Assessment of the Benefits of an Express STD Clinic Flow Model
in Eliminating Turn Aways

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Abstract

In a nation that has made so much progress in the twentieth century in reducing the burden of disease, the United States is still plagued with a continued high rate of sexually transmitted infections (STIs), with an estimated 19 million new STIs annually (CDC). With lack of healthcare coverage, where do these individuals who are infected seek screening and treatment? The burden has fallen more and more on the local health department to provide this free or low cost service. With continued high rates of sexually transmitted infections, the public health burden to provide clinical treatment is stretched to a breaking point in some areas of the United States. Innovative quality improvement measures are required to find solutions to this growing problem. Local and state health departments seek ways to expand STI Clinic services to meet this rise in sexually transmitted infections. Lack of resources and qualified medical providers has spurred new and inventive solutions, including “Express STD (sexually transmitted disease) Visits, Expedited Partner Therapy, embedded Communicable Disease Investigators in HIV Clinics for partner interviews, and Hepatitis B (and A) Vaccination in STD Clinics” (James, 2). Related evidenced based studies have proven these new approaches are effective. Of the 100 counties in North Carolina, only one, Wake County HIV/STD Clinic, is using the Express STD Clinic Flow Model to accommodate this influx of patients. Another North Carolina county, Forsyth County, has experienced an increase in syphilis rates, including a rise from 45 cases in 2008 to 210 cases in 2009. Subsequently, there has been an increase in the volume of STI clients seeking services; and additionally, a substantial increase in turnaways at the Forsyth County Department of Public Health STD Clinic. A pilot study, which initiated the first Express STD Clinic Flow Model in Forsyth County, is producing evidence based data showing its effectiveness in reducing the
immense (up to 44% in May 2009) turnaway rates in the STD Clinic to less than one percent after two months.
The Rise in Sexually Transmitted Infections (STIs) in the Twenty-first Century

Although the United States is one of the most developed countries in the world and has access to the most effective antibiotics to treat sexually transmitted infections, the STI rates are at a shockingly rampant level, surpassing all other developed countries. Statistically, syphilis, gonorrhea and Chlamydia, all of which are “highly treatable infections,” are at substantially high rates (Fox 2009, 1). What is the cause of the extreme rise of sexually transmitted infections in the US? According to John Douglas of the Centers for Disease Control and Prevention (CDC), the message to the public has not been effective. The message of “abstinence-only” is not working and plans are in process to strengthen the message to school age children as well as the public as a whole. Douglas states, “We haven’t been promoting the full battery of messages. We have been sending people out with one seatbelt in the whole car”. Additionally, Douglas said, “children and teens need to know about condom use, and should limit their number of sex partners, and avoid sex with people who do have many other sex partners” (Fox 2009, 1).

A recent survey of 56,000 Americans, done by MSNBC.com, (See Diagrams 1-3) determined that only 39 percent of those surveyed ever ask a sex partner about HIV status or other STIs. The clear message must be communicated in numerous ways on how to reduce risks of contracting sexually transmitted infections. The stigma of sexually transmitted infections has made people “fear rejection”, thus not discussing sexual issues with potential sex partners (Weaver 2005, 1). “While almost half of those with less than a high school degree never discuss STDs with a new partner, this group also was nine times more likely than college graduates to have paid someone for sex, according to Julius Schachter, editor of the journal Sexually Transmitted Diseases, and a professor of laboratory medicine at the University of California, San
Francisco (Weaver 2005, 2). STI prevention is critical for all ages, education, and income in order to reduce this burden of disease in the United States.

Diagram 1

The CDC’s most recent statistics reveal that the rate of STI’s, especially gonorrhea, syphilis, and Chlamydia, has remained high and is rising annually. In 2008 there were 1.2 million cases of Chlamydia and approximately 337,000 cases of gonorrhea in the United States. Astonishingly, the most cases of Chlamydia and gonorrhea were seen in teen girls ages 15 to 19, with African American females with the highest rates. Disproportionately, African Americans account for only 12 percent of the US population; however over fifty percent of the cases of Chlamydia and syphilis; and 71 percent of gonorrhea were present in this population group in 2008. There were 13,500 syphilis cases reported in 2008, about eighteen percent over 2007. Of syphilis cases, sixty-three percent were found in men having sex with men (MSM) (Fox 2009, 2). Also, “among alarming STD stats released by the Centers for Disease Control and Prevention is a rise in syphilis cases partly due to HIV positive men practicing unsafe sex with HIV positive partners. Known as "serosorting," the practice of sexual activity without the use of condoms between men with the same or similar strains of HIV can lead to the transmission of other STDs”
There should be targeted messages to those population groups with high incidence such as MSMs, African Americans, and the age group of 15 to 24 year olds.

**Diagram 2**

Risks of contracting sexually transmitted infections are limited primarily to several specific sexual practices (See Diagram 2). “Alcohol and drugs were the biggest risk factors for unprotected sex among both men and women and in every demographic subgroup, with nearly two-thirds of respondents saying they’ve had unsafe sex while drinking. Asians were the one notable exception, with more than 50 percent of them reporting never having had unprotected sex while under the influence of alcohol” (Weaver 2005, p. 3). Other risk factors noted are early
initiation of sex by teens, all ages not limiting the number of sex partners, and lack of use of condoms.

**Access to Testing and Treatment**

With an estimate of 19 million new STIs annually in the US (CDC), how can there be adequate access to testing and treatment? There is a new trend in the business sector to offer private STI testing at stand alone laboratories for those who can afford the fees. Websites offer STI testing where urine can be sent in for testing for gonorrhea and Chlamydia. Oral swabs can be mailed to identify HIV status. Private physicians will provide STI testing if requested but frequently treat only by symptoms and provide little or no follow up of sex partners. Emergency departments also provide a place for testing and treatment. Most states mandate each local health department provide free or low cost care for those who present for treatment of sexually transmitted infections. Access to testing and treatment varies based on the economic status of the patient.

**Private STI Screening**

Some who are concerned about a possible STI, and can afford it, have found a new resource for screening and treatment. On the World Wide Web look for: GetSTDtested, NationalSTDtesting, EasySTDtesting, STDTestExpress, SimpleSTDtesting, LocalSTDtesting, Testcountry or numerous others. One online advertisement says “for $60, no worrying, no waiting, confidential, walk in, no exam, and test for 4 STDs” (GetSTDtested). These are only a few advertisements found online. One private STI lab states that private testing is better for five reasons: “1) Your personal health data is in your control, 2) Access to premium lab tests for 50% less than the cost of a doctor visit, 3) No long waits in a public health clinic, 4) Free doctor consult and treatment options if you test positive, and 5) Fast results…..Up to 3 times faster than
results from a doctor or clinic” (STDexpresstesting). “Quick…Confidential…accurate STD
testing”…. At this express business, STDexpresstesting, for $249 a client can be tested for eight
STIs—syphilis, HIV, gonorrhea, Chlamydia, Hepatitis B, Hepatitis C, Herpes I and Herpes II.
Individual tests range from $79 to $199. The physician test order, specimen collection, lab test
processing, secure online results, and doctor phone consultation are all part of the service. Some
sites are home based when a urine is mailed in to test for gonorrhea and Chlamydia for the price
of $165.

In North Carolina and most states, all laboratories are required to report positive STI results to
the state STD Branch. Within 30 miles of Forsyth County Department of Public Health in
Winston Salem, North Carolina, there are 6 STDTestExpress Clinics. LabCorp Incorporated
provides this service anonymously. There is no sign on the door that says STDTestExpress. It
simply is LabCorp that does many other types of testing also. There are over 1800 LabCorp
offices across America and many more similar labs in the business (STDTestExpress). But how
many people can afford private testing each time a concern rises? Many patients return monthly
to the Forsyth County Department of Public Health HIV/STD Clinic to be retested. This would
not be feasible for low income patients.

Private testing also can occur at a private physician’s office with the cost of a co-payment.
However, many, if not most, private doctors do not screen for sexually transmitted diseases
unless specifically asked to do so. Many physicians do not inquire regarding a sexual history or
risks of sexually transmitted infections. Due to the immense frequency of Chlamydia, it is
essential for physicians to test any sexually active patient under the age of 26 for at least this one
exam. Even doctors, who test their patients regularly, don't necessarily test for all common STIs.
Recommended tests that should be done at annual exams on sexually active patients are
gonorrhea, Chlamydia, and HIV. In some areas, syphilis also should be a routine test if there is high occurrence. Pregnant women should be tested for syphilis, gonorrhea, Chlamydia, HIV, Hepatitis B, and bacterial vaginosis. Some physicians will just treat based on symptoms and never test. Others do not inquire about partners or refer them for treatment (Boskey 2010, 1).

