

Methicillin-Resistant *Staphylococcus aureus* (MRSA) Infections

Progress Report and Recommendations of the Tennessee Department of Health and the Infections Taskforce January 2008

This report was developed in response to PC 157, Senate Bill 268, requiring the Department of Health and the Infections Taskforce to collectively issue a progress report on MRSA to the General Assembly each year for three (3) years beginning in 2008. The Infections Taskforce and the Department of Health have been meeting at least semi-annually to discuss trends in the incidence of MRSA and used these data to formulate this report and recommendations. The Infections Taskforce was created by Public Chapter 323 to study the issue of healthcare-acquired infections and make recommendations to the Department of Health via the Tennesseans Improving Patient Safety (TIPS) advisory committee. The list of members of the Infections Taskforce is attached.

Executive Summary

Tennessee is a leader in collecting and reporting on antibiotic resistant infections by having made invasive methicillin-resistant *Staphylococcus aureus* (MRSA) cases reportable to the Department of Health's Communicable and Environmental Disease Services section in June 2004. Reporting is at the case or patient level. Reported information includes patient demographics (name, age, gender, race, address), body-site location such as blood, and who first reported it to the state health department, e.g., laboratory, hospital, nursing home or private physician. Data is collected by who first reported the case versus assigning the source. Therefore, individual facility level comparisons are not available or valid. There are currently no national standards on the most meaningful way to report rates of resistant organisms such as MRSA by individual healthcare facility. In 2006, 70% of cases were first reported by hospitals, 29% by laboratories, 0.2 % by private physicians. The following report describes current findings on invasive MRSA in Tennessee, both community acquired and healthcare associated infections. Invasive MRSA infections are a major public health problem across the country including Tennessee. Nearly 2,000 cases of invasive MRSA have been reported per year to the TDH. The incidence for 2006 was 33 per 100,000 making MRSA the most common reportable communicable disease in Tennessee after chlamydia and gonorrhea; there was no change in the incidence compared to 2005. The incidence for Tennessee is similar to findings for other states in our region.

The Department of Health is working with healthcare organizations and providers to implement evidence based strategies to prevent infections through the recent statute on reporting, changes to the licensure rules and regulations, and statewide education and awareness campaigns. The Department of Health has established an infections taskforce with representation of healthcare facilities, associations and infection control experts. Tennessee now has the infrastructure in place for the reporting and monitoring of healthcare associated infections and partnering with providers to significantly improve care. The Department will continue to monitor the efficacy of these strategies and report to the General Assembly on the state's progress.

Invasive Methicillin-Resistant *Staphylococcus Aureus* (MRSA) Reporting in Tennessee

Introduction

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a bacterium that is resistant to antibiotics such as methicillin, oxacillin, penicillin and amoxicillin. Staphylococcal infection, including MRSA are often described as “community-acquired/associated” or “healthcare associated”. Community associated staphylococcal infections are on the increase. Healthcare associated staphylococcal infections, including MRSA, occur most frequently among persons in hospitals and healthcare facilities (such as nursing homes and dialysis centers) who have weakened immune systems. MRSA in healthcare settings commonly causes serious and potentially life-threatening infections such as blood-stream infections.

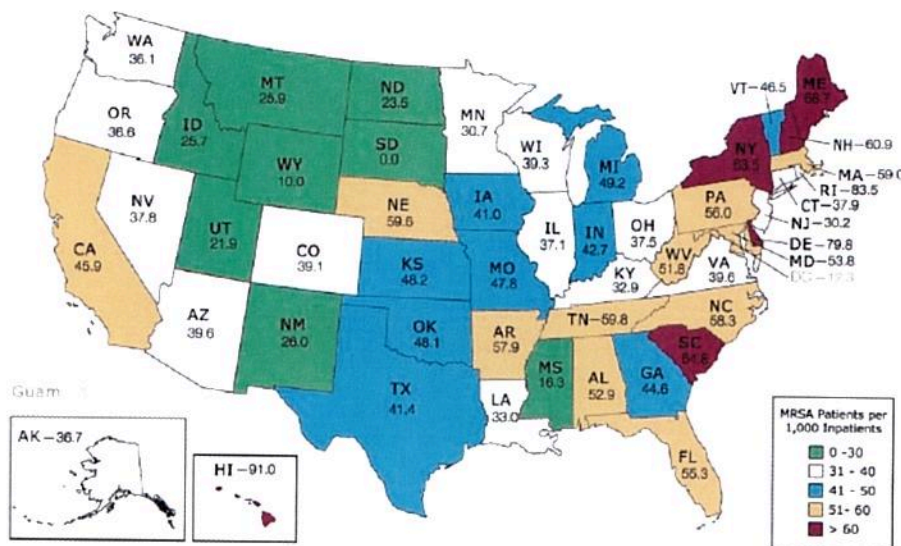
The overall proportion of *Staphylococcus aureus* infections that are MRSA varies nationwide from 39.5% in the Pacific Region to 58.3% in East-South Central Region that includes Tennessee (Figure 1.)

