

## COCA Call Information

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  - US: 1+(646)876-9923 or 1+(669)900-6833
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- ❑ All questions for the Q&A portion must be submitted through the webinar system.
  
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**Don't Overlook Assessing Environmental Exposures—During a  
Disaster and Every Day**

**Clinician Outreach and Communication Activity (COCA)  
Webinar**

**February 13, 2018**



## Continuing Education for COCA Calls

All continuing education (CME, CNE, CEU, CECH, ACPE, CPH, and AAVSB/RACE) for COCA Calls are issued online through the [CDC Training & Continuing Education Online system](http://www.cdc.gov/TCEOnline/) (<http://www.cdc.gov/TCEOnline/>).

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- ❑ **Planners have reviewed content to ensure there is no bias. Content will not include any discussion of the unlabeled use of a product or a product under investigational use.**
- ❑ **CDC did not accept commercial support for this continuing education activity.**

## To Ask a Question

- ❑ **Using the Webinar System**
  - Click the **Q&A** button in the webinar
  - Type your question in the **Q&A** box
  - Submit your question
- ❑ **For media questions, please contact CDC Media Relations at 404-639-3286 or send an email to [media@cdc.gov](mailto:media@cdc.gov).**
- ❑ **If you are a patient, please refer your questions to your healthcare provider.**

**At the conclusion of the session,  
participants will be able to accomplish  
the following:**

- Identify why taking an environmental exposure history is a critical consideration during a clinical intake during a disaster or disaster recovery situation.
- List the rationale for taking an exposure history as part of a clinical assessment.
- Describe how to access the PEHSU (Pediatric Environmental Health Specialty Units) resources.

## Today's First Presenter



**Diane E. Hindman, MD PharmD**

Senior Medical Toxicology Fellow and Board-Certified  
Pediatrician

ATSDR/CDC and Emory University



## Today's Second Presenter



### **Marya G. Zlatnik, MD, MMS**

Professor, Maternal Fetal Medicine & Program in Reproductive  
Health & the Environment, UC San Francisco  
Associate Director, Maternal Fetal Health & the Environment,  
UCSF-Western States Pediatric Environmental Health  
Specialty Unit



## Today's Third Presenter



### **Perry E. Sheffield, MD, MPH**

Assistant Professor, Departments of Pediatrics and  
Environmental Medicine and Public Health  
Deputy Director, Region 2 Pediatric Environmental Specialty  
Unit  
Ichan School of Medicine at Mount Sinai, New York, NY



## Today's Final Presenter



**Brian Tencza M. Ed.**

Team Lead

Environmental Medicine Branch/Division of Toxicology  
and Human Health Services

ATSDR/CDC



# Don't overlook assessing environmental exposures —during a disaster and every day



**Diane Hindman, MD PharmD**

Senior Medical Toxicology Fellow and Board-Certified Pediatrician  
ATSDR/CDC and Emory University, Atlanta GA

COCA Webinar  
February 13, 2018

# Children — A Vulnerable Population

- 25% of the US population, but 100% of our future
- Different physiological, behavioral, developmental, social and mental health needs
- **Air and water pollution, secondhand smoke, toxic industrial chemicals, pesticides, heavy metals, hazardous wastes and climate change** are among the environmental threats children face



## Children — A Vulnerable Population

- WHO 2012: up to 26% (95% CI: 16-38%) of deaths in children <5 yo if environmental risks were removed
- Pesticide exposure in pregnancy → 7-point IQ loss → lifetime earnings loss
- 2008: environmental disease in US children estimated \$76.6B



## How Can You Make a Difference?

Local healthcare and public health providers have key roles in environmental health

- Environmental history
- Anticipatory guidance
- Learn more about your community
- Get involved in emergency and disaster preparedness activities in your practice and your community
- Consult with experts

