

STI Outbreak Prevention and Control Activities

This document contains a list of control and prevention activities to consider for implementation during STI outbreaks. This is meant to serve as a companion to the [STI Outbreak Response Plan](#) and provide more specifics on control and prevention activities included in section 3i. Every outbreak is different, and some activities will be more feasible or more effective in certain jurisdictions depending on available resources and population. This is not an exhaustive list, and programs may implement activities not included here. It is important to explore multiple activities simultaneously, especially at the beginning of an outbreak. It is also important to evaluate activities on an ongoing basis to decide which activities work best and should be continued and which should be discontinued. Information on conducting a program evaluation is available [online](#).

Understand the Epidemiology

1. Review and analyze existing data sources (e.g., case data, supplemental surveillance data, claims data) to better understand what specific population(s) is affected by the outbreak and how best to find at-risk individuals and target interventions. More information is available in the Council of State and Territorial Epidemiologists (CSTE) document [Syphilis Outbreak Detection Guidance](#).
 - a. Consider including descriptive analyses summarizing age, sex, sex of sex partner, race/ethnicity, type of provider, and geography (e.g., county, census tract, neighborhood, or other geographic marker). Understanding which healthcare facilities/providers are diagnosing cases, patients' reasons for seeking care (e.g., symptoms, referral by partner, or screening), and what treatment practices are used can help target potential interventions, such as screening events or provider education.
 - b. Evaluate any available risk factor data that may help inform hypotheses of factors contributing to the increases (e.g., sex work; drug use; or venues for meeting partners, such as dating apps or bath houses). Discussions with Disease Intervention Specialists (DIS) may be particularly helpful for understanding the affected population, as DIS may notice trends or risk factors that are not currently collected systematically.
 - c. Consider including the following additional analysis which might be helpful if data are available:
 - i. Where partners report seeking care (can help identify areas to target for improved screening).
 - ii. Co-infections or repeat infections (can help narrow down a risk group).
 - iii. Healthcare provider adherence to treatment guidelines (can help identify providers in need of targeted education on STI treatment guidelines).
2. Optional steps: You may also consider the benefit of collecting additional information from the cases (and/or a group of uninfected persons [controls] for comparison) to better understand factors in a unique outbreak (e.g., ocular syphilis). It would likely take months and intensive resources to gather and analyze the data, so the benefit of knowledge gained should be weighed against the time and resources required.
 - a. In areas with syphilis increases among heterosexuals, efforts should be made to monitor for congenital syphilis cases (e.g., through review of stillbirth records and infant mortality cases).

3. If the outbreak involves a disease not routinely investigated, or if the current outbreak is overwhelming the ability of the health department to continue to investigate cases, consider creating a random sample of cases that could be part of an [enhanced data collection project](#) (see section 3, page 12, for "random sampling").
4. Determine if there are additional resources (e.g., public health students, medical students, internal medicine or preventative medicine residents, or infectious disease fellows) you can enlist to help with interviews or special projects related to the outbreak.

Increase Awareness

1. Providers – It is important to alert providers of the outbreak and the affected population(s). This can prompt providers to look for specific symptoms in patients that might otherwise be overlooked (e.g., rashes). Providers can then identify cases and provide early and appropriate treatment.
 - a. Release a Health Advisory via your health department's Health Alert Network (HAN).
 - i. Include information on the disease and epidemiology of the outbreak: signs and symptoms of disease, a diagnostic algorithm, appropriate treatment, screening recommendations, specifics of the affected population (e.g., demographics, geography, associated risk factors), and any applicable state laws around screening or treatment (e.g., [prenatal syphilis screening laws](#) or [expedited partner therapy](#) (EPT)). It is also important to remind providers to report cases in a timely manner.
 - ii. Your emergency preparedness or communicable disease colleagues or your regional STD Clinical Prevention Training Center may be able to help you reach providers to alert them of outbreaks, as well as screening and treatment recommendations.
 - b. Provide presentations and educational opportunities, including Grand Rounds, to local providers.
 - i. Include information about the outbreak, risk groups, screening recommendations, and treatment guidelines.
 - ii. Partner with organizations that can provide continuing education units to help increase interest and attendance.
 - iii. Include provider education opportunities and resources, including links to your regional STD Clinical Prevention Training Center.
 - c. Maintain relationships with healthcare facilities and providers, especially those in particular specialties (e.g., OB/GYN, HIV care, adolescent medicine) to understand current practices regarding screening, diagnosis, and treatment of patients and their partners. This could be a way to identify places that may need additional education or resources.
 - d. Consider setting up a phone line for providers to call if they have questions about clinical management.
2. Public health – Ensure surrounding counties and states are aware of the outbreak, as they may also see an increase in cases or use of STI clinic facilities. Options include [Epidemic Information Exchange \(Epi-X\) notifications](#) or communication through CSTE. You should also alert your CDC STI project officer to the situation. See the STI Outbreak Response Plan Guide for more specifics.
 - a. Establish an outbreak response team, identify a coordinator, and hold regular meetings. The team should include STI program staff, epidemiologists or data analysts, disease investigation services

staff, health department clinical staff, and health department leadership. You may also want to involve key staff from partner organizations that will be involved in the outbreak.

