

**A Reflection on the Development of a Community Education Program for
Methicillin-Resistant *Staphylococcus aureus***

By

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ABSTRACT

The prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA) in the United States has increased dramatically, in part, because of the emergence of community-associated MRSA. Recognizing that MRSA is an emerging health concern in the community, in August 2007, the Montana Department of Public Health and Human Services released guidelines that addressed the control and prevention of MRSA skin and soft tissue infections in non-healthcare settings. The Unified Health Command of Yellowstone County established a subcommittee to institute a mechanism for distributing the recommendations to the community. Educational toolkits and presentations were created for the schools of Yellowstone County based on these guidelines. This paper will look at the use of community collaboration to develop and disseminate educational materials. In addition, a reflection on the strengths and weaknesses of the process and the lessons learned will be included.

INTRODUCTION

The media uses the term “superbug” to conjure up images of indestructible bacteria that are destroying the human race. One such bacterium is methicillin-resistant *Staphylococcus aureus* (MRSA). Headlines about MRSA have included “MRSA ‘Superbug’ Becoming More Resistant¹” and “MRSA Superbug Infections Now Killing More Americans than AIDS².” MRSA has also made the national talk show circuit with an appearance on Dr. Phil’s show entitled “The Superbug Scare³”. While MRSA is not a new microorganism (it was discovered in 1961), it was originally associated with persons in healthcare facilities. So why is it now suddenly making headlines? In the mid-1990’s, reports began about MRSA infections in previously healthy individuals without established healthcare risk factors⁴. Since this time, the prevalence of MRSA has continued to grow in both the hospital and the community. Recent studies estimate MRSA infections occur in approximately 94,000 persons each year and are associated with approximately 19,000 deaths. Of these infections, about 86% are healthcare-associated and 14% are community-associated⁵. The impact of these infections goes beyond the health of the individual, it also has extreme monetary expenses. In 2005, MRSA cost the healthcare system an extra \$830 million - \$9.7 billion⁶. This increasing prevalence and related cost has prompted the suggestion that MRSA should be considered a national priority for disease control⁶.

This paper discusses the epidemiology of MRSA, the need for community education and the process of developing community education materials in one Montana county. In

particular, the paper presents the utilization of community collaboration to develop and disseminate materials and, provides reflection on the lessons learned in the process.

EPIDEMIOLOGY

MRSA is a type of *Staphylococcus aureus* that is resistant to beta-lactam antibiotics (e.g. methicillin, oxacillin, penicillin and amoxicillin) making treatment difficult. The primary reservoir for MRSA is infected or colonized (asymptomatic carriers of MRSA) individuals. Transmission occurs primarily via hands contaminated by contact with a colonized or infected individual. Transmission can also occur through contact with a colonized or infected body site or, contact with contaminated items or environmental surfaces⁷. The period of communicability lasts as long as infections continue to drain or the colonized state persists⁸.

Hospital and Community-Associated MRSA

MRSA, originally discovered in 1961, is historically considered a nosocomial infection with the primary risk factors being recent hospitalization or exposure to the healthcare setting. However, in the past decade, MRSA has been found among individuals with no exposure to healthcare. In the United States community-associated MRSA (CA-MRSA) first emerged in the mid-1990's and received national attention following the published case reports of four pediatric deaths in Minnesota and North Dakota due to CA-MRSA⁴.

Hospital-associated MRSA (HA-MRSA) and CA-MRSA differ by risk factors and site of infection (Table 1). The majority of CA-MRSA infections are caused by one of two

clones, USA300 and USA400⁵. These clones have been associated with more severe disease than the clones associated with HA-MRSA. The most frequent clinical manifestation of CA-MRSA infections is skin and soft tissue infections, but wound infection, urinary tract infection, sinusitis, bacteremia and pneumonia also occur⁹. Individuals with CA-MRSA infections commonly describe their infection as an “infected pimple” or “spider bite”⁷. HA-MRSA frequently appears as bloodstream and catheter-related infections¹⁰.

Table 1: Characteristics of HA-MRSA and CA-MRSA

Characteristic	HA-MRSA	CA-MRSA
Clinical manifestation	<ul style="list-style-type: none"> • Surgical site infection • Catheter-related infection 	<ul style="list-style-type: none"> • Skin and soft tissue infections
Epidemiology	<ul style="list-style-type: none"> • Older adults • Recent hospitalization or exposure to healthcare 	<ul style="list-style-type: none"> • Young • Athletes • Intravenous drug users • Inmates • Military
Resistance	<ul style="list-style-type: none"> • Multi-drug resistant 	<ul style="list-style-type: none"> • Beta-lactam resistant
Primary Clones	<ul style="list-style-type: none"> • USA100 • USA200 	<ul style="list-style-type: none"> • USA300 • USA400

The Centers for Disease Control and Prevention (CDC) have outlined the following criteria to distinguish CA-MRSA from HA-MRSA¹⁰. If persons with MRSA infections meet all of the criteria below, they likely have CA-MRSA:

- Diagnosis of MRSA made in the outpatient setting or by a culture positive for MRSA within 48 hours after admission to the hospital.
- No medical history of MRSA infection or colonization.
- No medical history in the past year of:

- Hospitalization
- Admission to a nursing home, skilled nursing facility, or hospice
- Dialysis
- Surgery
- No permanent indwelling catheters or medical devices that pass through the skin into the body.

