2021 DC Public Health Case Challenge

Addressing Infectious Diseases Using a Population Health Approach:

Prevention and Control of Bacterial Sexually Transmitted Infections in Young Adults 18–24

NATIONAL ACADEMY OF MEDICINE
Leadership • Innovation • Impact | for a healthier future

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Table of Contents

Acknowledgments

The authors express their appreciation to Georges Benjamin (Executive Director, American Public Health Association) and Jeffrey Crowley (Program Director, Infectious Disease Initiatives, O'Neill Institute for National and Global Health Law, Georgetown University) for reviewing the case and providing valuable feedback. In addition, the authors also thank National Academies of Sciences, Engineering, and Medicine (NASEM) staff from the Board on Population Health and Public Health Practice for their guidance during case development: Amy Geller (Senior Program Officer), Alina Baciu (Senior Program Officer), and Sophie Yang (Research Associate).

Disclaimer

All characters and organizations described in the case are fictional and do not reflect the views of actual organizations or specific individuals. The case scenario is complex and does not necessarily have a single correct or perfect solution, thus encouraging teams to develop a judicious balance of creative, interdisciplinary, and evidence-based approaches. The authors of this case study have provided facts and figures within the case and appendixes with resources and references to help teams create their solutions. The data provided are derived from independent sources, may have been adapted for use in this case, and are clearly cited such that teams can verify or contest the findings within their recommendations whenever pertinent. Teams are responsible for justifying the accuracy and validity of all data and calculations used in their presentations and supporting their assertions in front of a panel of subject matter experts who will serve as judges representing different stakeholders.

Instructions

Task: Develop a feasible and creative proposal of an intervention or interventions that will aid in the prevention and control of bacterial sexually transmitted infections (STIs), specifically among young adults ages 18–24 in Washington, DC. Present your proposed solution(s) to address the challenge at the Case Challenge competition to be held on October 29, 2021.

Scope: The proposal is limited to a budget of $2.5 million USD to be used during a 5-year span. Your proposal and presentation should specify which sector(s), groups of people, and/or organizations your intervention(s) will engage and provide a justification for these selections. Staff salaries for the intervention should be covered within the allowed budget.

Case information: The case includes some initial background statistics and information relevant to the case topic. However, in your presentation, you do not need to address all the information presented in the case. Rather, you can use the provided materials as a reference to help guide your response.

Outside resources: Teams should also consider outside resources for a deeper understanding of the problem and to develop a stronger proposal. However, registered team members must generate the case solution independently. Faculty advisors and other individuals who serve as a resource should not generate ideas for the case solutions but may provide relevant supportive

information, guide students to resources, and offer feedback on students' ideas and proposals for case solutions and recommendations and on draft slides/practice presentations. See Appendix B for a list of relevant resources.

Judging: Refer to the judging rubric (see Appendix E) for the criteria on which you will be assessed. Judges are drawn from organizations working with DC residents, academic and clinical medicine, and other nonprofit organizations.

If you have questions about the case, please e-mail Sophie Yang (syang@nas.edu) before 9:00 a.m. on Thursday, October 28, 2021. She will forward your question and the answer to all the participating teams.

On the day of the presentation, please remember the following:

- Arrive at the National Academy of Sciences building (2101 Constitution Avenue, NW, Washington, DC; entrance on C Street) between 8:00 a.m. and 8:30 a.m. on October 29, 2021.
- The security guard will ask to see your ID and COVID vaccination card (either hard copy or a clear photo of the card) and direct you to the auditorium to check in.
- Bring a copy of your presentation in PowerPoint format on a flash drive, and give it to the Case Challenge organizers by 8:30 a.m.
- Your presentation should be no longer than 15 minutes and will be followed by 10 minutes of Q&A from the judges.
- Dress professionally, as you are representing your school in front of an audience. However, please do not wear anything that would identify your school.

For more information on the Case Challenge guidelines and logistics, refer to the guide in Appendix G for student teams and faculty advisors.

We are looking forward to hearing your ideas for contributing to a thriving DC community. Thanks for participating, and have fun!

Case

Addressing Infectious Diseases Using a Population Health Approach: Prevention and Control of Bacterial Sexually Transmitted Infections (STIs) in Young Adults 18–24

Problem Statement[1]

The Centers for Disease Control and Prevention (CDC) estimate that in 2018, one in five people in the United States had an STI on any given day, with approximately 68 million estimated infections that year.[2] Many cases of STIs are often undiagnosed and unreported, since

[1] Throughout the case, citations are provided as footnotes. For a complete list of these citations, see Appendix C.
[2] CDC: https://www.cdc.gov/nchhstp/newsroom/2021/2018-STI-incidence-prevalence-estimates-press-release.html

infections are often asymptomatic (especially in women).[3] U.S.-reported case rates of the three most common reportable STIs (chlamydia, gonorrhea, and syphilis) have been increasing over the past two decades (see Figure 1). Since 2000, the overall chlamydia case rate has doubled, gonorrhea has increased nearly 1.4-fold, and primary and secondary syphilis is up 5-fold.[4]

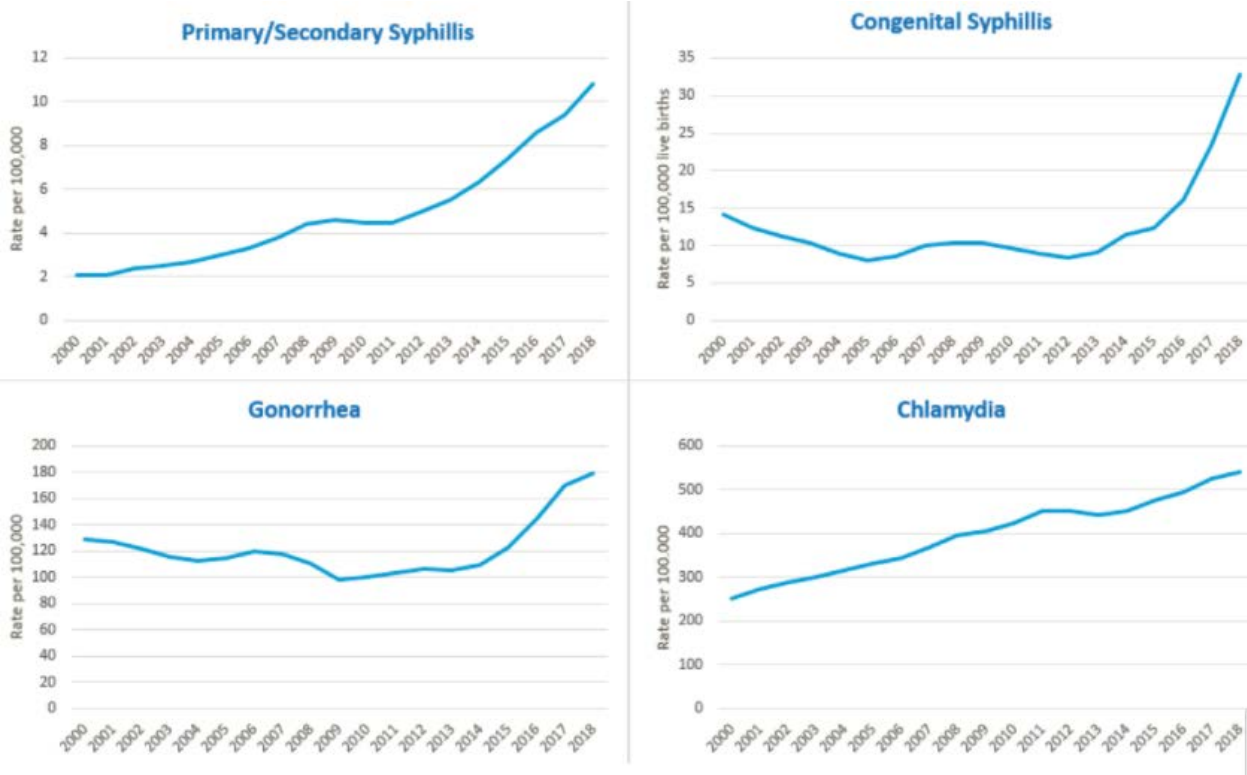


Figure 1: *Notifiable sexually transmitted infections—rates of reported cases per 100,000 population (per 100,000 live births for congenital syphilis), United States, 1999–2018.*
SOURCE: NASEM, 2021, data from CDC Atlas Plus: STD Data. https://gis.cdc.gov/grasp/nchhstpatlas/charts.html (accessed January 29, 2021).

Untreated STIs can have severe health consequences, including chronic pelvic pain, infertility, miscarriage or newborn death, and increased risk of human immunodeficiency virus (HIV) infection, genital and oral cancers, and neurological and rheumatological effects.[5]

Young adults aged 15–24 years account for about 25 percent of the sexually active population but approximately 45.5 percent of all reported STIs annually.[6]

[3] NASEM (National Academies of Sciences, Engineering, and Medicine). 2021. *Sexually transmitted infections: Adopting a sexual health paradigm.* Washington, DC: National Academies Press. Available for free PDF download, along with other relevant materials, at nationalacademies.org/PreventSTIs.
[4] Ibid.
[5] CDC: https://www.cdc.gov/nchhstp/newsroom/2021/2018-STI-incidence-prevalence-estimates-press-release.html
[6] CDC Fact Sheet: https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/2018-STI-incidence-prevalence-factsheet.pdf

Structural inequities related to sexual orientation, gender identity, race and ethnicity, and national origin, among others, are pervasive, increase STI risk, perpetuate stigma, and undermine access to STI prevention and treatment among marginalized populations.[7] For example, gay, bisexual, same gender loving, and other men who have sex with men (MSM) represent an estimated 2–3 percent of the adolescent/adult population but account for 54 percent of reported primary and secondary syphilis cases.[8]

STI prevention, control, and treatment has historically focused on individual-level behavior and behavior-change models, blaming or shaming individuals, which further contributes to the stigma and shame surrounding STIs.[9] However, many interconnected social and structural determinants of health contribute to sexual health. To address stigma and promote sexual health awareness, a paradigm shift to a sexual health approach through integration into existing broader health education and priorities is needed.[10] Successfully applying a sexual health framework necessitates multipronged and multilevel evidence-based sustained approaches that integrate individual, interpersonal, institutional, community, and structural facilitators.[11]

Funding Announcement

The Foundation for Sexual Health is excited to announce a grant funding opportunity for nonprofit organizations working to address prevention and control of bacterial sexually transmitted infections (STIs) in residents, specifically young adults ages 18–24, of Washington, DC. Since the foundation already funds numerous interventions focused on addressing viral STIs, such as HIV/AIDS or viral hepatitis, this grant will be applied to programs and interventions centered around improving the sexual health of young adults with a focus on bacterial STIs. Note that applicants may choose to focus on 18–24-year-olds living in Washington, DC overall or on one or more specific subgroups within that age range.

The foundation solicits submissions through an open, competitive process from eligible nonprofit organizations working to address prevention and control of bacterial STIs. Applicants will present their proposals to the foundation's panel of reviewers on October 29, 2021. For more detailed judging criteria, see Appendix E.

This grant supports activities over a 5-year period and has a total budget of $2.5 million. The award will go to the organization that develops a multifaceted, interdisciplinary, innovative, and evidence-based solution. A successful application will provide a feasible and sustainable intervention that the organization can implement readily or with minimal additional capacity. Proposals should prioritize the specific health effects and causal factors to be addressed, justify the choice of intervention(s), specify the implementation and evaluation strategy, and provide budget estimates for the use of funds within the time frame specified in the request for proposal

[7] NASEM: https://www.nap.edu/read/25955/chapter/2#18
[8] Ibid.
[9] NASEM: https://www.nap.edu/read/25955/chapter/1#xvi
[10] Ibid
[11] Ibid

(RFP). Applicants also should consider the structural and historical factors that influence causal factors and apply a comprehensive sexual health approach. Note that the foundation requires person-first inclusive language in all of its applications.

A funded grant from a different division of the foundation focused on reducing disparities in cancer and chronic disease by preventing tobacco use in African American adolescents. The successful grant application proposed a multilevel intervention with a community-based participatory research approach, along with arts and sports programming for youth in Washington DC's Wards 7 and 8.

The Challenge

You work for a nonprofit organization in Washington, DC that focuses on addressing infectious diseases using a population health approach, and the director of your organization has tasked you with forming a proposal team and applying for the grant.

The deadline for submission is in 2 weeks. When writing your proposal, note that your director has given approval for your team to hire qualified personnel as needed to help implement your proposed solution(s) if funded. The salaries of any additional personnel must be within the total funding allotted and accounted for in your budget estimates.

Proposals should be innovative, feasible, and sustainable. They will be evaluated by representatives from relevant DC government agencies, local policy makers (if appropriate), potential partner organizations, and community stakeholders.

Case Scenarios

The following scenarios provide examples of individuals who are affected by the abovementioned problem and could benefit from an intervention developed by your team. Although the scenarios are fictional, they draw from circumstances faced by DC residents, with an emphasis on the most marginalized and underserved groups. You are not limited to directing your solution(s) to the specific issues presented in these examples. Rather, these examples are intended to illustrate and personalize some of the different issues experienced by individuals as they navigate issues related to their sexual health.

