

**IN THIS ISSUE:**

DHEC Partners with Veterinarians to Promote Rabies Vaccines .....1

Congenital Syphilis in South Carolina .....2

South Carolina Long-Term Care Antimicrobial Stewardship Initiative .....3

Doxycycline Post-Exposure Prophylaxis (DoxyPEP) to Prevent Bacterial Sexually Transmitted Infections.....4

Perinatal Exposure to Hepatitis C is Increasing .....5

Tuberculosis (TB) in SC, 2023.....6

# Epi Notes

SPRING 2024

## DHEC Partners with Veterinarians to Promote Rabies Vaccines

Terri McCollister  
 Rabies Prevention Program Director  
 Bureau of Communicable Disease Prevention and Control

Laura McClure  
 Rabies Prevention Program Assistant  
 Bureau of Communicable Disease Prevention and Control

Each spring, DHEC partners with various veterinarians who are willing to host free or low-cost rabies vaccination clinics to help make rabies vaccines easily accessible. While veterinarians offer rabies vaccines year-round, these DHEC-supported low-cost clinics help raise awareness about why rabies prevention is so important.

Rabies is an active, deadly virus in wildlife, and it can be fatal to people if it's left untreated. Rabies in humans is preventable through post-exposure rabies treatment.

Any mammal can transmit rabies to people or pets. In South Carolina, in 2023, there were **78 positive cases of rabies** confirmed in animals across the state, including 24 raccoons, 19 skunks, 15 bats, eight foxes, 10 cats, one coyote, and one goat. South Carolina averages 148 confirmed rabid animals each year.

While the number of rabies-related human deaths has declined significantly over the past several decades as a result of rabies vaccinations and awareness, human fatalities still occur. The Centers for Disease Control and Prevention reported no human-related rabies deaths nationwide in 2023, but it reported five human-related rabies deaths in 2021. Four of the five deaths were directly related to bat exposures and one was from a dog bite that occurred in another country.

South Carolina law requires all pet dogs, cats, and ferrets to be vaccinated against rabies and revaccinated at a frequency to provide continuous protection from rabies using a vaccine approved by DHEC and licensed by the United States Department of Agriculture. To find a free or low-cost rabies clinic near you, visit [scdhec.gov/rabies](https://scdhec.gov/rabies).

### 2023 Events

<b>Dorchester Paws</b>	<ul style="list-style-type: none"> <li>•87 Rabies Vaccines</li> <li>•Microchips</li> <li>•Pet food and items (Chewy Truck)</li> </ul>
<b>Charleston Animal Society</b>	<ul style="list-style-type: none"> <li>•1800 pets</li> <li>•1,602 Rabies Vaccines</li> <li>•198 Microchips</li> </ul>
<b>Marlboro County Humane Society</b>	<ul style="list-style-type: none"> <li>•Rabies Vaccination Clinic</li> <li>•March 4, 2023</li> <li>•128 Rabies Vaccines</li> </ul>
<b>Humane Society of South Carolina</b>	<ul style="list-style-type: none"> <li>•Rabies Vaccination Clinic</li> <li>•March 25, 2023</li> <li>•234 Rabies Vaccines</li> </ul>
<b>Friends of Fairfield County Volunteers &amp; Pets Inc Mobile</b>	<ul style="list-style-type: none"> <li>•Rabies Vaccination Clinic</li> <li>•July 22, August 26, and September 30, 2023</li> <li>•153 Rabies Vaccines</li> <li>•88 Microchips</li> </ul>



## Congenital Syphilis in South Carolina

Marco Tori, MD, MSc  
 LCDR, United States Public Health Service  
 Career Epidemiology Field Officer, Centers for Disease Control and Prevention (CDC)  
 Medical Consultant, South Carolina Department of Health and Environmental Control

Jessica Tillman, PhD, MPH, RN  
 Nurse Consultant  
 Division of STD/HIV & Viral Hepatitis

Bernard Gilliard  
 Program Manager, Partner Services and Disease Intervention  
 Division of STD/HIV & Viral Hepatitis

During 2014–2022, the number of reported congenital syphilis (CS) cases in South Carolina increased 400 percent, from five to 25, the highest case rate in 20 years. A coordinated statewide effort is needed to prevent this devastating disease. Syphilis during pregnancy can result in stillbirth, neonatal death, premature birth, or certain long-term health challenges. CS is entirely preventable through timely testing and treatment during pregnancy.

