Key Gaps in the Delivery of Comprehensive Clinical Services for Sexually Transmitted Infections (STIs) in Allegheny County

by

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Abstract

Problem: The CDC reports a steep rise in the number of reportable sexually transmitted infections in the United States over recent years. The ACHD STI/HIV Clinic provides comprehensive STI care, however, considering uninsured and underinsured populations, the health department's clinical services are challenged while providing free or low-cost specialty care. This care deficit impedes sexual and reproductive health adding to the economic burden on the health systems. This matter warrants immediate attention from health authorities, public health specialists, and government bodies.

Methods: 1) Examine County-level operations to identify low-cost specialty care options that allow for clinic enhancement per the CDC best practice standards, especially while providing care for STI complications in the uninsured and underinsured. 2) Review current policies, literature, and reports from public health agencies and relevant articles.

Results: Medicaid, Medicare, and sliding scale are low-cost options currently available for primary care at FQHCs. The Birmingham clinic and McKeesport's Ninth Street clinic provide specialty care for the uninsured in Allegheny County. The financial assistance programs are offered by AHN and UPMC networks for those with STI complications regardless of HIV status. Other non-profit organizations such as the AHN Center for Inclusion Health and Pittsburgh Area Center for Treatment of HIV provide low-cost specialty care for STI complications in uninsured and underinsured individuals living with HIV, while Planned Parenthood, Allies for Health and

Wellbeing, and Central Outreach Wellness Center provide low-cost care for STIs in uninsured regardless of HIV status.

Conclusion: Structural bias, racism and stigma inherently co-exist within the health systems. Allocating more public health funds can allow for enhanced quality of STI clinical care services including specialty care, developing health programs with a focus on harm reduction, and above all, destigmatizing STIs is essential for improving sexual and reproductive health outcomes. Point-of-care testing, linkage to care, along with financial and social support are promising. As a local government agency, ACHD advocates for public health initiatives driven to overcome health inequities and provides free STI care in Allegheny County.

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List of Abbreviations

ACA …….……Affordable Care Act

ACHD ……...Allegheny County Health Department

AHN ……..…… Allegheny Health Network

AIDS ……. Acquired Immunodeficiency Syndrome

CDC …….Centers for Disease Prevention and Control

CEO …….Chief Executive Officer

CMO ……..….Chief Medical Officer

DHHS…….Department of Health and Human Services

DOH…….……..Department of Health

EOB ……..……..……Explanation of Benefits

FQHC…….……..Federally Qualified Health Center

HPV…….……..Human Papillomavirus

HIV ……...……Human Immunodeficiency Virus

HRSA …… Health Services and Services Administration

LGBTQ ……Lesbian, Gay, Bisexual, Transgender and Queer

LGV ……. …….Lymphogranuloma venereum

MSM…… …….Men who have Sex with Men

NACCHO …….National Association of County and City Officials

NCHHSTP…….National Center for HIV, Viral Hepatitis, STD, and TB Prevention

nPEP …….. ……..Non-occupational Post-Exposure Prophylaxis

NPOs …… Non-Profit Organizations

OASH ……Office of Assistant Secretary of Health

OIDP …….Office of Infectious Disease and HIV/AIDS Policy

PA ……Pennsylvania

PID ……..Pelvic Inflammatory Disease

PrEP …… Pre-Exposure Prophylaxis

QCS ……..……..Quality of Clinical Services

SRH ……Sexual reproductive Health

STD ……Sexually Transmitted Disease

STI ……..……..….Sexually Transmitted Infection

UPMC ……..….University of Pittsburgh Medical Center

US ……..……..United States

USPSTF ……....United States Preventive Services Task Force

WHO……..… World Health Organization

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Preface

My essay advisor and committee chair, Dr. David Givens, helped me immensely in the development of this analysis and I would like to thank him for his guidance and assistance. I would like to extend gratitude to Annie Nagy and Dr. Barbara Nightingale for their continued guidance on clinical services in Allegheny County throughout this process. I would also like to express admiration for Dr. Harold Wiesenfeld's expertise in reproductive infectious diseases and thank the Bureau of Clinical Services for the opportunity to work on this project.

1.0 Introduction

The term “sexually transmitted infection” (STI) refers to a pathogen that causes infection through sexual contact, whereas the term “sexually transmitted disease” (STD) refers to a recognizable disease state that has developed from an infection” (STI Guidelines, MMWR, CDC, 2021). When the infection becomes symptomatic, an STI leads to an STD development and many use these terms interchangeably, though the goal of public health and healthcare is to prevent and treat infection before the disease develops (Diseases & Related Conditions, CDC, 2023). For this essay, STI is the term used per the CDC (Centers for Disease Control and Prevention) standards, while STD is still used when other resources or data use the term. In general, the most commonly reportable cases of STIs include chlamydia, gonorrhea, syphilis, and HIV. However, in this essay, clinical services for STIs and their complications in the uninsured and underinsured are discussed in general, not exclusively focusing on HIV.

Despite world-class healthcare, pharmaceutical expertise, and sophisticated academic research, the current state of STIs in the United States in recent years warrants immediate attention. This essay highlights the need to improve the quality of clinical care services for STIs with complications, especially for the uninsured and underinsured. The essay’s public health significance is to assess the efficacy of county-wide operations mitigating the spread of STIs and correlate those efforts to quality, stigma-free clinical services, particularly for uninsured and underinsured individuals.

1.1 Description of the problem

Both Federally Qualified Health Centers (FQHCs) in Allegheny County and Allegheny County Health Department (ACHD) STI/HIV clinic provide comprehensive care services including free testing, diagnosis, and treatment of STIs to all eligible individuals. However, when faced with STI-related conditions that require specialty care and advanced diagnostics, the health systems have limited resources when an individual is uninsured or underinsured. In the current health systems, patients with STIs lack provision for holistic quality care except if a patient is HIV-positive or pregnant. The prevailing care services for HIV-positive and pregnant individuals include governmental and non-governmental health programs for uninsured residents, including those with STI complications (personal communication, ACHD Clinical Services, September 2023). However, clinical services exclusively for STI complications in uninsured or underinsured hit roadblocks due to a deficit in free/low-cost specialty care availability (personal communication, ACHD Clinical Services, September 2023).

1.2 Purpose

1.2.1 Significance of quality of STI clinical services

Sexually transmitted infections (STIs) range widely in their presentations from being asymptomatic or mild and going undetected, to having a chronic presentation. When STIs are neglected and go untreated they can advance to complicated STIs with long-term consequences. CDC reports about 20 million cases of STIs each year in the United States with about half

occurring in ages 15–to 24-year-olds; and can lead to severe reproductive health complications such as infertility, ectopic pregnancy, and congenital infections (STD QCS MMWR, CDC, 2020). In 2018, STDs alone accounted for over $16.9 billion in annual medical costs (CDC report, 2020). Additionally, STDs have high morbidity, and increase the risk of HIV acquisition and transmission to others (CDC, 2020).

During the 1980s and 1990s, STD clinics and HIV programs offered unique specialized STD care with necessary expertise being confidential, walk-in, and low cost; however, due to funding issues, many public health services including STD clinics were closed during 2008-2012 (STD QCS MMWR, CDC, 2020). Given the decreased availability of STD clinics, individuals started seeking care at primary care clinics, emergency departments, and family planning clinics instead (CDC, 2020). This shift in STD services prompted increased primary care visits by a high percentage of women and those with expanded insurance coverage; though publicly funded STD clinics continue to serve as a safety net for individuals without insurance coverage and marginalized populations (STD QCS, MMWR, CDC, 2020).

1.3 Current recommendations for STI quality of clinical services (QCS)

To operationalize quality clinical services for STIs, the CDC provides recommendations to healthcare providers to build, maintain, and enhance the delivery of STD services in their primary care and STD specialty care settings (STD QCS, CDC report 2020). CDC STD Quality of Clinical Services (QCS) recommendations "help assess what services are needed, determine if additional services can or should be made available and whether mechanisms for referral can or should be developed" (STD QCS, CDC report 2020). Given that CDC STD QCS recommendations

are not mandatory or regulatory, they provide scope for healthcare administrators to decide how, when, and what structural changes are meaningful to implement and use available resources effectively to enhance STI clinical services (personal communication, ACHD STI/HIV clinical services, September 2023).

"The CDC STD QCS recommendations are outlined in the following eight sections: 1) sexual history and physical examination, 2) prevention, 3) screening, 4) partner services, 5) evaluation of STD-related conditions, 6) laboratory, 7) treatment, and 8) referral to a specialist for complex STD or STD-related conditions" (CDC report, 2020).

1) Sexual history and physical exam: Both are foundational in determining (partners, practices, protection, past history of STDs, and prevention of pregnancy) the quality of clinical services for STIs as per the CDC because several studies show that STD clinics obtain more complete sexual histories than primary care (STD QCS 2020). 2) Prevention: Services for preventing STDs are condom provision, hepatitis A and B vaccination, HPV vaccination, emergency contraception, STD/HIV prevention counseling (brief, moderate intensity, or high intensity), Pre-Exposure Prophylaxis (PrEP) for HIV prevention risk assessment, education, counseling, provision, and linkage or referral or both; and Non-occupational Post-Exposure Prophylaxis (nPEP) risk assessment, education, counseling, linkage, or referral or both to HIV care (STD QCS 2020). 3) Screening and diagnostic testing: Emergency departments perform HIV testing routinely, though the practice is not widespread for unclear reasons; in correctional settings, routine testing varies – state and federal prison systems perform syphilis testing at intake but do not offer routine HIV, gonorrhea, or chlamydia (CDC STD QCS, 2020). The median time to treat patients who are not treated on the same day is 8 days; per the Philadelphia Department of Health, only 44 percent of gonorrhea cases received same-day treatment (CDC STD QCS, 2020). 4)

Partner services: To prevent reinfection, partner services allow notifying and treating the sex partners which interrupts the transmission and prevents complications (CDC STD QCS, 2020). 5) Evaluation of STD-related conditions: Genital ulcers can be caused by syphilis, herpes simplex, chancroid, granuloma inguinale, or lymphogranuloma venereum (LGV); STIs causing male urethritis are gonorrhea, chlamydia, mycoplasma, trichomoniasis, and herpes simplex; vaginal discharge due to vaginitis is seen with bacterial vaginosis, trichomoniasis, and candidiasis; while gonorrhea and chlamydia are implicated in epididymitis, pharyngitis, cervicitis, and PID; HPV associated with genital warts; proctitis caused by gonorrhea, LGV serovars of chlamydia, syphilis, and herpes simplex (CDC STD QCS 2020). 6) Laboratory: Laboratory tests for STD specialty care must offer same-day diagnostic testing and treatment for patients with STD-related conditions and ensure partner services are offered as well (CDC STD QCS 2020). 7) Treatment: STD specialty care must offer a full course of medication indicated and ensure the first dose is administered while the patient is in the clinic (CDC STD QCS 2020). 8) Referral to a specialist for complex STDs:

Section 8 includes the CDC's list of complex STD conditions that need specialists which are listed under Table 1 below. The table illustrates the numerous varieties of STI complications that need specialty care which is the essence of this essay.

Table 1. CDC recommendation on referral to a specialist for complex STIs or STI-related conditions

Complex Gonorrhea	• Antimicrobial-resistant gonorrhea • Cephalosporin or IgE-mediated penicillin allergy • Suspected cephalosporin treatment failure • Gonococcal conjunctivitis • Disseminated gonococcal infection or endocarditis or meningitis. • Gonococcal ophthalmia in infants
Complex Chlamydia infections	• Chlamydia ophthalmia in infants • Pneumonia in infants • Persistent or recurrent epididymitis • Persistent or recurrent cervicitis • Cephalosporin or IgE-mediated penicillin allergy • Suspicion of testicular torsion
Complex Syphilis	• Primary, secondary, and latent syphilis in infants and children • IgE-mediated penicillin allergy • Tertiary syphilis • Neurosyphilis • Ocular or otic syphilis • Syphilis during pregnancy with sonographic signs of fetal or placental syphilis

Complex Vaginal Discharge, trichomoniasis, and candidiasis	• Persistent vaginal discharge of unclear etiology • Persistent or recurrent trichomoniasis • IgE-mediated allergy to nitroimidazoles • Recurrent vulvovaginal candidiasis in patients who remain culture-positive despite maintenance therapy. • Recurrent nonalbicans vulvovaginal candidiasis
Complex PID	• Cephalosporin or IgE-mediated penicillin allergy (quinolone resistant gonorrhea or antimicrobial susceptibility cannot be assessed) • PID surgical complication (e.g., tubo-ovarian abscess)
Complex herpes	• Antiviral- resistant herpes infection • Genital herpes contracted during third trimester of pregnancy • Neonatal herpes
Viral hepatitis	• Hepatitis B infection • Hepatitis C infection
Complex warts	• Cervical or intra-anal warts • Atypical anogenital warts with high-grade squamous intraepithelial lesion on biopsy
Cervical intraepithelial neoplasia or cervical cancer	• Women with high- or low-grade squamous intraepithelial lesions on Pap smear

Complex ectoparasitic infections	• Crusted scabies in persons with HIV infection
Sexual assault	• HIV nPEP being considered. • STD in children (if suspected possibility of sexual abuse)
HIV infection	• New diagnosis or establish link to care

Abbreviations: HIV=human immunodeficiency virus; IgE= immunoglobulin, nPEP = nonoccupational postexposure prophylaxis; Pap = Papanicolaou; PID = pelvic inflammatory disease; PrEP = preexposure prophylaxis; STD = sexually transmitted disease.

Barrow RY, Ahmed F, Bolan GA, Workowski KA. Recommendations for Providing Quality Sexually Transmitted Diseases Clinical Services, 2020. MMWR Recomm Rep 2020;68(No. RR-5):1–20. DOI: http://dx.doi.org/10.15585/mmwr.rr6805a1external icon

1.4 Scope

Per CDC Guidelines, the STD QCS recommendations apply to private and public providers offering primary care as well as dedicated STD or sexual health clinics. These guidelines focus on structural-level policy recommendations to determine which STI-related clinical services are essential to promote implementation (CDC report, 2020). In addition to the providers, STD QCS are useful to medical directors in designing protocols and procedures to refine STD care, public health professionals, community organizations, and health care organizations to expand access, measure quality, and reduce STD clinical service gaps through partnerships and collaborations with local care providers; enable health care administrators to measure and monitor facilities' adherence to national recommendations and also, allows health care professionals and patients to advocate for the quality of services (CDC report, 2020).

2.0 Method

This section describes the methods utilized to determine the possible outcomes that are enlisted further in the upcoming sections.

