# Performance Management in Local Public Health Departments
# A Tool to Address Sexually Transmitted Infections

by

**Leah Pope**

BA in Health Science, Furman University 2016

BA in Chinese Language, Furman University 2016

Submitted to the Graduate Faculty of the

Graduate School of Public Health in partial fulfillment

of the requirements for the degree of

Master of Public Health

University of Pittsburgh

2021

UNIVERSITY OF PITTSBURGH

GRADUATE SCHOOL OF PUBLIC HEALTH

This essay is submitted

by

**Leah Pope**

on

April 22, 2021

and approved by

Essay Advisor:
Nancy W. Glynn, PhD
Assistant Professor of Epidemiology
Department of Epidemiology
Graduate School of Public Health
University of Pittsburgh

Essay Reader:
Mackey R. Friedman, PhD, MPH
Assistant Professor
Department of Infectious Diseases and Microbiology
Graduate School of Public Health
University of Pittsburgh

Essay Reader:
Valerie Stallworth, MPH
HIV/STD Program Manager
HIV/STD Prevention Program
Allegheny County Health Department

**Performance Management in Local Public Health Departments: A Tool to Address Sexually Transmitted Infections**

Leah Pope, MPH

University of Pittsburgh, 2021

## Abstract

**Introduction:** STI rates have been increasing across the United States for the past decade. Incidence of STIs in the United States have increased by nearly 40% since 2000, congenital syphilis in Pennsylvania reached a historical high in 2018, and strains of antibiotic resistant gonorrhea continue to emerge. Allegheny County Health Department (ACHD) addresses this issue through clinical services, surveillance, partner services, and education. Performance management and quality improvement have gained attention by public health organizations as a way to elevate health departments' performance and improve outcomes.

**Methods:** This project identified best practices for performance management in local health departments, reviewed ACHD's STD/HIV Prevention Program current practices and data, and developed recommendations based on that analysis and the identification of gaps that reduce program efficiencies and results.

**Results:** The STD/HIV Prevention Program sets performance standards based on the previous year's data, and is reflective of community needs, program goals and grant requirements. Performance measures indicate the program is having difficulty meeting screening goals, likely due to a change in location. Quality improvement can be used to address these problems, but currently no formal projects have been proposed.

**Conclusion:** ACHD's STD/HIV Prevention Program can benefit from broadening performance measures, strengthening the link between performance management and quality improvement, and assessing the workplace culture to determine the staff's awareness and willingness to engage in quality improvement. Using performance management to its full extent reduces gaps in care, increases efficiency and cost-effectiveness, and increases the program's ability serve the community. This is key to meet and maintain the high standards in health departments, and improving public health locally, and nationwide.

## Table of Contents

## List of Figures

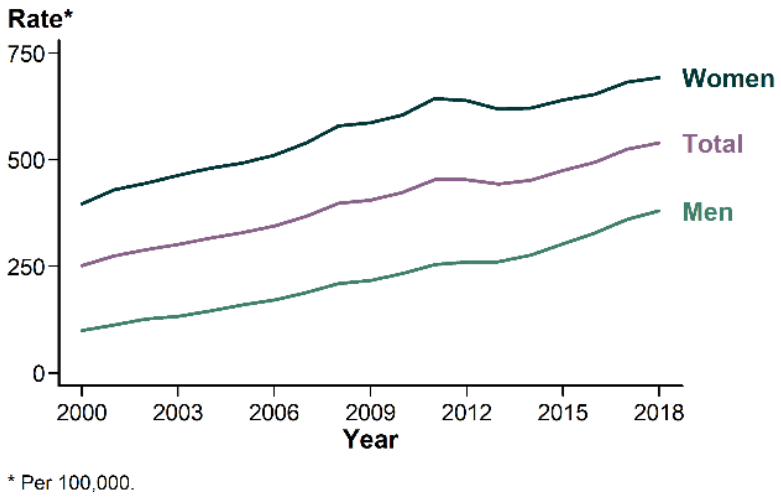
## List of Tables

# 1.0 Introduction

## 1.1 Epidemiology of Sexually Transmitted Infections

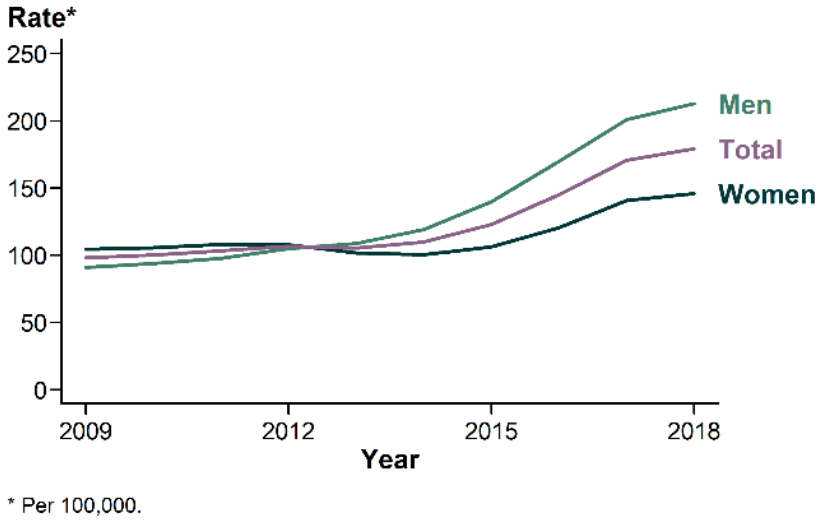
Sexually Transmitted Infection (STI) rates have been continually increasing in the United States, reaching record highs each year since 2014.[1] A January 2021 analysis by the Centers for Disease Control and Prevention (CDC) of national STI data estimated 20% of people in the United States were newly diagnosed with an STI in 2018—a 33% increase in incidence since 2008. Since 2000, incidence of STIs in the United States have increased by nearly 40%.[2–5] Due to the often asymptomatic presentation of STIs, prevalence of STIs are almost certainly higher than what is reported.

*Figure 1: Rates of Chlamydia Cases by Sex in the United States 2000-2018*




*Retrieved from CDC's 2018 National Profile*[4,5]

*Figure 2: Rates of Gonorrhea Cases by Sex in the United States 2009-2018*




*Retrieved from CDC's 2018 National Profile*[4,5]

STIs are more prevalent in urban areas. One study suggested that population growth and urbanization can double the rates of STIs.[6] African-Americans of all sexualities experience a far higher rate of STIs than White people, with more than five times the rate of chlamydia, more than 7.7 times the rate of gonorrhea, and 4.7 times the rate of syphilis.[7] The rate of STIs is disproportionally higher in men who have sex with men (MSM), who account for 63% of all syphilis cases.[8] People between 15-24 years old experience a higher burden of chlamydia and gonorrhea. The CDC estimates that people in this age group account for half of all incident STIs. People in this age group have significant barriers to care, including a misinformation on sexual health, a lack of insurance, and concerns about confidentiality and unwanted parental oversight.[9] STIs can lead to infertility in women, as well as pre-term birth, miscarriage, or stillbirth in pregnant women. Additionally, STIs can transfer from a pregnant mother to the child.

STIs spread through the exchange of bodily fluids through oral, anal, or vaginal sexual activity. Factors that increase risk for STIs include: having multiple partners, having anonymous

partners, and drug and alcohol use. Although any person engaging in sexual activity is a risk of infection, STIs can be prevented with consistent and correct condom use.[10,11]

STIs create a large medical and economic burden for both individual patients and the public. Although bacterial STIs are easily treated, STIs often go unnoticed. Untreated chlamydia and gonorrhea are especially dangerous for women. These infections can lead to pelvic inflammatory disease (PID), a condition that causes inflammation in a woman's upper genital tract, and scarring of the fallopian tubes. Eighteen percent of women experiencing symptomatic PID may become infertile.[12] In pregnant women, chlamydia and gonorrhea can prompt early labor and preterm birth, and cause conjunctivitis and pneumonia in newborns.

As a public health matter, syphilis remains a significant threat. Syphilis in its later, or tertiary, stage can affect major organs, causing critical or even fatal complications in the brain, nervous system, eyes, heart, and others. Transmission of syphilis from a pregnant mother to a fetus can cause stillbirth, anomalies, or developmental delays. Though it is rare, untreated syphilis can be deadly.

