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EPI-LOG

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IN THE DECEMBER 1997 ISSUE: **VOL 37, NO. 12**

- **Influenza Update: Strain Variants Cause Concern**
- **Antimicrobial Resistance: Everybody's Problem**

Influenza Update

In the November issue of the Epi-Log, we reported on the first influenza (A) isolate in King County and Washington state which occurred in October. Three new (A) isolates have been identified, two from King County. Two cases of influenza B in siblings were serologically recognized in Walla Walla in late September. Up to the first week of December, there had been no suggestion of influenza-like illness in schools, in nursing homes, or from sentinel physician practices.

Two reports from outside the state are of great interest and have potential for greater epidemic spread or severity of influenza this season. The first was the recovery of a strain of influenza A related to, but antigenically distinguishable from, the H3N2 component of the current vaccine. This new strain is identified as A/Sydney/05/97–like and was recovered from nursing home residents in Hawaii and passengers aboard a cruise ship sailing between New York City and Montreal. In both outbreaks, the isolates were detected in early November. According to the Center for Disease Control and Prevention (CDC), "The extent to which the A/Sydney/05/97 (H3N2) variant will circulate during the 1997-8 influenza season and the variant's effect on vaccine effectiveness is unknown. However, because vaccine effectiveness is dependent, in part, on the match between the vaccine and circulating strains, protection could be less than optimal if this variant circulates widely."

The other significant occurrence is of an avian strain of influenza causing human disease in Hong Kong. The first case occurred in the spring with the isolation of an avian strain (H5N1) from a child who died of Reye syndrome. Extensive studies showed no evidence of other cases in contacts or in his neighborhood. He may have had poultry contact. This was thought to be an isolated event and to have no epidemic potential. By early December, six more avian strain cases had been reported among Hong Kong residents who had no direct connection with one another. These included a 54 year old man who died from the infection, and two cases who required hospitalization. An additional nine cases are under study; seven are in hospital staff members who cared for the fatal case, and two are family members of a case. Thus, it appears that this avian strain has jumped to humans without the usual swine intermediates. There is also the suggestion of increased severity. The death due to Reye syndrome is not a measure of severity, but the fatality in the 54 year old, and the hospitalization others, suggest a virulent strain. What remains to be seen is whether this strain will establish itself as a human strain. The strain is being studied for its potential in vaccine production.

The H5N1 strain of virus has been recognized in poultry since 1961. Within the last decade, it became more virulent in poultry flocks resulting in significant illness and deaths. As a result, extensive and successful efforts to eliminate it from commercial flocks in the United States began six years ago. Quite recently it has become epidemic in China. There was an outbreak of the virus in chickens in Guangdong province in February and March, 1997, that killed approximately 1.7 million birds. In April the H5N1 strain affected chickens on 3 farms in Hong Kong province, killing some 4500 chickens. Opportunities for human-avian transmission are greater in much of China. It is estimated that 30% of poultry sold in China is sold as live chickens and not pre-slaughtered.

However, the critical issue is whether this strain or a variant of it will now transmit readily from person to person. If epidemic H5N1 influenza becomes established in Hong Kong it will be a matter of months before we can expect to see it in the United States. We have not experienced major antigenic shifts in influenza A since the introduction of the Asian strain (H2N2) in 1957 and the Hong Kong strain (H3N2) in 1968. We will continue to report on influenza trends here, but in the interim we will notify health care providers of significant events by broadcast fax. If you are a health care provider, and you wish to be added to our fax list for health alerts, please call: (206) 296-4774 or fax: (206) 296-4803.

Antimicrobial Resistance

Antibiotics are powerful weapons for fighting infections. However, extensive and inappropriate antibiotic use has contributed to increased rates of antibiotic-resistant organisms. Nationally, the chief drug resistant pathogens include methicillin-resistant *S. aureus*, coagulase-negative staphylococci, vancomycin-resistant *Enterococcus faecalis* and *E. faecium*, *Mycobacterium tuberculosis*, *Neisseria gonorrhoeae, Streptococcus pneumoniae*, and salmonella. Recent journal articles have challenged clinicians, public health officials, and patients to take immediate action to deal with the increasing disease threat resulting from the increasing prevalence of antibiotic resistant bacteria.

