1. First Reported Case of Vancomycin Intermediate Staphylococcus aureus in Wisconsin

The Bureau of Communicable Diseases and Preparedness, Division of Public Health, received a report on June 12, 2007 of isolation of vancomycin intermediate Staphylococcus aureus (VISA) from a patient in an acute care facility. This represents the first case of VISA infection reported in a Wisconsin resident.

The patient, an 86 year old female, was transferred from a subacute care unit to the hospital on May 22, 2007, due to recurrent fever. She was previously admitted to the subacute care unit on April 10 after been treated at another hospital for a stage IV presacral decubitis ulcer, congestive heart failure, and pneumonia. Three weeks after the initial hospital admission she developed an episode of hypotension and fever.

Blood cultures obtained at admission on May 22 yielded MRSA, and treatment with IV vancomycin was started. The source of the infection was thought most likely to be the decubitis ulcer. Subsequently blood cultures obtained from May 23-27 also yielded MRSA; blood cultures collected from May 28-June 1 were negative. The patient was discharged to the subacute care unit on June 1 and again developed recurrent fever.

Blood cultures obtained on June 7 and June 9 yielded MRSA with intermediate susceptibility to vancomycin (MIC = 4-8 ug/ml). The isolate was sent to the Wisconsin State Laboratory of Hygiene for confirmation of susceptibility results. The MIC by E-test and broth dilution was 4ug/ml. This was also confirmed by testing at the CDC.

Because endocarditis was suspected, the patient underwent an echocardiogram on May 24. No obvious vegetation was seen and no other foci of infection were identified. In addition to vancomycin,
the patient was treated with rifampin, daptomycin, and linezolid. The patient expired on June 11.

According to CDC guidelines for investigation and control of VISA and VISA infection, contact tracing is not routinely recommended because to date VISA strains are characterized by a resistance mechanism that is not transferred to susceptible strains and is associated with vancomycin use. Therefore the likelihood of transmission to contacts in the absence of vancomycin use is low. The infection control practitioner reporting this case of VISA infection determined the patient did not have any roommates during her stays in the subacute care unit and the hospital. Accordingly, follow-up of this case consisted of reporting the findings to the CDC.

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2. Summer 2007 WISCONSIN AIDS/HIV UDPDATE Posted on Web

The summer 2007 issue of the Wisconsin AIDS/HIV Update, a quarterly publication of the Wisconsin AIDS/HIV Program, is posted at http://dhfs.wisconsin.gov/aids-hiv/Update/index.htm. This issue contains several articles of interest to public health and infection control professionals.

Two in-depth articles focus on

- Annual HIV Testing As A Prevention Strategy For Men Who Have Sex With Men
- Detecting Acute HIV Infection Through Nucleic Acid Testing


Subscribers to the listserv (http://dhfs.wisconsin.gov/aids-hiv/Signup/index.htm) are notified via email when new issues of the Update are posted.

3. Rapid HIV Testing Technology Update

Of the six rapid HIV antibody tests currently on the market and approved by the Food and Drug Administration (FDA), three are categorized as “waived” under the Clinical Laboratory Improvements Amendment (CLIA) Program. Waived tests are fairly simple to use and can be conducted outside a formal laboratory. Waived rapid HIV antibody tests have been a key advance in HIV prevention because they significantly increase the number of persons who receive their test result and are linked to needed services.

When used with whole blood specimens, the following are categorized as waived rapid HIV tests:

- OraQuick Advance, manufactured by OraSure;
- UniGold, manufactured by Trinity Biotech; and
- Clearview Stat-Pak, manufactured by Inverness Medical.

OraQuick Advance can also be used as a waived test with oral fluid specimens. When used with serum or plasma, all of these tests are categorized as “moderately complex” since running these tests require a higher standard for laboratory personnel and test sample processing.

The three rapid HIV antibody tests have comparable sensitivity and specificity and each has specific advantages, e.g.:

- OraQuick Advance is the only rapid test that can be used orally,
- UniGold test has the fastest developing time (10 minutes), and
- Stat-Pak has a long shelf-life which reduces waste.

During the past 4 years, the Wisconsin AIDS/HIV Program has used OraQuick Advance for the majority of its rapid testing. In 2006, the Program supplied UniGold at a large STD clinic in Milwaukee because of lower costs and shorter developing time which eased clinic flow.

