

Scenario: Mr. Jones is a 50 year old man who complains of headache, nausea, flu-like symptoms and rash after the HVAC system in his office building was cleaned with a cleanser. Did the HVAC cleanser cause Mr. Jones' symptoms?

1. What is a “causation analysis”?

A causation analysis is a scientifically supported approach to analyzing individual case-specific causation in the medical literature. It is a four step process that includes the following items:

- Diagnosis – Is the medical diagnosis accurate and valid?
- Exposure Assessment – What was the agent to which the person was exposed?
- Epidemiologic Causation – Has that agent been known to cause the outcome of interest (i.e. illness or injury)?
- Individual Causation – Did the agent cause the outcome of interest in this case?

2. What is an exposure assessment?

An exposure assessment is a scientifically supported approach that attempts to determine the particular agent to which the person was exposed; how the exposure occurred, i.e. inhalation, ingestion or through the skin (dermal); the quantity of agent to which the individual was exposed, i.e. dose; and how often and for how long the exposure occurs/occurred, i.e. frequency and duration.

3. I have heard the terms “correlation.” Is this the same as “causation”?

No. If an agent is correlated or associated with an outcome, the agent does not necessarily cause the outcome. In causation, one must look at the overall picture to make this determination. The most important factors to consider are the timing, dose, duration and frequency of the exposure, the latency and incubation period of the illness and/or symptoms, source, etiology and pathway of exposure and other factors such as other environmental/occupational exposures, alternative diagnosis, family history, smoking history, exercise, hobbies, etc.

To best describe the difference between correlation and causation, consider the following example. According to data found from the US Census Bureau and US Department of Agriculture, there is a 99% correlation between the divorce rate in Maine and the per capita consumption of margarine in the US between the years of 2000 and 2009. Although they are correlated, it would be ludicrous to believe that one would cause the other.

4. I have a situation similar to the one above. What should I do?

An incident response assessment should be conducted to determine if you or one of your employees or business associates has fallen ill due to an agent at your work site. A team of medical professionals and environmental specialists can manage the incident, evaluate those who are ill and conduct town hall meetings to effectively communicate with residents/occupants, employees, families, media and others who are impacted by the potential exposures.

For more information related to causation analysis and exposure assessments please contact us at solutions@coagencyteam.com