- b. Consider working within your existing incident management system or including emergency response staff on the outbreak response team.
3. Broader community – It is important to alert the affected community to their potential increased risk for STDs during an outbreak. Targeting your messages and activities to the affected population can help minimize the possibility of stigmatizing specific persons or communities at risk. It is important to ensure that stigmatizing language is not used, even when communicating with the target population. Acquaint people with the symptoms and consequences of the disease, encourage condom use and safer sex approaches, promote screening, stress the importance of early treatment and partner notification, raise awareness about the [location of screening and treatment centers](#), and consider establishing a public hotline and/or an email inquiry address to direct people when there are further questions. Example community campaigns are available from the [CDC website](#).
 - a. Alert community leaders (e.g., mayors, tribal leaders, community-based organizations, or influential individuals from the at-risk population).
 - b. Update your website to include information about the outbreak and resources for patients and providers. [CDC's website](#) has content you can link to from your website.
 - c. Consider a press release.
 - d. Consider advertising in areas where you can reach the affected population (e.g., bus stops or shelters if outbreak is occurring in a specific location, or on social media sites with target populations).

Ensure Effective Partner Services

1. Review current partner service activities. Review key partner service indicators (e.g., interview index, partner index, treatment index, exam rate, and disease intervention index). Explore the reasons behind lower-than-expected indices and options for increasing effectiveness in areas where partner service indicators show room for improvement.
2. Consider performing cluster and social contact interviews to identify individuals that could benefit from screening or preventative treatment.
3. Explore how providers handle partner services and stress the importance of providers relaying diagnoses to patients, the need for treatment of partners, and the importance of offering EPT (if legal in your state).
4. Conduct “chalk talks” or case conferences with DIS and clinical, epidemiology, surveillance, and program management staff to coordinate, prioritize, and gather information on cases that could be useful for prevention efforts.
5. Review your disease intervention priorities (see section 2c. of the [STI Outbreak Response Plan Guide](#) for more information).
6. Consider field testing and treatment if populations are hard to reach or are unable to come to clinics. Consider incorporating other testing or service provision that may be appropriate for the response (e.g., HIV, HBV, HCV, and/or pregnancy testing and HIV pre-exposure prophylaxis).
7. Consider cross-training health department staff on CDC Train's [DIS Fundamentals Training](#) and [DIS Training Plan with Outbreak Response](#), online training modules for providers who conduct all aspects of STI/HIV Disease Intervention Services. These are designed for Partner Services professionals of all experience levels.

8. Consider training staff with [CDC's toolkit](#) that explores using technology-based platforms to enhance HIV and STI partners services to trace and contact people potentially exposed to these infections.
9. Ensure partners are informed of their exposure and tested and treated (including presumptive treatment when indicated) according to the [CDC STI Guidelines](#).
 - a. Presumptive treatment of associates/social network contacts may also be advisable in certain circumstances.

Provide Effective Clinical Services

1. Use the CDC STI Treatment Guidelines to ensure correct staging and treatment.
2. Ensure providers are screening the populations at highest risk, as well as performing appropriate laboratory testing and correctly interpreting results.
3. Ensure providers are reporting properly to the state surveillance system.
4. Offer provider education activities around STI screening, diagnosis, treatment, taking a sexual history, and partner treatment.
5. Determine if there are barriers to patients receiving screening and care. Do STI clinic hours need to be expanded? Is there adequate availability of providers? How are patients scheduled for clinic—appointments, walk-ins, or a combination? Does this create a barrier to patient attendance? Could there be value in mobilizing services if outbreak is in a rural or remote area (e.g., using mobile health units)? Are there insurance or payment issues? Are there language or cultural barriers?
6. Assess prenatal syphilis screening and expedited partner services laws. Determine if they should be changed (permanently or temporarily), and attempt to raise clinician's awareness of the laws.
7. Ensure prenatal syphilis screening is occurring per any state legal requirements. The CDC STI Treatment Guidelines recommend prenatal syphilis screening at first visit and again in the third trimester for all pregnant women, and at delivery if it is determined that the woman is at high risk or lives in an area of high syphilis morbidity.
8. For syphilis, ensure Bicillin (Benzathine penicillin G) supply is adequate and establish an inventory system to monitor supply. It may be necessary to set up a delivery system to providers who don't have Bicillin on hand or look for ways to minimize breaks in care. Review cases where Bicillin is not the treatment provided to determine the reasons.

Enhance Case Finding

1. Consider using information from case investigations to identify core populations, healthcare facility where diagnosing/testing takes place, locales where patients are meeting sex partners, geographic location, and socioeconomic variables to inform screening events, community awareness campaigns, or provider education.
2. Consider identifying high-risk venues or populations for targeted screening events (e.g., jails, treatment centers, known drug houses, bathhouses, bars and clubs, and homeless shelters and encampments).
3. Consider encouraging healthcare facilities to institute screening guidelines (e.g., with electronic medical record prompts).
4. As appropriate, consider whether incentives may be necessary for clients and their partners (e.g., for transportation to healthcare facilities).