Additionally, the presence of STIs can cause broader health concerns. Reoccurring incidences of chlamydia, gonorrhea, and syphilis is a risk factor for contracting HIV.[10,13] Multiple studies have shown that contracting multiple STIs can indicate a patient might be engaging in unprotected sex, have multiple sexual partners, or have anonymous partners, and other risky behaviors. Symptoms common to STIs (such as open sores or inflammation) cause breaks in the skin, which HIV can use to more easily infect the individual.[10,13]

## 1.2 Rates of STIs in Allegheny County, Pennsylvania

### 1.2.1 Chlamydia

The national trends are also evident at the county level. In 2019, the Allegheny County Health Department (ACHD) reported similar trends in STIs compared to the national burden in its annual report that presented data from the previous year.[14] In 2018, chlamydia was the most commonly reported STI, with a rate of 464.1 cases per 100,000 population—a 10% increase from the year before. Women in Allegheny County represented 60% of all cases in 2018. The majority of chlamydia cases are seen in young people (women ages 15 to 24, and in men ages 20 to 29). African-American women are especially burdened. African-American women experience 18% of the total number of all chlamydial infections, regardless of sex, but represent only 1% of patients tested for chlamydia.[14] Chlamydia can occur in sites other than the genitals, such as the mouth, throat, and rectum. Because it is tested through samples taken by a swab, chlamydial infections may go undiagnosed if all sites are not swabbed, leading to an underrepresentation of cases.[15]

### 1.2.2 Gonorrhea

Rates of gonorrhea also rose in Allegheny County in 2018, with an incidence of 168.8 per 100,000 population. In Allegheny County, African-Americans were 12 times more likely to have gonorrhea as compared to White people. Unlike chlamydia, the county's data showed a higher incidence of gonorrhea among men than women, and showed a higher incidence in men compared to women.[14] Though it is often asymptomatic, men experience symptoms more often than women, which may lead them to seek care when women would not. Like chlamydia, gonorrhea affects young people, with the majority of cases occurring in both men and women between 20 to 29 years of age.[14] Gonorrhea is of great concern to health officials, because it

quickly becoming resistant to all antibiotics. In December 2020, the CDC updated its guidelines for the treatment of gonorrhea, as evidence emerged that some strains were resistant to azithromycin. Currently, the recommendation is a single shot of 500mg of Ceftriaxone, which is the antibiotic that is completely effective against all strains of gonorrhea.[16] The emergence of antibiotic resistant gonorrhea highlights the need for providers to test extragenital sites on all STI screenings in order to treat patients that otherwise might have gone undiagnosed, and for early identification of ceftriaxone-resistant strains of gonorrhea.[15]

### 1.2.3 Syphilis

In Allegheny County, syphilis affects specific populations in a disproportionate manner. In 2018, 93% of syphilis cases in Allegheny County were reported in men, 74% of whom were White. Data shows that men who have sex with men (MSM) are particularly burdened with syphilis compared to the general population. The 2019 report by the ACHD concludes that he most common risk factor for syphilis in 2018 was sex with males.[14] Syphilis cases have increased among men under 30 years of age, and though cases are primarily seen in MSM, data show that many of these men also report sexual activity with women. Syphilis in people of reproductive age is of great concern to public health officials, due to the increased likelihood of congenital syphilis. Though congenital syphilis is still very rare in in Allegheny County, with only case reported between 2015 and 2018, state-wide numbers continue to rise dramatically. Early syphilis among women of child bearing age increased by 47% between 2017 and 2018, and seven cases of congenital syphilis were reported in 2018—a number that is historically zero.[17]

### 1.2.4 HIV

Human Immunodeficiency Virus (HIV) is a virus that attacks the immune system, and can cause acquired immune deficiency syndrome (AIDS). A compromised immune system is

vulnerable to severe illness and even death from opportunistic infections. Though there is no cure for HIV, it can be prevented by pre-exposure prophylaxis (PrEP) or effectively managed by antiretroviral therapy (ART). These medications produce the same effect. Taken daily, they block HIV reverse transcriptase, the enzyme that is necessary for HIV to reproduce in the body, thus preventing HIV in uninfected people, and reducing viral load in infected people—often to undetectable levels. In 2019, Dr. Fauci and his team at the NIH confirmed that a person with an undetectable viral load cannot transmit HIV to another person. This launched the Undetectable = Untransmitable (U=U) campaign, reducing stigma and fear for those living with HIV and their partners.

Allegheny County has seen reduced numbers of both HIV and AIDS incidence. After a spike in 2015, rates have declined dramatically, in large part due to the work of AIDS Free Pittsburgh and other community partners that educated providers on PrEP, and increased awareness and access to patients. In 2018, Allegheny County saw a total number of 85 new cases of HIV, down 54% from 2015, and down 6% from 2017. Among new cases in 2018, 87% occurred in males, and 61% of new cases occurring in men who have sex with men. Incidence rates among African-American men (59.4 per 100,000 population) and Hispanic men (37.1 per 100,000 population) were far higher than their White counterparts (4.1 per 100,000 population). The majority of new HIV infections identified in Allegheny County in 2018 were sexually transmitted, with only 9% of new cases occurring among people with a history of injection drug use.[14]

### 1.3 Performance Management and Quality Improvement for Health Departments

In recent years, performance management has emerged as a method of elevating the quality and efficiency of health department services. Though it can be difficult to measure how

performance management impacts community health, it stands to reason that high-performing health departments produce healthier communities. Studies have shown that health departments with performance management practices in place are more able to correctly identify and prioritize emerging public health concerns and efficiently direct funds and other resources to address them.[18–20]

Performance management is used by health departments to track performance and improve processes, with the goal of improving community health outcomes. Moreover, performance management tools that are focused and tested often result in the most effective use of limited funds. Performance management has long been recognized by prominent public health agencies as an essential tool to guide health departments in maintaining high-quality service. In short, well designed and executed performance management tools save lives and reduce human suffering.

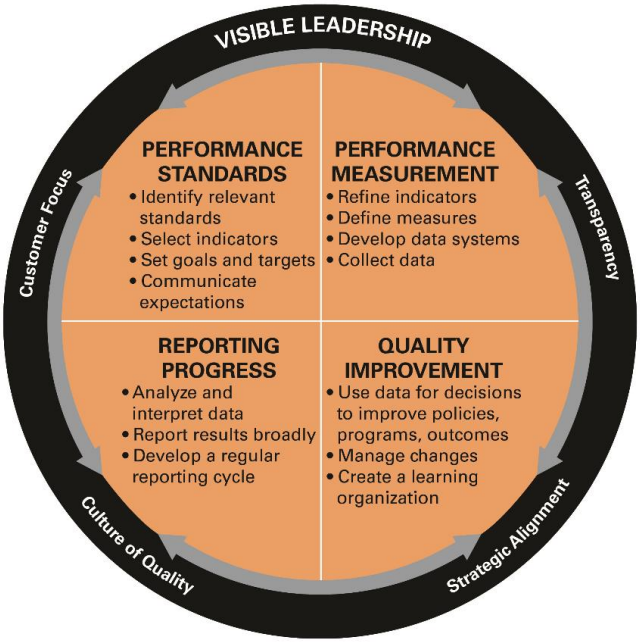
Even so, there are wide variations in how performance management tools are designed and used across public health institutions. Modern data collection and management tools provide a promising opportunity for refining and improving the way performance management is designed, implemented and used.

The National Association of County and City Health Officials (NAACHO) published a guide to performance management for health departments, in which the authors defined performance management as "the practice of actively using performance data to improve the public's health through the strategic use of performance standards and measures, progress reports, and ongoing quality improvement."[7]

This is achieved by establishing performance standards, measuring performance, reporting progress, and implementing data-driven Quality Improvement (QI) projects.[218] Because

the quality of each component is dependent on the others, careful consideration should be given at each step.

*Figure 3: Performance Management Framework*




*Retrieved from the Public Health Foundation's Performance Management Toolkit*[21]

### 1.3.1 Performance Standards

Performance standards are the objectives designed to guide a program and if necessary, provide opportunities to correct course. These standards should be relevant and reflect the health department's mission, the department's strategic plan, or programmatic goals, all of which relate to community health needs. Whenever possible, standards should be driven by and formulated on data that is collected and analyzed using tested and well-established methods. Standards can be adopted from national objectives, such as those set by U.S. Department of Health and Human Services' Healthy People 2030, or informed by local health data, community health assessments,

and grant requirements. Objectives should be specific, measurable, achievable, relevant, and time bound. Objectives that meet these criteria are known as SMART Objectives. Each objective can be broken down into activities that are designed to address the desired result. Activities are the mechanisms for achieving objectives, and whose success or failure can be measured.

### 1.3.2 Performance Measures

The impact of program activities - their relative success - is reflected by using performance measures. Defining these measures and how this data will be collected is a critical step in evaluating the precision and usefulness of the performance management process. This data informs a program of its strengths, weaknesses, and what adjustments are needed in the future. These truths underscore the importance of properly designing the performance management tools, their underlying assumptions and clearly defining the goals to be achieved.

