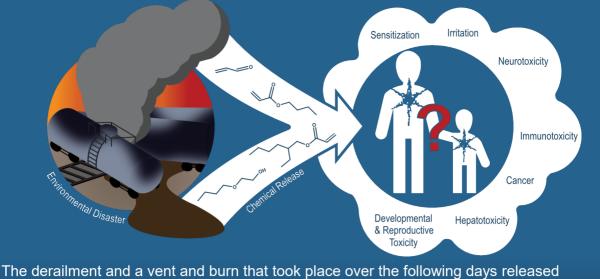
# Identifying Health Hazard Data Gaps for **East Palestine Train Derailment Chemicals**

## What Happened?

On February 3, 2023,

a Norfolk Southern Railway freight train carrying vinyl chloride and other hazardous chemicals derailed in East Palestine, Ohio.



hazardous chemicals into the environment. What We Did

effects of the chemicals. Phase 1 Phase 2

We reviewed the environmental health science literature to find information on potential health

## Scoping Identify chemicals and

extract authoritative review

conclusions for selected health outcomes

#### Identify Literature **Research Gaps**

research gaps

Identify and prioritize

chemical-outcome pair

### Reviews Conduct additional searches

for prioritized research gaps,

then summarize collective findings



### All eight higher priority chemicals irritate the skin and eyes, and seven of the eight irritate the respiratory system.

What We Found

- Two chemicals are **known** to cause cancer, and one chemical **probably** causes cancer. Four others may cause cancer, but more information is needed to draw definitive conclusions.
- Little data was found for noncancer health effects, and many data gaps remain. Two chemicals may cause immune or nervous effects, and two chemicals do or may cause damage to reproductive organs or the developing fetus. Little data was found for other organ systems, including the liver, kidney, and heart and
- blood vessels. Three chemicals were known hazards for other organs. Additional literature searches suggest that research is needed for most chemicals, but several studies were found for acrolein and neurological effects.

Vinyl Chloride .....

Phosgene Gas ··•PG



"Less Certain Health Hazard

• · · · · · Known or Likely Health Hazard

**Reading the Charts** 



2EA

Cancer

В

BA

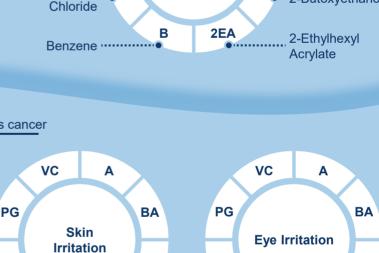
BA

PG

HC

PG

HC



HC

PG

**2B** 

2EA

Health **Effect** 

VC

HC

Butyl Acrylate

2-Butoxyethanol

**2B** 

BA

2EA

Α

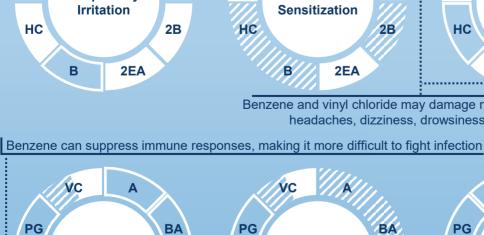
VC VC A

PG

Exposure to benzene may harm reproductive organs in men

Benzene is known to cause leukemia and may cause lymphoma and lung cancer and vinyl chloride is known to cause cancer of the liver and blood vessels in the liver

HC

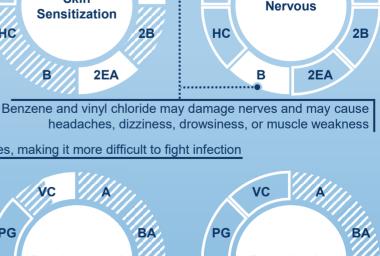


2EA

which can all increase risk.

Respiratory

PG BA Skin Sensitization HC **2B** 



VC

HC HC

and exposure during pregnancy may harm the fetus What Does this Mean?

- The community was exposed to many chemicals after the derailments, but we report health hazards from exposure to a single chemical. An individual's risk of health effects depends on the nature of the exposure and individual characteristics. For example, some people may have higher and longer exposures; exposure to many chemicals; genetic predispositions; and existing diseases or stress,