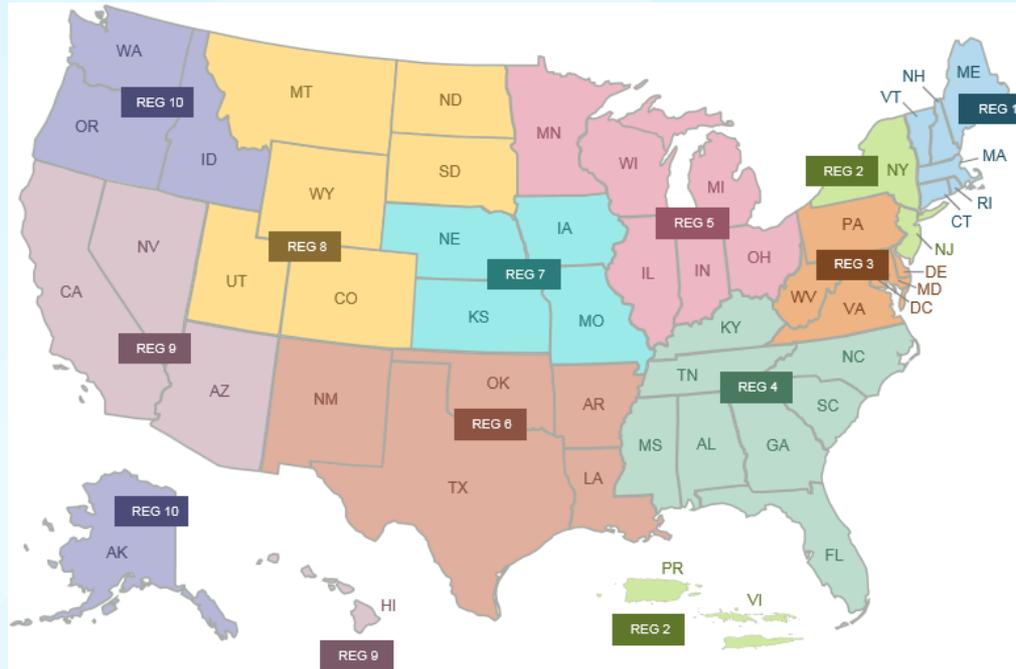




- Educate health professionals and others about environmental health risks children face
- Consulting with pediatric health care providers on how best to address known or suspected exposures to toxic hazards in the environment
- Responding with environmental health guidance, during natural disasters such as hurricanes and wildfires that impact children



# Expert Advice Across America



## PEHSUs Shared Expertise (1999 – 2014):

- >8000 consultations and educational activities
- 702,506 people

## References

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2. Gehle KS, Crawford JL, Hatcher MT. Integrating environmental health into medical education. *Am J Prev Med*. 2011;41(4S3):S296-301.
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8. Weiner DL. Lessons learned from disasters affecting children. *Clin Pediatr Emerg Med*. 2009;10(3):149-152.
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# Don't overlook environmental exposures —during a disaster & every day: **Wildfire smoke & pregnancy**



Marya G. Zlatnik, MD, MMS  
Professor, Maternal Fetal Medicine & Program in  
Reproductive Health & the Environment, UC San Francisco  
Associate Director, Maternal Fetal Health & the  
Environment, UCSF-Western States Pediatric  
Environmental Health Specialty Unit

## Case: Ms J, a 29 year old woman with a history of 3 prior term pregnancies



- Hx gestational diabetes
- Hx childhood asthma

## Case: Ms J, a 29 yo P3 at 31 wks

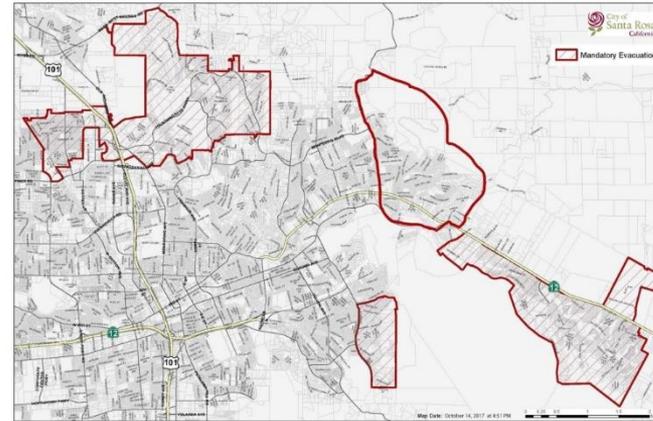
- Transferred from a Santa Rosa hospital after preterm premature rupture of membranes at 31 weeks