CA-MRSA has been documented in many community settings particularly those with a great amount of skin-to-skin contact and crowded conditions. These populations include athletes in contact sports, intravenous drug users, inmates at correctional facilities and military personnel⁷. More recently, data has been published to show that CA-MRSA is emerging in men who have sex with men¹¹. The CDC identifies five primary risk factors for CA-MRSA. These five risk factors are direct skin-to-skin contact, lack of cleanliness, compromised skin integrity, contaminated objects, surfaces and items, and crowded living conditions¹². Other risk factors for CA-MRSA include recent hospitalization, recent antibiotic use, past MRSA infections, recurrent skin disease and/or damage. In addition, close contact with someone known to be infected or colonized with MRSA, contact with a colonized pet and or living in a community experiencing high incidence of MRSA are also risk factors⁷.

Diagnosis

Diagnosis of MRSA is generally done using a culture from the infection site that is sent to the microbiology laboratory. The type of culture depends on the type of infection present. For example, a skin infection requires a small biopsy of skin or drainage from

the infected site, pneumonia requires a sputum culture, a bloodstream infection requires a blood culture and a urinary infection requires a urine culture¹⁰. Diagnosis of MRSA can also be accomplished using an FDA-approved polymerase chain reaction (PCR) test¹³. PCR tests are used for direct detection from a nasal specimen¹³. If *S. aureus* is isolated, the organism should also be tested for antimicrobial susceptibility in order to determine which antibiotics will be effective for treating the infection⁷.

Treatment

The treatment options for MRSA infections are incision and drainage, oral antibiotics, parenteral antibiotics and topical therapies. Staph skin infections, such as boils or abscesses, are usually treated by incision and drainage^{14, 15}. However, antibiotic treatment may be needed depending on the severity and should be guided by the antimicrobial susceptibility pattern of the organism⁷.

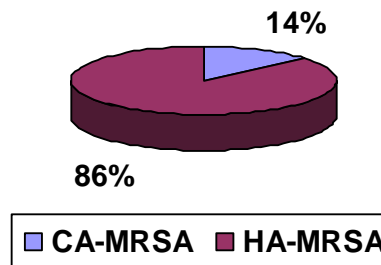
Prevalence

The prevalence of MRSA in the United States has increased dramatically as a result of the emergence of the CA-MRSA. Although incidence of MRSA in the United States varies geographically¹⁴ and is not reportable in most states, there are a variety of studies and active or passive surveillance that show the increased trend across the United States.

Klevens et al. report the frequency of CA-MRSA has increased greater than 15 fold in the years between 1996 and 2004⁵. Kuehnert et al. report that 2.3 million persons in the U.S. are colonized with MRSA (approximately 0.8%)¹⁶. In addition, CA-MRSA infections have become the most frequent cause of skin and soft tissue infections presenting to

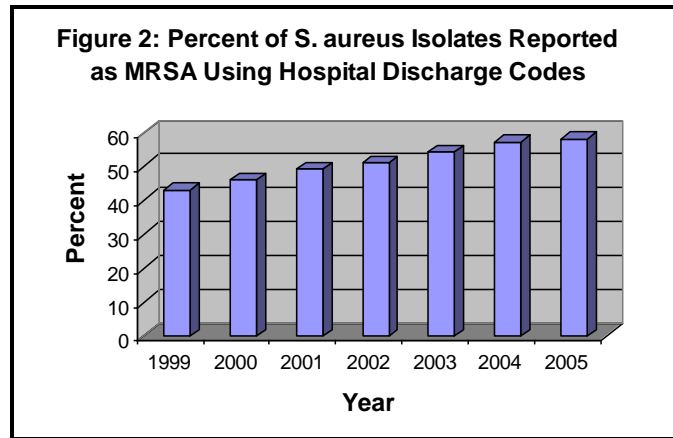
emergency departments in the United States. Invasive MRSA infections occur in approximately 94,000 persons each year and are associated with approximately 19,000 deaths. Of these infections, about 86% are healthcare-associated and 14% are community-associated (Figure 1)⁵.

Figure 1: MRSA Invasive Infections



The impact of these infections is not just seen in the health of the individual but it also results in large monetary expenses. Those infected with MRSA are more likely to require additional hospital stays and often more expensive treatments, particularly when the second or third medicine choices are required¹⁷. In 2005, MRSA cost the healthcare system an estimated \$830 million - \$9.7 billion (not including outpatient care)⁶.

While in Montana MRSA is not currently a reportable condition, the data available indicate that Montana is following the nationwide trend and the prevalence is increasing. Data from Montana's clinical laboratories show the percent of *S. aureus* isolates reported as MRSA has more than doubled from 17% in 1996 to 38% in 2005⁷. Klein et al showed similar data from hospital discharge reports across the United States (Figure 2)⁶.