There are several types of measures that describe the progress of an activity. "Performance measures" describe "how much, how well, and at what level programs, services, and products are provided within a given period."[7] Specifically, performance measures express what a program is doing. This includes a mixture of measures that show the following: what resources, including funds, personnel and time, are required to achieve the identified goal; delineating activities necessary to achieve the desired result; the product or results of program delivery; and the progress toward the community health outcome that the activity is meant to achieve. Tools should be in place to measure the effectiveness of each step in the process as well as the program's overall performance.

### 1.3.3 Reporting Progress

Performance management data gives health departments crucial information. The analysis and presentation of performance data not only keeps stakeholders informed and

involved, but is often necessary to continue receiving funding for health department programs. Reports should provide context, be easy to understand, and reflect the stakeholder's priorities. Reports should detail how performance standards and targets relate to the program's progress, who is responsible for meeting each objective, and how well those objectives are being met.[22]

### 1.3.4 Quality Improvement

QI is essential to maintaining high standards in public health organizations. It allows public health organizations to enhance the quality of service, streamline processes, and increase performance and accountability. Analyzing performance management data finds areas for improvement by highlighting the gap between standards and the programs' performance. If the solution is not apparent and easily implemented, programs can follow a formal QI process to create a road map for change. Plan, Do, Check, Act (PDCA) is the most commonly used method of QI in public health.

PDCA is a straightforward process that prompts users to create a plan for change, implement the change, evaluate it, and then make adjustments for long-term use. Though other programs, such as Kaizen or Lean Six-Sigma, have also been shown to be useful, they require extensive training, and hefty training fees. PDCA, on the other hand, is intuitive and free, making it the most popular and discussed formal QI process. This form of QI is meant to address issues in a process, not individual employee performance.

Because each component requires careful consideration, NAACHO's performance management guide expands this four-part cycle into seven steps that health departments can follow to create their performance management plan.[22]

### 1.3.5 Leadership and Workplace Culture

The goal of performance management is to achieve better outcomes through continuous quality improvement. Though the components of performance management are outlined above, the process will not run smoothly without buy-in from health department employees. This begins with commitment from leadership to create a culture of quality improvement throughout the department.

Leadership should assess the perceptions and readiness of staff toward implementing QI. Though QI can be organization-wide, and lead from the top down, performance management and smaller QI projects occur at the program-level.[23] Commitment from staff to improve processes is essential to identifying opportunities for improvement. Because health departments programs vary in size, area of focus, and outcomes, the support of staff to embrace and execute quality improvement initiatives is essential.

This is arguably the most difficult aspect of performance management. Fostering a workforce that has a collective commitment to QI requires dedication from leadership over the course of years. Suggestions for creating a culture of quality include: setting clear expectations, creating a committee dedicated to reviewing performance measures and offering QI advice, engaging every employee in QI projects that are important to their work, creating time in the day for QI as part of daily work, and recognize and reinforce participation in QI.[23,24]

## 1.4. History of Performance Management and Accreditation

Performance management and QI is not new to public health. In fact, public health officials were discussing its merits as early as the 1920's[25]. However, the use of QI did not be pervasive until 1988, when the National Academy of Sciences Institute of Medicine created a framework that would later inspire the development of the 10 Essential Public Health Services

and other strategic planning tools. The Institute of Medicine's scholarship laid the groundwork for an accreditation program.[25] Interest has surged since the founding of the Public Health Accreditation Board in 2005, in which performance management and QI are central tenets.

Accreditation for state and local health departments demonstrates their ability to maintain the high standard that the Public Health Accreditation Board (PHAB) requires. PHAB lays out the requirements in 12 domains, which are based on the 10 essential public health services.[25]

More than three hundred state and local health departments across the United States have achieved accreditation—including ACHD, which was accredited in November, 2017. PHAB was established in 2005 after the CDC determined that accreditation of local and state health departments was instrumental in strengthening public health infrastructure.[26] Since then, studies have shown that accredited health departments have had increased improvement in performance management and QI, and offer more services than their unaccredited peers.[19,20]

These results come as no surprise. PHAB placed an emphasis on performance management and QI as a requirement for accreditation. Domain 9 of PHAB's Standards and Measures for Accreditation is dedicated to continuous quality improvement through performance management. PHAB requires health departments to have a robust performance management system with objectives, measures, reporting, QI, and visible leadership across all levels of the department. Additionally, performance management and QI have been purposefully incorporated into every domain and step of the accreditation process.[27]

### 1.5. Performance Management Implementation

One of the most successful examples of performance management in action is the President's Emergency Plan for AIDS Relief (PEPFAR). In 2003, the Bush Administration launched PEPFAR in response to the worldwide HIV/AIDS crisis with a special emphasis on

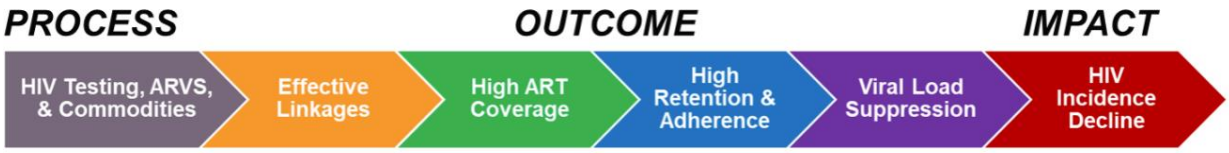
Africa. Since then, more than $80 billion has been invested and PEPFAR continues to reduce the transmission and the negative impacts of HIV on communities that may have otherwise been unable to control the spread. Since its creation, PEPFAR has expanded to support more than 14 million people receiving treatment for HIV. Beyond that, PEPFAR has prevented more than 2.2 million cases of congenital HIV cases, and helped provide more than 15.2 million men with voluntary medical male circumcision, which has been shown to reduce likelihood of transmission by close to 60 percent.[28,29] Other PEPFAR initiatives have created a 25–40% decrease in the incidence of HIV diagnoses among adolescent girls and young women in areas with the highest burden of HIV.[28]

PEPFAR cites performance management as a crucial component in decision and policy making. In its 2020 Annual Report to Congress, PEPFAR reports, "At every level of the program, we use data to increase program effectiveness, efficiency, and performance with geographic and epidemiologic focus; mobilize increased resource contributions and critical policy changes for impact from partner countries; support local partners for sustainable implementation; and validate outcomes, program costs, and results. For the past decade, this rigor has allowed PEPFAR to significantly expand our results and impact with little or no budget increase."[30]

PEPFAR managers continually review indicators and measures to ensure that they align with expectations and program implementation so that progress - or the lack of progress - can be accurately measured. Managers use a mix of indicators that measure the process, outcome, and impact of services. These indicators monitor program and partner management practices, measure new PEPFAR initiatives, and detect duplication of data collection.[31] Through this practice, PEPFAR reaffirms its commitment to person-centered care and monitoring. It allows

program managers and public health officials to make informed adjustments to their programs, and ensures that the communities most in need are not left behind.

*Figure 4: PEPFAR Monitoring: Getting from Process to Impact*




*Retrieved from PEPFAR's Monitoring, Evaluation, and Reporting Indicator Reference Guide*[31]

Though PEPFAR is a multi-national initiative focused on global health, the principles it uses to guide its program transfer to state and local initiatives. Performance management data can inform health departments where money and resources should go. With appropriate standards and measures, health departments can identify what areas are strong, and what aspects need improvement or reconsideration.

Local health departments from across the United States have used performance management to monitor performance and achieve a variety of objectives. Performance management and QI have helped health departments increase health equity, create an antibiotic stewardship program,[32] and improve asthma outcomes in East Tennessee, for example.[33]

The Orange County Health Department (OCHD) in Florida used performance management and QI tools to reduce rates of early syphilis in 2005.[34] STI data showed a large increase in early syphilis cases and that the program was under performing. The team came together, and identified the root cause of the problem: high employee turnover, lack of training,

and low morale. Over the following year, the program implemented changes to address these issues. More employees were hired, training was offered to staff, and requests were made to obtain cars and salary increases for employees. After this QI project, Orange County saw an improvement in performance and early syphilis rates begin to decline, even as surrounding counties experienced increases in syphilis rates.[34]

Another advantage of performance management concerns are budget and costs. Not only does a well-crafted performance management approach yield spending decisions and priorities that are efficient, more targeted, cost-effective and bring more successful results, they often can be developed for a lower or more reasonable cost.

As indicated above, PEPFAR uses performance management as a tool to maintain high-quality, targeted services with few changes to their budget. The same concept has proven effective on a smaller scale as well. After a report describing the need for intervention, the Knoxville County Health Department and the City of Knoxville partnered with local organizations to develop at nominal cost toolkits, references, and workflows to provide school nurses and primary care doctors the tools necessary to increase access to care for children and adults living with asthma.[33]

### 1.6 Gaps in Knowledge

Despite increased emphasis on performance management in health departments, there are few studies dedicated to the topic. Performance management provides the tools to help programs run more efficiently and improve practices and policies. Health departments across the nation have benefited from these practices, and studies agree that performance management is effective at ensuring cost-efficiency, in engaging employees, and streamlining processes. However,

researchers have yet to determine the direct impact performance management has on community health outcomes.

