

## **Environmental/Communicable Disease Local Public Health Impact Stories**

**Livingston County:** The health department nurses referred a young woman to their Environmental Sanitarian to have her private well tested. She had already had two miscarriages since moving to her husband's family farm. Her husband had also noted increased fatigue since moving there. The couple had two sons before moving to the family farm. The well tested 10 times over the recommended level for nitrates (90ppm was the level found with 10ppm being the maximum contaminant level). Well was only 20ft deep. The couples was advised to stop using the water and hook on to rural water source. One year later after the couple obtained rural water for their home the young woman gave birth to a healthy son.

**City of St. Joseph:** "Tina", a young college student called home to parents and reports, "I'm really sick I haven't gone to class for 2 days and on Friday I'm coming home." On Friday the student's parents were shocked to see yellow looking child. The student was hospitalized and a diagnosis of Hepatitis A was made. The student returned home and a public health nurse reported the student had been linked to a restaurant related Hepatitis A outbreak. Public health provided education and continued to monitor the student along with the family/ roommate. The student never finished a speech therapy degree. The student pursued nursing and is currently serving in public health.

### **City of St. Louis:**

A resident from a condo association called in a complaint about the unsanitary condition of the vacant unit below her. Upon arrival City of St. Louis Health Department staff was able to confirm that there had been a leak in the vacant unit, which caused the floor of the unit to cave into the basement, resulting in refuse and waste water in the basement.

Staff was also able to confirm from a plumber's report that the complainant's kitchen sink was not properly draining due to a clog in the sewer drain which she shared with the vacant unit. The plumber could not clear the blockage from her unit. The odor in the building was an overwhelming mixture of rotten waste water and mold.

For several months, the condo association was unable to get the cooperation of the owner of the vacant unit. Meanwhile, the residents were enduring terrible odors, allergies from mold growth, and inability to use their basement or kitchen sink. The City of St. Louis Health Department's environmental health officer was able to make contact with the property owners quickly after the initial inspection and issued them a violation notice. They responded by hiring a professional restoration company. When returning for re-inspection, the restoration company owner claimed this was one of the worst jobs he had ever seen. Because of the clog in the sewer drain, any time the residents in the

upstairs unit used their kitchen sink, the waste water would back up into the downstairs unit's sink and it eventually spilled over onto the counters and floor, causing the floor to cave into the basement, and creating an environment perfect for mold growth. Because the waste water came from the kitchen sink, it contained food particles which became putrid and created an awful odor. The restoration company removed all of the damaged structures (floor, cabinets, walls), unclogged the drain, and removed the mold from the premise. Needless to say the residents of the condo association were very happy to have the problem resolved.

**Columbia-Boone County:** A few years ago, Columbia-Boone County Department of Public Health and Human Services had a family that called Animal Control with concerns about exposure to a bat. They had discovered a bat in the home, with the possibility of exposure while sleeping. The family included small children that could not tell if they had contact with a bat. The family had captured a bat, but had missed the deadline for testing on that particular Friday. Between the courier and the testing schedule, the testing would not be performed until the following Tuesday, almost five days after exposure. There was a concern for having this family wait that long to start Rabies Post-Exposure Prophylaxis (PEP) if the bat tested positive. The local health department administrator spoke with the Department of Health and Senior Services, and arrangements were made for the bat to be transported to Jefferson City on that Friday, and the State Lab would do additional testing that day in order to expedite results. By the end of the day, the family was notified the bat from their home tested negative for rabies, and they would not need to go to the Emergency Room and start PEP for the four members in their family. This saved the family over \$10,000 in medical costs. If the bat had been positive, it would have possibly prevented the onset of a deadly disease.

**Cape Girardeau County:** Cape Girardeau County Public Health Center along with MoDHSS and MoDNR investigated an *E coli O157:H7* outbreak at a recreational facility that serves many of the local youth with different activities such as soccer, gymnastics, martial arts and fitness classes. The water at the facility was discovered to be the likely source of illness. Upon learning this, the LPHA implemented swift control measures such as requiring that the facility stop using the water for drinking purposes for those that participated at the facility. Without the appropriate funding, the LPHA would not have been able to enforce these control measures. Because of their actions children now that attend the facility have bottled water to drink and they can use the restroom and wash their hands (prior to the recent court proceedings the facility was required to stop using the water for hand washing as well) both cornerstones of good public health practice.

**Cape Girardeau County:** A couple of years ago, the Cape Girardeau County Public Health Center had an individual submit a skunk for rabies testing, which came back

positive. The individual and his wife lived in a very rural, remote part of the county. Both the husband and wife were had exposure to the rabid skunk as did an indoor female dog and her puppies. It took a combination of Public Health Nurses and Environmental Public Health Specialists to acquire rabies post-exposure treatment for the human exposure and investigate the proper treatment for the animals. After numerous trips and phone calls to this very rural area, it was determined that in addition to the indoor female dog and puppies, there were 23 other "outside" dogs that had probable exposure to the rabid skunk. The county does not have an animal vaccination ordinance or requirement, and none of these animals had been vaccinated. Thus, for 6 weeks, Public Health was the lead on a team (law enforcement, Dept. of Agriculture) that made weekly quarantine checks to the residence to assure that all animals were confined and no further evidence of rabies was identified.

**Multi-County outbreaks:** In the spring of 2012, an outbreak of Salmonella Montevideo occurred that was associated with chick exposure from birds purchased through a Missouri hatchery. Local public health agencies were an essential part of the investigation of this outbreak, with 28 Missouri residents from numerous counties being identified as part of this outbreak. This outbreak eventually was found to affect 93 persons in 23 states from as far away as Alaska, Florida, Massachusetts, and California (see <http://www.cdc.gov/salmonella/montevideo-06-12/index.html>). Missouri LPHAs were instrumental in investigating and identifying not only the persons affected by this outbreak, but also played a key role in helping MODHSS and CDC track down the suspected source of exposure. Because of their hard work, Missouri LPHAs helped identify the source of a communicable disease that could have sickened many more persons.

