

ATSDR Public Health Activities Related to Red Hill Fuel Releases

Ben Gerhardstein, MPH
Environmental Health Scientist
ATSDR Region 9

Daniel Nguyen, PhD, MSPH
Epidemic Intelligence Service Officer,
CDC/ATSDR
Assigned with Hawai'i State Department
of Health

Red Hill Fuel Tank Advisory Committee
November 9, 2022

Agency for Toxic Substances and Disease Registry (ATSDR)

- **Federal public health agency**
 - Respond to environmental health emergencies;
 - Investigate health concerns at contaminated sites;
 - Support state and local health partners.
- **Regional offices provide national presence**

ATSDR's two work streams at Red Hill

▪ Health survey

- Better understand health symptoms people have experienced after the November 2021 Red Hill fuel release

▪ Public health assessment activities

- Evaluate exposures and health risks related to Red Hill fuel releases since 2005

HEALTH SURVEY

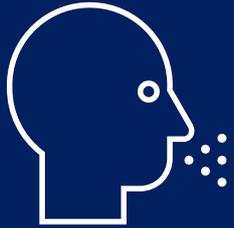
Daniel Nguyen

Impacts Associated with the Joint Base Pearl Harbor-Hickam Water System Contamination: Assessment of Chemical Exposures (ACE) Investigations

Oahu, Hawai'i

Red Hill Fuel Tank Advisory Committee Meeting
November 9, 2022

Previous studies suggest exposure to jet fuel may impact the respiratory system, gastrointestinal tract, and nervous system



Coughing



Difficulty
breathing



Abdominal
pain



Fatigue

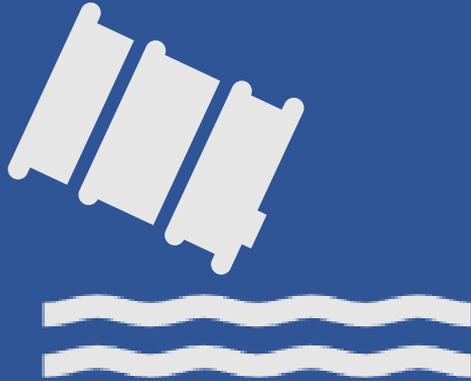


Convulsions

~9,700
households
potentially
exposed to jet
fuel in their tap
water



Dec. 2021: Hawai'i Department of Health (HDOH) request for CDC/ATSDR to conduct an investigation



