TLC+:
Best Practices to Implement Enhanced HIV Test, Link-to-Care, Plus Treat (TLC-Plus) Strategies in Four U.S. Cities

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Despite significant advances in the treatment and prevention of HIV, the number of new HIV infections in the United States holds steady at about 50,000.[1] Furthermore, 21% of individuals infected with HIV in the United States are not aware of their status, and an estimated 33% of those who know that they are HIV-positive are not engaged in care and treatment for their disease.[2] Another 38% of newly diagnosed individuals test positive for HIV so late that they receive an AIDS diagnosis at the same time as, or within a year of testing positive.[3] Clearly, novel prevention strategies, ways to engage individuals in care sooner after infection, and methods to maintain them in care and treatment are needed.

One such strategy is the Test, Link to Care, Plus Treat (TLC-Plus) approach. TLC-Plus addresses several aspects of the healthcare system that can be improved to help those with HIV live longer and healthier lives while also reducing transmission of the virus to others. The National HIV/AIDS Strategy places testing, linkage to care, treatment and support services at the center of efforts to improve the health outcomes of HIV-positive individuals and to prevent new infections.[4]

Key components of TLC-Plus include:

- Increased targeted HIV testing for as many individuals as possible in a given community at risk of HIV infection, in which testing yields a high positivity rate (generally >= 1%).
- Linking newly diagnosed individuals with HIV to medical care (and re-engaging previously diagnosed individuals who have fallen out of care or treatment) as quickly as feasible.
- Beginning antiretroviral therapy (ART) based on current treatment guidelines and, for those on ART, providing support services to promote drug adherence and other aspects of clinical care in order to achieve and maintain viral suppression.
- Supporting retention in care and treatment, including mental health and substance abuse treatment, by ensuring access to comprehensive social services, such as food and housing.

Additionally, TLC-Plus is based on evidence that people who are aware of their HIV-positive status are more likely to take steps to prevent transmission of infection to HIV-negative partners and to take steps to keep the virus under control.[5] TLC-Plus often includes prevention-for-positives counseling to reinforce the importance of safer sex strategies to prevent HIV infection of negative partners and STDs among all partners.

Importantly, there are also strong data to support the hypothesis that reducing an individual's viral load through ART lowers his or her potential to transmit HIV, thus providing protective effect for sexual partners. A study of more than 3,000 serodiscordant heterosexual couples in Africa found a significantly lower transmission rate when the HIV-positive partner was receiving treatment than when the HIV-positive partner was not. For those where the infected partner was receiving treatment, there was only 1 seroconversion (a rate of 0.37 per 100 person years) compared with 102 seroconversions among the couples where the partner was not receiving treatment (a rate of 2.24 per 100 person years).[6] This represents a 92% reduction in infections.

Recently, HTPN 052 closed more than 3 years early because interim data analysis showed that ARV treatment reduced the risk of HIV transmission from infected partner to uninfected partner by an astonishing 96%. HPTN 052 is a large, international study which randomized 1,736 heterosexual couples in which one partner is HIV-positive either to begin ART immediately, or to wait until treatment was clinically indicated (at a CD4 count of 250 cells/mm^3).

The study began enrolling participants in 2005 in Botswana, Brazil, India, Kenya, Malawi, South Africa, and Zimbabwe, and recruited couples in which the HIV-positive partner had a CD4 cell count between 350 and 550 cells/mm^3. The median CD4 count at the time of joining the study was 436 cells/mm^3. In the interim analysis, 39 infections occurred, 27 of which were in couples where the infected partner did not begin treatment immediately, translating to a reduction in transmission of 96% among those who began therapy immediately (p = <0.0001).

Several North American cities such as San Francisco, Vancouver, Los Angeles, and Washington, D.C. have achieved desirable health outcomes using elements of TLC-Plus, even though such strategies may not have been part of a compre-

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hensive TLC-Plus program. Outcomes include reductions in annual incidence of HIV infections, reductions in community viral load (CVL, the estimated average viral load among all HIV-positive persons in a community), higher CD4 count at time of HIV diagnosis, and/or reductions in the number of AIDS diagnoses within 1 year of HIV diagnosis.

This paper examines successful components of TLC-Plus programs in four jurisdictions and specific strategies used to achieve desired health outcomes, as described by public health officials in each. It is our hope that these strategies may be used to inform the development of TLC-Plus programs across the country. Consideration is also given to funding and to the role of electronic medical records, in Louisiana, in assisting patients who have fallen out of (or never entered into) care.