According to the CDC, "Despite the prevalence of STDs among adolescents, providers frequently fail to inquire about sexual behavior, assess risk for STDs, provide counseling on risk reduction, or screen for asymptomatic infection during clinical encounters” (CDC). Additionally, pediatricians avoid discussing sex with teen patients, leading teens to be silent about their risks for STIs and the need for testing. Numerous pediatricians also do not test teens for STIs, thus avoiding a pelvic exam. However, the new GenProbe test for gonorrhea and Chlamydia is now ordered more by pediatricians. It is a fast and simple test done merely with a urine specimen. This test, called nucleic acid amplification test (NAAT), is also done on an endocervical swab if a pelvic exam is done on a women or an intraurethral swab on a man. Early syphilis testing can be done with a swab from a lesion or a blood test if no lesions are present. Testing for other STIs is completed from blood tests. It is strongly recommended to test all teens beginning at age 13 at least once for HIV or again if they report high risk behavior (Iannelli 2010, 1).

**US Health Care and Uninsured Care**

Because of the status of US healthcare and the numbers of uninsured Americans, cost of assessment for STIs or other healthcare is not feasible for many people, including adolescents. In the United States Americans pay nearly twice as much for healthcare per person than the average person in other industrialized nations. However, the US healthcare system is ranked 37th in the world by the World Health Organization (WHO). It is only getting worse daily with the number of uninsured at 46 million and rising. Eighty-two percent of the uninsured are in working
families. According to a Harvard study most bankruptcies are accredited to illness or medical expenses. Sixty-six percent of those bankrupted by medical expenses were first insured before the illness occurred (Arnst, 2009, p.1). Private health plans in our health care system provide care that can be characterized by low quality, inefficiency, inaccessibility and lack of sustainability. Sadly, all other industrialized nations provide universal health care that costs less and is higher quality, and more efficient, accessible and sustainable.

Ethically, access to healthcare is the right plan for the US. Real health care reform that covers all of the uninsured and contains costs must be passed in US Congress (Kuicinah 2006). Unfortunately, all those projected statistics on the number of uninsured may be out-of-date due to the recent economic decline. “Accounting the effects of the recession, with widespread job losses cutting into employer-provided health care — more than 5 million jobs have been lost since last August — researchers at the Urban Institute and elsewhere estimate that the present-day number of uninsured is closer to 50 million” (Medical expenditure panel 2009, p. 1).

Almost thirty-three percent of Americans do not have the assurance that if or when they need medical care that it will be there for them. This is because nearly 44 million people in the US have no health insurance with 38 million more underinsured (Glied 2009). What are these Americans suppose to do when they get sick or think they may have a sexually transmitted infection? There are few free neighborhood clinics around and most if not all physicians require payment. The burden of paying the cost of last minute care for the uninsured becomes the responsibility of those that have insurance, the working taxpayers.

Health disparities also play a part in lack of healthcare in the United States. “Health disparities are preventable differences in the burden of disease, injury, violence or opportunities to achieve optimal health that are experienced by socially disadvantaged populations. These
disparities are inequitable and are directly related to the historical and current unequal
distribution of social, political, economic, and environmental resources” (National Center).
There are several factors that are responsible for health disparities, which begin with poverty.
Other contributors are environmental stress, access to health care, institutional racism, behavioral
factors, and educational inequalities. The population groups that experience health disparities
primarily are seen in minority races and ethnic groups, poor socioeconomic classes, immigrants,
non-English speaking, homeless, and those from geographically poor areas. Unfortunately,
health disparities play a large role in the disproportionate occurrence of many diseases including
HIV and various sexually transmitted infections.

**STI Screening in the Local Health Department**

Consequently, because of lack of insurance and healthcare coverage, a large number of
Americans are turning to free or low cost care. Most Americans cannot afford preventive
healthcare and many wait until a serious condition or symptoms occur before seeking care. It is
no different for those Americans who are uninsured, underinsured, unemployed or living in
poverty. With poverty also comes lack of education on how to live healthily and prevent disease,
even sexually transmitted infections. With the downturn in the American economy, many people
are looking for care through the local health department. Most health department services are
free or low cost. North Carolina STD Protocol mandates that all STI services be provided at no
cost and within 24 hours if symptomatic.

**Local Leadership’s Response to Increase in STI Screening and the Rise in STI Rates**

The economic environment is only the beginning factor in one local health department in
North Carolina which has experienced a substantial increase in STIs during 2009. The syphilis
rate in 2008 was a moderately high count of 45 cases in Forsyth County, Winston Salem, an
urban county with a population of nearly 350,000. However, it surprisingly rose steadily in 2009 to reach a total of 210 cases. And in 2010, the first quarter shows 58 syphilis cases compared to 28 cases at this time in 2009 (POSSE). Statistical data has shown that the two key population groups of index cases were commercial sex workers and men having sex with men (POSSE). With the Disease Intervention Specialists actively searching for contacts and associates, the local health department’s HIV/STD Clinic began reaching its maximum capacity. In addition to syphilis rates, HIV, gonorrhea, and Chlamydia cases all increased. This increase could possibly be attributed—at least partially—to a rise in STI testing related to the syphilis cases and contacts assessed in the HIV/STD Clinic. Additionally, Forsyth County’s HIV/STD outreach team called POSSE (Preventing Ongoing Spread of STD Everywhere), actively reached numerous county residents through testing for HIV/STD (and sometimes urine GenProbes for gonorrhea and Chlamydia) in the local jail, on the streets, entertainment venues, shelters, free clinics, door to door, churches, and anywhere people were willing to be tested.

Given the potential danger of the syphilis outbreak, the Forsyth County Department of Public Health Director, the Board of Health, the Management Team, the Epidemiology Team, the Clinic Manager and the POSSE Supervisor began searching for reasons and solutions to the syphilis outbreak and increases in all STIs in the county.

**Literature Review**

One strategy utilized by the Clinic Manager was to begin researching current literature on how other areas in North Carolina and across the United States were addressing their increases in the sexually transmitted infections, increase clinic volume, and turnaways from the clinics due to volume.
Managing Clinic Flow  In reviewing the current literature from mostly journals and online websites, it is apparent that improvement in clinic flow models has assisted in reaching the immense increase in sexually transmitted infections. Several evidence based programs have proven that the management of clinic flow is one of the first steps in quality improvement in the STI clinic settings, especially during outbreaks, increased volume of STI patients, and high turnaway rates.

Express STI Clinics  The Denver Metro Health Clinic is a large HIV/STI Clinic in Colorado and challenges STI Clinics to “Look out in the waiting room of your clinic. How many patients are waiting to be seen by a provider to be tested for a sexually transmitted infection?” (CTU, 2009, p.90). This clinic uses a triage process, staffed by medical assistants, to recognize low risk patients who have come for STI screening. Thus, the low risk person, asymptomatic for an STI, not participating in risky sexual behaviors, is offered an “express, testing-only visit to screen for major communicable diseases, without a physical examination” (CTU, 2009, p. 91). Electronic medical records also assist this successful STI Clinic with collection of data that has proven this evidence based express clinic flow is effective in identifying persons appropriate for express visits, in reduction of wait times, and increasing clinic output. The walk-in clinic has advanced since 2008 by also providing appointments using a computerized scheduling system. Patients calling in are triaged by phone and given an appointment if deemed to be low risk. Walk-ins’ are screened upon entering the clinic. STD tests include blood for HIV/Syphilis and urine collection for gonorrhea and Chlamydia.

Comprehensive visits are also offered at these 10 community Denver health clinics and at one hospital. These visits include the express tests along with a full physical examination whenever a client is symptomatic or experience high risk sexual behavior, such as contact with a STI case,
men having sex with men, injection of drugs, or exchange of sex for money or drugs (CTU 2009, p. 91). Express and Comprehensive patients are offered treatment if a positive STI is identified, along with counseling on STI prevention.

The express option in Denver “handled 8% more visits without increased staffing, including 18% more women and 32% more individuals under age 20. Costs for the express flow were minimal. Time savings was also observed in that the express visit was timed at 46 minutes compared to 105 minutes for the comprehensive visit for women. Men were seen in 52 minutes expressed compared to 85 minutes assessed comprehensively. Waiting room time averaged a half hour for both groups, and triage time was approximately 2 minutes. HIV, Syphilis, Gonorrhea, and Chlamydia rates are lower in the expressed at 9.8% compared to 26% in those receiving comprehensive services (CTU, 2009, p. 92). This evidence based study has encouraged other STI Clinics across the US to try the Expressed or Fast Track STI Clinic Flow model.

