

Minnesota Department of Health (MDH)
Food Safety Partnership (FSP) and
Partnership and Workforce Development Unit (PWDU)

QUARTERLY UPDATE

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BUG OF THE QUARTER

Toxoplasma gondii and Toxoplasmosis

Background

Toxoplasma gondii (*T. gondii*) is unlikely to occur on any consumer's list of common foodborne pathogens. However, the Centers for Disease Control (CDC) estimates that 22.5 percent of the U.S. population over 12 years old has been infected with *Toxoplasma* at some time in their lives.

NOTE from PWDU:

011...2012...20

Dear Friends and Colleagues,

Farewell to 2011 and best wishes to all of you from the Partnership and Workforce Development Unit. May you all enjoy a peaceful, useful and hopeful 2012.

Please join us in welcoming new PWDU staff member, Barbara Skoglund. Barbara has just arrived from the Department of Human Services to set our web pages, factsheets and general communications straight. Barbara is a quick study - already calling pathogens by their nicknames - and rapidly becoming accustomed to eating lunch with people whose conversation is peppered with allusions to vomiting and diarrhea.

Also, welcome to new FSP members - we hope to see some of you at an FSP meeting this year!

Deborah... and the rest of the PWDU staff

Toxoplasmosis is classified by CDC as one of the Neglected Infections of Poverty. These are parasitic, bacterial and viral infections that disproportionately affect impoverished people in the United States. These infections are considered neglected because relatively little attention has been devoted to surveillance, prevention, and/or treatment of these infections. (CDC)

T. gondii is a single-celled parasite found throughout the world. Very few people infected with *Toxoplasma* become symptomatic. The parasite can remain latent in humans for years - until a host's immune system becomes impaired.

T. gondii infection can result in miscarriage in pregnant women who do not show symptoms. Pregnant women, their fetuses, and people with compromised immune systems are most likely to suffer serious health problems as the result of toxoplasmosis. *(continued, next page)*

Toxoplasma gondii, continued

Signs and Symptoms

Symptoms of mild to moderate toxoplasmosis include fever, swollen glands, muscle aches and pains, and fatigue. Symptoms usually begin within one to three weeks of exposure and resolve in two to four weeks.

A severe infection - usually found in people with weakened immune systems - can cause damage to the brain, eyes or other organs. Severe illness can occur with a new infection, or an old infection that has been reactivated.

Infants infected in the womb usually have no symptoms at birth but may develop symptoms later. A small percentage of infected newborns have serious eye or brain damage at birth.

Food, Cat Feces and Risk

Though we may most often associate *T. gondii* with transmission via cat feces, CDC says that about half of all infections are foodborne. The most common food sources are raw or undercooked meats.

Toxoplasmosis is a leading cause of death attributed to foodborne illness in the United States, and is one of the top five foodborne pathogens associated with illness resulting in hospitalization according to these 2011 data from CDC.

Pathogen	Estimated No. Hospitalizations	% of All Hosp.
<i>Salmonella</i> , nontyphoidal	19,336	35
Norovirus	14,663	26
<i>Campylobacter</i> spp.	8,463	15
<i>Toxoplasma gondii</i>	4,428	8
<i>E.coli</i> (STEC) O157	2,138	4
Subtotal		88

Pathogen	Estimated No. Deaths	% of All Deaths
<i>Salmonella</i> , nontyphoidal	378	28
<i>Toxoplasma gondii</i>	327	24
<i>Listeria monocytogenes</i>	255	19
Norovirus	149	11
<i>Campylobacter</i> spp.	76	6
Subtotal		88

When the University of Florida's Emerging Pathogens Institute released a 2011 report ranking pathogen and food combinations that cause the greatest financial burden in this country, *Toxoplasma* showed up in two of those top 10 spots paired - not with kitties – but with pork and beef.

