

## Appendix A

### Summary of ACE Investigations

#### 1. Methyl bromide exposure at a condominium resort, U.S. Virgin Islands, 2015 (under OMB No. 0923-0051)

- Requesting agency: U.S. Virgin Islands Department of Health
- Data collected:
  - Interviewed potentially exposed persons including pest control company personnel, emergency responders, condominium staff members, and resort residents, vacationers, and visitors
- Sampling: None. Identified persons who were potentially exposed to methyl bromide (n=37); 17 persons were contacted, among the 20 for whom contact information was available, 16 were interviewed
- Response rate: Interviewed 16/20 (80%) of the potentially exposed who had available contact information
- Analysis:
  - Descriptive analysis
- Outcome:
  - Investigation revealed that the same company used methyl bromide at the same location 5 months earlier.
  - Raised awareness for pest control companies that methyl bromide is banned in homes and other residential settings.
  - For clinicians raised awareness about the toxicologic syndrome that exposure to methyl bromide can cause.

#### 2. Flint rash investigation, Michigan 2016 (under OMB No. 0923-0051)

- Requesting agency: Michigan Department of Health and Human Services (MDHHS)
- Data collected:
  - Surveyed persons with Flint municipal water exposure reporting a current or worsening rashes with onset on or after October 16, 2015
  - Water samples from homes
  - Reviewed dermatological medical charts
- Sampling:
  - Convenience sample of rash referrals from the following sources (n=429):
    - Public calls to 211
    - US EPA home visit/CDC-ATSDR consultation
    - MDHHS/Michigan Department of Environmental Quality home visit
    - Doctors' offices
    - Genesee County Health Department
    - MDHHS Division of Environmental Health's MITOXIC hotline
    - Governor's Constituency Services Office
  - Homes for water samples were determined by persons who completed rash survey and agreed to participate in water quality testing (n=170). Testing was completed by the EPA
  - All charts of the patients who met the case definition were reviewed (n=122)
- Response rate:
  - Interviewed 390/429 (90.9%) of individuals that were classified as a case

- Water sample analysis were included from 169/170 (99.4%) due to one of the households reported having well water and not using Flint river
- Analysis:
  - Descriptive statistics (e.g. frequencies) for questionnaire data and medical chart abstractions
  - To analyze combined data:
    - To evaluate the distribution of the data for the levels of select contaminants Shapiro-Wilks test was used to determine the normality of the data within the *not possibly related* and *possibly related* rash groups
    - Wilcoxon Mann Whitney test was used to evaluate the possible relationships between an individual's exposure to different levels of select contaminants and their rash diagnoses.
- Outcome:
  - When the city was using water from the Flint River, there were large swings in chlorine, pH and hardness. These swings are one possible explanation for the eczema-related rashes.
  - In Flint's water now, the chlorine, water hardness, metals, and pH are not at levels that would cause skin problems.
  - Stress can make most skin problems worse and people in Flint stated there is a lot more stress since the Flint water crisis.
  - A factsheet was developed about the Rash study, what to do if they still have a rash, who to contact, and stress management.
  - Findings suggested that diagnoses made after October 2015 were more likely acute and of limited duration, and less likely to be clinically severe, compared with chronic diagnoses such as eczema, that were more likely to have manifested prior to the transition in water source.
  - Was unable to find a consistent pattern relative to the rashes and current water quality, our findings were limited by the lack of historical data.

### **3. Flint rash dermatology follow-up was conducted with the public, Flint Michigan, 2016 (under OMB No. 0923-0051)**

- Requesting agency: Michigan Department of Health and Human Services (MDHHS)
- Data collected:
  - Follow-up interviews were conducted with patients who sought dermatological care
- Sampling: No. Interviewed patients who sought dermatological care for Flint rash exposure in April 2016.
- Response rate: Interviewed 43/61 (70.5%)
- Analysis: Ongoing
- Outcome: Because the project is still on-going we don't have all the results. However, the follow-up interviews resulted in improving the exam and referral processes that were still on-going at the time.