2.1 Stakeholders

2.1.1 Key personnel

Under the guidance of ACHD Clinical Services staff and providers, FQHCs including primary care services and other known clinics offering free or low-cost specialty services in Allegheny County are explored for this assessment. For this essay, due to privacy and security concerns, the individual identities are kept anonymous. Amid this process, top executives (personal communication, a non-profit organization representative, October 09, 2023) and experts are contacted and questioned whether any provisions exist for specialist providers in Allegheny County to offer free or low-cost care for the uninsured. The chief executive officers and chief medical officers of FQHCs are consulted during scheduled meetings and presented with similar questions by a non-profit representative for their feedback. Next in the process, several others including the directors, administrative directors, and medical directors of health programs and private health industries in Allegheny County are also approached through emails to assess if there are any available options regarding specialty care for STIs in uninsured populations.

Additionally, the process involves communicating with medical staff, nurses, social workers, care managers, and financial and billing patient advocates from the leading health industries in Allegheny County i.e. UPMC and AHN representatives at various levels. Via phone calls, emails, and texts try to collect information on current procedures of care for the uninsured and ask if they run any health programs for free or low-cost STI care and the possibility for specialist referrals.

Table 2. Allegheny County-level free/low-cost STI primary and specialty care services

FQHCs (17)	Nine of these FQHCs exclusively provide primary care. Medical assistance and a sliding scale are provided. Funded by HRSA grants
Birmingham clinic Ninth Street clinic	Specialty fellows-in-training staff at these UPMC clinics and provide free or low-cost care, if needed.
AHN network UPMC network UPMC Matilda Theiss Center clinic	Medicaid and Medicare accepted. If not, ask to sign up. No sliding scale is offered. Instead, financial assistance programs are offered for the uninsured and underinsured.
Non-Profit Clinics • AHN Centers for Inclusion Health (covers only people with HIV) • Pittsburgh Area Center for Treatment of HIV (covers only people with HIV) • Planned Parenthood • Allies for Health and Wellbeing • Central Outreach Wellness Center	Medicaid and Medicare accepted. If not, ask to sign up for insurance under the Affordable Care Act. *Services*: Help direct patients to specialty care (UPMC or AHN networks) for STIs after the initial assessment by their providers. PrEP for uninsured. Free/low-cost STI testing, HIV testing, and Hep C testing *Populations served:* Adolescents/youth/teens, African American/Black, Hispanic/Latino, American Indian or Alaska Native, at-risk persons, LGBTQ, People with HIV, low income with STIs.

See Appendix A for the list of primary and specialty care services for uninsured and underinsured individuals in Allegheny County.

2.1.2 Key specifics

With each of these individual stakeholder encounters, focus on asking a set of questions to determine existing options for uninsured individuals with STI complications. During the calls for establishing patient referral process, ask them if they have specialist providers in specific fields (ACHD STI/HIV clinic was specifically looking for specialists in Infectious Diseases, Neurology, Urology, Obstetrics and Gynecology, Ophthalmology, ENT, especially for Syphilis, and Allergists), accept new patients with no insurance, provide medical assistance or a sliding scale, wait time to see the specialist, confirm locations and hours, do they have any grants or run any state or federal programs for STIs or uninsured patients. Lastly, based on the information gathered and when the possibility of a collaborative alliance is promising, such relationships are established to make referrals, particularly for uninsured patients for future contact with the specialists.

After introducing and conveying the purpose of the call i.e., to establish a referral process for STI patients who have no insurance or are underinsured but are required to see a specialist for an STI-related complication, request to speak with someone who can answer questions related to STI specialty care for uninsured individuals. Then, after determining the required person is available, ask the following questions with the hope of learning about possible options existing in Allegheny County – ensure to be respectful and thank them prior to ending the call.

Out of 37 possible contacts that were reached out to, about 30 of them were interviewed to gather information. The rest were not reachable and were left with voicemails and emails requesting them to get back. Each of these contacts was approached a minimum of three times if not reachable via phone calls, emails, and online contact us chats.

Table 3. Questions to ask to establish a referral process

Are you accepting new patients?	Yes / No/*other*
Would you please talk about the care for uninsured or underinsured populations who seek care at your clinic/hospital setting? *If unable, ask which number to call or whom to contact for more information.* *If yes, ask leading questions to gather possible options for uninsured/ underinsured STI care by specialists – for example: How would you approach an uninsured STI patient with a complication requiring specialist care?*	Yes / No/*other*
Do you accept Medicaid or Medicare? *What options are available if an individual is uninsured? What is the process involved in getting health coverage assistance if they do not have one?*	Yes / No/*other*
Do you have specialist providers who can see *STI patients with complications, particularly those who can offer free or low-cost STI care?* If yes, please list the type of specialty department/s.	Yes / No/*other*
How soon can a patient see the specialty provider? How long is the wait time? *In case of speaking to a specialty provider, ask the best way to reach them in case when presented with a possible referral patient.*	walk-in to 3-months
Are location, hours, and timings the same as listed on the website? *If random – weekly or monthly clinics/ mobile camps – check for possible schedules.*	Yes / No/*other*
Can you talk about the federal or state-funded programs you may have for uninsured individuals? Are these available to STI patients who may be HIV-negative?	Yes / No/*other*
Would it be fine to have STI/HIV clinic patients with STI complications be referred to you?	Yes / No/*other*

2.2 Literature review

A systematic Ovid-MEDLINE search is done to gather evidence on clinical care services for STIs for uninsured and underinsured populations and existing policies related to STIs. The inclusion and exclusion criteria are set before initiating a search of articles published from 2010 to 2024. Next, the search results are then filtered down to include only the systematic reviews and review articles.

The inclusion criteria consist of sexually transmitted infections/or diseases including but not limited to bacterial, chancroid, chlamydia, gonorrhea, granuloma inguinale, syphilis, herpes genitalis, condylomata acuminata, HPV/papillomavirus infections; healthcare quality, health equity, health services accessibility, health services needs and demands, medically underserved areas, medically uninsured, Medicaid, underserved, health disparities, health inequities, inequalities, vulnerable populations, race, ethnicity, minority groups, bias, black or African American, financial support, government, jurisprudence, judicial role, court decisions, policies pertaining to STIs, public policy, family planning, health policy, healthcare reform, legislation, and laws. Exclusion criteria consist of out-country publications and non-English articles. Only studies conducted in the United States are included to keep this review clinically relevant to current practice and settings in the United States.

This search focusing on policies with the above set criteria resulted in a total of 89 published articles which were narrowed down to 41 articles after reviewing the abstracts in detail and eliminating the duplicates and out-of-country articles.

2.3 Other resources

The other sources used include two live webinars that include "*Sexually Transmitted Disease Program Overview*" by the Pennsylvania STD Program Department of Health (September 25, 2023) and "*Understanding Congenital Syphilis: A Refresher Course*" (October 26, 2023) presented by the Pennsylvania STD Program Department of Health (PA STD Program DOH). Publicly available reports from CDC, PA State DOH, and ACHD websites regarding STIs/STDs and relevant articles (25 articles) including but not limited to policies, and reports related to STIs are reviewed.

The above resources have contributed to the content of this essay to provide the most up-to-date information on care services for STIs, and personal communications were necessary to determine free or low-cost specialty care options including service providers in Allegheny County and understand the needs for particularly uninsured and underinsured individuals with STI-related complications. The essay discusses the key gaps in the clinical services for STIs after a review of the ACHD STI/HIV clinic services and the existing barriers to providing quality care for the uninsured and underinsured.

A review of the current policies for STIs is done to understand their impact on STI prevention and control by gathering evidence from existing literature, in addition to reports from public health agencies like WHO, CDC, DHHS, NACCHO, and other relevant articles to gain an understanding of the structural bias, racism and stigma related to STIs. The content from the above resources is synthesized to develop potential recommendations to promote the quality of clinical services that can contribute to better sexual and reproductive health outcomes.

3.0 Results

This section presents the data collected from ACHD clinical services, the findings from the literature review, and policies related to STIs.

3.1 Current Allegheny County level STI clinical care services

Allegheny County Health Department (ACHD) STI-HIV clinic provides free comprehensive sexual health services including preliminary testing and treatment for STIs along with linkage to care services to mitigate the circumstances that increase the risk of acquiring and developing complications from STIs (ACHD STI/HIV Clinical Services, July 2023). ACHD plays a crucial role in the prevention and control of STI/HIV infections in Allegheny County. Along with disease investigation processes, surveillance, and tracking of STIs across Allegheny County, the health department shares information provided by the Department of Health and Human Services (DHHS) to access a variety of free community resources such as food banks, housing, education, employment, and comprehensive health services for the homeless, disabled, elderly, or people living with HIV/AIDS, mental health and maternal and child health-related services, and more ACHD STI/HIV Clinical Services, 2023).

As per CDC recommendations, specialty care referrals are a necessity for complex conditions such as disseminated gonococcal infections, neurosyphilis, tubo-ovarian abscesses, and certain drug-resistant STIs that are not treatable in a clinic. This emphasizes the importance of enhancing the clinical services offered and expanding access to quality comprehensive sexual

health services at the health department, linkage to care, and partner services (personal communication, ACHD Clinical Services, 2023).

Currently, the STI-HIV clinic at ACHD is working on onboarding Adagio's free cervical cancer screening, offering emergency contraception, and referrals for PrEP, and nPEP services. They will soon be extending immunization coverage to Hepatitis A and B, mpox, and HPV vaccines, sometime in 2024, which are common infections associated with STIs (personal communication, ACHD Clinical Services, 2023).

Referrals are made to clinicians who have extensive specialized training and experience in diagnosing, treating, and providing follow-up care as necessary for complex STD cases (CDC, 2020). These providers include various specializations such as infectious disease clinicians, ophthalmologists, dermatologists, urologists, neurologists, allergists, obstetricians and gynecologists, oncologists, and other specialists (ACHD clinical services, 2023). Several of these services can be offered at different sites within a hospital system, certain FQHCs, private practice, or through mobile camps (ACHD Clinical Services, 2023).

3.1.1 At-home testing for chlamydia and gonorrhea

In its efforts to help fund STI services, the ACHD STI/HIV Program partnered with a local pharmacy, the Hilltop Pharmacy, in 2022 which turned out to be a great success story for expanding clinical services beyond the clinic walls in improving access to STI services through a grant from the National Association of County and City Health Officials (NACHHO) grant (personal communication, ACHD Clinical Services, December 2023). The care grant recipient, Hilltop Pharmacy played a crucial role in proving how pharmacies can leverage STI services effectively (NACCHO Voice, 2023).

ACHD serves 130 municipalities (NACCHO Voice, 2023). In November 2022, a pilot program consisting of self-collected home testing kits for chlamydia and gonorrhea was launched by ACHD for residents 18 years of age and older living in Allegheny County. Residents can request tests to be mailed to them, collect samples, mail them to the lab, and get results in the privacy of their homes. This is one of the strategies put forward to overcome barriers to STI testing. These kits offer flexibility to patients who want to avoid coming to the clinic due to stigma and get tested for STIs. Following a request for a self-test online order from the home-kit vendor, these kits are delivered to their home or participating pharmacy (Hilltop pharmacy is in a STI burdened community) if they have no permanent address or want to avoid sharing their home mailing address due to privacy concerns. Following a positive test result, the STI/HIV clinic contacts the patients to seek additional testing and care at the clinic, or Hilltop pharmacy will capture the patient's vitals and provide on-spot treatment for the STI diagnosis within minutes based on the standing order from the health department (personal communication, ACHD Clinical Services December 2023). In 2023, NACCHO provided additional funding to onboard Livingston Pharmacy in Clairton, another high-burden STI community (personal communication, ACHD Clinical Services December 2023).

Pharmacies can coordinate care along with the ACHD clinic team when patients have positive results on self-test kits (NACCHO Voice, 2023). As per the pharmacy, they can bill the patient's insurance, which partly covers for treatment provided though (NACCHO Voice, 2023). The pharmacy could not bill insurance for triage, the education aspect of the interaction, and the reimbursement for the pharmacist's time during this encounter (NACCHO Voice, 2023).

When this service was initiated, the process was considered as a potential option that could extend to other STIs including HIV and Syphilis given the increasing rates, however, this

expansion is funding-dependent (personal communication, ACHD Clinical Services November 2023). In 2023, ACHD had to switch from a Color Health vendor to a new test kit provider (ACHD STI/HIV Clinical Services, 2023). As per the NACCHO report, barriers to timely STI care and treatment through private and public health clinics include inconvenient hours, long wait times, distance to the clinic, and confidentiality/privacy concerns. To ease these barriers, NACCHO funded the sites that have committed interest in partnering with local pharmacies to expand STI care (NACCHO Voice, 2023). However, self-sampling is controversial as some public health professionals are for it while some are against it due to concerns over improper sample collection. Furthermore, there is a lack of publicly available data to substantiate either perspective. Moreover, since they have not been available for long enough, it is questionable to approve of their validity.

3.2 Establishing a formalized referral process for uninsured and underinsured

The lack of health professionals providing access to specialty care who can provide free or low-cost care is a large barrier to the treatment of STIs with complications, especially in uninsured individuals. Many scramble to look for alternative providers due to a lack of specialists, especially dermatologists, urologists, and ENT specialists who can offer low-cost care in Allegheny County (personal communication, non-profit representative, October 2023). When faced with no better option available, they depend on the advance fellows-in-training for multiple specialists who staff the UPMC's Birmingham clinic. However, the Birmingham clinic recently stopped accepting new patient referrals and only covers uninsured inpatient admissions (email communication, Program to Healthcare for Underserved populations, Birmingham clinic, September 2023).

Federally Qualified Health Centers (FQHCs) are federally funded health centers that provide free primary care services to underserved populations in rural areas, providing coverage for individuals with no insurance and have sliding scale options based on individual household income for those who can pay. In Allegheny County, 17 FQHCs provide free or low-cost care and nine of these exclusively offer primary care (pchspitt.org, n.d.). Some (East Liberty Family Health Center at Lincoln-Lemington) extend specialty care involving obstetrics and gynecological care and provide high-quality preventive care for cancer and other chronic medical conditions (personal communication, non-profit organization representative, October 09, 2023).

Federally qualified health centers serve individuals who have no insurance and if not eligible for insurance programs such as Medicare or Medicaid, they are offered a sliding scale for eligible individuals depending on their household income (those who fall below 200% of federal poverty guidelines) and they get free medical services including primary care, health screenings, chronic care management, substance abuse, behavioral health, women's health, dental services such as exams, teeth cleanings, x-rays, extractions, medication, and transportation assistance (personal communication, FQHC social worker, October 2023). They also confirmed most FQHCs offer primary care including physical exams for wellness checks, immunizations, vision, and hearing screenings, behavioral health, dental care, diabetes and blood pressure monitoring, nutrition, and housing support for the homeless and disabled (personal communication, FQHC social worker, October 2023).

