VIRGINIA
EPIDEMIOLOGY BULLETIN

Robert B. Stroube, MD, MPH, Health Commissioner
John S. Marr, MD, MPH, State Epidemiologist
Christopher Novak, MD, MPH, Editor
Vickie L. O'Dell, Layout Editor

January 2004 Volume 104, No. 1

Methicillin-Resistant *Staphylococcus aureus* in Special Populations

Introduction

Staphylococcus aureus is a common bacterium that has the ability to cause a wide variety of infections, from boils and abscesses, to pneumonia and sepsis. It also has a remarkable ability to become resistant to antimicrobial agents. For example, hospital strains of Methicillin-Resistant *Staphylococcus aureus* (MRSA) are resistant to all beta-lactam agents, including oxacillin and nafcillin, as well as cephalosporins and carbapenems. MRSA isolates often are multiply resistant to other commonly used antimicrobial agents, including erythromycin, clindamycin, and tetracycline. MRSA has spread as broad-spectrum antimicrobial usage within hospitals created selection pressure for resistance.

More ominously, reports of increasing numbers of Community-associated MRSA (CA-MRSA) have led to speculation that the epidemiology of MRSA is changing. CA-MRSA occurs in various populations, including children attending child care, prison inmates, and men who have sex with men. Fortunately, these strains are often resistant only to beta-lactam antibiotics and have tended to be susceptible to other antibiotic classes. The lack or loss of resistance to multiple antibiotics suggests a community origin, since antibiotic selective pressure is much lower within the community than in hospitals, and the survival advantage of multiple-drug resistance is lower.

INFECTION means that an organism is present and is causing illness.

COLONIZATION means that an organism is present in or on the body but is not causing illness—asymptomatic MRSA colonization usually does NOT require treatment.

With the development of new antimicrobials falling behind the appearance of microbial resistance, rational approaches to control the spread of MRSA are more urgent than ever. This article discusses the growing prevalence of MRSA in populations that have been found to be at increased risk (e.g., nursing homes, correctional facilities, and sports teams), and outlines appropriate recommendations to limit its impact.

Reservoirs of MRSA

People are a natural reservoir of *S. aureus*, and asymptomatic colonization is far more common than infection. About 60% of people are intermittently colonized, 20% are permanently colonized and the remaining 20% are never colonized. Healthy adults frequently carry *S. aureus* on the skin, nasopharynx and perineum, particularly if the cutaneous barrier has been disrupted or damaged.

Just as with antibiotic-sensitive *S. aureus*, people can pick-up, carry and spread the methicillin-resistant version. Because no systematic, population-based surveillance of community isolates of *S. aureus* exists, the true prevalence of MRSA cannot be determined—however, a hospital-based study found that up to 40% of MRSA infections in adults were acquired before admission to the hospital. Some of the factors that increase the risk of acquiring MRSA include a consistent exposure to a health care setting, severe underlying disease, or a history of broad-spectrum antibiotic exposure. Also, those who experience consistent breaks in the skin (e.g., wounds, indwelling tubes, etc.) are at increased risk. A recent survey of nursing home residents identified peripheral vascular disease and steroid therapy as potential risks for colonization.

MRSA Transmission

MRSA is spread primarily from one individual to another via transiently colonized hands. While MRSA can contaminate environmental surfaces, these have not served as a significant reservoir in most outbreaks. Airborne dispersal of MRSA has been known to oc-

In This Issue:

cur, but it is not considered as a significant source of transmission.

In the healthcare setting, the hands of personnel can become colonized while performing patient care activities on those colonized or infected with MRSA. Even among the small percentage of medical personnel who have persistent nasal carriage, transmission is most likely to occur through MRSA colonization of their hands. **Therefore, good hand hygiene is the primary barrier to the spread of MRSA.**

Special Considerations

Nursing homes

Admission or transfer into a nursing home should not be denied due to MRSA colonization. In fact, persons with MRSA may be protected by the Americans with Disabilities Act or other state or local laws or regulations. However, healthcare facilities should contact the nursing home in a timely manner to permit appropriate arrangements for receiving a colonized patient (e.g., planning resident placement). It should be clearly stated that the patient is colonized but not infected, or has been appropriately treated, to avoid alarming nursing home staff. Facility infection control protocols should be developed and promoted to reduce the risk of MRSA transmission, addressing the following measures:

1) Barrier Precautions and Hygiene. Control measures that prevent the spread of MRSA mostly involve barrier precautions and good hygiene. Standard precautions, in addition to contact precautions modified to fit the resources and capabilities of a facility, are recommended.