CA-MRSA CONTROL AND PREVENTION

The increasing prevalence of MRSA and in particular, CA-MRSA indicates the need for preventative action to be taken. A recent study by Klevens summarized that “invasive MRSA disease is a major public health problem and is primarily related to health care but no longer confined to acute care. Although in 2005 the majority of invasive disease was related to healthcare, this may change⁵.” Mark et al. ended their paper summarizing the need for improved control measures: “Containing the CA-MRSA epidemic will require more than appropriate antibiotics. Efforts to raise awareness among community members and health care personnel, to reduce unnecessary antibiotic use, improve community surveillance and bolster infection control measures will be required to help mitigate the effect of this evolving pathogen in our midst⁹.”

The data on the effectiveness of strategies to prevent new and recurrent CA-MRSA infections are currently limited¹⁸. Prior to 2004, readily available patient education materials were designed primarily for hospitals¹⁹. A few states have taken the lead on developing CA-MRSA guidelines and educational materials. For example, in 2004 Washington released guidelines on the evaluation and management of CA-MRSA in

outpatient settings¹⁵. In addition, the CDC has produced posters and other materials for use in specific settings such as athletics and correctional facilities. However, there are some faults with the work already done. The first fault is that there is currently no published information on the effectiveness of these guidelines and therefore, it is impossible to determine if they are successful. In addition, while all these materials discuss MRSA and general prevention strategies many fail to answer the tough questions like “should a MRSA positive student be allowed in the classroom?” and they often refer people to their local health department, who may be unequipped to deal with such issues.

General prevention methods are universal and most of the strategies come highly publicized. The primary prevention strategies include washing hands, covering wounds, not sharing personal items and cleaning environmental surfaces. Both the CDC and other states have developed excellent materials with these prevention messages. In addition, to generic MRSA educational materials there are specific settings in which specific prevention and control recommendations are vitally important. These include, but are not limited to correctional facilities, schools, athletic programs, and food establishments.

MONTANA GUIDELINES

In August 2007, the Montana Department of Health and Human Services (MT-DPHHS) followed the lead of other states and developed the “Interim Guidelines on the Control and Prevention of Methicillin-resistant *Staphylococcus Aureus* (MRSA) Skin and Soft Tissue Infections in Non-Healthcare Settings.” The primary purpose of the guidelines was to establish uniform strategies for use by Montana public health personnel in the

control and prevention of MRSA in community settings⁷. The Montana Communicable Disease Control and Prevention Bureau, Epidemiology Section prepared the guidelines with input from various Montana groups including the Montana Infectious Disease Network and the Montana Association for Professionals in Infection Control and Epidemiology. Due to lack of funding at MT-DPHHS minimal additional educational materials were created to accompany the guidelines.

The MT-DPHHS guidelines followed essentially the same recommendations as the guidelines from other states in terms of general prevention strategies for MRSA in the community. However, in comparison to some other states, the MT guidelines focused entirely on control and prevention and gave no recommendations on treatment of MRSA infections. Also, in comparison, the MT guidelines were laid out in a format addressing each setting (e.g. schools and correctional facilities) specifically and answering tough questions like “should a MRSA positive student be allowed in the classroom?” (the guidelines recommend they should be in the classroom unless they have a wound that cannot be kept covered). Prior guidelines like Washington’s do not specifically address questions of involvement in school or athletics. The CDC currently gives some guidelines to address these questions; however, they also direct people to their local health department for further information. In general, this is a good recommendation but can lead to problems if the local health department is unprepared to answer such questions.

To date, the effectiveness of the MT-DPHHS guidelines in controlling and preventing MRSA have not been evaluated. However, on a local level there has been anecdotal evidence that the guidelines are being utilized and the recommendations are assisting local health departments in dealing with MRSA. This evidence includes the positive feedback MT-DPHHS received from both local health departments and health professionals regarding the guidelines. Also, in August 2008 a conference on CA-MRSA control and prevention was held in Billings, Montana. The conference attendees included over 80 health professionals from a variety of settings across Montana (e.g. public health, schools, correctional facilities, clinics and hospitals). The attendees attested to their use of the Montana guidelines to help control and prevent MRSA in their work settings.

YELLOWSTONE COUNTY CA-MRSA EDUCATION CAMPAIGN

Unified Health Command

In 2001, RiverStone Health, Yellowstone County's public health agency, in collaboration with the two area hospitals, unofficially began the Unified Health Command (UHC) of Yellowstone County when the threat of bioterrorism gained national attention. In 2004, the Local Emergency Planning Committee adopted the UHC as an official subcommittee. The core members of the UHC are the two local hospitals Billings Clinic, St. Vincent Healthcare, RiverStone Health and Yellowstone County Disaster and Emergency Services. Additional members include Billings Public Schools, Children's Clinic, Indian Health Services, United States Postal Service and various other organizations.

The vision of the UHC is “Healthy People in Healthy Communities.” The mission of the group is “to ensure the coordination of the Yellowstone County public health system for the purpose of preventing, preparing, responding, and recovering from events that may impact the health of our community.” In particular, the UHC lists as one of its responsibilities “the obligation to prevent epidemics and the spread of disease” and looks at strategies such as coordinated outreach efforts including disease prevention and other campaigns.

