Infectious Diseases Society of America
Emerging Infections Network

Comments for Query: ‘Perioperative Staphylococcus aureus Screening and Decolonization’

[Pediatric responses are shown in blue font]

Respondent’s state of practice is shown in parentheses at the end of the comment

Do you correlate decolonization practice with the risk of SSI?

• We started the screening and decolonization a year ago. We have decreased SSI rate in that population in about half not just for MRSA but overall. We just started recommending chlorhexidine baths for all elective surgeries. The use of vancomycin preoperatively has decreased too. It is too soon to publish the data. Hopefully next year we will able to show the results and compare to similar institutions. [GA]

• Less MRSA with Hibiclens presurgery washes [TX]

• We do it but I am aware of the consequences of massive use of anti-infective agents; i.e., resistance. We have never had a major problem with MRSA so it is impossible to say how effective we have been. We have NOT seen the problems with MRSA that other hospitals in 60 miles of us have seen. [OH]

• S. aureus screening and targeted decolonization of patients is an ineffective use of resources in pediatrics. Far more beneficial would be the decolonization of surgeons and providers. Decolonization of patients has had no impact on SSIs in our institutions (2 metropolitan pediatric hospitals). [GA]

• MRSA screening is being done in PICU and in some patients. The rate has been noted to increase. All positive carriers are not routinely decolonized, which might reduce the rate and SSI. [NE]

• We have screened patients on admission to the SICU and MICU. Very helpful in controlling colonization/infections in the SICU, not in the MICU. Otherwise limited screening in NICU indicated very low colonization rate. Do not routinely screen otherwise. [CO]

• Preop screening is standard in my community for total joint patients. 18 months of practice of preop screening for MSSA/MRSA with decolonization prior to TJR. Postop SSI rate decreased to 1% for TKR and 0 for THR. [VA]

• No, we do not correlate practice with risk of SSI [CT, FL, NJ, MN, OH, TN, WI]

• Our nosocomial rates of MRSA are extremely low. I don't think that the screening and decolonization has changed our numbers because there are very few perioperative pts that screen positive for MRSA. We get at most two nosocomial MRSA pts a month at our facility and that includes all pts - medical, surgical, pediatric, ob/gyn. [ID]

• Have no data. Assume it may decrease the risk of post op infxn- but proof is pending. [GA]

• NO; really don't have sufficient personnel to follow all SSI but do sentinel procedures for outcome measures. In the sentinel procedures, MSSA outranks MRSA usually 2-3 to one. [MS]

• Currently all admissions to our hospital are screened for nasal MRSA colonization; the correlation between MRSA nasal carriage and post-op MRSA infection has been low! [CA]

• We start 24 hrs before surery and 2 weeks post surgery (modified Ontario protocol). We have done this for 7 years. Would predict 56-80 cases MRSA osteo/deep sternal. We have had ZERO cases! [OH]

• Prospectively look at it in CTS pts - preop screening had no correlation with infection [NJ]

• We have very low SSI rates and they have dropped slightly more with CHG bathing, education and mupirocin ointment. [TN]
• We only screen patients with a history of MRSA. We do not correlate inf with decol at present. [MI]
• We are starting to do so, but for the moment compliance with the AST policy and preoperative decontamination is not being documented. Therein, the difficulty of being able to definitively correlate. [CA]
• Our institution screens upon admission to an ICU. Our staph SSI rate is very low. [NY]
• We successfully reduced MRSA postoperative SSI in elective knee, hip and spine surgery patients using screening during their preoperative evaluations, using the Simor et al protocol for any who had a positive screen for MRSA. [TX]
• We have seen reduced SSI rates and reduced rates of S. aureus SSIs in patients using mupirocin and CHG pre-op (CV patients) - we've now extended this to hip and knee patients. [IN]