Another local health department in Maricopa County, Arizona, has provided four expanded services to improve the quality of service for STI clients. These include Express STD Visits, Expedited Partner Therapy, Embedded CDIs (Communicable Disease Investigators, similar to Disease Intervention Specialists in North Carolina) in HIV Clinics for partner interviews, and Hepatitis B Vaccination in STD Clinic (James, slide 2).

The Express STD Clinic provides a STI visit without a nurse or physician, an interview or a physical examination. The visit is a “test only” visit which includes blood work for HIV and syphilis, and urine test for gonorrhea and Chlamydia. To be expressed the patient must answer “no” to the following self assessment tool: *Are you experiencing symptoms? *Did someone tell you to come here? *Have you traded sex for drugs or money? *Are you pregnant? *Have
you engaged in receptive anal sex in the last 3 months? *Have you recently been sexually assaulted? (James 2009, slide 4). Maricopa County began its Express STD Clinic in September 2008 and 2,464 patients have been tested through expressed testing visits. Out of all those seen at this STD Clinic, 14% have been expressed. The clinic is run by two Communicable Disease Investigators. Results are given by the regular clinic protocol and no treatment is provided at the Express STD Clinic, but in the regular clinic.

The Maricopa County STD Clinic sees between 1400 and 1800 patients per month. Five percent of the expressed patients have received a positive STI report from the Express STD Clinic. This local health department has identified several benefits of having an Express STD Clinic. Wait times have averaged one hour shorter than the regular clinic flow. There are increased numbers of patients seen during working hours. This county has a fee for services of $20 for all clients whether expressed or seen in the regular clinic. Because of the additional patient volume, increase in revenue has occurred. This would not be the case in those states that do not allow charges for STD services. Many of the patients in Maricopa STD Clinic prefer the express option because they do not want to see a medical provider (James 2009, slide 8).

Of course with benefits there come some negative aspects. Because the patients do not see a medical provider there are no presumptive treatments given. This may create treatment delays because of lack of evaluation. Additional Communicable Disease Investigators are needed in the clinic setting instead of out in the field. The Express STD Clinic also required some clinic flow changes (James 2009, slide 10).

**Expedited Partner Therapy** According to the CDC, Expedited Partner Therapy (EPT) is the practice of treating the sex partners of persons with sexually transmitted diseases (STD) without an intervening medical evaluation or professional prevention counseling. Maricopa County
began this strategy in June 2009. The usual implementation of EPT is through patient-delivered partner therapy (PDPT), although other methods may be employed (CDC, 2006). Studies have contributed to CDC decisions to fund 4 randomized controlled trials (RCTs) designed to compare EPT with standard partner management approaches in men and women with gonorrhea, Chlamydia infection, or trichomoniasis; and to assess behavioral predictors of treatment and reinfection. Two trials that addressed both gonorrhea and Chlamydia infection found EPT to be associated with significantly reduced rates of sex with untreated partners at follow-up.

Preliminary economic analyses suggest that EPT is a cost-saving and cost effective partner management strategy. The legality of EPT is uncertain in some states and overt statutory barriers exist in others; the practice is clearly legal only in a few states (CDC 2006, p. 7-8). According to CDC’s article, only about 20 states are legally using EPT, some include Texas, Louisiana, Arizona, California, and New York, but not including North Carolina.

Most STI cases in the United States are diagnosed and treated in the private sector by primary care providers, who often do not report patient contacts to public health officials (CDC 2006, p. 8). Therefore, the available data on partner management are dominated by analyses of patients attending STI clinics or other public health clinics who often may not be representative of many infected persons. Except for syphilis, most health departments make little direct effort in partner management for persons with STIs treated in the private sector. The Institute of Medicine described STI partner management in the United States as inadequate, inefficient, and in need of redesign (CDC 2006, p. 8). Thus, patient referral is the dominant mechanism employed in the U.S. to try to assure treatment of the partners of persons with Chlamydia infection or gonorrhea. The proportion of partners who actually receive treatment or other direct
clinical services is difficult to ascertain, with some stats showing 70-90% of partner notification (CDC 2007, p. 9).

Maricopa County has used EPT since June 2009 and benefits have shown that patients deliver medication to partners and there has been a reduction in re-infection rates. There have been a reduced number of untreated partners (frequently male partners). This has reduced the need to track partners for clinic referral for testing and treatment. The cost for partner treatment is $7.75 for 1 gram of azithromycin (used to treat Chlamydia) and $9.94 for 400 mg of cefixime (Gonorrhea treatment) (James 2009, slide 13). Some potential drawbacks include partners not receiving follow-up testing or treatment, and the possible risk of adverse reactions to the medication prescribed without evaluation.

**Embedded CDIs in the HIV/STI Clinics** have also proven advantageous due to the large number of syphilis and HIV cases. Maricopa sees 70% of the Primary and Secondary syphilis cases among men having sex with men (MSM). Also, approximately 50% of these cases are HIV infected. So early in 2008, it became necessary to have embedded CDIs to work ½ day/week in two clinics and 1 CDI to work as on-call in one clinic. They deliver penicillin for syphilis for two of the three clinics. The CDIs also perform partner elicitation in the clinic after provider evaluation. This quality improvement plan has increased time to interview, with a higher number of interviews completed. There are a higher number of partners elicited and fewer field attempts to locate partners. Higher numbers of partners are brought in for treatment of syphilis and public health is more visible in the community.

**Administration of Hepatitis B Virus Vaccine in Maricopa STD Clinic** began with the realization that Hepatitis B (HBV) is a sexually transmitted infection. It is preventable with a three shot series. The highest risk population for HBV is the patients that attend STI Clinics.
The staff determines those who need the Hepatitis B vaccine series and gives the first vaccine in the STI Clinic with education provided regarding HBV. Hepatitis A is usually given along with Hepatitis B vaccine in a dual vaccine called Twinrix. The additional two Hepatitis B vaccines in the series are scheduled in the Immunization Clinic (James 2009, slide 20).

These four innovative services provided at the Maricopa STD Clinic have expanded care to the highest risk patients. So far the evidence based data has proven the great benefits of applying quality improvement strategies that have streamlined services to reach the more vulnerable population at most risk for HIV and other serious STIs.

Another health department in Dupage County, Illinois has felt the need for express visits for the STI Clinic. One morning per week patients with no signs or symptoms of sexually transmitted infections can schedule an appointment to be screened. Urine for gonorrhea and Chlamydia, as well as a blood test for syphilis and HIV is obtained. Patients can also receive vaccines for Hepatitis A, Hepatitis B, and Human Papilloma Virus. No physical exam is done and the cost is $30 for the express visit and an additional $20 if treatment is provided or if referred to a STI Clinic physician. To receive full service--which is a nurse consultation, lab tests, physician visit, physical exam and medication--the cost is $50 (Staff Reporter 2008).

An additional STI clinic in Tucson, Arizona, Theresa Lee Clinic, offers daily walk in Express Visits which cost $40 and includes HIV/STI testing. An HIV test is $20, but Herpes serology is $70. All medication is $5.00 (Pima County Health Department website). Different local health departments across the US provide STI services at a cost ranging from free to a moderate fee. Some accept insurance with the patient’s consent and most accept Medicaid reimbursement. Interestingly, due to a large number of turn away patients, Columbus Public Health STI Clinic, in Ohio, is no longer offering services for treatment of genital warts. As many as 15
people with bacterial STI symptoms (not genital warts) have been turned away daily because of over capacity. The medical director has made the decision to only treat bacterial STIs like Chlamydia, gonorrhea and syphilis because they are treatable and curable in most cases. Unfortunately genital warts are viral and incurable, only temporarily alleviated with topical treatments, but still remaining infectious. The time required to treat genital warts takes five to ten patient slots daily that could be used to treat bacterial STIs. Pap Smears will also not be performed in the Columbus STI Clinic. Patients needing Pap smears will be referred to a Women’s Health Clinic. There are no funds to increase staffing so this quality improvement approach was a difficult but needed decision (CDCNPIN). North Carolina STD Protocol (and most other states) also does not require STD clinics to treat genital warts, but Pap smears are required on those patients with history of an abnormal Pap smear in the last 12 months or otherwise every three years (NC STD).