<https://weather.com/news/weather/video/ca-hospital-evacuated-as-fire-nears>

## Ms J, a 29 yo P3 at 31 wks with PPRM

- Wildfires prompted evacuation of some local hospitals but Ms. J without any direct smoke exposure
- On arrival, no respiratory symptoms & normal vital signs, including O2 saturation
- She is worried about her husband & their house, in the evacuation area



## Why is wildfire smoke a concern in pregnancy?

- **Physiology of pregnancy: increased minute ventilation & metabolic needs**
  - Pregnant women more susceptible to hypoxia, respiratory disease (e.g., flu)
  - Fetal growth & well-being dependent on maternal respiratory function



# Is wildfire smoke a concern in pregnancy?



## 2003 Wildfires in So. CA

- 750,000 acres of forest burned
- Effect on birth weight studied

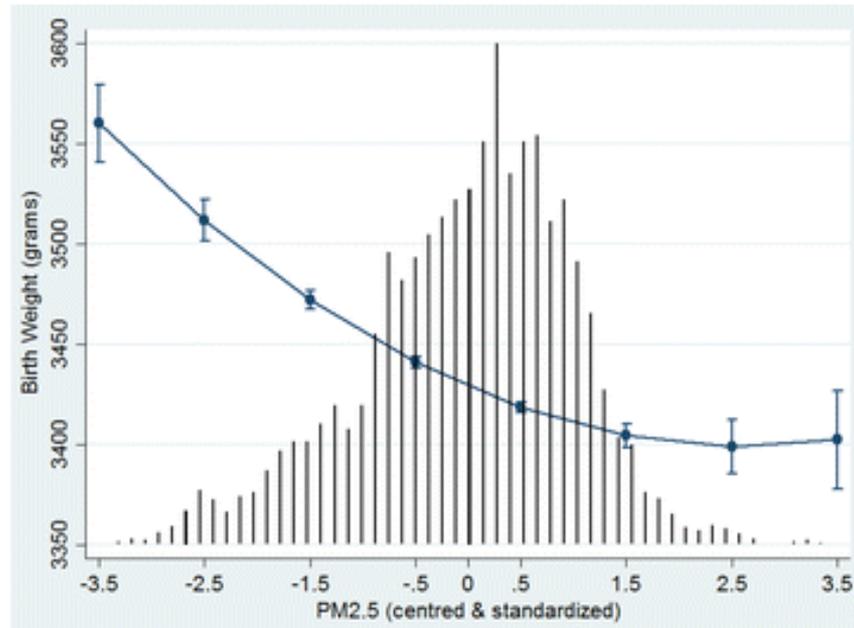
**Table 2.** Estimated effect of wildfire event during gestation on birth weight (g), by trimester.

Trimester of exposure	Unadjusted model		Adjusted model	
	Effect (g)	95% CI	Effect (g)	95% CI
Third ( $\geq 29$ weeks)	-7.9	(-12.8, -3.1)	-7.0	(-11.8, -2.2)
Second (17–28 weeks)	-17.1	(-21.9, -12.3)	-9.7	(-14.5, -4.8)
First (1–16 weeks)	-3.9	(-7.8, 0.0)	-3.3	(-7.2, 0.6)
Any trimester	-8.8	(-11.5, -6.1)	-6.1	(-8.7, -3.5)

Adjusted model includes terms for fetal sex, gestational age, parity, maternal age, maternal education, maternal race/ethnicity, secular trend, and season.

