

Pollen Summit

Portland, Maine

May 14-15, 2015

Summit Report

Overview

In response to the emerging, but largely unaddressed, public health challenges associated with pollen exposure, the Centers for Disease Control and Prevention (CDC) and several state health departments established a workgroup around pollen surveillance. This workgroup formed initially under the CDC Environmental Public Health Tracking Program and is now under the auspices of the Council of State and Territorial Epidemiologists (CSTE).

Following preparation of a foundational white paper, the CSTE workgroup identified the need for a strategic planning meeting, by which it could develop the framework for a national pollen monitoring network, a supporting CSTE position paper, and an outreach & education effort. In addition to these three tangible objectives, the workgroup also recognized the value in meeting face-to-face for in-depth conversations about the many faces of pollen, its health and economic impacts, and its relationship to climate, agriculture, and paleoecology.

To address these objectives, CSTE, in collaboration with CDC, hosted a Pollen Summit on May 14-15, 2015 in Portland, Maine.

Meeting Goals

- I. Share the latest research regarding the many facets of pollen, including its interconnectedness to health, climate, food security, and adaptation efforts
- II. Develop the specifications for a national pollen monitoring network
- III. Outline a position paper in support of a national pollen monitoring network and develop a work plan to complete the project
- IV. Develop a strategic plan for the promotion, education, advocacy and funding needed to implement the monitoring network
- V. Develop a structure and process that supports the ongoing work agreed upon by participants
 - I. Provide networking opportunities

Discussions, Recommendations, and Next Steps

(NOTE: next steps/assignments/unassigned tasks are in bolded red)

I. Monitoring System

A. What data should be collected?

1. Tree + grass + weeds + total counts (grains per cubic meter of air per 24 hours)
2. Option: mold (could take pictures as it's a specialty to identify)
3. Other metrics: wind, moisture, temperature, humidity, rainfall
4. Collect samples a minimum of 3 days/week at each site
5. Supplementary data
 - a. Links to the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Center (NCC) and North American Regional Reanalysis (NARR) data
6. Do we collect surrogate/proxy data?
 - a. Not health data/physical symptoms

- b. Google analytics has great data
- c. Citizen data (has to be non-descriptive)

B. Where should it be collected?

1. Current site inventory: Approximately 150 monitoring sites overall in the U.S.; National Allergy Bureau has about 77 in operation at a given time
2. Specific ideas for sites
 - a. PM/Ozone monitoring sites
 - b. Schools
 - c. Hospitals
 - d. State public health departments
3. Can build from existing monitoring sites but pollen sites can be anywhere
4. Consider sites where there is already microscopy (pollen techniques can be taught, in close proximity to Universities or Medical Schools)
5. What are ideal objectives for each region?
 - a. Ideally there would be urban, suburban, and rural representation in each region
 - b. Overlay population, phenology, and growing zones (**Andy¹ can offer insight on this**; also the US Environmental Protection Agency (EPA) experience and local knowledge)
 - c. Fill in with predictive modeling needs

C. Who is collecting data?

1. Undergraduates
2. STEM students
3. Public health departments
4. Affordable Care Act (ACA) community health profiles at hospitals
5. County health profiles
6. Citizen volunteers
7. Google trends
8. Local TV/weather (who don't pay for pollen.com)

D. How are data collected and submitted?

1. No preference on device, as long as the methodology is defined
2. Standardization ideal
3. Digital analysis may be available in the future
4. Conveying/submitting data
 - a. Sending photos
 - b. Sending analyzed data
 - c. **Len can provide some specifications**

E. When can we put the Network in place?

1. Planning timeline
 - a. 1 year: plan
 - b. 5 years: implement first wave

¹ Note: Andy refers to Andy Johnson, Maine DEP

- c. 20 years: full implementation

F. Cost

- 1. \$2,000 per collection site
- 2. Priorities: support the pollen monitoring sites we now have, then add new pollen counting stations based on ease, cost, best results