The 9th Street Clinic at McKeesport and Latterman Family health center are other clinics offering free primary care services for individuals with no insurance (Family Medicine Residency Program (n.d.). The UPMC Birmingham free clinic provides free or low-cost care for the uninsured and underinsured needing STI-related specialty services on site; however, their services are

primarily for direct referrals for uninsured being discharged from the hospital or emergency department (email communication, Program for Healthcare to Underserved Populations, Birmingham clinic, September 2023). There is free ophthalmology care for STIs through Guerilla Eye Services and free dermatology mobile care offered as well. However, given the uncertainty of when an STI complication would need these services, it calls for the provider and specialist to connect and enable care for the given patient (email communication, specialist provider, January 2024).

3.2.1 Financial Assistance Program

The financial assistance program is provided by both AHN and UPMC networks for eligible patients and offers pay assistance for patient costs.

3.2.1.1 AHN Care for Uninsured

Per the financial assistance program under AHN Centers for Inclusion Health, once services are rendered and the patient is billed, the patient is asked to call the helpline number to have financial advocates help take care of their billing.

AHN Center for Inclusion Health accepts all uninsured or homeless individuals and provides care for free or at discounted rates (personal communication, AHN financial advocate, November 2023). First, patients need to have approval for the financial assistance program by applying for a letter of medical assistance denial from the Local County State welfare office by submitting the PA162 form – if a patient receives the letter of denial, then financial assistance can be offered. If not, the patient is provided a medical assistance card i.e. insurance. Next, the patient must apply online or speak to a representative to submit a letter of denial to the financial assistance

program. This is a 6-month program that is income-based and takes 14 days to process from the time of receiving the application. Overall, 30-day turnaround time from the social worker's office to seeing a healthcare provider (personal communication, AHN financial advocate, November 2023).

Financial advocates then screen for financial assistance to confirm before enrolling uninsured patients into the program – once approved, financial assistance provides 100 percent coverage including copay, deductible, and out-of-pocket expenses. However, there are some exceptions with about 90 percent of AHN providers accepting patients through this program (personal communication, AHN financial advocate, November 2023).

Only when an individual is deemed to have exhausted all insurance coverage opportunities and is a United States citizen, can they apply for charity care (per AHN financial assistance program application). So, the provision for charity care applies to patient liability amounts and is reviewed case by case by the financial advocates at Allegheny Health Network (personal communication, AHN financial advocate, November 2023).

3.2.1.2 UPMC charity care and financial assistance

In the case of the UPMC financial assistance program, uninsured patients are enrolled retroactively based on their income level and proposed federal poverty guidelines (100-400) to help decide their eligibility. Partial or full compensation for medical services is based on eligibility for medical assistance (income, disability, chronic conditions) or other forms of insurance coverage. The STI patient would see the doctor, get billed for the services later, and get reimbursed by calling a financial assistance program (personal communication, UPMC Billing, November 2023). The fact that they cannot enroll unless the services are rendered to the patient as per billing

logistics leaves less hope to pursue this path due to fear of debt. Thus, though the money gets reimbursed back to the patient, the process involved contributes to being a barrier to STI care.

The coverage offered by UPMC Charity Care is 100 percent for those eligible ie. those with income between 0%-300% federal poverty level, get 100 percent coverage for patient services (UPMC). The financial assistance provides 80 percent discounted pricing for services rendered and the eligibility for assistance requires an income range that falls between 301%-400% (UPMC).

3.2.2 Other non-profit clinics

Pittsburgh Area Center for Treatment of HIV (PACT) provides care for HIV-positive patients only. They have an "Early intervention grant" for outpatients who are uninsured and the "Ryan White grant" for other social services, however, these are for HIV+ patients only. Ryan White grant is a federal HRSA grant and is administrated by the PA DOH Division of HIV Disease. They accept new outpatients who are HIV-positive and uninsured and cover lab work, visits, and all specialist referrals within the UPMC network. If a patient with unknown HIV status with STI approaches them, they will take Medicare or Medicaid and test for HIV status to determine care. If the patient does not have any insurance, they will refer them to "Allies for Health and Wellbeing" who will provide care for the uninsured (personal communication, care manager, October 2023).

Allies for Health and Wellbeing, a non-profit organization provides financial assistance for primary care services for all patients, not just people living with HIV. Historically, this organization was known as the Pittsburgh AIDS Task Force (PATF) which advocated against discrimination of people living with HIV; and empowered the community by removing financial barriers and stigma by ensuring care for those in need (alliespgh.org, n.d.). If specialists are

required for an STI patient, they refer them to Birmingham and UPMC which will need them to sign up for affordable care (personal communication, clinical social worker, December 2023).

Additionally, Central Outreach for Wellness Center is another non-profit providing care for all individuals regardless of income or HIV status the same day of visit. They need no co-pay and help with assistance pay. However, they require that the patient sign up as their patient as opposed to being a referral (personal communication, social worker, December 2023). Planned Parenthood is another non-profit providing low-cost care for STI testing, gender-affirming, and other sexual health care services (personal communication, Planned Parenthood, November 2023).

3.3 Existing policies related to STIs

3.3.1 Minors' consent law for STI services

The Disease Prevention and Control Law of 1955, P.L. 1510, No. 500 Act, enlists consolidated laws to provide prevention and control of communicable diseases including Venereal Diseases. Section 14.1 mentions the Treatment of Minors: "Any person under the age of twenty-one infected with a venereal disease may be given appropriate treatment by a physician. If the minor consents to undergo treatment, approval or consent of his parents or persons in loco parentis shall not be necessary and the physician shall not be sued or held liable for properly administering appropriate treatment to the minor" (14.1 added Dec1, 1971, P.L. 590, No.156).

State laws that enable minors to provide informed consent to receive healthcare services and procedures are complex; and given this high complexity with confidentiality concerns and requirements of clinician's judgment, these laws have substantial limitations (Kimberly et al.,

2023). STIs are predominantly seen among adolescents and young adults and one of the significant barriers to seeking STI services by young adults is their willingness to involve or reveal information to the parent or guardian (CDC, 2020). The law addresses this barrier by giving the minors legal capacity to consent to STI/HIV services without a guardian's involvement (CDC, 2020). In all 50 states plus the District of Columbia, minors can consent independently to STI/HIV testing and treatment; and the minimum age limit for consenting without parental knowledge varies by state jurisdiction (Kimberly et al., 2023). Though the law addresses the barrier of the guardian's consent requirement, it requires clinicians to decide to allow minors to seek care independently. Clinicians must decide that they have both the mental and legal capacity to make medical decisions without a guardian's permission and if they qualify for independent consent especially when posing a threat to health (JAMA Network, 2022). Thus, minors are not in control of these decisions and in fact, depend on the clinicians to act for their benefit (JAMA Network, 2022).

3.3.2 Legal status of expedited partner therapy

Expedited Partner Therapy (EPT) is permissible in Pennsylvania and liability is described by the General Assembly of Pennsylvania (Senate Bill No. 317, Session of 2021, The General Assembly of Pennsylvania).

The EPT ensures partner treatment by enabling persons affected with STIs to deliver prescription medications to their sex partners without clinical assessment by the Healthcare practitioner. The healthcare practitioner will recommend to the patient that the individual seek treatment from a health professional and document the name of the drug prescribed and its dosage, including directions for the use of the drug and any side effects, or contraindications associated with the drug noted in the patient's record; regarding the liability of not prescribing drugs to a

partner, a healthcare practitioner is not subjected to civil or professional liability for not choosing to provide EPT (Senate Bill No. 317, Session of 2021). Though the traditional practice was to notify partners of exposure, evaluate, and treat the infected person, the partner management through this approach had little to modest success in ensuring partner treatment (Sexually Transmitted Disease Treatment Guidelines, Centers for Disease Control).

Legal and Policy Toolkit for Adoption and Implementation of Expedited Partner Therapy by CDC's Division of STD Prevention provides resources to assist states in adopting laws supportive of EPT and helps states address barriers to its full implementation (Dear Colleague letter January 31, 2011, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB prevention).

3.3.3 Insurance billing for sensitive health services

Limits on Third-party Billing is one of the laws that emerged in response to serious syphilitic epidemics in army camps over the years leading up to and after the Second World War in reference to the "Pennsylvania law requiring free STD services" which was enacted in 1956 (National Coalition of STD Directors). The U.S. Public Health Service Corps advocated for state laws to assume responsibility for addressing the STI epidemic that subsequently enabled individuals to obtain treatment from other practitioners which allowed for overcoming privacy concerns and economic barriers to the diagnosis and treatment of STIs, and this led to the widespread use of antibiotics to treat Syphilis in the US; these laws ensured free service delivery in public health, however, unintentionally blocked third-party billing systems (National Coalition of STD Directors). Free STI services are to be rendered to patients according to this law. However, it is arguable if state and local state Departments of Health-affiliated STI clinics can bill third parties as payers considering the patient does not incur any direct cost or pay a co-pay. However,

another way to interpret this law is to allow the STD program to bill third-party payers if there is no fee to the patients and this does not violate the PA state DOH requirement (National Coalition of STD Directors).

3.3.4 Public health departments and state patient confidentiality laws

Health departments strive to treat communicable diseases like STIs, however, when one individual acquires more than one illness at the same time, it is challenging for health departments to effectively coordinate care while protecting patient confidentiality (State Statutes related to STDs in the US, 2013). The state statutes and regulations (regarding HIV/AIDS, Hepatitis B and C, syphilis, gonorrhea, chlamydia, and tuberculosis) address health departments' ability to release and use personally identifiable information to promote public health and coordinate care (State Statutes related to STDs in the US, 2013).

3.3.5 Communicable disease intervention laws

The health department may be permitted or required by the law to take steps to prevent the spread of communicable diseases like HIV and other sexually transmitted diseases; some states must report to local and state health departments, and those who encounter diagnosed patients are notified, tested, and treated; and sometimes, health departments may take preventive steps based on suspicion before confirming the diagnosis (The policy surveillance program, July 2013). The protocol involves reporting the case and intervening as per the state jurisdiction; this helps determine whether the state or local health department is required to act and what actions are permitted to take while intervening (The Policy Surveillance Program, July 2013).

The law is helpful as it empowers the health department with certain duties related to reporting, quarantining, and control of diseases declared communicable by law or regulation (Disease Prevention and Control Law of 1955, Act of Apr. 23, (1956).

3.3.6 Prenatal syphilis screening

The current recommendation for screening for prenatal syphilis starts at the first prenatal visit in the state of Pennsylvania (STD Treatment Guidelines, Centers for Disease Control and Prevention, 2021). Most importantly, screening for syphilis is recommended by the CDC during the first prenatal visit, at 28 weeks, and delivery if the mother lives in a community with high risk or is at risk (Department of Human Health Services, 2023). Allegheny County follows guidelines as per the Pennsylvania State Department of Health, according to which in addition to the first visit, syphilis testing is recommended for all pregnant women in the third trimester of pregnancy, at the delivery of a child, or the delivery of a stillborn child (health.pa.gov).

3.3.7 HIV/STD criminalization laws 2022

HIV criminalization laws were enacted to meet public health and patient safety goals way before the availability of antiretroviral therapy and pre-exposure prophylaxis (PrEP) (CDC, 2022). Criminalization of potential HIV exposure is largely controlled by state law with very little Federal legislation in discrete areas such as blood donation and prostitution; with wide variation as to what actions are criminalized or penalized (Laws, policies & STD, CDC 2022).

The law comes into play to criminalize actions when someone acts in ways to potentially expose another individual to an STD or HIV (laws, policies & STD, CDC 2022). Currently, 10

states mandate disclosure to partners if individuals are aware of their HIV status, and 3 states require disclosure to needle-sharing partners; the sentence for violating HIV-specific laws varies by state, with some states having life imprisonment, while others have a maximum sentence length of less than 10 years; only 10 states have laws that focus on prevention measures including condom use, antiretroviral therapy, and PrEP use; and at least 12 states have repealed or modernized their criminal laws (HIV criminalization and Ending the HIV epidemic in the US, 2023). It is important to note that the actual transmission or intent to transmit HIV is not usually required by existing laws in most states (HIV Criminalization and Ending the HIV Epidemic in the US, 2023).

3.3.8 HIV testing in general population

As per Pennsylvania Statues Title 35 P.S. Health and Safety 7605. Consent to HIV-related tests, with some exceptions to involuntary testing, (1) informed consent of the subject is mandatory before performing any HIV-related test. (2) An option for opt-out HIV testing is offered to subjects in which case they will be tested for HIV unless the subject refuses and the provider will document informed consent, including pretest information and refusal. (3) A confirmatory test is required for any positive test result; and (4) (notice of test result) physician who ordered the test, the physician's designee, or a successor in the same relationship to the subject shall ensure to inform the subject regardless of a positive or negative test result. (5) Post-test counseling is necessary whenever a positive test result is notified to the subject. (6) Blinded HIV-related testing which is performed for research purposes only must be reviewed and approved by the institutional review board prior to the effective date of this act (HIV laws, CDC 2023). Another similar law is the Perinatal HIV Testing Law which does not have any specific state statutes in Pennsylvania.

3.3.9 State laboratory reporting laws

Per the state of Pennsylvania laws related to HIV, the laboratories are required to report all CD4 counts, viral loads, and molecular data but do not have to complete reporting of laboratory data to the CDC, based on the evaluation of their surveillance data (Laboratory reporting laws, 2022).

28 Pa. Code 27.22. Reporting of cases by clinical laboratories for communicable diseases (including STIs)– promptly report findings no later than the next day after the close of business on the day on which the test was completed (Commonwealth of Pennsylvania, 2023).

3.4 Current status of STIs

STIs are a national concern and about 2.5 million new cases of chlamydia, gonorrhea, and syphilis are reported each year (CDC, 2021). The high prevalence of chlamydia and gonorrhea represents significant neglect of STIs; a rising economic burden over the decades must be recognized and prioritized as an urgent public health problem (Auchus et al., 2023). Untreated chlamydia leads to pelvic inflammatory disease in 40% of cases and is the leading cause of ectopic pregnancy resulting from fallopian tube damage and pelvic adhesions (Nadeau et al., 2018).

