

MRSA Guide to Patient Safety Tool*

The methicillin-resistant *Staphylococcus aureus* (MRSA) Guide to Patient Safety (GPS) is a brief troubleshooting tool to aid infection prevention teams in reducing MRSA in their hospital or unit. Modeled after the validated CAUTI GPS developed by researchers at Ann Arbor Veteran Affairs and University of Michigan, the MRSA GPS is designed to help teams re-examine their MRSA data and prevention activities, and direct them toward specific strategies and resources to overcome barriers and challenges.

The MRSA GPS is a brief self-administered assessment of yes/no questions. Multidisciplinary MRSA prevention teams should either, thoughtfully as a group, or independently followed by group review, answer the 13 questions that comprise the assessment. When done this way, the guide can stimulate discussion and uncover barriers that may be impeding MRSA reduction progress. For more information on Tier 1 and 2 MRSA prevention strategies, review the [MRSA Prevention resources](#) on the [CDC/STRIVE Infection Control Training website](#).

Instructions for Use

To accurately assess the team's MRSA prevention efforts, it is recommended that:

1. The team working on MRSA prevention at the hospital or unit-level complete the MRSA GPS assessment. This can be done independently or as a group.
2. The responses are reviewed as a team as a means to uncover strengths and barriers to reducing MRSA.
3. For questions that were answered with a "No," the team should click on the link below the question or reference the indicated section to review approaches, advice, and tools and resources to better implement the indicated MRSA prevention strategy.
4. If you answered "Yes" to all the questions and your MRSA rates are not where you want them to be, consider viewing the Enhanced Interventions to Prevent MRSA module ([MRSA 202](#)) on the [CDC/STRIVE Infection Control Training website](#).

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* Note. While this guide focuses on MRSA prevention, these strategies can be applied to the prevention of other multidrug-resistant organisms (MDROs).

MRSA Guide to Patient Safety

Hospital _____

Unit _____

1. Do you currently have a well-functioning team (or work group) focusing on MRSA prevention?
 Yes No

If you answered 'No' to the question above, review guidance and resources on [having a well functioning team](#).

2. Do you have a team leader with dedicated time to coordinate your MRSA prevention activities?
 Yes No

If you answered 'No' to the question above, review guidance and resources on [having a MRSA team leader](#).

3. Do you have an effective nurse champion for your MRSA prevention activities?
 Yes No

If you answered 'No' to the question above, review guidance and resources on [nurse champions](#).

4. Do you have an effective physician champion for your MRSA prevention activities?
 Yes No

If you answered 'No' to the question above, review guidance and resources on [physician champions](#).

5. Is senior leadership supportive of MRSA prevention activities?
 Yes No

If you answered 'No' to the question above, review guidance and resources on [engaging senior leaders](#).

6. Do you currently assess or identify the source of MRSA bloodstream infections (vascular catheter, surgical site, skin/soft tissue, etc.) to help focus MRSA prevention strategies?
 Yes No

If you answered 'No' to the question above, review guidance and resources on [assessing the primary source of MRSA bloodstream infections](#).

7. Do you currently collect MRSA-related data (e.g., incidence, prevalence, compliance with prevention practices) in the unit(s) or populations in which you are intervening to reduce infections?
 Yes No

If you answered 'No' to the question above, review guidance and resources on [MRSA-related data](#).

MRSA Guide to Patient Safety

Hospital _____

Unit _____

8. Do you routinely feed back MRSA-related data to frontline staff and physicians? (e.g., incidence, prevalence, compliance with prevention practices)

Yes No

If you answered 'No' to the question above, review guidance and resources on [providing feedback](#).

9. Do you have a system in place for communicating confirmed MRSA-positive cultures to frontline care staff?

Yes No

If you answered 'No' to the question above, review guidance and resources on [communication](#).

10. Do you currently place patients colonized or infected with MRSA into Contact Precautions?

Yes No

If you answered 'No' to the question above, review guidance and resources on [Contact Precautions for patients colonized or infected with MRSA](#).

11. Is staff empowered to speak up if hand hygiene is not performed effectively?

Yes No

If you answered 'No' to the question above, review guidance and resources on [empowering staff to speak up about hand hygiene best practices](#).

12. Does frontline staff receive training about how to prevent transmission of MRSA and other multidrug-resistant organisms (MDROs)?

Yes No

If you answered 'No' to the question above, review guidance and resources on [training frontline staff on MRSA prevention](#).

13. Do you have standardized processes for daily and discharge environmental cleaning/disinfection of patient rooms that includes monitoring of cleaning/disinfection quality?

Yes No

If you answered 'No' to the question above, review guidance and resources on [environmental cleaning and disinfection](#).

Question 1: Do you currently have a well-functioning team (or work group) focusing on MRSA prevention?

“For the change effort to be successful, a powerful group must lead the change; and members of that group must work together as a team. Key characteristics that must be represented on the team include power, leadership skills, credibility, communications ability, expertise, authority, analytical skills, and a sense of urgency.” (From TeamSTEPPS; TeamSTEPPS® 2.0. Content last reviewed September 2016. Agency for Healthcare Research and Quality, Rockville, MD.

<https://www.ahrq.gov/teamstepps/index.html>)

You indicated that either you don't have a team or work group or the one you have does not function well. A key aspect of implementing a MRSA prevention initiative is to identify an implementation team at your site. This team plays a critical role in developing the initiative and assisting with implementation. Key responsibilities of this team are education, data collection and evaluation. Individuals can fill more than one role and some may be short term and others, longer term.

A. Suggested Team Membership

Team composition can be crucial to the success of the team. Individuals with different clinical expertise and levels of experience can provide unique perspective and insight, enhancing initiative implementation. The following are suggested members to include on the team:

- **Team Leader:** The team leader is responsible for coordinating MRSA prevention efforts and integrating MRSA prevention practices into daily workflow and collaborating with the various prevention champions. When selecting a team leader, consider someone with leadership and management skills and previous successes in leading performance improvement initiatives. These attributes are more important than the job title or content expertise. [For more information click here.](#)
- **Nurse Champion:** The nurse champion is responsible for engaging nursing staff in MRSA prevention efforts and working to integrate practices into daily nursing workflow. When selecting a nurse champion, consider someone who is well respected and in a position to obtain support from the other nurses. [For more information click here.](#)
- **Physician Champion:** The physician champion is responsible for engaging physicians in MRSA prevention efforts and coordinating MRSA prevention efforts that require physician support. When selecting a physician champion, consider someone who is highly regarded by their peers, even if they are only able to lend their name to the initiative. [For more information click here.](#)
- **Performance Improvement Leader:** The performance improvement leader is responsible for providing expertise to the team on systematic formal approaches of performance improvement. Select someone in your organization with training and expertise in performance improvement strategies, data collection strategies, and sampling methods and who knows where key data in your organization resides, such as billing or coding data.
- **Data Champion:** The data champion is a vital member of the team, so this person must be committed to the initiative. Collecting and monitoring the data is a crucial component of

preventing MRSA infections. This person will work closely with the performance improvement leader, the infection preventionist and others to oversee and manage data collection, aggregation and reporting.

- **Infection Preventionist:** This person will provide content expertise, collaborate with other team champions and be heavily involved in developing prevention strategies, an educational plan and a monitoring plan.
- **Environmental Services Champion:** Effective environmental cleaning is an important part of preventing MRSA transmission. The environmental services champion will garner buy-in and help integrate MRSA prevention strategies into the environmental services daily workflow. Engaging an environmental services champion early will help bolster this partnership and coordinate environmental services and infection prevention efforts.
- **Assistive personnel:** Nonlicensed personnel who provide patient care, e.g. patient care assistant, patient transporters, will help provide the frontline staff perspective and garner buy-in.
- **Other Persons to Consider Including:** A senior leader, nurse educator, infectious diseases physician, clinical pharmacist, respiratory care professional, physical therapist, finance expert, and a patient who has had a MRSA infection or their family member.