Figure 1.



In Tennessee, at least 6 out of every 100 patients is colonized or infected with MRSA (Figure 2) according to the first National MRSA Prevalence Study, published by Jarvis et al in December 2007. Hawaii, Delaware, Maine, New York State and South Carolina had rates higher than Tennessee.

Figure 2



More infections are occurring now than in past decades for a number of reasons. Some of these include the following. Hospitals are saving trauma and burn patients, who years ago would have died of their injuries. Tiny infants who are 24 weeks or less in gestational age often weighing less than a pound survive against all odds. Cancer patients now survive with newer, more powerful chemotherapeutic drugs and immune suppressing therapies. Along with cancer patients, other patient populations have an increased infection risk including the homeless, children in day care, injecting drug users, HIV-positive patients, diabetics, obese patients and those on renal (kidney) dialysis. All of this advanced technology, more invasive testing and treatments, and immune system suppressing drugs open an avenue for infection causing organisms to gain a foothold.

MRSA infections that are acquired by persons who have not been recently (within the past year) hospitalized or had a medical procedure (such as dialysis for kidney failure, surgery, catheters) are known as community associated (CA-MRSA) infections. Staphylococcal or MRSA infections in the community are usually manifested as skin infections, such as pimples and boils, and occur in otherwise healthy people. CA-MRSA infections have been frequently mistaken for “spider-bites”. Incision and drainage is very important in the management of skin and soft tissue infections. Drs. Kainer and Omohundro showed that the number of visits to Emergency Departments for carbuncles and furuncles increased three-fold between 2000 and 2004. In a study conducted by Dr. Thomas Talbot, MD at Vanderbilt University Medical Center, from November 2004 through October of 2005, 70% of the skin abscesses seen in the Vanderbilt adult and pediatric emergency departments were from community acquired MRSA. This study affirms what is seen nationally and was reported the *New England Journal of Medicine*. In this study, researchers discovered that in 11 cities across the US, 59% of all skin infections treated in emergency rooms were caused by MRSA. This seems even more relevant when the news media reports outbreaks of MRSA in schools, especially in the local high school football team.

Societal factors also contribute to the general problem of antimicrobial resistance. Many consumers demand an antibiotic when they are ill even if they have a viral infection. Antibiotics are used to treat bacterial infections, not viral infections. When consumers do have a bacterial infection and receive an antibiotic, they often stop taking it the moment they feel better and save the remainder for later use. Partial treatment of infections by not completing the entire antibiotic course contributes to the emergence of antibiotic resistance. Tennessee has high rates of inappropriate antibiotic use; prescription rates for antibiotics are the highest in the U.S.

Reporting of Infections

In response to Public Chapter 323, the Tennessee Department of Health and the Tennessee Improving Patient Safety Coalition invited a group of infection control nurses and physicians and other health care personnel to assist with the review of issues relating to public reporting of hospital acquired infections. This group was composed of nine infection control nurses, two hospital physician epidemiologists, one hospital administrator, one Tennessee Hospital Association representative, and three Department of Health representatives.

This infections study group issued a report and recommendations to the Department of Health's Tennesseans Improving Patient Safety (TIPS) committee in December 2005. The Tennessee Department of Health presented its report on infections to the General Assembly in January 2006 with many of the report recommendations included in statute PC 904 that was passed in 2006.