Assess the impact
of the incident



Provide
recommendations

Assessment of Chemical Exposure (ACE) Investigation

ACE Toolkit

Surveys

Consent
Forms

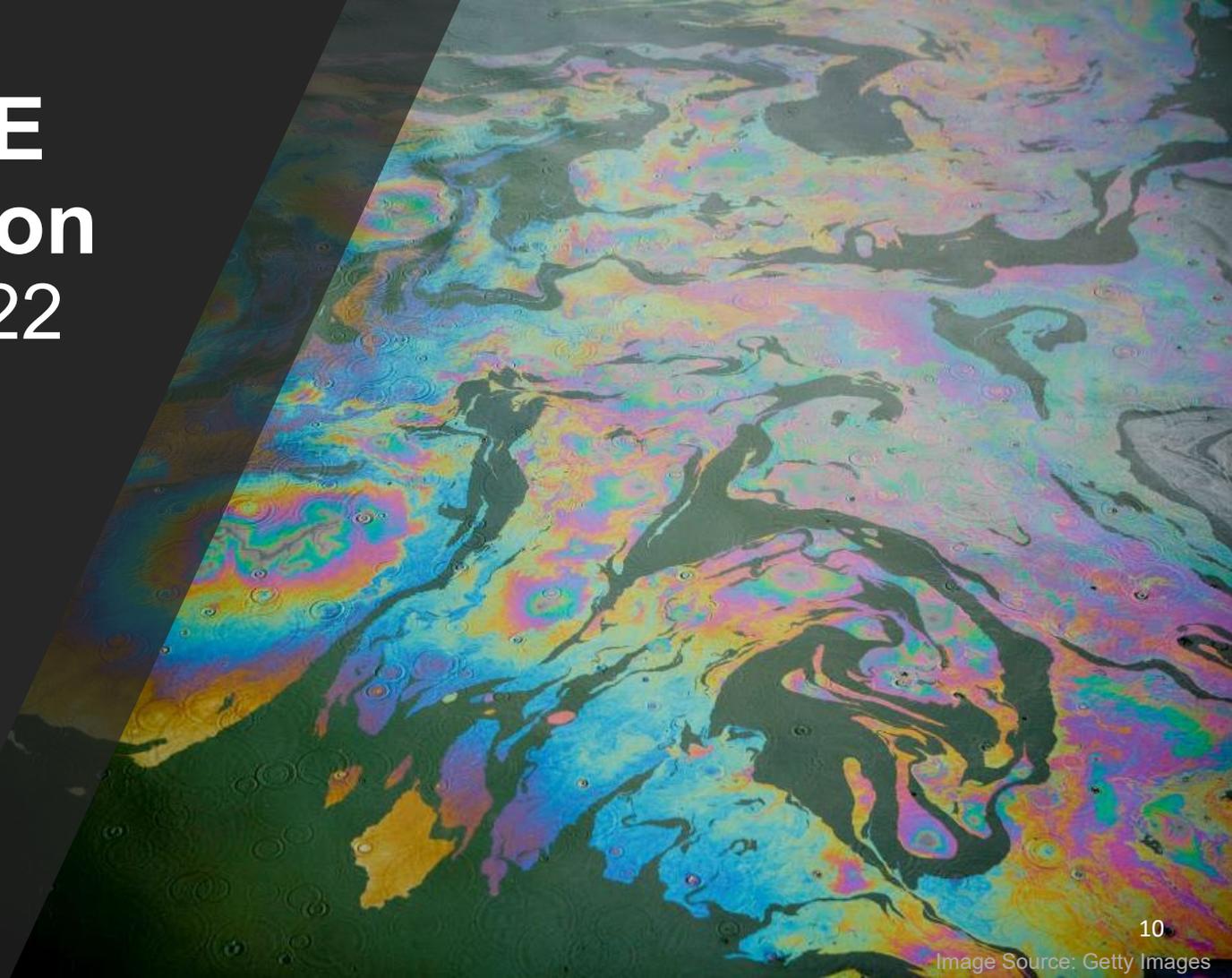
Training
Materials

Databases

Customize

Assessment
after Chemical
Incident

Initial ACE Investigation January 2022



Survey recruitment

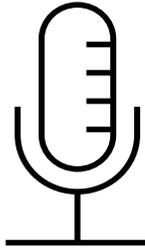
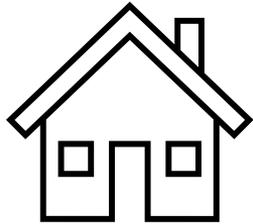
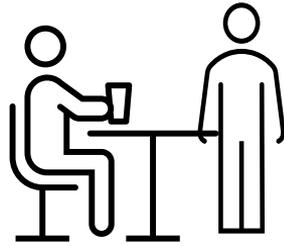
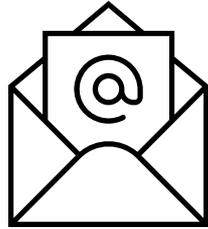
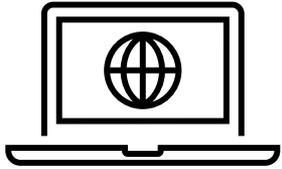
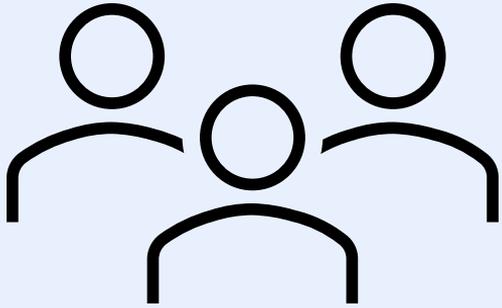


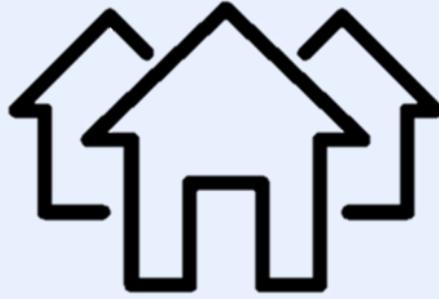
Photo used with permission from Epi-Aid study team