<u>Scenario 1:</u>

Albert S. (he/him) is a 23-year-old Black man living in Southeast DC with his parents, who are both nurses, and two brothers. He makes extra money by working additional shifts at local bars and bartending at various private gatherings. Since these shifts take up most of his time, Albert prefers to use mobile dating apps to meet and socialize. Albert currently has health coverage through his parents' insurance. Albert does not feel it is necessary to discuss his sexual activity with his doctor. He believes that he practices safe sex, and since he is unaware that urologists provide sexual and reproductive health services to men, he has not made routine visits about

his sexual health a priority. He also has high copays and avoids appointments unless he feels really sick. Instead, he usually visits the health department in Northwest DC for his medical needs. He has also never been screened for STIs and is unsure what to do when he is contacted by a former partner regarding a recent chlamydia diagnosis. During his visits to the health department, Albert did not have positive experiences and felt that the nurses were not very helpful and did not provide information that answered his questions. He often feels discouraged from accessing health care services, since most of the providers were white and appeared to be disengaged during his interactions.

Scenario 2:

Diana T. (she/her) is a 19-year-old transgender (trans) woman and works part time as a medical assistant while attending community college. She is also a volunteer member of her college's Student Diversity and Inclusion Board, where she is responsible for consolidating community resources for LGBTQIA students on a variety of topics. She noticed that information on sexual health issues was insufficient and resources for LGBTQIA students were not readily available. Additionally, several students shared with her the difficulty they experienced in locating health care resources, including providers, STI testing sites, and educational materials on sexual health. Diana also has had personal experience with difficulties finding a primary care provider who understands that her gender identity is part of her overall health and wellbeing.

Scenario 3

Julia C. (she/her) is an 18-year-old first-semester college student in Washington, DC. Leaving her hometown and moving to DC for college was a big step in her life, as she was raised Catholic in a small town by her Latino family, where she sometimes felt sheltered from the world around her. Her parents and older siblings never discussed with her anything related to her sexual health and wellbeing, as they were all busy working to support the family and uncomfortable with the topic. She has been suffering from anxiety, and her growing concern about her sexual health is contributing to it, as she is now planning on being sexually active and has never talked about this decision at home. Julia feels overwhelmed, lost, and confused trying to navigate her relationships and new life at college. She knows that it would be wise to undergo regular screening for STIs but is incredibly uncomfortable asking for help and cannot bring herself to seek care through the resources that she sees advertised across her campus (i.e., an appointment at the health center). Julia has a desire to be proactive in regards to her sexual health, but her upbringing, combined with moving to a big, new city, is making it difficult for her to do so, ultimately negatively impacting her mental health.

Public Health Model

Individual health is influenced by many factors (also called the "social determinants of health" or "drivers of health") that go beyond access to health care and individual actions. Persistent health inequities are a key driver of disparities in individual health outcomes. Health inequities are the systematic, avoidable differences in the opportunities that groups of people have to achieve optimal health, leading to unfair and unjust differences, or disparities, in health outcomes.[12] CDC states that the social determinants of health are the conditions in the environment in which people live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.[13] These factors include education, employment, health systems and services, housing, income and wealth, the physical environment, public safety, the social environment, and transportation.

When implementing public health interventions, it is important to consider the relationship between a given intervention and these social or environmental factors.

Tiered Model of Public Health Prevention

Public health interventions often focus on prevention, and this approach applies in working to address STIs. The tiered model of prevention is outlined below.

i. Primary prevention

Primary prevention refers to interventions that are targeted toward an individual or population to prevent disease from ever occurring. Primary prevention activities include limiting risky exposure or increasing immunity, such as vaccination, or, for STIs, using condoms during partnered sexual activities, often in the form of behavioral interventions.

ii. Secondary prevention

The main emphasis in secondary prevention is on early detection of disease. The target is individuals who appear healthy but have subclinical (not yet symptomatic) forms of disease in which pathologic changes are occurring in the body. Although asymptomatic, subclinical STIs can be diagnosed through a doctor's visit. The focus is STI identification and treatment, with the aim to impede the progression from infection to disease.

iii. Tertiary prevention

Tertiary prevention targets both the clinical and outcome stages of a disease. At this stage, individuals are symptomatic. Tertiary prevention aims to reduce the severity of the presenting disease and reduce long-term complications.

---

[12] See Braveman, 2006 on Health Disparities and Health Equity https://www.annualreviews.org/doi/10.1146/annurev.publhealth.27.021405.102103?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed

[13] NASEM: https://www.nap.edu/read/24624/chapter/5#100

The Initial Reproductive Health Visit: https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2020/10/the-initial-reproductive-health-visit

Social-Ecological Model

The social-ecological model of health (SEM) is a conceptual model that represents the different levels of influence on health. At the center sphere of the model is the *individual*, which is surrounded by the spheres of *interpersonal, organizational, community,* and *public policy.*

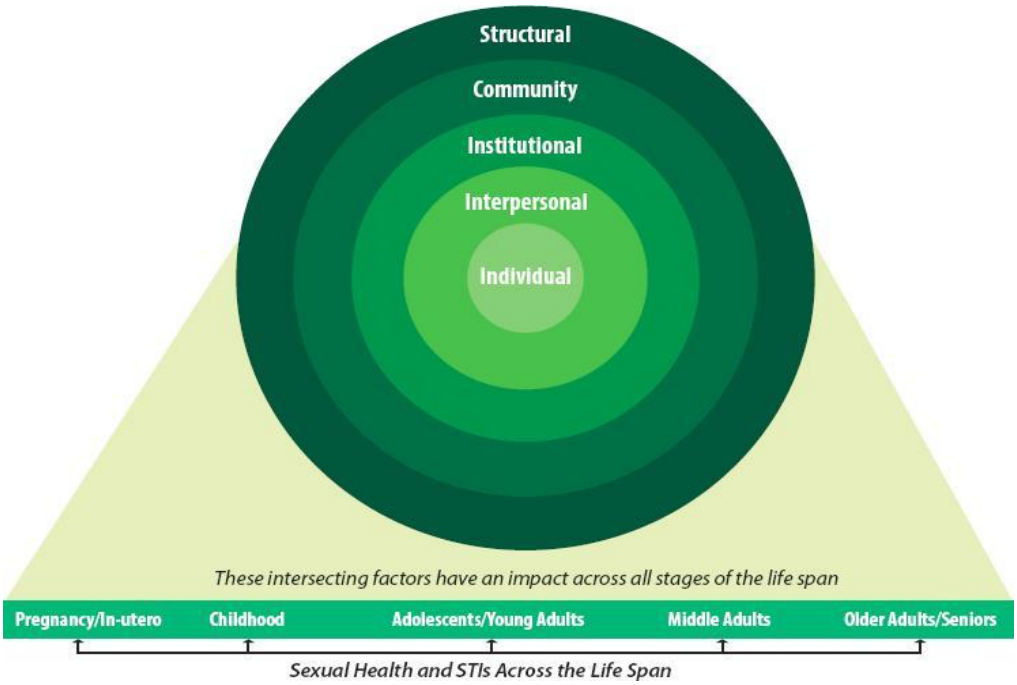


***Figure 2**: Modified social-ecological framework of sexual health and sexually transmitted infection (STI) prevention, control, and treatment. SOURCE: NASEM, 2021: https://www.nap.edu/read/25955/chapter/2#5*

NOTE: This figure illustrates the multiple interrelated influences on STI risk, prevention, health care access, delivery, and treatment across the lifespan.

The *individual* level in the center of the SEM shows the individual as the target of an intervention. Any intervention focusing on STIs in DC needs to consider the individual level to be where individual factors—such as knowledge, attitudes and beliefs, and self-efficacy—are emphasized. For example, it would be pertinent to focus on sexual behaviors (such as using a condom), psychosocial development (such as communication skills), and substance misuse (such as binge alcohol use, club drug use).

The *interpersonal* level focuses on entities that directly surround an individual, such as family, friends, and social networks (e.g., perceived peer norms for condom use, social media and other interpersonal digital communications, and patient–provider interactions). At this level, an intervention should address behavior change through these entities via a focus on social and cultural norms.

The *institutional* level includes pertinent institutions, such as health care systems, local public health departments, and community-run or -based clinics that have key roles to play in STI prevention and control (for example, health system policies that promote gender equity in health care delivery or school policies that facilitate/hinder school-based sexual education).

The *community* level illustrates the level of interventions by community organizations to provide trusted services and support. This level also includes cross-sector and other partnerships among relevant stakeholders to address the public health issue of STIs within their community (e.g., public transportation availability, neighborhood safety, neighborhood STI prevalence).

The *structural (also known as the public policy)* level refers to actions by federal, state, and local governments that support the implementation of policies that promote health (e.g., political priorities for increasing sexual health care services, societal resources for provider training and workforce career development, and social policies and laws that address structural inequities, such as structural sexism or anti-LGBTQ+ structural stigma). This broadest level of the SEM illustrates the most transformative and impactful level for action.

Surveillance

Currently, the CDC STI surveillance systems report data on chlamydia, gonorrhea, syphilis, and congenital syphilis.[14] However, they have significant limitations that may lead to erroneous conclusions about STI root causes, outcomes, and inequities and hinder the ability of federal authorities to monitor STI trends and provide the public with actionable data to identify emerging issues in a timely manner.[15]

About DC's Eight Wards

Washington, DC is administratively organized into eight wards, each home to approximately 75,000 residents. Each ward has its own history, neighborhoods, and diverse populations, which is critical to consider when planning public health interventions.

Many people who work in DC live in surrounding states and vice versa, creating challenges to ensuring continuous access to prevention and care services for STIs.

[14] CDC: https://www.cdc.gov/std/statistics/2019/default.htm
[15] NASEM: https://www.nap.edu/read/25955/chapter/4#55

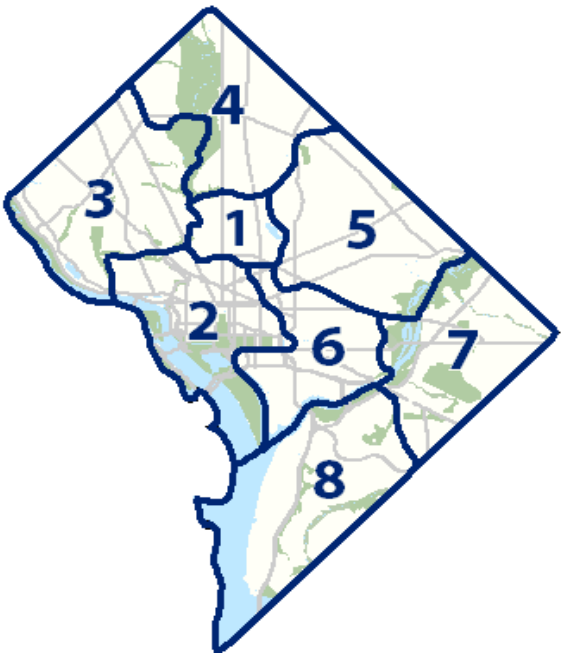


Figure 3: *Map of DC wards.*
SOURCE: https://planning.dc.gov/whatsmyward

Ward 1
Ward 1 is home to the neighborhoods Columbia Heights, Adams Morgan, U Street Corridor, Mount Pleasant, and Pleasant Plains.

Ward 2
Ward 2 is largely considered to be the area of DC where tourists and visitors spend the most time, as it is home to the White House, National Mall, monuments, and museums. It also includes the Federal Triangle and Central Business District, where the highest concentration of jobs within the city are located, and Georgetown, Foggy Bottom, West End, Kalorama, Dupont Circle, Logan Circle, Shaw, and Mount Vernon Square.

Ward 3
Ward 3 is a very residential area, home to the neighborhoods Chevy Chase, Tenleytown, Van Ness, Woodley Park, Foxhall Village, and Glover Park.

Ward 4
Ward 4 is located in the northeastern most part of the city, also largely residential, and home to the neighborhoods Takoma, Petworth, Brightwood, Fort Totten, Lamond-Riggs, Barnaby Woods, and Hawthorne, as well as portions of Rock Creek Park.

Ward 5
Ward 5 ranges from residential neighborhoods to development and industrial use areas and is home to the neighborhoods Brookland, Michigan Park, Woodridge, Eckington, Bloomingdale, and NoMA, as well as sites such as the National Arboretum.

Ward 6

Located in the heart of the city, Ward 6 is the only one to include parts of each of the four quadrants (NW, SW, SE, NE). It is home to a myriad of neighborhoods. It covers Downtown, Penn Quarter, Gallery Place, and Chinatown to the west and the Southwest Waterfront and Capitol Riverfront, anchored by Nationals Stadium. The center of Ward 6 contains the historic Capitol Hill neighborhood.

Ward 7

Ward 7 is home to the neighborhoods Deanwood, Capitol View, Benning Heights, Marshall Heights, Penn Branch, Hillcrest, Randle Highlands, and River Terrace. It has extensive waterfront located along the Anacostia River, making this ward diverse, as each riverfront neighborhood has its own unique identity.

Ward 8

Ward 8 is home to the historic Anacostia neighborhood, which was founded as Uniontown in 1854, making it one of the oldest neighborhoods in the city. It also includes Congress Heights, Washington Highlands, Bellevue, and Walter Washington Estates.