PC 904 requires acute care hospitals with an average daily census of greater than 25 patients to participate in reporting to the Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network (NHSN) database. Hospitals are required to report central line bloodstream infections in intensive care units and surgical site infections for coronary artery bypass graft (CABG) surgeries. The Tennessee Department of Health has access to the CDC database for the purpose of publicly reporting on hospital performance. In 2007, the Department of Health conducted extensive training sessions for providers on the CDC NHSN reporting requirements. Hospitals began reporting to the CDC NHSN database in January 2008. The statute includes authority to promulgate rules and regulations for licensed healthcare facilities. The state Board for Licensing Healthcare Facilities has adopted rules to strengthen hand hygiene guidelines, central line catheter insertion guidelines and employee influenza vaccination. These measures are targeted to reducing healthcare acquired infections such as MRSA and went into effect in October 2007.

Communicable Disease Reporting

Tennessee law (TCA Title 68, Chapter 5, Section 104 (a)) provides the authority for the Tennessee Department of Health (TDH) to mandate the reporting of certain communicable diseases/conditions. There are several categories of notifiable diseases that are declared to be communicable and/or dangerous to the public and are to be reported to the local health department by all hospitals, physicians, laboratories and other persons knowing of or suspecting a case. Category I requires immediate telephonic notification to the local health department. Telephonic notification is followed by a written report to the local health department using form PH-1600. Category II requires only a morbidity written report from physicians, laboratories, and hospitals using form PH-1600. Notifiable conditions are listed in Communicable Diseases Chapter (1200-14-1-.02) of the Rules of the Tennessee Department of Health- Division of Preventive Health Services.

This reporting system is designed to identify individual cases, for investigation and control, and provides an estimate of both disease burden and efficacy of control strategies. Data from this surveillance system is reviewed on a weekly basis by the Communicable and Environmental Disease Services (CEDS) section of the state health department, as well as local regional health departments. Apparent clusters or outbreaks are identified and investigated. CEDS works in a collaborative manner with healthcare facilities if any problems are identified by providing assistance by telephone or on-site to determine the cause of the problem and control it.

(a) Statewide Invasive MRSA Reporting

Tennessee was one of the very first states to make invasive MRSA reportable by adding it to the list of notifiable diseases in June 2004. Tennessee has become a model for other states on MRSA reporting. For Tennessee's statewide reporting, invasive disease is defined as isolation of MRSA from a normally sterile site (i.e., specimen source is blood, bone or fluid from around the brain, lungs, heart, abdomen or joints). Sputum, wound, urine and catheter tip isolates are not counted. Repeat isolates within 30 days from the same patient are not counted. Data is only collected on Tennessee residents. Information that is provided to the Tennessee Department of Health includes patient demographics (name, age, gender, race, address), from what body-site the invasive MRSA was isolated (e.g., blood), the date it took place, and who first reported it to the TDH (laboratory, hospital, nursing home, physician, infection control). It is not

meaningful or valid to attribute a case of invasive MRSA to a particular healthcare facility based on the way that the data is reported to the TDH. In addition, there are currently no national standards on the most meaningful way to report rates of resistant organisms such as MRSA by individual healthcare facility. Dr. Marion Kainer MD, MPH, from the TDH is providing input to the national working group that is discussing this topic. Dr. Kainer is also the Council of State and Territorial Epidemiologists (CSTE) liaison to the Healthcare Infection Control Practices Advisory Committee (HICPAC)—a federal advisory committee that provides advice to the CDC.

(b) Davidson County- Invasive MRSA Reporting (ABC)

Tennessee is one of 10 States participating in a special program called the Active Bacterial Core (ABC) surveillance program as part of the Emerging Infections Program—a collaboration between the Centers for Disease Control and Prevention (CDC), state health departments and universities. Additional information on this program can be found at: <http://www.cdc.gov/ncidod/dbmd/abcs/team-start.htm>. The ABC program has been conducting active surveillance for invasive MRSA in Davidson County hospitals for Davidson County residents since October 2004. ABC data for 2006 reveal 22% of invasive MRSA occurred greater than 48 hours following hospital admission. Most patients had healthcare-related risk factors (i.e., hospitalized in past year [63%], presence of an invasive device [48%], surgical procedure in past year [41%], resident of a long-term care facility in past year [28%], dialysis in past year [20%]). Only 21% had community-onset MRSA with no healthcare-related risk factors. It is very resource intensive and costly to collect the data in the ABC program. However, the much more detailed data provides useful additional insights to inform policy.

