



CEDARS-SINAI MEDICAL CENTER.

CSMC Healthcare Associated Infection (HAI) Prevention Strategies and California Regulatory Requirements

Effective infection prevention requires reduction of risk factors and implementation of evidence-based processes of care. This document outlines the following:

- Some of the HAI prevention strategies that have been adopted at CSMC by the Quality Council (whose processes and outcomes are monitored by respective Medical Center Committees and reported externally where required), as well as
- Information regarding the new CA Senate Bill 1058 and the new requirements of physicians as outlined in SB1058.
- Guidance for physicians regarding positive MRSA screening cultures

Hand Hygiene

All CSMC medical staff members are expected to comply with hand hygiene policies; hand hygiene compliance is the most effective measure to reduce HAIs, including those due to antimicrobial resistant organisms.

- Hands should be washed with soap and water or disinfected with alcohol handrub *before and after* entering a patient's room.
- When washing or using alcohol handrub, hands should be rubbed together, covering all surfaces of hands and fingers for at least 15 seconds.

Screening for MRSA and Other Multi-drug Resistant Organisms (MDRO)

CSMC has a screening program in place for selected multidrug resistant organisms (MDRO), including MRSA, VRE, *Acinetobacter baumannii*, in patients with the following risk factors on admission:

- With prior history of MDRO
- With a draining wound
- With a history of skin infections
- Who are ventilator- or tracheostomy-dependent (sputum if available)

Screening results (from nasal, rectal and respiratory swabs) are usually available within 48 hours, and the patient may be placed on pre-emptive Contact Precautions until results are obtained.

Effective in 2009, CA Senate Bill 1058 specifies that healthcare facilities screen selected patients for MRSA within 24 hours of admission. These include patients:

- Discharged from an acute care hospital within the past 30 days
- Admitted to intensive care units
- Receiving in-patient dialysis (hemodialysis or peritoneal)
- Admitted from a skilled nursing facility

CSMC has accordingly incorporated these criteria for admission MRSA screening to the MDRO screening program.

If the patient tests positive for MRSA, the law requires the following:

- The physician informs the patient or representative "immediately or as soon as practically possible" of the result.
- The hospital provides oral and written instructions on aftercare and precautions to prevent the spread of MRSA.
- See attached MRSA sheet for guidance on what to tell patients.

Central Line Associated Bloodstream Infections (CLABSI) Bundle

The Central Line Bundle is a series of evidence-based interventions that, when implemented together, help to decrease the incidence of catheter-related bloodstream infections. All patients with central lines are to have documentation in the procedure note at the time of line insertion of the compliance with the bundle elements as well as daily documentation in progress notes of the ongoing necessity of central lines. Elements of the bundle required of medical staff are:

At insertion: Hand hygiene

Maximal barrier precautions (wide sterile drapes) upon insertion

Chlorhexidine skin antiseptis

Optimal catheter site selection, with subclavian vein as the preferred site for non-tunneled catheters

After insertion: Daily review of line necessity (documented in progress notes) with prompt removal of unnecessary lines

Ventilator-Associated Pneumonia (VAP) Bundle

The Ventilator Bundle is a series of evidence-based interventions related to ventilator care that, when implemented together, will achieve significantly better outcomes than when implemented individually. Key bundle components are:

- Elevation of the head of the bed
- Daily “sedation vacations” and assessment of readiness to extubate
- Peptic ulcer disease prophylaxis
- Deep venous thrombosis prophylaxis

Surgical Site Infection (SSI) Prevention

An estimated 40-60 % of SSIs are preventable with appropriate use of prophylactic antibiotics, defined as:

- Prophylactic antibiotics are consistent with current national recommendations
- Prophylactic antibiotics are administered within one hour before surgical incision
- Prophylactic antibiotics are discontinued within 24 hrs of surgery end time or therapeutic reason to continue antibiotics beyond 24 hrs is documented.

Other measures demonstrated to contribute to a decrease in surgical site infections are:

- Appropriate hair removal (no hair removal or use clippers or depilatory instead of razor)
- Maintain high levels of inspired oxygen
- Control serum glucose (≤ 200 mg/dL)
- Maintain normothermia perioperatively (between 96.8-100.4° F within the first hour after leaving OR)

Clostridium difficile

There has been an increased incidence of *C. difficile* along with the emergence of a more virulent strain in the US and other countries. CSMC has implemented the following measures to reduce hospital transmission of *C. difficile*:

- Patients admitted with undiagnosed diarrhea are placed on Contact Precautions
- Soap/water hand hygiene is recommended, but alcohol based sanitizer may be used if soap/water are not readily available.
- All isolation rooms are disinfected daily using a diluted bleach solution.

