

Chemical Exposures associated with a Waterpark

July

Hennepin County

On July 31, 2017, Minnesota Poison Control called the Minnesota Department of Health (MDH) to report a possible chemical poisoning among staff at an indoor waterpark at a hotel in Maple Grove, Minnesota. Poison Control reported that five waterpark staff were seen at area emergency departments on the morning of July 29 after they began experiencing respiratory symptoms. MDH informed Hennepin County Public Health (HCPH) epidemiologists on July 31, and an investigation was initiated.

A HCPH sanitarian conducted a pool safety inspection and collected contact information for impacted staff on July 31. HCPH epidemiologists interviewed waterpark staff to evaluate the extent of their exposure and determine the severity of their illness.

A case was defined as a person with rash or eye, nose, or throat irritation within 24 hours of visiting the waterpark.

Six cases were identified; all were staff of the waterpark. Of the six cases, five (83%) reported coughing, five (83%) burning in their throat/lungs, five (83%) nausea, three (50%) difficulty breathing, three (50%) headache, three (50%) dizziness, three (50%) eye issues, two (33%) runny nose, one (17%) gagging, and one (17%) sweating.

The median incubation period was 10 minutes (range, 0 to 110 minutes) after exposure to the waterpark on July 29. The median duration of illness was 7.9 hours (range, 15 minutes to 24 hours) for the four individuals who had recovered at the time of interview. One case was briefly hospitalized, four cases were taken to area emergency departments by ambulance and released, and one case had complete resolution of symptoms upon leaving the pool area.

All six cases spent time in the pool area on the morning of July 29. Due to lack of non-ill controls, a case-control study could not be conducted.

Upon inspection of the waterpark by HCPH sanitarians on July 31, it was reported that shortly after 7:00 a.m. on July 29, a strong chlorine smell was noted in the pool area. Poolside chemical tests indicated elevated chlorine levels in the wading pool; this was later confirmed by the Fire Department, which detected a high chlorine reading in the air. Ventilation was increased, the pool area was evacuated and closed, and Emergency Medical Services evaluated five employees due to their exposure.

Waterpark staff drained and refilled the wading pool, checked water chemistry, and reopened the pool area around 1:00 p.m. on July 29.

A HCPH sanitarian interviewed the chief pool engineer after the incident. It was reported that the night before the incident, the pool operator noticed that the oxidation-reduction potential (ORP) was low and added an unknown amount of chlorine after the waterpark was closed. The operator could not

recall how much chlorine he added and did not document the amount. There was also a question of whether he added calcium hypochlorite or sodium hypochlorite.

This was a chemical inhalation exposure outbreak associated with an indoor waterpark. Elevated chlorine levels were detected early in the morning, and the pool area was evacuated and closed to prevent patron exposures. An undocumented excessive amount of chlorine added by the pool operator the night before the incident was the likely cause of the outbreak.