At ACHD, performance management is not used in a comprehensive manner. Though a performance management system is currently in place, the system lacks a strong link to QI. For example, the number of QI initiatives across ACHD that can examine the effectiveness of performance management on community health outcomes—such as STI rates—are sparse.

### 1.7 Public Health Significance

Prevention and early detection save lives, reduce the likelihood of sequalae, and curb the spread of antibiotic-resistant STIs. However, the necessity for aggressive practices to detect, prevent, and respond to STIs goes beyond merely reducing threats to a person's health and quality of life. There is also an economic component. STIs, and especially HIV, are expensive to patients and to already strained public health budgets. In 2018, incident STI cases nationwide cost patients an estimated $16 billion in direct medical costs. Of that total, more than $13 billion was spent to treat people with sexually acquired HIV.[35]

Nationally, the largest portion of CDC's budget in fiscal year 2020 was devoted to combating infectious disease ($2.7 billion from an overall budget of $7.9 billion). Significantly, the funds devoted to infectious disease prevention and control each year, including STIs, has remained constant despite fluctuations in CDC's overall budget ($8.2 billion in fiscal year 2018 and $7.2 billion in fiscal year 2019, for example).[36]

CDC budget trends and spending priorities are often a barometer for similar indicators among state and local public health departments. Performance management allows health departments to identify projects that are succeeding and those that need improvement. QI is also a valuable tool for strategically allocating resources to address public health concerns.

## 2.0 Objective

The goals of this project were to 1) identify best practices for performance management in a local health department, 2) review current practices at ACHD—specifically at the STD/HIV Prevention Program—and 3) develop recommendations for future use.

# 3.0 Methods

## 3.1 Allegheny County Health Department

ACHD serves Allegheny County, which is located in southwest Pennsylvania. It encompasses 130 municipalities, including the City of Pittsburgh, its suburbs, and more rural areas. The ACHD operates through five bureaus: Epidemiology, Administration, Public Policy and Community Relations, Health Promotion and Disease Prevention, and Environmental Health. Each bureau oversees programs that address specific community needs, such as the Air Quality Program, the Maternal Child Health Program, and the STD/HIV Prevention Program. The mission of the Allegheny County Health Department (ACHD) is to "Protect, promote, and preserve the health and well-being of all Allegheny County residents, particularly the most vulnerable."[37]

ACHD has been accredited with PHAB since 2017 and has been tracking performance data since that time. ACHD's performance management system currently incorporates performance standards, measurements, and progress reports similar to NAACHO's performance measures and data collection protocols.[38] Scorecards are used to record objectives, measures, and personnel responsible for each activity. Often, objectives and measures are set based on grant requirements, which were awarded to address community needs. Scorecards are reviewed and updated each quarter by program management and staff, and used to report annually to PHAB. The ACHD also uses scorecards to report to the Pennsylvania Department of Health, in order to receive funding from the state, as part of Act 315.

The ACHD formed a QI team, with members from programs across the health department. The QI team is intended to formulate QI projects, and offer expertise to programs to improve their focus and outcomes. The ACHD uses the PDCA method for QI, and has a

formalized process to implement QI. More focus - and data - is needed, however, to gauge staff enthusiasm and use for QI tools and methods.

### 3.2 STD/HIV Prevention Program Overview

Allegheny County Health Department's (ACHD) STD/HIV Prevention Program focuses the majority of its efforts on preventing, surveilling, and treating four reportable STIs: chlamydia, gonorrhea, syphilis, and HIV. The STD/HIV Prevention Program works to lower STI rates in Allegheny County through clinical services, education, STI surveillance, and partner notification.

ACHD's clinical services break down barriers to care for people who cannot afford testing and treatment and those who are concerned about confidentiality. The ACHD offers comprehensive STI clinical services free of charge. Patients who come to the clinic are examined by a nurse, and are tested for chlamydia, gonorrhea, syphilis, and HIV for anyone thirteen years of age or older. The clinic has treatment on hand, so those who test positive for these STIs can be treated without delay. Sexual partners of patients who test positive can be treated without waiting for test results to return. Nurses discuss prevention and safe sex behaviors with patients, as well as informing them about PrEP, and referring them to HIV navigation services and Disease Intervention Specialists (DIS) if eligible.

DIS at ACHD offer partner services to anyone in Allegheny County who test positive for an STI, and meet the eligibility requirements. DIS staff follows anyone who is newly infected with HIV, syphilis, or antibiotic resistant gonorrhea. DIS staff also follow pregnant women and anyone 15 years of age or younger who test positive for chlamydia or gonorrhea. DIS staff contact these patients, discuss transmission, symptoms, and prevention, and elicit a patient's sexual contacts in order to get them in for testing and treatment. DIS staff at ACHD use

Pennsylvania's surveillance system, PA-NEDSS, to follow patients and their contacts. If a person is identified as high-risk for contracting HIV, the program's HIV Navigators will reach out to connect them to discuss PrEP and prevention, as well as connecting them to care.

ACHD's STD/HIV Prevention Program also aims to communicate and educate Allegheny County residents on sexual health. Program staff do this through a variety of creative initiatives. The program has created informative videos for social media, sponsored posters on public transportation, issued ads on online dating sites, as well as attending educational events at schools and community events. Additionally, the STD/HIV programs communicate with local clinics and Federally Qualified Health Care Centers to update them on reporting and testing guidelines. The program also tracks STI data to identify areas of high morbidity to identify and outreach to areas that would benefit from increased testing.

STD/HIV Prevention Program annual scorecards from 2017 to 2019 were used for this project. Performance data over three years was reviewed and compared to best practices, outlined in the introduction. Each step of the performance management cycle was considered when looking for gaps—performance standards, performance measures, reporting, and QI.

STI data was retrieved from the Pennsylvania Department of Health, through the Enterprise Data Dissemination Informatics Exchange (EDDIE).[39] HIV rates were retrieved from the CDC, through the Atlas Plus.[40] Yearly percent change in rates was calculated simply by dividing the result of the current year's rate and the previous year's rate by the previous year's rate *(Rate of current year – rate of previous year)/rate of previous year*). Comparing the yearly percent change to the goals set at the beginning of the year will show whether the objective was met, and to what degree.

# 4.0 Results

## 4.1 Performance Management at the STD/HIV Prevention Program

The overarching goal of the program is to "decrease the number of HIV and sexually transmitted diseases among people 15-40 years, with a special emphasis on disproportionately affected minority populations."[41]

In 2017, the STD/HIV Prevention Program set performance standards based on data from prior years—how many people accessed clinical services, and how many patients accessed partner services. In 2018 and 2019, the program used information from the scorecards to identify new goals, with focused attention on high-risk populations. These standards reflect the goals of the program, as well as grant requirements.

In 2017, STI rates in Allegheny County decreased in the overall population. Chlamydia decreased by 13.1 percent, gonorrhea decreased by 10.9 percent, and syphilis decreased by 32.8 percent. High risk populations also saw a decrease in STIs, except for White men aged 15-25 years old; this population experienced a 15.5% increase in syphilis in 2017 as compared to the previous year.

During that year, the STD/HIV Prevention Program measured performance with 15 objectives, three each for chlamydia, gonorrhea, and syphilis, and six for HIV. The program aimed to pprovide chlamydia screening services for 9,000 patients presenting at the ACHD STD clinic, and screen 6,000 patients for chlamydia, in facilities other than the ACHD STD clinic. The clinic exceeded the target, testing 9,199 patients for chlamydia in their facility. Testing for chlamydia at facilities outside ACHD was no as successful, testing on 4,141 patients out of their target of 6,000. The program also aimed to ensure treatment for 90% of all positive chlamydia

cases reported from ACHD's STD clinic and screening sites. Treatment was confirmed for 94% of patients at the clinic, but for only 61% of patients who were tested at other facilities.

Goals for reducing gonorrhea in 2017 were to: provide gonorrhea screening services for approximately 9,000 patients presenting at the ACHD STD clinic, screen 6,000 patients 15-24 years old for gonorrhea, in facilities other than the ACHD STD clinic, and ensure treatment for 60% of all positive gonorrhea cases in Allegheny County. The STD/HIV Prevention program screened 9,232 patients for gonorrhea at the ACHD clinic, only 3,564 patients in facilities other than the ACHD clinic, and ensured treatment for 61% of patients.