This list is by no means exhaustive but provides the minimum recommended members. You should consider adding other individuals based on the culture of your institution. In addition, some team members may assume more than one role. For example, the performance improvement leader may also be the team leader. Dedicated time for the initiative for each member is ideal; however, if this is not possible, then consider having co-champions to lighten the workload and provide mutual support.

B. Team Expectations

- The team must take ownership of MRSA prevention.
- The team must meet on a regular basis; every other week is recommended in the beginning.
- The team must implement the initiative, which will involve educating various health care staff, auditing practices and providing feedback to staff and leadership on implementation.
- The team must collect data on a regular basis and feed it back to staff.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
- TeamSTEPPS Fundamentals Course: Module 2. Team Structure. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module2/igteamstruct.html>.
- [AHRQ Team Assessment Tool](#).
- Damschroder LJ, Banaszak-Holl J, Kowalski CP, Forman J, Saint S, Krein SL. The role of the champion in infection prevention: Results from a multisite qualitative study. *Qual Saf Health Care*. 2009; 18(6):434–40.

- Kendall-Gallagher D, Reeves S, Alexanian JA, Kitto S. A nursing perspective of interprofessional work in critical care: Findings from a secondary analysis. *J Crit Care*. 2017; 38:20-26.
- Jain M, Miller L, Belt D, King D, Berwick DM. Decline in ICU adverse events, nosocomial infections and cost through a quality improvement initiative focusing on teamwork and culture change. *Qual Saf Health Care*. 2006; 15(4):235-9.

Question 2. Do you have a team leader with dedicated time to coordinate your MRSA prevention activities?

You indicated that either you do not have a team leader or that the one you have does not have appropriate time for the initiative. The team leader is responsible for coordinating MRSA prevention efforts and integrating MRSA prevention practices into daily workflow and collaborating with the various initiative champions. In other words, the details of the MRSA prevention initiative fall to the team leader. It is their responsibility to keep the infection prevention efforts moving forward and coordinate the moving pieces, including people, data and implementation. It is unlikely that the MRSA prevention initiative is the only responsibility of the team leader, and because of this, there may not be enough time to devote to the prevention efforts. Creating that dedicated time is imperative to a successful initiative. The following are recommendations on how to ensure the success of the team leader:

A. If the team leader role needs to be filled, consider:

- Asking senior leadership for advice about whom they recommend that can have some protected time to do this work.
- Finding someone who has been successful in coordinating other performance improvement initiatives.
- Reaching out to a staff person who is passionate about MRSA prevention and may be motivated to be a part of this initiative.
- Recruiting an individual with leadership skills, enthusiasm, persistence and credibility. Their experience and knowledge on MRSA should be secondary; leaders can reach out to content experts for guidance related to the technical aspects of the work.

B. If the selected team leader is not as effective as necessary, then:

- Check to see if the team leader has been given dedicated time to work on this particular initiative. If not, engage leadership to help ensure the team leader has enough dedicated time.
- Consider that the team leader may need coaching in communication, collaboration and other teamwork skills. Identify a coach or mentor for the team leader and engage that person to provide coaching on an ongoing basis.
- In some instances, the team leader may not be a good fit for the initiative—maybe they were appointed rather than recruited—and a replacement should be considered.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
- [Top 10 Qualities of a Project Manager](#).
- [Top 10 Characteristics of Great Project Managers](#).
- TeamSTEPPS Fundamentals Course: Module 4. Leading Teams. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module4/igleadership.html>

- Bryce E, Grant J, Scharf S, et al. Horizontal infection prevention measures and a risk-managed approach to vancomycin-resistant enterococci: An evaluation. *Am J Infect Control*. 2015; 43(11): 1238-43.
- Cannon-Bowers JA, Tannenbaum SI, Salas E, Volpe CE. "Defining competencies and establishing team training requirements." Team effectiveness and decision-making in organizations. Guzzo RA, & Salas E (Ed.). San Francisco: Jossey-Bass, (1995) 333-80.
- Salas E, Burke CS, Stagl KC. "Developing teams and team leaders: Strategies and principles." Leader Development for Transforming Organizations. Demaree RG, Zaccaro SJ, Halpin SM (Ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc., (2004).

Question 3. Do you have an effective nurse champion for your MRSA prevention activities?

You indicated that either you do not have a nurse champion or that the one you have is not effective. Because daily patient care is crucial to the prevention of MRSA transmission, getting buy-in from nursing staff is key to MRSA reduction. The nurse champion is responsible for engaging nursing staff in MRSA prevention efforts and working to integrate practices into daily nursing workflow. A nurse champion plays a large role in not only bringing the initiative to the nursing staff, but also in modeling excitement for infection prevention efforts and problem-solving as challenges arise. The nurse champion often becomes the face of the initiative, especially to the people most instrumental in the initiative's success, the bedside nurses.

A. If the nurse champion role needs to be filled, then:

- Identify the type of individual that will work best in your organization. There is no “one-size-fits-all” strategy for identifying a nursing champion. Qualities to consider include someone who knows the organization culture, is respected by their peers and/or is passionate about performance improvement and patient safety.
- Consider a nurse who has insight into frontline nursing challenges to help make sure planned interventions fit into everyday workflow and that appropriate barriers are targeted. This may be a nurse manager, nurse educator, an esteemed bedside nurse or even a respected licensed practical nurse whom others go to for advice and support.
- Think twice about having a nurse executive or the director of nursing take on this role, as there is danger that the bedside nurses may view the initiative as another occasion for obeying the boss.
- Consider having co-champions, if necessary, to help spread out the workload and get buy-in from different nursing groups (e.g., critical care, pediatrics, oncology, etc.).
- Recruit a nurse who is on good terms with their colleagues and hospital leadership, and who is independent minded in terms of finding solutions to problems as they arise.
- Look for nurses with the following qualities: personable, enthusiastic, empathetic, have innovative strategies to get work done, have great communication skills, know the organization culture, are passionate about performance improvement and are respected by their peers.

B. If the nurse champion on your team is not as effective or engaged as needed, then:

- Check to see if the nurse champion has been given dedicated time to work on MRSA prevention. If not, engage leadership to help with this.
- Identify if there is a gap in the knowledge and skills necessary to be successful and coach/mentor the individual to strengthen their skill set.
- Support the nurse champion by temporarily reducing some of the clinical commitments at the beginning to focus on implementation efforts.
- In some instances, the nurse champion is not a good fit for the initiative—maybe they were appointed rather than recruited—so consider replacing the nurse champion.

- If the nurse champion has the dedicated time but is lacking some of the necessary skills, coaching can be very helpful. The ideal coach may be the senior leader who is tracking outcomes of hospital infection prevention efforts.
- Select the nurse champion based on both commitment to the issue and interest in patient safety.
- Recognize the nurse champion for their efforts. Consider using certificates of recognition, annual evaluation appraisals, items in newsletters and/or acknowledgement from the Chief Nursing Officer.
- Identify and enlist others who are either already engaged in this initiative or eager to improve patient safety to help support the efforts of the nurse champion.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
- [The Bedside Nurse and Supporters](#).
- Draper DA, Felland LE, Liebhaber A, Melichar L. The role of nurses in hospital quality improvement. Research Brief No. 3, March 2008; Center for Studying Health System Change. Available at <http://www.hschange.org/CONTENT/972/972.pdf>.
- Zoutman DE, Ford BD. Quality improvement in hospitals: Barriers and facilitators. *Int J Health Care Qual Assur.* 2017; 30(1):16-24.