As communities begin to implement TLC-Plus strategies, HIV Prevention Trials Network (HPTN) 065 is assessing the feasibility of community-level testing, linkage to care, plus treatment strategies in the United States. The study will evaluate the feasibility of some TLC-Plus components and the effectiveness (particularly of financial incentives) of others. The study is being conducted in two intervention communities: Washington, D.C., and Bronx, N.Y. and will take place over 36 months (expected completion date summer 2013).

Where TLC-Plus is Working

Although TLC-Plus programs are being implemented in several jurisdictions across the country, this paper profiles four: San Francisco, Washington, D.C., Los Angeles, and Birmingham. Each illustrates strengths in different components of TLC-Plus and exemplifies the successes and challenges of TLC-Plus implementation in diverse settings — from smaller geographic areas such as San Francisco to larger, more diverse ones such as Los Angeles County and Alabama. Each of these four locations is described briefly here, and details of their TLC-Plus strategies are discussed in the "Components" section below.

SAN FRANCISCO

San Francisco experienced a decrease in CVL from 2004-2008 as a result of increased rates of HIV testing, ART coverage, and population-level viral suppression that corresponded with a reduction of new HIV infections.[8] Data presented at CROI 2011 demonstrated that this trend continued into 2009, the latest year for which data are available.[9]

Both mean and total CVL decreased from 2004-2008 and were accompanied by decreases in new HIV diagnoses from 798 (in 2004) to 434 (in 2008). During this period, ART uptake among people living with AIDS went from 74% to 90% and virologic suppression was achieved in 78.1% of those with HIV infection in 2008, compared with 46.8% in 2005. The decrease in CVL was highly correlated with the reduction of annual new infections and can be attributed to expanded testing, greater uptake of more potent second- and third-generation ART that had fewer side effects, initiation of therapy at higher CD4 counts based on the accumulating evidence of the efficacy of earlier therapy to patients, and virologic suppression in greater numbers of HIV-infected individuals. Various elements of TLC-Plus worked in tandem not only to reduce new infections but also to achieve improved health outcomes. (See *Components of Successful TLC-Plus Programs* below.)

In fact, new modeling from San Francisco points to a further reduction of new HIV infections by 59% at 5 years just with the use of universal treatment to all HIV-infected adults already in care in San Francisco. Adding annual HIV testing for all MSM to universal treatment ("test and treat all") yields a decrease of new infections by 76% in 5 years.[10]

WASHINGTON, D.C.

The D.C. Department of Public Health launched a campaign in 2006 to promote routine HIV testing with improved linkage to care at locations throughout the city. Included in the campaign were opt-out testing at medical facilities, testing and treatment in jails, and a widespread social marketing campaign to promote testing. The number of tests rose dramatically (from 20,000 in 2004 to 93,000 in 2009) and resulted

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in an increase in newly diagnosed HIV cases (from 1,093 in 2004 to 1,280 in 2007) and a decrease in those diagnosed in the advanced stage of the disease (from 66% in 2004 to 57% in 2008). The percentage of people who developed symptomatic AIDS within 1 year after diagnosis decreased from 47% in 2004 to 28% in 2008. Median CD4 count at the time of diagnosis increased by nearly 60%, from 216 cells/mm^3 in 2004 to 343 cells/mm^3 in 2008.

While expanded testing and linkage to care in Washington, D.C. has not yet resulted in reduced HIV transmission, public health officials in the city suspect that a decrease will eventually happen if the trend of expanded testing and care is maintained.

BIRMINGHAM

Alabama, like other rural Southern states, has a hidden epidemic among Blacks and MSM who do not identify as gay or bisexual. There is still significant stigma associated with HIV and lack of knowledge about HIV being a treatable disease. There is also a fair amount of ignorance about HIV not being a "gay" disease.

For the past couple of decades there have been significant education efforts, mostly through communities of churches. Building upon that foundation, public health and other community leaders are working toward universal testing in these communities, particularly through the use of rapid HIV tests. For those who test positive, speedy linkage to care and retention in care is a paramount objective.

The 1917 Clinic in Birmingham serves more than 2,000 patients with HIV, particularly Ryan White clients, from Alabama and surrounding states. The clinic has focused its TLC-Plus efforts on developing partnerships with local HIV testing, clinical, and supportive service providers to integrate HIV testing and linkage services, as well as to coordinate activities around retention and re-engagement for shared patients. As a result, mean CD4 counts at the time of HIV diagnosis are now 310 cells/mm^3 as compared with 180 cells/mm^3 about 10 years ago.