Historical Disparities Between the Wards

The District of Columbia Office of Planning acknowledged in a statement that "our city and the practice of planning have inherited approaches that were built around systems of racism."[16] Due to the effects of historical segregation, DC residents continue to experience extreme disparities based on where they live. Wards 7 and 8 are 90 percent Black, whereas the city average is 47 percent. This figure highlights the segregated status of Washington DC, which shows that racial disparities continue to be "a root cause for many of the disparate outcomes residents continue to experience."[17] Additionally, white households in DC have a net worth 81 times greater than Black households, highlighting the persistent disparities in income and wealth. There are vast health disparities among the wards, starkly demonstrated by the fact that Ward 8 residents have a life expectancy that is 15 years less than that of residents of Ward 3.[18] When planning an STI intervention that will be implemented across DC, it is critical to ensure that the intervention design considers the lived experience of residents and communities, taking care to dismantle the multigenerational, historic barriers that allow these health disparities to persist.

[16] What's Happening at the DC Office of Planning?: https://planning.dc.gov/whats-happening-dc-office-planning-july
[17] Ibid.
[18] Ibid.

Demographics Tables

Population Data for City: District of Columbia (2021 Demographics)		
Characteristics	*Persons*	*Percent of Population*
Race/Ethnicity	*717,717*	*100*
White	303,639	42.31%
Black/African American	315,098	43.90%
American Indian/Alaskan Native	2,573	0.36%
Asian	32,144	4.48%
Native Hawaiian/Pacific Islander	513	0.07%
Other	63750	8.88%
Sex		
Male	341,119	47.5%
Female	376,598	52.0%
Marital Status		
Married	179,356	30.01%
Never Married	344,974	57.73%
Divorced	49,289	8.25%
Widowed	23,920	4.00%
Ethnicity		
Hispanic	87,765	12.23%
Non-Hispanic Latino	629,952	87.77%
Age Group		
0-85+ Years Old	717,717	100.00%
18-24 Years Old	65,779	9.20%

Table 1: Population Data Summary: District of Columbia (2021 Demographics)
SOURCE: https://www.dchealthmatters.org/demographicdata?id=130951&sectionId=935

Disability Data: District of Columbia (2015 Data)	
Disability Status	***Percent of Population***
18-64 Years Old	59.80%
5-17 Years Old	6.20%
65+ Years Old	33.60%

***Table 2*:** Disability Data Summary: District of Columbia (2015 Data)
SOURCE:
https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/2015%20Disability%20Characteristics%20Among%20DC%20Residents.pdf

STIs in DC

Terminology

STI surveillance and medical data typically do not distinguish gender identity from biological sex. The distinction between the arrangements of sex organs and reproductive biology is medically relevant in the discussion of disease transmission and resulting complications. It is important to note that sex and gender are not mutually exclusive and are integrally related and influence health in different ways.[19] Reported data in this section for "men" is referencing individuals assigned male at birth based on external anatomy and biological factors, and data for "women" is referencing individuals assigned female at birth.[20]

Viral STIs

Viral STIs are not a focus of this RFP and are only briefly described. Human papillomavirus (HPV) is the most common STIs in the United States, but some of the diseases it causes, including cervical cancer, can be prevented with vaccination.[21] A vaccine also exists for hepatitis B. Other viral STIs without vaccines, such as HIV and herpes simplex virus 2 (HSV-2), can cause lifelong disease. However, often STI and HIV funding and programs are separate, and there are opportunities to develop more efficient programs that recognize the "syndemic" relationship between HIV, STIs, and viral hepatitis in an integrated way.

Bacterial STIs

Of the many bacterial STIs, only four are nationally reportable—chlamydia, gonorrhea, syphilis, and chancroid. Diagnosis of these STIs is reported to CDC and requires notification of sexual partners. Many cases go undiagnosed and unreported because they are often asymptomatic. Asymptomatic individuals may not know they are infected but can still transmit an infection to their sexual partners or offspring. These infections are both preventable and curable but, if left untreated, can lead to lifelong consequences, including infertility, chronic pain, genital and oral cancers, or systemic disease; therefore, early identification of these STIs is critical for timely treatment and resolution.[22]

Chlamydia is the most common bacterial STI in the United States. Rates have been increasing in DC since 2015, and as of 2019, DC ranked the second highest for cases per 100,000 among U.S. counties and independent cities, after Baltimore.[23] An initial chlamydia infection may manifest as dysuria (pain with urination) and/or penile or vaginal discharge, but in individuals assigned female at birth, it can progress to pelvic inflammatory disease (PID) as the infection

---

[19] Clayton, J. A., and Tannenbaum C. 2016. Reporting sex, gender, or both in clinical research? *JAMA* 316(18):1863–1864. doi:10.1001/jama.2016.16405

[20] LGBTQ Inclusion: Glossary: https://www.uwmedicine.org/provider-resource/lgbtq/lgbtq-inclusion-glossary

[21] CDC, https://www.cdc.gov/std/hpv/stdfact-hpv.htm

[22] CDC Morbidity and Mortality Report: https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf

[23] DC Department of Health, Annual Epidemiology & Surveillance Report: Data Through December 2019. District of Columbia Department of Health, HIV/AIDS, Hepatitis, STD, & TB Administration 2020. Accessed September 1, 2021 at https://dchealth.dc.gov/service/hiv-reports-and-publications.

ascends the fallopian tubes and may cause scarring and/or infertility.[24] Such scarring increases the risk of extrauterine pregnancies, which can lead to tubal rupture or miscarriage.[25] Infections transmitted via the rectum can cause rectal pain, discharge, and bleeding.[26] Untreated chlamydia can also cause reactive arthritis, manifesting as joint pain, urethritis (inflammation of the urethra), and eye inflammation.[27]

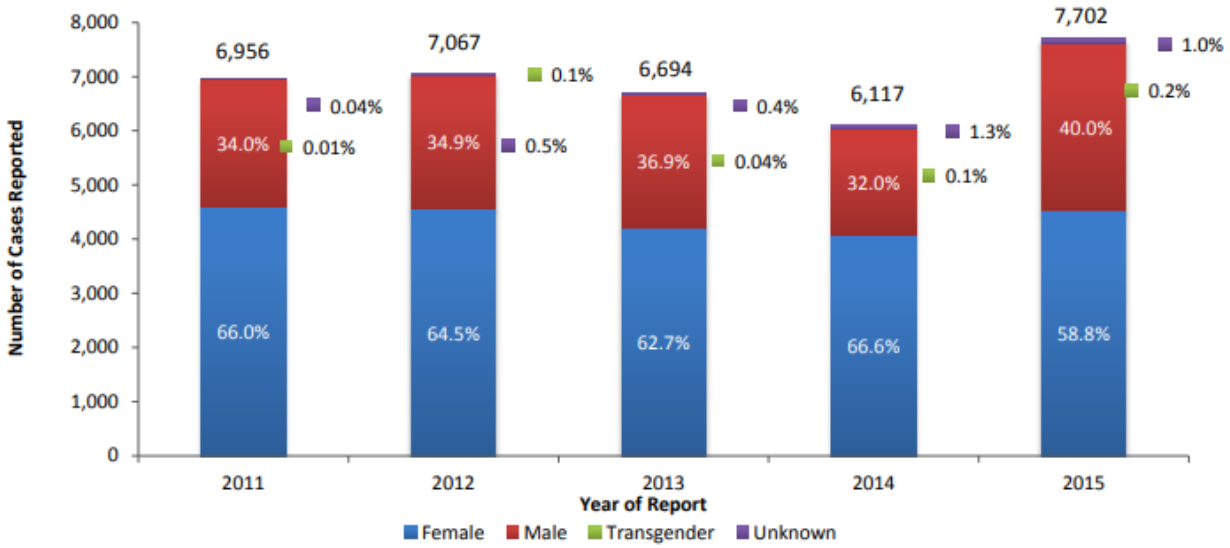
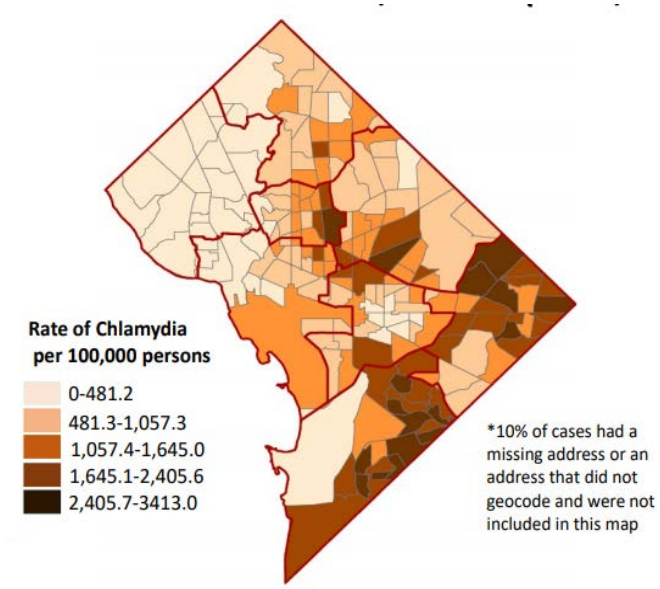


Figure 4:. Reported number of chlamydia cases by year and gender identity—District of Columbia, 2011–2015
SOURCE:
https://doh.dc.gov/sites/default/files/dc/sites/doh/page_content/attachments/2016%20HAHSTA%20Annual%20Report%20-%20final.pdf



[24] CDC: https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm
[25] ACOG: https://www.acog.org/womens-health/faqs/ectopic-pregnancy
[26] CDC: https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm
[27] Rihl, M. et al. 2006. Persistent infection of chlamydia in reactive arthritis. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1798068/

Figure 5: *Rates of Reported Chlamydia Cases per 100,000—District of Columbia, 2019 (*n = *9,337*).*
SOURCE:
https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/HAHSTA%20Annual%20Report%20%28thru%202019%29_updated%203-8-2021_0.pdf

Gonorrhea has also been increasing in DC since 2015, when 2,579 cases were reported. In 2019, diagnoses increased by 70 percent to 4,374 cases.[28] Gonorrhea manifests with similar symptoms to chlamydia, including dysuria, penile or vaginal discharge, or rectal pain, discharge, or bleeding.[29] Unlike chlamydia, it can also cause irregular vaginal bleeding between menstrual cycles.[30] Long-term effects of gonorrhea include PID in women and epididymitis in men, which can cause male infertility.[31] If left untreated, gonorrhea can spread to the blood, causing a life-threatening condition called "disseminated gonococcal infection."[32] Antibiotics are effective, but gonorrhea is manifesting an alarming antibiotic resistance.

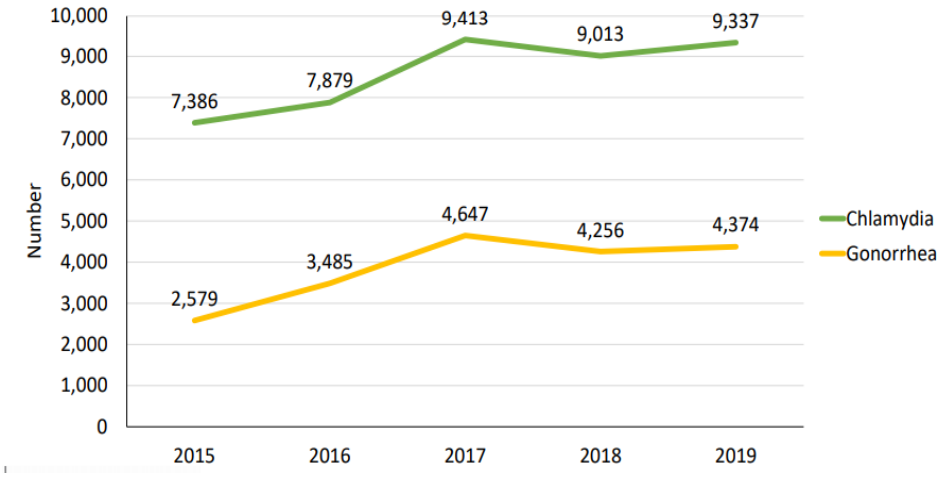


Figure 6: *Reported gonorrhea and chlamydia cases by year of diagnosis—District of Columbia, 2015–2019.*
SOURCE:
https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/HAHSTA%20Annual%20Report%20%28thru%202019%29_updated%203-8-2021_0.pdf

[28] DC Department of Health, Annual Epidemiology & Surveillance Report: Data Through December 2019. District of Columbia Department of Health, HIV/AIDS, Hepatitis, STD, & TB Administration 2020. Accessed September 1, 2021 at https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/2020-HAHSTA-Annual-Surveillance-Report.pdf