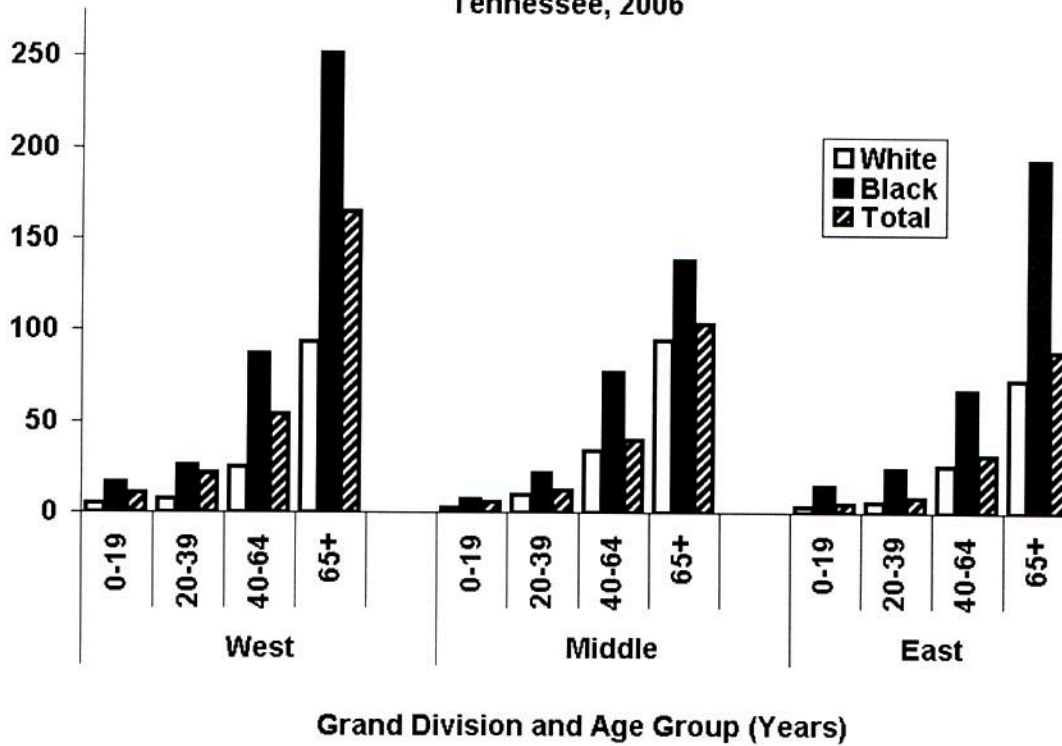
Results and Actions Taken

As shown in Figure 3, the incidence of MRSA dramatically increases with age. The incidence is higher among blacks than whites and is highest in west and lowest in east Tennessee. The incidence among blacks aged 65 or above in west Tennessee is greater than 200 per 100,000. Further research is needed to understand the demographic disparities. Analysis of ABC data for Davidson County suggests that the higher prevalence of diabetes and dialysis among blacks may account for a large part of this racial disparity. Invasive MRSA is at least 100 times more common among persons on dialysis.

Data from these two surveillance systems has been used locally and for informing policy. The Tennessee Department of Health (TDH) identified clusters of invasive MRSA among young adults that may have resulted from suboptimal treatment practices for MRSA skin infections. These skin infections were misdiagnosed as “spider-bites” and/or did not get drained and progressed to invasive MRSA. The state health department responded by providing on-site educational meetings for providers in these locations and disseminated a newsletter to providers outlining diagnosis and treatment recommendations for skin and soft tissue infections. Invasive MRSA infections are a major public health problem in Tennessee. Nearly 2,000 cases of invasive MRSA have been reported per year to the TDH. The incidence of invasive MRSA for 2006 was 33 per 100,000, making MRSA the most common reportable communicable disease in Tennessee after chlamydia and gonorrhea. There was no change in the incidence of MRSA between 2005 and 2006. The Department of Health has updated their Web site to provide resources on MRSA to providers, schools and the public following the recent community outbreaks and media attention across the country.