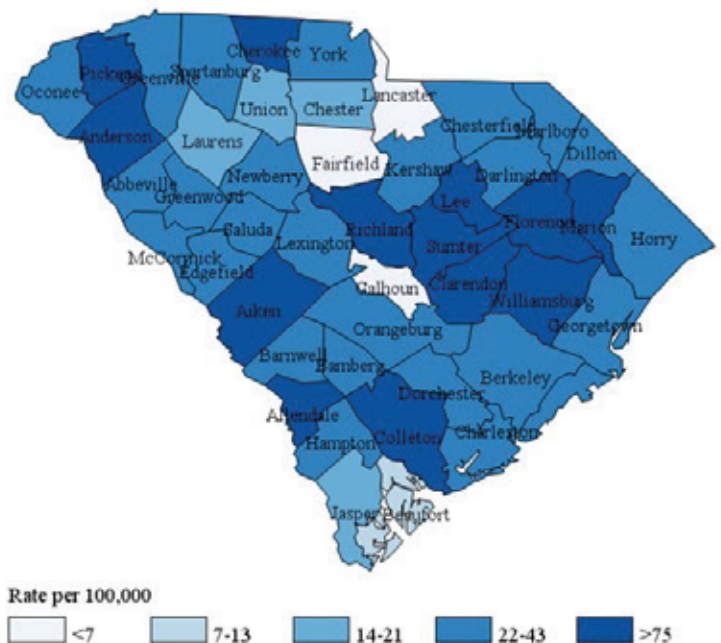
Many people who have syphilis do not receive adequate prenatal care, do not get repeat testing if they have risk factors for syphilis infection, or do not get adequate treatment. Any encounter between medical or public health professionals during pregnancy can be an opportunity to test for syphilis and link to care. Pregnant women seeking care in the emergency department or urgent care should be prioritized for rapid testing and treatment.

The Centers for Disease Control and Prevention (CDC) recently released **a report highlighting counties where people are at higher risk for syphilis**. In areas where the prevalence of syphilis is above 7 cases per 100,000 people (see map below), people of childbearing age and their sexual partners should be tested for syphilis to reduce rates of primary and secondary syphilis. Additionally, in these areas, screening for syphilis in the third trimester (at 28 weeks and at delivery) should be offered. Screening based on geographic risk can decrease stigma associated with biases and individual risk factors. People living outside of these high-incidence counties may also have higher risk for syphilis and should be screened as appropriate based on behaviors that put people at risk of syphilis infection. DHEC recommends increased geographic screening based on the location of the care facility to standardize the clinical practice.

There is a shortage nationwide of injectable benzathine penicillin (Bicillin), and Bicillin should be reserved for treating pregnant women and their partners until the shortage is resolved. DHEC has reserved sufficient supplies to treat syphilis during pregnancy to prevent CS. Non-pregnant people can also receive doxycycline for primary, secondary, and latent syphilis. Anyone who reports sexual exposure to syphilis should be treated, even if asymptomatic or awaiting testing. Anyone with signs or symptoms of primary or secondary syphilis should receive treatment without waiting for test results. These standards of care can help interrupt transmission and reduce the burden of syphilis in the community.

The preventable crisis of congenital syphilis can be addressed by increasing screening in geographic areas of high incidence, performing third trimester screening during pregnancy, or testing at delivery for women who received late or very little prenatal care. By standardizing increased screening, we will be able to detect syphilis and prevent CS across the population.