LOS ANGELES

Los Angeles County (LAC) is home to approximately 10.4 million people, and includes 88 cites and 4,083 square miles. It is one of the most diverse counties in the country with regard to population and geography. The HIV epidemic in LAC is predominantly among MSM, with a smaller proportion IDU and heterosexuals affected compared with jurisdictions in the South and Northeast of the United States. LAC's TLC-Plus strategy includes a focus on scaling up both targeted and routine HIV testing throughout the county, to identify the estimated 13,500 individuals living with HIV in LAC who are unaware that they are infected. LAC has embarked upon a process to increase both the number of publicly funded tests in LAC and to increase positivity rates at testing sites. This includes streamlining HIV testing procedures by using an HIV rapid testing algorithm (RTA) in order to give a presumptive diagnosis at the testing episode.

Linkage to care for both new diagnoses and those who are out of care is another key priority and component of LAC's TLC-Plus strategy. Currently 67% of individuals newly diagnosed with HIV in LAC are linked to care within 12 months. Through a combination of approaches, LAC's goal is to improve linkage to care rates across the county. Publicly funded HIV testing providers are given the goal of 85% linkage to care within 12 months, and this performance measure is included in the pay for performance structure for HIV testing. In addition, LAC is developing protocols to implement ongoing monitoring at the department of public health to identify those who have not linked to care, and deploy an intervention to link these individuals to care. Such interventions include attention from a public health investigator for those who have missed their first HIV care appointment, a youth-based linkage worker to assist newly diagnosed and out-of-care youth, and a peer navigator program to link individuals released from jail to HIV care in the community.

It is estimated that approximately 85% of HIV-infected individuals who are in care in LAC are retained in care, which is defined as 2 or more visits 3 months apart in the past 12

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months. However, there is also a significant number of individuals who are out of care all together. It is estimated that, in 2009, approximately 61% of individuals living with HIV/AIDS had one or more HIV care visits, leaving an estimated 39% of individuals who may have been out of care entirely during that year. For those in care, specifically in Ryan White, 72% of patients had a suppressed viral load, and ART coverage rates ranged from 84-92% in 2009-10. The Ryan White system of care serves approximately 19,000 persons living with HIV/AIDS in LAC.

Components of Successful TLC-Plus Programs

INCREASED HIV TESTING

Increased HIV testing in communities and populations with high seroprevalence is a key objective of TLC-Plus, as all subsequent components are dependent upon identifying HIV-infected individuals.

In the past few years, San Francisco has experienced a strong community uptake in testing: In 2008, 72% of undiagnosed men who have sex with men (MSM) in the City received an HIV test in the past 12 months compared to 65% in 2004, with over half (53%) testing in the last 6 months of 2008.[8] The increase in HIV testing is a result of a two-pronged approach that uses routine, opt-out screening in clinical settings and screening in non-clinical community-based counseling and testing sites such as Magnet (a provider of community-based sexual health services by and for gay men in the Castro).

Screening in Clinical Settings

Routine opt-out screening in clinical settings can contribute significantly to reducing the rates of unidentified HIV infection by reaching individuals who do not identify with high-risk groups (e.g., MSM or injection drug users [IDU]) or who experience other barriers to HIV testing. Detecting HIV infection in patients presenting in emergency departments (ED) is an important component of routine screening in clinical settings. According to data from the City to CDC, the San Francisco General Hospital ED has a positivity rate of 1.26% among those not previously identified as HIV-infected. Of 80 new cases identified in the ED between June 2008 and September 2010, 30% were heterosexual, 21% IDU, 26% were homeless, 30% reported having an HIV-positive partner, and 35% reported no prior HIV test — all astounding figures, which speak to the fact that routine testing in EDs reaches many individuals who may have gone undiagnosed for years, perhaps until advanced HIV disease.

In Washington, D.C., opt-out HIV screening was scaled up in 7 of 8 EDs and as part of hospital admissions. Los Angeles County has been working to move toward routine, rapid HIV testing in EDs but acknowledges the enormity of such efforts, particularly in a county as large as Los Angeles. Recently, LAC and the USC Medical Center, the largest ED in the county, have been able to implement routine HIV testing, yielding a 1.7% positivity rate in the first 3 months of the program.

Although positivity rates in public primary care settings may not be as high as in EDs, primary care settings represent opportunity for diagnosing HIV among those most likely to be unaware of their status — those who do not identify as high risk and those who have barriers to testing. San Francisco Department of Public Health clinics are scaling up routine, opt-out testing and officials expect this approach to reduce the percentage of HIV-infected individuals unaware of their status.