The STD/HIV Prevention program aimed to reduce primary and secondary syphilis in 2017 to five cases per 100,000 by providing syphilis screening services for approximately 10,000 patients at the ACHD STD clinic, assuring 75% of Primary and Secondary syphilis cases were interviewed within 14 days of investigation initiation date, and assuring 90% of syphilis and co-infected HIV cases will have a completed HIV Intervention questionnaire. That year, the program screened 9,660 patients for syphilis. DIS staff interviewed 75% of primary and secondary syphilis cases within 14 days, though success varied each quarter, achieving 86% and 90% in the first two quarters, and falling to 77% and 50% in the last two quarters as new employees were being trained.

The STD/HIV Program planned to reduce the incident rate of HIV infection to 8 per 100,000 population through a six of objectives: provide HIV counseling and testing to approximately 9,500 patients presenting at the ACHD HIV/AIDS and STD clinics; provide prevention counseling or refer to care at least 80% of persons receiving HIV tests results in the STD/HIV clinic; interview 85% of eligible clients for Partner Services within 30 days; link at least 85% of persons who receive their HIV positive result to medical care and attend their first

appointment; start all investigation of 100% laboratory reports within two weeks of receiving each report in PA-NEDSS; and complete investigations for at least 95% of cases with positive HIV laboratory reports or diagnosis within 30 days or report date. The program only screened 8,350 patients for HIV, but all other objectives were met or exceeded.

*Table 1: STI Rates in Allegheny County among the General Population, and High-Risk Populations, 2015-2019*

| STD | 2015 rate | 2016 rate | 2017 rate | 2018 rate | 2019 rate |
|---|---|---|---|---|---|
| P&S Syphilis overall rate per 100,000 | 10.5 | 7 | 4.7 | 4.8 | 5.8 |
| P&S syphilis among White men 25-34, per 100,000 | 29.0 | 27.6 | 31.9 | 14.7 | 17.5 |
| Gonorrhea overall rate per 100,000 | 158.2 | 165 | 146.7 | 169.1 | 157.5 |
| GC among Black people aged 15-34, per 100,000 | 2203.5 | 2140.4 | 1807.6 | 1790.6 | 1606.4 |
| Chlamydia overall rate per 100,000 | 475.8 | 491 | 427 | 464.5 | 518.2 |
| CT rate among Black women aged 15-24, per 100,000 | 7,556.7 | 9,618.3 | 8,739.4 | 8,909.7 | 10,069.7 |
| HIV overall rate per 100,000 | 12.8 | 11.6 | 8.5 | 8 | -- |

**These data were provided by the Pennsylvania Department of Health. The Department specifically disclaims responsibility for any analyses, interpretations, or conclusions. Retrieved from Enterprise Data Dissemination Informatics Exchange. (EDDIE)*[39]

*Table 2: ACHD STD/HIV Prevention Program 2017 Objectives*[41]

| Goal | %Change from 2016 | Objective | Program Plan Status |
|---|---|---|---|
| Obj. 1: Reduce the incidence of chlamydia cases to 480 per 100,000 population by December 31, 2017. | -13.10 (rate= 427 per 100,000) | Provide chlamydia screening services for approximately 9,000 patients presenting at the ACHD STD clinic. | Achieved |
| | | Screen 6,000 patients for chlamydia, in facilities other than the ACHD STD clinic. | Partially Achieved |
| | | Ensure treatment for 90% of all positive chlamydia cases reported from ACHD's STD clinic and screening sites | Partially Achieved |
| Obj. 2: Reduce the incidence rate of gonorrhea cases to 150 cases per 100,000 population by December 31, 2017. | -10.92 (rate= 146.7 per 100,000) | Provide gonorrhea screening services for approximately 9,000 patients presenting at the ACHD STD clinic. | Achieved |
| | | Screen 6,000 patients 15-24 years old for gonorrhea, in facilities other than the ACHD STD clinic. | Partially Achieved |
| | | Ensure treatment for 60% of all positive gonorrhea cases in Allegheny County. | Achieved |
| Obj. 3: Reduce the incidence rate of primary/secondary syphilis cases to less than 5.0 cases per 100,000 populations, by December 31, 2017. | -32.86 (rate= 4.7 per 100,000) | Provide syphilis screening services for approximately 10,000 patients presenting at the ACHD STD clinic. | Partially Achieved |
| | | Assure 75% of Primary and Secondary syphilis cases will be interviewed within 14 days of investigation initiation date. | Partially Achieved |
| | | Assure 90% of Early Syphilis (Primary, Secondary, Early, Latent) and co-infected HIV cases will have a completed HIV Intervention questionnaire. | Not Achieved |
| Obj. 4: Reduce the incidence rate of new HIV infection cases to less than 8.0 cases per 100,000 population by December 31, 2017. | -26.72 (rate= 8.5 per 100,000 | Provide HIV counseling and testing to approximately 9,500 patients presenting at the ACHD HIV/AIDS and STD clinics. | Partially Achieved |
| | | Provide prevention counseling or refer to care at least 80% of persons receiving HIV tests results in the STD/HIV Clinic | Partially Achieved |
| | | Interview 85% of eligible clients for Partner Services within 30 days. (Allegheny County) | Achieved |
| | | Link at least 85% of persons who receive their HIV positive result to medical care and attend their first appointment. (Allegheny County) | Achieved |
| | | Start all investigation of 100% laboratory reports within two weeks of receiving each report in PA-NEDSS (HIV). | Achieved |
| | | Complete investigations for at least 95% of cases with positive HIV laboratory reports or diagnosis within 30 days or report date. | Achieved |

The overall rates of STIs increased in 2018—chlamydia by 8.8 percent, gonorrhea by 15.3 percent, and syphilis by 2.1 percent, as compared to 2017. However, syphilis rates of among White men aged 15-25 years decreased by 53.9 percent. HIV continued to fall, with an incidence rate of 8.5 per 100,000 population.

In 2018, performance objectives were updated to address high-risk groups, and based off the 2017 performance scorecard. The STD/HIV prevention program aimed to reduce the number of chlamydia cases in 15-24 year-olds by three percent. To achieve this, the program created four objectives for the year, but none of the objectives were met. The STD/HIV Prevention Program planned to increase chlamydia screening visits for African-American females (15-24-year-old) by 10 % in the ACHD STD clinic, but screening for this population decreased in 2018 by 25 percent. At sites other than the ACHD clinic, 3,087 out of the projected 4,300 patients were screened for chlamydia and gonorrhea. In 2018, The program ensured 54% of patients received treatment for chlamydia, falling one percent short of the goal of 55%.

The 2018 goal for gonorrhea was to reduce the number of gonorrhea cases by 5% in Allegheny County. The program planned to do this by: increasing gonorrhea screening among African-American males between the ages of 15-24 year by 10% in the ACHD STD clinic; screening 9,500 patients for gonorrhea presenting at the ACHD STD clinic; ensuring treatment for at least 65% of patients diagnosed with gonorrhea in Allegheny County; and implementing one new screening sites in a high morbidity zip code in African-American communities. None of these objectives were met. There was a 25% decrease in screening at the ACHD clinic, only 7,053 patients were screened off-site, 53% of cases had confirmed treatment, and no new screening site was identified.

In 2018, the STD/HIV Prevention program aimed to reduce the incidence rate of primary and secondary syphilis to less than 6 cases per 100,000 by providing syphilis screening services for approximately 9,800 patients presenting at the ACHD STD clinic, providing partner service interviews to at least 15% of syphilis case sexual contacts, as well as treating at least 75% of syphilis case contacts within 7 days, and interviewing at least 75% of syphilis cases within 14 days. Although only 7,142 were screened for syphilis, the other three objectives were achieved. 30% of case contacts were provided partner service interviews, 80% of case contacts were treated within 7 days, and 98% of syphilis patients were interviewed with 14 days.

In 2018, the STD/HIV Prevention Program had two goals for HIV reduction. The first was to reduce the incidence rate of new HIV infection cases to less than 8.0 cases per 100,000 population. All but one of the objectives set to achieve this goal were not met. The program conducted 6,969 screening tests at the ACHD clinic out of the projected 8,500. The program worked with the Allegheny County Jail and Shuman Juvenile Detention Center in hopes of screening 1,300 residents. Of this, only 867 patients were screened for HIV. Another objective was to interview 85% of newly diagnosed HIV clients in Allegheny County for Partner Services, within 30 days. The program interviewed 82% of this population. The program also planned to provide PrEP referrals to 75% of targeted patients receiving services at the STD clinic. The program exceeded this goal, offering PrEP referrals to over 90% of patients for three quarters in 2018.

