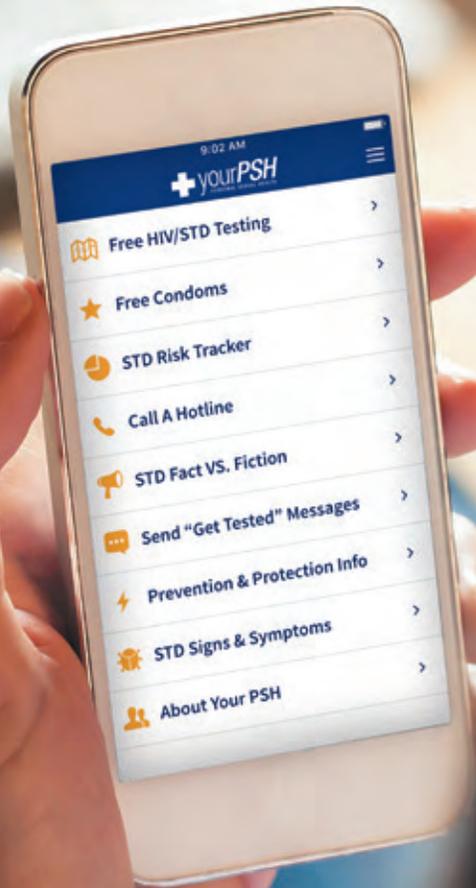




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DECEMBER 2015



SPECIAL HIV EDITION



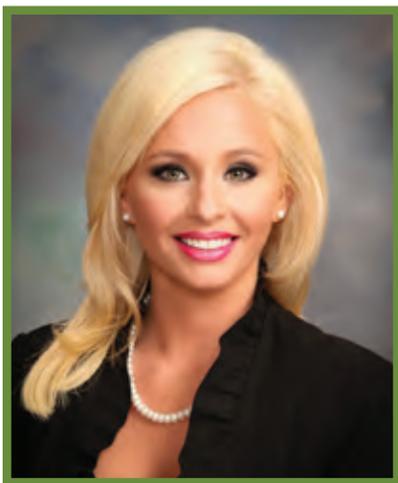


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The Reason Why



There are days our profession wears heavily on us. Last night, I ran a code on a longtime patient who suffered an acute arrest amidst an exacerbation of congestive heart failure and chronic renal failure. I lost my glasses amidst the bagging and chest compressions, but that loss was inconsequential compared to the deep loss I felt of a cherished patient. I left the code and his family filled with a persisting sadness despite having done everything I could to prolong his life. What we do is hard, both emotionally and physically. Such is why the distracting insanity of hurdles and burdens placed on us unnecessarily by the insurance providers and Medicare so angers us all.

Dr. Ralph Brock of McComb once told me that after a patient death, he would deliver a baby to lift his spirits. I haven't delivered babies since my residency, so that elixir is not an option for me. What does help me is to remember "the reason why" I became a physician: to help people and to make a difference in the lives of others. This idealism is shared by almost all physicians and when remembered trumps the cynicism and frustration embedded within the modern practice of medicine.

Cecil Woodham-Smith authored in 1953 an outstanding book on the Light Brigade Charge at Balaclava in October 1854. Entitled *The Reason Why*, Woodham-Smith was referring to lines from Alfred, Lord Tennyson's celebrated poem on the charge: "Theirs not to reason why, Theirs but to do and die." We often feel like those six hundred soldiers, ordered into the "jaws of Death" and the "mouth of Hell," our duty just to do and die. Like those cursed soldiers, we find ourselves mired in the valley of Death, forced to deal with orders from incompetent blunderers who will doom our care of the patient with the theft of our time and the distraction of our focus. However, unlike the six hundred, the only way out for us is to remember "the reason why" we became physicians in the first place.

