



World Health Organization

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GFN UPDATE

Global Foodborne Infections Network



A WHO Network building capacity to detect, prevent and control foodborne and other enteric diseases from farm to table

Burden of Illness Studies: Success in the Caribbean

The Epidemiological Situation

Foodborne diseases (FBD) in the Caribbean have increased in recent years. The Caribbean Regional Epidemiology Center (CAREC) is the Center of Excellence for WHO GFN in the PAHO/WHO sub-region of the Caribbean and serves as the center for data coordination for the Caribbean. During 1990-2006, over 90 outbreaks from 16 Caribbean countries were reported (40% viral, 50% bacteria). Most (40-60%) of these outbreaks occurred among tourists in hotels and cruise ships. Travel-related diarrhea, commonly known as travelers' diarrhea (TD), is caused by consuming contaminated food or water, and is reportedly the most common and frequently occurring health problem faced by visitors to the Caribbean. This disease can result in negative publicity affecting the tourism industry. However, the exact proportion of gastroenteritis that is foodborne is still not fully known.

WHO GFN in the Caribbean

CAREC provides support for training in FBD prevention and control in collaboration with WHO GFN by training on integrated surveillance of FBD, including laboratory training with regional, in-country, and Burden of Illness workshops.

Burden of Illness (BOI) Studies

With limited information and knowledge on the burden of FBDs in the Caribbean, BOI Studies were launched in six countries (St. Lucia, Grenada, Jamaica, Trinidad & Tobago, Dominica, Barbados), with the support of IDRC (Caribbean Eco-Health Program).



The BOI Study objectives were to determine the prevalence and estimate the burden of acute gastroenteritis and the priority pathogens commonly transmitted by food (e.g. *Salmonella*, *Shigella*, *Campylobacter*, pathogenic *Staphylococcus*, *Norovirus*).

Collaborators of the BOI Studies, since 2007, include the Food Safety Regional Program of PAHO/WHO and the Public Health Agency of Canada (PHAC). The study was completed in 2010 and provided an estimate of the burden of acute gastroenteritis, foodborne diseases and specific pathogens commonly transmitted by food. The results help explore risk factors for infection, identify gaps in surveillance, and

provide the basis for guiding appropriate prevention and control measures for foodborne diseases (country reports are available). Future steps include making recommendations on food safety and health promotion policies from BOI study findings at regional WHO GFN workshop in November 2011. (Excerpts from a report by Enrique Perez, PAHO)

2010 Salmonella Surveillance Annual Meeting in China

From September 7-9, more than 60 participants attended the 2010 *Salmonella* Surveillance Project Annual Meeting in Shanghai, China. Participants from around the world summarized the successes of the laboratory-based *Salmonella* surveillance project. The project began in China in 2006, and now boasts seven participating provinces, involving more than 100 hospitals from 44 cities.



The 2010 *Salmonella* Surveillance Project Annual Meeting's participants discussed and developed a new five-year plan of action. Speakers from WHO GFN Steering Committee, China CDC and seven Chinese provinces focused on the progress of WHO GFN. They assessed surveillance data from each project province and planned the relevant training course for next year.

-Wendy Bucklew, CDC/GFN, based on information provided by Xianhua Lin, China CDC

GFN Steering Committee

World Health Organization

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Training Course Highlights: Tunisia, Kenya, and Dubai



- ◆ The GFN course in Tunisia was held from November 1 – 6, 2010 and was conducted at the Pasteur Institute in Tunis.



2010 GFN Training Course
Tunis, Tunisia

Forty-seven microbiologists and epidemiologists from twenty different countries attended this Level I course, which focused on *Salmonella* and *Shigella* outbreaks, outbreak investigations, surveillance, data collection and data analysis.

Some of the laboratory training aspects of this course provided participants with an overview of identification, isolation, serotyping and antimicrobial resistance testing for foodborne pathogens.

- ◆ The GFN course in Kenya was held on November 1 – 6, 2010 and took place at the Kenya Medical Research Institute in Nairobi. Thirty-six participants from ten countries attended this Advanced Level III training course, which focused on surveillance, serotyping, and isolation of food pathogens, including

Campylobacter and *Salmonella*. Presentations covered such topics as sample collection, specimen transport, tracking and identification of pathogens in food, animal production systems, and quality control management.

- ◆ The GFN course in the United Arab Emirates took place from March 6 -8, 2011 at the Dubai Municipality Training Centre. Twenty-seven participants from Dubai Municipality and the Dubai Health Authority, along with four participants from Oman, attended. The training focused on foodborne disease surveillance and outbreak investigation.