Nicky Bassford, of the American Public Health Association, reports that the problem in Columbus mirrors a trend nationwide. “Limited financial resources and increasing demand for free or low-cost services are forcing many public health clinics to make difficult choices and cut non-essential services” she said. Columbus’ sexual health clinic is the only one of its kind in Franklin and the surrounding counties. In March, it instituted express STD testing to increase the number of patients it can see on a daily basis” (CDCNPIN).

**Quality Improvement Processes Needed in the local health department STI Clinic**

In addressing the increase in sexually transmitted volume in local health departments across the US, due to a rise in cases, quality improvement processes become essential. Without quality improvements, clinics are forced to turn away clients that need some type of STI assessment. “Quality management practices can positively influence almost every type of performance
measure, ranging from bottom line results and outputs to employee relations and customer satisfaction.” (Baker, Beitsch, Landrum, and Head, 2007, p. 427). Although most local and state public health agencies report quality improvement measures, evidence shows that those efforts may be overestimated. That is why use of the accreditation process assists in measuring public health agency performance as part of the process of assessing the agency’s standard practice and encouraging their moving to quality improvements going beyond the minimum standard. Thus, the Multi-State Learning Collaborative requires quality improvement activities as part of the accreditation process. Funding for the accreditation initiative was obtained from Robert Wood Johnson Foundation. The collaborative promotes the Plan-Do-Check-Act strategy to be included in the process of quality management (Baker, et al., 2007, p. 427).

Voluntary accreditation at the local health department should not be the sole driving force of quality improvement. Additionally, public health leadership, funders and management should be continually encouraging quality management, however, systemic obstacles exist. Barriers include “categorical funding streams, program requirements, lack of incentives for improvement or systems thinking, lack of leadership, unavailability of QI-skilled personnel, and technical assistance resources” (Baker, et al., 2007, p. 428).

Turning Point’s Performance Management National Excellence Collaborative, funded by the Robert Wood Johnson Foundation, has created a plan for managing performance in public health state and local agencies. The plan consists of four categories: 1) Performance standards, 2) Performance measures, 3) Reporting of progress, and 4) A quality improvement process (Landrum and Baker, 2007, p. 14). Its premise espouses that public health agencies need partners to provide noteworthy response in times of systemic threats to health of populations in the United States. That is why the collaborative has provided quality improvement tools such as
the National Public Health Performance Standards Program. Performance measures and data can help leadership drive a plan for quality improvement in different areas needed in their agencies. The goal is to support performance management as a “core discipline of public health practice” (Landrum and Baker, 2007, p. 15).

To practice performance management, use of performance standards and performance data are required as a system-wide process. In North Carolina, the Agreement Addenda, which is a local health department funding contract with the North Carolina STD Program, provides performance standards to which local health departments must adhere. The quality improvement process must also use performance data to determine evidence based practice. Use of performance data can assist managers “to improve policy, programs and outcomes” (Landrum and Baker, 2007, p. 16). Establishing benchmarks for quality improvement processes is essential. The North Carolina STD Program sets benchmarks for quality improvement processes in its STD Protocol Manual. One such benchmark is that 90% of symptomatic patients seeking STI assessment will be seen in the local health department within 24 hours (NC STD).

Use of quality management tools provides the local health department with the ability to set new strategies to change the direction of the public health agency. Repeating performance measures helps to refine the quality improvement process in order to meet benchmarks set locally and in the state Agreement Addenda. Reporting the quality improvement progress is also a key element of establishing evidence based practice. Since this is a continuous quality improvement process, data collection assists in improving program, policy, plans, and protocols. According to Landrum, et al, “better integration of performance standard, measures and reports, and quality improvement will shift the public health field from a categorical to a more systems-
wide approach, targeting the management and improvement of structure, process and outcomes” (Landrum and Baker, 2007, p. 18).

**Turnaways at Forsyth County Department of Public Health**

A syphilis outbreak and the continuing rise in gonorrhea and Chlamydia immensely impacted the capacity of the Forsyth County Department of Public Health HIV/STD Clinic, causing record turnaways. Until March 2009, statistical data was not collected regarding the patients turned away at the Forsyth County Department of Public Health (FCDPH) walk-in STD Clinic. With changes in registration management, data collection began. Registration clerks noticed that each day in early 2009, more and more patients seeking STI assessment could not be seen due to increase in clinic volume and shortage in staffing. There were a specific number of slots each morning and afternoon. Clinic registration began at 8:30 am and lasted until 11:45 am. Then in the afternoon, clinic registration would start at 12:45 pm and last until 3:45. The clinic closed at 5:00 pm. This occurred on Monday, Tuesday, and Thursday. On Wednesday, clinic registration was from 9:30 to 11:45 am; then 12:45 until 6:45 pm, closing at 8:00 pm. Friday’s clinic registration was shortened from only 8:30 to 11:45 am, closing at 1:00 pm. Staff had Friday afternoon off due to the late clinic on Wednesday. A significant number of patients at the walk-in STD Clinic were told that they had to return at the next registration time which was either that afternoon or the next morning. However, no data was collected that revealed when and if they returned. They were counted only as male or female turnaways.

Additionally, there began a rise in syphilis cases in Forsyth County. In 2008, Forsyth County reported 45 primary and secondary syphilis cases to the North Carolina Data Surveillance System. Early in 2009, Forsyth County began having an alarming number of syphilis cases
reported. Each case was treated and investigated by the Disease Intervention Specialists (DIS) in the community. So each day DIS brought in contacts and associates to the cases that were increasing. Contacts were sexual partners of the syphilis cases. Associates were people named by the contacts as possibly having sex with the syphilis cases. So, these cases, contacts and associates took priority over regular patients coming to the STD Clinic for services. By North Carolina STD Protocol, other priority patients in the local health department HIV/STD Clinic are those returning for treatment or coming for treatment because they are partners with someone with a positive STD test (NC STD). Subsequently by May 2009, there was a 44% turnaway rate in the FCDPH STD Clinic, and the number of syphilis cases was at 70, already exceeding the number for all of 2008. The turnaway rate was becoming as significant as the rising rate of syphilis in Forsyth County. The STD Clinic had exceeded its volume capacity.

The Problem’s Origin

In exploring root cause analysis, the recent history of the Forsyth County Department of Public Health STD Clinic had to be reviewed (See Diagram 4). Due to the “graying of Public Health” (Boggs and Southern), the prior two years in the clinical area at FCDPH had seen a significant turnover primarily due to retirements, transfers from the clinic, and resignations. This is not new to public health at the local, state, and national level.

“Despite the importance of public health to the health of our society, this workforce (public health) is facing critical challenges, namely a precipitous decline in numbers and resources. The most severe shortages are found in the epidemiology, nursing, laboratory science, and environmental health fields…Ultimately, if recruitment and retention rates of public health professions do not improve, vacancies resulting from retirement, turnover and other reasons will not be filled” (Perlino 2005, p. 2).

Forsyth County Department of Public Health has seen numerous retirements in the previous three years, especially in the Nursing Division with close to 30 retirements from 2006-2009. In the STD Clinic, from January 2007 until March 2009, the following turnovers had occurred. The
Clinic Medical Director, who had been very influential in establishing clinic policies and procedures, retired after 35 years of service in 2007. A replacement was difficult to acquire and when a new Medical Director was hired, he only stayed 4 months. Subsequently, a decision was made for the local health director, a physician, to assume the additional role of Medical Director. His role in the clinic would be minimal, and mostly back up, with the Physician Assistant and the Nurse Practitioner providing in-clinic medical consultation.

The Public Health Nursing Clinic Manager, who had been employed for fifty years, also retired at the same time as the long tenured Medical Director. The impact of these two public health professionals leaving brought changes to the clinical area. A new Clinic Manager was selected, but two more nurses retired, two nurses resigned and two nurses transferred in and then out again. The phlebotomist left and was replaced. The HIV counselor also resigned and was replaced in January 2009 along with a new Clinic Manager. The Nurse Practitioner resigned mid 2008 and it took almost a year to hire a replacement. Four new nurses were hired externally.

The North Carolina STD Program requires each nurse to become an Enhanced Role Registered Nurse (ERRN), credentialed to provide full STD exams (NC STD). Consequently, these newly hired nurses had to undergo a year of training in the classroom and online as well as performing a number of supervised physical exams and STD exams before they could function independently or bill Medicaid for the services provided. Even with new clinic nurses, they were sometimes out of the clinic at training or had to be supervised for their first year of employment, which lowered the staffing levels. By January 2009, only four of the original STD Clinic staff remained out of fourteen positions in January 2007 (See Attachment 1).