Daily remember your reason why. If it was to help people and to make a difference in the lives of others, never forget that you are doing it every day. ■

Contact me at lukelampton@cableone.net.
– *Lucius M. Lampton, MD, Editor*

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Stopping HIV One Patient at a Time: The Continuum of Care Model

THOMAS E. DOBBS, III, MD, MPH

State Epidemiologist, Mississippi State Department of Health



The HIV virus was identified as the etiologic agent of AIDS in 1983. At that time, HIV was an unrelenting, fatal illness that slowly drained the life from its victims. The steady introduction of antiretroviral medications, such as AZT in 1987 and protease inhibitors in 1995, transformed HIV from a universally fatal disease into a manageable, chronic illness. Early treatment regimens were often

associated with unwanted side effects, such as neuropathy and fat wasting. Subsequent treatment options have markedly reduced the incidence of side effects, allowing not only for longevity but also preserved quality of life. Today numerous once a day regimens, many consisting of a single pill, make compliance easier than ever. Federal support for medication provision ensures that almost everyone in need, even the uninsured, have ready access to these life saving treatments. Given the availability of highly effective, well tolerated and financially supported treatments, it is disconcerting to acknowledge that only 37% of Americans with HIV are on HIV treatment regimens and only 30% have adequately suppressed viral levels.

Based on CDC estimates, 14% of Americans living with HIV are unaware of the infection. Of those aware of the diagnosis, 60% are not currently in care for HIV infection and 63% are not on antiretroviral treatment. In Mississippi 16% of those living with HIV are unaware of the HIV diagnosis and 52% are not actively engaged in care. These gaps, readily apparent in Mississippi's Continuum of Care (Figure), contribute to unnecessary morbidity, healthcare expenditures, and transmission events. Although the Mississippi State Department of Health (MSDH) has been working aggressively to address these gaps, collaborative efforts from physicians across the state will be necessary to have an effective impact. Engagement in care is clearly successful, as 76% of clients in the MSDH Ryan White program are virally suppressed compared to 29% overall statewide.

Testing

Sixteen percent of people in Mississippi living with HIV are unaware of the diagnosis. The decision to test for HIV should not be performed solely on the basis of physical findings or the visibility of potential risk

factors. The USPTF recommends universal screening for HIV infection at least once for everyone between the ages of 15 and 65. Those at higher risk, particularly individuals who are sexually active, in non-monogamous relationships, and men who have sex with men, should be tested more frequently; at least annually. Insurance coverage for testing and the availability of HIV testing at every county health department minimize any financial disincentives to test.



GIVEN THE AVAILABILITY OF HIGHLY EFFECTIVE, WELL TOLERATED AND FINANCIALLY SUPPORTED TREATMENTS, IT IS DISCONCERTING TO ACKNOWLEDGE THAT ONLY 37% OF AMERICANS WITH HIV ARE ON HIV TREATMENT REGIMENS AND ONLY 30% HAVE ADEQUATELY SUPPRESSED VIRAL LEVELS.

Linkage to Care

Following the diagnosis of HIV, Disease Intervention Specialists from MSDH meet with each new patient to provide education on the virus, identify sexual contacts in need of testing, and ensure that each person is connected to care. New initiatives, started by the MSDH Office of STD/HIV, strive to ensure that all new patients are linked to care within thirty days. In addition to private providers, a statewide network of federally supported clinics is available to provide expert treatment regardless of insurance status or ability to pay. For a detailed listing of clinics and other services available to assist people living with HIV, please visit www.healthymms.com/HIVresources.

Reengagement in Care

Fifty-two percent of patients who know they have HIV in Mississippi are not currently engaged in care. Lapses in care can result in progressive declines in immune function, opportunistic infections, cancer, and preventable transmission events. As a component of HIV surveillance, CD4 and HIV viral load tests have been lab reportable conditions in MS since 2014. Using this data, MSDH social workers can identify those without recent testing and target them for additional supports that will permit re-linkage to HIV

care. Additionally, people living with HIV have numerous medical encounters outside the HIV care stream; encounters that can serve as an opportunity for re-linkage. HIV Case Managers are available within every Public Health District to assist with reengagement in care.