Gloves should be worn anytime a health care worker (HCW) will have contact with nonintact skin and mucus membranes. Wearing a gown is recommended anytime a HCW will contact a draining wound or other fluids that may soil clothing (e.g., changing linen, bathing patient, etc.). Masks can be worn when attending to a MRSA-positive patient; however, the main purpose of the mask would be to remind HCWs not to touch their nose while performing procedures. Keeping wounds covered, and maintaining dedicated equipment (e.g., thermometers, stethoscopes) for MRSA-positive patients, also prevents further spread.

Handwashing is crucial to the control of MRSA. **Healthcare workers should wash their hands after skin-to-skin contact with a patient, before gloving and after glove removal, and between patients.**

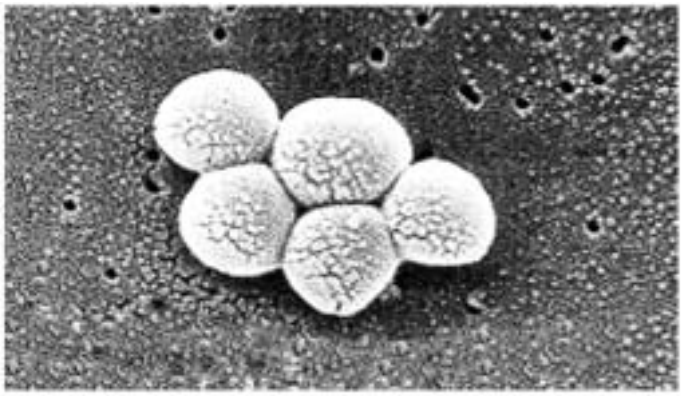
Even though MRSA can be found in the environment, standard housekeeping practices are sufficient to control it. Keeping surfaces clean and routine cleaning of bed linens (e.g., daily for those with draining wounds) should keep the environmental reservoir of MRSA to a minimum. Regular (e.g., daily, if possible) showers or sponge baths of all patients helps by maintaining good skin health and integrity.

2) Activities. In general, healthy people are at low risk of getting infected with MRSA. Therefore, casual contact is acceptable. Visitors should wash their hands before leaving an infected person's room. It is extremely important to maintain the patients' ability to socialize and have access to rehabilitation opportunities. As stated in the Society for Heathcare Epidemiology of America (SHEA) Position Paper: *Antimicrobial Resistance in Long-Term Care Facilities*, "Residents of LTCFs should not be restricted from participation in social or therapeutic group activities within the facility unless there is reason to think that they are shedding large numbers of bacteria and have been implicated in the development of infection in other residents." Therefore, infected or colonized patients should be permitted to participate in group meals and activities if draining wounds are covered, bodily fluids are contained, and the patients observe good hygienic practices.

3) Placement. Given sufficient resources, resident placement is another measure that can be employed to decrease MRSA transmission. The nursing facility should avoid placing a MRSA-positive resident in a room with a resident who is at higher risk of acquiring MRSA, (e.g., people with decubital ulcers, indwelling tubes or multiple functional disabilities). Another approach is to cohort MRSA-positive individuals (i.e., assign known MRSA colonized patients to the same room, or house colonized and non-colonized patients in separate wards or areas). If patients are cohorted, the nursing home should minimize staff crossover from colonized to non-colonized patients. This reduces the likelihood that MRSA will be transferred from affected to nonaffected residents on the hands of HCWs.

4) Surveillance. Surveillance wound or drain cultures of new or returning patients can help to identify patients who need precautions. Wounds that have not been assessed prior to admission or wounds that arise while in the nursing facility should be cultured. Facilities should obtain nasal swabs for MRSA for roommates of patients newly found to be infected or colonized with MRSA. This increases the likelihood that outbreaks will be recognized early. However, routine cultures for MRSA are not recommended for nursing home patients and staff. Surveillance cultures (e.g., roommates, regular contacts, staff) may be helpful during outbreaks. Environmental sampling is not generally helpful.