The second goal for reducing HIV in 2018 was to provide HIV/STD education in Allegheny County through community education and social marketing/media campaigns. The program created three objectives to meet this goal: implement two health promotion campaigns targeting adolescents via social media or social marketing; implement one evidence-based

intervention in the STD Clinic; and increase Condom Distribution Program partners by 10% (5 partners) in Allegheny County. The program established agreements with community partners to run advertisements and provide information to their audiences. The program also increased condom distribution by establishing 30 new partners, far exceeding the objective. The program did not run an intervention in the STD clinic, due to technical problems.

It is important to note that the STD/HIV Prevention Program moved their clinic and offices to a new location in February 2018. This change decreased the number of patients seen in 2018, and was not taken into account when setting goals for that year.

*Table 3: ACHD STD/HIV Prevention Program 2018 Objectives*[42]

| Goal | %Change from 2017 | Objective | Program Plan Status |
|---|---|---|---|
| Objective 1: Reduce the number of chlamydia cases in 15-24-year olds in Allegheny County by 3% (175 cases) by December 31, 2018. *(2016 Baseline: 3,901 cases)* | +8.78 overall<br>+1.95 target group | 1. Increase chlamydia screening visits for African-American females (15-24-year-old) by 10% (89 cases) in the ACHD STD clinic. (2017 Baseline: 891 screening) | Not Achieved |
| | | 2. Identify and implement at least one new screening site in high morbidity zip codes (targeting 15-24-year-old females in minority communities) by June 2017. (2017 Baseline: 10 MOU sites) | Not Achieved |
| | | 3. Screen 4,300 patients for chlamydia via MOU- approved chlamydia and gonorrhea testing sites in the community. (2016 Baseline: 4,141 screened) | Not Achieved |
| | | 4. Ensure treatment for at least 55% of patients diagnosed with chlamydia in Allegheny County. (2017 Baseline: 50% treated) | Not Achieved |
| Objective 2: Reduce the number of gonorrhea cases by 5% (100 cases) in Allegheny County by December 31, 2018. *(2016 Baseline: 2,018 cases)* | +15.27 overall<br>-0.94 target group | 1. Increase gonorrhea screening among African-Americans males between the ages of 15-24 year by 10% (9 cases) in the ACHD STD clinic. *(2017 Baseline: 892 screenings)* | Not Achieved |
| | | 2. Screen 9,500 patients for gonorrhea (and chlamydia) presenting at the ACHD STD clinic. *(2017 Baseline: 9,232 GC/CT screenings)* | Not Achieved |
| | | 3. Identify and implement one new screening sites in high morbidity zip codes (targeting YMSM, 15-24-year-olds) in African-American communities. *(2017 Baseline: 10 MOU sites)* | Not Achieved |
| | | 4. Ensure treatment for at least 65% of patients diagnosed with gonorrhea in Allegheny County. *(2017 Baseline: 61% gonorrhea cases treated)* | Not Achieved |
| Objective 3: Reduce the incidence rate of primary/secondary syphilis cases to less than 6.0 cases per 100,000 population by December 31, 2018. *(2016 Baseline: 7.1 per 100,000)* | +2.13 overall | 1. Provide syphilis screening services for approximately 9,800 patients presenting at the ACHD STD clinic. *(2016 Baseline: 9,660)* | Not Achieved |
| | | 2. For Early Syphilis case contacts initiated, at least 15% will have a cluster partner services interview conducted. *(No baseline)* | Achieved |
| | | 3. At least 75% of Primary & Secondary (P & S) syphilis case contacts will be treated within 7 days of investigation initiation date. *(2016 Baseline: 68%)* | Achieved |
| | | 4. At least 75% of Primary and Secondary (P & S) syphilis cases will be interviewed within 14 days of investigation initiation date. *(2016 Baseline: 68%)* | Achieved |
| Objective 4: Reduce the incidence rate of new HIV infection cases to less than 8.0 cases per 100,000 population by December 31, 2018. *(2015 Baseline: Allegheny County: 11.54/100,000)* | -5.88 overall | 1. Conduct 5th generation testing on 8,500 patients presenting at the ACHD HIV/AIDS. *(2017 Baseline: 8,350)* | Not Achieved |
| | | 2. Screen 1,300 individuals at Allegheny County Jail and Shuman for HIV. *(2017 Baseline: ACJ – 966, Shuman – 183, 1149 total)* | Not Achieved |
| | | 3. Interview 85% of newly diagnosed HIV clients in Allegheny County for Partner Services, within 30 days. *(2016 Baseline: 85%)* | Not Achieved |
| | | 4. Provide PrEP referrals to 75% of targeted patients receiving services at the STD clinic. *(2017 Baseline: 65%)* | Achieved |
| Objective 5: Provide HIV/STD education in Allegheny County through community education and social marketing/media campaigns. | | 1. Implement two health promotion campaigns via social media and/or social marketing targeting adolescents, YMSMs and adolescents at-risk for HIV/STDs by December 31, 2018. | Achieved |
| | | 2. Implement one evidence-based intervention (Safe in the City) in the STD Clinic. | Partially Achieved |
| | | 3. Increase Condom Distribution Program partners by 10% (5 partners) in Allegheny County. *(2017 Baseline: 45 CDP partners)* | Achieved |

In 2019, chlamydia increased in the general population by 11.5 percent; gonorrhea decreased by 6.9 percent; and syphilis increased by 20.8 percent. Data for HIV in 2019 is not yet available.

That year, the STD/HIV Prevention program aimed to reduce the number of chlamydia cases in 15-24-year olds in Allegheny County by 3% (100 cases). Four objectives were set to achieve this goal: increase chlamydia screening services in African-American females 15-24-years old by 10% in the ACHD STD clinic (462 individuals total); create a morbidity map to track HIV/STI testing, PrEP clinics, and other resources within Allegheny County to identify high morbidity areas for additional testing and outreach opportunities; ensure 80% of MOU-approved chlamydia and gonorrhea screening sites maintain a 3% chlamydia positivity rate annually; ensure that 55% of patients diagnosed with chlamydia in Allegheny County have treatment documentation in PA-NEDSS. The STD/HIV Prevention program tested 437 patients in the target demographic. This did not meet the goal of 462 patients, but is an increase from 2018. The program was successful in creating the HIV/STI morbidity map, and also met their objective to ensure 80% of MOU-approved chlamydia and gonorrhea screening sites maintain a 3% chlamydia positivity rate. Of patients with chlamydia, only 43.45% had treatment documented in PA-NEDSS

The 2019 goal for gonorrhea was to reduce the number of gonorrhea cases by 3% (37 cases) in the minority communities. The program aimed to do this through increasing gonorrhea screening among African-American males between 15-24 year-olds by 10% in the ACHD STD clinic (580 individuals in total), and ensuring that 65% of patients diagnosed with gonorrhea in Allegheny County have treatment documentation in PA-NEDSS. Neither of these objectives were achieved. 554 African American males between 15 and 24 years old were screened, falling

short of the goal of 580. Similarly, only 49.21% of patients had treatment documented in PA-NEDSS.

The program aimed to reduce the number of primary and secondary syphilis cases to less by 3% (2 cases) in 2019. They planned to do this through educating OB/GYNs, Federally Qualified Health Care Centers, and community-based organizations about syphilis data and pregnancy screening guidelines and by implementing two health promotion advertisements focusing on congenital syphilis via bus shelters, radio and transit advertisements. Both of these objectives were achieved. The program also aimed to assure that 15% of syphilis case sexual contacts have a partner services interview, that 75% of primary & secondary syphilis case contacts were treated within 7 days of investigation initiation date, and that 75% of primary and secondary syphilis cases will be interviewed within 14 days of investigation initiation date. The program achieved interviewing objectives, reaching 36% of contacts and 81% of syphilis patients for interview, however only 45% of contacts were confirmed to be treated.

The program set four objectives designed to meet their goal to reduce the incidence rate of newly HIV diagnosed cases to 10.0 cases per 100,000 population in 2019. These objectives were: screen 900 inmates for HIV at Allegheny County Jail and Shuman; interview 85% of newly diagnosed HIV patients in Allegheny County for linkage to care within 30 days; ensure that 95% of audited charts have documentation of PrEP information being offered to the patient; create Memorandum of Understandings (MOUs) with at least three PrEP clinics to coordinate and track referrals. All of these objectives were met or exceeded that year.

The second goal of providing HIV/STD education in Allegheny County through community education and health promotion advertisements saw similar success. The program met their objectives to disseminate HIV/STD advertisements via dating applications and Increase

Condom Distribution Program (CDP) partners by 10% (4 sites), but could not implement one evidence-based intervention (EBI) within the STD Clinic due to funding restrictions.

The PA Department of Health requires the HIV/STD program to track the documentation of gonorrhea and chlamydia treatment into PA-NEDSS, however many providers provide medication but do not record treatment. Therefore, in 2019 the HIV/STD program continued to see struggles surrounding screening and confirming treatment of chlamydia and gonorrhea by local providers, but met goals related to establishing and maintaining community partnerships.