Figure 3

Invasive MRSA per 100,000 by Race, Age, and Grand Division, Tennessee, 2006



A study by Klevens et al, published in the *Journal of the American Medical Association (JAMA)* in 2007, described an incidence of 53.0 per 100,000 in Davidson County, TN for 2005. This was the second highest incidence out of the nine ABC sites. The incidence for community-associated invasive MRSA in Davidson County was 6.8 per 100,000. The incidence for healthcare-associated invasive MRSA was 44.3 per 100,000.

Table 1: Incidence Rates of Invasive MRSA per 100,000 by ABC Surveillance Site and Epidemiologic Classification, US, 2005 (from Klevens et al)

Surveillance Site	Community-Associated	Healthcare-Associated		Total
		Community-Onset	Hospital-Onset	
Connecticut	2.7	15.6	8.4	27.1
Atlanta, GA, metropolitan area	5.1	16.7	10.3	33.0
San Francisco, CA, Bay Area	4.5	15.9	7.7	29.2
Denver, CO metropolitan area	2.8	12.3	6.0	21.2
Portland, OR metropolitan area	4.7	11.4	3.6	19.8
Monroe County NY	2.7	22.2	16.8	41.9
Baltimore city, MD	29.7	62.9	19.7	116.7
Davidson County, TN	6.8	30.4	13.9	53.0
Ramsey County, MN	1.6	11.5	6.1	19.2

Community-onset is defined as infections identified upon admission or within the first 48 hours of admission. Hospital-onset is defined as occurring after 48 hours of hospital admission. Prevention efforts in healthcare settings need to focus on both the prevention of infections (central line-associated blood-

stream infections, ventilator associated pneumonia, and surgical site infection) and the prevention of transmission of MRSA within healthcare facilities. The TDH is actively promoting the use of “bundles of interventions” (e.g., the central line bundle) to prevent these infections. The TDH Healthcare Facilities Licensure Board recently adopted rules that went into effect in October 2007 that require healthcare facilities to implement the central line bundle and to actively promote and monitor hand-hygiene.

Current Quality Measures and Improvement programs

Many hospitals adopt the Centers for Disease Control and Prevention (CDC) Healthcare Infection Control Practices Advisory Committee (HICPAC) Guidelines for Isolation in Healthcare Facilities. The *Management of Multiply Drug Resistant Organisms in Healthcare Settings* was published by HICPAC in October 2006. This document is a guideline on how to manage MRSA and other antibiotic resistant organisms, as well as what to do in the event of an outbreak situation. The guideline gives the reader step by step instructions on isolation, monitoring trends, judicious use of antibiotics, and educating staff and patients.

Nearly all licensed acute care hospitals in Tennessee have been accredited by the Joint Commission. As part of this accreditation process, hospitals submit to triennial inspections, also called surveys, and must have an Infection Control Program that is managed by a qualified person, usually the Infection Control Practitioner (ICP). Hospitals must systematically review health care acquired infections and have a plan in place to reduce those infections. One of the Joint Commission’s national patient safety goals is to reduce healthcare-acquired infections by adhering to the CDC guidelines for hand hygiene and reporting of healthcare-acquired infections that result in death or significant loss of function as sentinel events. The Joint Commission publishes institutional performance on quality measures and compliance with patient safety goals on their Web site at <http://www.qualitycheck.org/consumer/searchQCR.aspx>

The Centers for Medicare and Medicaid Services (CMS) is the federal agency that ensures hospitals treating Medicare patients meet high standards. Among the many mandates and performance measures that CMS requires for Medicare reimbursement, healthcare acquired infections are well represented. In April 2005, CMS unveiled a consumer oriented Web site “Hospital Compare” at www.medicare.gov to provide consumers with information on their local area hospitals and quality of care. CMS and the Hospital Quality Alliance (HQA) partners continue to update the Web site and expand the reported measures. Hospitals nationwide have voluntarily submitted quality-of-care information on four common conditions that affect adult patients: heart attack, heart failure, pneumonia and surgical infection prevention. The CMS measures include 27 measures for 2008. The measures will be further expanded over the next year to include more information on outpatient surgical care and infection prevention, as well as information on patients’ perceptions and experiences with hospital care.