Pathogen and Food	Cost Per Year
<i>Campylobacter</i> in poultry	\$1.3 billion
Toxoplasma in pork	\$1.2 billion
<i>Listeria</i> in deli meats	\$1.1 billion
<i>Salmonella</i> in poultry	\$700 million
<i>Listeria</i> in dairy products	\$700 million
<i>Salmonella</i> in complex foods	\$600 million
Norovirus in complex foods	\$900 million
<i>Salmonella</i> in produce	\$500 million
Toxoplasma in beef	\$700 million
<i>Salmonella</i> in eggs	\$400 million

(Ranking the Risks, www.epi.ufl.edu)

Earlier, a 2009 CDC study cited additional food and behavioral risk factors for *T. gondii* infection in the U.S. These include:

- drinking unpasteurized goat's milk
- eating raw ground beef or rare lamb
- eating locally produced cured, dried or smoked meat
- eating raw oysters, clams or mussels
- handling wild game
- having three or more kittens



Prevention is Key

To reduce the risk of Toxoplasmosis, the Mayo Clinic recommends that people wear gloves when gardening or handling soil; refrain from eating raw or undercooked meat; avoid raw cured meat and unpasteurized milk; wash cutting boards, knives and other utensils in hot, soapy water to prevent cross contamination; wash all fruits and vegetables; cover children's sandboxes to avoid their use by neighborhood cats as litter boxes; wash hands after emptying cat's litter boxes; avoid adopting a new kitten while pregnant, and to employ good hand hygiene at all times.

TRAINING RESOURCES

FSP/MEHA 2012 Calendar

Date	Org.	Topic / Contact
Feb 1	FSP	Epidemiology report; New food in schools: food safety & salad bars; Time as a public health control deborah.durkin@state.mn.us
Feb 16	MEHA	Mobile home parks, composting, food allergen training, health impact assessments, exotic foods www.mehaonline.org/events
Apr	FSP+	Agenda to be announced
May 10-11	MEHA	Spring Conference, Deerwood
Jun 6	FSP	<i>tent.</i> Epidemiology report, Food donation and composting, other
Aug	FSP+	<i>tent.</i> Fruit juice and cider making
Oct 3	FSP	Agenda to be announced
Oct 4	MEHA /NEHA	Fall Education Conference, Walker
Dec	FSP+	Agenda to be announced

Food Safety Partnership Video-Conference

The next Food Safety Partnership (FSP) video-conference will be held on Wednesday, **February 1**.

The meeting can be live-streamed at: www.health.state.mn.us/divs/eh/food/pwdu/livestream/survey.cfm. The archive address will be available later.

For CEUs or site information, contact Maggie Edwards, 651-201-4506, margaret.edwards@state.mn.us.

See past FSP presentations and materials at: www.health.state.mn.us/divs/eh/food/pwdu/fsp/

A prize will be sent to the first five people who identify a typo in this issue. Contact Deborah to receive your prize.

2012 University of MN Public Health Institute

www.sph.umn.edu/ce/institute

The 11th Annual Public Health Institute will be held May 21 through June 8, 2012. This summer, the institute offers 36 courses in nine public health areas and features 12 new courses.

Topics include: the impact of globalization, food protection, emerging infectious diseases, culturally responsive practice, health leadership and management, preparedness, women and child health, and research methods.

Limited financial support for select courses is available to qualifying participants. Visit the website for complete listings and information about registration.

University of MN Extension Online Food Allergen Course for Food Handlers

www.extension.umn.edu/food-safety

University of Minnesota Extension is offering a new one-hour, interactive, online course that teaches food handlers about food allergies and how to protect the health of their customers. The cost is \$10. Visit the website for more information.

CDC Environmental Health Training in Emergency Response (EHTER)

www.cdc.gov/nceh/ehs/eLearn/EHTER.htm

CDC's EHTER Awareness Level course is a four-day course that provides an overview of environmental health topics, issues, and challenges faced during emergency response. The purpose of the course is to increase the level of emergency preparedness of environmental health practitioners and other emergency response personnel by providing them with the necessary knowledge, skills and resources to address the environmental health impacts of emergencies and natural disasters.

Transportation, lodging, and meals are provided by DHS/FEMA to students from state, local and tribal jurisdictions. For more details about this course and other EHTER courses being offered, please visit <https://cdp.dhs.gov/schedules/program/s.html>.