All providers have the opportunity to reduce the HIV burden in Mississippi. Testing for HIV and referring patients when needed not only improve the lives of those with HIV, but it also decreases the spread of the virus. Through the combined efforts of MSDH, HIV providers and other clinicians statewide, we have an opportunity to have a major impact on the HIV epidemic in MS. All the pieces are available: testing, HIV providers, treatment. It will take a concerted effort from all players to put these pieces together. We all have a role, regardless of practice type, in ensuring that Mississippians living with HIV are connected to the existing resources that will save lives and money. ■



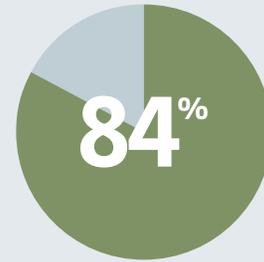
**RESOLUTION 2. MATERNAL HIV SCREENING
ADOPTED**

RESOLVED, that MSMA express to its members and all other providers supervising or providing prenatal care in Mississippi its endorsement of the USPSTF Grade A recommendation that clinicians screen all pregnant women for HIV, including those who present in labor and are untested and whose HIV status is unknown.

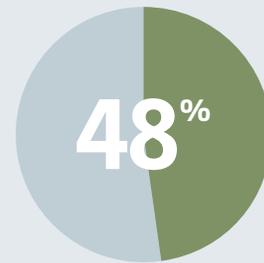
FIGURE.
MISSISSIPPI HIV CONTINUUM OF CARE



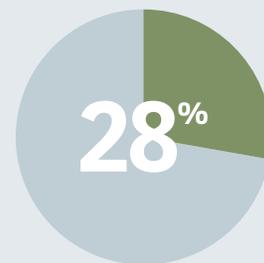
LIVING WITH HIV



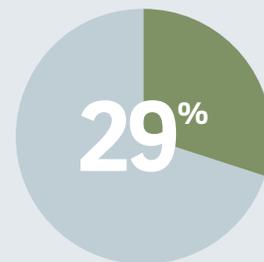
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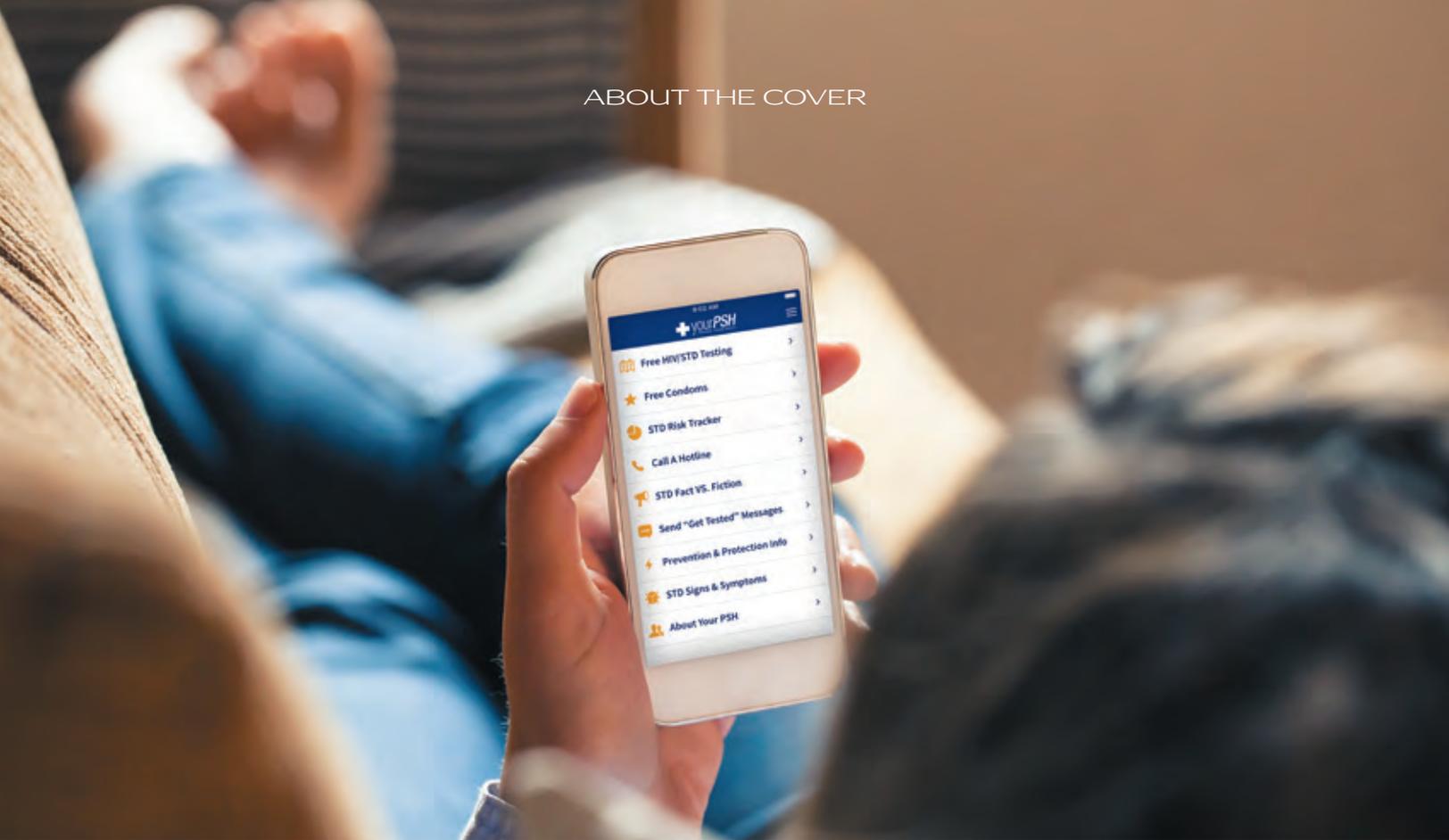
ENGAGED IN CARE