CMS has joined with several other organizations in a national quality partnership “The Surgical Care Improvement Project” (SCIP). SCIP is a voluntary partnership of national organizations formed in 2004 to focus on surgical infection prevention and improvement in surgical care. The SCIP project’s goal is to reduce the incidence of surgical complications by 25 percent nationally by the year 2010. The project promotes the universal use of evidence-based care processes known to reduce surgical infections. The SCIP measures include both outcome and process measures targeting surgical site infections, adverse cardiac events, venous thromboembolism and post-operative pneumonia. Hospital performance data on antibiotic selection and timing for surgical patients is currently reported to CMS as part of the SCIP initiative.

In addition to Joint Commission and CMS, hospitals voluntarily join various quality groups that publicly report the results of their performance measures on their web sites by hospital. The Leapfrog Group and others encourage adoption of the National Quality Forum ((NQF) safe practices. Among the 27 safe practices, several are aimed at preventing or reducing infections such as hand hygiene protocols, central line blood stream infection avoidance and influenza vaccines for patients and healthcare workers. There are a myriad of other excellent quality groups that health care institutions volunteer to join. The Institutes of Healthcare Improvement’s (IHI) 5 Million Lives campaign, the National Quality Forum, and Magnet

Hospital Certification are all active, rigorous quality programs with healthcare acquired infection reporting components.

The Institute for Healthcare Improvement (IHI) 100,000 Lives campaign, launched in January 2005, focused on patient safety through the implementation of evidence-based intervention strategies in six focus areas. The campaign included the use of “bundles,” groups of care processes that, when implemented together, have been shown to reduce complications and improve outcomes. Over 70 Tennessee hospitals participated in the IHI campaign by implementing evidence-based strategies on at least one topic area. The success of these interventions relies on the collaboration and teamwork among physicians, nurses and other professionals at the bedside to implement care processes targeting prevention of ventilator-associated pneumonia, central line infections and early recognition, and rescue of patients at the first signs of impending decline in their condition.

Currently the IHI is conducting the 5 Million Lives campaign to reduce incidents of medical harm in U.S. hospitals over a 24-month period. The campaign promotes the adoption of 12 interventions in care that can save lives and reduce patient injuries. It aims to enlist 4,000 hospitals, challenging all to adopt up to 12 interventions – six of which were included in the 100,000 Lives campaign and six of which are new. Reducing surgical complications and prevention of MRSA infections are two of the new campaign initiatives. In Tennessee, 86 hospitals are participating in the IHI initiatives.

Tennessee Initiatives to Reduce MRSA

The Tennesseans Improving Patient Safety Conference held in the fall of 2007 featured presentations on MRSA prevention and control and was targeted at reaching quality improvement and risk management personnel from hospitals, nursing homes and ambulatory surgical centers. These presentations received excellent evaluations by conference attendees. Several hospitals highlighted their facility improvement projects targeting MRSA as part of the conference presentation.

In 2003, Blount Memorial Hospital (BMH), the only acute care non-psychiatric hospital in Blount county, partnered with long term care facilities and instituted active surveillance testing (AST) for MRSA for all admissions from long term care facilities in 2004. BMH placed long term care residents into contact isolation until the test results were available. This resulted in a dramatic decrease in hospital onset MRSA infections. In addition, Blount County is the only county with a population of >100,000 where the incidence of invasive MRSA has decreased significantly between 2004 and 2006. BMH has received state and national recognition for this initiative. BMH was the recipient of the 2007 Tennesseans Improving Patient Safety Award. IHI visited BMH in late 2007 and BMH is now a national IHI mentor hospital for the reduction of MRSA.

Educational efforts have been directed at both patients and healthcare providers. The Tennessee Department of Health has created a toolkit on their Web site primarily aimed at Tennessee schools. This toolkit has suggestions for reducing transmission of MRSA for athletes and other students and offers direction for school custodians and school health care teams. A booklet is also available, [Living With MRSA](#), that can be downloaded and printed for distribution in the school systems.