Rates of Syphilis Among Women Aged 15–44 years, South Carolina, 2022



\*Note: Clinical practices located in counties with rates  $\geq 7$  per 100,000 should implement enhanced syphilis screening as described above.

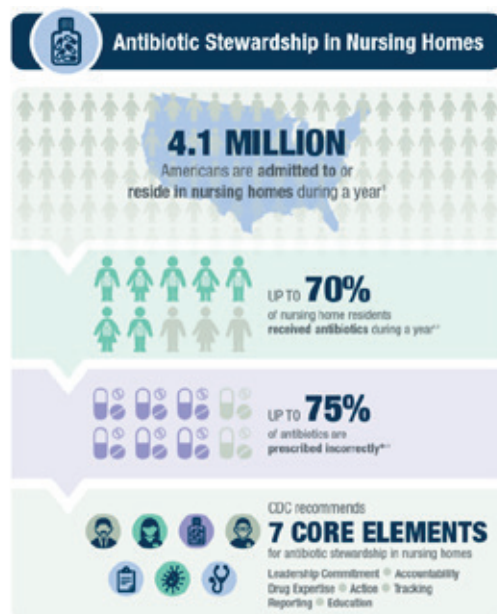


## South Carolina Long-Term Care Antimicrobial Stewardship Initiative

Chelsea Campbell, PharmD, MSPH

Healthcare Associated Infections-Antimicrobial Resistance (HAI-AR) Pharmacist

Division of Acute Disease Epidemiology



Antimicrobial resistance has become a critical public health issue, resulting in 2.8 million illnesses and more than 35,000 deaths, yearly.<sup>1</sup> The misuse of antibiotics has contributed to the growing issue of antimicrobial resistance and without action, these numbers will continue to grow.

Antimicrobial stewardship refers to coordinated interventions designed to optimize infection treatments while reducing the adverse events associated with antimicrobial use.<sup>1</sup> Antimicrobial stewardship programs can help promote responsible use of antimicrobial agents, which in turn can improve patient outcomes, reduce health care costs, and potentially reduce rates of antimicrobial resistance.<sup>2</sup>

The Centers for Disease Control and Prevention (CDC) recommends all nursing homes take steps to improve antimicrobial prescribing practices and reduce inappropriate use.<sup>2</sup> Antibiotics, a type of antimicrobials, are among the most frequently prescribed medications in nursing homes. Studies have shown that up to 70 percent of nursing home residents receive antibiotics per year and 40-75 percent of those antibiotics may be unnecessary or inappropriate.<sup>2-4</sup>

The CDC and the Council for State and Territorial Epidemiologists recommend that health departments incorporate stewardship activities into their healthcare-associated infections (HAI) programs.<sup>1,5</sup> Health departments can play a critical role in promoting appropriate antimicrobial use and prevention strategies to help slow the development of antimicrobial resistance. The South Carolina Department of Health and Environmental Control's (DHEC) HAI section has developed a Long-term Care (LTC) Antimicrobial Stewardship Initiative to provide guidance in the development, implementation, and maintenance of antimicrobial stewardship programs tailored to SC nursing homes.

As part of the LTC Antimicrobial Stewardship Initiative, the following tools were developed: an antimicrobial stewardship assessment survey, an honor roll program, and a training series. The antimicrobial stewardship survey was developed to gain a better understanding of a facility's current antimicrobial stewardship program, identify possible areas of improvement, and provide guidance when needed. The honor roll program helps recognize facilities that are committed to antimicrobial stewardship, thus publicizing the importance of responsible antimicrobial use. Currently, a nursing home training series is in development for nurses, prescribing practitioners, and pharmacists. The series will focus on the diagnostic and treatment methods of common illnesses among nursing home residents.

Increasing antimicrobial stewardship awareness in S.C. nursing homes will allow for more accurate surveillance of antimicrobial usage and resistance, leading to more informed public health decisions, including the evaluation of current interventions and their effectiveness along with the development of future guidance. For more information on antimicrobial stewardship, email [hai\\_esp@dhec.sc.gov](mailto:hai_esp@dhec.sc.gov).