Question 4. Do you have an effective physician champion for your MRSA prevention activities?

You indicated that either you do not have a physician champion or the one you have is not effective. The physician champion is responsible for engaging physicians in MRSA prevention efforts and coordinating MRSA prevention efforts that require physician support. A successful MRSA prevention initiative requires collaboration and cooperation with physicians and physician leadership. A physician champion is needed to bring the initiative to the other physicians, to help engage them, to be a part of problem-solving when there is resistance or another challenge from this group of providers and gain physician cooperation.

A. If the physician champion role needs to be filled, then:

- Identify the type of physician who will work best in your organization. There is no “one-size-fits-all” strategy. Some suggestions include hospital epidemiologists, hospitalists, infectious disease specialists, critical care physicians, physicians interested in performance improvement work, and medical directors of inpatient units. Physicians who work in intensive care units (e.g., pulmonary, critical care) may also be a good choice for a MRSA physician champion since ICUs are often where MRSA infections are the biggest problem. However, beware of choosing people based on their job title; unfortunately, titles do not guarantee an individual will be up to the task.
- Recruit a physician champion who has pride in the hospital’s culture of excellence or concern over the lack of one. Ideally, this physician may have the ear of the hospital administration and the respect of their peers from the quality of their service and excellent patient care. They would have the patience to hear views that may differ from their own.
- Temporarily relieve the physician champion of some responsibilities to give them time for MRSA-related work.
- Assure physicians that their role will not take too much of their time. Physicians, especially those who are not hospital employees, may be resistant to the idea of taking on more work. Physician champions should not, for example, be expected to attend all meetings or be otherwise involved in matters unrelated to clinical concerns unless, of course, they want to be. Their chief responsibility will be to share the details of the intervention with colleagues and gain their cooperation.
- Consider including activities as a champion toward obligations to meet credentialing requirements for the hospital.
- Consider using co-champions if other measures do not work as this can help to lighten the workload; however, this can also diffuse responsibility.
- Consider ways to recognize and reward physicians, including:
 - Recognizing a member of the medical staff with a “physician champion” award, complete with a certificate signed by the hospital’s chief of staff and a gift certificate to a local restaurant.
 - Providing financial compensation to physicians who actively participate in infection prevention initiatives as champions.

B. If the physician champion on your team is not as effective or engaged as needed, then:

- Use influencers such as strong nurse-physician working relationships to garner physician buy-in and support, especially if the new practice is viewed as a “nursing initiative.”
- Check to see if the physician champion has been given dedicated time to work on MRSA prevention. If not, engage leadership to help with this.
- In some instances, the physician champion is not a good fit for the initiative—maybe they were appointed rather than recruited—so then consider replacing the physician champion.
- Make sure that clinical leadership supports the initiative.
- A physician champion may not be necessary if both nursing and medical leadership supports the initiative and there is no active resistance from physicians.
- Find a member of the “tribe.” Some physicians respond better and are more receptive to ideas from physicians within the same discipline. For example, surgeons may be more receptive to a new collaborative or protocol if another surgeon is championing the initiative.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
- Damschroder LJ, Banaszak-Holl J, Kowalski CP, Forman J, Saint S, Krein SL. The role of the champion in infection prevention: Results from a multisite qualitative study. *Qual Saf Health Care*. 2009; 18(6):434-40.
- Reinertsen JL, Gosfield AG, Rupp W, Whittington JW. Engaging physicians in a shared quality agenda. IHI Innovation Series white paper. Cambridge, MA: Institute for Healthcare Improvement. (2007). Available on www.IHI.org.
- Saint S, Kowalski CP, Banaszak-Holl J, Forman J, Damschroder L, Krein SL. The importance of leadership in preventing healthcare-associated infection: Results of a multisite qualitative study. *Infect Control Hosp Epidemiol*. 2010; 31(9):901-7.
- Zavalkoff S, Korah N, Quach C. Presence of a physician safety champion is associated with a reduction in urinary catheter utilization in the pediatric intensive care unit. *PLoS One*. 2015; 10(12):e0144222.

Question 5. Is senior leadership supportive of MRSA prevention activities?

You indicated that you do not have the support of senior leadership. Given the many competing priorities of hospitals, having the support of leadership is key to making immediate and lasting progress with your MRSA prevention initiative. Having a member of the hospital executive leadership team oversee the initiative signals the importance of the initiative to the hospital staff.

A. Strategies to Engage Leadership:

- Understand senior leadership's perspective and priorities to tailor what and how you communicate information about this initiative. Senior leaders are essential allies in securing resources, overcoming barriers and aligning organizational priorities for your MRSA prevention activities. The American College of Healthcare Executives annual survey highlights that the top issues of immediate concern for hospital CEOs are: financial challenges, government mandates and patient safety and quality. (From Top Issues Confronting Hospitals in 2016. American College of Healthcare Executives. 2016. Accessed July 12, 2017. Available at <https://www.ache.org/pubs/research/ceoissues.cfm>)
- Appreciate that different senior leaders may have different concerns about the initiative or hospital priorities. For example, the chief nursing officer may be concerned about nursing shortages and their impact on patient outcomes, while the finance executive may worry more about how to help keep costs down. By understanding what matters to the individual, you can more effectively tailor your communication, and your requests will be more likely to gain support.
- Create a business case to help succinctly present your plan to leadership, ensure sufficient resources are available to sustain performance, summarize the goals and vision of the initiative, define how the organization will avoid errors and prepare for success and connect your MRSA prevention efforts with other safety initiatives and with organizational performance.
 - For more information on how to develop a business case, review the STRIVE Modules [BC 101](#) and [BC 102](#).
- Share monthly data and high-level progress updates with leadership. Important data to share includes:
 - Total MRSA bacteremia burden
 - MRSA bacteremia burden based on primary source infection (e.g., CLABSI, SSI, VAP, and/or VAE)
 - Hospital-associated MRSA bacteremia
 - Compliance with process measures such as hand hygiene, environmental cleaning, etc.
 - Cost savings associated with MRSA prevention efforts

B. Ways for Leaders to Show Support

- Share information about the MRSA prevention initiative in leadership and staff meetings and during staff encounters. Consider including updates and successes in hospital-wide

- newsletters, patient and family information, and in online communication. Make sure to emphasize that MRSA prevention efforts reflect the hospital's mission and values.
- Attend and listen to report-outs on implementation. This will help boost the improvement team's sense of purpose.
 - Include staff engagement in infection prevention initiatives in hospital employee credentialing requirements.
 - Encourage supervisors to provide support and backing when the improvement team encounters roadblocks.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
 - [Building a Business Case for Infection Prevention](#) (BC 101, BC 102)
- Tools for an Infection Prevention Business Case
 - Murphy D, Whiting J, Hollenbeak CS. Dispelling the myths: the true cost of healthcare-associated infections. Washington, DC: Association for Professionals in Infection Control and Epidemiology (APIC). 2007. Available at <http://www.spyderstyle.com/media/pdf/white-papers/The%20True%20Costs%20of%20Healthcare%20Associated%20Infections.pdf>
 - Kerkering TM. Building a Business Case for Infection Prevention. Society of Hospital Medicine. Available at <https://www.hospitalmedicine.org/CMDownload.aspx?ContentKey=95f19518-799c-4e62-ae27-07aa87b6f53e&ContentItemKey=765daf1b-7065-4b48-8e5c-7168331bfc4f>
- Aarons GA, Green AE, Trott E, et al. The roles of system and organizational leadership in system-wide evidence-based intervention sustainment: A mixed-method study. *Adm Policy Ment Health*. 2016; 43(6): 991-1008.
- Kotter J. Leading change: Why transformation efforts fail. *Harv Bus Rev*. 1995; 59-67.
- Saint S, Kowalski CP, Banaszak-Holl J, Forman J, Damschroder L, Krein SL. The importance of leadership in preventing healthcare-associated infection: Results of a multisite qualitative study. *Infect Control Hosp Epidemiol*. 2010; 31(9):901-7.