G. Discussion: Forecasting

- 1. Static climate models exist – they offer a framework
- 2. Dynamic modeling (short-term and highly resolved) is most needed for forecasting
 - a. National Aeronautics and Space Administration (NASA) has work going on
 - b. Will be used in future – our network will anchor the data and help check/affirm accuracy of models
 - c. This could lead to health modeling
- 3. Data gaps
 - a. Availability of station data is critical for accurate modeling
 - b. We have been thinking we know more than we actually know

H. Discussion: Building on existing monitoring capacity

1. Len Bielory has the following pieces of a monitoring system already in place

- a. ipollencount.com application
 - i. Collects personal data
 - ii. Gives information to individuals
 - iii. Can share with providers
 - iv. Currently only offered in greater New York City area
 - v. NEXT: Arie will ask Len for a webinar so the group can learn more**
- b. National pollen database
 - i. Location, level, date
 - ii. People from Oracle are helping on this
- c. Forecasting out to 2050
 - i. Pollution variables
 - ii. Climate model scenarios
 - iii. Meteorological data – altitudes
- d. Targets
 - i. Clinicians
 - ii. Health departments
 - iii. Farmers
- e. Maps
 - i. Continental US
 - ii. Canada
 - iii. There is interest from Mexico, Puerto Rico, and some South American countries

2. Building a bridge from Len Bielory's work to the future we envision

- a. Administration: anyone can join the new CSTE Work Group for \$50 in dues per year

- b. Mapping: we need a state-by-state inventory (including who's responsible) and an assessment of need (the latter will be Phase Two)
 - i. **Arie can do the mapping after information is gathered**
 - ii. AAAI (**Paul and Peggy will contact**)
 - iii. Public Health departments
 - iv. State departments of environmental protection and commissioners
 - v. Regional groups (**Andy will share information with Northeast group**)
 - vi. National Atmospheric Deposition Program (NADP)
 - vii. University medical centers
 - viii. Canada
- c. Monitoring locations:
 - i. Survey hospitals for possible spots
 - ii. Schools: ask Len for recruitment concept
 - iii. Phenology Network
- d. Data transfer
 - i. We can share data with Len (**Arie will get specs from Len**)
 - ii. Establish minimum standard (e.g. no faxing, must be digital)
- e. Other data
 - i. Lewis Ziska has paper data which interns could enter/format (**Amir could host an intern for this purpose**)
 - ii. Personal sensors (**Andy will report back on what's in development**)
- f. Quality assurance/control
 - i. We need a quantified consistent method of reading and reporting (the collection method can vary) (**could look at the Aroostook Band of Micmac's work in Presque Isle, Maine**)
 - ii. Long-term goal is to move the QAQC program to national certification
- g. Funding (**group will flesh out on a future call**)
 - i. Fund staff/consultant to focus on development?
 - ii. Tie to the Obama administration's focus on climate (consider ASAP)
 - iii. Global Change Research Program
 - iv. State 5-year federal plans (**Andy will add to Maine's plan**)

II. Research and Position Paper

A. CSTE Process

1. CSTE members vote, and when the proposed position statement is approved at the annual Conference, it will receive full member and organizational support
2. Policy positions must:
 - a. Lay out problem, solution, and desired action
 - b. Identify agencies from whom we are seeking a response and/or just providing information

B. Problem

1. Lack of adequate, accurate information for people, scientists, government, businesses who are all impacted by pollen
2. **NEXT: Wendy, Amir, and Asthma Work Group will draft "problem statement"**

C. Solution

1. National Monitoring Network & Repository
 - a. For “near real time” pollen data
 - b. Open data – can’t be purchased
 - c. Allow multiple use – for people and science
 - d. Include awareness of limitations of comparing collections
2. Alert System (to support people)
 - a. People share with doctors
 - b. This will lead to and allow for better forecasting
3. Data Sharing System (to support science)
 - a. Place where all data can go
 - b. Standardization
 - c. Open access
 - d. No/low cost
 - e. Len has pieces of this (industry funded)
 - f. National Allergy Bureau (NAB) has a limited system
4. **NEXT: Lauren, Andy, Claudia, Arie, and Norm will draft**