CDC team member conducting in-person interview at Kapilina's Beach Park



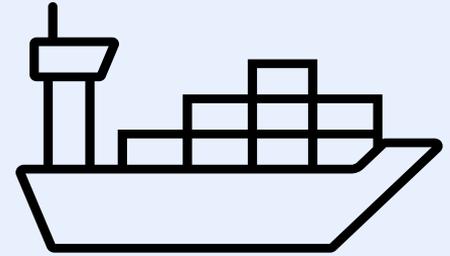
2,289

**participants
submitted
surveys
electronically**



14%

**of affected
households
were
represented**



88%

**were affiliated
with the military**

Initial ACE investigation key findings



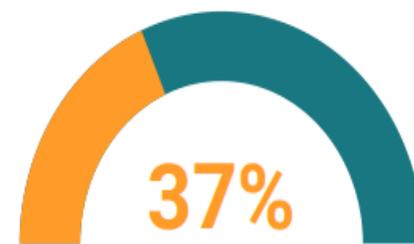
reported at least one new or worsening health symptom



switched to an alternate water source



of people with symptoms saw improvement after switching to an alternate water source



sought medical care.
17 people were hospitalized overnight

Initial ACE investigation recommendations

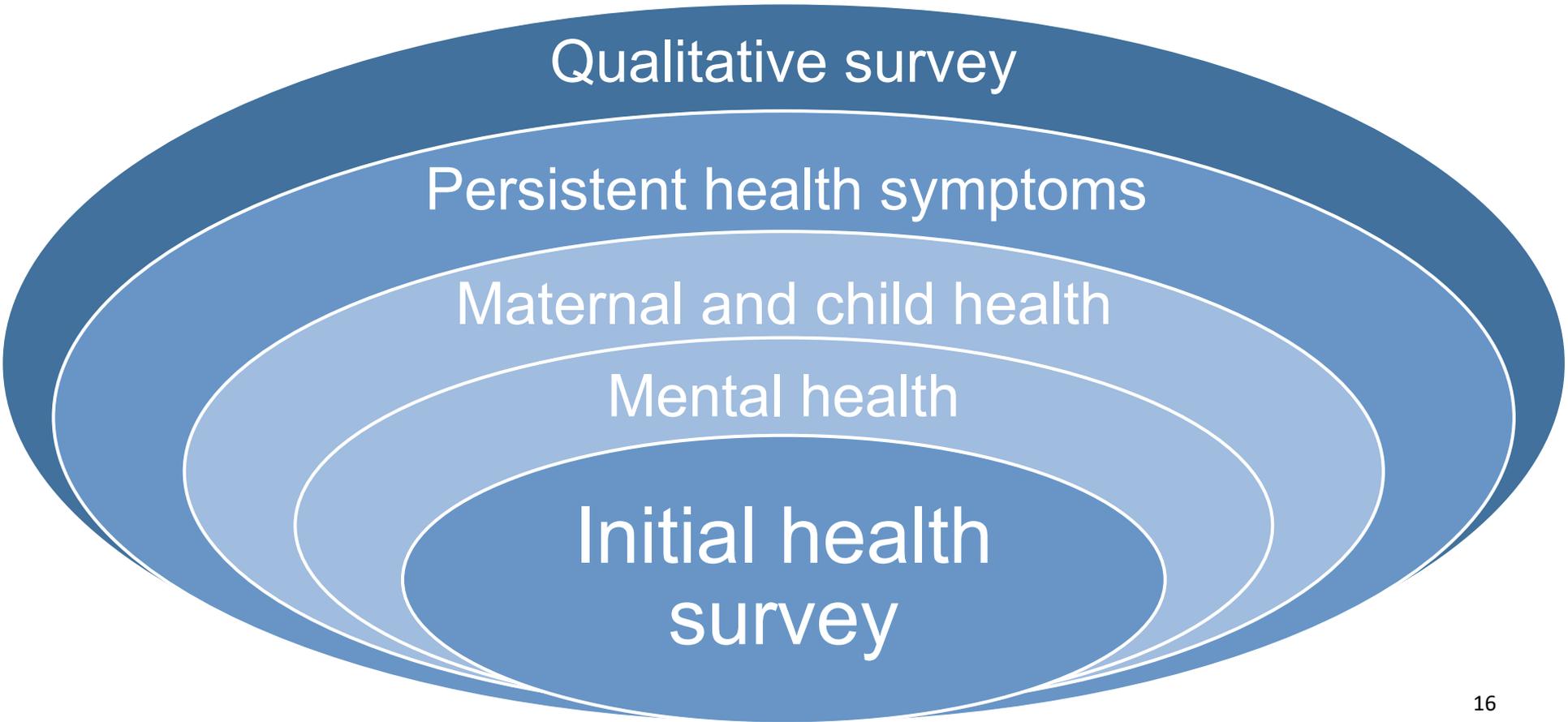
- Ensure the safety of the water system & build trust in it
- Conduct multi-agency hotwash
- Coordinate communication and actions across agencies
- Educate health providers
- Use ATSDR's Community Stress Resource Center
- Consider additional health investigations: 6-month follow-up ACE investigation