Another major root cause was associated with the rise in syphilis due to the decrease in *Syphilis Elimination Effort* funds from the NC STD Program and the Center for Disease Control
and Prevention. In North Carolina, early syphilis rates dropped from 15.1 cases per 100,000 populations in 1999 to a low of 4.7 in 2003. Yet, early syphilis rates in males started rising in 2004 and female rates in 2006. Overall early syphilis rates in 2007 were 6.4 cases per 100,000 (NC DHHS 2008, p. 71). This same year, three North Carolina counties had considerably high male-to-female ratios. These counties were Forsyth County with 5.6 male cases for every female case, Durham County with 6.8, and Wake County with 8.8. The six Syphilis Elimination Effort counties (Forsyth, Durham, Wake, Mecklenburg, Guilford and Robeson) accounted for more than half of the early syphilis cases statewide in North Carolina in 2007. At the same time significant increases in gonorrhea and Chlamydia cases were also seen especially in these six counties (NC DHHS 2008, p. 71).
According to Evelyn Foust, the Director of Communicable Disease Branch in the North Carolina Department of Health and Human Services, the rise in syphilis rates in Forsyth County correlates equally with the loss of funding for prevention from the CDC. In 1998, when five counties in North Carolina (including Forsyth County) were in the U. S’s twenty eight counties with the highest syphilis rates (See Diagram 5), the federal Syphilis Elimination Effort funded awareness campaigns and local prevention efforts.

However, when the number of cases dropped in North Carolina by 2007, federal funds were distributed to other states. “We had an opportunity to keep it down in the South and I believe that was a missed opportunity,” Foust said. “Congress has to increase funding for HIV and STD prevention, and that funding needs to be targeted to the South.” (Gould, 2009, p. 1). Numbers are higher in the South due to higher poverty levels. Syphilis rates in NC doubled from September 2008 to September 2009, which was a 90 percent increase. Due to funding cycles, now there will be no federal funding increases to eliminate high syphilis rates for at least another year in North Carolina, and then only if the budget allows. Now it is a matter of catching up by providing treatment which consists of one penicillin injection if infected for less than a year, and additional doses if infected longer. It is a curable disease if caught before significant physical damages have occurred (Gould, 2009, p. 1). However awareness along with prevention is vital to lowering these high rates as soon as possible.

By June 5, 2009, the local newspaper, Winston Salem Journal, reported that Forsyth County was ranked number one in North Carolina for syphilis cases. From January 2009 to May 22, 2009 there were 70 cases of primary and secondary syphilis cases reported. A considerable increase from 2008’s 45 reported cases and 2007’s 31. According to the local health director,
this rise was part of a cycle that is not always considered an abnormal occurrence. However, the local health department began strategies to restrain the spread of syphilis infection. The strategies planned would target the highest risk populations, including “prostitutes and gay and bisexual men and men who have sex with men” (O’Donnell 2009, p. 1).

**Eliminating Turnaways in Evidence Based Studies**

In the summer of 2009, the Health Director met with key stakeholders locally, and at the state STD Program level, to strategize on the possible solutions to reduce the Syphilis Outbreak, by having more community outreach along with extending STD Clinic hours. Plans were made which scheduled a Syphilis Outbreak RIOT (Rapid Intervention Outreach Team) for the last weekend in August 2009. Over 100 state and regional Disease Intervention Specialists and state STD Program staff joined approximately 50 FCDPH employees on a Friday and Saturday to reach out to the Forsyth County community with education and screening of HIV/Syphilis status,
especially in high risk neighborhoods. Teams of three travelled in neighborhoods together, sharing written and verbal counseling; and obtaining blood tests. Community residents were given $10 Wal-Mart gift cards for participation. Over 600 screening tests were performed on the streets, in homes, in community centers, homeless shelters, bars and clubs. While the RIOT progressed the HIV/STD Clinic remained open on Friday afternoon and night; then again on Saturday until 3:00 pm. This not only provided education on the impact of syphilis in the community, but also offered extended hours of testing in the clinic to meet the needs of the high volumes of clients seeking STD assessment and treatment. The next four subsequent Fridays, the HIV/STD Clinic remained open 4 extra hours. During these two months of August and September, there was a significant reduction in turnaways from 44% in May to 4-6% in August and September. This approach had a dual positive effect of education and screening for syphilis as well as reduction in clinic turnaways. However, staffing was not available to sustain the extension of clinic hours. The STD Clinic did move the morning registration time from 8:30 to 8:00 and chose to stagger staff lunches when possible to increase clinic hours.

Subsequently, after these intense strategies ceased, the turnaway rate began creeping up again. By December 2009, there was 17 % male turnaways and 22 % female turnaways in the STD Clinic (See Attachment 1). More innovative strategies were essential to reduce turnaway rates in STD Clinic. Additionally, 2009 ended with the high occurrence of syphilis with an overall year total of 210 syphilis cases, the highest incidence in a North Carolina county.

In December 2009, the local Health Director, Dr. Tim Monroe, gave an update on the Syphilis outbreak in Forsyth County to the Board of Health. He stated,

“There is a national and statewide trend at this time, and Forsyth County has the highest rate of syphilis in the state of the larger counties. People living in poverty are more likely to engage in behaviors that place them at risk for many adverse health conditions including communicable diseases. The high levels in the state and our community are related to prostitution, trading sex
for drugs, men having sex with men. Many individuals are co-infected with syphilis and HIV. Thirty percent of people infected with HIV do not even know their status. They receive HIV and Syphilis testing when they come in to the health department. If a patient is diagnosed with syphilis, then we follow up with them for a total of three months” (Forsyth County Board of Health Minutes, December 2, 2009).

**Piloting an Express STD Clinic Flow Model in a Local Health Department**

**Research and Data Collection**

Extensive literature research, along with telephone interviews with other North Carolina local health departments, and visitation at one local health department which uses an Express STD Clinic flow model, proved beneficial in beginning to develop a quality improvement plan to address the large turnaway rate locally (ranging from 4-44% in the last 11 months, with a 16.9% average monthly turnaway percentage). Most STD Clinics across North Carolina use the traditional model of clinics based either on an appointment system with sometimes high numbers of no shows for appointments or the congested walk-in clinic flow model. Interview phone calls were made to Wake County, Durham County, Cumberland County, Guilford County, Mecklenburg County, and Surry County. The first four counties were of comparable size to Forsyth, and Surry was the only rural county.

Wake County HIV/STD Clinic Manager was instrumental in explaining how a new express clinic flow model had been effective in their setting. This express replica was designed after the Denver model in the literature review. Since using this fast track model for one year, turnaway rates had decreased in Wake County from about 12% to below 5%. FCDPH Clinic Manager and the Physician Assistant visited the Wake County HIV/STD Clinic to interview the staff and observe the process. Their clinic had a full lab facility to support the labs needed for the clinic. The lab was located adjacent to the clinic with easy access for patients and staff. Appointments were only given one week in advance for someone who was asymptomatic and just wanted to
know their status. Otherwise, it was a Walk-in Clinic (first come, first served) for comprehensive visits and Express Clinic for asymptomatic patients. After all the morning slots were filled, clients were instructed they may wait to possibly be seen. Or they could return at the afternoon clinic. Many chose to wait and all patients that waited were seen that morning with a moderate wait (a total of 38 patients).

Patients that had no symptoms were asked to complete a triage form. If they answered no to all seven questions, they were sent to the lab for STD screening tests for HIV, Syphilis, Gonorrhea and Chlamydia. They then would leave and call back in two days for the results. These customers, as well as the staff, were pleased with the speed these visits took which allowed more time with the patients needing physical exams. Actually all patients were seen that day in a timely manner.

Staffing in Wake County HIV/STD Clinic was less than the FCDPH, comprised of two Physician Extenders, and two Registered Nurses (ERRNs). Each staff member performed the STD interview, full exam and treatment for each of their patients. Patients are sent to the Wake County Pharmacy with a prescription to be filled in-house. When fully staffed, Forsyth County’s STD Clinic has a phlebotomist, a part-time lab tech and five ERRNs which interview the patients, provide a full STD exam if needed, assist with lab collections (wet mounts, gram stains, pregnancy tests) and analysis, and then report positive findings to the physician extender on duty. The physician extender then determines treatment and dispenses on-site medication.