Beliefs / Opinions / Need for data in this area
At least some surgical patients screened preoperatively for S. aureus
• I believe this [preop screening & decolonization] should be a standard for high risk patients/operations - not all. [GA]
• If our goal is to decrease the risk of SSI (analogous to CLABSI), then preoperative screening for staph carriage for those surgeries with a significant risk of S. aureus SSI (i.e. non-bowel surgeries), followed by decolonization of patients carrying S. aureus, should be one of the MANY interventions made for surgical patients. "Getting to Zero" changes greatly how we assess interventions. [PA]
• For clean surgeries, it makes sense to reduce organism burden to reduce the risk of SSI. We just started decolonization for SA in cardiothoracic population and hope for a reduction in SA infections. [MI]
• The association appears to be closer for any implanted devices. [MT]
• Perhaps beneficial for certain subsets of pts--Cardiac surgery, Ortho [IL]
At least some surgical patients screened preoperatively for MRSA
• Just starting to look at correlating decolonization with risk of SSI - setting up a study. We are trying to develop a tool to look for patients at risk to use MRSA PCR as a survey tool. I don't know if it SHOULD be a standard of care - want to see impact first. [MO]
• Tough. Decolonization success overall 30% but may be helpful in short term preop. Need documentation. [NC]
• Favor screening and decolonizing [OK]
• I feel very strongly that surgical patients should be tested for MRSA and an attempt made to decolonize them perioperatively. [TX]
• Timely topic. In spite of lots of literature & studies, there are no validated standards (my opinion). We are evaluating routine decolonization including chlorhexidine. No such screening for chlorhexidine susceptibility exists! [CA]
• Very confusing literature on the benefits (or lack thereof) of decolonization and the risks of mupirocin resistance. Prefer to identify MRSA carriers to allow appropriate AB prophylaxis with vancomycin. [TX]
• We believe that 3 qdaily chlorhexidine showers preceding elective joint replacement has decreased the incidence of hardware infection at our hospital. We are exploring daily chlorhexidine as an approach to reducing BSI's in ICU patients with central lines. [NJ]
• We have a very low rate of MRSA SSI and thus I don't think screening is sensible in our setting. Screening and decolonization/changing prophylaxis patterns makes sense where there is a problem, but the logistics are daunting. [WA]
• I am personally in favor of bleach baths or Hibiclens showers for all surgical patients without active screening or decolonization. [MA]
I favor screening certain patients prior to certain surgeries (open heart surgery, total joint replacements) but would like to screen more. However, the logistics are such that it is an extreme burden to the laboratory and unless the cultures are done in the hospital lab, the information does not routinely make it to the electronic health care record. From my reading of the literature, I believe decolonization of known carriers can reduce the risk of MRSA SSI but until we can efficiently screen patients more rapidly (with PCR technology) we cannot implement more widespread screening and decolonization. I would not favor routine use of decolonization since it was shown to be largely ineffective except in known carriers (Hopkins study Trish Perl.) [TX]

Very murky subject. People who are colonized are often colonized at only 1 site. Sometimes not a site that is routinely cultured. I believe we need to consider adding MRSA coverage to our routine preoperative antimicrobial regimen. [AR]

The data are mixed. [IL]

My personal opinion is that decolonization of MRSA carriers may have some benefit in very limited surgical populations such as orthopedic procedures involving hardware or implants or cardiac surgery. I have made my opinion known to our community surgeons, but it is pretty much left up to the individual surgeon to decide and we have no formal policy. I do not believe universal decolonization is at all advisable and I think it should be limited to documented MRSA carriers undergoing the above mentioned surgical procedures. Our surgeons tend to use carrier status as a basis for choosing preoperative antibiotic prophylaxis rather than decolonization. [OR]

I think the data are still unclear about decolonization and post op infection despite some recent treatment guidelines [PA]

I believe in identifying colonisers with MRSA, and decolonizing. [MO]

Few SSIs are caused by MSSA or MRSA; therefore we don't universally recommend screening and decolonizing pre-op [MD]

I think preoperative screening for MRSA colonization makes sense to help prevent surgical site infections, but this is difficult to control in the outpatient setting. [IL]

Am in favor of decolonization (nasal mupirocin + chlorhexidine cloth) for MRSA colonized who will have orthopedic or other surgical implantation or cardiac surgery. I correlated decolon' pract' with risk SSI. [CA]

I think attention should be focused on use of chlorhexidine in all patients as opposed to patient-specific decolonization. In settings where MRSA remains a problem after this, I would consider use of decolonization. [NC]

Would like to do screening for all S. aureus and waiting for FDA approval for PCR technology [MD]