Holstius DM, Reid CE, Jesdale BM, Morello-Frosch R. 2012. Birth Weight following Pregnancy during the 2003 Southern California Wildfires. *Environ Health Perspect* 120:1340;  
<http://dx.doi.org/10.1289/ehp.1104515>

# Prenatal air pollution: Predicted effects of PM<sub>2.5</sub> on birth weight



Black vertical lines represent frequency distribution of PM<sub>2.5</sub>. Population-based retrospective cohort : singleton births in British Columbia, 2001-6. Exposure to PM<sub>2.5</sub> was estimated using a national land-use regression model developed to estimate PM<sub>2.5</sub> at census street block level. Erikson *BioMedCentral* 2016



## Care for a pregnant woman with smoke exposure

- ABCs/ICU care if needed
- OB/Maternal Fetal Medicine care for pregnancy needs
- Specific suspected exposures (e.g. carbon monoxide, heavy metals, flame retardants: PEHSU consult
- “Worried well”: PEHSU fact sheets



# Pregnant patient w/ smoke exposure: PEHSU fact sheets



**PEHSU Information on Health Risks of Wildfires for Children – Acute Phase Guidance for Health Professionals**

The Pediatric Environmental Health Specialty Units (PEHSU) Network encourage families, pediatricians, and communities to work together to ensure that children are protected from exposure to environmental hazards.

Wildfires expose children to a number of environmental hazards, e.g., fire, smoke, psychological stress, and the byproducts of combustion of wood, plastics, and other chemicals released from burning structures and furnishings. During the acute phase of wildfire activity, the major hazards to children are fire and smoke. Acute stress from fire activity and response to the fires and the emotional responses of those around them can also impact children during this time.

Children, individuals with pre-existing lung or cardiovascular problems, pregnant women, elderly, and smokers are especially vulnerable to environmental hazards such as smoke. Children are in a critical period of development when toxic exposures can have profound negative effects, and their exploratory behavior often places them in direct contact with materials that adults would avoid.

The **acute phase environmental hazards** for children and their family are highlighted below.

- **SMOKE** consists of very small organic particles, liquid droplets, and gases such as CO, CO<sub>2</sub>, and other volatile organic compounds, such as formaldehyde and acrolein. The actual content of smoke depends upon the fuel source.
- **HEALTH EFFECTS OF SMOKE:** Symptoms from smoke inhalation can include chest tightness, shortness of breath, wheezing, coughing, respiratory tract and eye



# Summary

- **Wildfire smoke exposure in pregnancy**
  - Importance of taking an exposure history as part of a clinical assessment
  - Pregnant women susceptible to smoke
  - Air pollution a risk factor for adverse outcomes
- **Resources: PEHSU network**
  - Experts for consultation
  - Fact sheets and other information

Don't overlook assessing environmental exposures  
—during a disaster and every day:  
**Post hurricane mixed exposures**

Perry Elizabeth Sheffield, MD, MPH  
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Depts. of Pediatrics and Environ Med and Public Health  
Deputy Director,  
Fed Region 2 Pediatric Environmental Health Specialty Unit  
Icahn School of Medicine at *Mount Sinai, New York, NY*  
CDC COCA presentation, February 13, 2018















# Summary

- Over 3 million Americans in the Caribbean were impacted by the 2017 hurricanes.
- PEHSU is working with diverse partners to address the complicated environmental health issues affecting children.
- There's a PEHSU in every region – get to know yours even before a disaster strikes. You don't have to go it alone!