Health officials in Washington, D.C. increased the number of HIV tests to 93,000 in 2009 from a base of 20,000 in 2004 largely through opt-out HIV testing in medical and other settings and through the use of a social marketing campaign. The campaign promoted routine HIV testing to providers and patients alike.

Targeting Social and Sexual Networks

Los Angeles County has increased testing by targeting sexual networks to identify HIV-infected people in communities most at risk and that may otherwise be difficult to reach. For example, the County has increased testing for

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HIV in STD clinics with high STD incidence. High STD incidence in a population suggests behavior that puts individuals at risk for HIV acquisition or transmission — in many cases among those who are coming to the clinic for symptomatic treatment of STDs rather than regular STD/HIV screening. As a measure of success for such targeted testing, the county has generally achieved positivity rates ranging from 1% in the general population seeking STD treatment, to 2% to 4% among high-risk MSM and IDUs in STD clinic settings.

Furthermore, in 2009, the County implemented a social network testing program, which focused on recruiting persons to test from the social and sexual networks of HIV-positive or high risk MSM pockets in the South LA and Metro areas of LA, two geographic areas with the highest HIV burden. This project resulted in an overall positivity rate of 8.0% (new positivity rate of 7.1%). Given its success in effectively identifying new infections, it has been replicated in 2 additional sites in LAC, and further scale-up of this methodology is likely.

Additionally, through the LAC Partner Services program, partners of individuals who are newly diagnosed, or who are HIV-infected with a concomitant STD are elicited, interviewed, and tested for HIV and STDs. This program, while time and staff intensive, has been another effective way of identifying HIV through sexual networks. In 2009, of 2,911 individuals with HIV who were referred to the Partner Services program, 1,223 partners were elicited. Of those partners, 588 accepted an interview and 426 were tested for HIV, resulting in 97 HIV diagnoses, and a positivity rate of 23% among those tested. Efforts to enhance Partner Services as an approach to case identification focus on improving acceptance rates of Partner Services interviews for index patients and partners through expanding the network of "embedded Disease Investigation Services (DIS)", which are individuals who work in community clinic settings with a high burden of HIV disease and perform partner services in collaboration with the health department.

Testing for acute HIV infection can be a valuable way of identifying early infection during the period in which viremia spikes and many patients are highly infectious. San Francisco has increased the identification of acute infections over recent years, primarily through viral load pooling — a method in which pooled samples screen multiple specimens at one time. If any sample in the pool is reactive, then all samples are tested to identify the individual infection. The City now has a CDC grant to compare results from viral load pooling with 4th generation antibody tests at high volume testing sites.

In LAC, public health officials have been screening for acute HIV infection using viral load pooling in clinical settings serving large numbers of MSM with high rates of syphilis, gonorrhea and chlamydia. LAC plans to move to the 4th generation antibody tests for its lab-based HIV testing algorithm in the next year, which will further enhance the ability to detect acute HIV infection among those tested for HIV through conventional testing.

Non-clinical community-based testing sites continue to identify new infections among those who identify as members of a high-risk group, e.g., gay men, and should augment HIV screening in clinical settings. These non-clinical sites contribute to lowering rates of unknown HIV infection by reaching individuals who seek testing outside medical settings for any number of reasons, including an affinity with the testing site or organization, physical or psychological safety, privacy, and/or convenience. In San Francisco, the new positivity rate among such sites (such as Magnet or the STOP AIDS mobile testing sites) was 1.4% for 2009.

Despite the success of community-based testing sites, some cities (including San Francisco) experience an annual gap among MSM, IDU, and transsexual females to males. To help bridge this gap, San Francisco Department of Public Health plans to triple the number of tests among MSM, IDUs and transfemales compared with 2009. Even this ambitious increase would only address approximately 28% of the testing gap, but is achievable by removing structural issues (such as eliminating the counseling requirement if it is a barrier to testing) and if sufficient support is given to the message that testing among these populations is needed every 6 months.

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IMPROVED LINKAGE TO CARE

The full benefit of HIV testing cannot be realized without appropriate linkage to care and treatment. Approximately 50% of known HIV-infected individuals are not engaged in regular care.[11] Components of successful strategies of linkage to care include: effectively targeting those most at risk, using existing public health resources and evidence-based interventions (which may differ by population/community), and developing innovative ways to optimize linkage to care for newly diagnosed patients and those lost to care. Some exemplary strategies are discussed below.