No surgical patients screened preoperatively for S. aureus/MRSA

Data are conflicting about benefit of perioperative screening. If you just do nasal screening you may miss 15-20% of colonized patients. Our rate of MRSA is below average. [PA]

We have looked at this critically. We have a low rate of health care associated SSI with MRSA, and at the time we looked at the question (about 1 yr ago), we decided on proactive chlorhexidine bathing for pts with implants, long cases etc. This is a dynamic issue, and we may revisit the situation. If screening is done, I feel that SA needs to be screened for, not just MRSA. [TX]

S. aureus screening pre operatively would really depend on surgical procedure. Prosthetic materials electively placed should be most useful patient target. I am agnostic re decolonization. Depends on how it is done. I am still fond of soap and water for both patients and surgeons... [AZ]

It might be reasonable to screen patients for S. aureus (including MRSA) in patients undergoing surgery involving orthopedic and cardiac implants. Decolonization could be attempted in those instances. [OR]
• Preoperative screening and decolonization will become standard of care in the future. [NJ]
• The survey is fine. The issue is how we use recently published information. It is not clear to me what (which) the decolonization process should be and how effective it would be if applied large scale. [CA]
• We are in the process of using our real time PCR for MRSA active surveillance model for per-op screening of patients undergoing high risk operations with implantable devices. We will then decolonize with mupirocin and chg and use anti-MRSA SAP. There is sufficient evidence to warrant directed SAP when the patient is known to be colonized with MRSA. [MO]
• I am not sure that preop screening/ decolonization is warranted for all surgeries (perhaps consider for high risk surgeries with prostheses) but it seems that if there are any recommendations to perform preop screening/ decolonization, that it should apply to all S. aureus (and not just MRSA) -- the Bode study included only patients with MSSA. However, the national attention seems to focus only on MRSA ignoring MSSA as an important cause of SSI. In addition, at what point is it more cost-effective to simply decolonize (without screening) a surgical population with a high (although would need define what constitutes "high") rate of S. aureus SSI and the main problem with this strategy is selection of resistance. On the subject of vancomycin prophylaxis, we chose to institute this (in addition to cefazolin which was standard prophylaxis previously) for patients undergoing revision knee arthroplasty only (where the SSI rate was 7% vs. 1% for primary knee arthroplasty). 1/3 of these SSI were due to MRSA and 1/2 were due to MRSE (either monomicrobial or polymicrobial). Therefore, there may not necessarily be a "one size fits all" approach but institutions should tailor according to where their problem SSI areas are. [CA]
• I think decolonization lowers risk, but not sure that universal screening and decolonization costs, justify the outcomes. [MI]
• There is a difference between true decolonization (with systemic antibiotics, topical chlorhexidine and nasal mupirocin) and decreasing skin colonization that has been shown to decrease postop wound infections. I favor MRSA screening preop, with chlorhexidine baths preop to decrease risk of MRSA postop infection. [CA]
• We have rather low rates of MRSA infections in our hospital. We have a policy of screening ICU patients for MRSA. After one year of screening, we didn't notice any decrease in our rates of infection. We are considering discontinuing this practice and observing whether there will be an increase in rates. The current literature is mixed on this practice. My opinion, subject to new data, is to screen based on local experience. [OH]
• The published data do not appear to be compelling for or against screening, as per contradictory studies in 2008. We are awaiting clearer data and/or CDC guidance. Routine screening at our hospital would involve 9000-10,000 patients per year (X 1-2 or 3 cultures each??). Even though massive, this approach would be worthwhile if the data supports doing so. [NY]
• Literature on the topic is mixed. The strongest case can be made for orthopedics/foreign body/prosthesis cases, and even there, it has not been shown convincingly across enough studies/populations to justify widespread use. Furthermore, the studies I'm aware of used mupirocin for the nares, which would likely be rendered useless in many hospitals within a decade by mounting resistance. PCR is not available in many institutions and I fear that mandating screening would create a sizeable population of non-compliant institutions for a debatable policy. I would need more convincing data, a better agent for the longterm than mupirocin, and an assurance that screening is economically and logistically possible before I would support it as policy. [NY]
• I am not involved in decolonization. But it reduces the S. aureus SSI. [MI]
• I completed this survey because I try to do all the EIN queries, but don't feel that the questions asked were those I wanted to answer. I would LIKE to make decolonization with CHG a standard of care, without necessarily doing routine nasal screening. [NJ]