# **Educational Materials from ATSDR**

**Brian Tencza, M.Ed.**

# Where to Find These Materials

The screenshot shows the ATSDR website interface. At the top left is the ATSDR logo and the text 'Agency for Toxic Substances and Disease Registry'. At the top right is a search bar with the text 'TOPIC ONLY' and 'SEARCH'. Below the search bar is a blue button labeled 'ATSDR A-Z INDEX'. A green banner across the page reads 'Environmental Health and Medicine Education'. Below this banner is a breadcrumb trail: 'ATSDR > Environmental Health and Medicine Education'. A yellow arrow points to this breadcrumb. Below the breadcrumb is a menu with 'Resources for Health Professionals' highlighted by a yellow box and a yellow arrow. Below the menu are social media icons for Facebook, Twitter, and a plus sign. The main content area has a heading 'Introduction' and a paragraph: 'ATSDR's environmental medicine education products for health professionals have been revised and refreshed to better meet needs for continuing education in a demanding professional climate. All of these products include current environmental medicine content drawn from peer-reviewed medical literature. In addition, these education products provide the latest information on evidence-based diagnosis and treatment. Each product offers free, accredited continuing education and is available and downloadable online.' Below this is a section 'Case Studies in Environmental Medicine' with a paragraph: 'ATSDR Case Studies in Environmental Medicine (CSEM) are self-instructional, continuing-education primers designed to increase primary care providers' knowledge of hazardous substances and aid in the evaluation of patients potentially exposed to hazardous substances. Each CSEM comes with additional companion products such as Grand Rounds in Environmental Medicine and Patient Education and Care Instruction Sheets.' Below this is a link: 'For more information and access to the ATSDR CSEM page, please visit https://www.atsdr.cdc.gov/csem/csem.html'. On the right side of the page is a section 'On This Page' with a list of links: Case Studies in Environmental Medicine, Grand Rounds in Environmental Medicine, Patient Education and Care Instruction Sheets, PEHSU National Classroom, A Story of Health, Amyotrophic Lateral Sclerosis (ALS) Continuing Education Module, Assessment of Chemical Exposures Training, Child Development, Resilience and the Environment, and Emergency Risk Communication.

ATSDR Agency for Toxic Substances and Disease Registry

TOPIC ONLY

SEARCH

ATSDR A-Z INDEX

Environmental Health and Medicine Education

ATSDR > Environmental Health and Medicine Education

Resources for Health Professionals

Case Studies

Grand Rounds

Patient Education and Care Instruction Sheets

PEHSU National Classroom

PFAS Continuing Education for Clinicians

A Story of Health

Amyotrophic Lateral Sclerosis

Emergency Risk Communication

Pediatric Environmental Health Toolkit

Surviving Field Stress for First Responders

Introduction

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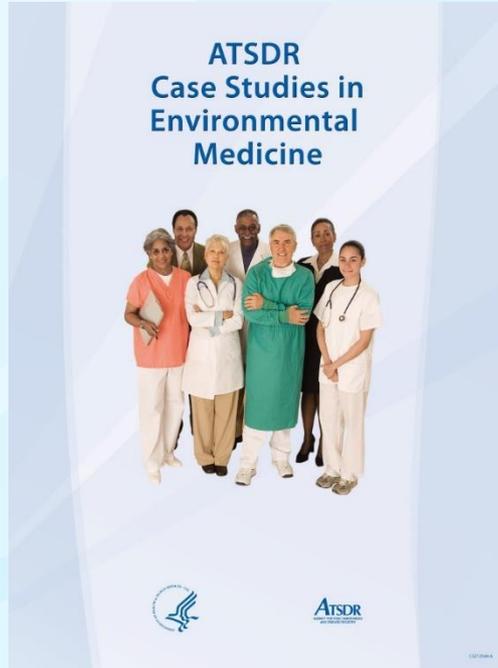
On This Page

- Case Studies in Environmental Medicine
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- Child Development, Resilience and the Environment
- Emergency Risk Communication

# Story of Health



# Case Studies in Environmental Medicine



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# Patient Education Sheet



## Information and Instructions for Patients

### **What is asbestos?**

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Asbestos is a mineral found in nature. Until the 1970s, asbestos was used in many industries and building materials throughout the United States. People who worked with asbestos often breathed asbestos fibers into their lungs. Today, asbestos is not often used in industry, but it is still found in many older homes, buildings, and automobile parts.