Patient Incentives

The HTPN 065 trial is evaluating whether financial incentives for patients can facilitate increased contact with care. Upon completion of a confirmatory HIV laboratory test at an HIV care site, a patient is given a $25 gift card. A $100 gift card is received upon completion of a care visit that includes interaction with a health care provider and discussion of lab test results. It is too early to tell the effects of such incentives on city-wide level, but Community Education Group, a D.C. nonprofit that seeks to stop the spread of HIV and eliminate health disparities in disproportionally affected neighborhoods through community health workers and educating and testing the hard-to-reach, tests nearly 10,000 individuals per year in venue-based settings and has used incentives to link to care since October 2009. The group has found a combination of financial incentives as well as providing transportation and physically escorting patients to care sites to be exponentially more effective than simple referrals to care: Before 2009, only about 5% of newly diagnosed individuals could be confirmed in care, perhaps due in part to data collection issues; now that percentage has increased to more than 90%.

New clients (or those re-emerging into care) are given appointments the next business day after they contact any public health clinic in Washington, D.C. They are assigned a "Red Carpet Concierge" who can be contacted directly to arrange these appointments and a phrase or "code word" that they can use when they arrive at the clinic as a Red Carpet member. Clients first see a caseworker who does an initial intake and completes lab work. Within 7 to 10 days of the intake, clients meet with a physician to go over baseline lab results and determine a course of treatment.

Birmingham has a similar goal of getting patients into the clinic for an evaluation, ideally within 2 days but no longer than 7 days. After more than 7 days, the clinic experiences a high rate of no-shows. Clinic 1917 uses a volunteer or caseworker for the initial 1-hour appointment during which time the patient is oriented to the clinic and baseline labs are performed. Within 2 to 3 weeks of this appointment, patients see a clinician. While time to enter care can vary among jurisdictions, the common goal is to obtain definitive laboratory results of CD4 counts and viral load within 3 months of diagnosis.

Streamlined Linkages

Los Angeles County has used a variety of strategies to increase those linked to care within 3 months of an HIV-positive test from 45.1% in 2006 to 59.6% in 2008. These linkage to care activities include:

- Incentivize linkage to care for the service provider: Fund testing sites through a fee structure that pays an additional $80 to $120 for linking newly diagnosed clients to HIV care. Linkages to partner services are also incentivized.
- Deliver presumptive diagnosis at each testing episode: Use two rapid tests for a presumptive diagnosis of HIV-positive and link the patient to care without waiting for confirmatory testing. This strategy is currently used in shelters, routine testing sites, and jails.
- Implement routine opt-out testing: Routine opt-out HIV testing is used at clinical sites in high burden areas with same-day linkage to care.
- Youth-focused linkage worker: Use a linkage worker specially trained to link newly diagnosed youth with care.
- Jail-based transitional case management (TCM) and peer navigator programs: Used in LAC jails with all

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HIV-positive inmates to establish linkage to medical care and other services upon release.
- HIV non-occupational post-exposure prophylaxis (nPEP): A pilot program in which nPEP is offered with intensive risk reduction counseling. Includes HIV testing and direct linkage to HIV care.

These approaches shift responsibility from patient to provider for patient entry into care and are more effective than passive referrals to patients. In Birmingham, the clinic has noted a decrease in no-show rates from 31% to 18% during a 1-year period. D.C.'s most recent request for applications for HIV testing will require testing sites to demonstrate at least 70% of those testing HIV-positive are linked to care.

Predictors and Consequences of Missed Visits

Decreasing missed clinic visits is an important component of a TLC-Plus Program, as early missed visits may identify patients at risk for poor long-term health outcomes. In fact, missed visits are associated with higher rates of mortality. A single missed visit in the last year is a higher predictor of mortality than age, CD4 count, viral load, or start date of ART.[12]

According to data analyzed by LAC, several multivariate predictors are associated with patients who are unlinked to care (defined as a client who did not receive a CD4 count or viral load test within 1 year of testing positive). The characteristics most associated with being unlinked to care, according to these data, were African American or Latino race/ethnicity, being homeless, identifying as transgender, and receiving an HIV test at a mobile testing site.

