EPI-LOG

Communicable Disease and Epidemiology News
Published continuously since 1961
Laurie K. Stewart, MS, Editor

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.
Epidemiology, Prevention Division
Wells Fargo Center
999 Third Avenue, Suite 900
Seattle, WA 98104-4039

Return Services Requested

Vol. 42, No. 2 **February 2002**

The Smallpox Threat

Before naturally occurring infection was eradicated from the earth in the late 1970's, smallpox existed in two forms, the severe variola major, responsible for the bulk of morbidity and mortality from the disease, and the milder form, variola minor. In the decades before smallpox eradication, the majority of smallpox disease in the U.S. was caused by the milder variola minor. However, should smallpox reemerge subsequent to its use as a biological weapon, the expected strain would likely be the virulent variola major.

Mortality rates with variola major, widely quoted as lethal in approximately one-third of those infected, are even higher in especially vulnerable populations – the young, elderly, and immunocompromised. Before eradication, naturally occurring variola major outbreaks resulted in case fatality rates of over 50% in young children and the elderly. In addition, the increased numbers of immunocompromised persons in our society today comprise a large, especially vulnerable population.

The necessary resources and collaborations for bioterrorism and smallpox-specific preparedness and response activities must be built upon a robust baseline public health system. Current smallpox preparedness is based on maintaining a stable, solid core disease control capacity at the local level. Public Health – Seattle & King County (Public Health) has been working on bioterrorism preparedness since 1999 with King County physicians, hospitals, pharmacists, emergency management and traditional first responder agencies, as well as the Washington State Department of Health and the Centers for Disease Control and Prevention (CDC).

Currently, Public Health has convened an Outbreak Response Work Group (ORWG) comprised of medical directors and key staff from King County hospitals to address issues related to implementation of a smallpox response plan in King County. We have successfully identified hospitals with the capacity to evaluate and care for a limited number of smallpox cases. A remaining challenge is determining how to respond to a large outbreak and care for adult and pediatric smallpox cases once our first-line hospital capacity is exceeded. Public Health is also working with the CDC's Division of Quarantine to improve our local capacity to respond to and contain communicable disease threats that may arrive through our air- or seaports. Response planning for bioterrorism, including smallpox, will serve our community well as we experience inevitable naturally occurring disease outbreaks such as pandemic influenza, *E. coli* 0157:H7 (and other enteric infections), meningococcal disease, and new and emerging infections such as West Nile Virus encephalitis. In both intentional and naturally occurring outbreaks, a strong surveillance system is the key to early detection and effective response.

With the most recent revision of the Washington Administrative Code for notifiable disease reporting, syndromes and clusters of illness compatible with biological terrorism are legally reportable by physicians and health care facilities. King County has been operating a pilot automated electronic syndromic surveillance system at a small number of clinical sites. This year we plan to expand our electronic syndromic surveillance system to King County hospitals that have the necessary computerized clinical information systems required for participation.

With respect to smallpox vaccine, the King County ORWG and others have notified CDC that we strongly recommend that pre-exposure vaccination be offered to health care workers and other first responders in the community who would be likely to have close contact with smallpox cases. We believe that the current vaccine stockpile of 20 million doses is insufficient to meet the demand should smallpox threaten more than one large urban location simultaneously. The CDC is in the process of acquiring additional vaccine and an anticipated 60-135 million doses are expected to be available by the end of the year, with a target of 300 million doses subsequently.

In order to respond successfully to a smallpox outbreak, a strong community–wide effort will be necessary. Volunteer emergency responders, including health care and public health workers and support personnel, will be needed to staff clinical facilities, mass immunization clinics, and conduct contact tracing and epidemiological investigations. As our planning process matures, we anticipate that King County health care providers will have opportunities to participate in disaster response planning. Health care providers who would like additional information about how they might help in a biological disaster response can call the Communicable Disease Control, Epidemiology & Immunization Section at 206-296-4774 and ask for the Bioterrorism Emergency Response Team (BERT).

Antibiotic Resistant Shigellosis in King County

Shigellosis is an invasive bacterial enteric disease, spread via the fecal-oral route. In the U.S., the two most common types of *Shigella* are *S. sonnei* and *S. flexneri*. Food and water contaminated with fecal matter are common vehicles, but because the infective dose of *Shigella* bacteria is very low, this infection is usually transmitted person-to-person through household or sexual contact with an infected person. In recent years, many U.S. cities (including Seattle) have had outbreaks of shigellosis among men who have sex with men who are infected through oral-anal contact (directly or indirectly).