**Planning a Pilot Study of an Express STD Clinic at Forsyth County to reduce Turnaways**

Several steps had to be made to gain approval for the pilot study. The Institutional Review Board at the University of North Carolina at Chapel Hill was consulted as to whether the study needed approval as a research study. Additionally, local and state approval was essential to
In late December 2009, as plans formulated to possibly pilot an Express STD Clinic at Forsyth County Department of Public, an application was submitted to the University of North Carolina at Chapel’s Institutional Review Board (IRB) due to the research aspect of the quality improvement process. The UNC Office of Human Research Ethnics replied on January 6, 2010 with the determination “that the research or research-like activity does not require IRB Approval” (IRB letter). The IRB determined that the pilot study entitled “Assessment of the Benefits of an Express STD Clinic Flow Model in Eliminating Turn Aways” submission does not constitute human subjects research as defined under federal regulations [45 CFR 46.102 (d or f) and 21 CFR 56. 102 (c) (e) (l)].

The pilot study description submitted to the IRB contained the purpose, participants, and procedures. The purpose was stated as “to assess the benefits of an Express STD Clinic in eliminating turn aways and long waiting times in the STD Clinic at Forsyth County Department of Public Health”. Participants include patients seeking screening at FCDPH STD Clinic and staff. Procedures consists of an express clinic with a five question Self STD Triage tool that all patients complete (See attachment 2). Assistance from the registration staff and interpreters is available if needed to complete the form. If patients answer “no” to all five questions (lower risk, asymptomatic), a Public Health Nurse offers Gonorrhea and Chlamydia urine screening in addition to HIV/Syphilis screening already done. If results come back positive on any of the four screening tests, the patient is contacted to return for assessment, treatment and counseling. This evidence based Express STD clinic allows more testing and essentially minimal turnaways.
The results are evaluated quantitatively by the number of patient turned away compared to the previous months of turnaway rates.

The Institutional Review Board advised if study protocol changed in a way that the determination no longer applies, a new determination would be needed before making changes. Since no human subject identifiers were used in this pilot study, the IRB determined that no approval was needed.

**Local and State Approval** After visiting the Wake County HIV/STD Clinic, plans began formulating to try this express clinic flow model locally at Forsyth County Department of Public Health, to reduce the monthly percentages of turnaways. The preliminary plan was presented to the health director, director of nursing and the management team. General support was given to move forward to try this strategy to reduce or eliminate turnaways in the STD Clinic. A mock clinic was held by the staff the week prior to starting the pilot study to “tweak” the process. The mock express clinic had FCDPH staff acting as STI patients with various problems, some asymptomatic, others symptomatic. The pilot study was set to begin February 1.

Prior to beginning the Express STD Clinic, the Clinic Manager contacted the North Carolina STD Program Nurse Consultant to obtain permission to pilot an express clinic flow model. Literature research was sent to the nurse consultant, along with the Wake County Health Department’s policies/procedures and standing orders related to the Express STD Clinic, FCDPH STD Clinic’s turnaway statistics, as well as the proposed policy and procedure for Forsyth County (See Attachment 4). The STD Nurse Consultant was impressed with the evidence based studies done across the United States and the success of Wake County Health Department. After comparing the policies set for the Express STD Clinic with the 2009-2010 HIV/STD Agreement Addenda, approval of the STD Express Clinic was received. The STD Nurse Consultant
especially commended the use of a Registered Nurse (ERRN) in the triage role, reviewing the Self STD Triage tool (See attachment 2) instead of non-professional staff with less training.

**Quality Improvement Process**  
Diane Kelly, in *Applying Quality Management in Healthcare: a Systems Approach*, views total quality in healthcare performance management inclusive of three principles: customer focus, continuous improvement, and teamwork (Kelly 2007, p. 19-30). The dual role of delivery quality and service quality must be considered when meeting patient’s “requirements and expectations” (Kelly 2007, p. 20). It is fair to assess that when patients come to the STD Clinic they are aware that a wait may be required, but expect to be seen as soon as possible. If a patient has no symptoms of a STI and just wants screening, he/she now expects to be seen in a timely manner. Thus identifying a way to improve this clinic process can provide delivery quality along with the service quality expected by the asymptomatic patients seeking STI screening.

Organizational quality improvements to reduce or eliminate turnaways in the STD Clinic were not only customer focused but also needed to be a continuous process. The need for a new clinic flow model was driven by the outbreak of syphilis and the increase of other sexually transmitted infections in Forsyth County. Continuous changes in the healthcare needs of patients require continuous quality improvement measures. Since Forsyth County Department of Public Health’s STD Clinic staffing had drastically changed in recent years, staffing shortages also impacted the traditional walk-in clinic flow model. Trying to meet the needs of patients of different categories—cases, contacts, treatments, symptomatic, and asymptomatic—has become a challenge that clinic management and staff had to address. The pilot study became a continuous process with almost daily changes based on patterns observed and clarifications needed.
Getting Staff on Board was an initial obstacle to the quality improvement process. In exploring how to make quality improvements to assist in eliminating or reducing turnaways in the STD clinic, tension resolutions had to be addressed to bring about structural dynamic changes. According to Robert Fritz in his book, *The Path of Least Resistance: Learning to Become the Creative Force in Your Own Life*, “when a difference exists between one thing and another, the resulting discrepancy created the tendency toward movement” (Fritz 1996). This establishes a type of tension found in organizations that is called “creative tension”. Creative tension is formed by “the discrepancy between an organization’s current level of performance” (massive turnaway numbers in the STD Clinic) and its “desired level and vision for the future” (turnaways at <10 % annually). Tension resolution sometimes comes in organizations by leading the staff toward a vision. Viewing an organizational change in the STD Clinic with quality performance processes using creative tension is a key traction tool to affect a change in behavior and systems (Kelly 2007, p. 191).

Teamwork is vital in any quality improvement process. Although the STD Clinic staff was made aware of the large number of turnaways, the impact did not initially convince the medical team that changes needed to be made. Some felt that with a walk-in clinic there would always be waiting times and possibly turnaways. Others expressed that the staff was hard working and changes were not needed to reduce turnaways. The opinion was also that those on the QA/QI committee were not aware of the clinical process and should not intervene in clinic matters. In the fall of 2009, the clinic had performed a clinic flow time study which was within CDC guidelines of less than ninety minutes for patients to be seen for STI services. However, checking the time study still did not address the turnaway rates. Creative tension resolution was
essential to improve this discrepancy between current performance and a future vision of reducing turnaways while addressing increases in STIs.

Then in November 2009 the turnaway rate had risen again to 17%, followed by December’s rate of 22%, which included turning away over 150 patients that had come for STI services. When the rising turnaway rates were reviewed by the clinic staff, they begin to understand that quality improvement was needed to meet the needs of the customers. Literature reviews on the evidence based studies and clinics across the US also convinced the clinic staff to try a new approach. The process of choosing the best strategy to use in local health department in Forsyth County began.

Since the Clinic Manager and the Physician’s Assistant had visited Wake County Health Department’s Express STD Clinic, the Registration Supervisor also made a visit there to review the process. Forsyth County staff chose to adapt the procedure used in Wake County with some modifications. The FCDPH Clinic Manager and other clinic staff customized the fast track clinic to meet their needs locally. The Clinic Manager and the Registration Supervisor began the process by each taking the different segments of the process to streamline. Moreover, the Registration Supervisor and her staff worked through the modifications needed for the registration process. Additionally, the Clinic Manager also devised a plan for the medical process for the lab, nurses and physician extenders. The policy and procedure for an express clinic flow model (See attachment 4) reflected the cooperation of the registration and medical staff working together as a team. The express clinic flow model designed (See attachment 3) utilized significant input from the frontline staff. Thus, early buy-in from the staff was essential for the quality improvement to be a successful process.
During the first two weeks of the new Express STD Clinic, the staff met almost daily at the end of the day to discuss what went well and what needed adjustment. This certainly improved staff ownership of the new design. The clinic staff was introduced to the Plan-Do-Check-Act design of quality improvement (Baker, et al., 2007, p. 427). As the plan was implemented, the need to check on its status was essential. Some minimal revision was made and then the staff acted on it. It continues to be an amazing process. Some of the original ideas of the Clinic Manager that were initially rejected have become the “new” ideas of the staff, which have made the design flow more smoothly. An example of this is seen in the original plan to have a triage nurse to use the Self STD Triage tool and interview the patient to determine who would be expressed. Initially, the staff did not see how staffing would allow a designated nurse to do this. Then early on, they all agreed that one nurse as express nurse would be best. Then after six weeks of the new clinic flow, the staff requested that the express nurse also assume more of a triage role. Therefore, now there is a registered nurse that serves as the triage, designating express or comprehensive patients.