The cumulative STI reported rates in 2021 for the State of Pennsylvania are low when compared to the rest of the nation, accounting for less than 0.5 percent i.e. less than 500 cases per 100, 000 population in 2021 (CDC, 2021). As per ACHD public health information release report in 2022, chlamydia and gonorrhea rates are highest among females 15-24 years of age, and gonorrhea is highest among males 20-29 years (ACHD report, 2022). Both chlamydia and

gonorrhea are common sexually transmitted infections and in 2022, 2532 cases of gonorrhea were diagnosed, which is a six percent increase from 2021. In 2022, 5594 cases of chlamydia, a two percent decrease from 2021 (ACHD report, 2022). However, STIs have increased over the past few years, especially with a persistent uptick in congenital syphilis cases since 2017 (PA DOH refresher course, October 2023).

From 2020 to 2021, the rates of primary and secondary syphilis in the US increased by 52 percent among women, and congenital syphilis increased by 32 percent (CDC, 2021). This increase in congenital syphilis and related deaths is a stark reminder of inadequacies in care and emphasis on prevention and testing in the face of worst outcomes related to STIs (PA DOH, 2022). As per the CDC report in November 2023, 90 percent of congenital syphilis cases in the US are due to a lack of timely testing and adequate treatment among all racial and ethnic groups and in all US Census Bureau regions. CDC illustrates a mutually exclusive six-part cascading framework of risk factors that include 1) no treatment or non-timely testing (timely testing is testing completed >/= 30 days before delivery), 2) late identification of seroconversion during pregnancy (<30 days before delivery), 3) no treatment or nondocumented treatment, 4) inadequate treatment, 5) clinical evidence of congenital syphilis despite documentation of adequate maternal treatment, and 6) insufficient data to identify a missed prevention opportunity for the case (CDC, November 2023). Implementing tailored strategies at local and national levels to address missed opportunities can help reduce congenital syphilis cases (CDC, November 2023).

In the state of Pennsylvania, babies born with syphilis hit the highest level in 32 years as per the Pennsylvania State Department of Health with 12 confirmed cases and two stillbirths in Pennsylvania in 2022 (PA State DOH, 2022). Pennsylvania State DOH vehemently reminds healthcare providers in all counties in PA including Allegheny County to test for syphilis at the

first prenatal visit, third trimester, and delivery and plans on mandating this recommendation soon for counties with the rise in congenital syphilis cases in recent years (PA DOH refresher course, October 2023).

3.5 Barriers to care

3.5.1 Stigma and structural bias

Stigma is a barrier to care as it acts as an obstacle to engaging patients to seek proper care. Communication in terms of public health responses should be based on equity and inclusiveness, and the recent outbreak of mpox explains this well (WHO, 2022). The term "Monkeypox", first originated in 1958 when a pox-like disease was first observed in monkeys (WHO, 2022). The recent cases that occurred in humans were reported in gay, bisexual, or MSM in 2022 and WHO was concerned by the "racist and stigmatizing language" that arose after monkeypox spread. WHO renamed monkeypox as mpox citing concerns about the original name being discriminatory and racist and aiming to minimize unnecessary negative impact due to stigmatizing language (CDC, 2023).

Historically, Bassey recalls that the effects of systematic or institutional racism, also referred to as structural racism, prevail due to social forces, ideologies, and processes that interact with one another to generate and reinforce health inequities and disparities seen among Black/African Americans, Native Americans, and Latinos (Bassey et al., 2022). Bassey highlights that the socio-demographic profile of Black/African Americans is vital to showcase the historically present inequalities such as high rates of poverty, limited access to higher education, financial

resources, employment opportunities, and access to quality healthcare services (Bassey et al., 2022). It is interesting to note that adverse health outcomes are common with a high incidence of STIs among Black/African Americans regardless of their socioeconomic factors and lifestyle (Bassey et al, 2022).

The evidence of mistrust created towards the medical community due to abuse, exploitation, and experimentation involving Black/African Americans is well known and one such example is the Tuskegee Syphilis experiment (Bassey et al., 2021). The United States Public Health Service (USPHS) justified the unethical experiment on 600 Black males as a necessity for medical advancement while intentionally pretending to provide them with medical care for tertiary syphilis (Bassey et al.,2021). Given such historical incidents, health disparities and social inequities among racial and ethnic minorities prevail to this day including African American diagnosis and treatment during the COVID-19 pandemic.

Colasanti found that despite the advancement in the treatment of HIV and a decrease in the number of new cases in the United States, more than half of the new HIV diagnoses occur in the Southern United States which disproportionately affects people of color and is attributed to increased barriers due to social determinants of health, coexisting mental health, substance abuse and sexually transmitted infections (Colasanti et al., 2019).

Black/African Americans have a comparatively higher incidence of poverty, and STDs including HIV, chlamydia, genital herpes, genital warts, gonorrhea, hepatitis, syphilis, and trichomoniasis despite improvement in socioeconomic status as per many epidemiological studies on Black women's health outcomes (Bassey et al., 2021). The stigma related to STIs is a significant issue among racial minorities especially Black/African Americans and MSM who are at high risk of STIs and are less likely to utilize health services and resources if an STI diagnosis

can make them feel discriminated against. Bassey highlights that race acts as an inhibitor of Black women's healthcare outcomes and legalized structural racism affects Black/African American women's mental and physical health because of the inherent bias based on skin color and prejudice (Bassey et al., 2021). The author notes that Black/African American women have historically experienced poor health outcomes from forced underage pregnancies, lack of transportation, food security, education, and financial and healthcare services due to low socioeconomic status, and racism (Bassey et al., 2021).

ACHD STI/HIV clinic acknowledges the impact of stigma amongst individuals with STIs and hence, provides access to self-testing program, free testing and treatment for STIs, and provides information to access free community resources for marginalized populations. Transgender and gender diverse (TGD) patients experience a high burden of health disparities compared to heterosexual/cisgender populations and have poor outcomes that are associated with the prevalence of implicit bias of healthcare providers and others, emotional distress, bullying, drug abuse, intimate partner violence, STIs, and cancer (Juarez et al., 2023).

Fuzell et al., (2020) found that though cervical cancer screening rates are high in the United States, often marginalized or underserved individuals including racial and ethnic minorities, rural residents, sexual and gender minorities, those having limited English proficiency, and certain religious beliefs do not participate in regular screenings. Additionally, the barriers extend further to difficulty of interacting with healthcare systems due to limited knowledge and health literacy which eliminate the scope for provider recommendation and contact, the cost and insurance, and logistical barriers such as lack of access, scheduling issues, family and social support are challenges that demand solutions (Fuzzell et al., 2020).

System-level barriers include parental attitudes and concerns about the vaccine's effect on sexual behavior, low perceived risk of HPV infection, social influences, irregular preventive care, and vaccine costs which call for continued efforts by healthcare professionals to increase overall HPV vaccine uptake (Holman et al., 2014). At the social and policy level, sexuality-related communication, health professionals' recommendations, and vaccine policies such as insurance coverage facilitated HPV vaccination while religious and moral convictions regarding abstinence from sex until marriage negatively influenced vaccine acceptance (Chan et al., 2023).

3.5.2 Barriers at the patient level

A study by Strickland suggests that being sexually active at a young age carries a stigma that reinforces fear amongst college students and reduces the disclosure of sexual reproductive health challenges to seek help by informing adults who may activate support (Strickland et al, 2023). Thus, stigma is a barrier at an individual level, though it can also be interpersonal, institutional, or community level, making it a challenge to overcome.

Even when Chlamydia testing is done for free, patients may still incur some separate charges for diagnosis, treatment, and associated office visits making it a prohibitive hindrance to seeking STI care (Loosier et al, 2014). Loosier's research article indicates that patient confidentiality is a significant concern, particularly due to stigma. This is why when seeking STI services, Lossier says some individuals avoid necessary STI care or opt for a provider other than primary care due to concerns about disclosing their sexual behaviors or disease status. However, not all health plans cover out-of-network providers-(Loosier et al., 2014).

Chan found the contributing factors at the individual level are the age of adolescent girls, perceived risk of HPV infection and knowledge of HPV transmission, perceived importance of vaccination, and lack of trust in the government (Chan et al., 2023).

Despite the progress on social, and political levels, with human rights advances made over the past two decades for gay, bisexual, and other MSM in the United States, the stigma and discrimination related to sexual health behaviors and incidence of STIs remains disproportionately high among MSM (Wolitski et al., 2011). While sexual health for MSM extends beyond the absence of STIs, the perceived discomfort related to sexual orientation and not disclosing same-sex behavior to healthcare providers may delay the diagnosis and treatment of HIV/STIs; and when left undetected and unaddressed, negative outcomes result in the form of newer infections and transmission to others (Wolitski et al., 2011).

3.5.3 Barriers at the provider level

Chlamydia is one of the most reported STIs that occurs at high rates among 15-24-year-old sexually active reproductive young women; when left untreated, it leads to pelvic inflammatory disease and infertility impairing reproductive functioning (Loosier et al., 2014). To prevent this, the CDC and the United States Preventive Task Force (USPSTF) recommend annual screening for chlamydia, though as per Loosier, many do not follow them (Loosier et al., 2014).

Mientkiewicz et al., (2022) emphasize reviewing standard practices in emergency care and the importance of laws regarding the providers respecting patient confidentiality while providing emergency medical care without parental consent for emancipated minors and adolescents. The author reminds providers about building their trust and encouraging adolescents to confide in their parents while making decisions regarding their healthcare (Mientkiewicz et al., 2022). Although

this may not be always a best practice; Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) youth seems like a significant potential caveat to this advice.

Mientkiewicz states providers should be aware of the fact that adolescents are more likely to seek care if the patient's visit is made confidential and that they have legal authority to refuse care and make medical decisions (Mientkiewicz et al., 2022).

Mansfield et al. reported the most significant facilitator for HPV vaccination was the provider recommendation involving patient-provider discussion for vaccine initiation and completion among adolescents. Mansfield reported barriers by the providers include difficulty discussing sexual health with parents, perception of limited vaccine safety, and ensuring adolescent follow-through with vaccine completion (Mansfield et al., 2021).

According to a study by Strickland, the lack of knowledge about sexual health and its relationship to overall health is crucial for understanding the need to seek sexual health services in the first place (2023). However, issues such as referral, and stigma, health insurance coverage, costs, and transportation are some of the known barriers among college students that have been exacerbated due to clinic closures and resource allocation since the pandemic onset (Strickland et al, 2023).

While ACA expansion expands access to preventive services, it does not establish minimum reimbursement rates for physicians or mandate service provision; providers lack incentives to offer these services widely making it a challenge when providers cannot collect copay. Loosier points out that due to the lack of uniform coverage, especially private insurance, standard Medicaid, and Medicaid expansion, provider reimbursements get complicated (as not all states have accepted Affordable Care Act expansion, though PA has) (Loosier et al., 2014).

3.5.4 Common health disparities among un-or -underinsured populations

The section explores the public health crisis of STIs further. Varying healthcare utilization due to access, and affordability issues, and the inequities due to race, socioeconomic level, and education are some of the factors leading to health disparities.

Epidemiologically, oral cavity and oropharyngeal cancers are more common among black men, and cancer control research illustrates poor patient outcomes and access to care due to existing health disparities associated with incidence, survival, and race/ethnicity (LeHew et al., 2017).

Enhancing overall HPV vaccination rates in the US requires a comprehensive approach across racial, ethnic, and socioeconomic groups which involves increasing healthcare access for low-income, efficient provider recommendation, and patient-focused interventions such as education and coordinated initiatives across diverse demographics to emphasize the importance of series completion, which potentially will reduce future disparities in cervical cancer (Jeudin et al. 2013). The incidence of HPV is higher in women than men in each race/ethnic group, with rates of cervical cancer being high in Blacks (8 cases per 100, 000) and Hispanic (9 cases per 100,000) women when compared to non-Hispanic white women (7 cases per 100,000) in the United States (CDC, 2020).

Jeudin emphasizes the importance of attaining a high HPV vaccination rate among minority populations for two reasons. First, given that most young adults have partners within their communities, it is crucial to achieve herd immunity within the sexual networks (2013). Second, the rapid rise in the proportions of Black, Hispanic, and Asian populations in the US is projected to increase by 2050 highlighting the need to improve vaccination rates in high-risk populations to

prevent an increase in cervical cancer disparities (Jeudin et al., 2013). In addition, HPV is the only vaccine available that prevents cancer.

Congenital syphilis is reported across all demographics; however, research indicates it is eight times more likely in infants born to Black, Hispanic, Native American, and Alaskan Natives outlining the importance of addressing gaps in healthcare, particularly focusing on marginalized populations (CDC STD, CBS news, Moniuszko, 2023). As per the CDC Division of STD Prevention, this finding is a combination of individual and systemic barriers (health coverage/maternal care deserts, transportation issues, substance abuse, housing instability, poverty, and racism) to testing and treatment that has led to missed prevention opportunities (CDC STD, CBS news Moniuszko, 2023).

3.5.5 Uninsured and ACA

Lyon explains that the Affordable Care Act (ACA) is aimed at addressing health inequalities by expanding Medicaid coverage for millions of uninsured Americans, particularly those with low incomes facing disparities in access to care and health outcomes (Lyon et al.,2014).

While studies suggest that Medicaid expansion can reduce insurance-related disparities, obstacles such as the Supreme Court's decision allowing states to opt out have limited its impact; Medicaid, with lower reimbursement rates and fewer services than private plans, faces imperfections that affect patients with critical illnesses and those who need specialty care (Lyon et al., 2014). Despite these challenges, Lyon suggests over 10 million low-income individuals who gain Medicaid coverage are likely to experience improved access to healthcare, reduced out-of-pocket expenses, and overall health enhancement (Lyon et al., 2014). Lyon states that Medicaid

expansion is poised to address coverage gaps for low-income individuals, tackling health inequalities in the United States (Lyon et al., 2014).

Lyon highlights that while Medicaid expansion is a positive step, studies in the specialty reveal ongoing health outcome disparities compared to private insurance as national adoption and consistent income eligibility thresholds are essential to avoid coverage gaps (2014). Challenges persist, including deficiencies in essential health benefits, cost-sharing for Medicaid beneficiaries, and limited access to specialists (Lyon et al., 2014). Lyon found that despite these challenges, Medicaid expansion enhanced provider availability to address health disparities. Access to healthcare though important, Lyon laments on much greater need for broader societal changes (Lyon et al., 2014).

Loosier points out the issues under the ACA that call for attention. Some of the main ones include uninsured individuals (undocumented immigrants/lawful non-citizens who have been in the country less than 5 years and do not qualify for standard Medicaid benefits), physician reimbursement, cost sharing, confidentiality concerns, inadequate sexual history taking by the primary care providers, and disclosures of sensitive information. Additionally, safety net programs that are expected to serve as a payer of last resort are scrutinized for their role in providing health care to individuals irrespective of their ability to pay (Loosier et al., 2014).