Asbestos-containing materials that are damaged, loose, or disturbed can release asbestos fibers into the air. Some areas of the United States have asbestos-bearing rocks that are close to the surface. These rocks can sometimes be disturbed during construction and other activities, causing asbestos fibers to be released into the air. The fibers can become lodged in your lungs if you breathe them in, causing irritation and sometimes disease.

### **Will I get sick?**

---

If you have been exposed to asbestos, you might or might not get sick. The more fibers you breathe in, the greater your risk of disease. Asbestos fibers cannot be washed out or surgically removed from your lungs. If you do get sick, your symptoms will typically appear 10 to 40 years after you were first exposed.

### **Asbestos-associated**

---

Asbestos usually affects the respiratory system, although it can affect other parts of the

# Grand Rounds

## Patient Advice - Asbestos



If the patient smokes, advise them to stop smoking and provide advice on smoking cessation. All patients should avoid exposure to environmental tobacco smoke.	Smoking decreases lung defenses, dramatically increases risk of lung cancer in case of asbestos exposure, and worsens effects of asbestosis.
Avoid further exposure to asbestos.	Further exposure to asbestos can worsen asbestos related disease.
Avoid exposure to respiratory infections especially influenza.	Respiratory infections can aggravate the symptoms of asbestos related disease.

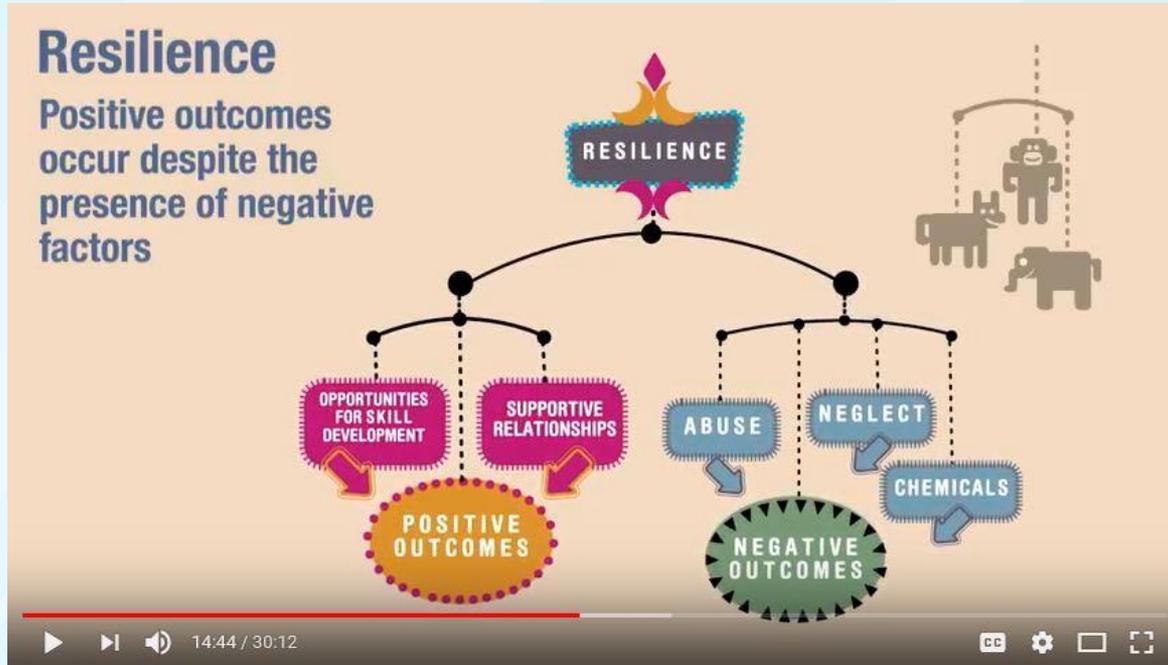
# Pediatric Environmental Health Toolkit



## **Resources for Stress After an Environmental Disaster Causes Relocation**

- **Relocation Stress Fact Sheet**
- **Surviving Field Stress for First Responders**

# Childhood Development, Resilience and the Environment





## Online Courses

The PEHSU program is committed to providing quality education to healthcare professionals. We provide interactive, evidence-based online courses on a variety of children's environmental health topics. Most of our courses offer CME, CNE, and CEU for healthcare professionals (see description for more detail).