**Joplin City:** MoDHSS received a report of a suspected pertussis case. During the course of the investigation the Joplin City Health Department discovered that the suspected case was also the mother of a premature child that was in the hospital at the time. The child's physician had stated to the mother that due to the potential risk for a bad outcome if the child contracted Pertussis, he would not release the child to the care of the mother until she and all members of the household where the mother resided received appropriate prophylaxis for pertussis. The Joplin City Health Department worked to identify household members and the most effective course of action to ensure that the child was protected from exposure. The LPHA determined that there were over thirteen individuals living in the mother's household and that none reported having received the Tdap vaccine used to prevent Pertussis. Joplin City Health Department staff went to the mother's home and provided immunizations to eight eligible household members and children for the disease. The five that were not eligible to receive Tdap were referred to their primary care physician for antibiotic prophylaxis, which they all received. In addition, during their evaluation and immunization of the household

members the LPHA identified one individual that had unusual skin lesions that concerned them. They recommended that the individual consult a physician as soon as possible to identify the cause of his condition and to ensure that the condition was not a disease of concern for the child. Because all of the persons in the household received immunization or prophylaxis and the mother completed her prophylaxis, the child was subsequently allowed to come home. The concerted efforts of the Joplin City Health Department consequently affected not only the health of the affected person, but also protected her child and those that might have exposed it to a potentially serious disease.

**Kansas City:** One of the duties of a Kansas City Health Department air quality inspector includes performing periodic surveillance of residential/industrial neighborhoods to determine possible air pollution sources. Clues of possible air pollution sources can include smoke, odors, and dust. It was during a periodic surveillance of an east side neighborhood that the air quality inspector observed smoke originating behind several homes. Upon further investigation, a property owner burning household waste behind a garage was discovered. The property owner had become overwhelmed by the fire and it was starting to spread to neighboring yards, utility poles and a garage. Besides the obvious fire safety hazard, a large amount of toxic smoke was being created. Burning household waste releases many pollutants including dioxins. According to the Environmental Protection Agency, dioxins are highly toxic, long lasting organic compounds. They are dangerous even at low levels and have been linked to several health problems, including cancer and developmental and reproductive disorders. Besides dioxin, the smoke from this type of fire can release additional hazards such as particulate matter, sulfur dioxide, lead, mercury, and hexachlorobenzene. These hazards can have immediate effects (Asthma, emphysema, or other respiratory illnesses) and long term effects (Nervous system, kidney damage, liver damage, reproductive and developmental disorders). Not only was the property owner exposing himself to these hazards he also exposed neighbors, the health investigator, responding fire fighters and KCPL utility crews.

**Kansas City:** The Asbestos Program of the Kansas City Health Department received a citizen complaint concerning damaged asbestos containing material. Citizen was concerned about possible exposure from damaged pipe insulation in laundry facilities. Chronic asbestos exposure has been linked to lung cancer, asbestosis, and mesothelioma. During my investigation I observed damaged pipe insulation in several locations of a multiple unit apartment building including basement storage and laundry facilities, to which all residents and employees had access. Potential for accidental release was very likely due to the protective canvas coating having been removed or compromised due to age or natural wear and tear. Although the current findings didn't violate the current air quality control code, education was provide to the owner

regarding future negative consequences if corrective actions were not completed including resident or employee litigation, possible compliance issues with the Occupational Safety and Health Administration, or unwanted negative public relations if a resident or employee contacts news media. The Owner was very responsive as he hired a professional licensed asbestos abatement contractor to perform corrective actions, greatly reducing the exposure to residents and employees.

**Kansas City:** In the Rat Control Program at Kansas City Health Department, staff have removed the threat of rats from numerous families, roughly 1100 per year. In one case, Rat Control helped an immigrant family, living in a very run-down property with their rat problem. The mother reported that the rats were running over her bed covers at night and, after a couple of visits by our contracted exterminator, the problem was solved. In 2006, a young infant girl was bitten by a rat as she lay in her crib. This situation occurred not long after the program had been reinstated, following the elimination of the program due to budget constraints. The little girl was sleeping in her crib with a sleep apnea machine and had vomited into her mouthpiece. The rat was attracted to the vomit and bit off the child's nose. Unfortunately, she will not be able to have corrective surgery until she's at least 16 due to her face growing. The Program arranged to treat the entire block after the incident as the infestation was throughout the neighborhood. Due to the Program's educational and advisory efforts, Steppingstone, a youth care facility, has adopted policies and procedures that ensure that its residents are free of the threat of bed bugs. The initial complaint that was received resulted in numerous training and consulting session. This ended with Steppingstone purchasing a heater and treating both donated items and the residents' personal belongings as well as being used to treat individual rooms.

**Kansas City:** At Project Re-Start, the Healthy Homes Program has been holding classes for people currently transitioning from homelessness to permanent housing. Training includes avoiding some of the common pitfalls of residency, such as avoiding accidents, keeping the home clean, dry, maintained, pest-free, etc. The program expands the knowledge base of our clients so they can live lives free of environmental contaminants and the resulting diseases, such as asthma. A total of eleven (11) classes have been conducted at this facility. Each class has been attended by 10-25 people, with great participation. The class has been modified the class to more reflect the concerns and questions that the clients have had after the first round of classes. Also they have instituted quizzes to make sure that the knowledge shared is having an impact.