Follow-up ACE Investigation September 2022



Follow-up investigation design





Navy Water System Contamination Follow-Up Health Survey



How to Participate

Scan the QR code

Online: tinyurl.com/RedHillWater

Phone: 404-567-3256

Email: ATSDRACE@cdc.gov

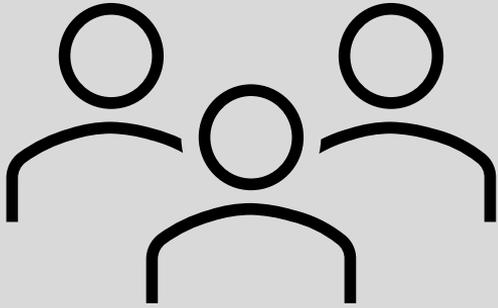
The survey will be available online until September 23, 2022



Survey recruitment

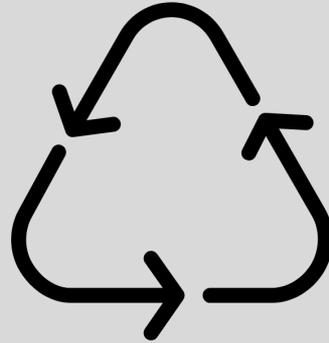


For more info, visit health.hawaii.gov



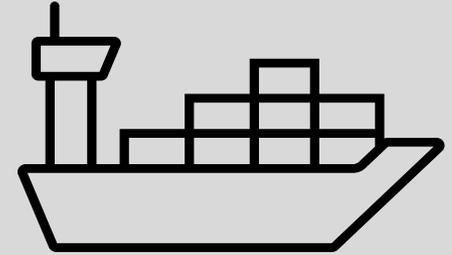
986

**participants
submitted
surveys
electronically**
representing 8% of
affected households



61%

**returning
participants**

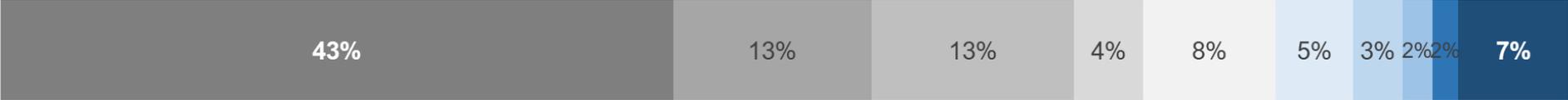


90%

**were affiliated
with the military**

Participants are very concerned about tap water safety

Before the incident



■ Not at all concerned ■ Very concerned

In the past 30 days



■ Not at all concerned ■ Very concerned

Do you think the water is safe now?

- "Absolutely not. Please bring back water distribution."
- "Not particularly for consumption, pets included."
- "No, I truly believe there are still issues with the water."

