



Public Health Update

Saturday, February 07, 2004

Public Health Updates Inaugural Edition

This edition of Public Health Updates initiates an effort by the NPS Office of Public Health to inform Superintendents and park employees about current issues. We will generally produce this informational newsletter once a month, but will issue more frequently as hot or timely public health news warrants.

Before coming to my new role as Director of our program, I held the position of Regional Public Health Consultant in the IMR in Denver. In covering my group of parks in the region, I heard a great deal from NPS employees about their interest in public health topics, especially those that impact or might impact their parks. In response to that interest, I started collecting news about public health issues and passing it along periodically to superintendents and those NPS park employees that had expressed a desire to receive information. Many park superintendents passed the information on to their employees. I frequently heard back from NPS park employees that they appreciated getting information about public health issues.

So... now we take that idea system-wide. In an on-going effort to keep up on current science, our program receives information from various sources such as FDA, USDA, CDC and others. We also regularly search for new public health information, either to keep up with a specific subject, or in response to current park issues. We will use this publication to pass along information that we judge might be of wider interest and that could affect NPS.

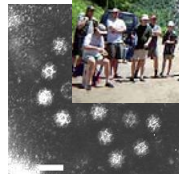
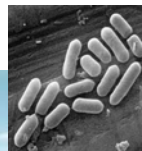
Because our program tries to primarily focus on drinking water safety, food

safety, waste water disposal, and vector control, most of the information in these newsletters will have to do with these subject areas. However, any information that is a public health issue, such as an emerging infectious disease, and might affect our parks, will be passed along.

Your comments about how to make this effort more useful to you, and suggestions for topics are always most welcome!

For additional information at any time, you can visit our website at www.nps.gov/public_health or contact any Regional Public Health Consultant listed in the following article.

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Serving the NPS Since 1918

Beginning with a U.S. Public Health Service (USPHS) officer that traveled to Yellowstone National Park in 1918 to conduct a survey of drinking water, officers of the Commissioned Corps of the USPHS have assisted the NPS with public health issues.



The Commissioned Corps of the United States Public Health Service is one of the seven uniformed services. An all officer corps serving under the Surgeon General of the United States, these officers are assigned to various federal, state and international agencies in order to protect and promote the health of the American people. Officers wear uniforms similar to the U.S. Navy, reflecting the Corps origins with the Marine Hospital Act of 1798.

An MOU between the USPHS and NPS arranges for officers to staff an Office of Public Health within NPS and tasks this group with assisting NPS administrators and staff with any public health issues. USPHS officers are assigned to each NPS region and deal with food safety, drinking water safety, waste water disposal, vector borne disease control and other public health issues including responding to outbreaks. In addition to these generalists, Public Health Engineers, Industrial Hygienists and other disciplines are on assignment to NPS to work on specific projects and subject areas from Risk Management to Land Acquisition. GATE has a PHS officer assigned specifically to

that park and a few parks hire Civil Service public health personnel.

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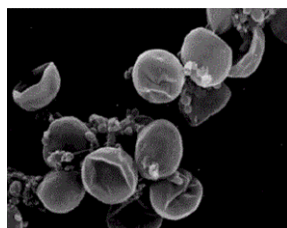
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U.S. Waterborne Disease Outbreaks - Summary

From 1991 to 2000, there were 155 outbreaks and 431,846 cases of illness in public and individual U.S. water systems. The table below lists reported outbreaks, their causes, the numbers of cases of associated illness reported, and the types of water systems affected. By far, the largest outbreak of this period occurred in 1993 with the emerging pathogen *Cryptosporidium* in Milwaukee.

Etiological Agent	Community Water Systems ¹		Noncommunity Water Systems ²		Individual Water Systems ³		All Systems	
	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases	Outbreaks	Cases
<i>Giardia</i>	11	2,073	5	167	6	16	22	2,256
<i>Cryptosporidium</i> ⁴	7	407,642	2	378	2	38	11	408,239
<i>Campylobacter</i>	1	172	3	66	1	102	5	340
<i>Salmonellas, nontyphoid</i>	2	749	0	0	1	84	3	833
<i>E. coli</i>	3	208	3	39	3	12	9	259
<i>E. coli O157:H7/C</i>	0	0	1	781	0	0	1	781
<i>Yersinia</i>	1	83	5	484	2	38	8	605
<i>Plesiomonas shigelloides</i>	0	0	1	60	0	0	1	60
<i>Non-O1 V. cholerae</i>	1	11	0	0	0	0	1	11
Hepatitis A virus	0	0	1	46	1	10	2	56
Norwalk-like viruses	1	594	4	1806	0	0	5	2400
Small, round-structured virus	1	148	1	70	0	0	2	218
Chemical	18	522	0	0	7	9	25	531
Undetermined	11	10,162	38	4,837	11	238	60	15,237
Total	57	422,364	64	8,934	34	548	155	431,846



photograph courtesy of B. Klein, TCJSHM

What is *Cryptosporidium*?

Cryptosporidiosis (krip-toe-spo-rid-e-osis), is a diarrheal disease caused by a microscopic parasite, *Cryptosporidium parvum*. It can live in the intestine of humans and animals and is passed in the stool of an infected person or animal. Both the disease and the parasite are also known as "Crypto." The parasite is protected by an outer shell that allows it to survive outside the body for long periods of time and makes it very resistant to chlorine disinfection. During the past two decades, Crypto has become recognized as one of the most common causes of waterborne disease (drinking and recreational) in humans in the United States. The parasite is found in every region of the United States and throughout the world.

