apply)

   a. Data linkage
   b. Data cleaning
   c. Validating data
   d. More state-specific examples of innovative surveillance methods

17. What other topics would you like to see covered in future workshops or trainings related to opioid surveillance?

18. Were there other team members from your state, who were not at the training, that would benefit from the training?

19. If yes, please include job titles

20. Please provide any additional comments regarding the overall meeting that could enhance future work

13. Please indicate if networking and sharing helped you identify any of the following: (check all that apply)

   a. New and/or innovative surveillance methods to enhance your current surveillance activities
   b. New resources and/or tools to take back to help you with your work
   c. Things your state is doing well that you might not have realized before
   d. New challenges for your state that you might not have realized