In 2007, following the release of the guidelines by MT-DPPHS, the UHC decided that MRSA had gained enough local and national attention that it was essential for the UHC to begin addressing the prevention and control of MRSA in Yellowstone County. The UHC formed a subcommittee to address the control and prevention of MRSA in Yellowstone County.

MRSA Subcommittee

The subcommittee, formed in October 2007, is comprised of public health nurses, epidemiologists, infection control practitioners, school nurses and infectious disease physicians from across Yellowstone County. Participation in the subcommittee is voluntary for each individual and the members bring a variety of experience to the table. Several of the committee members were involved in the review of the MT-DPHHS guidelines and have extensive experience with MRSA prevention. Others have very little experience with MRSA but have experience in settings that need MRSA education (e.g. schools and correctional facilities).

The committee initially reviewed the MT-DPHHS guidelines and agreed that the guidelines provided extensive guidance and recommendations. However, the committee believed that just distributing the guidelines in their current format (a 24-page document) would not adequately share the prevention messages.

Several possible formats for educational materials were discussed as was the subcommittee's experience with the development of educational materials. The subcommittee members have a wide range of experience with educational material development and dissemination. Infection control professionals (ICPs) from both local hospitals have spent a great deal of time, energy and money trying to teach many of these same prevention messages to the staff of the hospitals. In particular, several ICPs have recently been involved in a study on the use of Positive Deviance (PD)²⁰ as a tool for behavioral change. The study is having hospitals use PD to address MRSA as a problem that requires social change and as a tool to provide an experience to allow people to discover ideas for themselves²¹. For example, a problem that may require social change in the hospital is workers not washing hands before seeing a patient. The program started at the Billings Clinic in May 2006 and a 61 percent decrease in hospital-associated MRSA infections has been seen²¹. Based on their experience in this study, the Billings Clinic staff stressed the importance of community input in the development of materials. Likewise the staff involved at particular settings (e.g. schools) stressed the importance of short, easy to read materials, which answered the difficult and commonly asked questions. There was also no designated funding available specifically for this project

and to date no grant funding has been received. RiverStone Health made the commitment to provide staff and a small amount of money for development of materials. Therefore, one additional consideration in the development of the materials was how to effectively utilize these limited resources to create a community-wide campaign.

While very little research and data exist on the effectiveness of MRSA community prevention educational campaigns there are several counties that have been leaders in the process. Tacoma Pierce County in Washington is among one of the counties that has spent a great deal of time and effort developing educational materials on the topic of MRSA. These materials are made available to the public on their website and include resources for a variety of settings including schools, correctional facilities, and daycares. The educational materials created by Tacoma Pierce County for the schools are packaged as a toolkit that includes newsletter articles, infection control policies checklists, letter to parents etc. Although the committee was unable to find any published evaluations of MRSA community education programs (including Tacoma Pierce County) they decided to proceed with the toolkit concept and utilize evidence based practices for the creation of health promotion materials. The resulting campaign created by the subcommittee was titled “Wash Out MRSA.” The campaign included toolkits modeled after the school toolkits created by Tacoma Pierce County and designed to ensure strict adherence to the recommendations in the MT-DPHHS guidelines.

“WASH OUT MRSA” TOOLKIT

Toolkit Development

The “Wash Out MRSA” educational campaign chose schools and their faculty as its initial target audience. In October 2007, at the time this audience was chosen, the death of a Virginia high school student due to MRSA was making national headlines²².

Following the death, 21 schools were closed in that Virginia area prompting many Yellowstone County schools to ask for further information on MRSA.

The “Wash Out MRSA” school toolkit was created to present MRSA prevention and control strategies in various formats for a variety of audiences (e.g. teacher, school nurse, and parent).

Table 2: Toolkit Contents

Content	Details of Materials
Reference Materials	<ul style="list-style-type: none"> • List of EPA registered disinfectants • DPHHS guidelines
Prevention Strategies	<ul style="list-style-type: none"> • One page handout on the top four prevention strategies (wash your hands, do not share personal items, clean and cover open wounds and, regularly clean environmental surfaces)
Talking Points	<ul style="list-style-type: none"> • One page handout with an overview of what is MRSA, what to do if an infection is suspected, how to prevent the spread of MRSA
Sample Newsletter Articles	<ul style="list-style-type: none"> • School staff • Parents
Using Bleach for Environmental Disinfection	<ul style="list-style-type: none"> • General guidelines using bleach for cleaning
Question and Answer sheets	<ul style="list-style-type: none"> • Different sheets for School Officials, Teachers, Nurses, Coaches, Athletic Trainers and Custodians • Each sheet answers questions directly related to the specific audience
Policy Checklists	<ul style="list-style-type: none"> • Guidance on policies that could be developed for the prevention and control of MRSA in the school setting

The toolkit contents are distributed to the schools via hard copy and in an electronic format on a CD. The purpose of the CD’s was to ensure that the schools had the

capability to copy and distribute the materials as needed including, via email or website postings. This also enabled the dissemination of the materials at a reasonable cost.