Many participants report worse health after the incident

41%

of all participants reported worsening of an existing condition

31%

reported a **new diagnosis** from a healthcare provider since the incident

25%

of those with new diagnoses had no pre-existing conditions prior to the incident

Many participants report worse health after the incident

55%

reported worse physical health after the incident when compared to before

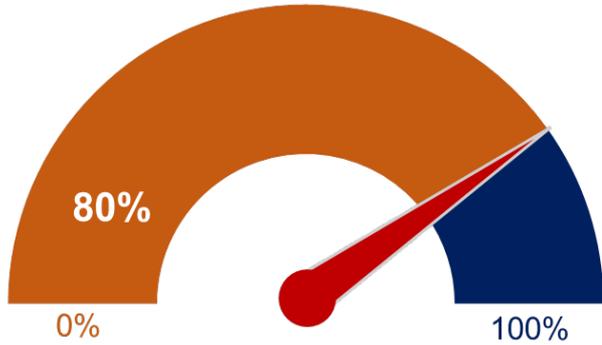
50%

reported worse mental health after the incident when compared to before

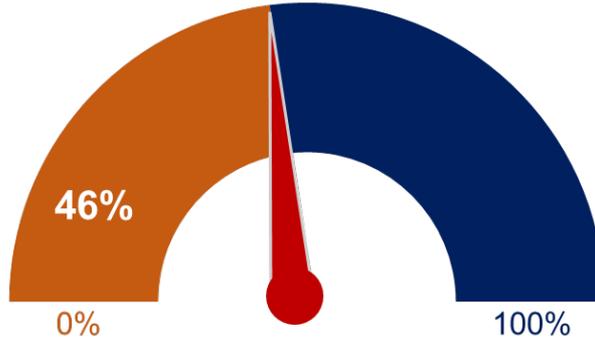
21%

kept from usual activities for 14+ of the past 30 days due to poor health

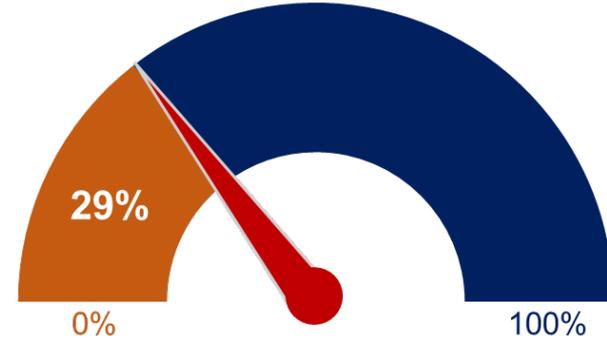
Follow-up ACE investigation: key findings



80%
reported
symptoms in the
past 30 days

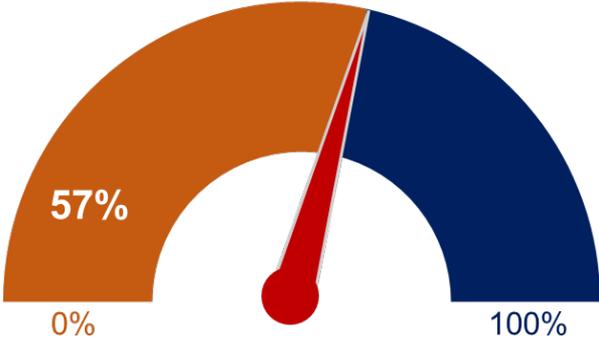


46%
very concerned
about tap water



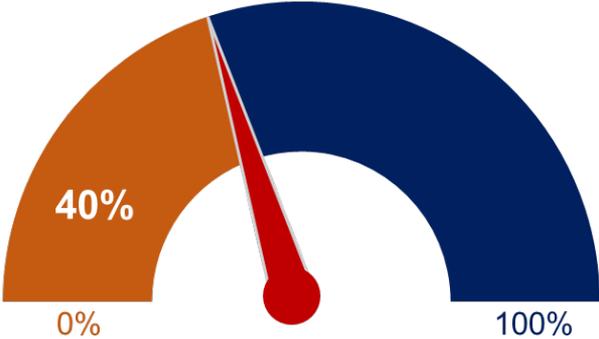
29%
smell or taste
petroleum or see a
sheen in tap water