RETAINED IN CARE



VIRAL SUPPRESSION



MSDH *Your PSH* App



The Mississippi State Department of Health (MSDH) recently unveiled an innovative new mobile app that promotes safer, smarter sexual health paired with HIV/STD prevention. The free app, *Your PSH* (Personal Sexual Health), is the first of its kind nationwide to offer the user immediate access to personal information at their fingertips when they need it on their mobile device.

Your PSH provides the following options for the user:

- Locate free HIV/STD testing facilities
- Send anonymous “Get Tested” messages
- Order free condoms delivered directly to their door
- Determine their risk for acquiring an STD
- Find HIV/STD prevention and protection information
- Learn STD signs and symptoms
- Dispel myths associated with HIV/STDs
- Watch a video on how to correctly put on a condom
- Call a hotline for more information

The app is part of a groundbreaking public awareness campaign led by the MSDH and developed in conjunction with Jackson-based advertising firm Maris, West and Baker. The campaign was named the 2015 Best Overall Wellness Campaign in the Ragan Communications Health Care Awards.

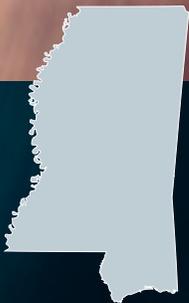
The candid, call-to-action campaign, titled “Know It,” takes a direct approach to encouraging young people to get tested for HIV and other sexually transmitted diseases through interactive and mobile technology. The multi-platform campaign utilizes traditional television, print, outdoor, and interactive media to promote testing access.

During its run, the campaign increased engagement with HIV/STD testing services by 17,000% from pre-campaign levels. The campaign ran statewide in Mississippi and targeted 17 to 35 year olds. The main goals of the campaign were to emphasize the importance of being tested, publicize access to free and confidential testing, to dispel myths that HIV is “untreatable” and “fatal,” and to encourage those who have HIV to get and stay in treatment regimens.