### References

- Center for Disease Control and Prevention. Antibiotic Resistance Threats in the United States, 2019. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2019.
- Center for Disease Control and Prevention. Core Elements of Antibiotic Stewardship for Nursing Homes. Atlanta, GA: U.S. Department of Health and Human Services, CDC; Accessed 05/22/2024.
- Lim CJ, Kong DCM, Stuart RL. Reducing inappropriate antibiotic prescribing in the residential care setting: current perspectives. Clin Interv Aging. 2014; 9:165-177.
- Nicolle LE, Bentley D, Garibaldi R, et al. Antimicrobial use in long-term care facilities. Infect Control Hosp Epidemiol 2000; 21:537-45.
- Council of State and Territorial Epidemiologists. CSTE Position Statement 14-ID-01. Recommendations for strengthening antimicrobial stewardship in the United States, including the role of the state and local health departments. 2014. Accessed 05/22/2024.

**HEALTHCARE ASSOCIATED INFECTIONS (HAI) SECTION**

The HAI Section is a section within the Division of Acute Disease Epidemiology at DHEC. The HAI Section is responsible for HAI surveillance, data analysis, and reporting and is dedicated to continually improving infection prevention and control (IPC) practices within health care settings in South Carolina.

**THE HAI SECTION WORKS IN COLLABORATION WITH LOCAL/REGIONAL INFECTION PREVENTION NURSES**

**WHAT WE PROVIDE**

- Guidance to prevent the transmission of infections in health care settings (including, but not limited to SARS-CoV-2 and multi-drug resistant organisms (MDRO))
- Infection prevention and control assistance during facility-associated outbreaks or as requested
- National Healthcare Safety Network (NHSN) technical assistance including how to report and track data
- Training and education on basic infection prevention and control practices
- Onsite assessments of IPC plans, policies and practices to strengthen IPC programs
- Site specific IPC tools for risk assessments, auditing, competency based training, etc.
- Guidance in the development, implementation and maintenance of antibiotic stewardship programs throughout South Carolina

**CONTACT THE HAI SECTION FOR QUESTIONS OR ASSISTANCE**

General HAI Questions: (803) 896-8884 or [hai\\_section@dhec.sc.gov](mailto:hai_section@dhec.sc.gov)  
 Antibiotic Stewardship: (803) 896-8881 or [hai\\_esp@dhec.sc.gov](mailto:hai_esp@dhec.sc.gov)  
 Project Partner (IPC education/training): (803) 487-9350 or [projectpartner@dhec.sc.gov](mailto:projectpartner@dhec.sc.gov)

**LOCAL/REGIONAL CONTACT INFORMATION**

Locality	Methods	Facilities	Service Requirements
<a href="#">Greenville</a>	<a href="#">Greenville</a>	<a href="#">Greenville</a>	<a href="#">Greenville</a>
<a href="#">Spartanburg</a>	<a href="#">Spartanburg</a>	<a href="#">Spartanburg</a>	<a href="#">Spartanburg</a>
<a href="#">York</a>	<a href="#">York</a>	<a href="#">York</a>	<a href="#">York</a>

## Doxycycline Post-Exposure Prophylaxis (DoxyPEP) to Prevent Bacterial Sexually Transmitted Infections

Marco Tori, MD, MSc

LCDR, United States Public Health Service

Career Epidemiology Field Officer, Centers for Disease Control and Prevention (CDC)

Medical Consultant, South Carolina Department of Health and Environmental Control

Doxycycline is an antibiotic that can be used to prevent bacterial sexually transmitted infections (STIs). This is an exciting new tool to prevent STIs in a group of people who experience high rates of sexually transmitted infections. A single dose can be taken within 24 hours of condomless oral, anal or vaginal sex to prevent infection of a bacterial STI. DHEC Preventive Health clinics in county health departments will begin offering DoxyPEP in April 2024.