Question 6. Do you currently assess or identify the source of MRSA bloodstream infections (vascular catheter, surgical site, skin/soft tissue, etc.) to help focus MRSA prevention strategies?

You indicated that you do not currently assess the source of MRSA bloodstream infections. MRSA bacteremia can originate from a variety of source infections (e.g., surgical site, skin/soft tissue, vascular catheters). Assessing the source of infection is important, as it can help to target and prioritize MRSA prevention strategies. Since MRSA bacteremia can arise from a variety of underlying infections, MRSA bloodstream infections may be a marker for problems with other HAIs or how patients receive care. Identifying and isolating these sources are critical to preventing future MRSA infections.

A. Conducting MRSA Primary Source Assessments

MRSA bloodstream infections are associated with substantial morbidity and mortality, and can arise from a variety of underlying infections and from any number of deficiencies in patient care practices. Therefore, a rapid investigation of such events should proceed as soon as MRSA is identified in a blood culture and thought to be hospital acquired. Prioritize prevention efforts depending on the identified gaps in patient care.

- The most common primary sources of MRSA bloodstream infections are:
 - Vascular catheters, including but not limited to peripheral intravenous catheters, central venous catheters and peripherally inserted central catheters
 - Pulmonary
 - Skin and soft tissue
 - Surgical Site
 - Urinary tract
 - Bone or joint
- Data to consider using in MRSA Risk Assessments include:
 - Individual case reviews of patients with MRSA bacteremia. Reviews of individual MRSA bloodstream infection cases can help to prioritize infection prevention interventions to reduce the risk of other patients developing an infection as well as identify opportunities for improvement. Case reviews can identify specific patient populations, hospital locations, materials/supplies and/or practices that may put patients at risk for MRSA bacteremia and warrant immediate attention and intervention.
 - At a minimum, individual case reviews should include assessments of compliance with existing infection prevention policies and protocols on the unit(s) the patient is or has been on. This should include the emergency department (ED), operating room (OR) and radiology. Make sure to assess compliance of the following:
 - Hand hygiene; include ancillary staff such as physical therapy (PT), occupational therapy (OT), phlebotomy, etc.
 - Personal protective equipment (PPE) and Contact Precautions use; include ancillary staff such as PT, OT, phlebotomy, etc.

- Environmental cleaning, making sure to include cleaning of equipment between patients (e.g., mobile vital sign machines); include ancillary staff such as PT, OT, phlebotomy, etc. since they often use equipment between patients.
 - Compliance with prevention bundles, such as CLABSI and CAUTI bundles.
 - Injection practices (e.g., double-dipping of multidose lidocaine solutions, common source flush solutions).
 - Sterilization/disinfection practices for procedural equipment.
 - Procedural practices (if a procedure has been done) such as aseptic technique, proper skin prep procedure, practice of immediate-use steam sterilization or flashing in the OR.
 - Consider supply contamination risks for supplies used on the patient such as ultrasound gel, implants, skin prep solutions and glove box.
 - Others processes and procedures depending on the specific case and course of care.
- Aggregate and compiled MRSA bacteremia case reviews. A review of such cases over time (months or year(s)) may reveal patterns of infection, pointing to the root causes.
 - Obtain culture data from your microbiology lab and review your MRSA cases.
 - Your microbiology lab can help you understand susceptibility patterns from each infection. The hospital's infection preventionist is an expert and can guide these assessments, along with infectious disease physicians or consultants that may be available.
- Estimate the facility's MRSA burden (include direct or proxy measures of transmission):
 - **Antibiogram:** Proportion of *S. aureus* isolates that are methicillin-resistant. Most hospital laboratories produce an antibiogram at least once per year, and these can be helpful in identifying changes in the prevalence of MRSA over time. Some hospitals provide antibiogram data for specific areas within the hospital, such as the ICU or oncology units.
 - **MRSA Patient Line Lists:** Hospital infection prevention maintain lists of MRSA-positive patients, which may be useful in determining incidence and prevalence rates and identifying locations and populations in which there is a larger MRSA burden. These lists will also help identify patients with MRSA that may have been physically located close to a patient with MRSA bacteremia or may have been in that hospital room before that patient. This listing of key variables such as patient characteristics, unit location, therapeutic factors, etc., can assist with developing a "picture" of MRSA bacteremia cases, pointing toward unifying characteristics and helping to target prevention interventions.

- **Other HAI Surveillance Data:** Other HAI surveillance require the documentation of positive bacterial cultures to confirm an infection. Therefore, data from HAIs like CLABSIs, surgical site infections and CAUTIs can be used to estimate MRSA burden among specific device and procedure-related infections.

B. Strategies for Success

- MRSA bacteremia cases need urgent investigation, so it is essential that the infection preventionist communicate such cases quickly up the chain of command to nursing, medical and risk management leadership, in addition to mandatory reporting to the health department if your state requires it. This can drive support for the time and resources needed to investigate these deadly infections quickly internally. Reporting all MRSA bacteremia infections to your health department quickly can assist them in detecting community outbreaks as well.
- Your hospital is already collecting and reporting a variety of HAI surveillance metrics as part of national and state requirements, so use this surveillance data to guide efforts, rather than collecting new measures.
- Utilize nurse and physician champions. Work with your infection prevention champions, such as your nursing and physician champions, to recruit different unit staff to help with the chart reviews from their units.

Tools, Resources and Further Reading

- STRIVE Content:
 - [MRSA Tier 1 Course, Risk Assessment and Monitoring](#) (MRSA 102)
- [CDC Acute Care Facility Multidrug-resistant Organism Control Activity Assessment Tool](#)
- APIC Guide to the Elimination of Methicillin-Resistant *Staphylococcus aureus* (MRSA) Transmission in Hospital Settings, 2nd Edition. Arlington, VA: APIC, 2010. Available at: http://www.apic.org/Resource_/EliminationGuideForm/631fcd91-8773-4067-9f85-ab2a5b157eab/File/MRSA-elimination-guide-2010.pdf
- Anderson DJ, Moehring RW, Sloane R, et al. Bloodstream infections in community hospitals in the 21st century: A multicenter cohort study. *PLoS One*. 2014; 9(3): e91713.
- Austin ED, Sullivan SB, Whittier S, et al. Peripheral intravenous catheter placement is an under recognized source of *Staphylococcus aureus* bloodstream infection. *Open Forum Infect Dis*. 2016; 3:ofw072.
- Calfee DP, Salgado CD, Milstone AM, et al. Strategies to prevent methicillin-resistant *Staphylococcus aureus* transmission and infection in acute care hospitals 2014 update. *Infect Control Hosp Epidemiol*. 2014; 35: 772-96.
- CDC. Vital Signs: Preventing Antibiotic-Resistant Infections in Hospitals — United States, 2014. *MMWR* 2016; 65 (No. 9, March 11):235-41.
- Epstein L, Mu Y, Belflower R, et al. Risk factors for invasive methicillin-resistant *Staphylococcus aureus* infection after recent discharge from an acute-care hospitalization, 2011–2013. *Clin Infect Dis*. 2016; 62(1):45–52.