D. Possible actions (structure)

1. Government program (e.g. CDC)
2. Government contract with non-governmental organizations (NGO) to carry out functions
3. Pay to play: be part of a network, then share information (e.g. this could be a university program)
4. Consortium: government agencies, educational institutions, private companies, and non-governmental agencies (e.g. National Atmospheric Deposition Program)
5. Industry based
6. **NEXT:**
 - a. **See Senator Collins’ list of mercury monitoring sites done through NADP [Andy will share]**
 - b. **Talk to Ivan re: model of USDA “climate hub”**

E. Who Benefits

1. Science
2. Industry
3. Patients/people with asthma/allergies
4. Providers and health systems
5. Health insurers
6. Farmers (e.g. when to water plants)

F. Funding ideas

1. USDA
2. State Energy Programs (SEPs): federal funding that could be used to buy hardware and microscopes
3. Hire consultants to coordinate
4. **NEXT:**
 - a. **Jennifer will submit proposal to CSTE**
 - b. **Arie will explore options with CDC**

G. Making the case

1. Why now?
 - a. Technology is making it possible
 - b. Need more than NAB – larger universe
 - c. **NEXT: Amir and Asthma Work Group will work on this section**
2. Why agencies should care
 - a. **NEXT: Lauren et al will work on this section using mission statements from agencies**
3. Document current burdens followed by the benefits of building a network
 - a. Economic Impacts
 - i. Direct
 - ii. Indirect
 - iii. Supply chain
 - b. Health impacts (e.g. Emergency Room visits)
 - i. Correlation between pollen and health outcomes
 - ii. How many monitors are needed to predict health outcomes?
 - c. **NEXT: Amir and Asthma Work Group will work on economic analysis**

H. Agencies to engage

1. Seeking response
 - a. CDC
 - b. NOAA
 - c. U.S. Department of Agriculture (USDA)
 - d. EPA
 - e. National Institutes of Health (NIH)
2. Information only
 - a. U.S. Geological Survey (USGS)
 - b. NASA
 - c. National Institute of Environmental Health Sciences (NIEHS)
 - d. National Heart, Lung, and Blood Institute (NHLBI)

III. Promotion, Education, Advocacy

A. Outreach to stakeholders

1. Possible proponents
 - a. EPA – must articulate how this relates to their work
 - b. Climate allies
 - c. Agriculture
 - d. Clinicians (especially primary care)
2. Possible opponents
 - a. Pollen.com
 - b. National Allergy Bureau (some sites may choose not to participate)

B. Communications

1. Integration of public health alerts
2. Take advantage of current administration's interest in climate change (could also get negative coat tails from climate)

3. Breaking through pollen.com (which isn't accurate)
4. Materials to produce and promote (**NEXT: CSTE will explore using workgroup common fund**)
5. Messengers: organization/association leaders; Surgeon General
6. What are our messages to allies and interested parties?

C. Partners: who is missing around this table?

1. Lewis Ziska (**Amir will ask right away**)
2. Stanley Feinman (**Arie will ask right away**)
3. Physicians – PSR (Tier II ask)
4. Moms for Clean Air (Tier II ask)
5. Mothers of Asthmatics (Tier II ask)
6. Nurses (Tier II ask)

IV. Structure and Process

A. Internal communications

1. **CSTE can coordinate (will explore use of “Base Camp” or other list serve type system)**
2. **Identify a point person within sections of work**

B. Timeline: First wave of tasks will be completed by September 1, 2015

APPENDICES

APPENDIX A: Objectives

II. Monitoring System

- A. Agreement on a three-phase framework for implementation of a monitoring system (short-term, medium-term, long-term): WHAT, WHERE, WHEN
- B. Agreement on a rough budget for implementation, by phase (HOW MUCH)
- C. All participants review and provide input on foundational documents provided
- D. Agreement on a work plan for each phase of monitoring system implementation – HOW will we accomplish each (general/specific) and WHO will be responsible (individuals/organizations)

