

Strength in Numbers: SURRG Sharpens Focus in the Quest to Stop Antibiotic-Resistant Gonorrhea

CDC has committed precious resources to fighting the concerning rise in antibiotic resistance in the United States and abroad. Gonorrhea, a common sexually transmitted disease (STD), has garnered much of this attention as its resistance to antibiotics has continued to grow: ceftriaxone is now the last highly effective recommended treatment available for it.

As with other STDs in the last several years, gonorrhea cases continue to trend upwards—with over half a million new infections reported each year in the United States.



Recognizing the risks associated with rising cases paired with increasing antibiotic resistance,

CDC monitors gonorrhea with programs such as the [Gonococcal Isolate Surveillance Project \(GISP\)](#) and the [STD Surveillance Network \(SSUN\)](#). And in 2013 when CDC's first [Antibiotic Resistance Threats in the United States](#) report listed drug-resistant gonorrhea as one of the three most urgent threats, the agency committed to developing even more aggressive strategies to meet the challenge.

One of those strategies is the creation of **Strengthening the United States Response to Resistant Gonorrhea (SURRG)** – a collaborative effort initiated in 2016 emphasizing rapid detection and response to drug-resistant gonorrhea in eight areas around the country. “The idea was to see if this kind of highly-focused, yet wide-reaching effort to combat the rise in antibiotic-resistant gonorrhea would be impactful,” said Dr. Bob Kirkcaldy, a Medical Officer in CDC's [Division of STD Prevention \(DSTDP\)](#).

In four short years—with an abundance of data as well as established partnerships and resource-sharing between states, big cities, and local communities—SURRG has created a solid foundation for capacity building to detect, respond to, and ultimately slow the spread of drug-resistant gonorrhea throughout the U.S.

SURRG has become a well-established pillar in the arsenal of CDC-supported programs focused on limiting the spread of antibiotic-resistant gonorrhea.

Since 2016, SURRG has:

- Created/expanded local capacity to test for drug-resistant gonorrhea.
- Implemented and evaluated antibiotic resistance culture testing in facilities other than STD clinics, which supports more widespread use of this testing.
- Implemented and evaluated intensive contact tracing/partner services to assess their impact on finding and containing cases, and to better understand sexual networks and disease spread.
- Established data management improvements and capacity building at the local level to increase rapid detection and response activities.

Half of all gonorrhea infections reported each year are resistant to at least one antibiotic

Approximately 1.14 million new gonorrhea infections may occur in the United States each year

As many as half of all new gonorrhea infections occur among young people aged 15-24



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Power in partnerships

Two of the biggest challenges associated with testing and monitoring for drug-resistant gonorrhea are sample collection and turnaround time of results – SURRG is changing that. How? By fostering partnerships between states and local health departments to simplify response capacity for everyone.

“Expansive sample collection and antibiotic resistance testing at clinics at the local level jump-starts the process, and the enhancements in local laboratory capacity help ensure a quick four- to six-day turnaround for resistance results,”

said Dr. Karen Schlanger, an epidemiologist in CDC’s DSTDP. (In comparison, traditional monitoring of drug-resistant gonorrhea (GISP) usually reports results after about one to three months of sample collection).

“Effective monitoring of drug-resistant gonorrhea requires collecting cultures, which aren’t typically collected – that’s the capacity we’ve focused on building up—something that could prove vital in the event of an outbreak,” she added. These local/city/state connections also play an integral role in the long-term data gathering and sharing that is the cornerstone of the SURRG process. “The partnerships have really helped expand the capabilities and possibilities of what we can accomplish with this program.”

SURRG also includes samples from non-STD clinics – places such as emergency departments and HIV care clinics, where diagnoses are on the rise. Local champions are also a tremendous help. Doctors, nurses, and other healthcare providers who work directly with clients help push the whole process forward.

“SURRG reaches all the way from the local to the national level, and therein lies the strength in our process,”

said Schlanger. This streamlined approach – collection, analysis, and rapid investigation of cases – has the potential to play a crucial role in guiding national recommendations for the public health response to antibiotic-resistant gonorrhea.

SURRG-ing forward

With a robust network and a vast amount of data currently available, SURRG now pivots to the next phase: detailed analyses to search for patterns of antibiotic-resistant gonorrhea throughout the country. These reviews will help public health officials begin to map out responsive long-term solutions.

Initial promising outcomes in SURRG data show

- the value and impact of scaling up testing and quality assessments in local areas;
- the outcomes of using enhanced partner services to track down and contain new strains of gonorrhea;
- the benefits of pairing partner services with genomic data to illustrate sexual networks affected by specific strains of gonorrhea;
- the successes, challenges, and best practices for collecting samples from women in addition to men; and
- the accuracy of SURRG’s faster and simpler antibiotic resistance testing.

Research also shows that the initiative offers a window into the behaviors and characteristics of people who have infections with signs of antibiotic resistance; information which can inform and target prevention interventions.

“With the early information we’ve examined, and the enhanced benefit of tools such as comprehensive partner services and genomic data mapping, we have uncovered new clusters of gonorrhea that were not found in traditional contact tracing alone,” said Kirkcaldy. “We have a lot to learn from the data, so I’m excited to see what else they will show. SURRG is an ambitious project with high data demands, but the sites have risen to the challenge. Not only has this helped SURRG, but the investments in infrastructure and data management capacity will hopefully leave footprints that will support STD prevention and control for years to come.”

Learn MORE at cdc.gov/std

[Drug-Resistant Gonorrhea: An Urgent Public Health Issue animation](#)

[CDC Gonorrhea Website](#)

[CDC Antibiotic Resistance Website](#)