- Simor AE, Pelude L, Golding G, et al. Determinants of outcome in hospitalized patients with methicillin-resistant *Staphylococcus aureus* bloodstream infection: Results from national surveillance in Canada, 2008-2012. *Infect Control Hosp Epidemiol*. 2016; 37: 390-7.
- Yasmin M, El Hage H, Obeid R, et al. Epidemiology of bloodstream infections caused by methicillin-resistant *Staphylococcus aureus* at a tertiary care hospital in New York. *Am J Infect Control*. 2016; 44(1):41-6.

Question 7. Do you currently collect MRSA-related data (e.g., incidence, prevalence, compliance with prevention practices) in the unit(s) or populations in which you are intervening to reduce infections?

You indicated that you do not currently collect MRSA-related data. Collecting, measuring, analyzing and reporting information on your MRSA prevention activities is critical to ensure continued success. Outcome data, such as total MRSA bacteremia infection rate (defined below), enable you to monitor the success of your MRSA prevention initiative and allow teams to compare how they are doing in their prevention efforts to other units and hospitals. Additionally, as health care moves from fee-for-service models of care to value-based compensation, healthcare-associated infection (HAI) rates, including MRSA bacteremia rates, are important metrics for determining care reimbursement. Process measures, such as hand hygiene compliance rates, ensure that process interventions are being effectively implemented and point to areas that require continued enhancement or intervention. Lastly, sharing and highlighting data are crucial strategies to engage physicians, frontline staff and senior leaders in infection prevention efforts.

A. What Data to Collect and When to Collect it

- **Total MRSA bloodstream infections:** All MRSA burden.
 - **MRSA bloodstream infection rate:** Total burden of MRSA bloodstream infections based on the number of patients in a hospital or unit over a specific time period.
 - $(\text{Number of MRSA Infections as identified by positive bloodstream cultures}) / (\text{Total Patient Days}) \times 10,000 = \text{MRSA infection Rate per 10,000 patient days}$
 - **MRSA bloodstream infection standard infection ratio (SIR):** A measure used to track HAIs at the national, state and local levels and used by Centers for Medicare and Medicaid Services (CMS) for their value-based purchasing program. The SIR compares the actual number of infections to the expected/predicted number of infections.
- **Hospital-associated MRSA bloodstream infections:** Patients who have MRSA-positive blood cultures obtained more than 48 hours after admission to the hospital. This is a better proxy for hospital-attributable disease.
- **Environmental cleaning compliance rates:** Compliance with institutional standards for daily cleaning procedures and discharge cleaning procedures.
- **Hand hygiene and PPE compliance rates:** Compliance with institutional standards for hand hygiene and effective PPE use.

B. Strategies for Successful Data Collection

- Apply a consistent approach to data collection at all stages of your MRSA prevention efforts so that you can compare across time periods and units.
- Designate personnel responsible for data collection. This will typically be infection preventionists or members of the quality department.
- Review MRSA line lists to monitor your hospital's MRSA bloodstream infections. Line lists for MRSA infections will give you a perspective on dates of onset of infection, locations within

- the hospital, and primary sites of infection, providing some insight into potential opportunities to intervene, such as a particular unit with a high prevalence of infection. To generate the line list we recommend using the date the MRSA blood culture tested positive. Such line lists are typically kept by infection prevention and/or can be obtained from your laboratory or electronic medical record.
- Regularly feed data back to the entire improvement team, senior leaders and frontline staff. Sharing data and highlighting successes will help empower staff and encourage continued improvement and commitment to the initiative.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Using Audits to Monitor Infection Prevention Practices](#) (CBT 102)
 - MRSA Tier 1 Course ([MRSA 101](#), [MRSA 102](#))
- APIC Guide to the Elimination of Methicillin-Resistant *Staphylococcus aureus* (MRSA) Transmission in Hospital Settings, 2nd Edition. Arlington, VA: APIC, 2010. Available at: http://www.apic.org/Resource_/EliminationGuideForm/631fcd91-8773-4067-9f85-ab2a5b157eab/File/MRSA-elimination-guide-2010.pdf.
- [CDC Acute Care Facility Multidrug-resistant Organism Control Activity Assessment Tool](#)
- National Healthcare Safety Network (NHSN). Surveillance for *C. difficile*, MRSA and other Drug-resistant Infections. Centers for Disease Control and Prevention, CDC. December 15, 2016. Available at: <https://www.cdc.gov/nhsn/acute-care-hospital/cdiff-mrsa/>
- Calfee DP, Salgado CD, Milstone AM, et al. Strategies to prevent methicillin-resistant *Staphylococcus aureus* transmission and infection in acute care hospitals 2014 update. *Infect Control Hosp Epidemiol*. 2014; 35: 772-96.

Question 8. Do you routinely feed back MRSA-related data to frontline staff and physicians? (e.g., incidence, prevalence, compliance with prevention practices)

You indicated that you do not routinely feed back MRSA-related data to frontline staff, which includes physicians. While collecting MRSA-related data is key to measuring success, it is imperative that the staff, especially those on the frontline, are aware of it. Data transparency can help motivate and engage staff at all stages of the initiative, as well as encourage them to continue the changes, promoting sustainability. Simply put, feedback improves motivation and learning. Feed back hospital intervention data, as well as data from comparable hospitals and national aggregates. Simple run charts or a MRSA scorecard are great ways to quickly display and easily communicate data to both frontline staff and senior leaders.

A. Feedback Mechanisms

- MRSA scorecard: Tracks hospital or unit progress towards achieving their MRSA prevention goals; it should be displayed throughout the unit or hospital for all staff to see
- Hospital newsletters
- Hospital electronic communications
- Staff educational events
- New employee orientation
- Staff meetings
- Unit huddles

B. Keys to Giving Effective Feedback

- For feedback to be effective, it should be:
 - **Timely.** Feedback should be at least monthly or more often if possible. If you wait too long to provide feedback key details are forgotten and/or the feedback loses its meaning.
 - **Individualized.** Feedback should relate to a specific situation, task, or individual. The more specific the feedback, the more the individual, unit, etc. will be able to correct or modify their performance to improve.
 - **Customizable.** Feedback should be detailed to the improvement goals of the individual, unit or organization. Different processes or data should be shared or highlighted depending on the targeted improvement goals.
 - **Non-punitive.** Feedback should be about performance of a specific situation or task; it should never be personal or about personality. Rather, feedback should be about achieving improvement goals.

(From TeamSTEPPS Fundamentals Course: Module 3. Communication. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD.)

- Don't limit feedback to numbers, e.g., just MRSA bloodstream infection rates; share details to help make it more meaningful. Instead, consider sharing the days the hospital or unit has

- gone without a MRSA bloodstream infection. Consider using stories or pictures to help remind staff that each infection correlates to harm to a patient.
- When communicating MRSA-related data to staff consider the audience and tailor what is shared to their needs. For example, complex rates or SIRs may be confusing for frontline staff, so instead consider sharing new monthly MRSA bloodstream cases with ancillary unit staff; MRSA rates and hospital SIR may be more appropriate to share with the infection preventionist and the infection prevention and control committee.
 - Highlight and celebrate successes, no matter how small. Consider rewarding staff for positive changes or making steps toward their MRSA prevention goals.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Giving Infection Prevention Feedback](#) (CBT 103)
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
 - MRSA Tier 1 Course ([MRSA 101](#), [MRSA 102](#))
- TeamSTEPPS Fundamentals Course: Module 3. Communication. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module3/igcommunication.html>.
- TeamSTEPPS Fundamentals Course: Module 6. Mutual Support. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module6/igmutualsupp.html>.
- Dubbert PM, Dolce J, Richter W, Miller M, Chapman SW. Increasing ICU staff handwashing: effects of education and group feedback. *Infect Control Hosp Epidemiol*. 1990; 11(4):191-3.