Although qualified non-citizens may receive subsidies in Marketplaces, undocumented adults and children are barred from purchasing Marketplace coverage, thus, these restrictions leave most immigrant populations out of ACA coverage expansions (Loosier et al., 2014). Loosier states that US citizens with income between 100% and 400% federal poverty line (FPL) qualify for federal subsidies to purchase coverage from the Marketplaces; however, in states without Medicaid expansion, these subsidies can assist some of the potential expansion population to obtain the

private plan, however, premium subsidies do not reach those below 100% FPL, causing them to remain uninsured. Loosier's article explores the impact of ACA health plans and identifies that increased enrollment represents a substantial increase in access to preventive health services without cost-sharing including chlamydia screening (Loosier et al., 2014).

However, enhanced access to chlamydia screens without cost sharing does not fully mitigate all barriers. Loosier signifies lingering challenges remain for preventing and treating chlamydia (2014). Loosier mentions low enrollments with 70% of uninsured children potentially CHIP-eligible but not enrolled, and only 63% of Medicaid-eligible adults are enrolled. The article concludes that identifying those who are eligible but uninsured and linking them to the resources is a strategy to increase the screening of young women for Chlamydia without insurance, who do not benefit from ACA (Loosier et al., 2014).

State laws generally require health plans to provide an explanation of benefits (EOB) to policyholders, to protect them from fraud and abuse. EOBs may reveal information about having chlamydia screening, potentially discouraging young women from seeking such services. The ACA provision of allowing children until 26 years on the parent's plan also raises concerns about disclosing sensitive information (Loosier, et al., 2014).

The author suggests that supporting health insurance expansion and advocating for improved policies in specialty care are immediate imperatives to ensure timely access to services and enhance health outcomes (Lyon et al., 2014). ACHD, FQHCs, and other clinics provide access to signing up for assistance/affordable care insurance every time they have a new patient who has no insurance in their efforts to improve access to services for STIs.

As per PA DOH, recommendations for syphilis screening include a screening of all pregnant women at the first prenatal visit and rescreening in case of high risk at 28 weeks or in the

third trimester and at delivery. The article by Goodman and McPhillips elaborates that though Medicaid mandates syphilis testing in the first trimester, state policies vary on repeat testing in the third trimester and at birth, and so, in states with no Medicaid expansion, pregnant women of lower income receive coverage, but their male partners do not, hindering the primary care access; this increases the risk of reinfection during pregnancy contributing to rising congenital syphilis rates, particularly in the south (seven out of 11 states that have not expanded eligibility for Medicaid, are in the southern US) (Goodman and McPhillips, 2023).

The National Coalition of STD Directors shows more than 40 percent decline in public health prevention funding for STDs since 2003, adjusted to inflation (Goodman and McPhillips, 2023). Federal funding silos also make it difficult to redirect money to where it is most needed (Glenza, Gaurdian 2023).

3.5.6 STIs and syndemics

STIs increase the risk of HIV acquisition and co-exist with other public health challenges such as HIV, viral hepatitis, substance abuse, and multi-drug resistance infections highlighting the importance of integrating health services (who. int, 2023).

Acquiring HIV or STIs can negatively impact physical and mental health, evoking feelings of shame and guilt, and prompting individuals to limit or alter their sexual behavior and preferences contributing to stressful relationships and breakdowns; on the other hand, the diagnosis of STI/HIV may uncover other co-existing issues like substance abuse, depression, sexual abuse, and sexual dysfunction, and presents with challenges of partner disclosure, dealing with recurring symptoms, and coping with one's inability to sustain relationships (Wolitski et al., 2011).

Godley emphasizes the syndemic theory and structural ramifications that exist based on their study involving Black/African American populations including MSM, cis-women, trans-women, heterosexual men, and adolescents (2020). The use of a syndemic framework in studying the associations is valuable in providing insights into HIV and STI-related outcomes by including mental health, violence, unstable housing, incarceration, sexual behaviors, testing, adherence to therapy, and substance abuse as these influence not only at the individual level but also can impact economic, political, and social systems; thus implementing policy changes by taking these associations into account is important to end HIV and other sexually transmitted infections (Godley et. al., 2020).

Sexual risk reduction counseling on behavior in primary care and related settings can benefit STI prevention in especially sexually active adolescents and adults with high-intensity (more than 2 hours of intervention contact) interventions at 6 months or less is reported to be most likely effective (O'Connor et al., 2014). Substance abuse, mainly Methamphetamine, and perinatal syphilis are commonly reported to co-exist and it is challenging for healthcare providers to reach these at-risk women in vulnerable situations (Goodman and McPhillips, 2023). The article highlights the infection's (syphilis is known to be more common among MSM) demographic shift toward heterosexual women and their partners, especially those involved in substance abuse and transactional sex, emphasizing heightened risk with methamphetamine addiction (Goodman and McPhillips, 2023).

Limited awareness of effective strategies to prevent violence at interpersonal or intergenerational levels contributes to the development of a wide range of mental and physical health problems (Sumner et al., 2015). Exposure to youth violence, child abuse and neglect, intimate partner violence, elder abuse, and vulnerable situations heightens the risk of STIs and

depression resulting from high-risk sexual behaviors; hence, enhancing efforts to prevent violence is crucial and health care providers play a significant role in this endeavor (Sumner et al., 2015).

4.0 National and global level recommendations for STI QCS

4.1 STI National strategic implementation plan 2021-2025

Also referred to as the Federal Implementation Plan (DHHS office, 2020). The Department of Health and Human Services (2020) in collaboration with federal partners coordinated the development of an inaugural STI plan that serves as a roadmap to guide stakeholders about policies and initiatives for the prevention and control of STIs (STI, DHHS, 2020). The steering committee used feedback from over 1000 individuals and organizations across the nation representing a diverse set of subject-matter experts from federal departments and representatives from state, tribal, territorial, and local governments, researchers, healthcare providers, community partners, and advocates in STI-related fields (STI, DHHS, 2020).

The Department of Health and Human Services (DHHS) Office of Infectious Disease and HIV/AIDS Policy (OIDP) in the Office of the Assistant Secretary for Health (OASH) announced the draft of the National STI Strategic Plan 2021-2025 for gaining additional feedback from public participation via comments reviewed from the Federal Register between 09/21/2020 to 10/01/2020 before developing the final STI National Strategic Plan (DHHS, 2020).

"DHHS's goals as per the STI National Strategic Plan for the United States 2021 – 2025:

1. *Prevent new STIs.*

- Increase awareness of STIs and sexual health.
- Expand implementation of quality, comprehensive STI primary prevention activities.
- Increase completion rates of routinely recommended HPV vaccination.

- Increase the capacity of public health, health care delivery systems, and the health workforce to prevent STIs.

2. *Improve the health of people by reducing adverse outcomes of STIs.*

- Expand high-quality affordable STI secondary prevention, including screening care, and treatment, in communities and populations most impacted by STIs.
- Work to effectively identify, diagnose, and provide holistic care and treatment for people with STIs by increasing the capacity of public health, healthcare delivery systems, and the health workforce.

3. *Accelerate progress in STI research, technology, and innovation.*

- Support research and investments to develop STI vaccines and bring them to market.
- Support the development and uptake of STI multipurpose prevention technologies, antimicrobial prophylaxis regimens, and other preventive products and strategies.
- Support the development and uptake of innovative STI diagnostic technologies, therapeutic agents, and other interventions for the identification and treatment of STIs, including new and emerging disease threats.
- Identify, evaluate, and scale up best practices in STI prevention and treatment, including through translational, implementation, and communication science research.

4. *Reduce STI-related health disparities and health inequities.*

- Reduce stigma and discrimination associated with STIs.
- Expand culturally competent and linguistically appropriate STI prevention, care, and treatment services in communities disproportionately impacted by STIs.
- Address STI-related social determinants of health and co-occurring conditions.

5. *Achieve integrated, coordinated efforts that address the STI epidemic.*

- Integrate programs to address the syndemic of STIs, HIV, viral hepatitis, and substance abuse disorders.
- Improve quality, accessibility, timeliness, and use of data related to STIs and social determinants of health.
- Improve mechanisms to measure, monitor, evaluate, report, and disseminate progress toward achieving national STI goals."

U.S. Department of Human and Health Services, 2020, STI National Strategic Plan for U.S.: 2021-2025. Washington, DC.

Thus, the federal and HHS agencies and offices in addition to public input are valuable in addressing the high burden of STIs, and the Federal implementation plan 2021-2025 by DHHS seems like a promising step forward to reduce STI rates and their public health impacts.

Another similar plan put forth by WHO is the Global Health Sector Strategy on HIV, Hepatitis, and STIs 2022—2030 in response to curtailing the rise in STIs which is as follows.

4.2 Global health sector strategy on HIV, hepatitis, and STIs, 2022 – 2030

WHO provides a global framework that guides the standards for STI prevention, testing, and treatment along with the groundwork for research to improve diagnostic tests, vaccines, and additional drugs for gonorrhea and syphilis; and helps strengthen surveillance and monitoring of antimicrobial drug resistance to gonorrhea (WHO response, 2022). Strategic directions are proposed by the WHO to end epidemics and advance universal health coverage, primary care, and health security where individuals can access quality, evidence-based patient-centered care (WHO response, 2022).

"WHO's strategic directions: Framework to end STIs by 2030:

1. Deliver high-quality evidence-based people-centered services.

- This is to accelerate access to and uptake of a continuum of high-quality essential services for HIV, viral hepatitis, and STIs and other services tailored to meet the needs of people in diverse populations and settings, to ensure that no one is left behind.

2. Optimize systems, sectors, and partnerships for Impact.

- By taking a system-based approach, promote synergies with primary care, health governance, financing and workforce, and service delivery while also fostering social and structural determinants of health.
- Collaborate with partners including funders, academics, research institutions, professional bodies, and the private sector for maximum impact.

3. Generate and use data to drive decisions for action.

- Monitor, evaluate progress, and guide action, and innovation research to promote transparency and accountability.

4. Engage empowered communities and civil society.

- Ensure services are culturally appropriate and responsive to community needs, to address stigma and discrimination to tackle barriers.

5. Foster innovations for impact.

- Collaborate and contribute to defining and implementing national, regional, and global research and innovation agendas that prioritize overcoming key barriers to achieving progress against HIV, viral hepatitis, and STIs."

Global Health Sector Strategies (July 18, 2022)

To be effective in using these strategies, it is essential to have predictable funding and be recognized by other stakeholders as key partners to facilitate service delivery, policy making, monitoring, evaluation, and support initiatives to address barriers (Global Health Sector Strategy 2022-2030).

5.0 Recommendations and discussion

The challenges to equitable quality stigma-free STI care services are many. Although great advances in STI screening, diagnosis, and treatment have been made, the number of case rates for reportable STIs is still high across the United States. Viral infections like hepatitis B and C, and HPV are responsible for approximately 20% of cancer deaths (Lichtman et al., 2013). The National Academy of Medicine 1997 report's description of the degree of public awareness about STDs as "The Hidden Epidemic" still holds good to describe the current situation now with continued stigma and adverse impacts on access to care and preventive services (National Coalition of STD Directors, 2018).

The key recommendations for improving STI care include implementing health education sessions tailored to young adults and youth to increase awareness and enable them to make informed decisions. Advance care that is accessible and affordable for all including minorities and underserved populations. Promote innovation and research for the development of vaccines and treatment alternatives for STIs with limited treatment options.

Timely treatment plays a critical role in reducing transmission and preventing complications. Per CDC STD QCS, to mitigate this problem, enhancing the quality of clinical services will enable expanding access to STI testing, diagnosis, treatment, and further evaluation for STI-related conditions that might require specialty care consults, and ideally have recommended medications available on-site, especially first-line therapies for STD-related conditions (urethritis, cervicitis, PID, epididymitis and proctitis) and recommended medications for syphilis, chlamydia, and gonorrhea, emergency contraception, PrEP, nPEP, provider-applied regimens for genital warts (CDC STD QCS, 2020). If these are not available on-site, the CDC

recommends patients should be given a prescription which then should be tracked for pick by the STD providers (CDC STD QCS, 2020). For syphilis treatment, providers may partner with local health departments to procure injectable medication (CDC STD QCS, 2020).

Several other factors such as detailed sexual history and physical exam, screening, prevention, partner services, and laboratory services such as point of care testing are critical to providing quality STI care services (CDC STD QCS, 2020).

Since most STIs are asymptomatic, testing is the only means to detect the infection which also necessitates timely intervention in terms of advanced diagnostics and receiving care from the specialists. The PA State Department of Health recommends that all sexually active individuals aged 15-30 years be routinely screened for HIV, syphilis, gonorrhea, and chlamydia. Individuals who do not have insurance or are uninsured can receive free and confidential STD and HIV testing services at any of the statewide STD clinics (PA DOH, 2023). Assuring provider access to up-to-date recommendations for specialty services is critical. Ensuring education on STIs can change stigma in healthcare settings and communities. Bassey et al. recommend education initiatives for high-risk populations, especially Black/African American women in the US who have a high incidence of trichomoniasis, other STDs, and related health issues, and emphasize the importance of self-advocacy in protecting one's health (Bassey et al., 2021).

Furthermore, the quality of clinical care services can be enhanced by extending treatment services for STIs to include harm reduction efforts available locally, educating the community on common misconceptions, and encouraging advocacy for underserved populations.

National organizations recommend creating an all-inclusive clinic environment for LGBTQ individuals as they have disproportionately high rates of mental health, alcohol, and drug abuse and are at high risk of STIs (Conniff et al., 2016). So, prevention strategies include screening

for cancer, infectious diseases, and STIs, HPV vaccination, and pre-exposure prophylaxis for HIV in these populations (Conniff et al., 2016).

Community information-sharing portals for STIs can influence community engagement and decrease stigma related to STIs. These recommendations can be effective and offer success through small changes in implementation which can influence complex policy changes in the future. Health departments need a more collaborative approach to engage community partners in establishing clinical specialty support services. HPV vaccination in ethnic minority adolescent girls can benefit from health education programs, sexuality-related communication skills training, religious and school-based collaborations, and debunking conspiracy theories that will promote vaccination coverage (Chan et al., 2023).

Jeudin et al., (2013) state that chronic HPV infection is responsible for 99.7% of invasive cervical cancer; the low-risk HPV genotypes 6 and 11 are responsible for benign lesions like genital warts, while genotypes 16 and 18 commonly lead to the causation of cervical cancers (Jeudin et al., 2013). Recommended since 2006 are quadrivalent vaccine (Gardasil or HPV4) and bivalent vaccine (Cervarix or HPV2) which prevent 98% of HPV 16 and 18 related cervical issues; and routine recommendation for HPV vaccine is for girls ages 11-12 with catch-up vaccination up to age 26 to minimize HPV exposure before vaccination (Jeudin et al., 2013).