The AIDS/HIV Program is currently evaluating the use of the Clearview Stat-Pak test, released in spring 2007, for a significant amount of testing conducted with whole blood. Stat-Pak’s 24 month shelf-life reduces waste and opens the possibility of
rapid testing at lower volume sites. It has a shorter developing time than the OraQuick Advance (15 min vs. 20 min) but a longer read time (the time period during which a result can be read) than the UniGold (5 min vs. 2 min) which improves the overall client wait time and allows enough “cushion” time for a staff person to read the result. The Stat-Pak is unique because a reactive test result can be read as soon as it develops rather than waiting the standard developing time.

Considerations for the use of various tests in different settings includes test performance (e.g. sensitivity and specificity; detection of HIV-2; temperature stability, etc.); cost; shelf-life, and ease of use. The AIDS/HIV Program will consider these factors in assessing new tests as they become available.

For more information on rapid HIV antibody testing through the Wisconsin AIDS/HIV Program, contact the HIV Counseling, Testing, & Referral Specialist: Kathleen Krchnavek 608-267-3583 krchnka@dhfs.state.wi.us

4. Babesiosis Cases Increasing in Wisconsin

This article is a brief synopsis of a paper recently published in the Wisconsin Medical Journal. Access the full paper at: http://www.wisconsinmedicalsociety.org/_WMS/publications/wmj/issues/wmjv106n4/Kazmierczak.pdf

Babesiosis can be a life-threatening illness with clinical manifestations that include fever, chills, myalgia, fatigue, hepatosplenomegaly, and hemolytic anemia. The overwhelming majority of cases, in the USA, are caused by the intra-erythrocytic parasite Babesia microti. The disease is generally more severe among individuals who are asplenic, immunocompromised, or elderly.

The parasite is transmitted to humans by the Ixodes scapularis tick (“deer tick”), which is also the vector for the agents of human Lyme disease and Anaplasmosis (formerly called human granulocytic ehrlichiosis). Co-infections with these agents have been described.

Babesiosis has historically been rare in Wisconsin. A striking increase in the number of cases reported to the Division of Public Health occurred in 2004 and 2005 (see figure). This is likely due to an increased prevalence of infected tick vectors, and may signal a long term increase in cases of babesiosis in Wisconsin.

Of the 32 cases of babesiosis reported to the DPH during 1996-2005, 23 (72%) occurred during 2004 and 2005. The majority of cases occurred in northwestern and west central Wisconsin. Anemia, thrombocytopenia, and elevation of liver transaminase levels were the most notable laboratory abnormalities among case patients.

Because of this apparent increased incidence in babesiosis in Wisconsin, clinicians should increase their index of suspicion for this disease and include acute babesiosis in the initial differential diagnosis for an acute febrile illness in the setting of possible tick exposure.

Reported confirmed and probable cases of babesiosis (n=32), Wisconsin, 1996-2005

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5. Wisconsin Supreme Court rules in favor of confinement of TB patients for treatment

State law gives the Department of Health and Family Services and Local Health Departments the power to confine people who have chronically missed doses of medicine or repeatedly refused to comply with Public Health officials in adherence to TB treatment.

One Milwaukee resident, who had developed infectious tuberculosis, but could not be located, was the subject of a search by officials of the Milwaukee Health Department. When she was later hospitalized, a circuit court order was obtained providing for her temporary detention at the hospital. After one month of detention and treatment, her tuberculosis became non-infectious and she was released into her sister's care and custody. She then failed to adhere to directly observed therapy and was lost to follow-up. When the city relocated the patient, officials sought her incarceration because her course of treatment had not been completed and she was at risk of redeveloping infectious tuberculosis. The patient also had demonstrated a propensity to abscond, rendering her care and treatment impossible except under conditions of secure confinement. The circuit court ordered her incarcerated for the entire course of her treatment, rejecting her contention that she should be confined in a hospital or other medical facility, partly on grounds of cost and partly on grounds of security. The circuit court's order was eventually upheld by the Wisconsin Court of Appeals and on July 17, 2007 the Wisconsin Supreme Court agreed with the Court of Appeals. This Supreme Court Decision further affirms that processes used in Wisconsin for confinement of TB cases to protect the health of the public are consistent with statutory requirements.

The patient asked to be confined to Aurora Sinai Medical Center, but the circuit court ordered the patient confined to the Milwaukee County Criminal Justice Facility (CJF).

- The Court of Appeals affirmed the Circuit Court on two independent grounds. First, the Court of Appeals agreed that Wis. Stat. § 252.07(9) authorized the patient’s confinement to the CJF, concluding that statutory language referring to "no less restrictive alternative" applied only to the fact of confinement itself, and not the place of confinement. Thus, the Court of Appeals concluded that once confinement is determined to be necessary, the statute does not require placement to the least restrictive facility. It further concluded that a circuit court may consider the relative cost of different placement options when determining the place of confinement.