Question 9. Do you have a system in place for communicating confirmed MRSA-positive cultures to frontline care staff?

You indicated that your hospital does not have a system in place, or the existing system does not function well, for communicating confirmed cases of MRSA to frontline care staff. An important component of preventing MRSA is early identification of patients with MRSA and notification of those involved in the care of that patient. Early identification and notification allows for the placement of these patients into Contact Precautions and modifications to daily patient care activities. Thus, it is imperative that frontline staff are aware of a patient's MRSA status. Nursing champions can play a pivotal role in helping ensure a communication system is in place and properly followed.

A. Intra-facility and Inter-facility Communication

- Implement a process for early detection of MRSA bloodstream infections and rapidly communicate these results to frontline staff so that patients can be promptly placed into Contact Precautions. This process should be written as a standard policy or protocol, communicated throughout the organization, and monitored for compliance.
- Institute a lab alert system to notify health care staff of newly positive MRSA results. At minimum, the lab should notify frontline staff and infection prevention of a new MRSA culture in a manner that is rapid and reliable. This may include an automated alert system via electronic medical record or cell phone, and/or a call to the nurse caring for the patient and infection prevention. In the event of MRSA bacteremia, the lab should also notify the attending physician immediately. This will facilitate rapid treatment, isolation of the patient, and investigation of the event. Whatever system is in place, it should be operational 24 hours a day, seven days a week, including weekends and holidays.
- Use electronic systems to identify or flag patients when MRSA lab results are positive or at readmission.
- Ensure and insist that inter-facility and intra-facility transfer forms include categories of "Isolation Requirements" and "History of MDRO" so this information is communicated to all persons caring for the patient. Encourage staff to use such forms in all departments, including emergency/medical transport, home health, ambulatory care, long-term care, etc.
- Enhance the reliability of MRSA status communication by educating the patient and any family members about MRSA and ask them to participate in communicating the patient's status to other health care providers.
- Audit and monitor the communication strategies set in place to make sure they are being properly and effectively implemented and that the data is being used. Audits should be seen and used as an opportunity for improvement, not for punishment. Most infection prevention departments have a process to reconcile MDRO cultures with isolation status of patients that is done routinely, which helps to support auditing of these processes. In addition, infection prevention and the microbiology lab personnel meet routinely in most hospitals to discuss and review such processes together to assess how they are working.

B. Strategies for Communication Success

- Creating a culture of safety will help promote open channels of communication. Culture can be difficult to change, but moving a hospital or unit from a punitive environment to one that emphasizes the importance of patient safety can have a profound impact on patient care and health outcomes.
- Use a common strategy or language to share patient information and provide feedback to keep feedback from being punitive. Create a shared understanding about communication expectations and provide staff with the tools to help them communicate more effectively. The TeamSTEPPS Module 3 Communication and Module 6 Mutual Support can assist you in devising a strategy that will work for your hospital.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Giving Infection Prevention Feedback](#) (CBT103)
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP101)
 - MRSA Tier 1 Course ([MRSA 101](#), [MRSA 102](#), [MRSA 103](#))
- [CDC Inter-Facility Infection Control Transfer Form 1](#)
- [CDC Inter-Facility Infection Control Transfer Form 2](#) [CDC One-and-Only Campaign: Safe Injection Practices](#)
- TeamSTEPPS Fundamentals Course: Module 3. Communication. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module3/igcommunication.html>
- TeamSTEPPS Fundamentals Course: Module 6. Mutual Support. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module6/igmutualsupp.html>
- <https://www.cdc.gov/hai/pdfs/toolkits/infectioncontroltransferformexample2.pdf>
- Slayton RB, Toth D, Lee BY, et al. Vital Signs: Estimated effects of a coordinated approach for action to reduce antibiotic-resistant infection in health care facilities –United States. Centers for Disease Control and Prevention. *MMWR*. 2015; 64(30):826-31.

Question 10. Do you currently place patients colonized or infected with MRSA into Contact Precautions?

You indicated that your hospital does not use Contact Precautions, or does not effectively use Contact Precautions for patients colonized or infected with MRSA. A key aspect of preventing MRSA bacteremia is preventing MRSA transmission. MRSA from colonized and infected patients can be spread by both direct and indirect contact. Current guidelines from the Society for Healthcare Epidemiology of America and the Infectious Diseases Society of America recommend that both patients with active MRSA infections and those colonized with MRSA should be placed into Contact Precautions.

A. Contact Precaution Essentials for Patients with MRSA

- Implement a process for early detection of MRSA to promptly place patients into Contact Precautions. Strict glove use should be promoted and gloves should be changed immediately if soiled and when leaving the patient room.
- Emphasize that glove use is not a replacement for hand hygiene. Hand hygiene should be performed prior to donning (putting on) gloves and after doffing (removing) gloves.
- When possible, patients colonized or infected with MRSA should be placed in private rooms to reduce the spread of MRSA. If absolutely necessary, they may be cohorted or placed in shared rooms with other patients with confirmed MRSA.
- Hospitals should have routine, competency-based training for staff covering Contact Precautions procedures and technique. Regular audits should be performed to ensure staff are correctly choosing, donning (putting on) and doffing (removing) personal protective equipment.
- Investigate whether roles and responsibilities for cleaning and disinfection of equipment are clear and in place. Hospitals should have a process for monitoring the quality and effectiveness of cleaning and disinfection of the patient care environment.

B. Strategies for Overcoming Barriers to the Use of Contact Precautions

- Promote a culture of safety by:
 - Empowering staff to remind their colleagues about Contact Precaution use
 - Using a hospital- or unit-wide communication strategy to provide feedback
 - Creating a mutual understanding around how to give and receive feedback
 - Providing staff with the tools to help them speak up when Contact Precaution procedures are not being followed: The TeamSTEPPS Module 3 Communication and Module 6 Mutual Support can assist you in devising a strategy that will work for your hospital.
- Conduct regular audits to monitor and assess staff compliance with Contact Precautions. When conducted successfully, using a frequent and recurring approach, audits provide valuable information that can identify opportunities for improvement and track progress over time. And remember, like feedback, audits should be seen as and used as an opportunity for improvement, not for punishment.
- Consider universal glove use for all patients in high-risk units to overcome challenges with staff adherence to Contact Precaution procedures.

- Hold team meetings or huddles to engage frontline staff on what they believe are the barriers to consistently using Contact Precaution with patients infected and colonized with MRSA. By engaging staff and gathering their input and feedback you will help create staff ownership of the policy, which strengthens behavior change and leads to sustainability.
- Nominate champions across various units to help engage staff on a daily basis with Contact Precaution use for patients infected and colonized with MRSA.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Personal Protective Equipment Use](#) (PPE 101, PPE 102, PPE 103, PPE 104)
 - MRSA Tier 1 Course ([MRSA 101](#), [MRSA 103](#))
- [Sequence for Putting On and Removing Personal Protective Equipment](#)
- [Donning and Doffing PPE for Contact Precautions Skills Competency Checklist](#)
- [Use of Personal Protective Equipment for Contact Precautions Audit Tool](#)
- Calfee DP, Salgado CD, Milstone AM, et al. Strategies to prevent methicillin-resistant *Staphylococcus aureus* transmission and infection in acute care hospitals: 2014 Update. *Infect Control Hosp Epidemiol*. 2014; 35:772-96.
- Siegel JD, Rhinehart E, Jackson M, Chiarello L, HICPAC. Management of multidrug-resistant organisms in healthcare settings, 2006. Available at <https://www.cdc.gov/hicpac/pdf/MDRO/MDROGuideline2006.pdf>

Question 11. Is staff empowered to speak up if hand hygiene is not performed effectively?

