

**The Bill Blackwood
Law Enforcement Management Institute of Texas**

**Managing the Spread of Methicillin- Resistant Staphylococcus Aureus
(MRSA) Infections Within a Correctional Facility**

**An Administrative Research Paper
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ABSTRACT

Managing the spread of methicillin-resistant staphylococcus aureus (MRSA) infections within a correctional facility is relevant to contemporary law enforcement because the prevention of MRSA infections in inmates is an important measure in preventing officers and the community outside the facility from acquiring an MRSA infection. The purpose of this research is to present information to assist any correctional facility on how to effectively reduce the number of MRSA infections within a correctional facility. Secondly, it is hoped that the information will provide county correctional facilities information needed to create a base line nursing protocol to continue battling this highly contagious infection. The method of inquiry used by the researcher included a review of articles, internet sites, periodicals, journals and a survey distributed to several county correctional facilities of varying sizes in Texas. The researcher discovered that having a set of guidelines or a nursing protocol significantly decreased the number of MRSA infections within a county correctional facility.

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INTRODUCTION

Methicillin-resistant staphylococcus aureus infections, also known as MRSA, are staph bacteria that have become resistant to several antibiotics, including penicillin's and cephalosporins. These infections are usually mild skin infections that can be treated with skin care and antibiotics, but it can become difficult to treat and can progress to life-threatening blood or bone infections due to lack of effective antibiotics. Staphylococcus aureus bacteria are commonly carried on the skin or in the nose of healthy people.

The problem or issue to be examined considers whether or not having a guideline pertaining to preventing, identifying and treating MRSA within a correctional facility can significantly reduce the spread of MRSA infections within the facility. The relevance of managing the spread of MRSA within a correctional facility is that the emergence of MRSA as a cause of inmate skin infections has presented a great challenge to correctional facilities today (Tobin-D'Angelo, Arnold, & Lance-Parker 2003). MRSA is spread by having direct contact with infected people or by touching objects contaminated by the infected skin of a person with staph bacteria. These infections are becoming more common and are often misdiagnosed as spider bites (MMWR, 1981). Inmates commonly complain of an infected pimple, insect or spider bite, sore or an ingrown hair.

In a correctional setting, all staff is at risk for acquiring some sort of infection or a communicable disease when dealing with the inmate population. With the growing number of inmates, the risk increases. The purpose of this research is to present information to assist any correctional facility on how to effectively reduce the number of

MRSA infections within a correctional facility. Secondly, the researcher anticipates establishing a template for a nursing protocol that can be implemented to significantly reduce the spread of MRSA infections. The research question to be examined focuses on whether or not having guidelines pertaining to identifying and treating MRSA can significantly reduce the spread of MRSA infections. The intended method of inquiry includes: medical journals and periodicals, published books and a written survey distributed to county correctional facilities of varying populations.

The intended outcome or anticipated findings of the research is to discover and elaborate on existing preventative measures for decreasing the number of MRSA infections within a correctional facility. Additionally, with the information obtained, the researcher hopes to create a base line nursing protocol that can be used within a correctional setting to continue battling this highly contagious infection. The field of law enforcement will benefit from the research or be influenced by the conclusions because the prevention of MRSA infections in inmates will be an important measure in preventing officers and the community outside the correctional facility from acquiring an MRSA infection. If officers contract this contagious infection, it is likely that they can transmit it to their family members as well. There are many findings that can be potentially beneficial from this research. It is anticipated that this research will discover many ways to decrease this highly communicable infection that is carried among many inmates.

REVIEW OF LITERATURE

Antibiotic resistance occurs when bacteria become smarter than antibiotics (Pollard, Rice 2006). Many times antibiotics are taken unnecessarily or improperly.

When this occurs, some bacteria can survive. The bacteria that does survive will develop ways to become stronger and drug-resistant. These resistant bacteria can then transfer this strength to other more dangerous bacteria. Bacteria inside the body share Genes that allow them to resist antibiotic treatment. Antibiotics only kill bacteria not Viruses. Doctors are the only people that can tell if you have a bacterial or viral infection. Many people believe that an antibiotic will make them feel better when they feel sick. It is better to allow the body to fight off infection on its own. This will help build the body's immunity to that virus. When a doctor does prescribe an antibiotic, directions should be followed closely. Misuse occurs when the directions are not followed. If a person stops taking the medication as soon as he or she starts to feel better, this allows the bacteria to survive and reproduce. Misuse also occurs when a person shares antibiotics or uses left over pills when they start feeling ill.