You have the option to preview the presentation or take the course. Selecting **Take Course** will navigate you to the PEHSU's learning management system where you will complete a pre-test, post-test, the course presentation, and an evaluation. Upon completion, you will be eligible to obtain continuing education (CE).

Click on a course title below to view more details.

### Air Quality

» [Particulate Matter & Public Health](#)

### General Environmental Health

» [Utilizing the Environmental Public Health System](#)

» [Taking an Exposure History](#)

» [Pediatric Asthma & Environmental Exposures](#)

» [Environmental Exposures and Cancer](#)

» [Approaching Cases of Environmental Exposure](#)

### Indoor Environmental Health

» [School Environment, Health and Performance](#)

#### PEHSU National Classroom

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# Summary

 **ATSDR** Agency for Toxic Substances and Disease Registry

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ATSDR A-Z INDEX ▾

## Environmental Health and Medicine Education

- Environmental Health and Medicine Education
- Resources for Health Professionals** -
- Case Studies +
- Grand Rounds
- Patient Education and Care Instruction Sheets
- PEHSU National Classroom
- PFAS Continuing Education for Clinicians
- A Story of Health
- Amytrophic Lateral Sclerosis
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### Resources for Health Professionals

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- [Assessment of Chemical Exposures Training](#)
- [Child Development, Resilience and the Environment](#)
- [Emergency Risk Communication](#)

## To Ask a Question

### □ Using the Webinar System

- Click the Q&A button in the webinar
- Type your question in the Q&A box
- Submit your question
- CDC Media: [media@cdc.gov](mailto:media@cdc.gov) or 404-639-3286
- Patients, please refer your questions to your healthcare provider

## Today's webinar will be archived

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**When:** A few days after the live call

**What:** All call recordings (audio, webinar, and transcript)

**Where:** On the COCA Call webpage

[https://emergency.cdc.gov/coca/calls/2018/callinfo\\_021318.asp](https://emergency.cdc.gov/coca/calls/2018/callinfo_021318.asp)

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# Upcoming COCA Call

**Shingles Vaccine**

**Thursday, March 8, 2018**

**2:00-3:00 ET**

## Join COCA's Mailing List!

Receive information about:

- Upcoming COCA Calls
- Health Alert Network notices
- CDC public health activations
- Emerging health threats
- Emergency preparedness and response conferences and training opportunities



<http://emergency.cdc.gov/coca>

# COCA Products & Services

		<b>COCA Call</b>
		CDC Clinician Outreach and Communication Activity

Promotes COCA Calls and contains all information subscribers need to participate in COCA Calls. COCA Calls are done as needed.

		<b>COCA Learn</b>
		CDC Clinician Outreach and Communication Activity

Monthly email that provides information on CDC training opportunities, conference and training resources located on the COCA website, the COCA Partner Spotlight, and the Clinician Corner.

		<b>Clinical Action</b>
		CDC Clinician Outreach and Communication Activity

Provides comprehensive CDC guidance so clinicians can easily follow recommendations.

# COCA Products & Services



Monthly email that provides new CDC & COCA resources for clinicians from the past month and additional information important during public health emergencies and disasters.



Informs clinicians of new CDC resources and guidance related to emergency preparedness and response. This email is sent as soon as possible after CDC publishes new content.



CDC's primary method of sharing cleared information about urgent public health incidents with public information officers; federal, state, territorial, and local public health practitioners; clinicians; and public health laboratories.





**COCA**

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