[29] CDC: https://www.cdc.gov/std/gonorrhea/stdfact-gonorrhea-detailed.htm

[30] Ibid

[31] Ibid

[32] Ibid

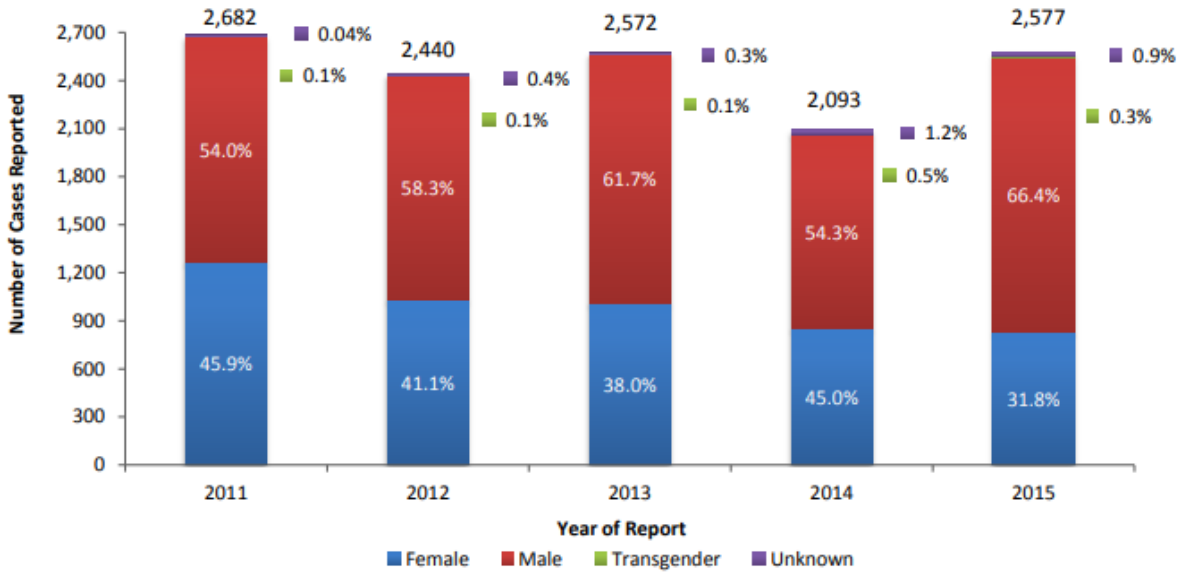


Figure 7:. Reported number of gonorrhea cases by year and gender identity—District of Columbia, 2011–2015
SOURCE:
https://doh.dc.gov/sites/default/files/dc/sites/doh/page_content/attachments/2016%20HAHSTA%20Annual%20Report%20-%20final.pdf

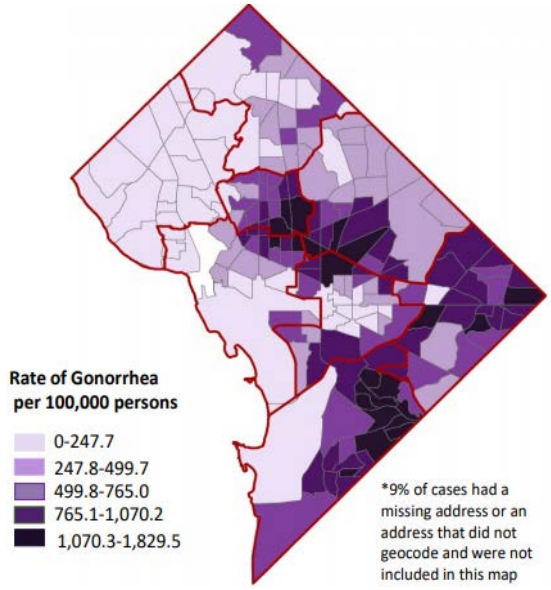


Figure 8: *Rates of Reported Gonorrhea Cases per 100,000—District of Columbia, 2019 (*n = *4,374*).*
SOURCE:
https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/HAHSTA%20Annual%20Report%20%28thru%202019%29_updated%203-8-2021_0.pdf

Cases of primary and secondary syphilis have nearly doubled in DC since 2015; DC was the sixth highest in the country among counties and independent cities in 2018, second only to Baltimore.[33] Regular self-examination can help identify the painless chancre symptomatic of a

[33] DC Department of Health, Annual Epidemiology & Surveillance Report: Data Through December 2019. District of Columbia Department of Health, HIV/AIDS, Hepatitis, STD, & TB Administration 2020. Accessed September 1, 2021 at https://dchealth.dc.gov/service/hiv-reports-and-publications.

primary syphilis infection.[34] Secondary syphilis develops a few weeks after the primary chancre heals and manifests as a rash across the trunk and palms of the hands and soles of the feet and lesions in mucous membranes.[35] Delays in treatment will result in progression to latent and tertiary syphilis, which affects the heart, brain, and spinal cord and can cause death.[36]

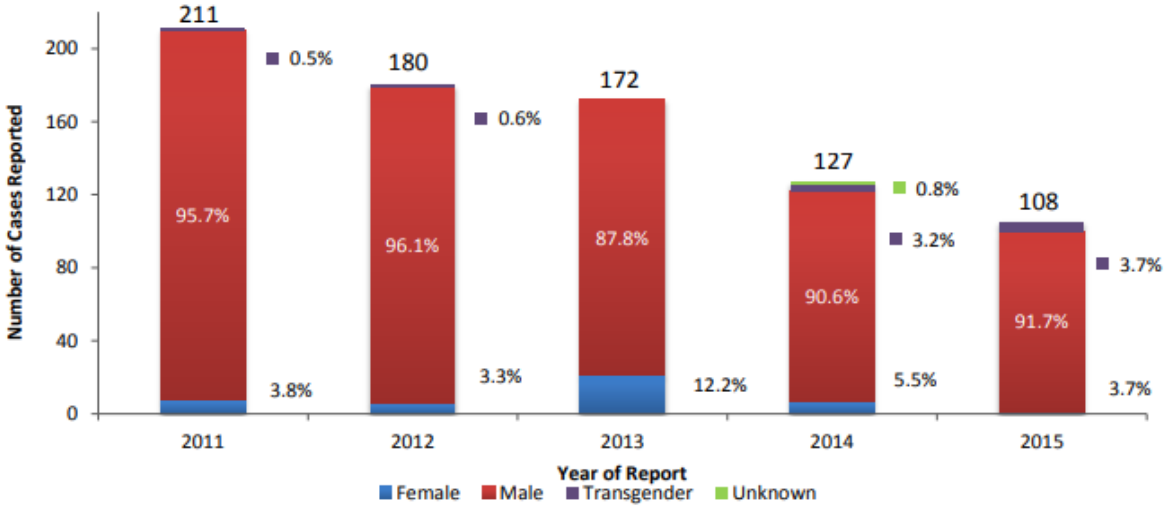


Figure 9:. Reported number of syphilis cases by year and gender identity—District of Columbia, 2011–2015
SOURCE:
https://doh.dc.gov/sites/default/files/dc/sites/doh/page_content/attachments/2016%20HAHSTA%20Annual%20Report%20-%20final.pdf

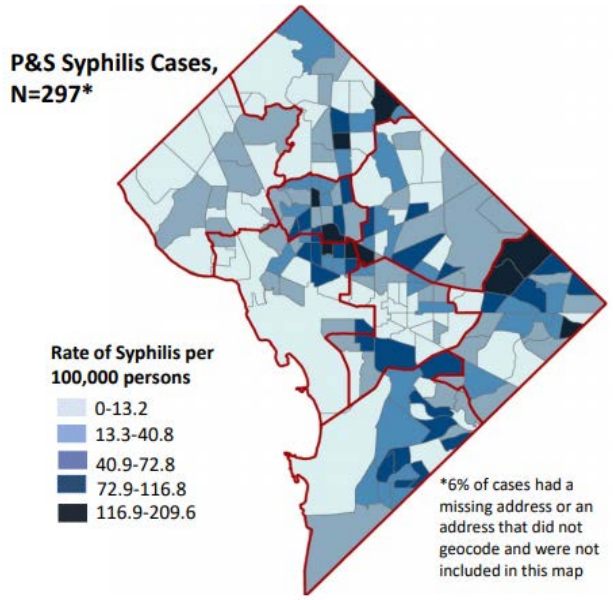


Figure 10: *Rates of primary and secondary syphilis cases—District of Columbia, 2019.*
SOURCE:
https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/HAHSTA%20Annual%20Report%20%28thru%202019%29_updated%203-8-2021_0.pdf

[34] CDC: https://www.cdc.gov/std/syphilis/stdfact-syphilis.htm
[35] CDC: https://www.cdc.gov/std/syphilis/stdfact-syphilis.htm
[36] CDC: https://www.cdc.gov/std/syphilis/stdfact-syphilis.htm

In contrast to the painless chancre of syphilis, chancroid manifests as a painful ulcer with tender genital adenopathy. Caused by the *Haemophilus ducreyi* bacteria, chancroid infections are associated more with infrequent outbreaks and are not part of the current rising epidemic of STIs driven by chlamydia, gonorrhea, and syphilis infections.[37]Treatment of chancroid infections is particularly important, as they are a risk factor for the transmission and acquisition of HIV.[38]

Individuals who are living with HIV and also have a bacterial STI are at higher risk of transmitting HIV to their sexual partners, as urethritis and genital ulcers increase the likelihood of viral shedding.[39]

Priority Populations

The emergence of priority populations results from conditions at all levels of the SEM, not only the individual level. Often, STI risk is attributed solely to individual choices, but external factors modify individual risk for contraction, transmission, and resolution of infections and disease. Priority populations with increased risk of complications or transmission of bacterial STIs include pregnant individuals, young adults and adolescents, MSM, and Black, Hispanic, and American Indian/Alaska Native populations.

Pregnancy has a risk of infection transmission to the fetus or newborn.[40] Syphilis can cross the placenta, leading to congenital syphilis.[41] Chlamydia, gonorrhea, hepatitis B, and genital herpes can be transmitted through the birth canal.[42]

National STI Data

- Young adults 15–24 represent the population with the highest case rates for chlamydia, gonorrhea, and syphilis.[43] Female young adults have the highest case rate for chlamydia, while male young adults have the highest case rates for gonorrhea and syphilis.[44] In DC, the demographics are similar, with women representing 50 percent of chlamydia cases and men representing 70 percent of gonorrhea cases and 90 percent of syphilis cases.[45] Adolescents ages 13–19 accounted for 20 percent of chlamydia

[37] NASEM. 2021. *Sexually transmitted infections: Adopting a sexual health paradigm.* Washington, DC: The National Academies Press.

[38] CDC: https://www.cdc.gov/std/tg2015/chancroid.htm

[39] CDC: https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm

[40] HHS, https://www.womenshealth.gov/a-z-topics/stis-pregnancy-and-breastfeeding#:~:text=Some%20STIs%2C%20such%20as%20syphilis,infect%20the%20baby%20during%20delivery

[41] CDC, https://www.cdc.gov/std/tg2015/congenital.htm

[42] HHS, https://www.womenshealth.gov/a-z-topics/stis-pregnancy-and-breastfeeding#:~:text=Some%20STIs%2C%20such%20as%20syphilis,infect%20the%20baby%20during%20delivery

[43] CDC, https://www.cdc.gov/std/statistics/2019/figures.htm

[44] CDC, https://www.cdc.gov/std/statistics/2019/figures.htm

[45] DC Department of Health, Annual Epidemiology & Surveillance Report: Data Through December 2019. District of Columbia Department of Health, HIV/AIDS, Hepatitis, STD, & TB Administration 2020. Accessed [access date] at https://dchealth.dc.gov/service/hiv-reports-and-publications.

cases, and young adults ages 20–29 accounted for 50 percent of chlamydia cases and 40 percent of gonorrhea cases in DC.[46]

- MSM have the highest case rates for gonorrhea and syphilis across all age groups. Men who have sex with women have the highest case rates for chlamydia until 30+, where MSM have the highest case rate.[47]

- Black men are disproportionately affected by STIs, having the highest case rates for gonorrhea and primary and secondary syphilis.[48] Black women have the highest case rate for chlamydia.[49] (This disparity is also present in DC, where 50 percent of primary syphilis cases are reported in Black individuals.[50])

- STI rates among trans women, and Black and Latina trans women in particular, are some of the highest in the United States,[51] as these groups experience discernable gendered and racialized dynamics that contribute to greater risk.

Biomedical Prevention Tools

Testing

CDC recommends regular testing, especially in the case of multiple partners.[52] However, barriers to testing, including stigma, lack of access to culturally competent health services, inability to pay health insurance copays, transportation to and from clinics/appointments, and other factors related to the social determinants of health, can interfere with preventative care.[53],[54] Point-of-care testing is preferable for immediate treatment at diagnosis but may be limited by clinic and/or provider resources and patient willingness and/or ability to wait for results.[55],[56] To increase access to testing for adolescents, DC public schools have partnered with the DC Department of Health to offer free, voluntary annual testing for chlamydia and

---

[46] Ibid

[47] CDC, https://www.cdc.gov/std/statistics/2019/figures.htm

[48] Ibid

[49] Ibid

[50] DC Department of Health, Annual Epidemiology & Surveillance Report: Data Through December 2019. District of Columbia Department of Health, HIV/AIDS, Hepatitis, STD, & TB Administration 2020. Accessed September 1, 2021 at https://dchealth.dc.gov/service/hiv-reports-and-publications.

[51] Becasen, J. S., Denard, C. L., Mullins, M. M., Higa, D. H., and Sipe, T. A. 2019. Estimating the prevalence of HIV and sexual behaviors among the US transgender population: A systematic review and meta-analysis, 2006–2017. *American Journal of Public Health* 109(1):e1–e8.
Poteat, T., Logie, C., Adams, D., Lebona, J., Letsie, P., Beyrer, C., and Baral, S. 2014. Sexual practices, identities and health among women who have sex with women in Lesotho—a mixed-methods study. Cult Health Sex 16(2):120–35.