According to the University Health Systems, San Antonio, Texas (2005), MRSA should be considered endemic in jail settings, and sporadic cases should be expected. The primary way MRSA is transmitted is from person to person by direct contact usually from the hands of an infected individual (Navy Environmental Health Center [NEHC] 2005). It can also be transmitted by sharing towels, personal hygiene items, clothes, drug paraphernalia and homemade tattooing equipment. Also, inmates may acquire MRSA by not maintaining good personal hygiene. Many do not shower with soap on a daily basis. Inmates can often be observed washing their personal clothing by hand in their toilets. MRSA can also occur in healthy persons without the traditional risk factors (Chambers, 2001).

MRSA infections often begin as a mild skin or soft tissue infections. They may

cause inflammation without pain causing inmates not to seek medical attention. Other ways MRSA manifests itself is through abscess, carbuncles, cellulitis, folliculitis, furunculosis, impetigo and infected lacerations (Chin, 2000). They can also cause serious infections such as surgical wound infections, pneumonia, sepsis, and death (Chin, 2000). Inmates with other medical conditions such as diabetes, HIV infection, chronic skin conditions, indwelling catheters and decubiti are also at increased risk for acquiring a serious MRSA infection (Lowy, 1998).

According to Chambers (2001), an estimated 10-40% of persons have staphylococcus aureus in their nares, mucous membranes, or breaks in their skin. These people are considered to be colonized with staph. Only a small percentage of these are colonized with MRSA. Colonized persons are more likely to develop staphylococcal infections but remain asymptomatic. Colonization occurs most commonly in injection drug users, people with diabetes, and people with acquired immunodeficiency syndrome (Chin, 2000). Drug users usually make up most of the inmate population, thus making correctional facilities a breeding ground for MRSA.

Diagnosing MRSA should start with inmates presenting with abscesses or other draining skin lesions that are red, swollen and painful. Correctional officers should be observant and encourage inmates with skin lesions to seek medical attention as soon as possible (DeMaria, A. (n.d.). In addition, any inmate presenting with “dry” skin lesions are at increased risk for staphylococcal infections due to the integrity of the skin being compromised by this condition. This observation should first begin at initial intake (Johnson, G., 2004). Bacterial cultures of draining skin lesions should be obtained whenever possible to clinically diagnose staphylococcal infections that are

sensitive to beta-lactam antibiotics. These are antibiotics that are susceptible to treating MRSA. These positive cultures may indicate bacterial colonization or infections.

The treatment of MRSA starts once a skin lesion is observed. Inmates should be referred to the facility physician or medical staff to start this treatment regardless of ability to pay. Minor skin and soft tissue infections can often be treated with warm soaks or compresses. It should be up to the facility physician on whether to incise and drain (I&D) the skin lesion. Usually these abscesses will open and drain with the application of warm compresses. If possible I&D should be the last resort used if no prophylactic antibiotic is given to prevent further spread of the infection. Once the bacterial culture is obtained, antibiotic therapy should be started using directly observed administration (BOP, 2005). Using directly observed observation will ensure that the inmate is indeed taking the antibiotics. Housing of inmates presenting with MRSA infections should be on a case-by-case basis. Single cell housing is not required for lesions that are not draining or small draining lesions. Single cell housing is recommended for inmates presenting with draining lesions (Johnson, G., 2004). Single cell housing should also be used for inmates that are known to be non-compliant with verbal instructions or inmates that are classified mentally ill or mentally retarded.

