The path towards creating

Delaware’s Environmental Public Health Tracking Network

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Setting the stage

• In December 2014, the Delaware Division of Public Health drafted the *Health Data for Delaware* proposal with a vision that “Delawareans have access to usable, meaningful, timely, and high-quality data about their health and the health of the communities in which they live.”

**DELAWAREANS MUST HAVE:**

1. Access to their own health data.

2. Access to data about the community in which they live.

3. The tools to make change that positively impacts individual and population health.
...the communities in which they live...

- DPH focused its proposal on Step 2, that Delawareans must have access to data about the community in which they live.
  - Considered as a first step to improving the health of our population, reducing disparities, and improving health equity.
  - Requires that individuals have information on the social, political, economic, and environmental conditions that affect their health and the health of the community in which they live.
    - Information should be shared in readily usable and understandable formats.
- DPH proposed to develop an interactive Web-based data portal.
Figure 1. Conceptual illustration of key components within a data portal.
Figure 2. Illustration of an interactive Web-based data portal for Delaware communities.

- **Geography**
  - Click on your city and find out more about the health issues facing your community.

- **Determinants or Disease**
  - Whether you want to know infant deaths, pertussis, employment, or community safety, you can search by the disease or determinant.

- **Index to rank and compare**
  - How does your city compare to the rest of the state or other similar cities in the state.

- **Data**
  - Using time series graphs and other measures, see changes in obesity rates adjusted by age and stratified by race/ethnicity.

Finding a path...
Developing Delaware’s EPTHN Strategic Opportunity Fund for Adaptation

- Climate change framework for Delaware EO 41
- Recommendations for DPH to develop a tracking network
- Strategic Opportunity Fund for Adaptation
- Developing Delaware’s EPTHN
The approach for creating Delaware’s tracking network
Systematic approach

1. Model after national tracking network – understand requirements.
2. Follow CDC data standards (NCDMs) to ensure comparability, validity, and high quality of data presented and shared with partners.
3. Review existing state networks – design and presentation of data – end-user experience.
4. Determine potential for using existing state infrastructure (i.e., Delaware Open Data).
5. Engage partners in Governance Committee and Technical Advisory Group.
6. Share intent to develop tracking network with internal and external stakeholders.
7. Create and develop an environment for sustainability.
8. Ensure data are available by meaningful geographic designations.
The National Environmental Public Health Tracking Network

• **2002**: initial funding to develop a national tracking network following IOM report.
• **2002-2006**: pilot projects implemented in states.
• **2006**: CDC funded 16 state tracking networks.
• Currently 26 state and local tracking networks
Tracking network content areas

- Air quality
- Drinking water quality
- Childhood lead exposure
- Birth defects
- Reproductive health outcomes
- Hospitalization data
- Carbon monoxide poisoning
Tracking in action

Click on the map for more details about Tracking in Action.
Environmental Public Health Tracking

- Hazard
- Exposure
- Health Effect
- Data
- Collection
- Integration
- Analysis
- Dissemination
- Ongoing Evaluation
- Assessment
- Research
- Prevention
- Ongoing Evaluation
- Stakeholders*
- Improved Public Health

*Stakeholders Include
- Federal Agencies
- Business and Industry
- State and Local Agencies
- Policy Makers
- Academia
- Media
- Health Care System
- Public
- Non-Governmental Organizations
Nationally consistent data and measures

• Ensure compatibility and comparability of the data across states.
• Health and environmental agencies have a long history of tracking trends in health and environmental factors separately.

Follow CDC data standards (NCDMs) to ensure comparability, validity, and high quality of data presented and shared with partners.
NCDMs of air quality

EPHT Air Data
- EPA AQIS
  - Date
  - Lat/Long of monitor
  - Monitor ID
  - Parameter (ozone or PM2.5)
  - Concentration
- EPA Statistically Combined Data
  - Date
  - Lat/Long of grid cell centroid
  - Grid cell ID
  - Parameter (ozone or PM2.5)
  - Concentration
  - Standard error of conc.