Do not know whether surgical patients screened preoperatively for MRSA

• When we reviewed this topic it seems Bactroban decreased incidence of SSI with S. aureus, but studies that looked at overall infection rate as secondary endpoint did not show reduction in total infection rates as Gram negative infections were higher in patient who got Bactroban. [KS]

• We need adequate data about colonization of various sites and differential risk of significant infection and similar information. [IN]

Current practices

At least some surgical patients screened preoperatively for S. aureus

• We have very variable practice, and we are looking into standardizing; we may adopt a no test, routine CHG bathing the night before and morning of surgery. [NY]

• A lot of it in our institution is done without much of a plan except for use of chlorhexidine. [TX]

• Answer to question 5 [decolonization] varies in our institution by service. Cardiac does all patients, other services only do it for S. aureus carriers. [MA]

• We also screen/selectively decolonize all SA positives for ICU patients-at admission and weekly. [OH]

• Answers may not convey the level of individual variation depending on surgeon. There is no standard practice or screening methodology. Practices are based upon individual surgeon preferences. Vanco use is not routine; MRSA carriers prophylaxed with vancomycin. [NE]

• Question 11--answer would be yes for certain surgical procedures (e.g., CAGB, valve replacement, prosthetic joint, etc) but not for every procedure performed at our institution. [GA]

• We are trialing the interventions described above and degree of completion by all surgical services not currently known. To reiterate: 1) Patients are to be asked at their preop surgical or medical visit: Have you (within the past 10 years) had a staph, MRSA or surgical wound infection? If yes, provider is advised to prescribe mupirocin nasal application & chlorhexidine bathing (neck & below) for 10 days. No cultures, PCR. 2) Patients are being given chlorhexidine wipes to cleanse skin, neck and below, on morning of surgery. They are not to bathe again before surgery after application of the chlorhexidine. [FL]

• We cannot get our CV surgeons on board. [MT]

• We do not consider a PRSA (MSSA) post op infection a good outcome which is why we don't screen just for MRSA with PCR. We use vancomycin prophylaxis for all (50% community MRSA resistance) and add cefazolin if they are MSSA positive. We presented this at a recent health care quality forum. One of the three hospitals is now talking about it. We are the smallest hospital in town. Physician egos tend to be proportional to the size of the institution so they certainly won’t be following MY lead. I think it should be a standard of care. [NY]

• I do decolonize pts if I know they are staph carrier (MSSA/MRSA) and I happened to see them for pre op clearance (elective). [AZ]

At least some surgical patients screened preoperatively for MRSA

• We have had a USA 300 SA with multiple toxins, including PVL, but it was sensitive to methicillin. The article out of St. Louis (CID 2009:49; 536-543) describing the increasing number of this type of organism isolated from abscesses betokens an emergence of yet another infectious organism for which we need to plan. [WI]

• We have selective MRSA screening. We are considering MRSA or SA/MRSA screening for device related surgeries. Pre-op CHG, peri-op mupirocin would be the likely strategy. [OH]

• We will be starting preoperative chlorhexidine baths for our pediatric neurosurgical patients. [NJ]
• We have an active pre-op surveillance and de-colonization protocol, still getting the kinks out. Big issue is urgent surgery, as these folks are to be screened on admission, however this is not 100%. As a note, our post-op MRSA infections are rare compared to pre-intervention, so that we count individual cases and investigate reasons for the 'breakthrough' infection rather than keep rates for MRSA. [/NC]

• My answers are such a mix because I know as little about internal medicine as the typical internist knows about life in the NICU. My answers are only applicable to our nursery and probably should not be counted. Vanco is used especially for shunt placement. [/NC]

• Regarding question 11: screening is routine for all CABG and valve replacement. Decolonization is not standard of care in our community. [/CA]

• This is surgeon specific. If they choose to screen them they are responsible for followup. My concern is if screening is done by the institution, who is responsible for tracking, notifying the patient, appropriate response which is unknown anyway. [/AZ]

• Our institution is a private hospital so practice varies from MD to MD. So no std protocol to decolonize among private practices. [/CA]