[52] CDC, https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf

[53] HHS, https://www.hhs.gov/sites/default/files/STI-National-Strategic-Plan-2021-2025.pdf

[54] NASEM. 2021. *Sexually transmitted infections: Adopting a sexual health paradigm.* Washington, DC: The National Academies Press.

[55] Gaydos, C. A., and Melendez, J. H. 2020. Point-by-point progress: Gonorrhea point of care tests. https://pubmed.ncbi.nlm.nih.gov/32500764/

[56] NASEM. 2021. *Sexually transmitted infections: Adopting a sexual health paradigm.* Washington, DC: The National Academies Press.

gonorrhea to students.[57] Baltimore also offers a STI test kit delivery through its IwanttheKit.org program.[58] Many young adults view themselves as "invulnerable," leading to decreased testing.[59] Testing in a nonmedical environment and education paired with testing can increase receptiveness to testing and willingness to be screened.[60] Peer perception and engagement is an important part of promoting youth STI testing.[61] On the clinical side, testing is not necessarily offered to every patient due to considerations of "practicality," instead being targeted toward populations considered to be at high risk, including women <25 years old, MSM, patients with HIV, and individuals entering correctional facilities.[62] However, if clinical care professionals take a detailed, culturally competent, sexual history, they could identify those not in preidentified "high-risk" groups who should be tested.

Condoms and Barrier Method Contraceptives

Physical barriers for sexual contact, such as external condoms ("male condoms") and internal condoms ("female condoms"), are highly effective at preventing STI transmission. Condoms are at least 70 percent effective, with increasing efficacy based on proper and consistent use.[63],[64]

According to 2017 BRFSS data, 59.9 percent of DC residents ages 18 and older did not use condoms the last time they had sexual intercourse, with those living in Ward 3 and those with an income of more than $75,000 reporting lowest condom use. Residents ages 18–24 were most likely to use a condom, with 33.1 percent reporting they did not use a condom the last time they had intercourse, compared to 57.5 percent of 25–34-year-olds.[65]

HIV PrEP

HIV PrEP is safe and more than 99 percent effective at preventing HIV when used as prescribed, but it does not protect against other STIs. The HIV PrEP regimen, however, includes regular screening for HIV and STIs (at least every 6 months, and generally every 3 months for MSM). This creates new opportunities to screen for and treat STIs. For persons with most insurance coverage, PrEP and STI screening must be provided free of charge. For uninsured persons, federal and DC programs exist to provide PrEP and its related services for free.

---

[57] https://dcps.dc.gov/page/sexual-health-services

[58] I Want The Kit Baltimore: https://iwantthekit.org/

[59] Fleming, C. et al. https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/s12889-020-09285-1.pdf

[60] Ibid

[61] Ibid

[62] Screening for sexually transmitted infections: https://www.uptodate.com/contents/screening-for-sexually-transmitted-infections

[63] CDC, https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf

[64] NASEM. 2021. *Sexually transmitted infections: Adopting a sexual health paradigm.* Washington, DC: The National Academies Press.

[65] District of Columbia Behavioral Risk Factor Surveillance System (BRFSS) 2017 Annual Health Report. https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/BRFSS%202017%20Annual%20Report%20Final.pdf

Drivers of STIs and Structural Inequities

Disparities in STIs stem from social, economic, and environmental disadvantages and structural inequities. Differential access to and quality of care is often rooted in interpersonal and institutional discrimination and structural barriers, including poverty, racism, and unequal access to other social determinants of health.

Education

The quality of schools and educational opportunities has significant long-term impacts on employment, income, health insurance coverage, and health behaviors. Studies have shown that lower levels of education are associated with higher STI rates.[66] Adolescence is a time in which young people start developing their personal and sexual awareness, so access to sexual health education is critical for establishing healthy relationships.

Employment

Cascading impacts of societal discrimination can lead to unemployment, which has been associated with increased STI transmission.[67] Lack of employment and income is also associated with barriers to education and health care and increased rates of substance use and violence, all of which are risk factors for STIs and associated with higher rates of STIs (NASEM, 2017). Employment rates can also have an impact on insurance coverage.[68]

As of March 2021, the unemployment rate in DC was 7.8 percent, with the number of employed residents increasing throughout early 2021. Large discrepancies in unemployment rates are observed across the wards, as summarized in Figure 8 below.

	March 2021 (r)			
Ward	Labor Force	Employment	Unemployment	Unemployment Rate
1	63,380	60,143	3,237	5.1
2	64,483	62,235	2,248	3.5
3	56,916	55,027	1,889	3.3
4	49,711	45,916	3,795	7.6
5	44,157	40,215	3,942	8.9
6	58,160	54,475	3,685	6.3
7	36,654	32,201	4,453	12.1
8	30,267	25,396	4,871	16.1

Table 3: *Labor Force, Employment, Unemployment, and Unemployment Rate by Ward (DOES, 2021)*
SOURCE: https://does.dc.gov/release/dc-unemployment-rate-78-percent-march-0

[66] Hogben, M., and J.S. Leichliter. 2008. Social determinants and sexually transmitted disease disparities. *Sexually Transmitted Diseases* 35(12):S13–S18
[67] The Social and Sexual Networks of Black Transgender Women: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6301432/
[68] Ibid

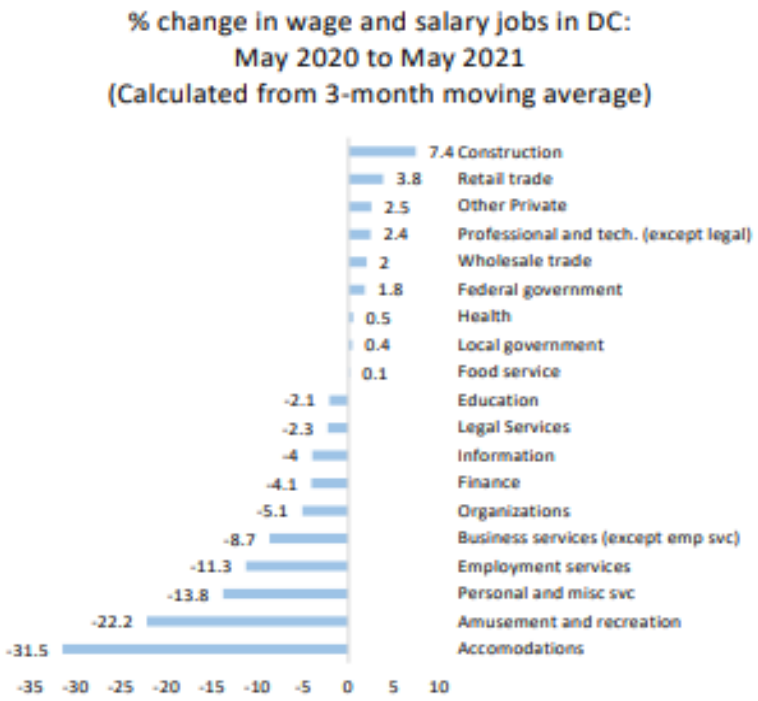


Figure 11: *Jobs and wages by sector*
SOURCE: https://cfo.dc.gov/node/1552311

Income

Individuals of lower socioeconomic status are also less likely to have access to quality health insurance or to experience problems or obstacles with cost of care and treatment.[69]

Lower-income adolescents facing economic living challenges are more likely to exchange sex for money, shelter, food, or drugs; this is associated with STIs and related risk factors, including multiple sex partners, injection drug use, childhood trauma, and reduced condom usage.[70]

Housing and Transportation

Washington, DC, like many other regions in the United States, is experiencing large wealth and income disparities across population groups, which has led to fewer affordable housing options and more residential segregation, often based on race and socioeconomic status. Residential segregation significantly impacts social and sexual networks and access to resources, further contributing to STI disparities.[71]

Discriminatory economic policies (such as mortgage loan denial) further drive residential segregation, and mortgage discrimination has been found to be directly associated with sexual behaviors and STIs in Black residents (Lutfi et al., 2015).

---

[69] See Braveman, 2006, on Health Disparities and Health Equity: https://www.annualreviews.org/doi/10.1146/annurev.publhealth.27.021405.102103?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed

[70] Non-injection and injection drug use and STI/HIV risk in the United States https://pubmed.ncbi.nlm.nih.gov/22890684/

[71] Mortgage Discrimination and Racial/Ethnic Concentration: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7010885/

Multiple studies have shown that unstable housing negatively impacts STI prevention and care.[72] Persons who are homeless are more likely to have substance use issues, mental health disorders, arrest history, or history of physical or sexual abuse, thus placing them at higher risk of STIs.[73] In addition, homelessness is inversely associated with consistent condom use, and unstable housing is positively associated with multiple sex partners for youth (Marshall et al., 2009).[74] DC has one of the highest rates of homelessness in the nation, with more than 1,300 unaccompanied youth and more than 6,000 youth enrolled in school known to be homeless or have unstable housing (Davidson, 2019).[75]

Lack of transportation is also a barrier for adolescents and young adults due to the cost of public transportation or reliance on parents or other family members. The majority (81 percent) of DC households have one car or none, perhaps limiting options for accessing health care services (DCHealthMatters, 2021). However, DC adolescents who attend any public or private K-12 school located in DC are enrolled in the Kids Ride Free program.

Health Care System

Trust and Cultural Competency

The District has high rates of health insurance coverage compared with other states; however, adolescents, especially Black and Latino/a young adults, may be uncomfortable seeking sexual and reproductive health services due to the exploitative and unethical medical trauma these communities have historically experienced in relation to STIs.[76] Fear and previous experiences of discrimination could also affect health-seeking behaviors and quality of care.

Health care provider bias in the form of focused sexist, homophobic, transphobic, ableist, and/or racist behaviors also leads to increased risk of STIs in terms of prevention and the quality of care and further exacerbates disparities (Wiehe et al., 2011).[77] Such interpersonal discrimination can affect health-seeking behaviors and thus physical health, including sexual, and mental health. Stigma, bias, and discrimination from health care providers can also affect the delivery and quality of care for STIs (Wiehe et al., 2011).[78]

---

[72] Homelessness and Unstable Housing Associated with an Increased Risk of HIV and STI Transmission among Street-Involved Youth: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2673329/

[73] Ibid

[74] Ibid

[75] How Do We End Homelessness in DC: https://www.thecommunityfoundation.org/news/how-do-we-end-youth-homelessness-in-dc

[76] Roberts, D. 2016. Killing the Black body: Race, reproduction, and the meaning of liberty. New York: Vintage Books.

[77] Chlamydia screening among young women: https://pubmed.ncbi.nlm.nih.gov/21262889/

[78] Ibid.

Confidentiality

Currently, CDC guidelines recommend that health care providers ask for a complete sexual history of adolescents. This may be easier to obtain when adolescents meet with health care providers alone; they are more likely to seek sexual and reproductive health care and treatment than those who do not spend time alone with their provider (Copen et al., 2016).

Confidentiality issues are also further complicated for adolescents and individuals who remain on parental insurance until the age of 26; studies have shown fear of STI testing and associated costs appearing on parental insurance claims (Loosier et al., 2018).[79]

In many states and in Washington DC minors are allowed to access some sexual and reproductive health services without parental consent.[80] For example, all states and DC allow young people to consent to STI services. Additionally, the DC Health and Wellness Center provides free and confidential clinical STD services to persons 13 years of age and older.[81]

Availability of Testing and Other STI/Sexual Health Resources in DC

The DC Department of Health (DOH) is responsible for a multitude of public health and safety programs. The DOH division of HIV/AIDS, Hepatitis, STD, and TB Administration (HAHSTA) is the core government agency in DC responsible for the surveillance, prevention, and treatment of these aforementioned communicable diseases. HAHSTA works with health and community-based organizations to offer a variety of support services, including education, testing, counseling, and services at STI clinics. It also publishes an annual epidemiology and surveillance report.

Lack of health care resources in the United States in the form of adolescent and LGBTQ+ friendly sexual health services are a key barrier to delivering adequate STI testing and treatment. Underserved, economically resource-poor communities also have a scarcity of accessible sexual health resources or may not have access to services that match their health needs (NASEM, 2021), leading to reduced screening, testing, and timely management of STIs.

The STD Testing Directory[82] identified more than one hundred testing locations throughout the DMV area, with many identifying as free or low-cost options. Wards 1 and 2 have a higher concentration of facilities, with fewer listed in Wards 7 and 8 (Karsou, 2021). STI testing and treatment locations in Washington, DC are available at https://sexisdc.org/dc-health-finder/, and a full list of providers is available here. In 2020, Mayor Muriel Bowser and the DC DOH announced new at-home and walk-up testing options for DC residents for STDs, HIV, and

[79] Young Adults' Access to Insurance Through Parents: https://pubmed.ncbi.nlm.nih.gov/30115507/
[80] Ibid.
[81] DC Department of Health, https://dchealth.dc.gov/release/dc-health-adds-new-home-and-walk-std-testing-options-through-getcheckeddcorg
[82] Note that this resource states: “We evaluate products and services independently, but we may receive a referral fee on the services featured on this page.”

hepatitis called the DC Health and Wellness Center (GetCheckedDC.org). DC also hosts the website “Sexual + Being” (https://sexualbeing.org/)—a sex-positive resource.