Considering Allegheny County, an alternate possibility for the uninsured with STI complications is for ACHD to consider if they want to advocate for UPMC and AHN to expand services for uninsured STI patients with complications (personal communication, non-profit representative, October 2023).

Prioritization for policy and system changes, approaches to decrease stigma, and enhanced education is the key along with supporting basic needs (access to food, housing, transportation) to providing holistic healthcare (Colasanti et al., 2019).

5.1 County-level operations at ACHD STI/HIV clinic

ACHD STI/HIV Clinic provides free walk-in STI/HIV testing for anyone regardless of insurance, income, or immigration status. The clinic provides free condoms through the condom distribution program. Partner services for those diagnosed with an STI who do not want to disclose their identity can avail of a free, voluntary, confidential testing service for their partners. They provide the public with free access to health information online, printed material, and in-person counseling for mental and sexual health. The clinic offers PrEP referrals and linkage to care services, and social services such as food, transportation, employment, shelter, mental health, family support services, etc. Through disease investigators and surveillance teams, ACHD prioritizes tracking of STIs (personal communication, ACHD, September 2023). These efforts are put forth to reduce stigma, health disparities, and inequities in Allegheny County.

All FQHCs in Allegheny County provide sliding scale and medical assistance to those uninsured and underinsured (personal communication, care managers/social workers, 2023). Although this is beneficial for primary care, most requiring specialist care are still referred to the Birmingham clinic and Allies for Health and Wellbeing (personal communication, care managers, social workers, 2023). Some of the FQHCs providing primary care also provide free transportation, diabetic care, dental care, elderly care, maternal and child health support, and behavioral

counseling which is useful for many uninsured and homeless individuals in Allegheny County (Primary Care Health Services Inc, 2022).

ACHD's quality of clinical services is well-efficient with ongoing efforts. More grant funding will allow for improved awareness, availability, access, and affordability of care, and resources that are crucial for maintaining sexual and reproductive health. Enable harm reduction programs to build trust, and support efforts to strengthen the performance and accountability of individuals. It is important to integrate clinical services to eliminate the disparities in insurance, bias, stigma, and negligence towards sexual and reproductive health. Implementing multi-level interventions to innovate upscale measures of clinical services is promising.

5.2 Current state of congenital syphilis in PA

Considering congenital syphilis in PA is at a historical high in 30 years, this section offers an exclusive overview of congenital syphilis.

The cases of congenital syphilis have remarkably risen over the past few years. Though it was on the verge of elimination, it has re-emerged prompting evaluation and updating prenatal screening, prevention, and management guidelines (Partridge et al., 2022).

Although no case of congenital syphilis has been reported in Allegheny County over the past few years, 16 counties in PA have reported 31 cases of congenital syphilis in 2023 (PA DOH). Previously, one case of congenital syphilis was reported in Allegheny County in 2019 (ACHD STI/HIV report, 2020).

Pregnant mothers when infected with syphilis are at high risk of transmitting the infection to the fetus or newborn depending on the timing of infection underscoring the importance of

prenatal screening, and if detected early, treatment during the pregnancy prevents transmission to the baby and thus, preventing congenital syphilis. PA DOH recommends that all women who are child-bearing age and living in high-risk areas be screened for syphilis three times: at the first prenatal visit, in the third trimester, and at the time of delivery (personal communication, PA DOH syphilis refresher course). In response to the recent increase in both congenital syphilis and early syphilis, PA DOH recommends testing for the delivery of a stillborn child (PA DOH). Additionally, all individuals with a recent positive test for another STD, such as gonorrhea or chlamydia should be tested for syphilis and HIV regardless of the timing of pregnancy (Statewide advisory 28 Pa Code 27.89). Amongst the total reported early syphilis cases, Luzerne County is projected to have a 420 percent increase in female cases from 5 cases in 2021 to 15 cases in 2023 (PA DOH syphilis refresher course, 2023).

Many barriers exist in PA rural and especially counties like Luzerne, Bucks, Franklin, Northampton, and Montgomery have reported congenital syphilis cases in 2023 (PA DOH syphilis refresher course, 2023). The most common cause was found to be a lack of prenatal care obtained followed by inconsistent compliance of health care providers to enforce the guidelines for syphilis in pregnant women accounting for missed opportunities that could have been taken care of by the providers (PA state DOH syphilis refresher course, 2023). Parental Benzathine Penicillin G is the only therapy indicated for the treatment of syphilis in pregnancy and due to recent changes in manufacturing and healthcare delivery, providers were unable to obtain cost-effective access to Benzathine penicillin G for their at-risk pregnant patients (PA DOH syphilis refresher course, 2023).

The lack of health professionals having access to and being informed on the most up-to-date accurate recommendations for STI screening, treatment alternatives, and extended care

opportunities is a big barrier to the quality of STI clinical care services. Due to a shortage of knowledge and specialists who can care for STI complications, healthcare providers do not always follow the recommendations especially when it comes to screening and referral to STI/HIV care. Inadequate health professional training on recommended guidelines for STIs especially for congenital syphilis has been of great concern to the Department of Health and Human Services (DHHS, 2023).

State Health Departments should identify counties with high syphilis rates and notify healthcare providers about the need for testing, collaborate on reducing barriers to patient care to enable follow-ups, monitor pregnancy for timely interventions to prevent congenital syphilis and facilitate partner services (DHHS, 2023). In November 2023, the National Syphilis and Congenital Syphilis Syndemic Federal Task Force response was initiated by the U.S. Department of Human Health Services in collaboration with the CDC and put forth a plan to work directly with jurisdictions to maximize syphilis testing in pregnant women, promoting sexual health discussions to reduce syphilis rates, expand equitable access to syphilis testing and treatment in communities with limited health resources, and promoting alternative testing locations to traditional prenatal care settings, such as substance use facilities, harm reduction programs, and emergency departments (DHHS, 2023).

5.3 Opportunities for improved quality of clinical services in Allegheny County

Establishing a referral process for specialty care for uninsured patients seen at the ACHD STI/HIV clinic provides an opportunity for improvement of the quality of STI clinical services. Currently, by following the recommendations outlined by the CDC, the ACHD STI/HIV clinic

administration is improving the clinic infrastructure to include cervical cancer screening, vaccines, PrEP and nPEP, and emergency contraception. The plan to soon provide emergency contraception and PrEP on site (however, unsure about timeline) is promising in terms of enhancement of the quality of clinical services as the ACHD STI/HIV clinic now provides free condom provision, STI prevention and counseling, PrEP and nPEP referrals, EPT and partner services along with linkage to care and resources for social needs if needed.

The at-home testing for chlamydia and gonorrhea program offers self-test kits that have greater receptivity given the patient satisfaction rate as noted by the Hilltop Pharmacy, more individuals may use such services in the future. The possibility of increasing the utilization of STI care services with a future scope to collaborate with more pharmacies across Allegheny County seems exciting as this will allow for more STI testing and treatment (Personal Communication, ACHD Clinical Services, December 2023). Another important aspect of the self-testing program is that individuals do not want to identify with having STI treatment generally, hence, pharmacists can provide the patient with a "Tell your Partner" Platform where patients can anonymously share diagnoses with their partner/s. Thus, making the STI care service experience cordial and respectful for the recipient and the provider including the pharmacy (NACHHO Voice, 2023).

Self-sampling using non-invasive and minimally invasive methods like a urine sample, cervical brush, vaginal swab, and tampons demonstrated equivalent or superior detection of STIs in comparison to traditional sampling and detection methods (Paudyal et al., 2015). Paudyal notes that self-screening has higher compliance if choosing to be completed at home along with a reduced workload for working staff and providing patients with greater autonomy, privacy, and confidentiality, however, this can be controversial. As per Paudyal, self-sampling is the preferred method for diagnosing curable STIs as an alternative to clinic-based screening and is beneficial in

overcoming barriers like lack of privacy, embarrassment, discomfort, and time or financial constraints; this approach is especially advantageous for asymptomatic individuals, preventing conditions from progressing to severe stages like pelvic inflammatory diseases and infertility and contributing to reducing healthcare costs (Paudyal et al., 2015).

Pharmacy personnel can help ease access and facilitate the utilization of sexual reproductive health resources by youth (e.g. emergency contraception provision). More research is needed on capitalizing on pharmacies to serve the youth with reservations and ease the use of and quality of sexual and reproductive health (Gonsalves et. al., 2017).

The HPV vaccine is safe and effective for cancer prevention and is underutilized in the United States despite understanding the barriers to vaccination which can be improved by increasing vaccine availability, decreasing financial barriers, and designing interventions for both providers and patients (Walling et al., 2016). Fuzzell et al., (2020) recommend mobile screenings, to ensure interpreters at all visits and employing community outreach workers and patient navigators to help increase screenings and adherence for follow-up evolutions in cervical cancer screening (2020). To improve vaccination initiation and completion, advanced nursing practitioners play an active role in the point of care, and educating families about HPV vaccination, particularly in disadvantaged populations (McKeever et al., 2015).

5.4 Policy-related

This section discusses the possible amendments to the existing policies related to STIs and proposes recommendations for newer policies to build upon.

5.4.1 Potential amendments

STIs are very common even though all are preventable and most of them are curable (Diseases & Related Conditions, CDC, 2023). Though laws were built to protect people when much less was known about HIV transmission and treatment, over 40 years now, these laws have increased the stigma against HIV and exacerbated disparities as individuals are less likely to want to disclose and, therefore, discouraged to get tested with the fear of consequences (CDC, policies, 2022).

The state of PA does not have any specific STI/HIV Criminalization laws that criminalize exposure or transmission, but the PA crimes code contains a few provisions that prosecute people living with HIV for conduct related to their HIV diagnosis (AIDS Law Project, n.d.)

Criminalization laws are supposed to enhance community health, however, when policies criminalize and penalize those suffering, they exacerbate the health disparities, increase stigma, and may discourage testing for STI/HIV (CDC NCHHSTP, 2023). The same standards as treatable infectious diseases are not applied to HIV and such laws were implemented in the early years to discourage transmission, promote safe practices, and receive funds to support HIV prevention activities (CDC NCHHSTP, 2023).

Another law that may benefit if amended is the minor's consent law. Although no state requires parental consent for STI care, provisioned through Minor's Consent Law, PA state (age of adulthood for PA is 21 years) enables minors to undergo diagnosis and treatment without the need for parent's consent and does not hold the physician liable for providing diagnostics or administering care if the minor consented (27.97, Treatment of minors, Pennsylvania code, n.d.). Though this is done, it conflicts with protecting confidentiality for STI care, particularly when adolescents are enrolled in private insurance plans that mandate the health plans to provide a

written statement to the beneficiary indicating the services performed, charges covered, what insurer allows, and the amount for which the patient is responsible i.e. explanation of benefits (EOB) and medical billing claims received by the parent disclose STI services including laboratory tests performed (CDC STD Treatment Guidelines, 2021). Such breach of confidentiality weakens incentives for minors to get tested.

Additionally, Culp and Caucci highlight that minor's access to PrEP without parental consent is unclear and needs further analysis to evaluate how state laws relate to the provision of clinical interventions for the prevention of HIV infection (Culp and Caucci, 2013). Though courts have ruled that minors may access STI/HIV preventive methods such as condoms without parental consent, it is arguable to allow minors to access PrEP (Culp and Caucci, 2013). Unlike PrEP, condoms are a less invasive method for HIV prevention and PrEP does not prevent STIs (Culp and Caucci, 2013).

Similarly, third-party billing law could benefit from further reassessment. Pennsylvania's Medicaid program also known as Medical Assistance, adopted Medicaid expansion under the ACA in 2015 and provides comprehensive healthcare coverage for vulnerable populations of all ages and enables coverage based on limited incomes to live healthy lives (Pennsylvania Health Law Project, Medicaid Eligibility 2020). The ACA allows access to free screening of sexually transmitted infections but this, consequently, impacts insurance and billing for services (National Coalition of STD Directors, n.d.). A major policy issue is whether the healthcare facility can bill third-party payors or patients themselves for services rendered. Since state laws and policies vary by state, as ACA takes effect, it raises questions on whether health departments are authorized to provide free STD treatment services and whether state law prohibits third-party (insurance companies and government) billing for STD services (National Coalition of STD Directors, n.d.).

5.4.2 Recommendations for policies

A study looked at quantitative and qualitative data from sex workers of all genders over the years from 1990 to 2018 and operationalized lawful and unlawful police repression of sex workers or their clients including criminal and administrative penalties and measured the associations between policing and outcomes of violence and sexual health or STIs (Platt et al., 2018). Evidence shows that the criminalization of sex work and policing practices affects health, access to services, and justice as existing inequalities exacerbate the abuses of power, thus, there is an urgent need to reform the work-related laws and institutional practices related to sale and purchase of sex to reduce harm and barriers to accessing healthcare beyond HIV/STI testing (Platt et al., 2018).

Wang et al., 2019, demonstrate existing variability in emergency contraception policies and practices for U.S. hospital emergency departments, of which only 60 percent of hospitals had a policy and only 44 percent of the Emergency departments offered emergency contraception showing a need to improve access for sexual assault survivors.

As per Strickland et al., 2023, there is a need to design policies and programs that mitigate pandemic-related exacerbations in negative sexual health outcomes and focus on promoting rewarding interpersonal relationships and overall well-being. They also need to emphasize preventing unwanted outcomes (for example, intergenerational caregivers, parents, college faculty, and staff) and facilitate comprehensive sexual reproductive health (SRH) prevention programs that include sexual violence prevention training programs mandated in many colleges (Strickland et al., 2023).

Due to a lack of expertise among medical education faculty and preceptors both in undergraduate and graduate medical education programs, Juarez proposes a policy brief aimed at

raising awareness about gender-affirming care among education planners and policymakers in government and advisory bodies (Juarez et al., 2023). For those placed in jails and prisons, transgender individuals who had not had genital surgery corresponding to birth-assigned sex rather than gender identity face violence from inmates and staff and urgently need correctional policy change that centers human rights and structural interventions to reduce stigma, access to medically necessary gender-affirming therapies including prevention methods during incarceration (Poteat et al., 2018).

Many LGBTQ youth have high rates of depression, suicide, anxiety, posttraumatic stress disorder, sexually transmitted diseases, alcohol, and substance abuse and will benefit from advocacy, education, culturally competent health care, and policymaking which will help eliminate health disparities (Rodgers et al., 2017).