VIRAL SUPPRESSION WITH IMPROVED ADHERENCE TO TREATMENT AND CARE

Patient adherence to treatment includes taking medications as prescribed but also transcends to other aspects of care, particularly clinic visits. Although getting patients into care after a diagnosis with HIV is sometimes the most significant hurdle, providers are reminded that a single, initial physician visit does not equal HIV care. A lack of continuity of care is one of the biggest predictors of mortality. Those with only 1 office visit per year are 94% more likely to become ill or die than those who had 4 visits in a year.[13] Strategies used to streamline patients to care (such as those described for Los Angeles above) can also be effective in maintaining patients in care or for patients re-emerging into care. In LAC, of newly diagnosed HIV infections during 2007-2008, 81% of those individuals were retained in care 12 months after diagnosis.

Men who have been incarcerated for any period of time within 1 year of diagnosis have a low probability of visiting a care provider within a 1-year period after release from jail or prison: Of these men, only 40% have had a clinic visit within a year. Strategies in Los Angeles for maintenance in care include a peer-led navigation program to improve adherence to care for HIV-positive individuals released from jail. This study is funded by the National Institute on Drug Abuse and includes cost analysis to understand the impact the program may have on the county as a whole from a cost perspective. If the program is demonstrated effective, it may be replicated in other cities or possibly used with other patient populations.

VIRAL SUPPRESSION

Reducing HIV viral load is an important strategy to improve individual health outcomes as well as reduce HIV transmission though lowered CVL. A combination of increased uptake in HIV testing, improved linkage to care, and greater uptake of ART at an earlier stage leads to more individuals who are virologically suppressed, which in turn lowers CVL and, ultimately, the number of new HIV infections.

In San Francisco, a number of public health measures related to TLC-Plus helped to achieve suppressed viral load in 78% of patients in 2008 (compared with 47% in 2005).

Los Angeles has achieved similar results as San Francisco: of those in care, 71% in the Ryan White system achieved suppressed viral load (with 82% having 2 visits or more in the previous year).

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According to Casewatch data from January to December 2009 in the Ryan White system of care, various characteristics predicted a person's unlikelihood to achieve an undetectable viral load. Predictors of a detectable viral load based on a multivariate analysis of Ryan White clients include:

- Race: African Americans, Asian/Pacific Islanders, or Latinos were more likely to have detectable viral loads than white individuals;
- Age: Youth (0-24 years) and young adults (25-39 years) were 4 times and 2 times more likely, respectively, to have detectable viral loads than adults 50 years or older.
- Living at or below the federal poverty level;
- Homeless (or in transitional housing);
- Not having health insurance;
- Recent history of substance abuse;
- History of incarceration;
- CD4 count of less than 200; and
- New infection (≤ 1 year from time of diagnosis).

CVL and individual viral load reduction are important outcomes for HIV prevention and care programs and inform targeted prevention services. In LAC, prevention services, particularly testing and linkage to care, have targeted those communities likely to have the highest seroprevalence, e.g., MSM. By targeting testing and other prevention programs to those with highest risk of being positive, more positives can be identified and entered and retained in care, which in turn generally reduces CVL. Specific testing strategies are discussed above.

Patient Incentives for Reduced Viral Load

As part of the HTPN 065 trial, researchers in Washington, D.C. are studying whether financial incentives can enhance clinical outcomes such as suppressed viral load. At 20 HIV care sites in the city, clients are randomized to either a financial incentive — those who achieve a viral load of less than 400 copies/mL at quarterly visits will receive $75 gift cards — versus the current standard of care, without financial incentives. (These incentives are in addition to those for linkage to care and the completion of initial laboratory tests, described above.) According to Community Education Group, the D.C. nonprofit, the same services that link patients to care (e.g., transportation to initial appointments) apply in many cases to subsequent medical appointments, so trends are pointing to adherence to care and treatment and decreased viral loads.

Washington D.C.'s "It's Free to Treat Your HIV" campaign in 2007-08, part of the broader direct-to-consumer campaign previously described, increased community awareness about the availability of free drug therapy for low-income patients and increased ADAP enrollment by 50%.

Most jurisdictions discussed in this paper are fortunate to have stable ADAP programs that generally meet the demand for ART. Some jurisdictions, such as Alabama, have ADAP waiting lists. However, according to officials in the state, most patients can still get the medications they need through patient assistance programs from the pharmaceutical manufacturers.

ENHANCED PREVENTION WITH POSITIVES & OTHER SERVICES

Services such as partner notification and prevention with positives are important steps in preventing HIV transmission once a patient has been identified as HIV-infected and is in stable care. A few strategies to enhance these services are described here.