Census Data
- Population by year and county

C-R functions
- From peer-reviewed literature

Linked Analyses
- (EPHT State & Multistate Analyses)
  - Measure short-term association between Asthma or MI and PM2.5 exposure, focusing on effect modification by individual and ZIP code level risk factors and potentially identifying regional or temporal differences in C-R functions

EPHT Hospital Indicators
- Annual number of asthma and myocardial infarction (MI) hospitalizations by county
  - Other indicators include crude, age-specific, and age-adjusted rates by gender and county

Other Data
- Daily counts of admissions
  - Date
  - ZIP code
  - # admissions
  - ICD (asthma or MI)
  - Age group

EPHT Hospital Data
- (limited access to safeguard confidential data – secure state systems)

EPHT Linked Indicators
- Long- and short-term association
  - Comprehensive assessment based on multiple outcomes
  - Examples:
    - # deaths attributable to long-term PM
    - # deaths and asthma hosp attributable to short-term ozone exposure

Mortality Data
- (National Data on CDC Wonder Website)
  - Deaths by cause, county, and year

EPHT Air Indicators
- Average annual PM2.5 concentration by county/year
  - percent of the pop living in areas exceeding annual PM2.5 standard
  - % of days and # person-days above daily PM2.5 standard
  - # of days and # person days above daily ozone standard

Could be used for long-term PM estimate

*Note: The diagram illustrates the flow of data and analysis related to NCDMs of air quality, including information from EPA AQIS, Census Data, and EPHT Hospital Data. The EPHT Air Indicators and EPHT Linked Indicators are highlighted as key components for assessing the impact of air quality on health outcomes.*
State tracking networks
State tracking networks

• State-specific data that may not already be available at the national level.

• Opportunity to present data in geographic designations that are meaningful for Delaware.
  • Aggregation of census tracts into communities.
  • More granularity than what is presented on national tracking network.
Florida’s tracking network
Florida’s tracking network

Florida Environmental Public Health Tracking

works in partnership with the US Centers for Disease Control and Prevention to track diseases that may be related to environmental exposures. This website provides data sets on environmental hazards and associated health outcomes. The purpose of these efforts is to inform communities about disease trends and to design interventions that lead to better health outcomes. Learn more

What’s new?

Updated asthma and heart attack data

Occupational health indicators
Florida Charts
## County Profiles

### Healthiest Weight Alachua County

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year(s)</th>
<th>Rate Type</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults who are overweight⁴</td>
<td>Percent</td>
<td>32.4%</td>
<td>36.4%</td>
<td></td>
</tr>
<tr>
<td>Adults who are obese⁴</td>
<td>Percent</td>
<td>24.4%</td>
<td>26.4%</td>
<td></td>
</tr>
<tr>
<td>Adults who participated in 150 minutes or more (or equivalent minutes) of aerobic physical activity per week⁴</td>
<td>Percent</td>
<td>57.1%</td>
<td>50.2%</td>
<td></td>
</tr>
<tr>
<td>Adults who participated in muscle strengthening exercises two or more times per week⁴</td>
<td>Percent</td>
<td>38.2%</td>
<td>28.6%</td>
<td></td>
</tr>
<tr>
<td>Adults who participated in enough aerobic and muscle strengthening exercises to meet guidelines⁴</td>
<td>Percent</td>
<td>25.4%</td>
<td>19.9%</td>
<td></td>
</tr>
<tr>
<td>Adults who are sedentary⁴</td>
<td>Percent</td>
<td>18.7%</td>
<td>27.7%</td>
<td></td>
</tr>
<tr>
<td>Adults who consume at least 5 servings of fruits and vegetables a day⁴</td>
<td>Percent</td>
<td>10.7%</td>
<td>18.3%</td>
<td></td>
</tr>
</tbody>
</table>