The “Wash Out MRSA” campaign was designed to not only utilize the educational materials in the toolkit but to be distributed in conjunction with educational presentations to all school staff members. The purpose of the presentations was to educate school staff on MRSA including prevention strategies and, how to deal with suspected and confirmed cases of MRSA in students. The secondary goal of the presentations was to make the staff aware of the resources available in the “Wash Out MRSA” toolkit.

Toolkit Dissemination

The presentations began in the Yellowstone County schools in March 2008. Each school was asked to allow a UHC subcommittee member to come to their weekly staff meeting and present prevention and control strategies for MRSA.

Toolkit Evaluation

CA-MRSA infection incidence rates in Yellowstone County are difficult to assess for two reasons. First, MRSA is not a reportable condition and therefore, currently no baseline data is available to determine if the education results in a reduction of infections.

Second, it is expected that the number of cases that are actually reported to the RiverStone Health will rise due to the increased knowledge of the topic of MRSA.

However, despite these challenges, the following goals and evaluation plan has been established for this program (Table 3).

Table 3: Evaluation Plan

Goal	Evaluation	Progress
Provide all 49 schools in Yellowstone County with a “Wash Out MRSA” toolkit by November 2008.	Track the schools that received “Wash Out MRSA” toolkits	As of June 29, 2008 44 schools have received “Wash Out MRSA toolkits”
Present on MRSA prevention strategies (including proper hand washing techniques) to 40 (82%) of schools in Yellowstone County by November 2008.	Track the schools that received MRSA presentations and the number of staff that attended	As of June 29, 2008 30 schools have received presentations and approximately 500 staff members have received training.

Current Toolkit Status

“Wash Out MRSA” materials have been developed for schools and school athletic settings. These materials have been disseminated in Yellowstone County to 44 schools (including both School District 2 and the county schools). The dissemination will continue in the 2008/2009 school year. The subcommittee is currently working closely with the nurses and medical staff of the Yellowstone County correctional facilities along with transitional facilities to develop materials appropriate for these settings. Suggestions have included material that is of low literacy level and shows pictures of MRSA skin and soft tissue infections. In addition, the focus should be on creating materials that can be posted (e.g. posters) vs. individually distributed reading materials. The dissemination method is not finalized however, it is anticipated that the materials will be created by UHC and each facility will be in responsible for the posting. Staff of correctional

facilities will also begin receiving education on MRSA from RiverStone Health Public Health Nurses.

Following correctional facilities, the next setting will be daycare facilities. The Environmental Health program at RiverStone Health is anticipated to play a vital role in the creation and dissemination of these materials as they routinely complete inspections of the local daycares and have opportunities to educate.

LESSONS LEARNED

The “Wash Out MRSA” campaign utilized a strong collaboration between several community organizations. Along with this collaboration there were areas of strengths and areas that require improvement. The lessons learned from this collaboration could be utilized by other organizations in their future public health collaborations.

IMPROVEMENT AREAS

Lack of physician participation

In Montana, only eleven infectious disease (ID) physicians service an area of 147,000 square miles. However, three of these physicians are located in Billings and are active members of the UHC. The chair of the subcommittee actively worked to engage these physicians in the subcommittee by inviting them to each meeting and ensuring they received all materials. However, despite this effort none of the physicians were actively involved in the process and therefore the benefit of their knowledge was missed. One possible solution to this problem is to appoint a physician chair of the committee. The

active participation of just one ID physician may have encouraged the other ID physicians to play a larger role. In addition, it should be noted that at the beginning of this process RiverStone Health's Chief of Public Health resigned. Therefore, RiverStone was lacking the participation of a high ranking staff member. This lack of reciprocation on behalf of RiverStone may have resulted in the lack of participation from the ID physicians. RiverStone could have improved this by seeking out another physician within their organization to play a role in the committee.

Political Barriers and Competition

One other area requiring improvement was the politics. Billings has two hospitals in the city and they are in direct competition with each other for the majority of their services. Therefore, to involve both hospitals in the process was essential to ensure support for this community wide effort. However, there is often tension between the staff of the two hospitals and some secretiveness on what the policies/procedures are, especially with regard to infection control. During this process, the goal was to create a successful campaign by utilizing the subcommittees' expertise. However, many times the members specifically did not provide information for fear that it would be used against them (e.g. infection rates) or that the other hospital would 'steal' the ideas/programs. To solve this problem the chair of the subcommittee found it was essential to be vitally aware of the competitive nature of the hospitals and ask for specific information pertaining to their hospitals on an as needed basis only. The purpose of asking for the information was also made abundantly clear so that each hospital understood the relevance of the information and exactly how it would be utilized.