In this context, the recommendations for the ACHD STI/HIV clinic are that it would be beneficial to provide health programs disseminating awareness on the importance of sexual reproductive health which will allow for emphasizing recommended screening and vaccinations for common STIs, running anti-stigma campaigns to encourage marginalized populations to feel welcome to get tested, and mobile access to specialty STI care that may get routed to areas with increased incidence and prevalence along with continuing the current practices to reduce the STI case rates.

To curtail rising STI rates in Allegheny County, ACHD may consider expanding screening services and treatment and access to free resources through periodic campaigns (once weekly or monthly) driving down to the communities impacted by STIs. May consider campaigning by having the outreach camps go to the communities instead of requiring patients to come to the STI clinic. This will help overcome barriers such as stigma, medical distrust, and other social

determinants of health, and rather help improve access, and build trust in the health system which will allow for improved patient engagement and compliance to scheduled recommendations for STI care in the community (DHHS, 2020). Mobile access to community partners for more holistic care focusing on health inequities (racial, ethnic, sexual minority groups), and not just STI prevention will facilitate opportunities to change human behavior, which can improve gaps and help establish policies to positively influence the quality of services rendered to help reduce disparities over time.

STI-related stigma may also be addressed by telemedicine and telehealth services which allow for sexual health concerns to be discussed in private (DHHS, 2020). Providing STI providers with training through continuing education and maintenance of certification throughout their career, will strengthen provider confidence and skills in a variety of practice settings to overcome stigma and provider bias (DHHS, 2020).

5.4.2.1 Additional funding for uninsured

To enhance population-based prevention, it would benefit to retest after diagnosis of chlamydia, gonorrhea, and trichomoniasis 3 months after treatment; any person with a syphilis diagnosis should follow up for serological testing per current recommendation and follow-up testing and all of this needs additional funding to cover for uninsured and underinsured populations (CDC STD Treatment Guidelines, 2021). According to current practice on clinical services in the United States, several studies show that STD clinics obtain more complex and thorough sexual histories than primary care settings making STD specialized clinics an essential component of STI care. Increased federal funding is needed for directing interventions for control, prevention, and research to address vulnerable populations and to curb the rise in STIs, especially congenital syphilis. In June 2023 under the Biden administration, $400m was reallocated from STIs to

COVID-19 disease investigation specialists as part of COVID-19 relief aid, which the CDC blames on the debt deal (Cohen, Roll Call 2023).

5.5 Cost effectiveness and quality of clinical services

High-cost diagnostics with a lack of available specialists for free or low-cost care for STI complications especially for uninsured individuals is a substantial issue in Allegheny County (personal communication, ACHD clinical services, September 2023).

Recommendations for screening sexually active adolescents and adults for STIs include repeat screens based on patients' sexual behaviors and local disease prevalence, and counseling and linkage to care which highlight the importance of open discussion about sexual health (CDC STD Treatment Guidelines, 2021).

Screening for Hepatitis A, Hepatitis B, and Hepatitis C depends on local prevalence and a person's vaccination status, and vaccination for Hepatitis A and B is indicated only if the person is susceptible (CDC Treatment Guidelines, 2021). Though Hepatitis B is not an STI, it is recommended to vaccinate at-risk individuals as Hepatitis B can be transmitted sexually. Currently, the ACHD STI/HIV clinic faces the challenge of ensuring Hepatitis B vaccine coverage for all residents in Allegheny County as this requires providers to know if individuals have been vaccinated before, and/ or infected; Hepatitis B screening in individuals before providing them with Hepatitis B vaccine is a hindrance as each test costs $25 for Allegheny County residents and $30 for non-residents and this is just an out-of-pocket expense to determine eligibility for Hepatitis B vaccination (personal communication, ACHD Clinical Services, December 2023).

Wagman et.al article demonstrates how public health cuts have impacted the ability of clinics and pharmacies to carry the syphilis treatment Bicillin as there are price differentials of $0.37/box vs $3869.63/box manufacturers' retail price as per 340B drug pricing depending on if they qualify, as well as unique storage requirements (2021).

5.6 Training of healthcare providers

Educational outreach sessions are being conducted by PA DOH to remind healthcare professionals about the importance of testing for syphilis, especially in pregnant women. Additionally, given the recent rise in congenital syphilis cases across the nation to near-record high levels, the Wilkes-Barre Health Department sent out letters to more than 600 physicians in Luzerne County to raise awareness about syphilis testing and treatment recommendations in pregnancy (PA DOH, 2023).

Health professionals must be focused on delivering improved STD care by continuously updating their knowledge on changing recommendations for improved quality of clinical services. Education, motivational interviewing, and awareness of STIs will help reduce stigma and health disparities among providers and patients. However, given the current rise in cases, more efforts to increase awareness of the current situation amongst the providers and the public are equally important, along with additional training offered to healthcare professionals, care managers, and social workers involved in STI care.

6.0 Future directions

Health systems must be designed to coordinate care for individuals at all levels of society regardless of socioeconomic, race, ethnicity, gender, immigration status, and health behaviors. Substantial efforts to neutralize the economic inequities and health disparities are needed.

To envision impactful clinical services, we need evidence-based research focused on patient-centered care, equity and costs, and innovative technologies to develop quality improvement projects that can connect patients, communities, healthcare providers, insurance providers, and social services and focus on preventive healthcare and patient safety for better outcomes.

Though most multilevel interventions are contextual, they are the key to addressing the multiple determinants of health disparities, though this is complex and challenging considering the interplay of biological, interpersonal, organizational, community, environmental, and policy-related factors that confluently impact the health of disadvantaged populations (Paskett et al., 2016). While traditionally, interventional research is directed at specific individual levels, designing studies with strategies to assess multiple levels is an essential methodology to advance health disparities research and ultimately reduce these disparities (Paskett et al., 2016).

Meaningful Measure Initiative put forth by the Centers for Medicare and Medicaid Services (CMS) National Quality Strategy is a unified approach that can help improve quality across health systems, especially for underserved and under-resourced populations (Centers for Medicare and Medicaid Services, 2023).

The chlamydia infection rates are consistently higher among military servicewomen with a 20 percent acquisition rate noticed among young active women, increasing the severity of

gynecologic health sequelae and a cost of burden and will benefit from research funding to fill in the critical gaps through opportunities for interventions (Nadeau et al., 2018).

There are no methods to predict infections or focused screenings for trichomoniasis, which is the most common STI among Black/African American women and predisposes an increased HIV transmission and acquisition of other STIs (Bassey et al., 2021). Innovative epidemiological and biomedical research strategies are needed to eradicate this global public health issue of STIs at the intersection of racism, and health equity given existing health disparities in the US (Bassey et al., 2021).

Further studies are needed to evaluate broadly and validate the outcome of self-sampling procedures to inform policy development for the management of STIs (Paudyal et al., 2015)

Wang et al., highlight the need to research persisting and new barriers to accessing emergency contraception for sexual assault survivors and see if emergency department services are improving for testing of STIs and HIV (2021).

7.0 Limitations

7.1 Data

This essay has limitations in that this review includes only English language articles, which could result in language bias. Deep insights into the development of interventions and policy-level initiatives may improve the incidence and prevalence of STIs. This review provides critical views from the literature and real-world scenarios at the county-level operations to understand and propose changes to address long-standing issues related to sexual health and STIs. Collecting qualitative data from the uninsured and underinsured patients may help identify the factors that might have been missed, however, this is not within the scope of this project. Many of the details obtained are from local individuals working in Allegheny County in various roles and therefore, the information received differed in their level of knowledge which may have contributed to certain limitations in terms of appropriateness and completion of available data.

7.2 Process

Though this review is based on the outcome of meetings and interactions involving government and non-government participants (ACHD, FQHCs, UPMC, AHN, NPOs), the reported findings and evidence regarding enhancing the specialized clinical services for STIs are ongoing and success depends on continued effort by the providers and clinical services administration, especially while caring for the uninsured. A limitation is that the resulting data is

based on meetings and interactions from some systems and providers which do not fully represent the situation in Allegheny County.

A structured method that ensures all individuals receive STI care regardless of their circumstances (ability to pay, citizenship or immigration status, gender identity, language spoken, sex practices, health behaviors including substance abuse) is important to effectively reduce the occurrence of STIs among persons at risk (CDC STD Treatment Guidelines, 2021). Though ACHD offers free STI testing for all regardless of the aforementioned barriers, the requirement to provide identity proof to access their STI results may still be a barrier on certain occasions.

The review of policies for STIs will need a more comprehensive review by law professionals and healthcare providers to examine how the law applies in real-time to enhance provider performance while factoring in at-risk populations and empower patients with access to follow-up and care including avenues to seek help based on individual needs.

Despite these limitations, the availability of health resources and how stringently services and prevention technologies are administered to achieve risk reduction are crucial to building quality clinical services.

8.0 Conclusion

STIs are contagious and can spread rapidly under favorable social conditions. Timely interventions including testing, prompt treatment, and low-cost specialty care are essential.

The ACHD quality of clinical services is well-efficient with ongoing efforts put in place for the public and improved STI care services. More grant funding will allow for improved awareness, availability, access, and affordability of care and resources that are crucial for maintaining sexual and reproductive health. Dedicated funds to STI clinics are needed for the integration of specialist care for STIs and for expanding the comprehensive STI care services to include consults and specialty referrals, in addition to enabling harm reduction programs to build trust, support efforts to dispel misinformation regarding STIs, and increase the effectiveness of outreach, to strengthen performance and accountability of individuals and communities in prevention and control of STIs.

Expansion of self-testing programs to more types of STIs will increase rates of case detection, reduce cases missed due to fear and stigma, and improve access to care. It is important to leverage pharmacies and laboratories to have enhanced diagnostics for screening of STIs, improve access to treatment, and lessen the transmission to others in society. Incentivize free services and humanitarian providers who offer transportation, pharmacy, mail service, shelter, employment, food, childcare, and family support. Enhance faith-based educational programs that dispel the myths and apprehensions about sex, drug and alcohol, substance abuse, and violence to reduce high-risk health behaviors, and enable healthy life choices. Importantly, specialty care integration into the STI/HIV clinic will enhance the quality of clinical services offered especially

for the uninsured considering rising rates of STIs, including the recent reemergence of congenital syphilis cases.

These services and resources are essential and indeed a necessity to fulfill the basic needs and overall well-being of Allegheny County residents. The health departments assist in connecting the community resources to people in need and allow them to preserve and enjoy their physical, mental, and sexual health without worrying about the social impacts of race, gender, socioeconomic and immigration status.

However, the success of providing free or low-cost care is rooted in eliminating the disparities in insurance, bias, stigma, and negligence toward sexual and reproductive health (which is often not given as much importance as mental or physical health as noted by some studies). The possibility of having better sexual health and improved quality of clinical services is intertwined with the impact of social determinants of health and co-existing issues such as violence, substance abuse, HIV, and other communicable diseases, and certain laws that exacerbate disparities.

Given this complexity, to welcome a generation nearly free of STIs that is well-equipped to fight against emerging new infections, the health systems need to collaborate with large organizations and community partners to implement multilevel interventions to innovate upscale measures of clinical services. This calls for more research into integrating health, education, technology, reproductive, and population science along with economics and ecological sciences to build a model that can provide sustainable solutions for overall well-being.

Appendix A appendices and supplemental content

Primary and specialty care for the uninsured and underinsured in Allegheny County

REFERRAL GUIDE

PRIMARY CARE SERVICES:

Provider name	Facility	Address	Contact
[redacted] IM (LGBTQ, STD, PrEP services)	AHN Primary Care Fox Chapel	970 Freeport Rd, Pittsburgh, PA 15238	412-325-5000 (press*5)
[redacted] IM (LGBTQ, STD, PrEP services)	AHN West Penn associates	4747 Liberty Ave, Pittsburgh, PA 15224	412-325-5810
Program for Health Care to Underserved Populations/Birmingham Free Clinic Volunteer Specialists and fellows help PHCUP Clinic – monthly specialty sessions: • **Guerrilla Eye Service** • **Eye and Ear institute** • Private practitioners in **dermatology** from Vujevich Dermatology Associates	UPMC free clinic serves patients with no medical insurance.	As of 7/21/23: Mercy Community Care 1515 Locust Street Suite 705 Pittsburgh, PA 15219	412-246-3053
McKeesport 9th Street Clinic Latterman FHC	UPMC Free clinic	1305 5th Ave, McKeesport, PA 15132	412-664-4304
Federally Qualified Health Centers (FQHCs) Primary Health Care Services (PCHS) in Allegheny County:			
	Alma Illery Medical Center	7227 Hamilton Ave, Pittsburgh, PA 15208, United States	(412) 244-4700
	Braddock Family HC	404 Braddock Ave, Braddock PA, 15104	(412) 351-6400
	East End Community HC	745 N. Negley Avenue, Pittsburgh, PA 15206	(412) 404-4000

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	Hazelwood Family HC	4918 Second Avenue, Pittsburgh, PA,15207	(412) 422-9520
	McKeesport Sto-Rox Family HC	Sto-Rox Family Health Center, 710 Thompson Ave, McKees Rocks, PA 15136	(412) 771-6462
	Northside Christian Health center	Northside 816 Middle St. Pittsburgh, PA 15212 412.321.4001 Northview Heights 525 Mt. Pleasant Rd. Pittsburgh, PA 15214 412.322.7500	412-321-4001 412-322-7500
	West End HC	415 Neptune Street Pittsburgh, PA,15220	(412) 921-7200
	Steel Valley Family HC	1800 West Street. Suite 110 Homestead, PA, 15120	(412) 461-3863
	Wilkinsburg Family HC	807 Wallace Avenue Pittsburgh, PA, 15221	(412) 247-5216
Other FQHCs in Allegheny County			
East Liberty Family health center (ELHCC)		EAST LIBERTY MEDICAL OFFICE 6023 Harvard Street First Floor Pittsburgh, PA 15206 LINCOLN-LEMINGTON MEDICAL AND DENTAL OFFICE 7157 Mary Peck Bond Place Pittsburgh, PA 15206	412-661-2802
Squirrel Hill Health Center		4516 Browns Hill Road Pittsburgh, PA 15217	412-422-7442
Hilltop Community Health center		317 Climax Street Pittsburgh, PA 15210	412-431-3520
Hill District Medical Office		373 Burrows Street Pittsburgh, PA 15213	412-661-2802
Brentwood Towne Square		103 Towne Square Way Brentwood, PA 15227	412-422-7442
Northview Heights Office		525 Mt. Pleasant Road Pittsburgh, PA 15214	412-322-7500
Metro Community Health Center		1789 South Braddock Avenue, Suite 410 Pittsburgh, PA 15218	412-247-2310