• This issue has become an important one especially in cases of hardware implant (e.g., orthopedic prostheses) in the setting of increased levels of MRSA. In those patients with recent healthcare contact or known MRSA, I have given permission for surgeons to use vancomycin perioperative prophylaxis in place of cefazolin. [/MS]

• Use of vancomycin for known MRSA carriers varies by provider [/GA]

• I only screen elective preop pts with history of MRSA infections. If positive, I decolonize with chlorhexidine, mupirocin and oral Bactrim/rifampin or doxy/rif if sulfa allergic. [/CA]

• CABG patients have been screened for years since an outbreak of MRSA mediastinitis in 1995. The elective total joint replacements screening has been recent. Also, we screen high risk patients on admission for MRSA. [/NC]

• One local HCA hospital screens for MRSA but results frequently are not available prior to surgery and there is no protocol for how to handle a positive result. (Heavy Ortho no Thoracic cases). The other local non-profit hospital has no screening protocols of any kind in spite of elevated thoracic infection rates. Administration has opposed protocols. [/GA]

• Population screened and decolonized (where necessary) includes only known prior MRSA + cases. Goal is to remove from isolation those who are no longer MRSA colonized. Otherwise we are not doing pre-op screening of patients with no history of MRSA. [/CA]

• #2 - we also try to get urgent cases screened, but miss some. #5 - this is not our recommendation, but done by CT. #11 - Boston area epidemiologists (12 teaching hospitals) have been meeting to discuss over past several months. [/MA]

• More formalized protocol for CTS patients. Orthopedic patients more variable. [/KY]

• We actually give chlorhexidine to ALL elective pre-op patients, but the survey is not structured to give that as an answer. [/TX]

• The survey question 2 may lead to misleading results. For example, at my institution we do not do cardiothoracic surgery, so my answer is we do not screen, but if we did, we would screen. We are developing an institution wide protocol for managing colonized patient so it will be helpful to have the survey results. [/NY]

• We are in the process of developing a protocol for all S aureus screening for orthopedic implants and spine surgeries. Difficulty getting surgeons to buy into it as they fear it will delay surgeries and we don't have PCR capabilities yet. Also, surgeons are concerned as to who will pay for this extra testing and the decolonization protocol. [/CA]
No surgical patients screened preoperatively for *S. aureus*/MRSA

- We are a pediatric facility and there is a dearth of data on pediatric screening and decolonization. We are however considering preoperative screening for children undergoing cardiac surgery or spinal instrumentation given the recent studies. [UT]
- Decolonization regimens in children are not very effective for the USA-300 strain. We use chlorhexidine before surgery and for surgical prep and have a very low rate of SSI. [OH]
- CV Surgery is considering perioperative decolonization with chlorhexidine and intranasal mupirocin. [IN]
- We are in the process of developing and implementing a rational *S. aureus* pre-op screening program and appropriate pre-op antibiotic prophylaxis protocol. It is just not as yet active. [GA]
- Our community has a significant incidence of CA-MRSA. All neurosurgery and cardiovascular pts get vancomycin, as do a significant number of orthopedic pts. Screening, as EIN members know, is imperfect. Vancomycin is used only for certain procedures. [CA]
- We are in process of trying to institute pre-op chlorhexidine bathing/showering for both in and out-patient surgeries [MI]
- We often do surveillance cultures on patients with history of prior SSI, particularly if it was MRSA. These same patients are often given chlorhexidine baths & mupirocin nasal BID pre-operatively for 3-5 days. These procedures are not hospital policy but frequently done by some ID physicians. [NY]
- We are about to begin screening all CABG patients for MRSA this week. [MD]
- Beginning screening and decolonization for both MSSA and MRSA for CT surgery and spinal fusions in 6/10. [VT]
- Current practices to be changing to elective pre-screening of joint replacements and cardiothoracic procedures [OR]
- We do use routine vancomycin short-term prophylaxis for certain high risk procedures: CABG, joint implants, PPM/AICD [TN]
- Chlorhexidine bathing is for TKR & THR. #11b-std of care only for joint replacement. [MD]
- We recently recommended to our surgeons that chlorhexidine bathing/showering the night before and morning of surgery be done. Some surgeons were already doing this (CTS for above procedures, some ortho for joint implants). Some would like more evidence to show this works to prevent SSI. The studies included in the Cochrane review on chlorhexidine preop baths were flawed, but there is little published evidence on it. Only CTS has a protocol for routine decolonization (no screening for *S. aureus* or MRSA performed). Our surgeons give postop antibiotics for 24 hrs (48 for cardiac surgeries) routinely - I introduced the idea of not giving routine postop antibiotics, but the reception was lukewarm. A few surgeons do use vanco prophylaxis; not routine. [AZ]
- There is lots of discussion on this. We do admission and some later PCR testing of all patients for MRSA. Don't have isolates most of the time. [MN]
- Our program of standardized preoperative chlorhexidine bathing is in the process of being implemented. [IA]
- Preoperative antibiotics, preoperative chlorhexidine bathing seems a simpler measure [TX]
- You could have asked whether we have screened and stopped, which is what has happened here mostly [OH]
- We do plan to start screening and decolonizing carriers for select procedures as recommended in the NEJM editorial 1/2010. [MI]
- We do not do major surgery/CT surgery at this facility. [NH, TN]
- We have really not had a problem with MRSA or even MSSA SSI [MD]
- I am thinking to implement a protocol for MRSA preop screening [TX]
• We are in the process of implementing screening/decolonization for *S. aureus* (both MSSA and MRSA) for patients undergoing orthopedic implants. [IA]
• We plan to start preop screening and decol for total joints and cardiac surgery cases, but haven’t started yet. [OR]
• Thanks as always for putting this together. Very hotly debated topic here. Because our pt burden of MRSA and MRSA SSI rates are so low, we do not routinely screen or decolonize. Our sister hospital across town does screen but does not decolonize. Pseudo-exception: CT Surgery pts ALL get preop intranasal mupirocin w/o any screening (in keeping with STS guidelines). [WA]
• We are going to institute prop screening. We currently screen ICU/CCU admissions and known prior MRSA colonized pts. I believe decolonization does then decrease risk of SSI. [CA]