- The Wisconsin Supreme Court concluded that Wis. Stat. § 252.07(9) (a) authorizes confinement to a jail for a person with noninfectious tuberculosis who is at a high risk of developing infectious tuberculosis and fails to comply with a prescribed treatment regimen, provided the jail is a place where proper care and treatment will be provided and the spread of disease will be prevented, and that no less restrictive alternative exists to jail confinement. It further concluded that a circuit court may take into account the cost of placement options when determining the place of confinement under § 252.07(9), but only after determining that two or more placement options fulfill the statutory requirements of proper medical treatment and disease prevention, and that none of these options is significantly less restrictive than the other(s).

- In this case, the circuit court engaged in a careful, deliberative process in which it demonstrated appropriate concern for both the public health of the community and the care and treatment of the patient. The Wisconsin Supreme Court concluded the circuit court did not erroneously exercise its discretion in ordering the patient’s confinement to the CJF. It therefore affirmed on these grounds the court of appeals’ opinion affirming the circuit court's order of confinement.

The complete decision of the Wisconsin Supreme Court Decision can be found at: [http://www.wicourts.gov/sc/opinion/DisplayDocument.pdf?content=pdf&seqNo=29744](http://www.wicourts.gov/sc/opinion/DisplayDocument.pdf?content=pdf&seqNo=29744)

The summary of the holdings in the Supreme Court decision is as follows:

- The Milwaukee County Circuit Court found that if the patient continued to not adhere to treatment, the patient would become contagious and threaten the health of the public. The court issued an order of confinement pursuant to Wis. Stat. § 252.07(9).
In partnership with local health departments and health care providers, the Wisconsin Department of Health and Family Services TB Program is responsible for the implementation of Wis. Stat. § 252.07(8) and (9) (2005-06). This statute delineates the process for ordering involuntary confinement of persons with infectious or high-risk TB disease who are unable or unwilling to comply with their prescribed treatment.

Guidelines for local health departments, located on the TB Program’s website at http://dhfs.wisconsin.gov/tb, cover the isolation and confinement of TB cases as well as other aspects of TB management (see the Effective Practice Guidelines hyperlink). In the event that involuntary confinement is indicated, the Confinement, Preparedness & Implementation Guideline outlines the steps that local health authorities should follow.

This Supreme Court Decision further affirms that processes used in Wisconsin for confinement of TB cases to protect the health of the public are consistent with statutory requirements.


The Division of Public Health is monitoring occurrence of aseptic (viral) meningitis in the state. Some focal increases in incidence have been reported. An outbreak in Marathon County, caused by an enterovirus (Echovirus 18), has involved illnesses in at least 18 people since June. Most of those infected are adults. Aseptic meningitis is a marker for the occurrence of a wide range of enteroviral related illnesses, but is a particularly important manifestation because of the frequent need to consider and rule out a diagnosis of bacterial meningitis.

Since 1999, an annual average of 215 cases of aseptic meningitis cases (range 113-325) has been reported in Wisconsin. This represents a small proportion of the cases actually occurring. Although laboratory confirmation is sporadic, it is highly likely that enteroviruses caused the majority of these cases. Historically, aseptic meningitis and other enteroviral related illnesses typically occur during July thru October with peaks in late August and September.

Enterovirus infections can affect anyone; however, the incidence is up to 10 times higher among children, notably young infants (< 1 year old). Since 1999, approximately 30% of all reported cases in Wisconsin were identified in children <10 years old, with 21% of all cases occurring in infants. Although most illness caused by enteroviruses is self limiting, 14 deaths associated with aseptic meningitis have been recorded since 1999.

Clinical presentation of nonpoliovirus enterovirus infection is highly variable. Enteroviral infection may occur as a nonspecific febrile illness, and in young infants may result in clinical evaluation for bacterial sepsis. Aseptic meningitis is only one of the manifestations of enteroviral infections. Constellations of signs and symptoms include the following: (1) respiratory: common cold, pharyngitis, herpangina, stomatitis, pneumonia and pleurodynia; (2) skin: exanthema; (3) neurologic: aseptic meningitis, encephalitis, and paralysis; (4) gastrointestinal: vomiting, diarrhea, abdominal pain and hepatitis; (5) eye: acute hemorrhagic conjunctivitis; and (6) heart: myopericarditis. Each of these manifestations can be caused by multiple different enteroviruses. Manifestations that are typically associated with specific enteroviruses include: hand-foot-and-mouth disease (coxsackievirus A16 and enterovirus 71), acute hemorrhagic conjunctivitis (consackievirus A24 and