Current studies demonstrate that doxycycline as post-exposure prophylaxis (PEP) reduced syphilis by 77-87%, chlamydia by 74-88%, and gonorrhea by 55-57% in people taking HIV PrEP or on HIV treatment. These studies support prescribing DoxyPEP to MSM and transgender women who have sex with cisgender men or transgender people, have had multiple partners, or have had a bacterial STI in the last year. Ongoing and future studies will evaluate if DoxyPEP will work in other groups of people.

Importantly, doxycycline does not prevent infection with HIV or other viral STIs. People with behaviors that put them at risk for HIV infection (such as condomless vaginal or anal sex, or unsafe injection drug use) should be counseled for and prescribed HIV pre-exposure prophylaxis (PrEP) if they do not have HIV infection.

Interest in doxyPEP among MSM and transgender women is high, as the use of doxyPEP is empowering and allows patients to take charge of their sexual health. Offering individualized care and STI prevention strategies to this population that has been historically isolated and disempowered is an important aspect of health equity. Sexual, gender and racial or ethnic minorities are disproportionately affected by STIs, and providers should anticipate a disparate uptake in DoxyPEP by these groups. Training clinical staff and community health workers about the importance of addressing STIs in these populations may help increase equitable access to STI and HIV prevention. Failing to adopt equitable STI care policies like providing HIV PrEP and DoxyPEP to sexual and gender populations that have often been left out may further erode trust in the health care and public health systems.

Though DoxyPEP is a new strategy, providers across the country have already developed some effective prescribing practices. DoxyPEP should be prescribed only when someone is known to be STI negative. Dispensing multiple doses of doxyPEP allows the client to take the medication after an exposure, therefore single dose dispensing is discouraged. If a patient returns for DoxyPEP refill, they should be screened at all anatomic exposure sites for gonorrhea and chlamydia, syphilis, and HIV on a three-month basis. If someone using DoxyPEP gets infected with a bacterial STI, they should be treated according to current CDC treatment guidelines.

South Carolina has high rates of bacterial STIs, especially among men who have sex with men. Implementing this prevention service is likely to prevent STI transmission in our state. DoxyPEP is an exciting tool available to prevent bacterial STIs. It's proven to be safe and have minimal side effects, and though there is some public health monitoring still needed, this new strategy should be widely adopted.

## Perinatal Exposure to Hepatitis C is Increasing

Marco Tori, MD, MSc  
LCDR, United States Public Health Service  
Career Epidemiology Field Officer, Centers for Disease Control and Prevention (CDC)  
Medical Consultant, South Carolina Department of Health and Environmental Control

Elona Rhame, RN, MSN, MPH  
Perinatal Hepatitis C Coordinator  
Division of Acute Disease Epidemiology

The DHEC Perinatal Hepatitis C Case Management Program began in 2023. Our goal is to identify and test all infants with perinatal exposure to HCV.

Hepatitis C (HCV) is a bloodborne pathogen that spreads parenterally. The most common mode of transmission is unsafe injection drug use (IDU). Rates of hepatitis C among reproductive-aged persons have been increasing annually since 2010 and are highest among persons 20-39 years of age due to the opioid crisis. However, HCV is a curable infection, and anyone who is infected can get treated.

HCV screening with an anti-HCV antibody test is recommended for all pregnant persons with each pregnancy. A reactive HCV antibody indicates current or past infection and should be followed with a test for HCV RNA. Detectable HCV RNA is indicative of current infection. Perinatal transmission of HCV can occur in infants born to pregnant persons with detectable HCV RNA. Some providers choose to treat HCV infection during pregnancy, though most wait until after delivery to pursue treatment and cure.

Although the history of unsafe IDU is the most reported risk factor among adults for acquiring new HCV infection, perinatal transmission is the primary risk factor among young children.

Approximately 6-7 percent of perinatally exposed children will acquire HCV infection. Identifying infants exposed to HCV at birth and testing for it is a key component toward the national goal of eliminating perinatal transmission of hepatitis C in the U.S.

