Biomonitoring California
Program Update and Priorities

Robin Christensen, Sc.M.
California Department of Public Health
Presentation to the Scientific Guidance Panel Meeting
July 25, 2019 – Oakland, CA
Announcements

• CDPH leadership

• Recent staff changes

• U.S. Centers for Disease Control and Prevention cooperative agreement
CALIFORNIA REGIONAL EXPOSURE (CARE) STUDY
CARE Study

• Eight regions, based on geography and population

• Conduct sampling in approximately one region/year, with 300-500 participants per region

• Biomonitoring for metals and perfluoroalkyl and polyfluoroalkyl substances (PFASs) and collection of exposure data

• Potential to include additional panels, such as 1-nitropyrene or environmental phenols
CARE-LA: Timeline

- **Jan 2019**: returned results for metals, PFASs, and 1-nitropyrene
- **Mar 2019**: returned results for phenols
- **Sep 2019**: data available to public
  
  www.biomonitoring.ca.gov
CARE-LA: Public Meeting

- Findings will be available to the public at the South Coast Air Quality Management District’s 5th Annual Environmental Justice Conference
  - September 12, 8:30 am-1:00 pm
  - Center at Cathedral Plaza
    555 West Temple Street
    Los Angeles, CA 90012
  - Free to the public
How representative is CARE-LA?

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>% CARE-LA Participants</th>
<th>% LA County (2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Black</td>
<td>12</td>
<td>8</td>
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<tr>
<td>Hispanic</td>
<td>37</td>
<td>48</td>
</tr>
<tr>
<td>White</td>
<td>33</td>
<td>26</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Education (% of Total)</th>
<th>% CARE-LA Participants</th>
<th>LA County (2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some or no college</td>
<td>35</td>
<td>78</td>
</tr>
<tr>
<td>College degree or higher</td>
<td>65</td>
<td>31</td>
</tr>
</tbody>
</table>
CARE-LA: Data Analysis

• Surveillance
  – Distribution across demographics
  – Comparison between regions
  – Comparison with NHANES

• Exposure Assessment
  – Based on exposure survey data
  – Identification of important sources of exposure (e.g. diet, occupation)
CARE-2: Timeline

Riverside, San Bernardino, Imperial, Mono, & Inyo counties

- **Feb 2019**: Start of collections
- **Apr 2019**: Fieldwork complete
- **May 2019**: Final shipment of samples arrived at laboratory
- **Analyses in progress**
CARE-2: Progress Update

- Interested in participating (692)
- Invited to participate (555)
- Enrolled and initiated participation (436)
- Completed study steps (331)

60% completion rate

100% completion rate
CARE-2: Progress Update

- Interested in participating (720)
- Invited to participate (583)
- Enrolled and initiated participation (464)
- Completed study steps (359)

62% completion rate including walk-ins
**How did people find out about the study?**

<table>
<thead>
<tr>
<th>Source</th>
<th>% of Prescreen Population</th>
<th>% of Completed Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postcard</td>
<td>54%</td>
<td>56%</td>
</tr>
<tr>
<td>Friend/Family</td>
<td>16%</td>
<td>17%</td>
</tr>
<tr>
<td>Craigslist</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Local group, health fair, or meeting</td>
<td>12%</td>
<td>10%</td>
</tr>
<tr>
<td>Media</td>
<td>4%</td>
<td>5%</td>
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</table>
How representative is CARE-2?

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>% CARE-2 participants</th>
<th>% Region 2 age 18+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Black</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>46</td>
<td>52</td>
</tr>
<tr>
<td>White</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education (% of Total)</th>
<th>% CARE-2 participants</th>
<th>% Region 2 age 18+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some or no college</td>
<td>55</td>
<td>82</td>
</tr>
<tr>
<td>College degree or higher</td>
<td>45</td>
<td>18</td>
</tr>
</tbody>
</table>
CARE-3: Timeline

San Diego County and Orange County

• **Summer 2019**: Outreach, site visits, and planning
• **Fall 2019**: IRB amendments and prepare for fieldwork
• **Jan 2020**: Set up in field, invite participants, and train staff
• **Feb 2020**: Sample collection begins
EAST BAY DIESEL EXPOSURE PROJECT (EBDEP)
East Bay Diesel Exposure Project (EBDEP) Update

Assessing exposures to diesel exhaust in child/parent pairs living in the SF East Bay

- UW laboratory analyses of 1-nitropyrene and metabolites completed
- Data processing and statistical analysis underway
- Biomonitoring results return packet approved by State Institutional Review Board
- Community meetings tentatively scheduled for October
- Summary results presentation planned for November SGP
PRIORITIES FOR BIOMONITORING CALIFORNIA
Draft Priorities

1. Improve the California Regional Exposure (CARE) Study, the Program’s statewide surveillance project
   - Study cycle timeline
   - Representation by language, race/ethnicity, and socioeconomic status

<table>
<thead>
<tr>
<th>Region</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARE-LA</td>
<td>2018</td>
</tr>
<tr>
<td>CARE-2</td>
<td>2019</td>
</tr>
<tr>
<td>CARE-3</td>
<td>2020</td>
</tr>
<tr>
<td>CARE-4</td>
<td>TBD</td>
</tr>
<tr>
<td>CARE-5</td>
<td></td>
</tr>
<tr>
<td>CARE-6</td>
<td></td>
</tr>
<tr>
<td>CARE-7</td>
<td></td>
</tr>
<tr>
<td>CARE-8</td>
<td></td>
</tr>
</tbody>
</table>
Draft Priorities

2. Conduct biomonitoring studies that seek to better understand and mitigate environmental health inequities

– Environmental exposures vary according to social determinants, such as housing, neighborhoods, education, and industries.
Draft Priorities

3. Work with stakeholders to assist local environmental and public health responses
   - Exposures from wildfire
   - Heavy metal exposure
Draft Priorities

4. Maintain core laboratory capabilities and develop innovative and efficient laboratory methods to protect the public’s health
Draft Priorities

5. Increase public access to biomonitoring findings, data, and reports to inform evidence-based decision making for better health.
Draft Priorities

6. Expand and improve health education for individual participants, health-care providers, community organizations, and the public

– Newsletter
– Web content
– Fact sheets
*Program budget was supplemented through the Budget Change Proposal (BCP) process as a temporary measure following the 2014 reduction in CDC funding.
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