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While this State of Wisconsin Supreme Court ruling in Milwaukee v. Washington affirms the authority for public health restraint of noncompliant individuals with tuberculosis, local health departments must ensure all possible assistance measures and incentives to promote voluntary treatment compliance before resorting to more restrictive regulatory measures. The use of forced confinement is expensive, and can have the undesirable effect of actually encouraging some individuals to avoid government programs. It should only be used as a last resort after all other measures have failed. The State TB Program funds an incentive program available through the American Lung Association of Wisconsin. All local health departments are encouraged to use the incentive program to assist TB patients in completing treatment and hopefully avoiding forced confinement.
enterovirus 70), brainstem encephalitis and polio-like paralysis (enterovirus 71), and pleurodynia and myopericarditis (coxsackieviruses B1 through B5).¹ Enteroviruses are spread through feces and respiratory secretions of infected individuals. The virus can persist on environmental surfaces long enough to allow spread from these objects to humans. The incubation period for enterovirus infection is typically 3-6 days. Viral shedding in the feces can continue for several weeks after the onset of clinical illness, while respiratory shedding is limited to one week after onset of illness.

Among hospitalized patients, in addition to standard precautions, infection control measures include contact precautions for infants and young children for the duration of illness. Control measures focus on hand hygiene: good handwashing, especially after diapering infants, is the best way to prevent the spread of enteroviruses. There is no vaccine to prevent enterovirus infections.

Not to be confused:
Of note, hand-foot-and-mouth disease usually affects children less than 10 years old and is a mild illness characterized by vesicles (small blisters which contain clear fluid) that occur inside the mouth, on the gums and on the side of the tongue.

This disease should NOT be confused with foot (or hoof) in mouth disease that is currently a major concern in the United Kingdom. Foot and mouth disease, caused by the foot and mouth disease virus, is a highly contagious and sometimes fatal viral disease of cattle and pigs. It can also infect deer, goats, sheep, and other bovids with cloven hooves. Humans are rarely affected.

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7. Wisconsin Electronic Disease Surveillance System (WEDSS) Update

WEDSS is a secure, web-based system for reporting and tracking communicable diseases statewide. It is currently being used at the state level and by three Wisconsin counties in pilot phase. Data from the state’s legacy data systems have been migrated and the system is operational for all communicable diseases, with the exception of Hepatitis B, Hepatitis C, sexually transmitted diseases (STD), and AIDS/HIV. Hepatitis B, C, and STD data are expected to be included in WEDSS in December.

System enhancements are under development by the vendor and are expected to be functional in December. Discussions with health departments to schedule their implementation will begin in fall 2007, and statewide implementation is expected to begin in early 2008.

In the next month, the Wisconsin State Laboratory of Hygiene (WSLH) will begin transmitting laboratory reports for reportable conditions directly to this electronic system. Electronic laboratory-based reporting (ELR) is likely to be more timely and complete. The WSLH is coordinating efforts for other Wisconsin laboratories to provide reports electronically. Over the next several months, four additional laboratories will begin transmitting data.

Laboratories implementing WEDSS reporting will use a dual process initially so that the paper and electronic reports can be compared to verify proper data transmission. Once this has been confirmed, the laboratory will be certified to stop sending the paper reports to the health departments. A mechanism for forwarding the reports to health departments not yet using WEDSS will be developed at the state level. WEDSS electronic laboratory reporting is for the purposes of notifiable disease surveillance only. Entities submitting specimens for testing to the laboratory will still receive their reports (positive and negative results) in the old way. If a special investigation requires reporting of all positive AND negative results for a given test, an alternative mechanism must be arranged (spreadsheets on the HAN, etc.).
8. Lincoln County Blastomycosis Outbreak: January-April, 2006

Blastomycosis is an uncommon but potentially serious infection caused by inhalation of spores of a fungus, *Blastomyces dermatitidis*.

On February 15, 2006, the Lincoln County Health Department (LCHD) was notified of six patients with recently diagnosed blastomycosis, and notified the State Bureau of Communicable Diseases and Preparedness (BCDP). On February 16, an email health alert was sent to all medical providers in the Lincoln County area advising them to be on the alert for patients with pneumonia-like illnesses, and recommending procedures for diagnosis. An epidemiological investigation was undertaken to determine the source of infection.