WEB AND WRITTEN RESOURCES



Preparedness Minute Videos

www.soph.uab.edu/SCP/HP/preparedness_minute_videos

Free preparedness videos for public health professionals and consumers are available from the South Central Partnership. The brief clips describe actions to take in emergency situations at work and home. Topics include: psychological first aid, staying cool, staying warm, personal medications, generator safety and food safety.

Network for Public Health Law Webinar Series

www.networkforphl.org/network_resources/webinar_series/

The Public Health Law Webinar Series is a monthly series focused on providing the public health community with practical knowledge on emerging topics. See the website for dates of upcoming webinars or to view past webinars.

University of MN Extension Food Safety eNews

www1.extension.umn.edu/food-safety/enews/

The *Food Safety eNews* provides updates for food service professionals "to assure quality and safety for your customers." Subscribe to this free quarterly newsletter at the website above.

Partnership for Food Safety Education

www.fda.gov/Food/ResourcesForYou/Consumers/ucm239035.htm

The new FDA Education Resource Library contains a wealth of free materials for educators, teachers, dietitians and health professionals.

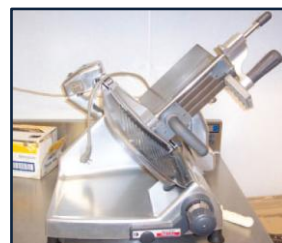


PWU Quarterly Newsletter

New FDA Factsheet: Commercial Deli Slicer Inspection Tips for Food Safety Professionals

www.fda.gov/Food/FoodSafety/RetailFoodProtection/IndustryandRegulatoryAssistanceandTrainingResources/ucm240672.htm

FDA has provided this factsheet in response to recent foodborne illness outbreaks associated with the accumulation of food soils and micro-organisms on commercial deli slicers.



FOOD AND FOOD SAFETY MATTERS

American Society for Microbiology, *Journal of Applied and Environmental Microbiology*

Environ. Microbiol. October 2011 77: 7093-7095

The October issue of this journal contained a series of papers from a conference on antibiotic resistance. Representative titles included:

- *Characterization of Multidrug-Resistant Escherichia coli Isolates from Animals Presenting at a University Veterinary Hospital*
- *Mechanisms of Fluoroquinolone Resistance in Escherichia coli Isolates from Food-Producing Animals*
- *Acquired Antibiotic Resistance: Are We Born with It?*
- *Characterization of Methicillin-Resistant Staphylococcus aureus Isolates from Food and Food Products of Poultry Origin in Germany*

Big Picture Science: *Blame It On Bacterio*

http://radio.seti.org/episodes/Blame_it_on_Bacterio

Download or listen online to this radio show about the role of microbes in our lives. In brief segments, the hosts and panelists discuss illness investigation, the role that animals play as hosts for disease, and why the rate of emerging diseases is increasing worldwide.



Part Four, featuring Dr. Pete Snyder of the Minnesota Hospitality Institute of Technology and Management, explores the home kitchen as a biosafety hazard.

Food Allergies Linked to Norovirus

www.benthamscience.com/open/toij/articles/V004/22TOIJ.pdf

A study published in the *Open Immunology Journal* in November 2011 suggests a link between food allergies and norovirus.

Researchers at the Medical College of Wisconsin fed egg protein to mice infected with norovirus. Then they examined the mice for signs of an immunoglobulin E, (IgE) response against the food protein –the response that leads to an allergic reaction. They had previously demonstrated an IgE response to an inhaled protein during a respiratory infection in mice.

These studies suggest that early respiratory infections in children could lead to allergic diseases like asthma later in childhood. Likewise, food allergies may result from an immune response to a norovirus or other gastrointestinal infection.

Food Safety News: Top Food Safety Stories, 2011

Food Safety News has once again named its top food safety stories of the year. Whether or not you agree with the order or inclusion of these stories on the list, most people working in food world will remember:

- #1: Germany epicenter of world's largest HUS outbreak
- #2: Listeria-tainted cantaloupes sicken 146, kill 31
- #3: Antibiotic resistant Salmonella
- #4: 'Big Six' E. coli banned in beef
- #5: Del Monte Fresh Produce vs. FDA
- #6: FDA-Egg Industry Disconnect
- #7: Questions about the quality of imported honey
- #8: Food fright (general concern about outbreaks and specific fears about apple juice, BPA, etc.)
- #9: The FDA Food Safety Modernization Act
- #10: Local Food 'Sovereignty' Movement and Cottage Food Exemptions

And One More Story to Remember



In November, Congress “saved the potato” (*New York Times*) and reinstated pizza as a vegetable when they blocked the bill that would have revised nutritional standards for school lunches.