Surveillance data for antibiotic-resistant organisms in Washington state are limited. Since 1994, the state Department of Health (DOH) has collected data from selected hospitals on vancomycin-resistant enterococcus (VRE) isolates. The percentage of tested enterococcus isolates resistant to vancomycin increased from around 2% to almost 4%. For *M. tuberculosis*, resistance to at least one anti-tuberculosis drug was found in 32 of 204 isolates (16%) tested in Washington state in 1996. In the past year, the DOH began collecting information on drug resistant *Streptococcus pneumoniae* (DRSP) from selected hospitals in the state, although the period of collection has been too short to identify any trends. Initial

analysis of data received for the third quarter of 1997 shows that 10 (42%) of 24 pneumococcal isolates from blood or cerebrospinal fluid have decreased susceptibility to penicillin; 5 (21%) are fully resistant to penicillin. In contrast, data from a collaborative study with the CDC between 1992 and 1995 found only 1 (0.8%) of 125 blood and cerebrospinal fluid isolates from the Puget Sound Region fully resistant to penicillin. A recent study at the University of Washington found 42 (15%) of 275 isolates collected in 1996 had decreased susceptibility to penicillin; 4 (1.5%) were fully resistant to penicillin. This study did not include many isolates from children and found a prevalence of resistance lower than many other studies nationally.

In general, the prevalence of antibiotic resistance for all the pathogens of interest appears to be lower in Washington state than in many other regions in the U.S., but this situation is likely to change. Thus, efforts to use antibiotics more judiciously here may help to prevent the rapid development of resistance that has been recognized elsewhere in the nation. For DRSP, the currently-available pneumococcal vaccine covers many of the strains which have become resistant and is an important part of a prevention strategy. The vaccine is recommended for all persons aged 65 years or greater and for persons over 2 years of age with certain underlying illnesses (see November Epi-Log).

In Finland and Japan, studies have demonstrated that the significant increase in the prevalence of erythromyin resistant group A streptococci in the 1970s corresponded to the dramatic increase in the use of macrolides. Likewise, as subsequent use decreased nationally, so did the erythromycin resistant isolates.

Health care providers face significant pressures to give patients antibiotics even though they suspect that these treatments may not be necessary. Although the vast majority (>90%) of upper respiratory infections and bronchitis are viral in nature, a recent study revealed that 50 to 70% of adult patient visits for these conditions resulted in an antibiotic prescription for the patient. In this study, practitioners in rural locations were more than twice as likely to prescribe antibiotics than urban practitioners. Other factors**,** such as age, sex, race, and ethnicity of the patient, method of payment, and physician specialty were not significantly associated with antibiotic use. The authors concluded that over prescription of antibiotics was a pervasive practice problem.

Various collaborations have occurred on a national level to deal with the increasing prevalence of antibiotic resistance in hospital and outpatient settings. Ten strategic goals, related processes, and outcome measures to optimize antimicrobial use have been identified in a report by the CDC and the National Foundation for Infectious Diseases. The recommendations recognize that antimicrobial resistance must be tackled systematically at an organizational level and provide a blueprint for action. Recommendations from the American Hospital Association's MRSA task force and the VA consensus panel recognize and offer a range of options for control of MRSA in hospital and long-term care facilities. The American Academy of Pediatrics, the American Society for Microbiology, and the CDC have collaborated to create the pamphlet, "Your Child and Antibiotics," which describes for patients the growing problem of antibiotic resistance and the appropriate use of antibiotics. If you would like one copy of the pamphlet for review, please call us at: (206) 296-4774. Subsequent copies can be obtained by contacting: QuoVadis Harris, NCID/DBMD MS C-09, 1600 Clifton Road, Atlanta, GA 30333, telephone (404) 639-4702; fax (404) 639-4702.

To Report:
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STDs..... 731-3954
Communicable Disease 296-4774
24-hr Report Line..... 296-4782
Disease Alert:
CD Hotline 296-4949
After hours 682-7321
http://www.metrokc.gov/health/

REPORTED CASES OF SELECTED DISEASES SEATTLE-KING COUNTY 1997

	CASES REPORTED IN NOVEMBER		CASES REPORTED THROUGH NOVEMBER	
	1997	1996	1997	1996
VACCINE-PREVENTABLE DISEASES				
Mumps	0	1	4	6
Measles	0	0	1	4
Pertussis	8	18	188	248
Rubella	0	0	1	2
SEXUALLY TRANSMITTED DISEASES				
Syphilis	0	0	5	1
Gonorrhea	73	65	826	878
Chlamydial infections	267	229	2831	3043
Herpes, genital	57	54	626	626
Pelvic Inflammatory Disease	13	18	266	349
Syphilis, late	2	6	39	58
ENTERIC DISEASES				
Giardiasis	17	25	247	232
Salmonellosis	14	13	216	203
Shigellosis	5	7	94	65
Campylobacteriosis	19	46	304	315
E.coli O157:H7	5	11	44	57
HEPATITIS				
Hepatitis A	23	32	403	386
Hepatitis B	0	4	37	77
Hepatitis C/non-A, non-B	0	1	11	12
AIDS	33	61	297	444
TUBERCULOSIS	7	5	105	126
MENINGITIS/INVASIVE DISEASE				
Haemophilus influenzae	0	1	1	4
Meningococcal disease	3	2	20	26