Some studies have also suggested that screening high risk patients and isolating colonized individuals may help to decrease the MRSA burden in a facility. However, to be effective this control



Scanning electron micrograph of *Staphylococcus aureus*

Sample MRSA Surveillance Line List

Name, age & sex	Room No.	Unit or ward	Date first admitted to this facility	Recent Hospitalizations[1]		Date of first MRSA-positive culture	Site of colonization or site of infection and onset date[2]	Has patient been cleared of MRSA?[3] (yes/no)
				Admit date	Discharge date			
Age: ___ Sex: M F								
Age: ___ Sex: M F								

1. List all admissions and discharge dates within 30 days prior to onset of infection or date of first MRSA-positive culture if onset date unknown.
2. List all sites of MRSA infection (e.g., wound, sputum, catheter line) and list the earliest onset date known. If the presence of MRSA is believed to be a colonization, list colonization site only (no onset date required).
3. A patient is considered clear of MRSA when three consecutive negative cultures, each taken a minimum of one week apart when the patient is not receiving antibiotic therapy, are taken from a previously infected site and/or nares.

measure must be supplemented by infection control measures, such as good hygiene.

Maintaining a line list of residents with clinical cultures growing MRSA is a practical and cost effective way to monitor the level of MRSA in a facility (see sample line list above). Monitoring baseline and threshold MRSA infection rates then helps to identify the need for investigations and/or initiation of enhanced control measures.

5) Decolonization. Decolonization antibiotic therapy is variably successful, and recolonization generally occurs. In addition, widespread use will contribute to the emergence of further antibiotic resistance. Therefore, routine treatment of asymptomatic, colonized individuals is not recommended, but may be done on a case-by-case basis (e.g., an immunocompromised patient, a health care worker who has been epidemiologically linked to an outbreak, etc.), depending on the facility and a physician's assessment of the situation. Facilities should consider decolonization only during outbreaks where other control measures are not working or infections are particularly severe. Otherwise, good hygiene and strict implementation of barrier precautions are sufficient.

Following these principles will help prevent the transmission of MRSA while preserving quality of life for those residents colonized with MRSA.

Correctional facilities

Prisons, jails and other correctional facilities have special challenges related to MRSA control. These include limited resources for isolating cases, and overcrowding that can result in less than hygienic conditions that may lead to poor skin integrity. Injection drug use, unprotected sex and tattooing are other risk behaviors that may occur. Because of these barriers, prisons and jails can serve as amplifiers of MRSA skin disease.

Containing MRSA infections in a confined setting is difficult, time consuming, and resource-intensive. **Improving hygiene and infection-control practices in correctional facilities will likely be the most effective strategy in the control of MRSA.** This could include: 1) skin infection screening and monitoring (e.g., maintaining a log of skin infections, visual skin screening on intake); 2) culturing suspect lesions and providing targeted antimicrobial therapy; 3) efforts to improve inmate hygiene (e.g., education on appropriate hand and body hygiene, appropriate laundering techniques, limiting use of shared items, and greater availability of soap); and 4) improved access to wound care and trained health-care staff.

A recent MRSA outbreak in a Virginia juvenile correctional facility illustrates the effectiveness of interventions. This outbreak involved five moderate to severe soft tissue infections over a three-week period from August to September 2003. The outbreak ended as a result of educating residents about promptly attending to wounds, stressing the importance of good personal hygiene, and increasing environmental cleanliness. Those that were most severely affected were cohorted in the facility's infirmary under contact precautions until either the wounds were healed or were no longer draining and could be easily covered.

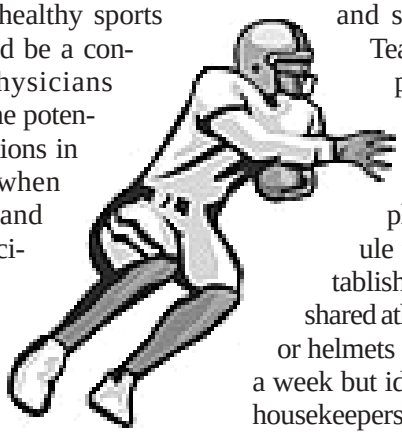
Facilities detecting a substantial number of MRSA infections should implement improved hygiene, infection-control, and treatment practices. Additional measures may be employed depending on the situation and under the guidance of the facility's physician. Correctional facilities experiencing outbreaks of MRSA may want to seek assistance from their local and state health departments.