**Results of the Pilot Study**

**Lessons learned**

The major lesson learned was *that quality improvement is a process*. It is not just a change in one moment in time. Every time the clinic staff felt the clinic flow model was finally like it should be, it was discovered that another change could make it better. After the month long pilot study, one staff member stated “This means we will not have to change it again, right?” Well after about two weeks the staff had to come back to the “drawing board” to readjust the flow. This is where the staff decided that the Express STD Nurse should do triage on all the patients as
they come in. Whenever the frontline staff was involved in the process, ownership of the quality improvement occurred. The Clinic Manager and the Registration Supervisor also worked in the clinic to model what the clinic flow model changes should be.

Another lesson learned was that if a Self STD Triage tool is completed by the patient, the Express STD Nurse does not need to repeat every question to the patient. Patients need to be asked if they understood the questions and if they have any other concerns. Then they should be expressed. Otherwise, the patient suddenly has symptoms and is asking to be seen for a complete STD exam, especially patients that come for frequent checkups. If a patient truly does have symptoms, they are asked to wait in the order for which their number falls. They are not seen ahead of other patients.

Screening patients through triage, allows more patients to be seen in the same amount of time. Many patients just have questions that need to be answered and are glad to be expressed. Others can be reassured that a small amount of vaginal discharge can be normal or that symptoms of yeast infection can be treated with over-the-counter medications. However, the Express STD Nurse needs to let the patient know that a screening service is offered even if a full STD exam is not available. A chance for a full STD exam, if symptomatic of a sexually transmitted infection, is offered in limited appointments and at the next available registration time which is either that afternoon, or the next morning, except when seen on Fridays, due to the weekend. The Express STD Nurse can also emphasize late clinic hours available every Wednesday with registration ending at 6:45 pm.

The Self STD Triage tool needed to be revised at least five times. Some of the questions were confusing. Other questions used medical language that the patients did not understand. For example, many did not know what oral sex or anal sex is. However, when the layman’s meaning
was put in parenthesis (put your mouth on your partner’s private area), the patients had a clearer understanding. Some patients from other countries thought oral sex was “kissing”. The original Self STD Triage tool had seven questions. Some of the questions were vague, such as “Do you have symptoms of a sexually transmitted infection?” The form was later revised to state “Do you have any of the following symptoms?” and then specified them in layman’s terms. It is really important to consider health literacy in developing forms and literature patients will be reading. Using interpreters for Spanish speaking patients is always necessary to assure understanding of the Spanish Self STD Triage tool.

**Lessons Learned in Review of Literature**

Review of literature was vital to the success of this quality improvement chosen to decrease turnaways in the FCDPH STD Clinic. When the problem of a syphilis outbreak, increase in STI patients in the clinic, and the immense turnaway rates occurred, a Physician Assistant in the Family Planning Clinic area suggested reading the current literature on the express clinic flow model in Denver, Colorado (CTU 2009). Additionally, learning of another clinic in North Carolina which had implemented an express clinic flow model reinforced the need to explore the literature on how clinics across the US were handling the increase in STI patients needing services.

After the literature was reviewed and plans began to implement a quality improvement in the STD Clinic in Forsyth County, the literature proved to be helpful in convincing the local health director and the State STD Nursing Consultant that this was a valid option that had helped in other clinics nationally. Furthermore, sending the State STD Nursing Consultant the literature review and the policies and procedures from Wake County Health Department HIV/STD Clinic
reinforced the validity and value of fast tracking patients instead of just turning them away without any services.

Thus, the importance of research and collection of data is most imperative to any quality performance process. Researching how other clinics operate was only one important aspect of literature review. Moreover, research on how to apply quality management in healthcare was invaluable. Using the three principles of total quality also proved crucial. These principles—customer focus, continuous improvement, and teamwork---assisted in planning and implementation of the quality improvement for the FCDPH STD Clinic (Kelly 2007). How to use customer satisfaction surveys, documenting the process, diagnosing the problem and monitoring the quality improvement process were learned in researching quality performance in the healthcare setting.

**Lessons Learned in Professional Experience**

Clinical Management presents a challenge in any healthcare setting, but even more in the local health department. With budget cuts, the public as the customer, funders and numerous other stakeholders, implementing quality improvement strategies can sometimes be implausible, but vital. The implementation of a process, to assess the benefits of an express STD clinic flow model in eliminating turnaways, was beneficial to expand the Clinic Manager’s professional experience. Learning systems approaches to solve healthcare organizational crises is critical in becoming a successful leader.

Through performing a pilot study to address a systemic problem, the value of maintaining an ongoing environment of quality and performance improvement has been instilled internally as a professional. Getting staff “to perform adaptive work is a mark of leadership in a competitive world”, according to article “The Work of Leadership” (Heifetz and Laurie 2001). As a leader
several lessons have been learned including: “identify an adaptive challenge, regulate distress, maintain disciplined attention, give the work back to the people, and protect voices of leadership from below” (Heifetz and Laurie 2001). The adaptive challenge was how to lower or eliminate turnaways in a busy urban STD Clinic. When the staff was approached about the need for change, the distress level rose and the Clinic Manager learned how to sequence and pace the quality improvement at a speed the staff could absorb and accept. The Clinic Manager as leader also had to help the staff maintain their focus on proposing solutions to the problem. All staff was encouraged to provide input during the Plan-Do-Check-Act phases with frequent meetings to “tweak” the process (Baker, et al., 2007, p. 427). The work was given back to the staff and they came up with some very viable solutions. Working together with the Registration Staff also allowed the adaptive change to occur. Teamwork between the Clinic Manager and the Registration Supervisor modeled how the process could flow smoothly.

During the process the Clinic Manager allowed leaders to evolve from the staff below, which helped to identify proactive staff and potential new leadership. According to Heifetz and Laurie, “Leadership requires a learning strategy. A leader, from above or below, with or without authority, has to engage people in confronting the challenge, adjusting their values, changing perspectives and learning new habits” (Heifetz and Laurie 2001). A great professional lesson learned was how to engage employees in confronting a challenge.

**Recommendations to Other Local Health Departments**

Although this is just one of many dilemmas that can occur in a clinical area in the local health department, Clinic Managers and other leadership need to be looking for areas to apply quality performance methodology. Researching the literature, other states’ program protocol, as well as other local clinic procedures, is a great way to find ideas for quality improvements. Also, before
plans are developed, requesting local and state approval is also crucial. The quality improvement process must align with the state program Agreement Addenda and protocols. Benchmarks set by the CDC and the Division of Medical Assistance must also be considered.

After local and state program approval is received, the clinic manager should assess input from the frontline staff on the quality improvement process. Having a structured beginning point is helpful to allow the staff to understand the root-cause analysis of the problem before a new process can be created. Stakeholder surveys from funders, other community agencies and the public in general, as well as customers and staff are essential. Sharing statistical data with the clinic staff is also convincing evidence of needed improvements.

Setting a target date for the pilot improvement to begin allows the staff and customers to prepare for the change. The mock express clinic in this quality improvement process permitted the frontline staff an opportunity to observe how the new clinic flow may evolve. Early adjustments were made even before the pilot study began. A bulletin board in the waiting area was created to explain how the new quality improvement would work for the patients. During the first month customer satisfaction surveys and staff surveys were used to assist with alteration of the quality improvement as needed. An attempt to have a focus group meeting was unsuccessful with lack of volunteer participants, probably due to the confidential nature of an STD Clinic.

Other recommendations include being tolerant of patient and staff disapproval initially. Any change can be “painful” for those involved, but leadership must be open to positive or negative comments. Allowing continuous quality improvement suggestions to be made assist in resolving the creative tension that occurs. Leadership must also be willing to become part of the working team to also see any modifications needed. Providing positive feedback to the staff, including
praise of individual and team efforts can make an enormous impact on the success. Lastly, it is helpful to supply upper management, clinic staff and all health department staff successful statistical data at monthly intervals to enhance pride in the quality improvement process.

**Conclusion**

The statistical evidence of the benefit of an express clinic flow model to reduce or eliminate turnaways in the Forsyth County Department of Public Health HIV/STD Clinic is very promising. After only two months, the turnaway rates have reduced drastically. During February 2010, although a short month, only five patients out of 773 were turned away making the turnaway percentage less than one. Surprisingly, in March 2010 there were no turnaways at all in the STD Clinic, even with the greatest number of (921) patients seen in the FCDPH STD Clinic.

