

2024

SPARC Year in Review

Introduction to SPARC

The Maryland Statewide Prevention and Reduction Collaborative ([SPARC](#)) is a quality improvement project engaging public health and academia to address evolving infection prevention and antibiotic stewardship needs in Maryland hospitals. SPARC is led by the Maryland Department of Health (MDH), the University of Maryland, Johns Hopkins University, and implementation contractor NORC at the University of Chicago (NORC).

Since 2018, SPARC has played an integral part in addressing the needs of Maryland hospitals by leveraging a peer-to-peer learning model that includes regular webinars, Q&A office hours, in-person workshops, and site visits. Participants include infection preventionists, infectious disease physicians, clinical pharmacists, and other clinicians (e.g., nurses, hospital administrators, and epidemiologists) from hospitals across Maryland.

Over the past six years, SPARC has led interventions focused on a variety of infection prevention and antibiotic stewardship needs across the state:



2018-2019

SPARC focused on [reducing *Clostridioides difficile* \(*C. difficile*\) rates in Maryland acute care hospitals](#). This effort resulted in a decrease in *C. difficile* infection rates by 45% among the 12 participating hospitals.



2020-2021

In response to COVID-19, SPARC shifted its scope to provide a forum to support Maryland hospitals with responding to rapidly changing science, treatment guidance, and policies. [An assessment](#) of these activities found that SPARC was an important source of information for hospitals managing the dynamic healthcare environment during the pandemic.



2022-Present

As COVID-19 cases decreased in Maryland alongside increased rates of other healthcare-associated infections (HAIs), SPARC turned to addressing the emerging needs of acute care facilities identified through needs assessments. For example, in 2023, SPARC launched a seven-month central line-associated bloodstream infection (CLABSI) initiative, hosting eight webinars to discuss a range of topics.

Currently, SPARC is focused on two participant-driven arms of the collaborative. The **antibiotic stewardship initiative** focuses on supporting Maryland hospitals in advancing antibiotic stewardship for sepsis and other clinical areas through site visits, monthly webinars, and Q&A office hours. The **infection prevention initiative** is currently focused on improving water management by hosting monthly webinars covering relevant infection prevention topics, office hours, in-person workshops, and providing targeted coaching. At the conclusion of each topic-specific initiative, SPARC will identify and share lessons learned to advance infection prevention and antibiotic stewardship efforts at acute care hospitals.

SPARC Activities in 2024

SPARC utilizes qualitative interviews, needs assessments and post-intervention assessments administered online, and focus groups to identify hospital needs and elicit feedback about the collaborative's impact. These data-driven mechanisms ensure that the topics SPARC covers are responsive to participants' needs. In 2024, SPARC identified and addressed hospital needs related to antibiotic stewardship and infection prevention-related topics.

ANTIBIOTIC STEWARDSHIP

In 2024, SPARC completed its Sepsis Intervention, which was a targeted intervention for facilities in Maryland interested in improving their antibiotic stewardship policies or practices. A needs assessment highlighted the importance of focusing the intervention on sepsis. During this quality improvement intervention, SPARC supported eight facilities in designing and implementing an intervention targeting broad-spectrum antibiotics commonly prescribed for sepsis.

The intervention consisted of two main components:

1. Tailored guidance to participating facilities to develop and implement their evidence-based intervention.

- SPARC conducted in-person site visits with hospitals and provided initial recommendations for evidence-based interventions to improve antibiotic stewardship practices.

SPARC BY THE NUMBERS

In 2024, SPARC hosted:



22 biweekly webinars covering relevant antibiotic stewardship and infection prevention topics.

- An average of **150** attendees representing all Maryland acute care hospitals attend the biweekly webinars.
- Throughout the year, **13** external speakers presented at SPARC webinars.



5 office hours sessions engaged participants in a Q&A style conversation with experts.



8 Maryland facilities engaged in a sepsis-focused antibiotic stewardship intervention.



1 in-person workshop, attended by **121** participants, focused on water management for infection prevention.