In July 2003, the Federal Bureau of Prisons issued guidelines to prevent and control MRSA in correctional facilities. See http://www.bop.gov/hsdpg/hsdcpgstaph.pdf for details.

Sports Teams

CA-MRSA has the potential to spread and cause outbreaks among players of competitive sports, including those sports that involve little skin-to-skin contact, such as fencing. For example, in the fall of 2003 several members of a southern Virginia school football team were diagnosed with

MRSA skin infections. Although the results of the investigation, including genetic testing of the isolates, suggested that most of these were coincidental infections and not transmitted among team members, this event brought home two points: 1) MRSA exists in the community and 2) transmission among young, healthy sports team members should be a concern. Therefore, physicians should be aware of the potential for MRSA infections in sports participants when evaluating patients and making treatment decisions.



Possible risk factors for infection among sports teams include:

- Physical contact. Some sports for which MRSA infections have been reported involve frequent physical contact among players (e.g., football and wrestling).
- Skin damage (including skin trauma from turf and mat burns) that could facilitate entry of pathogens. In sports with less direct contact (e.g., fencing), protective clothing can be hot and might chafe skin, resulting in abrasions and lacerations.
- Inadequate wound coverage.
- Sharing of equipment, clothing and unwashed bath towels. Pieces of shared equipment or other personal items that are not cleaned or laundered between users could be a vehicle for *S. aureus* transmission.
- Sharing personal items (e.g., balms, razors).

Wound cultures should be collected when medically indicated, particularly when wounds are not healing with appropriate therapy. However, testing of asymptomatic teammates, or decolonization therapy, is generally not recommended.

All persons associated with competitive sports teams, including players, coaches, teachers, parents, and administrators, can help prevent sports-related skin infections and should be aware of prevention measures. Sports team administrators should provide an environment that promotes good hygiene, such as clean facilities and adequate supplies of soap and towels. Coaches and parents should encourage good hygiene among players (e.g., appropriate hand hygiene, showering with soap after every practice or tournament, laundering personal items such as towels and supporters after each use). Team members should be taught proper first aid, follow a system to ensure adequate wound care and cover skin lesions appropriately before play. A routine cleaning schedule for equipment should be established—cleaning or laundering shared athletic equipment such as pads or helmets should be done at least once a week but ideally after each use. School housekeepers and staff should be educated on proper handling of soiled equipment and linens. Players should be encouraged to avoid sharing towels or other personal items, and inform coaches about active skin infections. Consultation with a health-care provider is recommended for wounds that do not heal or appear infected.

Conclusions

The development of multi-drug resistant organisms results from antimicrobial selection pressure. This leads to fewer treatment options, usually with more expensive and more toxic medications. Evidence suggests that MRSA strains have gained a foothold in the community and are emerging as important outpatient pathogens. Based on the experience with penicillin-resistant strains, prevalence of MRSA among community isolates may be as high as 25% within the next 5 to 10 years. Clinical implications of this trend would include:

- increased treatment failures, with increased complications or deaths;
- infections that may be more difficult to manage or more expensive to treat; and,
- increased vancomycin use, adding further to the problem of antibiotic-resistant gram-positive bacteria.

Minimizing the antibiotic pressure that favors the selection of resistant strains is essential to controlling the emergence of these strains in the hospital and the community. Low cost methods can be implemented to effectively limit the impact of MRSA, while increasing patient safety. Although challenges exist, efforts to control antimicrobial resistance remain everyone's responsibility.