Todd et al: *Outbreaks where food workers have been implicated in the spread of foodborne disease*



Ewen Todd and others have produced a series of 11 articles on foodborne outbreaks in food workers, their causes, contributing factors, and methods – including handwashing and glove use – used to control them. The articles were published from 2008 through 2010 in the *Journal*

of Food Protection, and can all be found online.

Outbreaks where food workers have been implicated in the spread of foodborne disease.

- Part 1. Description of the problem, methods and agents involved
- Part 2. Description of outbreaks by size, severity and settings
- Part 3. Factors contributing to outbreaks and description of outbreak categories
- Part 4. Infective doses and pathogen carriage
- Part 5. Sources of contamination and pathogen excretion from infected persons
- Part 6. Transmission and survival of pathogens in the food processing and preparation environment
- Part 7. Barriers to reduce contamination of food by workers
- Part 8. Gloves as barriers to prevent contamination of food by workers
- Part 9. Washing and drying of hands to reduce microbial contamination
- Part 10. Alcohol-based antiseptics for hand disinfection and a comparison of their effectiveness with soaps
- Part 11. Use of antiseptics and sanitizers in community settings and issues of hand hygiene compliance in health care and food industries

In Part 10, the authors note that alcohol compounds are increasingly used as a substitute for handwashing. They warn that the effectiveness of hand sanitizers depends on how much soil (bioburden) is present on the hands and that **each formulation must be evaluated against the target pathogens in the environment** before being considered for use.

SPECIAL REPORT

National Public Health Department Accreditation

By Lynne Markus, MDH/EHS/PWDU

National accreditation efforts are underway! National accreditation is a voluntary and prestigious opportunity for state, local and tribal public health departments. Accreditation benefits include recognized capacity and service, public accountability, and credibility. Accreditation from the new nonprofit Public Health Accreditation Board (PHAB) verifies a public health department's commitment to address the key public health issues in their jurisdiction and to continually improve performance in accordance with PHAB national standards.

The public health department accreditation standards nest within 12 general domains listed in the blue box. The PHAB standards address management, administration, governance and the public health functions of the 10 essential public health services.

Environmental health programs in Minnesota have invested much effort in continual program improvement based on FDA standards. To aid local agency accreditation efforts, MDH Environmental Health Services (EHS) is preparing a crosswalk between the FDA standards and the PHAB terminology (consisting of domains, standards and measures). The crosswalk will relate the PHAB standards to the FDA standards that environmental programs currently address. The crosswalk will also identify current activities, compliant with the FDA standards, to document compliance with national accreditation requirements. EHS will email the crosswalk to local public health departments after its completion this winter.

In January 2012, MDH Environmental Health Division begins working with other MDH divisions to proceed through the seven steps to achieve accreditation for MDH: pre-application; application; documentation, selection and submission; site visit; accreditation decision; reports; and reaccreditation.

"MDH EHS has particular responsibility to help document how our department investigates health problems and environmental public health hazards to protect the community (domain 2)," stated Colleen Paulus, Manager, Environmental Health Services. "We are also assisting with most of the other domains for MDH accreditation," she noted.

Local public health departments and tribes are encouraged to obtain the PHAB national accreditation. Hennepin County Human Services and Public Health Department is one of the thirty local, state and territorial public health departments throughout the country that tested this new accreditation process. It is among the first applicants for accreditation.

The accreditation process evaluates a public health department's performance, innovation, evidence-based practice, partnerships, and quality improvement. The PHAB assesses conformity with national standards by reviewing examples of policies and procedures; documentation of reporting activities, data and decisions; and distribution of communication and education materials.