Resources

[CDC's STI Treatment Guidelines](#)

[Community campaign examples](#)

[CSTE's Syphilis Outbreak Detection Guidance](#)

[Epidemic Information Exchange \(Epi-X\)](#)

[Expedited Partner Therapy](#) (including legal status)

[Location of screening and treatment centers](#)

[National Network of STD Clinical Prevention Training Centers](#)

[DIS Fundamentals Training Plan](#)

[DIS Training Plan with Outbreak Response](#)

[Prenatal Syphilis Screening Laws](#)

[STD Program Evaluation Tools and Trainings \(STD PETT\)](#)

[Toolkit for Technology-Based Partner Services](#)

[STI Outbreak Response Plan Guide](#)

[STI Fact Sheets](#) and [Communication Resources](#)

Manuscripts describing prior STI outbreak detection and responses

- Multi-state syphilis outbreak among American Indians, 2013 to 2015. Bowen V et al. Sex Transm Dis 2018 Oct;45(10):690-695. [PMID: 30204746](#)
- An ongoing outbreak of heterosexually-acquired syphilis across Teesside, UK. Acheson P et al. Int J STD AIDS 2011 Sep;22(9):514-6. [PMID: 21890548](#)
- Syphilis outbreak among American Indians – Arizona, 2007–2009. MMWR 2010 Feb;59(06);158-161. [PMID: 20168294](#)
- Guilford County's syphilis elimination program: People Stopping Syphilis Today (PSST). Green M and Lucas JP. N C Med J 2006 Sep-Oct;67(5) 378-80. [PMID: 17203641](#)
- Syphilis outbreak assessment. Finelli L et al. Sex Transm Dis 2001 Mar;28(3):131-5. [PMID: 11289193](#)
- Primary and Secondary Syphilis Among Men Who Have Sex with Men – New York City, 2001. CDC. MMWR 2002 Sept 27;51(38);853-6. [PMID: 12363336](#)
- Outbreak of Syphilis Among Men Who Have Sex with Men – Southern California, 2000. CDC. MMWR. 2001 Feb 23;50(7): 117-20. [PMID: 11393490](#)
- Resurgent Bacterial Sexually Transmitted Disease Among Men Who Have Sex with Men – King County, Washington, 1997-1999. CDC. MMWR 1999 Sept 10;48(35):773-7. [PMID: 11283546](#)
- Outbreak of Primary and Secondary Syphilis – Guilford County, North Carolina, 1996-1997. CDC. MMWR 1998 Dec 18;47(49): 1070-3. [PMID: 9879632](#)
- Syphilis Control: The historical context and epidemiology basis for interrupting sexual transmission of *treponema pallidum*. Cates W et al. Sex Transm Dis 1996 Jan-Feb;23(1):68-75. [PMID: 8801646](#)
- Outbreak of Primary and Secondary Syphilis – Baltimore City, Maryland, 1995. CDC. MMWR. 1996 Mar 1;45(8): 166-9. [PMID: 8596531](#)

- Increases in Unsafe Sex and Rectal Gonorrhea Among Men Who Have Sex with Men – San Francisco, California, 1994-1997. CDC. MMWR 1999 Jan 29;48(03);45-48. [PMID: 9935141](#)
- Gang-Related Outbreak of Penicillinase-Producing *Neisseria Gonorrhoeae* and Other Sexually Transmitted Diseases – Colorado Springs, Colorado, 1989-1991. CDC. MMWR. 1993 Jan 22;42(02);25-28. PMID: 8419788.
- An outbreak of syphilis on an Indian reservation: descriptive epidemiology and disease-control measures. Gerber AR et al. Am J Public Health 1989 Jan;79(1):83-5. [PMID: 2909191](#)

Manuscripts reviewing specific STI outbreak interventions

- Control of epidemic early syphilis: the results of an intervention campaign using social networks. Engelgau MM et al. Sex Transm Dis 1995 Jul-Aug;22(4):203-9. [PMID: 7482101](#)
- Lessons learned on the implementation of jail syphilis screening in Nashville, Davidson County Jail, 1999-2005. Burke R and Rhodes J. Sex Transm Dis 2009 Feb;36(2 Suppl):S14-6. [PMID: 17898676](#)
- Identifying likely syphilis transmitters: Implications for control and evaluation. Khan RH et al. Sex Transm Dis 2006 Oct;33(10):630-5. [PMID: 16601660](#)
- Syphilis testing in association with gonorrhea/chlamydia testing during a syphilis outbreak. Rosenman MB et al. Am J Public Health 2004 Jul;94(7):1124-6. [PMID: 15226131](#)
- An epidemic of congenital syphilis in Jefferson County, Texas, 1994-1995: inadequate prenatal syphilis testing after an outbreak in adults. Southwick K et al. Am J Public Health 1999 Apr;89(4):557-560. [PMID: 10191801](#)
- Public health intervention in a cocaine-related syphilis outbreak. Hibbs JR and Gunn RA. Am J Public Health 1991 Oct;81(10):1259-62. [PMID: 1928522](#)