Washington, D.C. strives to link medical providers to other providers such as mental health and substance abuse treatment so that referral mechanisms are in place when they are needed. They also use other tools to examine client trends and organizational needs within the public health infrastructure.

D.C.'s enhanced care includes an expanded standard of care for prevention with positives programs. Their model reduces loss to follow-up, increases the availability of mental health and substance abuse services, and develops innovative interventions. Also included is expanded hepatitis C subspecialty care.

San Francisco's Positive Health Access to Services and Treatment team (PHAST) provides linkage, engagement, and retention services to all newly diagnosed persons on San Francisco General Hospital campus. All these individuals are

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referred for Partner Services through San Francisco's City STD Clinic. San Francisco is currently expanding the PHAST team to become city-wide and provide linkage and partner services to all newly diagnosed individuals and re-engagement and retention support to out of care patients.10

In LAC, partner services staff deliver up to 5 sessions to all new HIV-positive clients with the goal of linking them to HIV care. These sessions include strengths-based case management to identify barriers to care, as well as prevention messaging and education. Public Health Investigator staff use techniques from the ARTAS case management model to assure that newly diagnosed HIV-infected individuals receive comprehensive prevention, education and linkage services along with partner elicitation and partner services. Some resources have been shifted to support this enhanced model of partner services programs.

Finally, the role of condoms and syringes in preventing the transmission of HIV has not been forgotten. The D.C. condom program distributed 3.2 million condoms in fiscal year 2009, in turn normalizing their use and increasing availability. San Francisco distributes over 2.5 million syringes annually; over 1.5 million condoms through the condom distribution program, and supports all community-based organizations in provision of condoms through outreach and programmatic efforts.

Funding

Federal funding is evolving in ways that will enhance TLC-Plus: The new Ryan White Part A application for 2011 focuses on coordination and clustering of services with an emphasis on quality, standards of care, and health outcomes. Furthermore, coverage expansions planned for 2014 under health care reform could allow a re-allocation of resources (e.g., ADAP and Ryan White) to expand coverage of care and treatment. Three of the four cities profiled here (Washington, D.C., Los Angeles, and San Francisco) are recipients of nearly $1 million each from the CDC as part of the Enhanced Comprehensive HIV Prevention Planning (ECHPP) and Implementation for Metropolitan Areas Most Affected by HIV/AIDS. These 12 jurisdictions represent 44% of the HIV epidemic. The goal of ECHPP is to align resources and jurisdictions' prevention activities with the prevention goals of the National HIV/AIDS Strategy. ECHPP funds many strategies associated with TLC-Plus, including routine opt-out screening for HIV in medical settings, HIV testing in non-clinical settings, and efforts to change existing structures, policies, and regulations that are barriers to prevention, care, and treatment. Funding began in September 2010.

The President's 2012 proposed budget, if approved, includes expanded funding for programs in line with TLC-Plus.

Cost effectiveness

While targeted testing in high prevalence communities is more effective than widespread testing, the cost-effectiveness of routine HIV testing in health care settings is similar to those of commonly accepted interventions. A study by Sanders et al. found that screening costs less than $50,000 per quality-adjusted-life-year if HIV prevalence exceeds just 0.05%.[14] Recurrent screening became more cost-effective in communities or populations with higher HIV incidence.

According to the same study, even a one-time screening program leads to a lifetime reduction of 44% in transmissions for a person with HIV, as compared with the natural history of the disease had the person gone undiagnosed, and a reduction in the annual transmission rate of approximately 21% with the use of a screening program, as compared with the absence of screening.[14]

Sharing of Electronic Medical Records

The Louisiana State University Health System Health Care Services Division (LSU HCSD) and the Louisiana Department of Health and Hospitals Office of Public Health (DHH OPH) have successfully implemented an electronic information

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exchange between the two organizations with the purpose of improving timeliness of disease reporting and access to care and treatment for persons with HIV, syphilis, or tuberculosis. The OPH HIV/AIDS Program estimates that 45% of the more than 17,500 persons living with HIV in Louisiana are not in care. As many as 1,100 persons who were previously diagnosed by OPH but who did not receive their HIV test results or were not in HIV care, presented at HCSD facilities for other medical reasons. With electronically shared medical information, OPH is able to alert clinicians in the LSU HCSD system of patients who need to be informed of their diagnosis or linked/re-linked to care. The system allows for "electronic outreach" for those lost to OPH and the care system and increases opportunities to intervene with patients earlier in the course of disease.

