

**Issue:** Virginia faces a variety of EH threats. Attention to the impact on our MCH populations is a public health necessity

**Project:** Comprehensive resource that highlights the significance EH hazards have on MCH populations and *what can be done!*

Identifies:

- Exposure risks
- Health impact

Provides:

- Prevention tips
- Mitigation resources

- Flexible format: printable, online
- Provides local, state, national resources

**Accomplishments and Results:**


- Bridges a divide* between siloed departments
  - Collaboration between Environmental Health, Population Health, and Nursing
  - Incorporation into state emergency preparedness plans
- Serves as a resource for all staff
  - Nurses - field community questions about exposures
- Supports Virginia’s current Title V grant priorities focusing on the importance of the postpartum period and community engagement

**Setting:** Designed for staff across 35 local health districts serving rural, suburban, and urban communities of vast geography

**Barriers:** The changing landscape of public health in 2025

**Lessons Learned:** Our qualitative evaluation demonstrated the intersection of EH and MCH is a growing area of interest and importance locally and statewide

**Replication:** The toolkit is applicable to all communities and can be customized to meet local and state needs



THE ENVIRONMENTAL & MATERNAL + CHILD HEALTH TOOLKIT

PROTECT THE HEALTH OF YOU AND THOSE YOU CALL FAMILY

**EH & MCH TOOLKIT**

The goal of *The EH & MCH Toolkit* is to highlight common environmental threats to maternal and child health (MCH). Covering both physical and behavioral environmental health (EH) risks, the toolkit identifies direct sources of environmental hazards, discusses health consequences for women and children, and provides tips for prevention and resources. The toolkit aims to raise awareness through evidence-based information and serves as an educational guide to improve MCH well-being and development.

EDUCATE

CREATE AWARENESS

PROMOTE HEALTH

Topics in this toolkit may be useful to mothers and children, pregnant people, birthing people, parents, caretakers, and friends.

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**Flooding**

**HAZARDOUS EXPOSURES**

Changes in climate are causing more frequent precipitation and rainfall leading to **rising sea levels, hurricanes, surge storms, and floods.**

Increased Precipitation

Destructive Flooding

Rising Sea Levels

Surge Storms

Hurricanes

**VA SEA LEVEL BY YEAR (2004-22)**

Yearly sea level change in Norfolk, VA. Increasing trend shows gradual rise in sea level from 2004-2022.

**INTERACTIVE COASTAL MAP**

Changing Coast

Link to interactive visual map that shows changes in sea level and storm/flood risk zones.

**INJURIES**

Cuts, punctures, fractures, broken bones, physical blows

**DAMAGES**

Buildings, roads, food/water supply, communities, personal property

**DEBRIS**

Tree branches, broken glass, loose waste, electrical lines

**DROWNING**

Even strong swimmers can get swept away by strong waters

**FLOOD DANGERS**

**MATERNAL & CHILD HEALTH IMPACTS**

The emotional and physical stress of floods and natural disasters have been linked to the following MCH outcomes:

Anemia (low red blood cell count)

Eclampsia (high blood pressure and potential seizures)

Miscarriage

Post-Traumatic Stress Disorder (PTSD)

Pre-term birth

Low birth weight

Physical damages are not the only hazards that come with extreme precipitation. **Bacteria or viruses** in flood water may mix with drinking water and cause **waterborne illnesses**. This can cause acute infections in pregnant mothers and subject fetuses to severe future birth defects.

TOP WATERBORNE DISEASES IN THE US	SYMPTOMS	MCH COMPLICATIONS
Otitis Externa "Swimmer's Ear"	Tenderness, pain, itching, swelling in the ear, fluid discharge	No known fetal risk, but ear discomfort in mother
Norovirus	Diarrhea, nausea, stomach pain, vomiting	Electrolytes imbalances may cause pre-term birth or urinary tract infections
Giardia	Diarrhea, dehydration, gas, greasy stools, stomach pain, vomiting	Malabsorption (problem with intestines absorbing nutrients) and diarrhea may affect fetus

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If you need crisis or emotional support, call or text 1-800-985-5990 (Disaster Distress Helpline)

Storms

Floods

Droughts

Wildfires

Moisture in flood debris can lead to **mold** growth. These fungi spread through the **release of spores**, which are small airborne particles, and can cause poor indoor and outdoor air quality.

Visit the Outdoor Air Quality section on page 35 to learn more about how airborne irritants affect respiratory health.

**PROTECTIVE ACTIONS**

Create a flood plan - risk evaluation, evacuation, safe spots

Prepare emergency kits - first aid, food/water, batteries

Pack enough medicine for days to weeks

WAIT! Do not attempt to go out during an emergency

Proceed with caution when walking through debris

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