### Weight, Activity, and Eating Habits among Children and Teens

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year(s)</th>
<th>Rate Type</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle and high school students who are at a healthy weight⁶</td>
<td>Percent</td>
<td>70.3%</td>
<td>67.6%</td>
<td></td>
</tr>
<tr>
<td>Middle and high school students who are underweight⁶</td>
<td>Percent</td>
<td>3.4%</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>Middle and high school students who are overweight or obese⁶</td>
<td>Percent</td>
<td>26.2%</td>
<td>28.2%</td>
<td></td>
</tr>
<tr>
<td>Middle and high school students who are overweight⁶</td>
<td>Percent</td>
<td>14.9%</td>
<td>15.8%</td>
<td></td>
</tr>
<tr>
<td>Middle and high school students who are obese⁶</td>
<td>Percent</td>
<td>11.4%</td>
<td>12.4%</td>
<td></td>
</tr>
<tr>
<td>Middle and high school students who were physically active for at least 60 minutes per day on all 7 of the past 7 days⁶</td>
<td>Percent</td>
<td>24.5%</td>
<td>22.0%</td>
<td></td>
</tr>
</tbody>
</table>

### Maternal Weight and Breastfeeding among Mothers

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year(s)</th>
<th>Rate Type</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live births to mothers who are at a healthy weight (BMI 18.5-24.9) at time pregnancy occurred⁶</td>
<td>Percent of Live Births</td>
<td>45.4%</td>
<td>44.3%</td>
<td></td>
</tr>
<tr>
<td>Births to Underweight Mothers at time Pregnancy Occurred</td>
<td>Percent of Live Births</td>
<td>11.1%</td>
<td>10.7%</td>
<td></td>
</tr>
<tr>
<td>Live births to mothers who are overweight (BMI 25.0-29.9) at time pregnancy occurred⁶</td>
<td>Percent of Live Births</td>
<td>22.6%</td>
<td>24.1%</td>
<td></td>
</tr>
<tr>
<td>Live births to mothers who are obese (BMI ≥ 30) at time pregnancy occurred⁶</td>
<td>Percent of Live Births</td>
<td>24.8%</td>
<td>21.5%</td>
<td></td>
</tr>
<tr>
<td>Live births to mothers who initiate breastfeeding⁶</td>
<td>Percent of Live Births</td>
<td>85.9%</td>
<td>84.2%</td>
<td></td>
</tr>
</tbody>
</table>
Florida Charts

Infant Deaths

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Year</th>
<th>Measure Type</th>
<th>10-Year Report</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant Deaths</td>
<td>2015</td>
<td>3-Year Rolling</td>
<td>View 10 year report</td>
<td>View help</td>
</tr>
</tbody>
</table>

