

Cancer Clusters in the USA – What do the last twenty years of state and federal investigations tell us?

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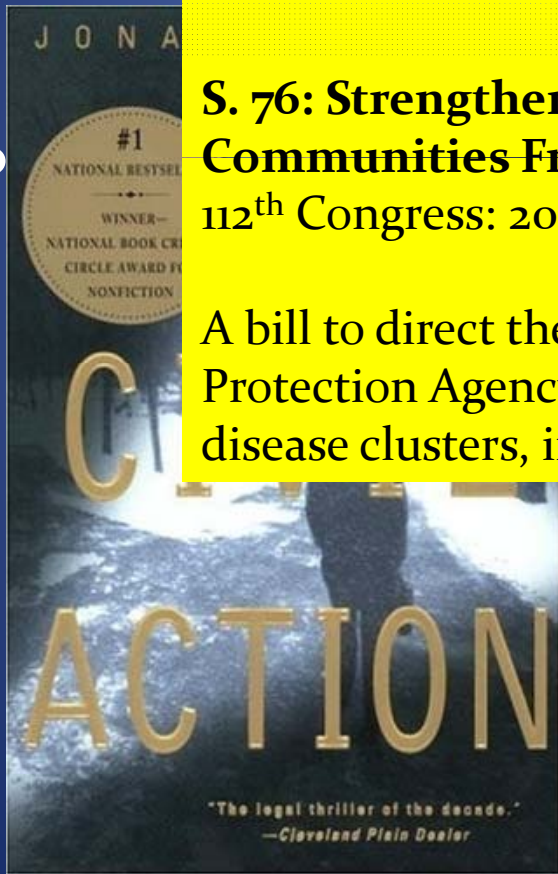
Disclosure

This research was supported by the American Chemistry Council (ACC).

ACC was not involved in the design, collection, management, analysis, or interpretation of the data.

Background

- Cancer clusters remain the focus of public



S. 76: Strengthening Protections for Children and Communities From Disease Clusters Act

112th Congress: 2011-2012

A bill to direct the Administrator of the Environmental Protection Agency to investigate and address cancer and disease clusters, including in infants and children.



Study motivation

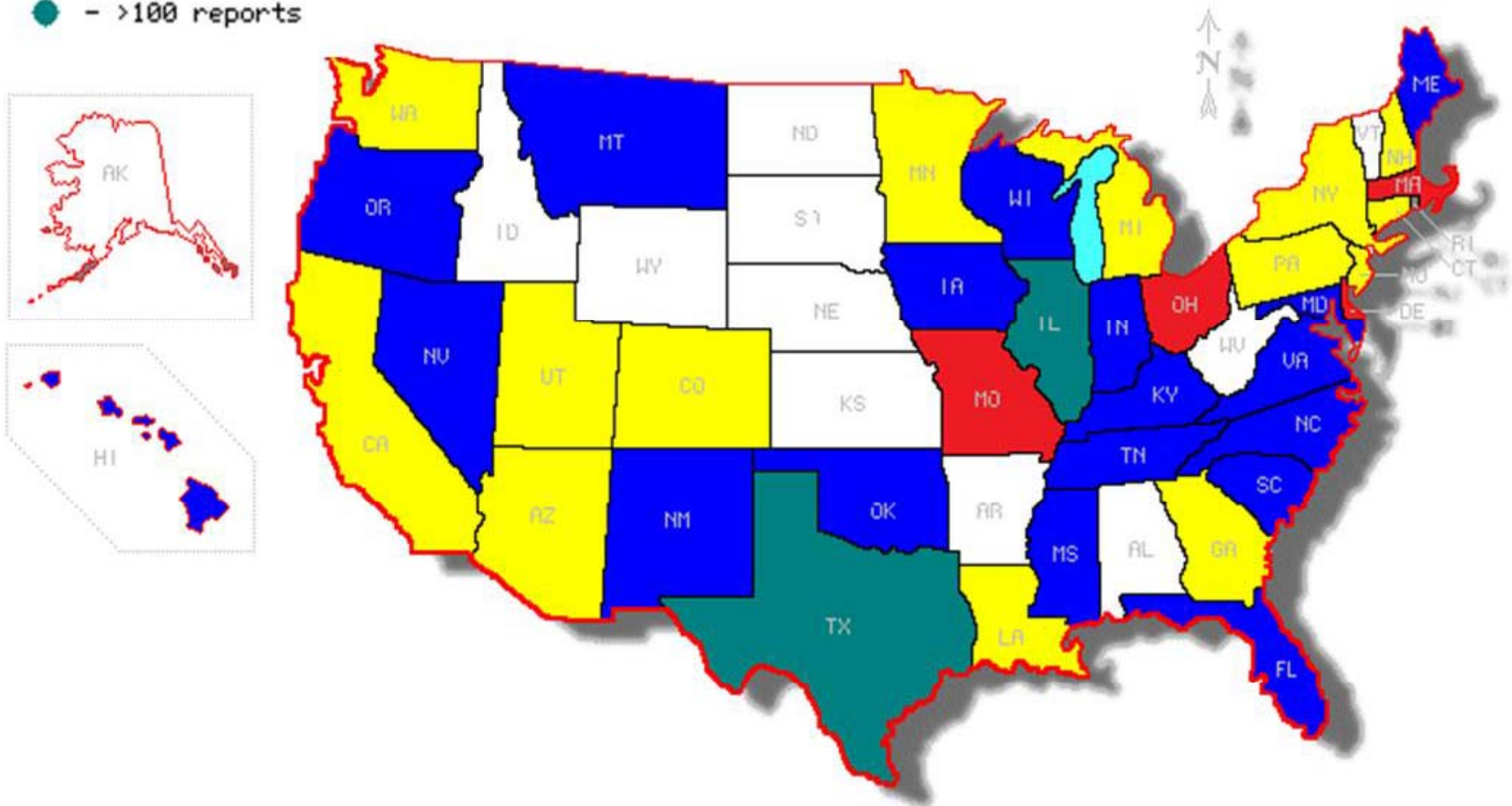
- The 1989 National Conference on Clustering of Health Events reviewed evidence from the 70s and 80s
- Conference demonstrated that cluster investigations are rarely, if ever, informative
- We sought to answer the question:
Have cancer cluster investigations conducted in the past 20 years improved our understanding of cancer etiology, or informed cancer prevention and control?