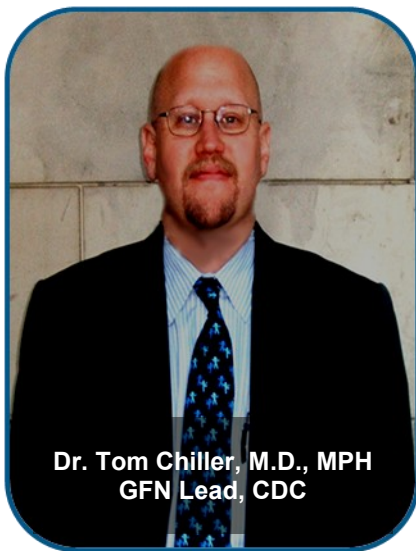
EQAS: 2010 Preliminary Results are In!

In 2010, a total of 178 laboratories submitted results to at least one of the WHO EQAS components. For *Salmonella* serotyping the number of correctly serotyped isolates ranged from 85.5% (*S. Bareilly*) to 96.5% (*S. Enteritidis*) with 96.5% of the participants correctly serotyping the internal standard. The result for *Shigella* is a bit better than those for *Salmonella*. Here the serogrouping ranged from 98% (*S. dysenteriae*) to 100% (*S. flexneri*), which is an outstanding result. However, it seems as though the capacity to perform a full serotyping of *Shigella* is low, ranging from 58.3% to 58.9%. This is likely to be an issue related to the availability of antisera needed for agglutination. In 2010, 99 and 96, participants attempted to identify the two *Campylobacter* isolates. A total of 91.7% and 84.8% of the participants obtained a correct identification for *C. jejuni* and *C. coli*, respectively. A *Citrobacter* was included as the unknown organism in 2010, as this is known to be mistaken for *Salmonella* when performing plating on selective agar plates. However, 89.6% of the participants managed to correctly identify the *Citrobacter*.

For information on EQAS, contact Rene S. Hendriksen at rshe@food.dtu.dk

Meet a Partner

Dr. Tom Chiller received his bachelor's degree from Dartmouth College and his medical and public health degrees from Tulane University. He completed a residency in internal medicine at University of Texas, Southwestern and then worked for a year at



Dr. Tom Chiller, M.D., MPH
GFN Lead, CDC

UT Southwestern as an attending physician in HIV medicine. He completed a fellowship in infectious diseases and mycotics at Stanford University and then traveled to the Centers for Disease Control and Prevention (CDC) to train in infectious disease epidemiology as an Epidemic Intelligence Service (EIS) officer. He has been at CDC for 9 years and is currently serving as Deputy Chief of the Mycotic Diseases Branch and Associate Director for Epidemio-

logic Science for the Division of Foodborne, Waterborne, and Environmental Diseases.

Dr. Chiller is Board Certified in Internal Medicine and Infectious Diseases. He is an Adjunct Assistant Professor in the Division of Infectious Diseases at Emory School of Medicine, and is also an Adjunct Faculty Member at the Emory and Tulane Schools of Public Health. He has authored numerous articles and book chapters. He enjoys traveling, good food, and spending time with his son and two daughters.

Strain	Correct sero-group	Correct serovar	Anti-genic formula	Serogrouping			Serotyping		
				No. labs	correct	devia-tions	No. labs	correct	devia-tions
WHO 2010 S-10.1	O:3,10 (E1)	Muenster	I 3,10:e,h:1,5	160	147	13	144	125	19
WHO 2010 S-10.2	O:9 (D1)	Enteritidis	I 9,12:g,m:-	159	153	6	143	138	5
WHO 2010 S-10.3	O:7 (C1)	Bareilly	I 6,7:y:1,5	159	153	6	138	118	20
WHO 2010 S-10.4	O:3,10 (E1)	Amsterdam	I 3,10:g,m,s:-	156	146	10	143	130	13
WHO 2010 S-10.5	O:8 (C2-C3)	Litchfield (or Paki-stan)	I 6,8:l,v:1,2	158	149	9	139	125	14
WHO 2010 S-10.6	O:1,3,19 (E4)	Senften-berg	I 1,3,19:g,s,t:-	157	135	22	141	119	22
WHO 2010 S-10.7	O:13 (G)	Kedougou	I 13,23:i:l,w	149	134	15	132	116	16
WHO 2010 S-10.8	O:8 (C2-C3)	Kentucky	I 8,20:i:z6	157	153	4	140	127	13
WHO 2010 SH-10.1	flexneri	var. Y	N/A	115	114	1	67	58	9
WHO 2010 SH-10.2	sonnei		N/A	116	114	2			
WHO 2010 SH-10.3	flexneri	var. X	N/A	114	114		66	53	13
WHO 2010 SH-10.4	dysenteriae	3	N/A	102	100	2	60	52	8
WHO 2010 C-10.1	N/A	<i>C. jejuni</i>	N/A				96	88	8
WHO 2010 C-10.2	N/A	<i>C. coli</i>	N/A				99	84	15
WHO 2010 B-10.1	N/A	<i>Citrobacter</i>	N/A				115	103	12