References:

- Strausbaugh LJ, Crossley KB, Nurse BA, Thrupp LD, SHEA long term care committee. SHEA Position Paper: antimicrobial resistance in long-term-care facilities. *Infect Control Hosp Epidemiol* 1996;17:129-139.
- BOP Clinical Practice Guidelines For The Management Of Methicillin-Resistant *Staphylococcus aureus* (MRSA) Infections. (October 2003).
- Canadian Paediatric Society (CPS). Control of methicillin-resistant *Staphylococcus aureus* in Canadian paediatric institutions is still a worthwhile goal. *Paediatrics & Child Health* 1999; 4(5):337-341.
- CDC. Methicillin-Resistant *Staphylococcus aureus* Infections Among Competitive Sports Participants—Colorado, Indiana, Pennsylvania, and Los Angeles County, 2000-2003. *MMWR* 2003; 52(33);793-795.
- CDC. Outbreak of community-associated methicillin-resistant *Staphylococcus aureus* skin infections—Los Angeles County, California, 2002-2003. *MMWR* 2003; 52:88.
- CDC. Methicillin-resistant *Staphylococcus aureus* skin or soft tissue infection in a state prison—Mississippi, 2000. *MMWR* 2001; 50:919-22.
- CDC. The Changing Epidemiology of *Staphylococcus aureus. Emerg Infect Dis* 2001; 7(2).

Index to Volume 103 (by Issue Number)

Questions for the Health Department: Influenza Vaccinations for Thimerosal-Sensitive Patients

As a result of the September and November 2003 VEB articles related to influenza vaccines, Dr. M.H. in Northern Virginia inquired about what measures can be taken for providing influenza immunizations to patients who are sensitive to thimerosal.

Thimerosal is an organic mercurial compound that has been widely used as a preservative in some vaccines, eyedrops, and contact lens cleaning and storage solutions. Some vaccines contain no thimerosal; "preservative-free" vaccines may contain trace amounts (<0.5 µg/dose), if it has been used only in the production process. Generally, vaccines formulated in multidose vials (such as the influenza vaccine) may have thimerosal added in varying concentration (10-50 µg/dose) to prevent microbial contamination.

The Global Advisory Committee on Vaccine Safety has found no evidence of mercury toxicity in infants, children, or adults exposed to thimerosal in vaccines. The only evidence of harm due to thimerosal in vaccines appears to be a small risk of hypersensitivity reactions, typically skin rashes or local swelling at the site of injection. For example, Aberer (1991) found that although sensitization to thimerosal can occur through vaccines, the amount delivered IM is insufficient to elicit clinical symptoms. Audicana et al (2002) found that even among individuals with delayed type hypersensitivity to thimerosal, more than 90% of allergic patients tolerated intramuscular challenge tests. The vast majority of people who have positive skin tests for thimerosal allergy tolerate thimerosal-containing vaccines well, as long as it is injected into the muscle—as the flu shot should be given—rather than directly under the skin.

After consultation with the VDH Division of Immunization, the following options are available for dealing with a patient with thimerosal hypersensitivity, depending on a thorough assessment of the patient's medical history, and the risks and benefits of immunization:

1) If there has been no evidence of anaphylactic reaction to thimerosal in a patient, then use of the influenza vaccine should be relatively safe. Epinephrine injection (1:1000) should always be immediately available for <u>any</u> patient should an acute anaphylactic reaction occur.
2) FluMist (intranasally administered Live, Attenuated Influenza Vaccine) does not contain thimerosal—if there are no other contraindications (e.g., age, underlying medical conditions, pregnancy, sensitivity to eggs, etc.), this could be a good option.
3) A limited supply of preservative-free influenza vaccine exists. Although not shown to be safer than regular childhood influenza vaccine, this product has been produced for use in children 6-35 months of age.

Use of currently available preservative-free influenza vaccine in adults is off-label. Such use would require two injections (the preservative-free vaccine is formulated in doses of 0.25 ml, while the recommended adult dosage is 0.5 ml). Since preservative-free influenza vaccine is not approved by the Food and Drug Administration for use in older children or adults, and usage for adults would more rapidly exhaust the available supply and potentially leave children without the appropriate immunizations, the Centers for Disease Control and Prevention does not endorse "off-label" uses for patients.

When in doubt, the directions in the package insert state that it is contraindicated to administer influenza vaccine to individuals known to be sensitive to the components of the vaccine. Unfortunately, this may mean that some patients cannot receive the vaccine. For patients at high risk from influenza, an alternative could include chemoprophylaxis using antivirals (e.g., amantidine, rimantidine, or oseltamivir). Finally, the Division of Immunization believes that preservative-free adult dosages of inactivated influenza vaccine may become available in subsequent years.