In the fall of 2007, the Department of Health distributed 14,500 “Germs are not for sharing” books to public libraries, childcare resource and referral center libraries, headstart programs, daycare centers, schools (preK- Grade 4), pediatricians, public health clinics and acute care hospitals. This delightful book teaches important personal hygiene habits such as respiratory hygiene (using tissues when sneezing, coughing into your sleeve) and washing hands after using the bathroom. These hygiene habits help to prevent the spread of influenza, colds, diarrhea (for example, salmonella, shigella, E .coli O157), MRSA and lots of other diseases.

Healthcare providers and Infection Control Practitioners were targeted at the statewide Tennessee Infection Prevention Network meeting held in October 2007. Dr. William Jarvis, world-renowned expert on MRSA, presented the latest findings at the annual conference attended by over 150 persons, predominately infection control professionals.

Nationally known hospital epidemiologist, Dr. William Schaffner, has been interviewed on CNN as well as appearing on local news broadcasts to answer questions and concerns about MRSA and its ramifications for the public. Many Tennessee Infection Control Practitioners, including several members of the infections taskforce have worked with the Association for Professionals in Infection Control (APIC) and a Tennessee based medical film company to create educational videos for healthcare workers. Three recent films, Screening for MRSA: How to Swab, Top Priority: The CDC Guideline for Multi-Drug Resistant Organisms (MDROs), and Of Critical Importance: The New CDC Isolation Guideline Explained! focus on MRSA and precautions healthcare providers should take to decrease transmission and have been distributed nationally and internationally through APIC.

In June 2007, all Hospital Corporation of America (HCA) hospitals in Tennessee joined a national HCA initiative to combat MRSA. This consists of "A. B. C. D. E": (A= Active surveillance; B= Barrier precautions (same as contact precautions); C= Compulsive hand-hygiene; D= Disinfection/environment cleaning; E= Executive championship). Additional details can be found at www.hcahealthcare.com.

In September 2007, Veterans' Administration hospitals in Tennessee joined a nationwide initiative roll-out by the VA to reduce MRSA infections. There are four components: active surveillance testing for MRSA for all admissions, transfers and discharges; aggressive hand hygiene; contact precautions and cultural transformation. Additional details can be found online at: http://www.va.gov/pittsburgh/mrsa/mrsa_overview.htm.

Many other Tennessee hospitals have also voluntarily initiated MRSA reduction strategies.

Extensive training on the National Healthcare Safety Network (NHSN) was conducted by Tennessee Department of Health staff to ensure that infection control professionals were confident in definitions and methodology. Reporting to NHSN begins in January 2008.

The Tennessee Center for Patient Safety, an initiative of the Tennessee Hospital Association, was created in 2007 to support and accelerate hospital quality improvement and patient safety activities. The Center was established with a three year grant from the Tennessee Health Foundation of Blue Cross Blue Shield of Tennessee (BCBST). The Center has an advisory council with representatives from 12 partner organizations including the Department of Health, Quality Improvement Organization (QIO), American College of Surgeons and Association for Professionals in Infection Control.

The Center and its partners are creating a statewide collaborative on reducing health care acquired infections that will focus on central line bloodstream infections, MRSA and surgical care. The collaborative is hosting a statewide meeting January 30, 2008, and has engaged Dr. Peter Pronovost from Johns Hopkins as faculty and coach for the 24 month collaborative. Dr. Pronovost's model for patient safety has been successfully implemented in over 200 hospitals resulting in dramatic and sustained improvements in evidence-based interventions for the intensive care setting. He has authored or coauthored over 70 articles and is a well known international expert in the field of intensive care unit patient safety.

The TN Center for Patient Safety will coordinate the collaborative activities including statewide conferences, regional networking meetings and conference calls among participants and faculty.