The red ribbon commemorates World Aids Day December 1 and denotes this follow-up to the June special HIV edition of the *JMSMA*. Volume 56, number 12 ends 2015 with the subject/author index in the back. ■

Taking a Sexual History and Creating Affirming Environments for Lesbian, Gay, Bisexual, and Transgender People

HARVEY J. MAKADON, MD and HILARY GOLDHAMMER, MS



MISSISSIPPI RANKS AMONG THE TOP STATES IN THE COUNTRY FOR RATES OF HIV AND STDs. Among those at highest risk are gay and bisexual men and transgender women; yet these groups often delay or avoid care because they fear being misunderstood or stigmatized. This article focuses on how providers in Mississippi can minimize these barriers by taking sexual histories that are inclusive and affirming of all sexual orientations and gender identities. The article also offers strategies for improving the environment of care within health care organizations in order to create welcoming and safe spaces for lesbian, gay, bisexual, and transgender people.

Introduction

The Centers for Disease Control and Prevention (CDC) ranks Mississippi among the top states in the country for rates of HIV, Gonorrhea, and Chlamydia.¹ Those at highest risk for HIV and other sexually transmitted diseases (STDs) throughout the U.S. are gay and bisexual men and other men who have sex with men (MSM).² The CDC reports that 63% of new HIV infections in the U.S. occur in MSM, and that new infections among young (13-24 years) black MSM are rising at disproportionate rates.^{3,4} Transgender women (people born male whose gender identity is female) are also at extremely high risk of HIV and STDs.⁵ Despite a great need for STD and HIV services, these individuals often lack ready access to health care in Mississippi. Even when testing and treatment services are available, many delay or avoid going because they fear being stigmatized, or have experienced stigma or bias during previous health care experiences.

“

TO MAKE PROGRESS IN LOWERING RATES OF STDs AND HIV IN MISSISSIPPI, IT IS THEREFORE CRITICAL THAT HEALTH CARE PROVIDERS UNDERSTAND THE IMPORTANCE OF CREATING ENVIRONMENTS OF CARE WHERE LESBIAN, GAY, BISEXUAL, AND TRANSGENDER (LGBT) PEOPLE FEEL RECOGNIZED, WELCOMED, AND SAFE FROM BIAS OR DISCRIMINATION.

To make progress in lowering rates of STDs and HIV in Mississippi, it is therefore critical that health care providers understand the importance of creating environments of care where lesbian, gay, bisexual, and transgender (LGBT) people feel recognized, welcomed, and safe from bias or discrimination. It is also essential that providers take routine histories of sexual health with all patients, and that the questions are asked in a way that includes LGBT relationships. While our focus will be on health care settings, it must also be said that the state's decision to not expand Medicaid limits access to care for many who need it most.

Taking a History of Sexual Health

Learning about the sexual health and behavior of your patients is critical in all primary care and public health settings. While the time to do this can stretch the limits of the well-planned schedules used in many practices, not doing so can lead to missed opportunities, both for treating active infections as well for counseling on risk reduction. Often the greatest limiting factors in initiating discussions of sexual health is our lack of training and our discomfort with talking about intimate issues.⁶ As the Institute of Medicine succinctly states in its report on *The Hidden Epidemic: Confronting Sexually Transmitted Diseases*, “Ironically it may require greater intimacy to discuss sex than to engage in it.”⁷ Yet studies have shown that most people want to talk to their providers about these issues. In a survey of 500 U.S. adults over the age of 25, 85% of respondents expressed an interest in talking to their providers about sexual concerns.⁸ Given the recent dramatic rise in HIV rates among young MSM across the nation,³ it may be even more important to have

these discussions with adolescents, while being cognizant of the need to assure patients about the confidentiality of such discussions. In Mississippi, minors are allowed to consent to STI testing and treatment and HIV testing, but not HIV treatment. Physicians are allowed but not required to inform a minor's parents about their child's accessing these services.⁹ Given that the CDC¹⁰ and the USPSTF¹¹ recommend routine screening for HIV of all people at least once between the ages of 15 and 65, it is clear that some discussion about this and about risk of HIV and STDs is incumbent on all practitioners.

How to Begin?