Note: *The Virginia Department of Health is pleased to try to answer healthcare provider questions related to previous VEB articles or other public health/preventive medicine issues, either through direct communication, or if of general interest, within the Virginia Epidemiology Bulletin.*

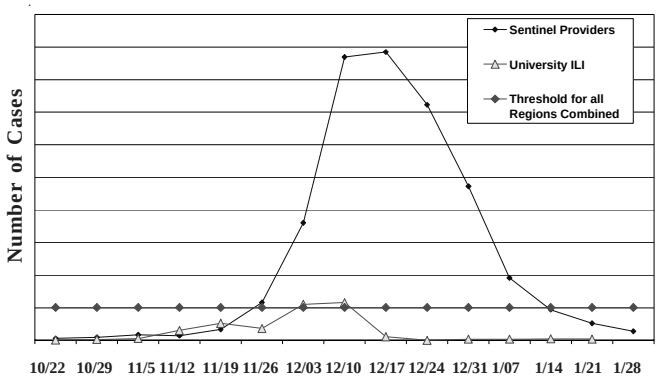
References:

1. Aberer W. Vaccination despite thimerosal sensitivity. *Contact Dermatitis*. 1991 Jan; 24(1): 6-10.
2. Audicana MT, Munoz D, del Pozo MD, Fernandez E, Gastaminza G, Fernandez de Corres L. Allergic contact dermatitis from mercury antiseptics and derivatives: study protocol of tolerance to intramuscular injections of thimerosal. *Am J Contact Dermat*. 2002 Mar; 13(1): 3-9.

Flu Corner

Nationally, the number of states reporting widespread influenza activity continued to decline in January. In addition, specimens testing positive for influenza and patient visits for influenza-like illness (ILI) have declined. However, national pneumonia and influenza (P & I) mortality continued to exceed the epidemic threshold. Therefore, the influenza threat has not ended.

Influenza-like Illness Reported by Sentinel Providers and University Surveillance in Virginia for the 2003-2004 Flu Season



In line with the national trend, **Virginia** influenza levels have declined (see graph). As of January 22, 2004, the number of known adult influenza deaths (adults for whom influenza is noted on the death certificate) in Virginia was 15—most have been in high-risk individuals with multiple risk factors. In addition, one child influenza death and three cases of influenza-associated encephalopathy in children are known to have occurred in Virginia to date.

Worldwide Avian Influenza A (H5N1) Cases

Concern over avian influenza A (H5N1) has grown in recent months. Influenza A (H5N1) viruses normally circulate among wild birds but can infect poultry, and rarely have infected people in the past. This year, outbreaks of influenza A (H5N1) have also been reported among poultry in Cambodia, China, Hong Kong, Indonesia, Japan, Korea, Laos, Thailand and Vietnam.

In addition, Vietnam has reported 18 people who have contracted influenza A (H5N1) virus infections (13 of whom have died), and 5 cases of avian influenza in humans have occurred in Thailand (all of whom have died). To date all viral genes in these infections were of avian origin, indicating that the virus had not yet acquired human genes (human genes increase the likelihood that a virus of avian origin can be transmitted from one human to another). Genetic sequencing of human H5N1 isolates from Vietnam did show characteristics that may confer antiviral resistance to amantadine and rimantadine. Oseltamivir and zanamavir should still be effective.

At this time there is no evidence of efficient person-to-person transmission of avian influenza in Vietnam or elsewhere. However, current avian influenza could change to a more infectious virus that would threaten to cause a global epidemic. **As a result of concern over the potential for wider spread of avian influenza, the Centers for Disease Control and Prevention (CDC) recommends enhanced surveillance efforts by state and local health departments, hospitals, and clinicians to identify patients at increased risk for influenza A (H5N1).**

Avian influenza A (H5N1) should be considered in hospitalized patients with:

a. radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established, **AND**
b. history of travel within 10 days of symptom onset to a country with documented H5N1 avian influenza in poultry and/or humans (for a listing of H5N1-affected countries, see the WHO Web site at http://www.who.int/en/).