- SPARC developed a one-page planning tool for sites to identify a target disease state/antibiotic, population, timeline, and pre-/post-intervention metrics alongside common types of interventions.
- During and after the site visit, SPARC provided hospitals with tailored information and guidance to assist in developing their intervention.

2. Ongoing support to participating facilities throughout the implementation of the intervention through webinars and office hours.

- In 2024, SPARC held 11 monthly webinars focused on antibiotic stewardship best practices. Key webinar topics included leveraging Antimicrobial Use data, antibiotic stewardship for specific disease states, and implementation and quality improvement methodology.
- SPARC moderated office hours and provided intervention participants an opportunity to ask expert panelists questions and learn from their peers' experiences.

In Spring/Summer 2024, SPARC conducted an assessment of participants' views on the value of the Sepsis Intervention. Sites felt positive about SPARC's guidance in identifying interventions, noting that they saw the value of having an outside perspective. They also reported that sharing and learning from implementation experiences at other facilities was beneficial. Sites emphasized that hosting SPARC during the in-person site visit provided an opportunity to discuss the importance of antibiotic stewardship with hospital leadership. Overall, the intervention impacted meaningful changes at participating facilities.

In addition to the Sepsis Intervention, SPARC leveraged the monthly webinars to cover broad antibiotic stewardship topics including nasal swabs, blood culture diagnostics, Centers for Disease Control and Prevention (CDC) perceptions of antibiotic stewardship, and quality improvement strategies.

INFECTION PREVENTION

In 2024, SPARC launched an initiative focused on improving Maryland hospitals' understanding of the processes around water management. A needs assessment showed that Maryland hospitals were specifically interested in learning how to increase facility-wide awareness on the importance of water management, what role infection preventionists should play on a water management team, how to conduct surveillance for water-associated pathogens, and how to complete a water infection control risk assessment (WICRA).

The initiative involved two main components:

1. An in-person water management workshop for infection preventionists and facilities managers with 40 in-person and 81 virtual attendees representing 49 Maryland hospitals.

- The goal of the workshop was to provide a comprehensive understanding of the processes around water management, including water management programs and WICRAs, and provide advice from external experts on addressing challenges and goals for improving water management processes.
- Topics discussed at the workshop included 1) water-related risks, 2) key elements of water management plans and how to leverage them to prevent waterborne infection, 3) additional information on WICRAs, and 4) facilities' short- and long-term goals for water management.

2. A monthly water management webinar series.

- In 2024, SPARC held eight water management-focused webinars during bi-weekly MDH acute care calls with hospitals.
- At the webinars, SPARC and external experts discussed water-related outbreaks, Legionella surveillance and nontuberculous mycobacteria (NTM) reporting, secondary water treatment, infection control risk assessments for construction, water management for dialysis, mitigation strategies related to sink drains, and standards for water system risk management.
- Three Maryland hospitals presented their experiences implementing water management programs.

Looking Ahead

In its six years, SPARC has fostered a community of infection preventionists, clinicians, hospital administrators, epidemiologists, and public health professionals in Maryland with a common goal to implement quality improvement related to infection prevention and antibiotic stewardship in healthcare facilities. SPARC has maintained this infrastructure while adapting to Maryland hospitals' evolving needs.

SPARC has enabled peer-to-peer learning and sharing of best practices, leveraged data-driven feedback mechanisms to ensure a needs-driven approach, and provided a wealth of expertise through partnership with public health and academic partners to support a wide range of hospital needs.

SPARC will continue addressing hospital needs related to antibiotic stewardship and infection prevention over the next year.

ANTIBIOTIC STEWARDSHIP. In 2025, SPARC will continue to offer antibiotic stewardship support through monthly webinars. SPARC will also hold quarterly office hours providing support on a range of topics. While the Sepsis Intervention is complete, SPARC will reach out to participating sites to probe the sustainability of the changes made during the intervention and offer support as needed.

INFECTION PREVENTION. In 2025, SPARC will continue the water management initiative through additional webinars, office hours, and one-on-one coaching sessions with interested facilities. Once the initiative is complete, SPARC will conduct a formal post-assessment to determine the initiative's success in improving facilities' knowledge related to water management and identify new topics of interest for upcoming activities.