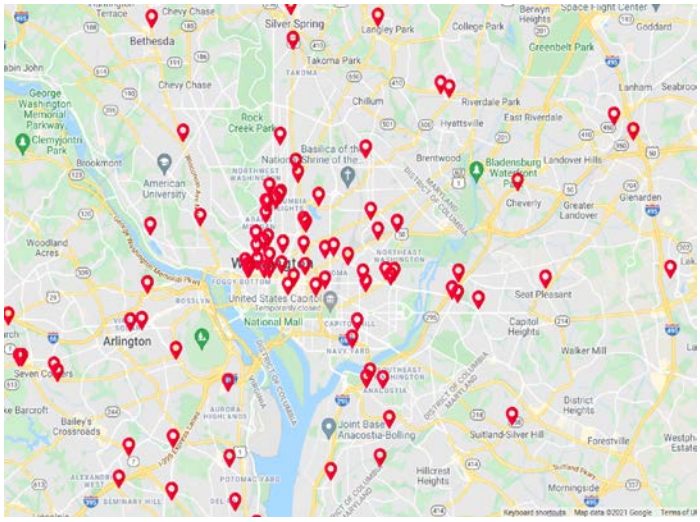


Figure 12: *STD Testing Directory DC, Maryland, Virginia*
*SOURCE: https://www.testing.com/std-testing/washington-dc/#i__std_directory_in_washington__d_c_*

Community-Level Interventions

Community interventions focus on a shift from individual-level influences to a focus on social and environmental influences. In the area of STIs, they range from vaccination clinics (for HPV) and distribution of condoms to community engagement methods and partnerships to build local STI prevention and control capacity (for example, enhancing STI and sexual health services for adolescents and young adults). To be most effective, they will address both individual and structural factors to promote community wellness to ultimately facilitate better sexual health outcomes. Examples of what DC has done in this area, and future plans, are outlined in Youth Sexual Health Plan (2016–2020) here. Community mobilization was an important tool to address HIV—background on this, and lessons learned for STIs in general, is available here.

Within DC, organizations such as Whitman-Walker Health provide various services tailored to the needs of people aged 13–24 years with the goal of addressing health needs.[83] These services range from free HIV/STI/pregnancy testing to lessons on safer sex and include education on prevention of adverse outcomes.[84]

Structural and Policy Interventions

Structural interventions can decrease STI inequities by addressing social factors at both the macro (e.g., policies, social norms, societal distribution of power and resources) and meso (e.g., social networks, community resources, local health care systems) levels. Very few structural

[83] Whitman-Walker Health: https://www.whitman-walker.org/youth-services/
[84] Ibid.

interventions that address STIs currently exist.[85] However, with the release of the first ever National STI Strategic Plan by the DOH and Human Services, more attention will hopefully be paid to STIs in a holistic manner that addresses the root causes.[86]

At the macro level, examples include federal and state health policies, such as the Patient Protection and Affordable Care Act (ACA) and state HPV vaccination policies, sexuality education policies, and minor STI testing consent laws. Examples at the meso level include clinic-based interventions that effectively promote STI screening, programs built as alternatives to prison, and supportive housing programs.

For more information on policy and structural interventions for STIs see Chapter 9 of the recent NASEM report on STIs.

Psychosocial Interventions

Psychosocial and behavioral interventions play important roles as components of a comprehensive and effective national strategy to promote sexual health and prevent and control STIs.[87] Since these interventions aim to change individual behavior, they can be crucial in promoting a sexual health by influencing behavioral outcomes associated with STI risk.[88] In 2016, the Washington DC DOH introduced the Youth Sexual Health Plan to provide accessible resources that supported healthy decision-making around relationships and sexual health; it partly aimed to identify and address behavioral outcomes associated with STI risk.[89]

Example: School-based sexual education: Abstinence only education programs are not effective at preventing initiation of sexual intercourse or decreasing high-risk sexual behaviors (such as not using a condom).[90] The American College of Obstetricians and Gynecologists recommends a comprehensive sex education approach with medically accurate and age-appropriate information, including information on the benefits of delaying intercourse, reproductive development, contraception, and barrier protection.[91] Evidence suggests that comprehensive and medically accurate sex education is effective at reducing STI prevalence in adolescents and in delaying sexual debut (first sexual intercourse).[92] Additionally, a 2005 clinical trial with inner

---

[85] NASEM, 2021: https://www.nap.edu/read/25955/chapter/11

[86] https://www.hhs.gov/programs/topic-sites/sexually-transmitted-infections/plan-overview/index.html

[87] NASEM: https://www.nap.edu/read/25955/chapter/10#400

[88] Ibid.

[89] District of Columbia: Youth Sexual Health Plan (2016): https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20Youth%20Sexual%20Health%20Plan%202016_2020%20-%20Final%20%282%29.pdf

[90] Santelli, J. S. et al. https://www.jahonline.org/action/showPdf?pii=S1054-139X%2817%2930260-4

[91] ACOG, https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2016/11/comprehensive-sexuality-education#:~:text=Although%20formal%20sex%20education%20varies,STIs%2C%20and%20adolescent%20pregnancy%2011.

[92] NASEM. 2021. *Sexually transmitted infections: Adopting a sexual health paradigm.* Washington, DC: The National Academies Press.

city African American and Latina adolescent participants showed that a skills-based intervention significantly affected behavior (increased condom use, decreased number of sexual partners).[93]

While sexual education often falls to schools, parents can have the most significant impact on affecting adolescent sexual decision-making and are critical partners in the education process.[94] DC requires schools to have sex education but does not mandate a comprehensive[95] or medically accurate curriculum.[96]

For more information on behavioral interventions, see Chapter 8 of the NASEM report here.

Role of Tech, Data, and Media

An important area to explore in prevention and control STIs is technology and new media, as they bring both risks and benefits for sexual health. These technologies include social media, mobile apps, dating apps/websites, online pornography, virtual/augmented reality, text messaging, digital contact tracing and digital exposure notification, wearable devices/biosensors, television, radio, and print, electronic health records, blockchain, cryptocurrency, "big data," and AI.

Digital tools are not inherently risky or health promoting by themselves—it depends on how they are used. Young adults use many of these technologies, so their potential to positively impact sexual health is an important area for exploration.

To learn more about these technologies, see Chapter 6 of the recent NASEM STIs report here. For examples of how technology has been used in behavioral interventions, see Chapter 8 here.

Appendix A: List of Acronyms and Initials

ACA	Affordable Care Act
AIDS	Acquired Immunodeficiency Syndrome
CDC	Centers for Disease Control and Prevention
DC	District of Columbia
DMV	DC, Maryland, Virginia
HHS	Department of Health and Human Services
HIV	Human Immunodeficiency Virus
HPV	Human papillomavirus
HSV-2	Herpes Simplex Virus 2

[93] Jemmott, J. B. et al. 2005. HIV/STD risk reduction interventions for African American and Latino adolescent girls at an adolescent medicine clinic: A randomized controlled trial. https://pubmed.ncbi.nlm.nih.gov/15867118/

[94] NASEM. 2021. *Sexually transmitted infections: Adopting a sexual health paradigm.* Washington, DC: The National Academies Press.

[95] District of Columbia Sex Education Snapshot: https://siecus.org/state_profile/district-of-columbia-state-profile/

[96] Ibid

LGBTQIA	Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual +
MSM	gay, bisexual, same gender loving, and other men who have sex with men
MSM	men who have sex with men
NASEM	National Academies of Sciences, Engineering, and Medicine
NIH	National Institutes of Health
PID	Pelvic Inflammatory Disease
SEM	Social-Ecological Model
STD	Sexually Transmitted Diseases
STI	Sexually Transmitted Infections

Appendix B: Resource List

National

American College of Obstetricians and Gynecologists
American Sexual Health Association
Advocates for Youth
Centers for Disease Control and Prevention
Department of Health and Human Services (HHS)
Division Adolescent and School Health at the Centers for Disease Control and Prevention
Division of STD Prevention (DSTDP) at the Centers for Disease Control and Prevention (HHS)
National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention (HHS)
Indian Health Service (HHS)
Journal of the American Sexually Transmitted Diseases Association
National Academies of Sciences, Engineering and Medicine
National Coalition of STD Directors
National Institutes of Health (HHS)
Planned Parenthood
Youth Tech Health (yth): https://yth.org/

DC, Maryland, Virginia

Black Women's Health Imperative
DC Health and Wellness Center
DC TransCoalition
DC State Data Center
District of Columbia Department of Health (DC DOH)
District of Columbia Employment Services
District of Columbia Office of Planning
District of Columbia Office of the Chief Financial Officer
District of Columbia Public Schools
¡Empodérate!
Greater Washington Community Foundation
HIPS (https://www.hips.org/about.html)
La Clínica del Pueblo
Mary's Center

Nationz Foundation
NovaSalud
Sex Is (https://sexisdc.org/about-us/)
Sexual + Being (https://sexualbeing.org)
SMYAL (Supporting and Mentoring Youth Advocates and Leaders)
The Women's Center
Us Helping Us
Whitman-Walker Health (Ward 8)

Relevant Recent Reports

CDC. 2019. *Sexually Transmitted Disease Surveillance 2019*
DC DOH. 2016. *Youth Sexual Health Plan: District of Columbia 2016–2020*
DC DOH. 2019. *Annual Epidemiology & Surveillance Report: Data through 2019*
DC State Data Center. 2017. *2015 Disability Characteristics Among DC Residents*
HHS. 2020. *Sexually Transmitted Infections National Strategic Plan for the United States | 2021–2025*
NAPA. 2018. *The Impact of Sexually Transmitted Diseases in the United States: Still Hidden, Getting Worse, Can Be Controlled*
NAPA. 2019. *The STD Epidemic in America: The Frontline Struggle*
TAG. 2019. *Pipeline for Gonorrhea, Chlamydia, and Syphilis*
NASEM. 2021. *Sexually Transmitted Infections: Adopting a Sexual Health Paradigm*

Appendix C: References

Becasen, J. S., Denard, C. L., Mullins, M. M., Higa, D. H., and Sipe, T. A. 2019. Estimating the prevalence of HIV and sexual behaviors among the US transgender population: A systematic review and meta-analysis, 2006–2017. *American Journal of Public Health*. 109(1):e1–e8. doi: 10.2105/AJPH.2018.304727. PMID: 30496000; PMCID: PMC6301428.

Braveman, P. 2006. Health disparities and health equity: Concepts and measurement. *Annual Review of Public Health* 27(1), 167–194. https://doi.org/10.1146/annurev.publhealth.27.021405.102103

Chancroid—STI Treatment Guidelines. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/treatment-guidelines/chancroid.htm

Clayton, J., and Tannenbaum, C. 2016. Reporting sex, gender, or both in clinical research?. *JAMA* 316(18), 1863. doi: 10.1001/jama.2016.16405

DC Department of Health. 2020. Annual Epidemiology & Surveillance Report: Data Through December 2019. District of Columbia Department of Health, HIV/AIDS, Hepatitis, STD, & TB Administration. Accessed [September 1, 2021 at https://dchealth.dc.gov/service/hiv-reports-and-publications

DC Health Adds New At-home and Walk-in STD Testing Options Through GetCheckedDC.org. 2020. Retrieved September 24, 2021 from https://dchealth.dc.gov/release/dc-health-adds-new-home-and-walk-std-testing-options-through-getcheckeddcorg