III. Research and Position Paper

- A. All participants review and provide input on white paper
- B. Agreement on purpose and “big-picture” dissemination of position paper
- C. Agreement on format, length, and content sections of position paper
- D. Agreement on research needed and who will be responsible for its completion
- E. Agreement on production process, timing, and responsible parties for position paper

IV. Promotion, Education, Advocacy

- A. All participants review and provide input on foundational documents provided
- B. Agreement on an educational outreach planning chart, including target audiences, purpose/goals for each, messages, messengers, mechanisms/vehicles for delivery of information, timing, evaluation questions
- C. Agreement on potential funding sources for each phase of monitoring system implementation

- D. Agreement on a promotion planning chart, including target audiences, purpose/goals for each, messages, messengers, mechanisms/vehicles for delivery of promotion information, timing, evaluation questions
- E. Agreement on an advocacy planning chart, including target decision-makers, messages, messengers, timing, evaluation questions
- F. Agreement on a rough budget for promotion, education, and advocacy

V. Structure and Process

- A. Creation and population of at least three ongoing work groups (position paper, monitoring system work plan, promotion/education/advocacy work plan)
- B. Agreement about ongoing internal process: sharing information, feedback system, decision-making, calls/meetings
- C. Agreement about any next steps related to June 2015 CSTE conference

APPENDIX B: Meeting Agenda

May 14, 2015

- | | |
|----------------|---|
| 3:00 – 3:15 pm | Welcome/Introductions |
| 3:15 – 3:30 | Review agenda for tomorrow |
| 3:30 – 5:40 | Discussion: The many faces of pollen (Norm moderates) <ul style="list-style-type: none"> • Pollen and Paleoclimatology - Andrea Nurse (U Maine) – 10 minutes • Pollen and Health – Paul Shapero, MD and Peggy Pennoyer, MD (ALA) – 10 minutes • Pollen as an Indicator of Ecological Health – Ivan Fernandez (U Maine) – 10 minutes • Pollen and Air Quality – John Chandler (ALA) – 10 minutes Open Conversation – 40 minutes |

May 15, 2015

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|------------------|---|
| 8:00 – 8:30 am | Welcome, introductions, review agenda and planning language |
| 8:30 – 10:45 | Research and position paper <ul style="list-style-type: none"> • Review goal and objectives for this “bucket” of work • What do we know: review foundational white paper and assessments • What’s missing • How do we fill the gaps • Work plan (next steps, when, and by whom) |
| 10:45 – 11:00 | Break |
| 11:00 – 12:00 | Monitoring system <ul style="list-style-type: none"> • Review goal and objectives for this “bucket” of work (national, regional, and state) • What do we know: review foundational documents, technologies, potential partners, public support • What’s missing • How do we fill the gaps • Work plan (next steps, when, and by whom) |
| 12:00 – 12:45 pm | Lunch |
| 12:45 – 2:15 | Promotion/education/advocacy <ul style="list-style-type: none"> • Review goal and objectives for this bucket of work • What do we know: review foundational documents |

- What’s missing
 - How do we fill the gaps
 - Work plan (next steps, when, and by whom)
- 2:15 – 2:45 Break
- 2:45 – 3:30 “Knitting” it all together
- 3:30 – 3:50 Summarize next steps, timeline, assignments for each section, as well as:
- CSTE June conference media
 - CSTE June conference presentation
 - CSTE Adoption of Position Statement on pollen
- 3:50 – 4:00 Closing

APPENDIX C: About CSTE

CSTE is an organization of member states and territories representing public health epidemiologists. CSTE works to establish more effective relationships among state and other health agencies across a wide range of public health disciplines. For more information about CSTE, please visit: <http://www.cste.org/>.

Financial support for the pollen summit was provided by CSTE in collaboration with CDC and the Maryland Environmental Public Health Tracking (EPHT) Program at the Maryland Department of Health and Mental Hygiene (DHMH). Views expressed by the pollen summit participants or in this pollen summit summary do not necessarily represent the positions of CSTE, CDC or DHMH.