Antibiotic resistance to a number of antibiotics, including ampicillin and trimethoprim-sulfamethoxazole (TMP-SMX) is common in *Shigella* strains circulating in Seattle. Antibiotic sensitivity data is available on 121 of 186 cases (65%) reported since March 2000, and the most commonly tested antibiotics are ampicillin, TMP-SMX, ciprofloxacin, and levofloxacin**. Seventy-nine percent (95/121) of *Shigella* isolates were resistant to ampicillin and 76% (92/121) were resistant to TMP-SMX (see Table 1).**

Table 1 Number and percentage of antibiotic resistant *Shigella* species in King County, March 2000 through January 2002

	Resistant		Not tested	Indeterminate
Organism/Antibiotic	**No.**	**(%)**	**No.**	**No.**
S. flexnari n = 37				
Ampicillin	28	(75.7)	0	0
TMP-SMX*	17	(45.9)	1	0
Ciprofloxacin	0	-	15	1
Levofloxacin	0	-	24	0
S. sonnei n = 80				
Ampicillin	64	(80.0)	0	3
TMP-SMX	72	(90.0)	0	0
Ciprofloxacin	0	-	29	0
Levofloxacin	0	-	29	0
All Types** n = 121				
Ampicillin	95	(78.5)	0	3
TMP-SMX	92	(76.0)	2	0
Ciprofloxacin	0	-	45	1
Levofloxacin	0	-	54	0

* Trimethoprim-sulfamethoxazole.
**Includes all isolates (1 group A, 1 group C, and 2 unknown type)

Of the isolates that were tested for sensitivity to ciprofloxacin and levofloxacin, all were sensitive except for one that was "indeterminate" for ciprofloxacin. However, many isolates (37% for ciprofloxacin, 45% for levofloxacin) were not tested for sensitivity to these antibiotics. During this period, only one isolate each was reported for *S. dysenteriae* and *S. boydii* and both were resistant to ampicillin and TMP-SMX, but were sensitive to the quinolones.

Based on this analysis of local *Shigella* sensitivity data, clinicians should consider routinely requesting antibiotic sensitivity testing of *Shigella* isolates. For empiric treatment of adults, quinolones are recommended. For treatment of children with ampicillin and TMP-SMX – resistant shigellosis, potential options include ceftriaxone and nalidixic acid. Consultation with a pediatric infectious disease physician should be considered. **Healthcare providers should consider antibiotic treatment of shigellosis infections if the patient is a foodhandler, in a childcare setting, or likely acquired the infection sexually.** Persons who fall into these categories are at high risk of spreading their infection to others. Appropriate antibiotic treatment will shorten the duration of shedding of the organism, and decrease the incidence of secondary cases among contacts. Because resistance to commonly prescribed antibiotics is common among *Shigella*, treatment with an appropriate antibiotic based on sensitivity testing is important to resolve the infection and shorten fecal shedding. For further information about shigellosis among men who have sex with men in Seattle, see article in the August 2001 edition of *Epi-Log*, online at: http://www.metrokc.gov/health/phnr/prot_res/epilog/vol4108.htm#shig

Disease Reporting
AIDS ..... (206) 296-4645
Communicable Disease ..... (206) 296-4774
STDs ..... (206) 731-3954
Tuberculosis ..... (206) 731-4579
24-hr Report Line ..... (206) 296-4782
Hotlines:
CD Hotline ..... (206) 296-4949
HIV/STD Hotline ..... (206) 205-STDS
Past issues of the *Epi-log* can be found at:
www.metrokc.gov/health/providers

Reported Cases of Selected Diseases, Seattle & King County 2002

	Cases Reported in January		Cases Reported through January	
	2002	2001	2002	2001
AIDS	19	17	19	17
Campylobacteriosis	24	24	24	24
Cryptosporidiosis	3	3	3	3
Chlamydial infections	320	377	320	377
Enterohemorrhagic *E. coli* (non-O157)	0	1	0	1
***E. coli* O157: H7**	1	2	1	2
Giardiasis	24	18	24	18
Gonorrhea	118	161	118	161
***Haemophilus influenzae* (cases <6 years of age)**	0	0	0	0
Hepatitis A	7	2	7	2
Hepatitis B (acute)	1	3	1	3
Hepatitis B (chronic)	29	38	29	38
Hepatitis C (acute)	3	1	3	1
Hepatitis C (chronic, confirmed/probable)	146	108	146	108
Hepatitis C (chronic, possible)	75	30	75	30
Herpes, genital	58	62	58	62
Measles	0	4	0	4
Meningococcal Disease	3	1	3	1
Mumps	0	0	0	0
Pertussis	5	1	5	1
Rubella	0	0	0	0
Rubella, congenital	0	0	0	0
Salmonellosis	9	15	9	15
Shigellosis	2	6	2	6
Syphilis	5	10	5	10
Syphilis, congenital	0	0	0	0
Syphilis, late	2	4	2	4
Tuberculosis	9	12	9	12

Alternate formats available upon request.