How has this been possible with large numbers of patients seeking care and continued staffing shortages? More than anything, the alert awareness of the staff to provide more efficient and sometime expressed services has challenged the staff to reduce or eliminate turnaways. Out of the total number of patients seeking STD services (1694) 18 percent have been expressed during February and March 2010. Some expressed needed an STD exam but received only the four lab tests to determine if positive for HIV, Syphilis, Gonorrhea and Syphilis. They were screened with blood and urine samples and given appointments to return for STD exams. Of the number of patients expressed 12.5 percent were positive for a sexually transmitted infection and 100 % percent returned for treatment. The nursing personnel have performed the majority of the triage and express visits. Occasionally, trained lab personnel have also assisted. The patients receive counseling on use of condoms and the importance of STI prevention. The Customer Satisfaction Surveys are overwhelmingly positive with less than 0.04 percent voicing complaints
during the pilot study. The Staff Surveys also showed that the staff is supportive of a new process and are pleased to have input in the quality improvement.

Is the Express STD Clinic effective in eliminating/reducing turnaways? Overwhelmingly, yes is the reply. The benchmark to have less than ten percent turnaways has been met for two consecutive months, even with the occurrence of syphilis at high numbers still. Management has provided a supportive role in this quality improvement process and the frontline workers have assumed major responsibility for its success.
References Cited


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Pima County Health Department. STD Clinic. Retrieved online on 16 December 2009 @ www.pimahealth.org/ya/calendar.asp.

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Website at www.STDTestExpress.com.


# ATTACHMENT 1

## Statistical Data of FCDPH STD Clinic

### Prior to March 2009

<table>
<thead>
<tr>
<th>Date (Month)</th>
<th>Medical Director</th>
<th>New Clinic Manager</th>
<th>New Medical Director</th>
<th>Medical Director Resigned</th>
<th>Health Director Resigned</th>
<th>2 PHNs Retire, 2 PHNs Resign</th>
<th>2 PHNs Transfer in and Transfer out</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/07</td>
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<tr>
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<tr>
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### Beginning March 2009

<table>
<thead>
<tr>
<th>Date (Month)</th>
<th>Turn Aways</th>
<th>%</th>
<th>Total Seen</th>
<th>Rise in Syphilis cases</th>
<th>Add Refugee Clinic 2 days a month</th>
<th>2 PHNs out of STD Clinic</th>
<th>New Clinic 2 PHN in STD/PAA Training</th>
<th>Complete training but one PHN resigns</th>
<th>1PHN medical leave</th>
<th>2 more returns</th>
<th>2 PHNs out on medical leave</th>
<th>New NP Hired</th>
<th>New PHN Hired</th>
<th>1PHN hired</th>
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<td>3/09</td>
<td>83</td>
<td>13.8%</td>
<td>598</td>
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<tr>
<td>5/09</td>
<td>221</td>
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<td>494</td>
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<tr>
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<tr>
<td>1/10</td>
<td>120</td>
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<tr>
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</table>
Attachment 2

Self STD Triage Tool Questions

1. Are you having any of the symptoms below?

   ___ burning or pain when peeing
   ___ drip or ooze from head of penis
   ___ abnormal or foul smelling discharge from vagina
   ___ pain in scrotum (balls)
   ___ pain in the belly or lower abdomen
   ___ skin rash on hands or feet
   ___ sores or bumps in your private area
   ___ itching or tingling of penis, vagina, or rectum (butt area)
   ___ discharge (liquid) from your butt area

2. Have you ___ given sex with your mouth on the private area or ___ received sex with your partner's penis in your butt area (in the last 60 days)?
   (Please check one or both of the above if your answer is yes)

3. Has your partner recently been told he/she has a sexually transmitted disease OR does he/she have symptoms (see list in #1) or a sexually transmitted disease?

4. Are you a male who has sex with another male?

5. Have you traded sex for drugs or money?
Attachment 3

Express Clinic Workflow Chart

REGISTRATION PROCESS

STD 1 Express Nurses provides Registration Clerk a schedule for the AM and PM based on staff available. Patient enters Clinic A and takes a number. Registration Clerk calls patient in by number. Clerk determines why patient is at clinic (DIS, Treatment, Contact, or to receive a STD assessment. Provides patient with Self STD Triage form and assists patient or calls interpreter if needed. Patient is registered. Clerk places EXP with number on Encounter Form.

LAB PROCESS

Blood is drawn for HIV/Syphilis. If instructed by the STD Express Nurse, lab tech will also obtain urine for gonorrhea/Syphilis. Lab tech places the record in the Express Nurse Box if EXP is on the top of the encounter form.

EXPRESS NURSE PROCESS

The nurse reviews Self STD Triage Form with patient to clarify answers. If patient is symptomatic and needs a regular STD exam, the nurse will notify the patient that he/she cannot be expressed and places the record in the regular STD clinic. If the patient is not symptomatic or cannot be seen in the regular clinic flow due to clinic volume, the patient submits a urine specimen and the nurse completes the HIV scan form and the Self Triage Form. If a STD exam is needed, the patient will be given an appointment for STD exam within 24 hours or is instructed to return at the next registration time.

EXPRESS LAB PROCESS

Whenever there is no more capacity for the express nurse to express patients, the Registration Clerk will give the patient call back results information, STD brochures, and Condoms. The patient will then be sent to the lab for blood and urine collection. If the patient is symptomatic, the Clerk will offer an appointment within 24 hours and notify the patient of the next registration schedule.
Policy: The Forsyth County Department of Public Health Clinic A will provide expanded access to Sexually Transmitted Disease (STD) screening by providing an Express STD Clinic Flow Model.

Definitions:

“Turn Aways” are defined as Clinic A clients who are not offered any screening including either lab for HIV, Syphilis, Gonorrhea, Chlamydia, or STD exam.

Purpose: To reduce or eliminate Clinic A turn away clients

Scope: Clients presenting for STD screening and assessment in Clinic A. (All clients returning for treatment, contacts or associates, or DIS suspects are given priority in Clinic A.)

Procedure:

1. The STD1 Express Nurse will determine the number of clients to be seen in the AM and PM based on staffing and provide the Registration Clerk a list with appropriate slots and for AM and PM (See Schedule Attached).
2. There will be 4 clients per nurse in the AM and 4 clients per nurse in the PM on Monday, Tuesday, Thursday; 2 per nurse on Wednesday AM and 6 per nurse on Wednesday PM; and 4 per nurse on Friday AM. The STD1 Nurse will not have clients assigned and will triage all the expressed clients. It is essential that the STD1 Express Nurse facilitate communication between the Registration Staff and Nursing Staff to assure that as many
clients may be seen for either the Express STD Clinic or for comprehensive STD assessment. (The STD 1 Express Nurse will notify Registration staff when to stop registration based on the number of clients presenting for services.)

3. The client gets a number at the window when arriving. When the number is called, the client is given the Self STD Triage form by the Registration Clerk who will identify if the client needs assistance with the form or an interpreter. Clients returning for treatment do not need to complete the Self STD Triage form.

4. Every client registered in the HIV.STD Clinic will have HIV/Syphilis blood test (unless the client opts out for HIV) done in the lab.

5. If the client has answered “No” to all five questions on the triage form, the medical record will be placed in the STD 1 Express Nurses’ rack. She will begin screening clients for the Express STD Clinic. If a client has answered “Yes” to any of the five questions, the chart will be placed in the rack for the Regular STD Clinic.

6. After the Regular STD Clinic slots are filled, the STD 1 Express Nurse will express all other clients for screening for HIV, Syphilis, Gonorrhea and Chlamydia. The Self STD Triage form will be reviewed with the client. If the client is symptomatic, the client will be expressed and offered an appointment for the afternoon or next day. Each client expressed by the STD 1 Express Nurse will have the HIV Scan form completed. Then each client will be given call back for results forms, STD brochures and condoms. A urine specimen will be collected for gonorrhea and Chlamydia screening. The STD1 Express Nurse will complete the HIV scan form and the bottom of the Self Triage Form. An encounter form is completed by the nurse.

7. Whenever registration ends, if there are a large number of clients registered that still need express screening, the clerks will give the clients the call back for results information, brochures and condoms. If the client is symptomatic, a time to return will be given to the client by the Registration Clerks. The lab tech will obtain blood and urine for the four screening tests.

8. If a client is expressed by the Registration Clerk/Lab Tech, the STD 1 Express nurse will be responsible for completing the HIV scan form, the bottom of the Self STD Triage form, and the encounter form. The encounter form will be marked “left, not seen” since the nurse did not see the client.

9. The Registration Clerks will be responsible for collecting data on the clients turned away and the reason. If a client refuses to wait or accept an appointment, it is not considered a turnaway.