A case was defined as laboratory confirmed *Blastomyces dermatitidis* infection in a resident of Lincoln County with illness onset dates between January 1 and March 5 living in the 54452 zip code. 21 case patients were selected for investigation. An exposure period was defined as 3 to 12 weeks prior to the onset of symptoms.

The grand median of all exposure periods was estimated to be December 5, 2005, representing the most likely time of exposure if a point source exposure had occurred.

The 21 cases were also compared with 64 age- and gender-matched controls from the same zip code. No statistically significant associations were observed between illness and recognized blastomycosis risk exposures. 16 of the 21 case patients either resided or spent a substantial amount of time within a one kilometer radius of the cluster center, compared with 7 of the 64 control subjects (RR=7.0, 95% C.I. 3.4-14.6).

Inspections of the area identified a suspected exposure source: a city-run yard waste collection and storage site located within 100 meters of the cluster center. During the 2005 season, an unusually large volume of pine needles accumulated and remained in the yard waste pile throughout the winter. Approximately 12 days prior to the median estimated exposure date, this large pile of pine needles was moved from the center of the yard to a location closer to the cluster center of the case patient residences.

The area experienced a moderate to severe drought throughout the summer of 2005, followed by a period of normal to above-normal temperature and precipitation which coincided with the estimated exposure period for the 21 case patients. For a period of several days during and after an unseasonably warm and rainy stretch, the cluster center of case patient residences would have been downwind from the yard waste site. Urine specimens from all study subjects tested negative for *Blastomyces* antigen. Eight of sixty serum specimens were positive by antibody EIAs, including one of 36 control subject specimens. The control subject who tested positive was excluded from the case-control data analysis.
Environmental samples included samples from the relocated pine needle pile and soil/compost samples from the original site of the pile, as well as from dredge and finished compost piles. All tested negative in two laboratories.

Previously-reported blastomycosis outbreaks may be classified into two different outbreak patterns: clustering of cases over extended periods in endemic areas, and presumed common source exposures.

This currently reported outbreak is the second largest reported outbreak of blastomycosis, and the largest reported to have occurred in a non-rural setting. Most of the cases were probably the result of a common point source exposure.

Historically, blastomycosis has most commonly occurred among middle-aged men, probably reflecting their greater opportunity for exposure through outdoor occupational and recreational activities. The equivalent sex distribution and the younger age of the case patients from this outbreak are more consistent with a common source exposure rather than unrelated, sporadic exposures. The occurrence of 21 cases within a 9 week period of time is also indicative of either a continuing common source outbreak or a point source outbreak.

The microbial components of bioaerosols generated during the composting process contain many of the same microorganisms that are commonly present in the soil, in the constituent organic materials, and in "normal" outdoor air. The main difference is that of scale.

The accuracy of blood and urine clinical testing is inadequate for the diagnosis of blastomycosis. Also, throughout the past 50 years, most attempts to isolate or detect *B. dermatitidis* from the environment have been futile, even from areas where occurrence of the disease indicated that the fungus must have been present.

There are no formal recommendations for preventing exposure to *B. dermatitidis*, largely because the disease remains enigmatic, its occurrence is sporadic, and its region of endemcity is widespread. Furthermore, there are no epidemiologic studies that suggest that either modification of individual behavior or remediation of environmental hazards will reduce the incidence of blastomycosis. However, based on tacit knowledge and the observational evidence in this investigation, it is prudent to make the following general recommendations:

- Practices that may create bioaerosols through mechanical agitation of decayed and rotted vegetation and organic debris near residences in areas known to be endemic for blastomycosis should be terminated. Such composting activities should be moved to a non-residential, relatively isolated area.
- Employees engaged in mechanical agitation of decayed and rotted vegetation and organic debris in areas known to be endemic for blastomycosis should use appropriate respiratory protective equipment.
- Residents or visitors with prolonged exposures in areas known to be endemic for blastomycosis, especially the elderly or immunocompromised, should be aware of the signs and symptoms of blastomycosis and immediately contact their health care provider if they have an illness consistent with blastomycosis.
- Area clinicians should strongly suspect/consider blastomycosis as a cause of illness in anyone presenting with pneumonia-like symptoms who fails to respond to conventional management in a timely fashion. Diagnosed and suspect cases of blastomycosis should be reported to the patient’s local health department promptly, within 72 hours of suspicion of blastomycosis.
- Residents, especially the elderly or people with impaired immune systems, residing in the endemic area should be aware of the risks associated with soil-disturbing activities (e.g., gardening or landscaping) and consider the use of HEPA-filter or dust masks when taking part in such activities.

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