Though QI projects occurred in the STD/HIV Prevention program between 2017 and 2019, no formal projects using PCDA were proposed.

*Table 4: ACHD STD/HIV Prevention Program 2019 Objectives*[43]

| Objective | %Change from 2018 | Activities | Program Plan Status |
|---|---|---|---|
| Objective 1: Reduce the number of chlamydia cases in 15-24-year old's in Allegheny County by 3% (100 cases) by December 31, 2019. (2017 Baseline: 3,336 cases) | +11.56 overall<br>+13.02 target group | 1. Increase chlamydia screening services in African American females (15-24-year-old) by 10% annually (41 individuals) in the ACHD STD clinic. 2018 Baseline: 421) | Not Achieved |
| | | 2. Create a morbidity map to track HIV/STD testing, PrEP clinics and other resources within Allegheny County to identify high morbidity areas for additional testing and outreach opportunities. | Achieved |
| | | 3. Ensure 80% of MOU-approved chlamydia and gonorrhea screening sites maintain a 3% chlamydia positivity rate annually. (2018 Baseline: 78% MOU sites met criteria.) | Achieved |
| | | 4. Ensure that 55% of patients diagnosed with chlamydia in Allegheny County have treatment documentation in PA NEDSS. (2018 Baseline: 4%) | Not Achieved |
| Objective 2: Reduce the number of gonorrhea cases by 3% (37 cases) in the minority communities by December 31, 2019 (2017 Baseline: 1,069 cases) | -6.86 overall<br>-10.29 target group | 1. Increase gonorrhea screening among African-American males between 15-24-year old's by 10% (58 individuals) in the ACHD STD clinic. (2018 Baseline: 580) | Not Achieved |
| | | 2. Create a 2017 morbidity map to track HIV/STD testing, PrEP clinics and other resources within Allegheny County to identify high morbidity areas for additional testing and outreach opportunities. | Achieved |
| | | 3. Ensure that 65% of patients diagnosed with gonorrhea in Allegheny County have treatment documentation in PA NEDSS (2018 Baseline: 53%) | Not Achieved |
| Objective 3: Reduce the number of primary/secondary syphilis cases to less by 3% (2 cases) by December 31, 2019. (2017 Baseline: 61 cases) | +20.83 overall | 1. Educate OB/GYN, FQHCs and community-based organizations about PA DOH syphilis data and pregnancy screening guidelines. | Achieved |
| | | 2. Implement two health promotion advertisements focusing on congenital syphilis via bus shelters, radio and transit advertisements. | Partially Achieved |
| | | 3. Assure that 15% of Early Syphilis case contacts have a cluster partner services interview. (2018 Baseline: 30% of cases have cluster interview.) | Achieved |
| | | 4. Assure that 75% of Primary & Secondary syphilis case contacts will be treated within 7 days of investigation initiation date. (2018 Baseline: 80%) | Not Achieved |
| | | 5. Assure 75% of Primary and Secondary (P&S) syphilis cases will be interviewed within 14 days of investigation initiation date. (2018 Baseline: 98%) | Not Achieved |
| Objective 4: Reduce the incidence rate of newly HIV diagnosed cases to 10.0 cases per 100,000 population by December 31, 2019. (2016 Baseline: 10.30 per 100,000) | N/A | 1. Screen 900 inmates for HIV at Allegheny County Jail and Shuman. (2018 Baseline: ACJ – 743, Shuman – 125, 868 total.) | Achieved |
| | | 2. Interview 85% of newly diagnosed HIV patients in Allegheny County for linkage to care within 30 days. (2018 Baseline: 81%) | Achieved |
| | | 3. Ensure that 95% of audited charts have documentation of PrEP information being offered to the patient. | Achieved |
| | | 4. Create Memorandum of Understandings (MOUs) with at least 3 PrEP clinics to coordinate and track referrals. | Achieved |
| Objective 5: Provide HIV/STD education in Allegheny County through community education and health promotion advertisements by December 31, 2019. | | 1. Disseminate HIV/STD advertisements via dating applications (i.e., Grindr, Adam4Adam, Tindr, etc.) targeting 15-24 years old, LGBTQ+, YBMSMs and women at risk for HIV/STDs. [2018 Baseline: 3 health promotion campaigns were advertised through City Paper (digital), WAMO, and Lamar Advertising.] | Achieved |
| | | 2. Implement one evidence-based intervention (EBI) within the STD Clinic. | Not Achieved |
| | | 3. Increase Condom Distribution Program (CDP) partners by 10% (4 sites). (2018 Baseline: 39 active CDP sites.) | Achieved |

## 5.0 Discussion/Recommendations

The results from this review show some difference between the activities and objectives that are being achieved and those that are not. Objectives surrounding HIV prevention have the highest rate of success. This may be due to several reasons: high levels of public interest and funding, high levels of oversight, and the increasing access to PrEP.

The Health Resources and Services Administration's provides Ryan White and other funding to a plethora of HIV prevention initiatives. This money helps those infected get treatment, those at risk get PrEP, and funds public health programs. Due to this funding, high level of public interest, and confidential nature, HIV surveillance and services have high levels of oversight—beyond that of chlamydia, gonorrhea, and perhaps even syphilis. This level of oversight reduces the chance for mistakes and missed opportunities.

As discussed above, PrEP is a medication that prevents a person exposed to HIV from getting infected. The widespread use of this drug continues to reduce the spread of HIV year by year. In addition, it its physical benefits, enrolling in PrEP requires individuals to be tested for STIs every three months. This leads to early detection of HIV and STIs, and swift intervention.

Though HIV treatment and surveillance have unique characteristics, the success of this aspect of the program can be considered when creating QI strategies in other areas, increasing chlamydia and gonorrhea screening for example.

The STD/HIV prevention program has several other strong areas in performance management. STIs are under strict surveillance in Allegheny County, which gives the STD/HIV Prevention program an accurate picture of STIs in the community year by year. This allows the program to set performance standards that are realistic and which reflect community needs. It also allows the program insight into high-risk populations, and where resources are most needed.

The HIV/STD Program works closely with PA Department of Health to obtain data of areas with a high STD morbidity. This enables ACHD to collaborate with other agencies to focus outreach and testing efforts. The STD/HIV Prevention program uses this data to inform to objectives for performance management and to provide assistance where it is most needed.

Additionally, the STD/HIV Prevention Program has leadership that promotes creativity and initiative from staff. Each year, staff provide input for updating the performance management scorecard and giving insight for future projects. Staff are encouraged to provide feedback and implement initiatives for QI throughout the year. This type of leadership provides a strong foundation to foster a culture of quality improvement in the program.

Though the performance management system has been used since 2017, only one QI project has been formally identified and tracked. The project tracked the number of supplies wasted at the clinic, and streamlined how supplies are ordered and transported. The low number of QI projects may be due to logistical reasons. The program, along with the rest of the health department, were new to performance management in 2017, and may not have developed the expertise yet. In 2018, the STD/HIV Prevention Program moved locations, which reduced the number of patients seen. This impacted performance, but would not need a QI project to address the problem. Also due to staff turnover and competing priorities, many activities may have been readjusted.

This link to QI can be strengthened. Though the STD/HIV Prevention Program implements QI projects, documenting these efforts and tracking changes using the performance management system would be beneficial to the program. This would provide the program with data to analyze what changes are making an impact. The scorecards are an ideal tool to identify objectives that are not being met, and areas for improvement, while doing a root-cause analysis

and employing PDCA provides the program with objective information that provide a better understanding of what changes need to be made, and analyze the effectiveness of interventions and new processes.

The STD/HIV Prevention Program should consider using more descriptive and a wider variety of performance measures to showcase the variety of work the program does. For example, the program can add metrics to better reflect the work the clerks do, such as registering patients, entering data, or providing positive interactions with patients. These metrics are captured in induvial performance evaluations for employees, and can translate to the performance management score cards. Taking those steps will provide a full picture of the program's performance. This will also provide data to use in larger analyses, and better determine the impact performance has on community health outcomes.

Greater performance management practices lead to better and higher quality programs. That performance in turn should lead to healthier communities. However, a direct link to performance management and community health outcomes is difficult to establish, as is the case with ACHD's STD/HIV Prevention Program. There are many factors influencing the increase in STI rates, and not enough performance data to determine what relationship—if any—exists between the two. Continuing to measure performance over time and expanding performance measures will not only increase the program's function, but may eventually provide the information for an analysis.