Follow-up ACE investigation: key findings



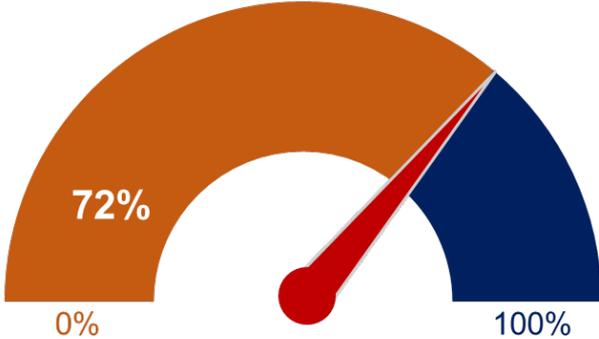
57%

think about the incident **every day**



40%

reported **anxiety**



72%

who were pregnant (n=47) since the incident reported a **complication**

Note: small numbers, limited in drawing conclusions from these data

Follow-up ACE investigation recommendations

Develop multipronged strategy to rebuild confidence in the drinking water system.

- Continue regular drinking water monitoring at residences and businesses on the water system.
- Consider third-party split sampling to build trust as well as on-demand testing for people with concerns, even if it is above the quota.
- Ensure transparency with testing/monitoring plans and drinking water quality results that are easily accessible and understandable for the public.

Follow-up ACE investigation recommendations

To rebuild trust, multi-agency workgroups are key.

- Establish joint emergency preparedness plans and exercises among partners responsible for addressing potential future drinking water contamination.
- Develop emergency response protocol for rapid environmental and biological sampling.
- Ensure consistency of communication from leadership and parity of resources and support given to affected communities, including civilians.

Follow-up ACE investigation recommendations

Assist clinical providers in registering and supporting affected communities.

- Provide guidance on signs and symptoms of petroleum exposure and the effects that acute and chronic stress can have on health.
- Develop referral systems for mental health and trauma support.

Follow-up ACE investigation recommendations

Support affected communities.

- Acknowledge the disruption the incident caused to daily life.
- Facilitate access to mental/physical health care and support systems, locally and for those who moved away.

Follow-up ACE investigation recommendations

Further investigate health impacts.

- Consider conducting a review of Department of Defense (DOD) and other medical records for exposed individuals.
 - Include syndromic surveillance and birth records data
 - Link to Defense Occupational and Environmental Health Readiness System (DOEHRS)
- Identify and characterize ongoing and long-term health effects in affected individuals.
 - Consider developing a third-party registry (ex. Flint Registry)
- Provide environmental sampling data for CDC/ATSDR public health assessment activities.