District of Columbia's Sex Education Snapshot. 2021. Retrieved September 24, 2021 from https://siecus.org/state_profile/district-of-columbia-state-profile/
Ectopic Pregnancy. 2018. Retrieved September 24, 2021 from https://www.acog.org/womens-health/faqs/ectopic-pregnancy
Ezell, J. M., Ferreira, M. J., Duncan, D. T., and Schneider, J. A. 2018. The social and sexual networks of Black transgender women and Black men who have sex with men: Results from a representative sample. *Transgender Health* 3(1), 201–209. https://doi.org/10.1089/trgh.2018.0039
Figures—Sexually Transmitted Disease Surveillance, 2019. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/statistics/2019/figures.htm
Fleming, C., Drennan, V. M., Kerry-Barnard, S. et al. 2020. Understanding the acceptability, barriers and facilitators for chlamydia and gonorrhoea screening in technical colleges: Qualitative process evaluation of the "Test n Treat" trial. *BMC Public Health* 20**,** 1212. https://doi.org/10.1186/s12889-020-09285-1
Gaydos, C. A., and Melendez, J. H. 2020. Point-by-point progress: Gonorrhea point of care tests. *Expert Review of Molecular Diagnostics* 20(8):803–813. doi: 10.1080/14737159.2020.1778467. PMID: 32500764; PMCID: PMC7483383.
Ghanem, K., Tuddenham, S., Marrazzo, J., and Bloom, A. 2020. Screening for sexually transmitted infections. Retrieved September 24, 2021 from https://www.uptodate.com/contents/screening-for-sexually-transmitted-infections
Hogben, M., and Leichliter, J. S. 2008. Social determinants and sexually transmitted disease disparities. *Sexually Transmitted Diseases* 35(12 Suppl), S13–S18. https://doi.org/10.1097/OLQ.0b013e31818d3cad
Home—IWTK. 2021. Retrieved September 24, 2021 from https://iwantthekit.org/
How Do We End Youth Homelessness in DC?—Greater Washington Community Foundation. 2019. Retrieved September 24, 2021 from https://www.thecommunityfoundation.org/news/how-do-we-end-youth-homelessness-in-dc
Incidence, Prevalence, and Cost of Sexually Transmitted Infections in the United States. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/2018-STI-incidence-prevalence-factsheet.pdf
Jemmott, J. B., 3rd, Jemmott, L. S., Braverman, P. K., and Fong, G. T. 2005. HIV/STD risk reduction interventions for African American and Latino adolescent girls at an adolescent medicine clinic: A randomized controlled trial. *Archives of Pediatrics & Adolescent Medicine* 159(5), 440–449. https://doi.org/10.1001/archpedi.159.5.440
Khan, M. R., Berger, A., Hemberg, J., O'Neill, A., Dyer, T. P., and Smyrk, K. 2013. Non-injection and injection drug use and STI/HIV risk in the United States: the degree to which sexual risk behaviors versus sex with an STI-infected partner account for infection transmission among drug users. *AIDS and Behavior* 17(3), 1185–1194. https://doi.org/10.1007/s10461-012-0276-0
LGBTQ Inclusion: Glossary UW Medicine. 2021. Retrieved September 24, 2021 from https://www.uwmedicine.org/provider-resource/lgbtq/lgbtq-inclusion-glossary
Linton, S. L., Cooper, H., Chen, Y. T., Khan, M. A., Wolfe, M. E., Ross, Z., Des Jarlais, D. C., Friedman, S. R., Tempalski, B., Broz, D., Semaan, S., Wejnert, C., and Paz-Bailey, G. 2020. Mortgage discrimination and racial/ethnic concentration are associated with same-race/ethnicity partnering among people who inject drugs in 19 US cities. *Journal of Urban Health* 97(1), 88–104. https://doi.org/10.1007/s11524-019-00405-w
Long, J. 2019. Sexually transmitted infections, pregnancy, and breastfeeding. Retrieved September 24, 2021 from https://www.womenshealth.gov/a-z-topics/stis-pregnancy-and-

breastfeeding#:~:text=Some%20STIs%2C%20such%20as%20syphilis,infect%20the%20baby%20during%20delivery
Loosier, P. S., Hsieh, H., Cramer, R., and Tao, G. 2018. Young adults' access to insurance through parents: Relationship to receipt of reproductive health services and chlamydia testing, 2007–2014. *The Journal of Adolescent Health* 63(5), 575–581. https://doi.org/10.1016/j.jadohealth.2018.04.015
Marshall, B. D., Kerr, T., Shoveller, J. A., Patterson, T. L., Buxton, J. A., and Wood, E. 2009. Homelessness and unstable housing associated with an increased risk of HIV and STI transmission among street-involved youth. *Health & Place* 15(3), 753–760. https://doi.org/10.1016/j.healthplace.2008.12.005
NASEM (National Academies of Sciences, Engineering, and Medicine). 2021. Sexually transmitted infections: Adopting a sexual health paradigm. Washington, DC: The National Academies Press. https://doi.org/10.17226/25955.
Polis, R., and Lee, S. (2014). The Initial Reproductive Health Visit. Retrieved September 4, 2021 from https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2020/10/the-initial-reproductive-health-visit
Poteat, T., Logie, C., Adams, D., Lebona, J., Letsie, P., Beyrer, C., and Baral, S. Sexual practices, identities and health among women who have sex with women in Lesotho—a mixed-methods study. 2014. *Culture, Health & Sexuality* 16(2):120–135. doi: 10.1080/13691058.2013.841291. PMID: 24237008.
Rihl, M., Köhler, L., Klos, A., and Zeidler, H. 2006. Persistent infection of chlamydia in reactive arthritis. *Annals of the Rheumatic Diseases* 65(3), 281–284. https://doi.org/10.1136/ard.2005.044966
Roberts, D. 1998. *Killing the Black body*. New York: Vintage.
Santelli, J., Kantor, L., Grilo, S., Speizer, I., Lindberg, L., Heitel, J. et al. 2017. Abstinence-Only-Until-Marriage: An Updated Review of U.S. Policies and Programs and Their Impact. Retrieved September 24, 2021 from https://www.jahonline.org/article/S1054-139X(17)30260-4/fulltext
Sexual Health Services DCPS Retrieved September 24, 2021 from https://dcps.dc.gov/page/sexual-health-services
Sexually Transmitted Disease Surveillance, 2019. 2021. Retrieved August 18, 2021 from https://www.cdc.gov/std/statistics/2019/default.htm
Sexually Transmitted Infection Press Release. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/nchhstp/newsroom/2021/2018-STI-incidence-prevalence-estimates-press-release.html
Stacey, J. 2020. Comprehensive Sexuality Education. Retrieved September 24, 2021 from https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2016/11/comprehensive-sexuality-education#:~:text=Although%20formal%20sex%20education%20varies,STIs%2C%20and%20adolescent%20pregnancy%2011
STD Facts—Chlamydia. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm
STD Facts—Congenital Syphilis. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm
STD Facts—Gonorrhea. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/gonorrhea/stdfact-gonorrhea-detailed.htm
STD Facts—HIV. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm
STD Facts—Human papillomavirus (HPV). 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/hpv/stdfact-hpv.htm

STD Facts—Syphilis. 2021. Retrieved September 24, 2021 from https://www.cdc.gov/std/syphilis/stdfact-syphilis.htm
Trueblood, A. 2020. What's Happening at the DC Office of Planning? Retrieved September 24, 2021 from https://planning.dc.gov/whats-happening-dc-office-planning-july
U.S. Department of Health and Human Services. 2020. *Sexually transmitted infections national strategic Plan for the United States: 2021–2025*. Washington, DC: U.S. Department of Health and Human Services.
Walenski, R., Houry, D., Jenigan, D. et al. 2021. *MMWR Recommendations and Reports 70*. Retrieved from https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf
Wiehe, S. E., Rosenman, M. B., Wang, J., Katz, B. P., and Fortenberry, J. D. 2011. Chlamydia screening among young women: Individual- and provider-level differences in testing. *Pediatrics*, 127(2), e336–e344. https://doi.org/10.1542/peds.2010-0967
Youth Sexual Health Plan: District of Columbia 2016–2020. 2016. Retrieved from https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/DC%20Youth%20Sexual%20Health%20Plan%202016_2020%20-%20Final%20%282%29.pdf

Appendix D: List of Figures and Tables

SOURCE:
https://doh.dc.gov/sites/default/files/dc/sites/doh/page_content/attachments/2016%20HAHSTA%20Annual%20Report%20-%20final.pdf (Page 20)

Figure 8: Rates of Reported Gonorrhea Cases per 100,000—District of Columbia, 2019 *(n* = 4,374*).
SOURCE:
https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/HAHSTA%20Annual%20Report%20%28thru%202019%29_updated%203-8-2021_0.pdf (Page 20)

Figure 9: Reported number of syphilis cases by year and gender identity—District of Columbia, 2011–2015
SOURCE:
https://doh.dc.gov/sites/default/files/dc/sites/doh/page_content/attachments/2016%20HAHSTA%20Annual%20Report%20-%20final.pdf (Page 20)

Figure 10: Rates of primary and secondary syphilis cases—District of Columbia, 2019.
SOURCE:
https://dchealth.dc.gov/sites/default/files/dc/sites/doh/publication/attachments/HAHSTA%20Annual%20Report%20%28thru%202019%29_updated%203-8-2021_0.pdf (Page 21)

Figure 11: Jobs and wages by sector, *SOURCE:* https://cfo.dc.gov/node/1552311 (Page 26)

Figure 12: STD Testing Directory DC, Maryland, Virginia
SOURCE:
https://www.testing.com/std-testing/washington-dc/#i__std_directory_in_washington__d_c_
(Page 29)

Table 1: Population Data Summary: District of Columbia (2021 Demographics)
SOURCE: https://www.dchealthmatters.org/demographicdata?id=130951&sectionId=935 (Page 16)

***Table 2*:** Disability Data Summary: District of Columbia (2015 Data)
SOURCE:
https://planning.dc.gov/sites/default/files/dc/sites/op/publication/attachments/2015%20Disability%20Characteristics%20Among%20DC%20Residents.pdf (Page 16)

Table 3: Labor Force, Employment, Unemployment, and Unemployment Rate by Ward (DOES, 2021)
SOURCE: https://does.dc.gov/release/dc-unemployment-rate-78-percent-march-0 (Page 25)

Appendix E: Judging Rubric

These criteria will be considered collectively through a facilitated judging discussion to determine the overall grand prize winner and category prizes. The criteria contributing to the three category prizes listed are below.

Category Prizes: *Practicality Prize; #Interprofessional Prize; Wildcard Prize

	Poor	Accept-able	Very Good	Out-standing	Comments
Analysis of Problem/Challenge					
● Astute synthesis of problem ● Identification of key issues	☐	☐	☐	☐	
Appropriateness/Justification of Solution					
● Justification of chosen priorities ● Justification of chosen intervention(s) ● Evidence to support likely effectiveness ● Fit to Washington, DC context ● Cultural/political/social factors ● Resourcefulness in gathering information	☐	☐	☐	☐	
Acceptability/Uptake of Solution*					
● Acceptability to relevant DC area stakeholders ● Cultural acceptability ● Social/behavioral considerations	☐	☐	☐	☐	
Implementation Considerations*					
● Implementation plan ● Timeline and budget ● Feasibility (budget and other resources, time frame, leverages local partners/resources, logistical/infrastructure constraints) ● Monitoring and evaluation plan	☐	☐	☐	☐	
Potential for Sustainability*					
● Addresses/considers root causes & structural factors that lead to disparities in health outcomes (institutional racism, social/economic/physical conditions, etc.) ● Long-term maintenance and growth (feasibility, funding)	☐	☐	☐	☐	
Interdisciplinary/Multisectoral#					
● Use of collaborations/interactions among disciplines and/or sectors	☐	☐	☐	☐	
Teamwork#					
● Engagement of whole team in preparation and/or presentation ● Clear team understanding and use of each other's roles and expertise	☐	☐	☐	☐	
Presentation Delivery					
● Clarity of content and logic of flow ● Time management ● Audience engagement ● Visual aesthetic ● Professionalism, poise, and polish	☐	☐	☐	☐	
Questions and Answers					
● Clarity and thoughtfulness of responses ● Ability to draw from evidence	☐	☐	☐	☐	

Appendix F: Case Writing Team Biographies

Each year, students from local universities work together to write this background document for the competing teams, including identifying the specific topic to be addressed.

Redd Woldeselassie, He/Him (Case Lead): Redd is a Ph.D. student at George Mason University studying health service research with a concentration in knowledge discovery and health informatics. He graduated from George Mason with an M.A. in health informatics and a graduate certificate in health data analytics. Redd is a veteran of the U.S. Marine Corps, where he served as a logistics specialist. He works as a research assistant at George Mason investigating the optimization and application of machine learning and artificial intelligence algorithms to study clinical outcomes. Earlier, Redd worked as a data scientist and consultant at the Veterans Health Administration. Before that, he was a research assistant at the George Mason College of Education and Human Development, where he analyzed the impact of education on minority and underrepresented university students. Redd was on the team representing George Mason at the 2016 DC Public Health Case Challenge. In 2017 and 2018, he was part of the case writing teams. After co-leading the 2019 Case Challenge, he joined the 2021 team as the team lead.

Mary Kate Fogarty, She/Her (Case Writer): Mary Kate is a second-year M.S. in global health student at Georgetown University's School of Nursing and Health Studies, concentrating on maternal and child health and disease prevention. She has experience in public health both domestically and abroad, ranging from a grassroots public health clinic in Nairobi, Kenya to Save the Children in Washington, DC. She is a Policy Fellow at Organon, a global health care company focused on improving women's health around the world. Mary Kate graduated from American University in May of 2020 with a B.S. in public health; she was an undergraduate research assistant and involved in various student-run organizations and, most importantly, fell in love with living in DC! She participated in the 2019 DC Public Health Case Challenge representing American University and is so excited to be a part of the case writing team for the 2021 challenge.

Taylor Tresatti, She/Her (Case Writer): Taylor Tresatti is an M.P.H. graduate from the George Washington University School of Public Health with a focus in global health program design, monitoring, and evaluation and has a global health certificate from the University of Copenhagen. She has experience with various local and global nonprofit organizations, including the Pan American Health Organization, Active Minds, and International Rescue Committee. She is a program manager for the GW Urban Health Program, a public health–focused, community engagement and service-learning initiative for public health students serving the DC metro area. She was on the Grand Prize–winning team at the 2016 DC Public Health Case Challenge representing George Washington University and is thrilled to join the case writing team for the 2021 Case Challenge.

Sarah Walsh, She/Her (Case Writer): Sarah Walsh is a fifth-year MD/Ph.D. student at the Uniformed Services University. She is completing her dissertation with the Regenerative Medicine Team in the Department of Surgery and working with a simulated blast injury model to investigate early biomarkers for traumatic injury complications seen in servicemen and -women. Sarah is a second lieutenant in the Army Medical Service Corps and will continue her career as a physician-scientist in the Army Medical Corps after graduation. She served as the president of the Global Health Interest Group at the Uniformed Services University and works to provide opportunities for other students to explore public and global health challenges. In 2019, Sarah was the Uniformed Services University Team Leader for the DC Public Health Case Competition. Sarah graduated from Michigan State University in 2017 with degrees in biochemistry and molecular biology and public policy. As an undergraduate, she worked with international researchers at the Diabetes Center in Düsseldorf, Germany; she enjoys engaging with scientists from around the world.