Antibiotic Resistance Control Program

Antibiotic resistant bacteria have emerged as a nationwide problem in many healthcare facilities, including hospitals and nursing homes. In many cases these, bacteria have become resistant to all or most of our most potent broad spectrum antibiotics; additionally the pipeline for new antibiotics has narrowed, providing few new antibiotic treatment options. Prevention and control of Multi-Drug-Resistant Organisms (MDRO) requires both infection control and antibiotic control strategies. The most important antibiotic control measure is to reduce unnecessary use of broad spectrum antibiotics. CSMC Guidelines for Antimicrobial Use may be found on the intranet and are revised by the Antimicrobial Use Review committee based on CSMC trends in antimicrobial resistance.

Below are CSMC MEC approved policies for the use of antibiotics:

Empiric broad-spectrum antibiotic* therapy: (ie vancomycin, cefepime, imipenem, levofloxacin, or piperacillin/tazobactam) is to be modified within 48-72 hours either to directed therapy based on specific culture results or, to narrower spectrum antibiotics, based on the absence of antibiotic-resistant bacteria (e.g. Pseudomonas, other multi-drug resistant organisms, MRSA).

CSMC policy (MEC approved 2007) is to discontinue broad spectrum or restricted antimicrobial drugs after 5 days unless MD justification is provided for continued use.

Prophylactic antibiotics: for clean-contaminated surgical procedures will be administered as a single, well-timed (within 60 mins prior to incision), preoperative dose. For prolonged surgeries (that exceed 1-2 times the half-life of the antibiotic), a second antibiotic dose should be administered intraoperatively. For procedures listed under the JCAHO core measures reporting criteria, a maximum of 24 hours of perioperative antibiotic prophylaxis may be used.

References

Centers for Disease Control and Prevention. Guideline for hand hygiene in healthcare settings. 2002. MMWR 2002; 51 (No.RR-16): 1-44.

Institute for Healthcare Improvement. <http://www.ihl.org>

CDC Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, 2007

California Senate Bill 1058, effective September 25, 2008.



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**Methicillin Resistant *Staphylococcus aureus* (MRSA) Positive Screening Cultures:
Guidance for CSMC Medical Staff (CA SB1058 Regulation)**

- A new CA regulation (SB1058) requires physicians to notify patients of a positive MRSA screening as soon as feasible (patients who undergo mandatory screening based on regulatory criteria).
- The information below is guidance if you have been informed of or identify a new positive MRSA screening culture in your patient.

Please notify your patient of the following:

1. That their nasal screening test was positive for MRSA
2. That the nasal screening test most likely represents “colonization” not an active infection (unless there is active infection at another site due to MRSA)
3. That they will be given an educational handout by their nurse
4. That they will be placed on isolation precautions (if not already done) while in the hospital

Protective measures: Contact isolation

1. Gloves: direct contact with patient or patient care environment
2. Gowns: if close physical contact with patient or soiling likely
3. Strict handwashing with soap and water or use of alcohol handrub

Colonization versus Infection

1. A positive nasal screen indicates the patient is “colonized” in the nares with MRSA and does not necessarily indicate an active infection. Unless an active infection is present at another site, no specific treatment may be necessary.
2. Determine whether the patient has active infection (concurrent symptoms) at another site that may be due to MRSA. Active infection with MRSA requires treatment with vancomycin (and/or other antibiotics).
3. Certain patients who are colonized with MRSA may be at higher risk for subsequent infection, including those:
 - a. With indwelling central lines or prosthetic devices
 - b. Who are immunosuppressed (HIV, chemotherapy, etc)
 - c. Undergoing hemodialysis
 - d. With a history of recurrent MRSA infection
4. Patients with MRSA colonization at high risk for infection may benefit from suppression of MRSA colonization of the nares and skin using the topical protocol described below.

Procedure for Topical Decolonization of MRSA:

1. Use of the 7 day protocol below has been shown to suppress MRSA colonization for a short-term period of time (2 weeks to 6 months; long term results variable). Though published data has shown longer term eradication with both topical and systemic oral medications* (rifampin and doxycycline), use of these drugs has frequently been limited due to drug interactions or contraindications.

2. Orders:

- Daily chlorhexidine 2% baths for 7 days (from neck down)
- Intranasal mupirocin 2% ointment applied to both nares TID for 7 days
- Change invasive devices where feasible
- Consult Hospital Epidemiology to follow

3. Surveillance cultures: order at end of protocol after all antibiotics have been discontinued (and 2 weeks after completion)

- a. If cultures are negative on both occasions, isolation precautions may be discontinued (if no other reasons exist)
- b. If cultures are positive, continue isolation, and consider repeating decolonization procedure and reassess.

For questions, call Hospital Epidemiology at 310-423-5574

Optional oral regimen: Rifampin* 600 mg PO daily for 7 days AND Doxycycline 100mg PO BID for 7 days (*Patient’s medication list should be checked for drugs which interact with rifampin. Liver enzymes should also be assessed before starting rifampin and repeated during administration for any symptom of hepatitis.)