Methods

- Contacted health departments of 50 states and DC (phone, e-mail, or website) to find publicly-available reports issued since 1990
- Examined available federal documents and peer-reviewed literature
- All investigations categorized with respect to:
 - cancer type(s)
 - hypothesized cause(s)
 - evidence to support perceived increase in incidence
 - conclusions about a link between cancer(s) of concern and hypothesized exposure(s)

Results

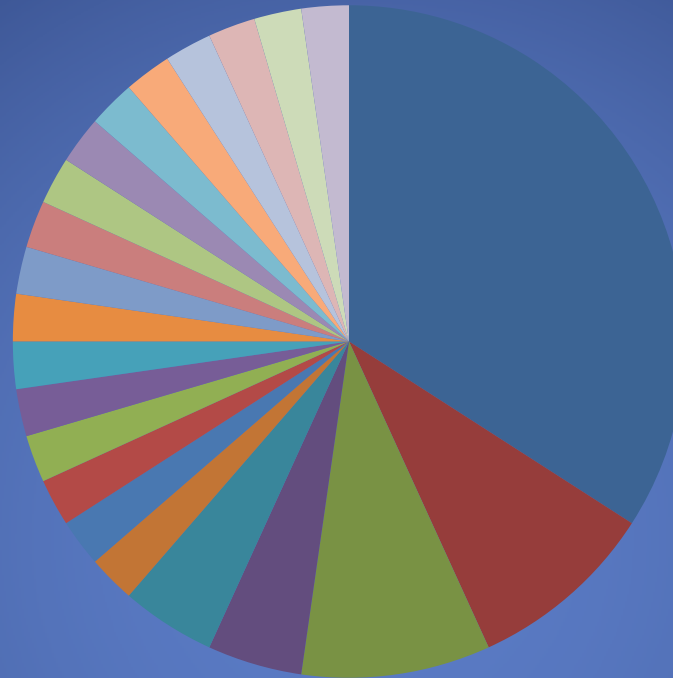
- - 0 reports
- - 1-2 reports
- - 3-10 reports
- - 11-30 reports
- - >100 reports



Results

- Three most commonly reported cancer clusters by site:
 - Brain
 - Breast
 - Leukemia/myeloma
- Three most common exposures of concern:
 - Trichloroethylene
 - Benzene
 - Dioxin

Example: Cancers linked to TCE



■ All cancers (15)

■ Brain/CNS (2)

■ Abdomen

■ Kidney

■ Astrocytoma

■ Wilm's tumor

■ Lymphoma

■ Stomach

■ Breast (4)

■ Lung (2)

■ Colon

■ Pancreas

■ Sympathetic nervous system

■ Bone

■ Hodgkin's disease

■ Leukemia (4)

■ Uterus

■ Testes

■ Childhood - all

■ Neuroblastoma

■ Soft tissue sarcoma

■ Non-Hodgkin's lymphoma

Summary of findings

Number of
cancer clusters
investigated

567



Number of
confirmed
cancer
clusters

72



Number of
confirmed
cancer clusters
associated
with an
environmental
exposure

3



1



Number of
cancer
clusters
with
established
cause

Questions moving forward

- Should we continue community cancer cluster investigations?
- If so, is there room for new hypotheses?
 - Infections?
 - Lifestyle?
 - Health care-related factors?
- Is this time for a new round of multi-disciplinary national discussions?

Acknowledgement

We are grateful to all state Health Department representatives who took the time to speak with us and to search their records for reports of cluster investigations

We could not have conducted this research without their assistance.