Appendix G: Guide for Student Teams and Advisors

NASEM will host the eighth annual DC Public Health Case Challenge on October 29, 2021 to promote interdisciplinary, problem-based learning for the betterment of our DC area community. Teams will be asked to approach a realistic public health issue facing that community and to develop a multifaceted plan to address it. A panel of expert judges will watch student presentations and pick winning solutions.

Organizers

NASEM Health and Medicine Division (HMD) Staff
Point of Contact: Sophie Yang (syang@nas.edu)
Amy Geller (ageller@nas.edu)
Alina Baciu (abaciu@nas.edu)

Case Writing Team
Rediet (Redd) Woldeselassie (George Mason University, lead)
Mary Kate Fogarty (Georgetown University; American University)
Taylor Tresatti (George Washington University)
Sarah Walsh (Uniformed Services University of the Health Sciences)

Theme

The broad topic of this year's case is "addressing infectious diseases using a population health approach."

Overview

- **Universities form a team** of 3–6 graduate and/or undergraduate students representing **at least three disciplines, schools, or majors**. The case will require a comprehensive solution, and it is advisable that teams include students representing a variety of subjects (health, nursing, public health, law, business, communications, engineering, IT, gender

studies, anthropology, economics, sociology, etc.). Teams are encouraged to have both undergraduate and graduate students.

- A **webinar** will take place for all students who will be competing (advisors are also welcome to tune in). The purpose of the webinar is to provide a primer on **upstream, evidence-based policy solutions for public health issues**, an overview of the Case Challenge process, and Q&A. The webinar will be 12–1 p.m. on October 15.
- **Student teams** will be provided with a case that is based on a real-life challenge faced by individuals and organizations in the DC area. Teams will be given 2 weeks to **develop comprehensive recommendations** to **present to a panel of expert judges**. The presented recommendations will be judged on criteria such as content, creativity, feasibility, interdisciplinary nature, and strength of evidence base. The case will include more detailed information on the judging criteria.
    - Information from the 2013–2019 DC Case Challenge events is available at http://nam.edu/initiatives/dc-public-health-case-challenge/

Prizes/Incentives for Student Teams

- Experience working with multiple disciplines to tackle a multifaceted public health challenge.
- Practice for Emory University's International Global Health Case Competition.
- Press release announcing the winning solution through the National Academy of Medicine (NAM) and the HMD of the Academies.
- Publication by NAM summarizing each team's solution written by team members (team members listed as authors). Past publications are available at https://nam.edu/initiatives/dc-public-health-case-challenge/.
- Breakfast, lunch, and refreshments.
- Free entry to the 2021 NAM Annual Meeting. This year, the meeting is being held virtually on October 17. The topic is: *Crossing the Policy and Equity Chasm: Lessons from Compounding Health Crises*. Registration and the agenda are available here. To register, enter the code **COMP**—note that this code is for competing teams and faculty advisors only.
- **Prize money**
    - Grand Prize: $3,000
    - 3 "Best in Category" Prizes: $1,800
        - Harrison Spencer Interprofessional Prize
        - Practicality Prize
        - Wildcard Prize (judges' choice)

Timeline

- **Friday, September 24**: Deadline for universities to confirm participation (please e-mail Sophie Yang at syang@nas.edu).
- **Friday, October 1**: Deadline to submit list of team member names with areas of study and e-mail addresses for final team registration ***(use the form on the last page of this guide)***.
- **Friday, October 15, 12–1 p.m.:** A 1-hour informational webinar for competing students (and advisors) will take place before the case is released. The webinar will be recorded and posted online, so any students who are not able to attend can view the recording. Students (and advisors) are welcome to e-mail questions in advance. The purpose of the webinar is to provide a primer on upstream, evidence-based policy solutions for public health issues, an overview of the Case Challenge process, and Q&A.
- **October 15, 1 p.m.:** Case is released.
- **October 15–29**: Teams develop their solutions to the case.
- **Friday, October 29**: Teams present their solutions to a panel of judges. Presentations will be followed by an awards ceremony. The event will be approximately 8:30 a.m. to 5:00 p.m.;

we will provide exact times once we know the number of participating teams. If the event is held in person (TBD in October), breakfast, lunch, and a reception will be provided.

Getting to the National Academy of Sciences Building

The National Academy of Sciences (NAS) building is located at **2101 Constitution Avenue, NW, Washington, DC** and is accessible by car or metro.

Driving to the NAS building: Limited visitor parking is available within the NAS building's main parking lot. To park for free, tell the garage attendant that you are participating in the Case Challenge and provide your name and license plate number. Street parking is also available at normal DC rates, as is a ramp at the corner of 23rd Street, NW, and I Street, NW.

Taking the Metro: The closest metro station is Foggy Bottom, located along the blue and orange lines. Upon exiting the metro, head west on I Street, NW, toward 23rd Street, NW. Turn left onto 23rd Street, NW, and walk for about half a mile. Turn left onto Constitution Avenue, NW, and the NAS Building will be on your left.

Upon entering the building, masks are required. You will need to present a photo ID and proof of COVID vaccination to the guard at the front desk. Participants may then proceed to the auditorium to check in and receive further instructions.

Appendix H: Student Team Guidelines and Rules

Suggested Team Preparation:
Teams are encouraged to meet several times before they receive the case, to get to know each other, look at examples from previous case competitions (available at https://nam.edu/initiatives/dc-public-health-case-challenge/), and loosely plan an approach. It may be helpful for team members to agree on communication strategies and time commitments for the 2 weeks during which they will be developing the case solution.

Developing the Case Solution:

- Designated members of the case writing team will be available to respond via e-mail to questions and requests for clarification during the 2 weeks while teams prepare their solutions (contact details will be provided with the case). To ensure that all teams have access to all information about the case, all teams will receive a copy of the question and the response within 24 hours of receipt. Questions will NOT be accepted after 9:00 a.m. on Thursday, October 28.
- Teams should not discuss their case presentations or case content with other teams during the Case Challenge period (October 15–29) until the judges have completed final scoring.
- Teams can access and use any available resources for information and input, including both written resources (publications, Internet, course notes/text, etc.) and individuals within and outside of the team's university. Students are encouraged to ground their solutions in public health theory, particularly the SEM.
- This is a student competition and should reflect the students' ideas and work. The case solution must be generated by the registered team members. Faculty advisors and other individuals who are used as resources should not generate ideas for case solutions but are permitted to provide relevant

information, guide students to relevant resources, and offer feedback on student's ideas and proposals for case solutions and recommendations and on draft/practice presentations.
- Participants may not speak individually with the judges about their case solution until judging has concluded on Friday, October 29. Please help the organizers by adhering to this rule during breaks.

Faculty Advisors:

Each team must have at least one faculty advisor. They will serve as a point of contact with the Case Challenge organizers and also ensure that the team is made up of only undergraduate and graduate students of their university and has representatives of at least three disciplines. Faculty advisors can also help teams prepare for the competition within the following parameters:

- Faculty advisors **CAN** do the following:
    - Ensure that the case is grounded in public health theory, particularly the SEM
    - Assist teams with practice sessions or practice review of sample cases in the weeks preceding the release of the case
    - Suggest resources relevant to the case
    - Provide feedback on ideas for case solutions and recommendations generated by the students
    - Provide feedback on draft/practice presentations
    - Communicate with the Case Challenge organizers about the guidelines and logistics
- Faculty advisors **CANNOT** do the following:
    - Generate ideas for case solutions and recommendations
    - Communicate about the case with faculty advisors and students from competing teams

Presentations:

- Presentation time: Each team will have 25 minutes (with 5 minutes of transition time between presentations).
    - 15 minutes are allotted to present analysis and recommendations.
    - 10 minutes are allotted for Q&A with judges.
    - Timing will be strictly enforced.
    - Any leftover time will be used at the discretion of the judging panel.
    - Teams may not view other teams' presentations until they have delivered their own presentation.
    - Handheld wireless microphones and a podium with a microphone will be available.
    - Team members will advance their own slides with a wireless clicker.
    - Masks will be required while presenting (consider practicing with masks on).
- Format:
    - Analysis and recommendations should be presented in Microsoft PowerPoint.
    - A Case Challenge organizer will load the presentation onto the computer and projection screen for you. Teams will have an opportunity to check the compatibility of their file in advance of the presentation.
    - Judges will receive a black-and-white printout of each team's slides.
    - Teams are encouraged to build appendix slides to help answer questions that they anticipate from the judges.
    - Judges will not know teams' university affiliation until after judging is completed. The names of team members can appear in the presentation, but **DO NOT** include the university name or any identifying information (e.g., school mascot).
- Presenters:

    - As many team members can participate in the presentation as the team sees fit. All team members should stand at the front of the room during the Q&A session at the end of the presentation.
- Dress code:
    - Competing teams are encouraged to present their case solution in business attire. The teams will not be identified by university to the judges, so students should not wear or carry any identifying logos, insignias, etc.
- Deadline to turn in completed case:
    - To ensure that each team has an equal amount of preparation time, each team's final presentation should be loaded onto the presentation computer **by 8:30 a.m. on Friday, October 29**. Failure to submit the presentation on time will result in disqualification. No changes can be made to presentations after that time, and teams should not continue to work on their case solution and presentation while awaiting their presentation time.

Judging:

- The judges have agreed to participate in this event as volunteers. They will be announced 1 week before the event, and their biographical sketches will be available to student teams then.
- In evaluating the proposed case solutions, judges will consider the following:
    - Rationale/justification for strategies
    - Specificity and feasibility
    - Interdisciplinary nature of the solution
    - Creativity and innovation
    - Clarity and organization
    - Presentation delivery
    - Teamwork
    - Ability to respond to questions
- Detailed judging criteria are provided with the case when it is released.

Safety Protocols:

- Masks are required at all times, other than while eating or drinking. This includes while presenting on stage.
- All food and drink must be consumed in the cafeteria or outside.
- Teams will have designated seating in the auditorium.
- While waiting for their turn to present, teams can wait in their designated room or outside.
- Hand sanitizer will be available throughout the building.
- After each team presents, the microphones will be cleaned with sanitizing wipes.

Appendix I: Presentation Day Agenda

2021 DC Public Health Case Challenge

Agenda

October 29, 2021

National Academy of Sciences Building | 2101 Constitution Avenue, NW, Washington, DC

8:00–8:30am	**Arrival and Registration** *(outside Kavli Auditorium; breakfast available outside room 120 to be eaten in cafeteria or in outdoors area)*
8:30am	**Deadline to Turn in Presentation** *(8:30am)* *Please take your flash drive to the Case Challenge staff member at the computer. This is when teams draw a number for presentation order.*
	Judges Check In *(Front row of auditorium)*
8:45am	**Welcoming Remarks** *(virtual, Auditorium)* *Victor J. Dzau, M.D., President, National Academy of Medicine*
8:55am	**Logistics** *(Auditorium)*
9:00am–12:40pm	**Presentations** *(Auditorium)* *At this time, all but the first team should leave and go to designated room or outside (see 2nd page of the agenda for your designated room). Return to the auditorium when it is your teams turn to present. After your team has presented, you may remain in the auditorium to watch the remaining presentations, in your designated team room, or outside. During the morning, an organizer will gather each team to take a photo at the Einstein statue in front of the NAS building—see the schedule on page 2.*

9:00–9:30	Team 1
9:30–10:00	Team 2
10:00–10:20	**Break**
10:20–10:50	Team 3
10:50–11:20	Team 4
11:20–11:50	Team 5
11:50–12:10	**Break**
12:10–12:40	Team 6
12:40–1:10	Team 7

1:10–2:30pm *(students)*	**Lunch** *(Food available outside room 120, please take to the cafeteria or outside)*

1:10 – 3:20pm *(judges)*	**Judges' Deliberations** *(pick up lunch from the registration table and eat in the cafeteria or outdoors, reconvene in Board Room at 1:30)*
2:30–3:10pm	**Presentation and Discussion** *(Kavli Auditorium)* *Laura Castillo-Page (she/her), Chief Diversity and Inclusion Officer, National Academies of Sciences, Engineering, and Medicine*
3:20–3:35pm	**Group Photo with Students, Advisors, and Judges** *(Outside)*
3:35 – 3:50	**Presentation** *Nixon Ricardo Arauz (he/him), 2021 Christine Mirzayan Science and Technology Policy Graduate Fellow; PhD Student, Department of Health Behavior and Policy; Virginia Commonwealth University School of Medicine*
3:50–4:15pm	**Awards Ceremony** *(Auditorium; pick up refreshments on your way out)*

Team Room Assignments and Group Photo Times:

Room 120

- Team 1
- Team 2
- Teams 1 & 2 meet at registration desk at **10:00am** for team photo

Room 125

- Team 3
- Team 4
- Teams 3 & 4 meet at registration desk at **9:00am** for team photo

West Court

- Team 5
- Team 6
- Team 7
- Teams 5, 6, & 7 meet at registration desk at **9:30am** for team photo