Perinatally exposed infants should receive a test for HCV RNA at age 2-6 months to identify children in whom chronic HCV infection might develop.

- Infants and children aged 7-17 months who have not previously been tested should receive a NAAT for HCV RNA.
- Children aged  $\geq 18$  months who previously have not been tested should receive an anti-HCV test with reflex to NAAT for HCV RNA.
- Infants with detectable HCV RNA should be managed in consultation with a health care provider with expertise in pediatric hepatitis C management.
- Infants with undetectable HCV RNA do not require further follow-up.
- Refer infants and children with perinatally acquired HCV infection to a provider with expertise in hepatitis C management. Curative direct-acting antiviral (DAA) therapy is approved for children  $\geq 3$  years of age, preventing these children from suffering from a chronic disease.

**Together we can eliminate hepatitis C infection for all South Carolinians.**

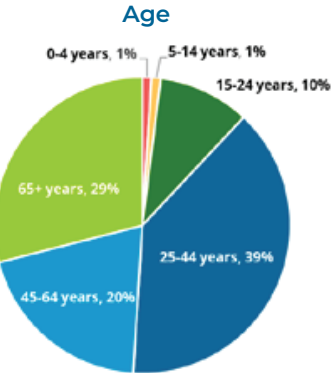
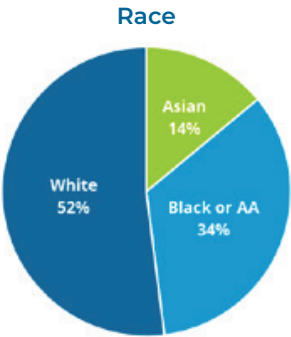
# Tuberculosis (TB) in South Carolina, 2023

TB is a bacterial disease found primarily in the lungs. It is spread from person to person through the air. There are medications to treat TB that work for most people. As shown in the graphic below, there were 90 cases of reported TB cases in South Carolina in 2023.

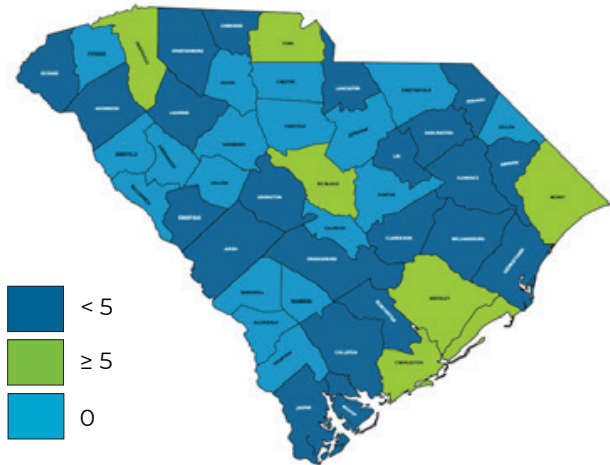
## Total Annual Cases, by Gender



## Demographics



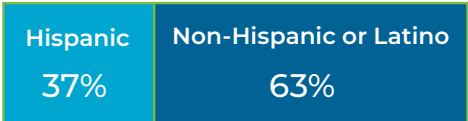
## Number of Cases per County



### Country of Birth



### Ethnicity



## SC TB Cases, 2013-2023



## Share Epi Notes with your Colleagues



Epi Notes is published two to four times a year and emailed to our disease reporting partners that have requested to be included in our subscriber database. Please share our Epi Notes with your colleagues and encourage them to subscribe so that we can continue to share important information with our healthcare partners.

Email **EpiNotes@dhec.sc.gov** to  
subscribe to Epi Notes.

Want to see other topics featured in a future  
edition of Epi Notes? We would love to hear  
from you! Send your suggestions to  
**EpiNotes@dhec.sc.gov**.



Epi Notes is published by the South Carolina Department of Health and Environmental Control  
Bureau of Communicable Disease Prevention and Control.

CR-010898 5/24