Containing MRSA infections within a correctional setting is difficult, time consuming and resource-intensive (Federal Bureau of Prisons [BOP], 2005). All inmates and correctional staff should be provided information on the transmission and prevention of MRSA infections. Frequent in-service training by the medical staff or facility physician on adequate identification of possible MRSA infections should be required for all correctional facilities. Good hand washing techniques using soap and

water or hand sanitizer should be instilled to all correctional staff. Inmates should be encouraged to take regular showers with soap and warm water. They should also be discouraged from sharing personal items, such as towels, razors or toothbrushes. All open and draining skin lesions should be covered with appropriate bandages. Likewise, all bandages should be discarded appropriately. Bed sheets, towels, uniforms and underclothing should be laundered with hot water and detergent and dried on the hottest setting. The use of antibacterial laundry detergent has not shown to be any more effective than regular detergent and hot water. Personal protective equipment (latex gloves) should be worn by correctional staff when contact with inmates and their personal items is made (DeMaria, A., (n.d.)). Officers should use good hand washing techniques as soon as the gloves are removed (Schweon, 2006). An established cleaning schedule is essential for preventing the spread of MRSA infections. Inmate cells should be cleaned regularly with a 1:10 bleach solution or some other type of antibacterial cleaning solution. All medical supplies such as blood pressure cuffs, countertops, exam tables and other treatable surfaces should also be cleaned routinely, as with any surface contaminated blood or body fluids (NEHC, 2005).

METHODOLOGY

The emergence of MRSA as a cause of inmate skin infections has presented a great challenge to correctional facilities today (Tobin-De'Angelo, Arnold, & Lance-Parker, 2003). The research question to be examined considered whether or not having a guideline pertaining to preventing, identifying and treating MRSA within a county correctional facility can significantly reduce the spread of MRSA infections. The researcher hypothesizes those facilities that do have a guideline or nursing protocol for

preventing, identifying and treating MRSA within a county correctional facility will significantly reduce the spread of MRSA infections. The method of inquiry will include: medical journals and periodicals, published books and a written survey.

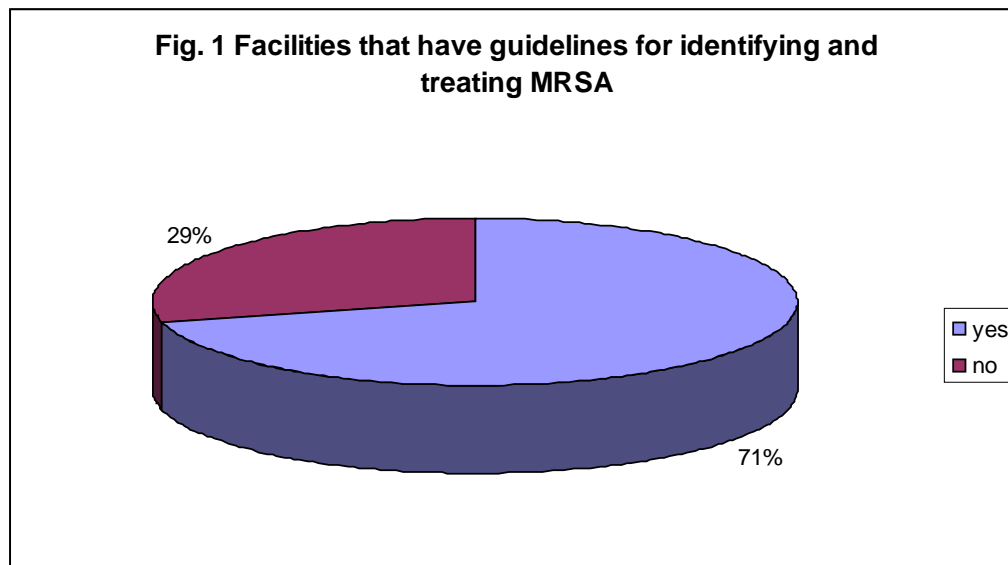
The instrument that will be used to measure the researcher's findings regarding the subject of managing the spread of methicillin-resistant staphylococcus aureus (MRSA) infections within a correctional facility will include a written survey designed to receive feedback from random county correctional facilities of varying populations. The size of the survey will consist of 11 questions, distributed to 16 survey participants from Texas. This survey will be sent via fax and telephone calls will also be made if further information is needed after receiving the surveys.