**Alachua**
- Change County: Alachua
- Change grouping: All
- Change count rate display: Counts and rates

**Florida**
- Change map grouping: All Race
- Change map year: 2015

**Infant Deaths Per 1,000 Live Births, 3-Year Rolling Rates**

**Florida Deaths Per 1,000 Live Births, 3-Year Rolling Rates, 2013-15**

Mouseover counties to see values
<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
<th>Death</th>
<th>Suicide Rate</th>
<th>State</th>
<th>Cases</th>
<th>Death</th>
<th>Suicide Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996-98</td>
<td>80</td>
<td>7.405</td>
<td>10.8</td>
<td>Bay</td>
<td>56</td>
<td>6,063</td>
<td>8.0</td>
</tr>
<tr>
<td>1997-99</td>
<td>73</td>
<td>7.314</td>
<td>10.0</td>
<td>Bradford</td>
<td>13</td>
<td>988</td>
<td>14.6</td>
</tr>
<tr>
<td>1998-99</td>
<td>81</td>
<td>7.416</td>
<td>10.9</td>
<td>Brevard</td>
<td>97</td>
<td>15,581</td>
<td>6.2</td>
</tr>
<tr>
<td>1999-00</td>
<td>86</td>
<td>7.451</td>
<td>9.1</td>
<td>Broward</td>
<td>346</td>
<td>66,051</td>
<td>5.2</td>
</tr>
<tr>
<td>2000-01</td>
<td>81</td>
<td>7.475</td>
<td>10.8</td>
<td>Calhoun</td>
<td>2</td>
<td>418</td>
<td>4.8</td>
</tr>
<tr>
<td>2001-02</td>
<td>87</td>
<td>7.355</td>
<td>11.8</td>
<td>Charlotte</td>
<td>12</td>
<td>3,058</td>
<td>3.9</td>
</tr>
<tr>
<td>2002-03</td>
<td>93</td>
<td>7.500</td>
<td>13.2</td>
<td>Citrus</td>
<td>25</td>
<td>3,054</td>
<td>3.2</td>
</tr>
<tr>
<td>2003-04</td>
<td>91</td>
<td>7.777</td>
<td>11.7</td>
<td>Clay</td>
<td>34</td>
<td>6,395</td>
<td>5.3</td>
</tr>
<tr>
<td>2004-05</td>
<td>87</td>
<td>8.134</td>
<td>10.7</td>
<td>Collier</td>
<td>56</td>
<td>9,688</td>
<td>5.8</td>
</tr>
<tr>
<td>2005-06</td>
<td>80</td>
<td>8.376</td>
<td>9.6</td>
<td>Columbia</td>
<td>21</td>
<td>2,483</td>
<td>8.5</td>
</tr>
<tr>
<td>2006-07</td>
<td>72</td>
<td>8.666</td>
<td>8.3</td>
<td>Miami-Dade</td>
<td>440</td>
<td>95,560</td>
<td>4.6</td>
</tr>
<tr>
<td>2007-08</td>
<td>73</td>
<td>8.754</td>
<td>8.3</td>
<td>DeSoto</td>
<td>9</td>
<td>1,123</td>
<td>8.0</td>
</tr>
<tr>
<td>2008-09</td>
<td>77</td>
<td>8.771</td>
<td>8.8</td>
<td>Dixie</td>
<td>1</td>
<td>467</td>
<td>2.1</td>
</tr>
<tr>
<td>2009-10</td>
<td>75</td>
<td>8.751</td>
<td>8.7</td>
<td>Duval</td>
<td>324</td>
<td>38,110</td>
<td>8.5</td>
</tr>
<tr>
<td>2010-11</td>
<td>77</td>
<td>8.751</td>
<td>8.7</td>
<td>Escambia</td>
<td>0</td>
<td>11,956</td>
<td>7.1</td>
</tr>
</tbody>
</table>

FloridaCHARTS.com is provided by the Florida Department of Health, Division of Public Health Statistics & Performance Management.

Data Source: Florida Department of Health, Bureau of Vital Statistics.
New Hampshire’s tracking network
New Hampshire
Environmental Public Health Tracking
Making the Connection between Health and Environment

News

- Tracking Air Quality
- Tracking Asthma
- Tracking Birth Conditions and Outcomes
- Tracking Childhood Lead Poisoning
- Tracking Cancer
- Tracking Climate Change
- Tracking CO Poisoning
- Tracking Drinking Water
- Tracking Heart Disease
- Tracking Radon
Air quality

- Number of days with maximum 8-hour average ozone concentration over the NAAQS
- Number of person-days with maximum 8-hour average ozone concentration over the NAAQS
- The daily ozone National Ambient Air Quality Standard (NAAQS) is 0.075 ppm. EPA established this new 8-hour standard for ozone of 0.075 parts per million (ppm) in 2008. The previous 8-hour...
Delaware tracking network

• Reviewed existing state tracking networks to identify the “best parts” of each state network to use for the development of Delaware’s network.

• Reviewed and included existing nationally consistent data and measures as a requirement.
  • Enables participation in national tracking network.
  • Ensures that when CDC funding becomes available, our state tracking network meets the requirements for funding

• Ensure that data are stratified by community into community profiles (similar to Florida Charts).

• Ensure that the system is flexible and can be modified by DPH staff when updated data are available.

• Funding is available to develop the data portal; will include selected environmental and health data.
The tracking network is more than data...

- Tool for relevant health and environmental information.
- Points the community to valuable resources.
- Highlights the use of the data for health impact assessments – improvement of population health.
- Tool that provides information to the community in a usable format that can be translated into action through the generation of hypotheses about causes and underlying mechanisms that should be explored.
Thank you!

Questions?