You indicated that staff are not empowered to speak up to remind colleagues to perform proper hand hygiene. A key aspect of preventing MRSA infection is preventing MRSA transmission. Staff should be encouraged and empowered to remind colleagues about strict glove use, wearing proper PPE and performing hand hygiene. Consider using a facility-wide common reminder phrase to get everyone on the same page and keep reminders from feeling punitive; it's about patient safety not punishment.

A. Hand Hygiene Essentials for Preventing MRSA

- Hand hygiene, using alcohol-based hand rub (ABHR), is the preferred method of hand hygiene in hospitals unless a hospital or unit has high endemic rates of *Clostridium difficile* infection (CDI) or hands are visibly soiled.
- Perform hand hygiene prior to donning and doffing gloves; glove use is not a replacement for hand hygiene.
- Incorporate hand hygiene procedures and technique into routine, competency-based training for all staff.
- Conduct regular hand hygiene audits to ensure staff are performing hand hygiene effectively and are correctly donning and doffing PPE.

B. Strategies for Creating a Culture of Safety and to Empower Staff to Remind Colleagues

Staff should be empowered to speak up and remind colleagues if they see something wrong in the hospital or a hospital unit; this is part of a hospital or unit's culture. However, culture can be difficult to change. Moving a hospital or unit from a punitive environment to one that focuses on and emphasizes open communication can have a profound impact on patient care and health outcomes. In a just culture, people are encouraged to report problems rather than hide them so issues can be addressed and prevented.

- Use of Champions. Recruit champions from different hospital disciplines to help bring the initiative to various hospital peer groups and units. Champions can help spearhead the initiative, provide support and guidance and empower colleagues to share concerns. They can also help be a voice for frontline staff, relating ideas, barriers or concerns to the MRSA prevention team and leadership.
- Create mutual understanding, using a common strategy or language to provide and receive feedback. Provide staff with the tools to help them speak up when Contact Precaution procedures are not being followed or when anything happens that could impact patient safety. The TeamSTEPPS Module 3 Communication and Module 6 Mutual Support can assist you in devising a strategy that will work for your hospital.
- Share stories to help highlight the impact MRSA and other infections have on patients. Staff engagement can be fostered or enhanced if all health care personnel appreciate the true risk associated with MRSA infections. Sharing stories will also help tap into individuals' internal motivators (knowledge, attitudes, beliefs and values), which help to inspire human behavior.

- Share infection prevention data with staff. Data transparency can help motivate and engage staff, as well as encourage them to continue prevention efforts. Consider sharing the days the hospital or unit has gone without a MRSA infection. Staff can use this information to remind colleagues that proper hand hygiene will help them continue the hospital or unit's success of days since the last infection.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
 - [Giving Infection Prevention Feedback](#) (CBT 103)
 - [Hand Hygiene](#) (HH 101, HH 102, HH 103)
 - MRSA Tier 1 Course ([MRSA 101](#), [MRSA 103](#))
 - [Patient and Family Engagement](#) (PFE 101)
- TeamSTEPPS Fundamentals Course: Module 3. Communication. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module3/igcommunication.html>
- TeamSTEPPS Fundamentals Course: Module 6. Mutual Support. Content last reviewed March 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available at <https://www.ahrq.gov/teamstepps/instructor/fundamentals/module6/slmutualsupp.html>
- Calfee DP, Salgado CD, Milstone AM, et al. Strategies to prevent methicillin-resistant *Staphylococcus aureus* transmission and infection in acute care hospitals: 2014 Update. *Infect Control Hosp Epidemiol*. 2014; 35:772-96.
- Ellingson K, Haas J, Aiello A, Kusesk L, Maragaksi L, Olmstead R, et al. Strategies to prevent healthcare-associated infections through hand hygiene. *Infect Control Hosp Epidemiol*. 2014; 35(8):937-960.
- Grant AM, Hofmann DA. It's not all about me: Motivating hand hygiene among health care professionals by focusing on patients. *Psychol Sci*. 2011; 22(12):1494-9.
- Stickbert-Bennett EE, DiBiase LM, Willis TMS, et al. Reducing health-care associated infection by implementing a novel all hands on deck approach for hand hygiene compliance. *Am J Infect Control*. 2016; 44(5 Suppl):e13-6.

Question 12. Do frontline staff receive training about how to prevent transmission of MRSA and other multidrug-resistant organisms (MDROs)?

You indicated that you do not have training for frontline staff about how to prevent multidrug-resistant organism (MDRO) transmission or that training is ineffective. Daily patient care is crucial to the prevention of MRSA and other MDRO transmission. Thus, buy-in and competency of nursing and frontline staff are crucial for success. Frontline staff training to prevent MDRO transmission should focus on: proper hand hygiene, personal protective equipment use, Contact Precautions, cleaning and disinfection of the environment and equipment and communicating a patient's infection status to frontline staff or during inter- and intra-hospital transfers.

A. Strategies for Training and Educating Frontline Staff

- Key concepts to emphasize include:
 - Hand hygiene with alcohol-based hand rub is the preferred method of hand hygiene unless a hospital or unit has high endemic rates of CDI or hands are visibly soiled. Hand hygiene should be performed prior to donning (putting on) gloves and after doffing (removing) gloves. It is important to emphasize that glove use is not a replacement for hand hygiene.
 - Five moments of hand hygiene: 1) Before touching a patient; 2) before providing a clean or aseptic procedure; 3) after direct contact with a body fluid; 4) after touching a patient; and 5) after touching surfaces around a patient.
 - Current guidelines recommend that both patients with active infections and those colonized with MDROs should be placed into Contact Precautions.
 - MDROs frequently contaminate the patient's environment and patient care equipment; many MDROs can live for days and weeks, some months, on hard surfaces.
- Consider your audience when designing trainings. Frontline staff include multiple roles and disciplines, individuals from different cultural backgrounds, varying ages and different levels of education and literacy.
- Strategies to engage adult learners include:
 - Ensuring a clear understanding of expectations
 - Setting goals together
 - Assessing current knowledge before training
 - Relating learning to past experiences and practical situations
 - Sequencing learning experiences to build confidence, then challenge when comfortable
 - Creating a safe learning environment
- Use existing team meetings and huddles to train and revisit key concepts about preventing MDRO transmission. This helps integrate training into daily workflow and prevent it from becoming onerous.

- Consider using stories to help highlight key educational material and the impact MDROs have on patients. Helping frontline staff appreciate the risk and impact MDROs have on patient well-being will help enhance their engagement in training. Sharing stories will also help tap into individuals' internal motivators (knowledge, attitudes, beliefs and values), which help to inspire human behavior.
- Share infection prevention data with staff. Data transparency can help motivate and engage staff to continue prevention efforts. Consider sharing the days the hospital or unit has gone without a MRSA infection. Staff can use this information to remind colleagues that proper hand hygiene will help them continue the hospital or unit's success of days since the last infection.
- Host unit-level competitions to help motivate and engage staff. A PPE contest using whipped cream or chocolate pudding on gloved hands to see which staff/unit can doff (remove) PPE without "contaminating" themselves is just one example of how learning can be fun, insightful and memorable. Or consider tracking unit compliance rates over time, rewarding the unit(s) that can maintain the highest hand hygiene or PPE use compliance rates.