Cornerstone Care Community Health Center of Clairton		559 Miler Avenue Clairton, PA 15025	412-226-5454
Hill House Health Center	PERMANENTLY CLOSED		
UPMC Matilda Theiss family health center	**Community outreach office –** within same building runs **Free health care clinic** on the 1st and 3rd Tuesday of each month (10 a.m. to 12:30 p.m.) and the 2nd and 4th Thursday of each month (6 to 8 p.m.).	1860 Centre Ave. Pittsburgh, PA 15219 (next to PNC bank)	(412) 383-1550

Infectious Diseases

Provider name	Facility	Address	Contact
[redacted] ID (Hep, HIV AIDS)	AHN	1307 Federal St b110, Pittsburgh, PA 15212	412-359-6899
[redacted] **Center for Inclusion:** - Free transportation. - Works on barriers (mental health, housing/social) and establish care as needed. - Ryan White: covers all outpatient HIV care, some meds & labs, copay & office visits (does not cover emergency services).	**Center for Inclusion, AHN** (Ryan White Grant provides coverage for uninsured people with HIV patients with no insurance or underinsured – specialists/ob care covered for people with HIV only – but need to register as a new patient first at AHN	**1.Federal North Medical (MAIN office) Building (near Allegheny General Hospital)** 1307 Federal Street, Suite B300 (for new patient registration) Pittsburgh, PA 15212 – window #3 is for patients, Tuesdays 8-4:30pm **2.Aliquippa Clinic (once a month- Mondays)** 203 Pleasant Drive Aliquippa, PA 15001 **3. Forbes Family Medicine (once a week- Fridays) – by** [redacted] 2550 Mosside Boulevard, Suite 500, Monroeville, PA 15001	1st call main office for Rapid care contact# (412) 398-6768
Neurosyphilis evaluation			
[redacted]	AHN ID Clinic	420 E North Ave Suite 406, Pittsburgh, PA 15212	412-359-3683 (Fax: 412-359-3373)
[redacted]	UPMC (Falk) ID Clinic	3601 Fifth Ave, Pittsburgh, PA 15213	412-647-7228

			(Fax: 412-647-7951)

Ophthalmology for syphilis

Provider name	Facility	Address	Contact
[redacted] (Accepts PA medical assistance, Medicare, Medicaid, and if uninsured, ask patient to call billing: 412-864-0284 → pt. is billed for services to get reimbursed if eligible for financial assistance program).	UPMC	1622 Locust St Floor 1, Pittsburgh, PA 15219 Can see physicians during the regular hours only: 8 am- 3:50 pm If out of hours visit, send pts. to Mercy ER (located right across the road)	(412) 232-8950
Guerrilla Eye Services (for uninsured) – check for schedule as it varies.	East End Community HC	745 N. Negley Avenue, Pittsburgh, PA 15206	(412) 404-4000 - accepts Medicare, Medicaid, and Sliding scale for uninsured.

Obstetrics-Gynecology

Provider name	Facility	Address	Contact
[redacted] Obstetrics	UPMC Magee	300 Halket St Suite 610, Pittsburgh, PA 15213	(412) 641-6412
[redacted] Gynecology	UPMC Shadyside FM	5215 Centre Ave, Pittsburgh, PA 15232	412-623-2287
	East liberty family health center –	EAST LIBERTY MEDICAL OFFICE **Address** 6023 Harvard Street First Floor Pittsburgh, PA 15206 **Medical Hours** Mon: 8:15 am–4:30 pm Tues: 8:15 am–4:30 pm *Tues: 4:40 pm – 6:20 pm Audio/Video Telehealth Appointments*	412.661.2802 Fax | 412.661.8020

	Our physicians are on call 24 hours a day, 7 days a week for patient care issues. *On the first and fourth Wednesday of each month, all Health Center locations open at 10 am.	LINCOLN-LEMINGTON MEDICAL AND DENTAL OFFICE **Address** 7157 Mary Peck Bond Place Pittsburgh, PA 15206 **Medical Hours** Mon: 8:15 am–4:30 pm Tues: 8:15 am–4:30 pm *Tues: 4:40 pm – 6:20 pm Audio/Video Telehealth Appointments* *Wed: 8:15 am–4:30 pm Thur: 8:15 am–4:30 pm Fri: 8:15 am–4:30 pm **Dental Hours** Mon: 8:15 am–4:30 pm Tues: 8:15 am–4:30 pm *Wed: 8:15 am–4:30 pm Thur: 8:15 am–4:30 pm Fri: 8:15 am–4:30 pm	**Contact** Phone | 412.661.2802 Fax | 412.661.8020
	Squirrel hill health center- Care Navigators and AmeriCorps members provide a full range of assistance for ensuring that they are connected to specialty care, financial aid for eligible patients, when possible	4516 Browns Hill Road Pittsburgh, PA 15217 **Medical and Behavioral Health Services** Monday & Wednesday: 9 AM – 4:30 PM by appointment only Tuesday & Thursday: 9 AM – 8:30 PM by appointment only Friday: 8 AM – 3:30 PM by appointment only Alternating Sundays: 9 AM – 12:30 PM by appointment only	412-422-7442
	Planned Parenthood (has state funded program or low fee scale based on income)	Address: 933 Liberty Avenue, Pittsburgh, PA 15222 Mon-Fri: 8:30am to 4:30pm Saturday: 8am-3pm	412-434-8971
	Center for Inclusion (AHN women's health) – Covers for people with HIV only	call 1-855-493-2500 or email at financialadvocates@ahn.org	▪ 412-doctors ▪ If HIV testing: 412-359-3360 ▪ If need urgent HIV care: 412-398-6768 ▪ If HIV care transfer: 412-398-6768

			▪ If HIV care transfer: 412-398-6768

Neurology

Provider name	Facility	Address	Contact
AHN network Center for inclusion. If someone approaches with STI, they will offer testing for HIV and then determine if STI can be taken care of. If HIV negative, generally, they would refer to Central outreach for STI testing or Allies for Health & wellbeing.	Center for Inclusion, AHN (Covers for people with HIV only)		AHN 412 (DOCTORS) 412-362-8677

ENT for syphilis:

Provider name	Facility	Address	Contact
AHN network Center for inclusion. If someone approaches with STI, they will offer testing for HIV and then determine if STI can be taken care of. If HIV negative, generally, they would refer to Central outreach for STI testing or Allies for Health & wellbeing.	Center for Inclusion, AHN (Covers for people with HIV only)	Call - location of specialist determined after new patient eligibility/ enrollment into program.	412-doctors i.e., 412-362-8677

Dermatology

Provider name	Facility	Address	Contact
-	Birmingham Clinic has private dermatologists that volunteer – Vujevich dermatology associates		

[redacted]	Medical school runs mobile derm		[redacted]
Financial assistance program	AHN care for uninsured	First, needs approval letter: Letter of medical assistance denial from Local County State welfare office – patient can obtain by submitting **PA162 form**– if pt. receives letter of denial, then financial assistance can be offered. (If not, pt. is offered to sign up for medical assistance card, i.e., insurance) [Allegheny county office# 412-565-2146, 412-565-7755] Website: www.compass.state.pa.us	1-855-493-2500
Financial assistance program	Charity care & Financial assistance at UPMC	Patient is seen by the doctor, but patient will get billed later. Patient should then call UPMC financial assistance program to enroll and get assistance.	1-800-371-8359

Urology - penile/testicular issues

Provider name	Facility	Address	Contact
AHN Network Center for inclusion. If someone approaches with STI, they will offer testing for HIV and then determine if STI can be taken care of. If test results are negative, generally, they would refer to Central outreach for STI testing or Allies for Health & Wellbeing.	Center for Inclusion, AHN (Covers for people with HIV only)	Call - location of specialist determined after new patient eligibility/enrollment into program.	412-doctors i.e., 412-362-8677

Financial assistance program	AHN care for uninsured	First, needs approval letter: Letter of medical assistance denial from Local County State welfare office – patient can obtain by submitting **PA162 form**– if pt. receives letter of denial, then financial assistance can be offered. (If not, pt. is offered to sign up for medical assistance card, i.e., insurance) [Allegheny county office# 412-565-2146, 412-565-7755] Website: www.compass.state.pa.us	1-855-493-2500
Financial assistance program	Charity care & Financial assistance at UPMC	Patient is seen by the doctor, but patient will get billed later. Patient should then call UPMC financial assistance program to enroll and get assistance.	1-800-371-8359

Allergy

Provider name	Facility	Address	Contact
AHN Network Center for inclusion. If someone approaches with STI, they will offer testing for HIV and then determine if STI can be taken care of. If test results are negative, generally, they would refer to Central outreach for STI testing or Allies for Health & Wellbeing.	Center for Inclusion, AHN (through rheumatology) for people with HIV only		412-doctors i.e., 412-362-8677
Financial assistance program	AHN care for uninsured	First, needs approval letter: Letter of medical	1-855-493-2500

		assistance denial from Local County State welfare office – patient can obtain by submitting **PA162 form**– if pt. receives letter of denial, then financial assistance can be offered. (If not, pt. is offered to sign up for medical assistance card, i.e., insurance) [Allegheny county office# 412-565-2146, 412-565-7755] Website: www.compass.state.pa.us	
Financial assistance program	Charity care & Financial assistance at UPMC	Patient is seen by the doctor, but patient will get billed later. Patient should then call UPMC financial assistance program to enroll and get assistance.	1-800-371-8359

Other programs for uninsured and underinsured:

AHN care for Uninsured**: Financial assistance program** - accepts all uninsured and homeless (spoke to financial advocate at 1-855-493-2500)

Determination of eligibility: First, the individual needs to be approved for the **financial assistance program** by applying for a "**letter of medical assistance denial**" from the **Local County State welfare office** by submitting the **PA162 form**– if a patient receives a letter of denial, then financial assistance can be offered. (If not, the patient is provided a medical assistance card, i.e., insurance)

[Allegheny county office# 412-565-2146, 412-565-7755, Website: www.compass.state.pa.us]

Next, apply online or speak to a representative (1-833-684-0239), and submit this letter of denial to the financial assistance program (it is a 6-month program that is income based, involves an application process-> complete and send back with a bank statement, income tax, etc. After 6 months if still needed, then the patient should reapply). The processing time at the financial assistance program is 14 days from the time of receiving the application. Overall, 30 days turnaround time for pt. visit (from the social welfare office to seeing a provider).

The financial advocates then screen for financial assistance to confirm before enrolling uninsured patients into the program – once approved, provides 100% coverage (except for New York residents) and pays copay, deductible, and out-of-pocket expenses.

Though pt. after seeing the provider will get billed, pt. should reach out to the financial assistance team to pay. However, all providers may/may not accept financial assistance programs (90% of AHN providers accept, if UPMC- should sign up for other options – Obamacare/Affordable Care Act).

https://www.ahn.org/patients-visitors/patients/financial-services/uninsured-financial-assistance#linkstoresources

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Charity Care and Financial Assistance at UPMC

Address: UPMC Financial Assistance
Quantum Building
2 Hot Metal St.
Pittsburgh, PA 15203

Phone: Talk with a financial specialist or request a Financial Assistance Application form by calling UPMC Financial Assistance Department toll-free at **1-800-371-8359 option 2**.

Determination of Assistance Amount
https://www.upmc.com/locations/hospitals/memorial/about/charity-care
In determining a reasonable and fair level of assistance, UPMC applies a sliding scale.
If a patient's income is below 400 percent of the federal poverty guidelines, the patient may receive some form of Financial Assistance.
If a patient's income is at or below 300 percent of the federal poverty guidelines:

- The patient is eligible for **100 percent** financial assistance.
- The fees for UPMC services are completely waived.

If a patient's income is between 301 and 400 percent of the federal poverty guidelines and they are uninsured:

- The patient responsibility will be reduced to the current amount generally billed (AGB)

UPMC will not charge an eligible individual for emergency or other medically necessary services more than the amount generally billed (AGB) to individuals who have insurance covering such care.
In some cases, UPMC may recognize other financial or medical conditions that warrant Financial Assistance. If a patient's income falls outside the guidelines listed above, please contact UPMC's Financial Assistance Department at **1-800-371-8359 option 2** to review the circumstances. In any case, UPMC staff may be able to help establish a payment plan that helps patients pay their balance over time.

Exclusions-
While UPMC's Financial Assistance Program covers most services, there are some exclusions, such as, but not limited to:

- Cosmetic services
- Transplant-related services.
- Bariatric-related services
- Elective reproductive services
- Acupuncture

- Private duty nursing
- Dental services
- Services deemed non-covered by Medicare.
- Other services, at UPMC's discretion

Financial Assistance is not typically available for:

- People who fail to reasonably comply with insurance requirements, such as obtaining authorizations or referrals.

In addition, this policy does not apply to international patients who come to Pennsylvania to seek treatment from a UPMC provider.
https://www.upmc.com/locations/hospitals/memorial/about/charity-care

Financial assistance program UPMC# 1-800-371-8359 (contact: 412-864-0284)

Patient sees the doctor, but patients will get billed later after services are completed. Patients should then call the financial assistance program to enroll and get assistance. [Cannot enroll unless the services are rendered to the patient as per Billing agent.]

Pittsburgh Area Center for Treatment of HIV (PACT) – covers people with HIV only.

Address: 3601 Fifth Ave, Pittsburgh, PA 15213
Hours: Monday- Friday: 8:30 am to 5 pm
Phone: (412) 647-7228

Have an "Early intervention grant" for outpatients who are uninsured & and "Ryan White" for other social services for people with HIV.

Accepts new outpatients with HIV only → covers uninsured for lab work, and all specialist referrals within UPMC.

If HIV status is unknown for an individual with STI→ will take Medicare/Medicaid to determine their HIV status; if no insurance→ refer to "allies for wellbeing" who will provide care for the uninsured.

Allies for Health and Wellbeing

Address: 5913 Penn Ave 2nd Floor, Pittsburgh, PA 15206
Hours: Monday- Friday: 9 am – 5 pm
Phone: (412) 345-7456
Appointments: alliespgh.org

- Provide financial assistance for primary care services.

Central Outreach Wellness Center - No copay. - Help with assistance pay, referrals and what is needed but patient should sign up with them and not be a referral.	**No wait time.** **Hours:** Mon 09:00 am - 07:00 pm Tue 09:00 am - 05:00 pm Wed 09:00 am - 05:00 pm Thu 09:00 am - 07:00 pm Fri 10:00 am - 05:00 pm	**Address:** 127 Anderson Street, Suite 101 Timber Court Building, Pittsburgh, PA 15212

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