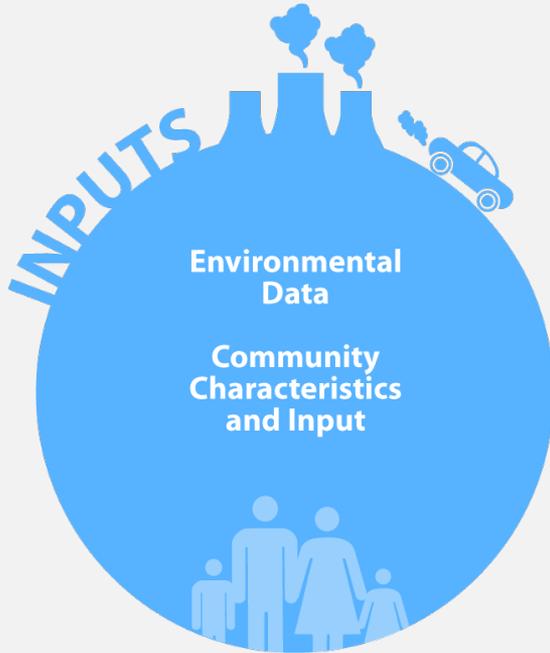
PUBLIC HEALTH ASSESSMENT ACTIVITIES

Ben Gerhardstein

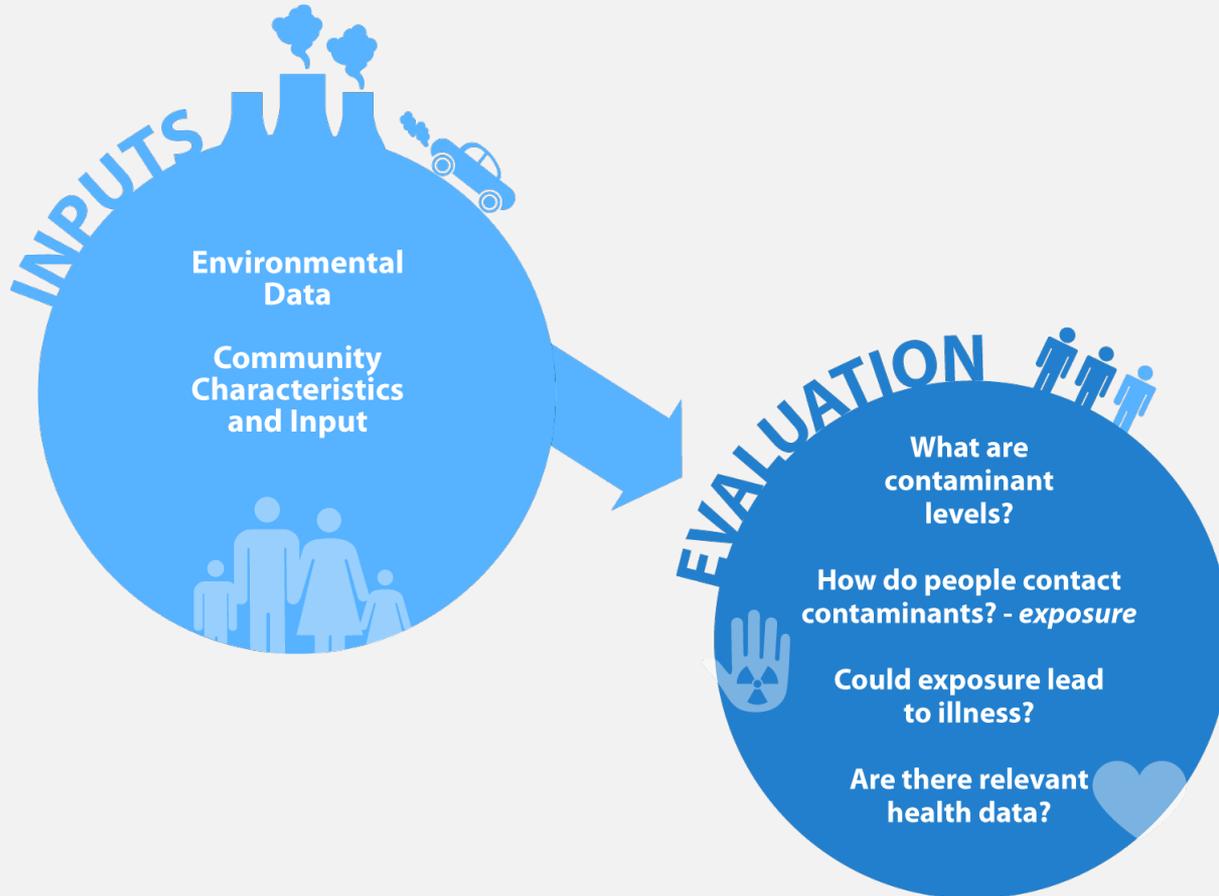
Public Health Assessment activities at Red Hill

- Evaluate existing environmental and health data on releases from the Red Hill facility since 2005
- Determine whether and how exposures could harm people's health
- Identify data gaps
- Make recommendations to protect health