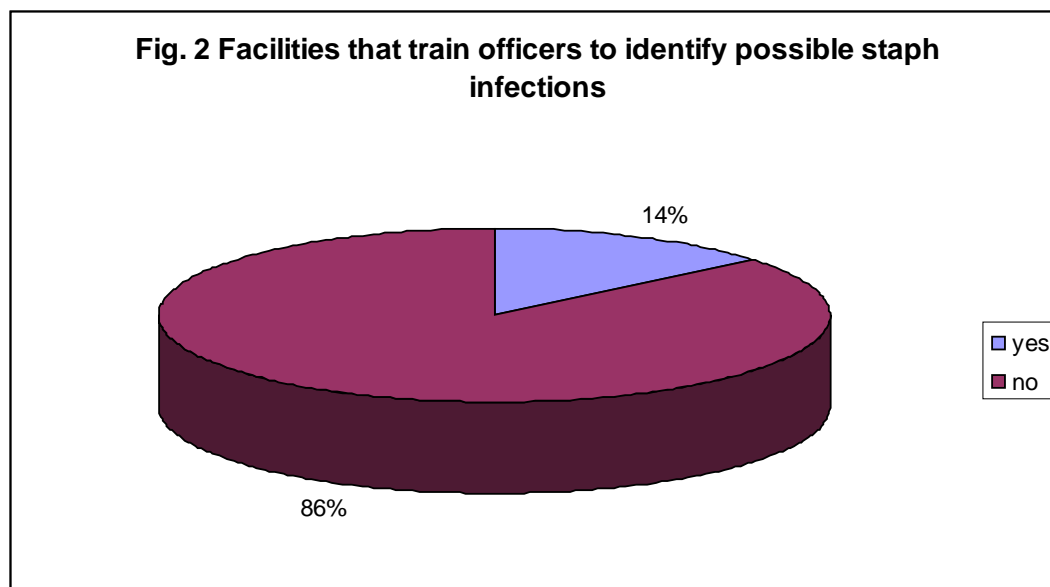
The response rate to the survey instrument resulted in only 44% of the county correctional facilities returning their answered surveys. The information obtained from the survey will be analyzed by the researcher in an attempt to organize replies to prove the hypothesis; that having guidelines or nursing protocols in place will significantly reduce the number of MRSA infections.

FINDINGS

Preventing the spread of MRSA within a correctional facility today has presented a great challenge. Of the 16 surveys sent out to various county correctional facilities from Texas, seven (44%) were returned. Of these seven that were returned, only five facilities (14%) had guidelines for identifying and treating MRSA. (See Figure 1) Telephone calls were made to the five facilities that stated that they did have guidelines for identifying and treating MRSA. These facilities were asked if they felt that having a guideline had significantly reduced the number of MRSA infections within their facility.

They all stated that they felt that having this guideline has decreased the number of MRSA infections. Of the seven surveys returned, six facilities (86%) do train their officers to alert medical staff of possible staph infections. (See Figure 2). All the seven surveys returned indicated that antibacterial soap or hand sanitizer is available for correctional officers. All of the seven facilities also use some sort of antibacterial cleaning solution or bleach mixture for daily cleaning. Many facilities are not large enough to have segregation cells, and this can pose a problem when an inmate does have a draining skin abscess that is confirmed to be MRSA. Of the seven facilities, only five facilities (71%) have segregation cells.





DISCUSSION/CONCLUSIONS

The problem or issue examined by the researcher considered whether or not having a guideline pertaining to preventing, identifying and treating MRSA within a correctional facility can significantly reduce the spread of MRSA. The purpose of this research was to present information to assist any correctional facility on how to effectively reduce the number of MRSA infections within a correctional facility. Secondly, the researcher anticipated establishing a template for a nursing protocol that can be implemented to significantly reduce the spread of MRSA infections. The research question that was examined focused on identifying and treating MRSA within a correctional facility. The researcher hypothesized that having a guideline pertaining to preventing; identifying and treating MRSA within a correctional facility will significantly reduce the spread of MRSA infections. The researcher concluded from the findings that having this guideline that includes, prevention, identification, and treatment of MRSA infections, will significantly reduce MRSA infections. These findings of the research did support the hypothesis probably due to

the decrease in the number of MRSA infections as reported from the facilities surveyed. Limitations that might have hindered this study resulted from the lack of surveys that were answered and returned. The study of managing the spread of methicillin-resistant staphylococcus aureus (MRSA) infections within a correctional facility is relevant to contemporary law enforcement because preventing MRSA among inmates is an important measure in preventing officers and the community outside the correctional facility from also acquiring this contagious infection.

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