Bureaucratic Delays

The dissemination method of the “Wash Out MRSA” toolkits required the cooperation and support of the Yellowstone County school’s administrative staff. The administrative staff assists in the organization of the presentation, the dissemination of the toolkit materials and is the primary support behind encouraging (or requiring) staff members to attend the presentations. This support was not an issue for the county/rural schools in Yellowstone County where the school nurses are RiverStone Health employees. The county schools immediately implemented the toolkits and arranged presentations. However, in School District 2 in the city of Billings, the entry into the schools was a long process that required many steps of bureaucracy. The School District 2 administration approval was required before the administration at each school was contacted. The arrangement of the appropriate meetings and approvals took a couple of months and pushed the entry dates into the schools until mid-May, near the end of the school year. Looking back the subcommittee believes they should have delayed the launch until the beginning of the 2008/2009 school year. Thereby, allowing completion of the presentations in all Yellowstone County schools in the same school year.

Poor Evaluation Plan

The evaluation of the campaign was another area that requires improvement. Actual MRSA incidence and prevalence before and after campaign initiation were impossible to assess since MRSA is not a reportable condition. Therefore, the goals and evaluation plan were aimed around the dissemination of the materials with no evaluation method for

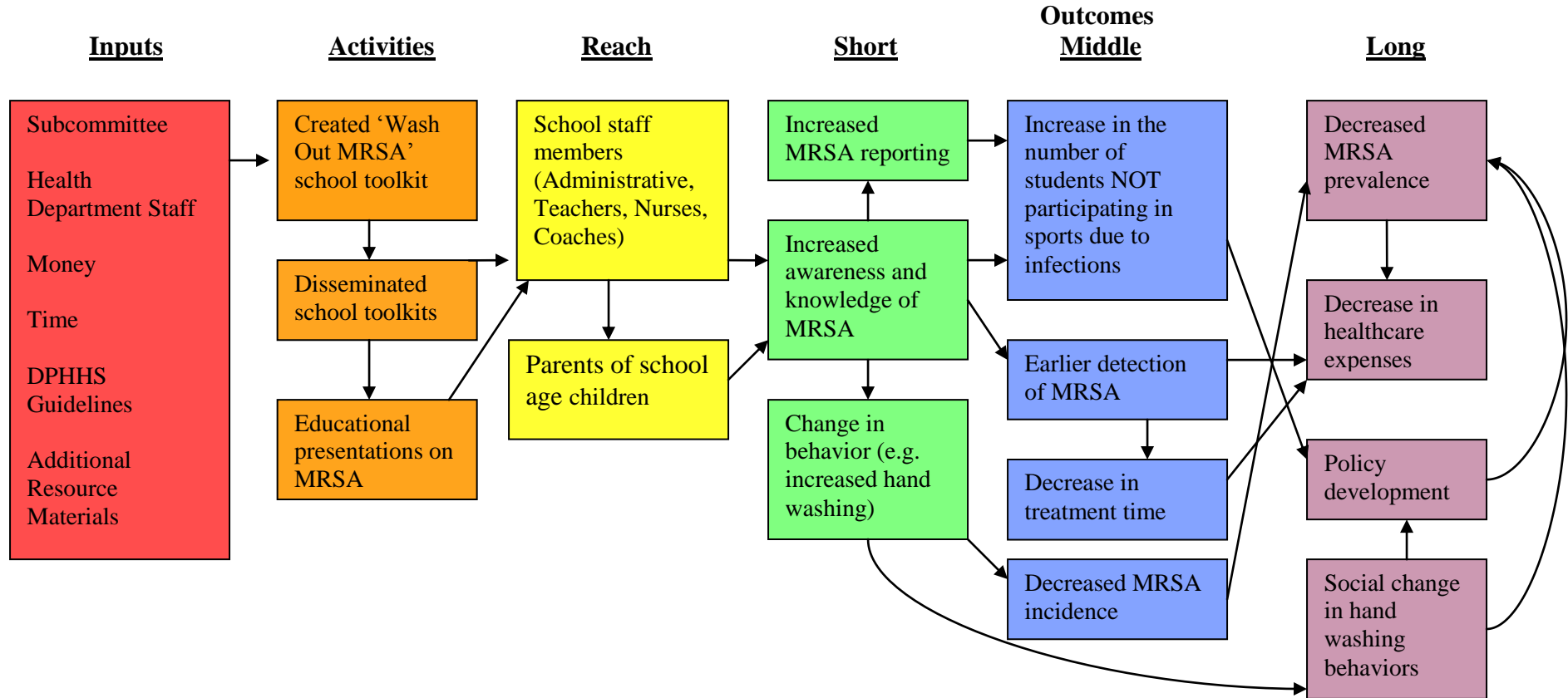
actual understanding of the materials. The subcommittee has reflected back on this process and believes that additional evaluation tools such as pre and post testing would have provided useful data. Likewise, there is currently no information on the use of the toolkits in the schools and whether all the information has been distributed to the relevant school staff.

A logic model (Figure 3) shows the process of the program including the inputs, activities and anticipated outcomes. The outcomes have been laid out to examine both the short, middle and long term impacts the program could potentially have. This logic model displays the potential missed opportunities for evaluation. While some of the questions in the logic model evaluation area may have been difficult to assess (e.g. decrease in healthcare expenses) others would have been easier and have provided valuable insight into the successes and/or failures of the ‘Wash Out MRSA’ campaign. Future work by the subcommittee will more closely consider the evaluation plan early on in the campaign to ensure that relevant data is collected.