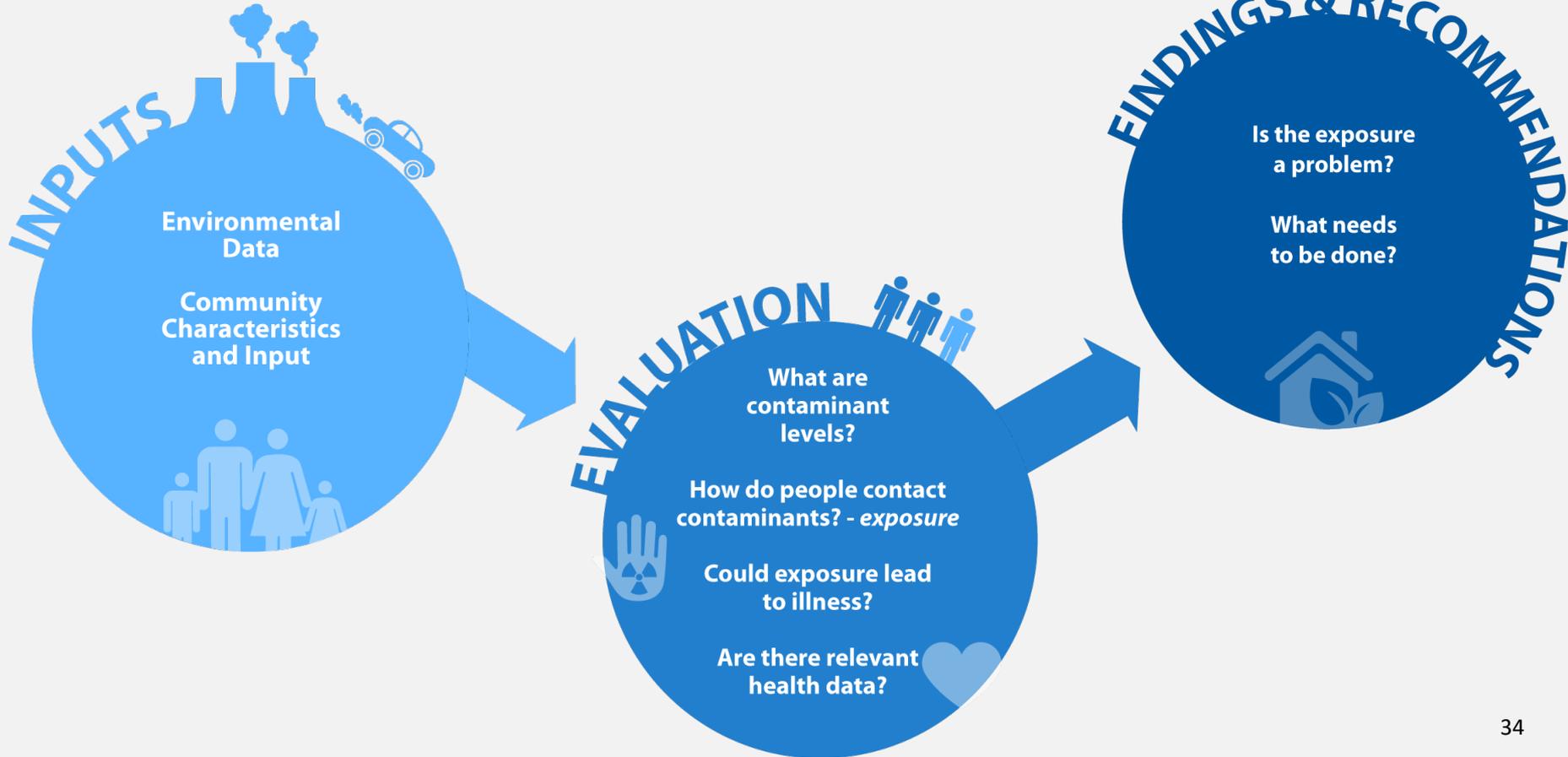
Public health assessment process



Public health assessment process



Public health assessment process



Commitment to community engagement

- **Will involve current and former residents in the process to better understand experiences and concerns**
 - Meetings, webinars, and other opportunities to dialogue
- **Will keep community members up to date on our progress**
 - Contact Jamie Rayman (JRayman@cdc.gov) to receive email updates

Status of Red Hill public health assessment activities

- Received Hawai'i Department of Health request in July 2022
- Assembled an ATSDR team
- Scoped the assessment
- Asked the Navy for data
- Communicating with the public and other organizations about progress of ATSDR's work streams

Stay tuned: health-focused webinar in early 2023

- **ATSDR plans to present during EPA's Red Hill Webinar Series**
 - More detailed findings from the health surveys
 - Updates on the public health assessment activities

Questions?

Public health assessment: Ben Gerhardstein: bgerhardstein@cdc.gov

Health survey: Daniel Nguyen: DNgyuen3@cdc.gov

For more information, contact ATSDR
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.atsdr.cdc.gov
Follow us on Twitter @CDCEnvironment

The findings and conclusions in this presentation have not been formally disseminated by the Centers for Disease Control and Prevention/the Agency for Toxic Substances and Disease Registry and should not be construed to represent any agency determination or policy.