In addition, avian influenza A (H5N1) should be considered on a case-by-case basis in hospitalized or ambulatory patients with:

a. documented temperature of >38°C (>100.4°F), AND
b. one or more of the following: cough, sore throat, shortness of breath, AND
c. history of contact with domestic poultry (e.g., visited a poultry farm, household raising poultry, or bird market) or a known or suspected human case of influenza A (H5N1) in an H5N1-affected country within 10 days of symptom onset.

Testing for influenza A (H5N1) should be done in consultation with local health departments, and includes nasopharyngeal wash or swab for viral culture by DCLS. Influenza A virus should be subtyped, and those that cannot be identified as H3 or H1 viruses will be sent to the CDC for testing for influenza A (H5N1).

Infection Control Precautions for Influenza A (H5N1)

All patients who present to a healthcare setting with fever and respiratory symptoms should be managed according to recommendations for Respiratory Hygiene and Cough Etiquette (see http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm) and questioned regarding their recent travel history. Isolation precautions (see http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm) should be implemented for all hospitalized patients diagnosed with or under evaluation for influenza A (H5N1). These precautions should be continued for 14 days after onset of symptoms until an alternative diagnosis is established or until diagnostic test results indicate that the patient is not infected with influenza A virus.

More Information About Influenza

For further details about the reported cases of influenza A(H5N1) in Vietnam, see the WHO Web site (www.who.int/en/). Additional information about influenza is available on the CDC Web site at www.cdc.gov.

SARS Update: Recent SARS Cases in China

As of February 4, 2004, four suspected or confirmed cases of Severe Acute Respiratory Syndrome (SARS) in **southern China** have been reported. No link has been established between the cases, and the source of exposure for the cases remains unclear. All four patients are reported to be doing well, and no signs or symptoms of SARS-like illness have been reported among their identified contacts to date.

Recommended U.S. SARS Control Measures

The Centers for Disease Control and Prevention (CDC) currently recommends that U.S. physicians maintain a higher index of suspicion of SARS in patients who require hospitalization for radiographically confirmed pneumonia or acute respiratory distress syndrome (ARDS) **AND** who have a history of travel to Guangdong Province (or close contact with an ill person with a history of recent travel to Guangdong Province) in the 10 days before onset of symptoms. When such patients are identified, the following actions should be taken:

- Immediately place patients under appropriate isolation precautions for SARS (i.e., contact and airborne precautions); and,
- Report the suspected case to the local health department—they can help to arrange to test for evidence of SARS-CoV infection as **part** of the diagnostic evaluation.

Contacting the local health department is important as personnel there will also help to identify, evaluate, and monitor relevant contacts of the patient, as indicated.

The CDC continues to recommend identifying and reporting patients who require hospitalization for radiographically confirmed pneumonia or ARDS without identifiable etiology **AND** who have one of the following risk factors in the 10 days before the onset of illness:

- Travel to mainland China, Hong Kong, or Taiwan, or close contact with an ill person with a history of recent travel to one of these areas, OR
- Employment in an occupation associated with a risk for SARS-CoV exposure (e.g., health care worker with direct patient contact; worker in a laboratory that contains live SARS-CoV), OR
- Part of a cluster of cases of atypical pneumonia without an alternative diagnosis.

Infection control practitioners and other health care personnel should also be alert for clusters of pneumonia among two or more health care workers who work in the same facility. Diagnostic testing for SARS in these cases proceeds as described at www.cdc.gov/ncidod/sars/absenceofsars.htm.

SARS and Influenza A(H5N1)

The CDC notes that there is considerable potential overlap in the clinical presentation and travel history of persons with either SARS or influenza A (H5N1) infection. Therefore:

- Influenza A infection should be considered in the differential diagnosis when evaluating a SARS patient.
- Laboratories should make subtyping of influenza A viruses isolated from potential SARS cases a priority.
- The laboratory should immediately notify the local health department if any influenza A virus cannot be subtyped.

SARS Testing

Remember that, with the current low level of SARS activity, testing would likely lead to a relatively high proportion of "false positives." False-positive test results generate tremendous anxiety and concern and expend valuable public health resources. Therefore, SARS-CoV testing should be performed judiciously and preferably only in consultation with the local health department. If SARS tests are performed, providers should report all positive test results immediately to the local health department, and arrange for confirmatory testing at the Division of Consolidated Laboratories (DCLS) through the local health department.