Do not know whether surgical patients screened preoperatively for MRSA
• Currently there is no general policy for surgery and MRSA screening and decolonization at our hospital. Some individual decisions and/or surgeons my be developing their own practices at this point. [PA]

**Laboratory issues and mupirocin resistance**

At least some surgical patients screened preoperatively for MRSA
• I think preop chlorhexidine is a good idea for all patients. I'm not as certain that mupirocin is all that helpful and am expecting resistance to develop. [IL]
• Given the increasing rate of CA- or small cassette-MRSA, nasal screening appears outdated. We are switching to PCR based screening but our institution does not have a coherent approach. [SC]
• I have questions about value of mupirocin intranasally. I believe that chlorhexidine is worthwhile, with evidence to back this up. [VA]
• Good survey. We are having problem of increase resistance to mupirocin already. [WA]
• I think recommending the patient shower using chlorhexidine on the day of surgery is a good idea without screening for MRSA/MSSA. I am concerned about using nasal mupirocin due to the increase in mupirocin resistance. [NY]
• We use Cepheid MRSA PCR to screen; I would prefer to have an isolate to evaluate (susceptibility testing as well as genetically), but with lab issues (not enough micro techs, costs, etc.) we are unable to perform this. [FL]

No surgical patients screened preoperatively for *S. aureus*/MRSA
• Screening is a problem when results are not available in a timely manner in order to implement effective decolonization strategies. It is also not clear for how long should we decolonize (before and after surgery) for MRSA (3 vs. 5 vs. 7 days of mupirocin?) and what the impact of mupirocin resistance is on patient's outcomes. [FL]

**Miscellaneous**
• Interesting to find out if patients are using the CHG bottles or the newer impregnated cloths. [CT]
• Such an important issue. Nice survey! [CO] Great survey [MA] Thanks for doing this! [MI]
• Prophylaxis for which particular surgeries with what particular agents still needs clarification. Antimicrobial prophylaxis in our area is occurring for nearly all surgeries regardless of *S. aureus* & is difficult to stop at this point. Are the IDSA guidelines available now? [LA]
• What practices really is this MCQ survey trying to get at? [GA]
• Expensive way to get people to practice good contact isolation. [CA]
• High rate of noncompliance with preoperative baths at home, if you can believe it. A simple bath might do as much good as all of this. [OK]