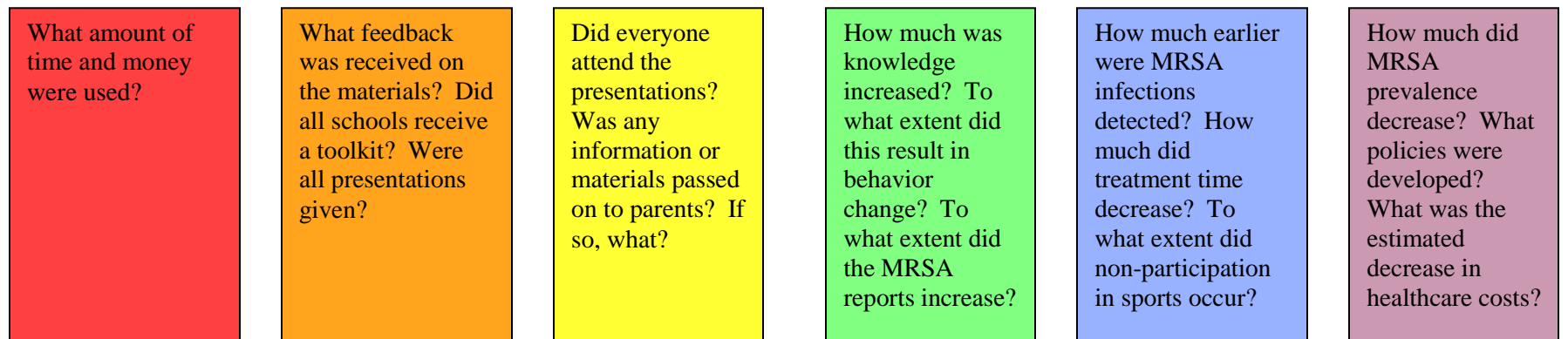
Figure 3: Logic Model

Unified Health Command Vision: Healthy People in Healthy Communities

MRSA Subcommittee Mission: A community education campaign that reduces the incidence of CA-MRSA.



Evaluation Opportunities



STRENGTHS

Pace of Work

One of the primary strengths of the program is the pace of work. The RiverStone Health staff members work on the materials on a regular basis. This work ensures that at each monthly meeting (prescheduled to coincide with the UHC) the subcommittee has new materials to review and/or discussion topics. This pace of work keeps the committee members engaged and guarantees consistent involvement. However, the pace of work is entirely dependent on the time resources available from the RiverStone Health staff as they create and complete the bulk of the toolkits. Therefore, in other scenarios the dependence on such a small group of the subcommittee could actually hinder the process.

Community Collaboration

Community collaboration also strengthens this project. The committee consists of community members representing numerous organizations (primarily healthcare) from Yellowstone County. This variety of members allows a mixture of viewpoints and expertise. Most importantly, politically it has helped gain community wide acceptance. However, since there is such large competition between the two local hospitals they are often reluctant to work together on various projects and this needed to be addressed. In order to address this RiverStone has taken on the key role in leading/organizing the subcommittee and a logo was created specifically for the UHC (Figure 4). This logo is put on all materials distributed and no individual organization logo is included. This collaboration has strengthened the credibility of the materials and brought added support from other un-involved organizations.

The collaboration was also strong to the fact that the dynamics of the team are very positive. This positive dynamic could be attributed to the fact that all members have played a role on the UHC in the prior years and had established trust from having worked together on various occasions. Conflict has been virtually non-existent. However, it is worth noting that the subcommittee at this point has primarily just played a role in material development based on the state guidelines. The committee has not yet faced any decisions or controversial situations with the implementation of the guidelines. The one exception to this came at subcommittee formation. Initially the subcommittee was formed to review both hospital and community MRSA. However, it immediately became clear that reviewing hospital MRSA would cause a lot of conflict as both hospitals took a very different approach to infection control and their resources dedicated to infection control varied considerably. Therefore, based on the reaction of the group the MRSA hospital agenda item was eliminated and to date, this issue has not been raised again.

Figure 4: Unified Health Command



The collaboration however, does not stop with just community organizations; Montana DPHHS and the Montana Infectious Disease Network also have played a key role in

reviewing the materials. This continued collaboration will be especially important as the materials are disseminated on a statewide basis. The initiation of this collaboration was fairly simple for a couple of reasons. The first being Montana is a sparsely populated state; the MT-DPHHS and local health departments communicate frequently and personal relationships are built. Therefore, obtaining the support from DPHHS was easy due to already established relationships. Likewise, the chair of the MRSA subcommittee is also the lead organizer of the MT ID Network and three of the physicians from Billings participate in the Network.

Use of the Montana Guidelines

The strict use of the Montana guidelines was also a strength in the development of the educational campaign. The subcommittee made it a distinct point at the beginning of the project to utilize the Montana guidelines. Again, this added to the credibility of the materials, consistency in messaging and made the review process much easier. In addition, while the “Wash Out MRSA” materials are currently being distributed only in Yellowstone County, the plan is that these materials will be available statewide for use in other counties. Each county will easily be able to immediately utilize the information and have the confidence that it is following MT-DPPHS recommendations.