"Cover Your Cough" Poster Available!

This simple, but informative, design will provide good hand-hygiene techniques to your patients to help prevent the spread of respiratory illnesses.

For Health Care Settings

For Community and Public Settings (e.g., Schools, Child Care Facilities)

Flyers (8.5" x 11") and **Posters** (11" x 17") are available as PDF files for downloading and printing from the CDC website at: http://www.cdc.gov/flu/protect/covercough.htm

Cases of Selected Notifiable Diseases Reported in Virginia*

Disease	Total Cases Reported, December 2003: State	Regions: NW	N	SW	C	E	Total Cases Reported Statewide, January through December: This Year	Last Year	5 Yr Avg
AIDS	59	10	16	5	15	13	795	870	922
Campylobacteriosis	75	15	11	13	23	13	844	686	636
E. coli O157:H7	5	2	1	0	2	0	42	70	69
Giardiasis	58	4	23	5	11	15	392	386	443
Gonorrhea	765	41	56	98	188	382	9,042	10,462	10,048
Hepatitis A	22	3	6	3	3	7	121	163	181
B, acute	30	3	6	7	10	4	210	224	165
C/NANB, acute	7	0	1	3	1	2	14	15	9
HIV Infection	86	10	30	7	22	17	799	980	898
Lead in Children†	47	8	12	4	8	15	769	788	691
Legionellosis	10	5	2	1	0	2	100	35	36
Lyme Disease	87	5	76	0	0	6	174	259	152
Measles	0	0	0	0	0	0	0	0	4
Meningococcal Infection	3	1	1	1	0	0	27	46	49
Mumps	0	0	0	0	0	0	1	5	10
Pertussis	94	86	0	3	1	4	185	168	139
Rabies in Animals	57	16	16	10	7	8	542	592	560
Rocky Mountain Spotted Fever	1	0	0	0	0	1	32	43	25
Rubella	0	0	0	0	0	0	0	0	<1
Salmonellosis	155	19	43	20	37	36	1,168	1,277	1,217
Shigellosis	33	1	13	5	12	2	443	1,061	528
Syphilis, Early§	14	0	6	1	2	5	155	165	282
Tuberculosis	97	12	49	8	14	14	332	315	317

Localities Reporting Animal Rabies This Month: Accomack 2 raccoons; Alexandria 1 raccoon; Arlington 1 raccoon; Augusta 1 cat; Bedford 1 dog, 3 raccoons, 1 skunk; Carroll 1 raccoon; Charles City 1 skunk; Chesterfield 1 fox; Clarke 1 raccoon; Dinwiddie 1 fox; Essex 1 otter; Fairfax 1 bat, 1 cat, 5 raccoons, 1 skunk; Fauquier 1 raccoon; Galax 1 skunk; Grayson 1 fox; Henrico 2 raccoons; King George 1 skunk; Loudoun 4 raccoons, 1 skunk; Madison 1 raccoon; New Kent 1 fox; Newport News 2 raccoons; Norfolk 1 cat; Northumberland 1 fox, 1 skunk; Orange 1 cat; Page1 skunk; Prince George 1 raccoon; Prince William 1 fox; Pulaski 1 cat; Roanoke 1 skunk; Rockbridge 1 bobcat, 1 skunk; Rockingham 2 cows; Shenandoah 2 raccoons, 1 skunk; Spotsylvania 1 skunk; Stafford 1 raccoon.

Toxic Substance-related Illnesses: Asbestosis 16; Cadmium Exposure 1; Lead Exposure 11; Mercury Exposure 3; Pneumoconiosis 5.

*Data for 2003 are provisional. †Elevated blood lead levels ≥10µg/dL.

§Includes primary, secondary, and early latent.

Published monthly by the
VIRGINIA DEPARTMENT OF HEALTH
Office of Epidemiology
P.O. Box 2448
Richmond, Virginia 23218
Telephone: (804) 864-8141

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment
www.vdh.virginia.gov

PRESORTED STANDARD U.S. POSTAGE PAID Richmond, Va. Permit No. 591