A fundamental question in a project such as this is whether consumers would accept the sharing of confidential medical information between two health agencies. In order to understand consumer opinion before moving forward with the plan, the two Louisiana agencies conducted 16 focus groups of 149 persons in eight rural and eight urban locations followed by more in-depth interviews with selected participants. These focus groups and interviews revealed that consumers expect protection of their records but that control of content and access to those records, not privacy per se, was the main concern. Consumers were more comfortable with those closest to treatment having the most access and having a tracking system in place so that records are kept of who has viewed medical records.

As of May 2010, there were 282 matches from the system and a 65% response rate. Of 216 LSU patients tracked for follow-up, 118 had received follow-up HIV care, and 111 had current CD4 and viral load counts.

Discussion

The strategies discussed here begin to demonstrate the feasibility of implementing components of TLC-Plus in various settings — from large urban metropolitan areas such as Los Angeles to smaller geographical areas such as San Francisco and Washington, D.C., to less urban settings such as Alabama. HIV testing in medical settings and targeted testing strategies among hard-to-reach populations in which testing yields a high positivity rate (generally >= 1%) are the cornerstones of TLC-Plus. With a higher percentage of those infected with HIV knowing their status, HIV transmission can be lowered significantly through behavioral change and through care and treatment.

Linkage to care includes a number of strategies to simplify entry (and re-entry) into care. These include financial incentives, streamlining of appointments, co-location of testing and care services, physical escort to services, and other means to track patients missing from care. Strategies to link newly diagnosed patients into care often work effectively to assist patients in re-entry in care, particularly when coupled with surveillance data or when coupled with shared electronic medical records so that patients seeking care for non-HIV or non-STD-related medical conditions can be re-linked into care, as has been done in Louisiana.

As the several aforementioned studies released this year and last indicate, TLC-Plus strategies, in which a greater percentage of those infected receive ARV treatment and more people with undetected HIV are diagnosed and entered into care, can curb the domestic HIV epidemic in ways thought unimaginable just a few years ago.

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References

1 Hall HI, Song R, Rhodes P, et al. *Estimation of HIV incidence in the United States*. *JAMA*. 2008;300:520-529.

2 HRSA HIV/AIDS Bureau Outreach: *Engaging people in HIV care*. August 2006.

3 Valdiserri RO. *Late HIV diagnosis: Bad medicine and worse public health*. *PLoS Medicine*. 2007;4:e200.

4 Office of the White House. *National HIV/AIDS Strategy for the United States*. July 2010.

5 Centers for Disease Control. *MMWR Recommendations and Report, Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health Care Settings*. 2006:6.

6 Donnell D, Baeten Jm, Kiarie J, et al. *Heterosexual HIV-1 transmission after initiation of antiretroviral therapy: a prospective cohort analysis*. *Lancet*. 2010;375:2092-2098.

7 Alkorn K. *Treatment as prevention works: randomised study shuts 3 years early after showing 96% reduction in risk of transmission*. aidsmap. May 12, 2011.

8 Das M, Chu PL, Santos, G-M, et al. *Decreases in community viral load are accompanied by reductions in new HIV infections in San Francisco*. *PLoS ONE*. 2010;5:e11068.

9 Das M, Chu PL, Santos, G-M, et al. *Success of test and treat in San Francisco? Reduced time to virologic suppression, decreased community viral load, and fewer new HIV infections, 2004 to 2009*. Paper presented at: 18th Conference on Retroviruses and Opportunistic Infections; February 2011; Boston, MA.

10 Charlebois ED, Das M, Porco TC, Havlir DV. *The effect of expanded antiretroviral treatment strategies on the HIV epidemic among men who have sex with men in San Francisco*. *Clin Infect Dis*. 2011;52(8):1046-1049.

11 Gardner EM, McLees MP, Steiner JF, del Rio C, Burman WJ. *The spectrum of engagement in HIV care and its relevance to test-and-treat strategies for prevention of HIV infection*. *Clin Infect Dis*. 2011;52(6):793-800.

12 Mugavero MJ, Lin H-Y, Willig JH, et al. *Missed visits and mortality among patients establishing initial outpatient HIV treatment*. *Clin Infect Dis*. 2009;48(2):248-56

13 Giordano TP, Gifford AL, White Jr. AC, et al. *Retention in care: A challenge to survival with HIV infection*. *Clin Infect Dis*. 2007;44(11):1493-1499.

14 Sanders GD, Bayoumi AM, Sundaram V, et al. *Cost-effectiveness of screening for HIV in the era of highly active antiretroviral therapy*. N Engl J Med. 2005;352:570-85.