FUTURE

Policy Implications

MRSA surveillance is a highly debated topic and recently this issue has received the attention of legislatures around the United States. Twenty-three states have seen

legislation introduced requiring the surveillance of MRSA²³. Currently, Montana has no such legislation and very little discussion has occurred on this topic. However, many believe it is just a matter of time before its introduction into Montana. The UHC is aware that this may be on the horizon and has begun discussions on the logistics of this legislation. The UHC is aware that such legislation could receive media attention and lead to increased public awareness and fear of MRSA. The “Wash Out MRSA” materials will serve as an immediate source of education to the public if or when this occurs.

Sometime in the near future, the hope is that the local Montana schools will begin implementing MRSA policies and procedures for the control and prevention of MRSA in the school environment. The Montana guidelines and the “Wash Out MRSA” materials both encourage schools to create written policies on the topic of MRSA. The recommendation is that these policies cover such topics as the policy for MRSA positive student’s participation in school and athletics. Currently, no school has contacted RiverStone Health to assist in the development of policies. However, the need for such policies is critical as there will be controversial decisions to be made especially with regard to participation in sports for MRSA infected athletes. The MT guidelines recommend no contact sports for an individual with a MRSA infection until the wound has stopped draining, which could potentially take weeks. This controversial guideline is fully supported by the MRSA subcommittee but the implementation could be very difficult for school authorities. Therefore, to ensure that such guidelines are followed, policy development is critical to ensure that there is a uniform way of dealing with these situations.

Short-term steps

The future of the “Wash Out MRSA” campaign is largely based on the influence and participation of the UHC and the MRSA subcommittee. In the short term, the subcommittee hopes to continue with the development of the materials for additional non-healthcare settings. These settings include, but are not limited to, correctional facilities, daycares and food establishments. Development and distribution of these materials is planned to continue in Yellowstone County indefinitely.

In June 2008, the MRSA subcommittee met with the local correctional facilities and translational living facilities to begin the discussion of MRSA. The information was well received and there was a strong interest from the group in having materials created specifically for their settings. The suggestions for materials and education included: posters showing pictures of MRSA infections, handouts for MRSA positive inmates and an education program for correctional officers. Development of these materials is currently underway.

Additional activities underway include increased targeting of athletes and coaches. The MRSA subcommittee recently created a brochure entitled “MRSA and Athletics: What Coaches and Athletes Need to Know.” The brochure was distributed at the Montana Coaches Association Annual Meeting in August 2008. The MRSA subcommittee is working to make the brochure available to all athletes in Billings at the time they receive their sports physicals. The plan is to distribute the brochure to all locations affiliated with

RiverStone Health, Billings Clinic or St. Vincent Healthcare that provide sports physicals.

Long-term steps

Currently the “Wash Out MRSA” materials are only being distributed in Yellowstone County. However, the plan is to make these materials available statewide. To begin this process RiverStone Health is working to get all the materials posted on their website and on the Montana Antimicrobial Resistance Awareness website. RiverStone Health staff will also be presenting this project at the 2008 Montana Public Health Association Fall Conference. The goal of this presentation is to make other public health workers across the state aware of the materials that are available for their use.

SUMMARY

The prevalence of MRSA continues to increase in Montana and across the United States; CA-MRSA plays a large role in the increased prevalence, thus intensifying healthcare expenditures. The further development of community education campaigns are needed to address this emerging public health concern. Although several states have begun this process, many of the tough questions associated with MRSA remain unanswered. That said, in August 2007, the MT-DPHHS created the “Interim Guidelines on the Control and Prevention of Methicillin-resistant *Staphylococcus Aureus* (MRSA) Skin and Soft Tissue Infections in Non-Healthcare Settings.” Realizing the guidelines provided much needed guidance in a variety of settings, the Unified Health Command of Yellowstone County created a subcommittee to create educational toolkits. This subcommittee has made great

strides in creating MRSA educational materials to control and prevent the spread of MRSA in non-healthcare settings despite the lack of evaluated MRSA community education programs. In addition, the process provides good insight for other local health departments looking to take on similar collaborative projects. Specific challenges encountered during this particular project, and common to any community collaboration include political barriers, lack of participation, and bureaucratic delays.

Recommendations to overcome these obstacles include striving for open and honest communication, re-evaluating timelines when bureaucratic delays occur, and involvement from influential administrative public health leaders. Keeping the pace of work steady and allowing wide community collaboration can also increase the success of the project.

Most importantly, a strong evaluation plan at the beginning of any project is necessary for solid evidence-based appraisal. Incorporating an evaluation plan into the “Wash Out MRSA” toolkit program would substantially contribute to the literature on MRSA education programs beyond merely discussing the experiences during the development phase of the project. Evidence based programs are needed now more than ever in the area of MRSA community education as the potential for MRSA reporting policies are expected to be established across the United States; the issue of CA-MRSA control and prevention requires much more work and research to find a solution.

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