B. Strategies for Assessing Competency and Compliance

- Assessing competence is how you validate the skills, knowledge and attitude of the frontline staff after completing training.
- Learners remember 10% of what they read, 20% of what they hear, 30% of what is seen, 50% of what is heard and seen, and 80% of what is heard, seen and done.
- Four levels of clinical competence:
 1. Knows. Did the learner gain a basic level of knowledge? Simple pre-/post-tests are useful to measure basic knowledge.
 2. Knows How. Does the learner understand how to apply the new knowledge? Case studies can test the learner's knowledge and promote critical thinking and application of new knowledge.
 3. Shows. Is the learner able to demonstrate the new skills? Simulations are a way to provide a controlled environment in which learners can practice and demonstrate application of skills.
 4. Does. Does the learner independently perform the skill in practice? This may be assessed by observing personnel during direct patient care or work duties.
- Audit implementation of MDRO prevention best practices to ensure that frontline staff are competent in MDRO prevention skills. Simply having these policies and trainings in place is not enough to ensure patient safety. Rather, auditing best practices helps to make sure that best practices are being properly and effectively implemented.
- Use audits and compliance monitoring to assess opportunities for improvement in staff education and training and address gaps in clinical practice.
- Engage patients and families to assist with auditing of best practice compliance. For example, you can ask patients and families to remind providers to clean their hands before care or swab the hub on a central line before accessing it. One state hospital association had

small hand fans made to give to patients that said, “Remember to clean your hands” the patient or family could hold them up when needed, instead of having to speak up. Educating and engaging patients in safety processes is very useful to drive best practice.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Strategies for Preventing Healthcare Associated Infections](#) (SP 101)
 - Competency-Based Training, Audits and Feedback ([CBT 101](#), [CBT 102](#))
 - [Hand Hygiene](#) (HH 101, HH 102, HH 103)
 - [Personal Protective Equipment Use](#) (PPE 101, PPE 102, PPE 103, PPE 104)
 - Environmental Cleaning ([EC 101](#), [EC 102](#))
 - MRSA Tier 1 Course ([MRSA 101](#), [MRSA 103](#))
- [WHO Hand Hygiene Observation Form](#)
- [Donning and Doffing PPE for Contact Precautions Skills Competency Checklist](#)
- [Environmental Cleaning Audit Template](#)
- Calfee DP, Salgado CD, Milstone AM, et al. Strategies to prevent methicillin-resistant *Staphylococcus aureus* transmission and infection in acute care hospitals: 2014 Update. *Infect Control Hosp Epidemiol*. 2014; 35:772-96.
- Miller GE. The assessment of clinical skills/competence/performance. *Academic Medicine*. 1990; 65(9):S63-7.
- Siegel JD, Rhinehart E, Jackson M, Chiarello L, HICPAC. Management of multidrug-resistant organisms in healthcare settings, 2006. Available at <https://www.cdc.gov/hicpac/pdf/MDRO/MDROGuideline2006.pdf>
- Tilley S, Donna D. Competency in nursing: A concept analysis. *J Continuing Ed Nursing*. 2008; 39(2):58-64.
- Whelan L. Competency Assessment of Nursing Staff. *Orthop Nurs*. 2006; 25(3):198-202.

Question 13. Do you have standardized processes for daily and discharge environmental cleaning/disinfection of patient rooms that includes monitoring of cleaning/disinfection quality?

You indicated that you do not have a standardized process for daily and terminal environmental cleaning of patient rooms, or that the process you do have does not work well. Transmission of MRSA is similar to that of other pathogens spread by contact; microorganisms can contaminate the patient or their environment and then be passed on to other patients via health care personnel or shared equipment, or to the next occupant of the patient room. A key aspect of preventing MRSA and other MDRO infections lies in preventing transmission. Hospitals and units need to ensure environmental cleaning and disinfection is effectively decontaminating patient rooms and equipment.

A. Environmental Cleaning and Disinfecting Essentials for Preventing MRSA and other MDRO Transmission

MRSA and other MDROs can survive on hospital surfaces and equipment for days, weeks or even months. Transmission of MRSA is similar to other pathogens spread by contact; the patient or patient's environment can become contaminated, making it easy to spread MRSA to other patients if the environment and equipment is not properly cleaned and disinfected.

- When selecting products for cleaning and disinfection the following factors should be considered before implementing new products:
 - Level of disinfection required and the most appropriate agent or solution for the job
 - Ease of use (contact time, mixing requirements, stability, method of delivery, etc.)
 - Safety (toxicity, flammability, etc.)
 - Surface compatibility, persistent activity and odor
 - Accompanying products needed (mops, cloth, etc.)
 - Cost
 - Training and education
 - Potential barriers (product availability, staffing, workflow, etc.)
- Cleaning and disinfecting protocols should place particular emphasis on high-touch surfaces, such as the bed rails, over-bed tables, call buttons, TV controls, phones, door handles, and encourage staff to follow a predetermined logical cleaning pattern, moving from cleanest to dirtiest. Checklists are useful to ensure all items are included in the cleaning and disinfection process and everyone is on the same page about what is “cleanest to dirtiest.”
- Patients colonized or infected with MDROs should have dedicated medical equipment whenever possible (e.g., stethoscopes, blood pressure cuffs). If dedicated medical equipment is not available, all equipment needs to be thoroughly cleaned and disinfected before using it on another patient.
- For shared patient equipment, a plan for cleaning and disinfection that includes who is to clean the equipment, when and how should be developed, posted and monitored.

- Identify and address barriers to effective cleaning and disinfection (e.g., clutter in the patient room, lack of assigned responsibility for cleaning certain items).
- Include mechanisms for monitoring compliance and thoroughness of cleaning.

B. Strategies for Environmental Cleaning Success

- Consider environmental services staff key members of the MRSA infection prevention team. Emphasizing their important role in infection prevention will help create buy-in and may help highlight alternative approaches for decreasing MRSA transmission.
- Recruit an environmental services champion. The environmental services champion can help integrate MRSA initiatives into the existing workflow and help coordinate environmental services and infection prevention efforts.
- Consider using a responsibility framework to assign cleaning responsibilities for particular patient care equipment and noncritical items. A responsibility framework provides clear details on who is responsible for cleaning and disinfecting specific pieces of shared patient equipment. It should also include by what means and how frequently shared equipment will be cleaned. When developing such a framework it's important to include all necessary stakeholders (Environmental Services, Nursing, Patient Transport, etc.). Interdepartmental collaboration will help to streamline processes across departments, prevent rework and enhance communication.
- Ensure materials for environmental services staff are assessed for potential language and reading level barriers. At a minimum, include the following materials and assessments: educational materials, instructions/checklists, cleaning equipment, cleaning solutions/bottles, and Safety Data Sheets required by OSHA.
- Use audits as an opportunity for improvement, not for punishment, i.e. as a "ladder," not a "hammer." Use a frequent and consistent approach to audits to provide valuable information that can identify opportunities for improvement and track progress over time.
- Provide feedback to staff on environmental cleaning and disinfecting practices in a timely, clear and consistent manner, focusing on improvement rather than punishment.
- Encourage a team atmosphere when providing feedback by using "we" statements (e.g., how can "WE" work together to improve MRSA cleaning and disinfection?). Spend time listening to staff concerns and refrain from placing blame.
- Verify environmental services staff receive feedback about MDRO rates, too. As they engage and learn how critical their work is for patient safety, it is important for them to know they are making a difference. Include them in unit staff meetings where infection data are shared and patient stories are told. They are a critical part of the infection prevention team.

Tools, Resources and Further Reading

- STRIVE Content:
 - [Competency-Based Training, Audits and Feedback](#) (CBT 101, CBT 102, CBT 103)
 - [Environmental Cleaning](#) (EC 101, EC 102, EC 103)
 - MRSA Tier 1 ([MRSA 101](#), [MRSA 102](#))
- [CDC Environmental Checklist for Monitoring Terminal Cleaning](#)

- [CDC Environmental Cleaning & Disinfecting for MRSA](#)
- [CDC Options for Evaluating Environmental Cleaning](#)
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