Accreditation also depends upon the following attributes: leadership, strategic planning, community engagement, customer focus, workforce development and evaluation leading to quality improvement. More information about the PHAB accreditation process is available at www.phaboard.org

The Twelve Accreditation Domains

ASSESS - Conduct and disseminate assessments focused on population health status and public health issues facing the community

INVESTIGATE - Investigate health problems and environmental public health hazards to protect the community

INFORM & EDUCATE - Inform and educate about public health issues and functions

COMMUNITY ENGAGEMENT - Engage with the community to identify and address health problems

POLICIES & PLANS - Develop public health policies and plans

PUBLIC HEALTH LAWS - Enforce public health laws

ACCESS TO CARE - Promote strategies to improve access to health care services

WORKFORCE - Maintain a competent public health workforce

QUALITY IMPROVEMENT - Evaluate and continuously improve health department processes, programs and interventions

EVIDENCE-BASED PRACTICES - Contribute to and apply the evidence base of public health

ADMINISTRATION & MANAGEMENT - Maintain administrative and management capacity

GOVERNANCE - Maintain capacity to engage the public health governing entity

CLIMATE CHANGE CORNER

Climate Adaptation and Partnerships

www.whitehouse.gov/sites/default/files/microsites/ceq/2011_adaptation_progress_report.pdf

“A resilient, healthy and prosperous Nation in a changing climate” is the vision of the Interagency Climate Change Adaptation Task Force. *“Federal Actions for a Climate Resilient Nation – Progress Report of the Interagency Climate Change Adaptation Task Force, October 28, 2011 reports progress in five targeted areas:*

- Integrating adaptation into federal government planning and activities
- Building resilience to climate change in communities
- Improving accessibility and coordination of science for decision making
- Developing strategies to safeguard natural resources in a changing climate
- Enhancing efforts to lead and support international adaptation

The report provides examples of citizen, government and business adaptations to extreme weather. A record number of 101 shareholder resolutions in 2010 asked North American firms to “manage climate change risks.” Local governments are developing early warning systems for dangerous storms. Agribusiness is selecting crops and landscapers are using plants more suitable for warmer, wetter weather and more frequent flooding. Companies are relocating key facilities from areas vulnerable to weather damage.

The Task Force encourages decision makers to “understand what science and services they need to manage the impacts of climate change” and includes *Guiding Principles for Adaptation* in Appendix C of the report.

Partnerships and collective efforts to reduce risks are a dominant theme for adaptation to climate change and building a resilient nation.



Ill Affects May Outweigh the Good as Drought and Warmth Transform a Brown Holiday Season

Most of southern Minnesota and part of the arrowhead are experiencing severe drought, and all of the state is unusually dry. Lack of snow causes one set of problems while record-setting warm weather causes even more.

The Department of Natural Resources (DNR) warns that lakes aren't safe. Fish houses have fallen through the ice all over the state, as have numerous ATVs and riders. A Minnesota conservation officer was among the latest to escape an icy bath on December 28 when his ATV fell through the ice on Lake of the Woods.

Sled dog races, snowmobiling and cross-country skiing are on hold in most parts of the state, harming the businesses that cater to winter recreation. Lack of snow is saving money for cities whose winter plowing budgets are getting a break but economists say we may be looking at higher food prices in 2012 because of the continued drought.

Drought has also caused an unusually high risk of fire this winter. DNR says grasses and brush, which are usually covered with snow, are freeze-dried, making them easier to burn. On December 26, 750 acres burned near the northwestern Minnesota city of Gully. The fire burned rapidly through wooded areas, driven by high winds and dry fuels.

SPECIAL REQUEST

Web Feedback Sought

The MDH Environmental Health Services web site should be a valuable resource for businesses, sanitarians and others interested in our work. PWU is looking for volunteers to help us evaluate the current web site and suggest ways we can improve the content and usability of our online resources. We need both sanitarians and people from licensed establishments to participate in focus groups and usability testing. There will be opportunities for in-person groups in St. Paul and virtual groups via online technology or video conferencing. Please contact Barbara Skoglund, PWU communications coordinator, at barbara.a.skoglund@state.mn.us or 651-201-4825 if you are willing to volunteer for an hour or two. We need your help in improving our web site so we can better meet your needs.