Recommendations of Infections Taskforce in Collaboration with the Department of Health:

- 1) Based on the data and information available from the current state reporting of invasive MRSA, the taskforce recommends that the Department of Health partner with healthcare providers to voluntarily implement targeted intervention strategies based on local risk assessments for their communities. These public/private partnerships will require seed funding for implementation and to evaluate the efficacy and impact of these interventions (resources, costs, impact on MRSA infections at the hospital and county level)
 - a. Encourage acute care hospitals and long-term care facilities in a geographic region to partner together to reduce MRSA by using active surveillance testing for MRSA and barrier precautions (similar to Blount Memorial Hospital).
 - b. Partner with one or more dialysis clinics to evaluate some targeted interventions to reduce invasive MRSA; dialysis patients are at 100 times greater risk of invasive MRSA.
 - c. Community education and partnerships among all healthcare providers, schools and daycares on hand hygiene and environmental cleaning
- 2) The infections taskforce and the Tennessee Department of Health, Division of Licensure and Division of Communicable Disease should continue to meet at least semi-annually to discuss methicillin-resistant *Staphylococcus aureus* (MRSA) for the purposes of reviewing incidence and trends and identifying strategies for the prevention and control of invasive MRSA.
 - a. Review of invasive MRSA statewide incidence data trends
 - b. Review of recent research and national guidelines from the Centers for Disease Control (CDC) and other professional organizations
 - c. Findings and recommendations from the Tennessee Department of Health's Communicable and Environmental Disease Services Section
- 3) Education and Resources for providers and health care professionals
 - a. Expand the Tennessee Department of Health Web site and partner with the Tennessee Center for Patient Safety
 - i. Develop links and resources to CDC guidelines for clinicians
 - ii. Develop model checklists and tools
 - iii. Share best practices and case studies
 - b. TIPS Annual Patient Safety Summits to include topic presentations on MRSA and infection control strategies
 - c. Ongoing presentations to professional groups and organizations on MRSA prevention and control strategies
 - d. Newsletter articles to healthcare professionals through licensure boards
 - e. Education and resources for non-clinical staff and environmental services staff
 - f. Provide funding for a public health educator and an epidemiologist (infection control professional) to work in the Communicable Diseases and Environmental Services Section of the Tennessee Department of Health. This funding will enable the Department of Health to increase educational outreach to providers and the community for prevention and management of MRSA.
- 4) Rules and Regulations for licensed healthcare facilities
 - a. Rules and regulations on hand hygiene, central line insertion protocols and employee influenza vaccination effective October 2007.
 - b. State health department surveyors to monitor compliance with rules
- 5) Consumer education
 - a. Disseminate patient education resources on reducing infections and preparing for surgery such as the Joint Commission "Speak Up" brochures, CDC consumer education materials and IHI consumer education handouts.

Annual Progress Report

The Tennessee Department of Health's Division of Health Care Facilities, and Communicable and Environmental Disease Services Section and the infections taskforce will continue to issue an annual progress report on invasive MRSA each year for three years beginning in 2008.

The progress report will continue to include aggregate data on the incidence and trends for invasive MRSA in Tennessee as reported to the Department of Health in compliance with Tennessee Code Annotated, Title 68, Chapter 5-104(a). The progress report will continue to identify strategies implemented by the Department of Health and among the provider community to reduce MRSA, examine the effectiveness of these interventions and include recommended strategies for further improving care.

Summary

Tennessee is a leader in the tracking and reporting of healthcare-acquired infections including MRSA. Effective strategies to prevent and control MRSA require a collaborative effort of public health officials, local communities, health care facilities and infection control professionals. Several initiatives are underway that show promise. These include proposals to replicate the "Blount Memorial Hospital model" (partnership between hospitals and long-term care facilities) and interventions to reduce invasive MRSA infections among dialysis patients. The infections taskforce established by the Tennessee Department of Health is a partnership of infection control experts committed to improving care and preventing infections. The Department of Health is working with the taskforce, healthcare organizations and providers to implement evidence based strategies to prevent infections through the recent statute on reporting, changes to the licensure rules and regulations and statewide education and awareness campaigns. The infections taskforce and Department of Health recommend that these strategies be given adequate time for implementation and evaluation of effectiveness before additional legislative mandates for reporting are considered. Annual progress reports to the General Assembly will continue to provide assurance that the issues and challenges of reducing infections are being addressed.

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