The STD/HIV prevention program at ACHD is essential in reducing the rates of STI in Allegheny County. Performance management data provides insight into what is being done. Recommendations to improve the performance management system include: 1) Assess staff willingness to participate in QI, and create a plan to engage them if necessary; 2) Formalize the

link between QI and performance management by documenting QI projects using PDCA; 3) Perform a root-cause analysis to determine barriers to screening for chlamydia and gonorrhea, and initiate QI projects as necessary; 4) Expand scorecard metrics to fully capture the work that is being done; 5) Continue to track performance management to provide data for future analyses.

Performance management is an important tool for local health departments. The ACHD's STD/HIV Prevention Program can use these tools to monitor performance, identify areas that could be improved, and implement data-driven QI projects. Using performance management to its full extent reduces gaps in care, increases efficiency and cost-effectiveness, and increases the program's ability serve the community. This is key to meet and maintain the high standards in health departments, and improving public health locally, and nationwide.

## Bibliography


1. STDs Continue to Rise in the U.S. Press Release | CDC. https://www.cdc.gov/nchhstp/newsroom/2019/2018-std-surveillance-report-press-release.html. Accessed February 28, 2021.
2. Kreisel KM, Spicknall IH, Gargano JW, et al. Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2018. *Sex Transm Dis*. January 2021. doi:10.1097/OLQ.0000000000001355
3. Satterwhite CL, Torrone E, Meites E, et al. Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sex Transm Dis*. 2013;40(3):187-193. doi:10.1097/OLQ.0b013e318286bb53
4. Figures in the National Profile. https://www.cdc.gov/std/stats18/fignatpro.htm. Accessed March 20, 2021.
5. National Profiles - Overview - 2018 Sexually Transmitted Diseases Surveillance. https://www.cdc.gov/std/stats18/natoverview.htm. Accessed March 20, 2021.
6. Patterson-Lomba O, Goldstein E, Gómez-Liévano A, Castillo-Chavez C, Towers S. Per capita incidence of sexually transmitted infections increases systematically with urban population size: a cross-sectional study. *Sex Transm Infect*. 2015;91(8):610-614. doi:10.1136/sextrans-2014-051932
7. Syphilis - 2018 Sexually Transmitted Diseases Surveillance. https://www.cdc.gov/std/stats18/Syphilis.htm. Accessed April 20, 2021.
8. Table of Contents - 2018 Sexually Transmitted Diseases Surveillance. https://www.cdc.gov/std/stats18/toc.htm. Accessed February 28, 2021.
9. Sieving RE, Gewirtz O'Brien JR, Saftner MA, Argo TA. Sexually transmitted diseases among US adolescents and young adults: patterns, clinical considerations, and prevention. *Nurs Clin North Am*. 2019;54(2):207-225. doi:10.1016/j.cnur.2019.02.002
10. Detailed STD Facts - HIV/AIDS & STDs. https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm. Accessed February 28, 2021.
11. Condom Fact Sheet for Public Health Personnel | CDC. https://www.cdc.gov/condomeffectiveness/latex.html. Accessed April 20, 2021.
12. Haggerty CL, Gottlieb SL, Taylor BD, Low N, Xu F, Ness RB. Risk of sequelae after Chlamydia trachomatis genital infection in women. *J Infect Dis*. 2010;201 Suppl 2:S134-55. doi:10.1086/652395
13. HIV and Sexually Transmitted Diseases (STDs) | NIH. https://hivinfo.nih.gov/understanding-hiv/fact-sheets/hiv-and-sexually-transmitted-diseases-stds. Accessed April 20, 2021.
14. Allegheny County Health Department. *Allegheny County Health Department STD/HIV Program 2018 Annual STD Report*.; 2019.

15. Danby CS, Cosentino LA, Rabe LK, et al. Patterns of extragenital chlamydia and gonorrhea in women and men who have sex with men reporting a history of receptive anal intercourse. *Sex Transm Dis*. 2016;43(2):105-109. doi:10.1097/OLQ.0000000000000384
16. St Cyr S, Barbee L, Workowski KA, et al. Update to cdc's treatment guidelines for gonococcal infection, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(50):1911-1916. doi:10.15585/mmwr.mm6950a6
17. Levine R. Historic Increase in Reported Congenital Syphilis. October 2019. https://www.health.pa.gov/topics/Documents/HAN/2019-PAHAN--461-10-09-ADV-Syphilis%20Increase.pdf. Accessed April 22, 2021.
18. Ingram RC, Scutchfield FD, Charnigo R, Riddell MC. Local public health system performance and community health outcomes. *Am J Prev Med*. 2012;42(3):214-220. doi:10.1016/j.amepre.2011.10.022
19. Beitsch LM, Kronstadt J, Robin N, Leep C. Has voluntary public health accreditation impacted health department perceptions and activities in quality improvement and performance management? *J Public Health Manag Pract*. 2018;24 Suppl 3:S10-S18. doi:10.1097/PHH.0000000000000713
20. Ingram RC, Mays GP, Kussainov N. Changes in local public health system performance before and after attainment of national accreditation standards. *J Public Health Manag Pract*. 2018;24 Suppl 3:S25-S34. doi:10.1097/PHH.0000000000000766
21. The Public Health Foundation. Performance Management Toolkit. Performance Management Toolkit. http://www.phf.org/focusareas/performancemanagement/toolkit/Pages/Performance_Management_Toolkit.aspx. Accessed March 5, 2021.
22. Measuring What Matters in' ' Public Health. 2018. https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/performance-management. Accessed April 22, 2021.
23. Riley WJ, Parsons HM, Duffy GL, Moran JW, Henry B. Realizing transformational change through quality improvement in public health. *J Public Health Manag Pract*. 2010;16(1):72-78. doi:10.1097/PHH.0b013e3181c2c7e0
24. Jabbal J. Embedding a culture of quality improvement. November 2017.
25. Beitsch LM, Yeager VA, Moran J. Deciphering the imperative: translating public health quality improvement into organizational performance management gains. *Annu Rev Public Health*. 2015;36:273-287. doi:10.1146/annurev-publhealth-031914-122810
26. Accreditation Background - Public Health Accreditation Board. https://phaboard.org/accreditation-background/. Accessed March 5, 2021.
27. PHAB Standards and Measures, Version 1.5 . https://phaboard.org/standards-and-measures-for-initial-accreditation/. Accessed March 5, 2021.
28. Webster P. PEPFAR at 15 years. *Lancet*. 2018;392(10143):200. doi:10.1016/S0140-6736(18)31642-8

29. Farley TM, Samuelson J, Grabowski MK, Ameyan W, Gray RH, Baggaley R. Impact of male circumcision on risk of HIV infection in men in a changing epidemic context - systematic review and meta-analysis. *J Int AIDS Soc*. 2020;23(6):e25490. doi:10.1002/jia2.25490
30. U.S. State Department. *2020 Report to Congress on the President's Emergency Plan for AIDS Relief*. U.S. State Department; 2020. doi:10.30875/4a0b4159-en
31. PEPFAR. Monitoring, Evaluation, and Reporting' ' Indicator Reference Guide . September 2019.
32. Antibiotic Stewardship Program. October 2013. http://www.phf.org/programs/antibioticstewardship/Pages/Antibiotic_Stewardship.aspx. Accessed April 22, 2021.
33. Public Health Foundation A. Improving Asthma Outcomes in America: Improving the Quality of Adult Asthma Care in East Tennessee. 2011. http://www.phf.org/programs/PMQI/Pages/Asthma_Demonstration_Projects.aspx. Accessed March 13, 2021.
34. Orange County Health Department STD Quality Improvement Project Storyboard. July 2006. http://www.phf.org/programs/PMQI/Pages/Orange_County_Quality_Improvement_Project.aspx. Accessed April 22, 2021.
35. Chesson HW, Spicknall IH, Bingham A, et al. The estimated direct lifetime medical costs of sexually transmitted infections acquired in the united states in 2018. *Sex Transm Dis*. January 2021. doi:10.1097/OLQ.0000000000001380
36. FY 2020 Snapshot at CDC. https://www.cdc.gov/funding/documents/fy2020/fy-2020-ofr-snapshot-508.pdf. Accessed April 22, 2021.
37. Hacker D. 2015 COMMUNITY HEALTH ASSESSMENT.
38. Performance Management - NACCHO. https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/performance-management. Accessed March 13, 2021.
39. Enterprise Data Dissemination Informatics Exchange. Pennsylvania Sexually Transmitted Diseases (STDs): Crude/Age-Specific Rates per 100,000. https://www.phaim1.health.pa.gov/EDD/WebForms/STDCnty.aspx. Accessed February 28, 2021.
40. CDC's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. *AtlasPlus - Tables*.
41. *2017 STD/HIV Prevention Program Performance Management Scorecard* . ACHD; 2018.
42. *2018 STD/HIV Prevention Program Performance Management Scorecard* . ACHD; 2019.
43. *2019 STD/HIV Prevention Program Performance Management Scorecard* . ACHD; 2020.