NPS Public Health Program to Roll Out Cutting Edge Systems-Based Food Safety Evaluation

Like all other federal, state, and local public health programs, the NPS Public Health Program has used traditional "check-list" methods in order to assess whether or not concession operations are producing foods safely. It has been known for some time, however, that this "inspection" approach has some drawbacks and limitations. Chief among these is that an inspection is only a comparison of regulatory lists and requirements against what is observed on any day, during any given time period. From this effort, a list of violations, or deviations, from the regulations is generated and communicated to the operator. Not a bad approach if you want to know about static issues such as structural condition, cleaning and equipment. Also not so bad for determining a snapshot of what ever aspect of the process you happen to walk into on that day, at that particular moment in time.

Inspection is not as effective if you want a deeper understanding of a dynamic system, and food service operations are definitely DYNAMIC systems. Ingredients, procedures, temperatures, holding times, etc., etc., can exhibit a great deal of variation depending on countless variables including staffing, time of day, time of year, and many more.

Because food facilities are complex systems with a great number of underlying forces of various influence on the final outcome, an inspectional method often fails to understand these, resulting in a lack of lasting improvement. In inspection programs, this is sometimes called the "yo-yo" effect. An inspection occurs, issues of compliance are raised, an operator attempts to correct them, and then, because the deeper, underlying reasons have not been discovered or dealt with, the system quickly or slowly "resets" to the original set-point, just like a thermostat.

In an effort to be more effective and efficient, and to provide a higher-end service to parks and concessions, the NPS Public Health Program has been piloting a new systems-based food safety evaluation

method. Over the past two years within the IMR and the NER, Regional Public Health Consultants have tested an approach that includes four steps.



1. Describing the entire food service system including all of the inputs, processes, outputs, feedback loops and underlying “why’s.”
2. Determining the degree of control that concession operations have over the following three common food process categories.
 - a. Foods that are not cooked.
 - b. Foods that are cooked and served.
 - c. Foods that have more complex preparation.
3. Drilling into why some processes are controlled and others are not;
4. Using all of this information to assist the concession managers to explore ways to strengthen their control of food safety. An effort is made to look for active managerial controls that will be effective, practical and sustainable.

These pilot efforts have shown that operations can gain and maintain control over key food safety issues, beyond their improvements under past inspection efforts. One Executive Chef stated that, “Under the inspection method, we always wanted to do well and look good, but many of the items were rather random. If you came in on a different day, many of them would be different. So, that sort of diminished how much value that was to us and the relative importance we gave it. Now, with this new approach, it’s completely changed our discussions.”

Another operator said that, “This method has inspired us. It makes us draw on our professional pride, and understanding our kitchens better helps us in many different ways.”

NPS Concession Specialists have reacted positively as well to this pilot saying that the information gives them a better sense of the degree of control and effort that operations exhibit in food safety. One key change in the new work is the way in which the food safety evaluation results are documented. Control is still gauged against the U.S. Public Health Service Model Food Code, just as before. This system goes beyond that, recording additional information, including data for processes that are CONTROLLED, giving a better feel for the balance that is every operation, negative and positive. Recording both control and lack of control should also help the Public Health Program better keep track of trends and progress over time.



Over the next several months NPS Public Health Program staff will be trained on these new methods and our intent is to use this approach for all of our food safety evaluations by this summer.

Avian Influenza (Bird Flu) Outbreak

The following material has been obtained from the Centers for Disease Control and Prevention and edited by the NPS Office of Public Health.

An outbreak of avian influenza, more commonly known as bird flu, is affecting bird populations in countries throughout Asia. The outbreak is caused by the H5N1

subtype of influenza A. Human cases also have been reported.

In birds:

Outbreaks of avian influenza A (H5N1) have been confirmed among poultry in Cambodia, China, Hong Kong (in a single peregrine falcon), Indonesia, Japan, Korea, Laos, Thailand, and Vietnam.

In people:

The outbreak of bird flu has resulted in human cases of H5N1 infection in Vietnam and Thailand. Deaths have been reported. At this time it is believed that these cases resulted from contact with infected birds or surfaces contaminated with excretions from infected birds. An investigation is ongoing to determine the source of human infections.

CDC Recommendations

Travelers:

CDC advises that travelers to countries in Asia with documented H5N1 outbreaks should avoid poultry farms, contact with animals in live food markets, and any surfaces that appear to be contaminated with feces from poultry or other animals.

Health Departments and Health Care Professionals:

At this time, CDC recommends enhanced surveillance efforts by state and local health departments, hospitals, and clinicians to identify patients who have been hospitalized with unexplained pneumonia, ARDS, or severe respiratory illness AND who have traveled to Vietnam, South Korea, and Japan within 10 days from onset of symptoms. All such patients should be tested for influenza virus infection; these tests should include viral culture of nasopharyngeal and throat swabs. All influenza A viruses should be subtyped, and those that cannot be identified as H3 or H1 viruses should be sent immediately to CDC for testing for influenza A (H5N1).

In Partnership for nearly 100 years, the National Park Service and the United States Public Health Service have worked to protect the health of visitors in Americas Parks !