A history of sexual health may come up quite naturally as part of a discussion with a new patient by simply saying, “Tell me about yourself and why you are here today.” We have often found that patients are eager to talk about their close relationships, including relationships with same-sex partners, that they had never discussed before with a clinician. Questions can also be specifically asked as part of the social history, past medical history, or history of reproductive health.

Unless clearly volunteered by the patient as part of telling you about themselves, it is important that before asking questions about sexual health, it is important to explain why it is important to ask these questions, and to assure that they are questions you ask of all patients. Also let patients know that what they tell you is confidential, and give them an opportunity to ask questions before you start.

If patients want to know why you are asking sexual health questions, appropriate answers include:

- Your sexual health is important for your overall emotional and physical health.
- We reassess these issues each year because it is common for people's partners and sexual behaviors to change over time.
- It is important to learn about your sexual activity so we know whether we need to test for and treat sexually transmitted infections; these are most effectively treated early.
- Asking these questions can also lead to important discussions of how to prevent disease, how to plan families, and how to avoid unwanted pregnancies.
- This will also provide us an opportunity to discuss any concerns you might have about sexual desire or function.

Basic questions to be asked of all patients include:

- Behavior and risk
- Have you had sex with anyone in the last year?
- Did you have sex with men, women, or both?
- How many partners did you have?
- Sexual health, sexual identity, and gender identity
- Do you have any concerns about your sexual function?
- Have you had any changes in sexual desire?
- Do you want to talk about your sexuality, sexual identity, or gender identity?
- Reproductive health and desires to have children

- Traditionally, discuss contraception.
- Discuss desires to have children and methods for becoming parents beyond intercourse, such as donor insemination, surrogacy, and adoption.

Based on the answers it may be necessary to follow up in more detail. For example in the case of a man who has sex with men, it will be important to determine additional risk for HIV and STDs, which will largely depend on whether he has multiple sexual partners as well as his sexual practices, drug use, and use of protection. Transgender people may also require follow up on a more regular basis. Depending on this assessment, one might ask that a patient come more frequently for HIV and STI testing. The STD Treatment Guidelines from the CDC offer more detailed information about frequency of screening in different populations. In addition, for patients who test negative for HIV, one might consider recommending pre-exposure prophylaxis (PrEP) to prevent HIV infection. PrEP is discussed in another article in this Journal. *For an algorithm of the basic questions and follow-up procedures, see the figure below.*

FIGURE. Algorithm for taking a sexual history



Creating an Inclusive and Affirming Environment for LGBT People

Given the need for greater access to services among LGBT people, as well as the general lack of education available to clinicians about this population, the rest of this article will focus on understanding these groups, and what can be done to help them overcome barriers to care and services. As previously mentioned, lack of access to care is thought to be associated with increased rates of HIV and STDs in Mississippi, and should therefore be resolved at least in part by creating more affirmative and inclusive approaches to care and services.

Most of us recognize that the experience of seeking health care can create anxiety and be intimidating. This is particularly true when people have had negative experiences in the past. In such cases they may be reluctant to return for care, or may not return at all. In order to overcome these barriers to care, it is important for all members of the health care team to create an affirmative and inclusive environment for all patients. If we are to make a difference in the quality of care that LGBT people receive, some basic guidelines are important for all staff – beginning with the front line staff who greet patients when they arrive for visits and including the clinical care team and anyone else the patient encounters.

Some Helpful Definitions

In order to provide affirmative care to different population groups, it is helpful to start by understanding some of the definitions and terms used by that group. Below we offer some common definitions used by lesbian, gay, bisexual, and transgender (LGBT) people. These are by no means a comprehensive list of terms. When talking to LGBT people, as with all people, it is important to listen to what terms the patients use and mirror those terms. It is also okay to ask if you are unsure of what a term means or what the patient prefers to be called.

LGBT Americans are diverse in terms of race, ethnicity, age, income levels, education, personality, and all other factors that make individuals unique. What unites them is the fact that they are sexual and gender minorities. In other words, their sexual orientation or gender identity is different than the majority of the population, and they experience discrimination and stigma based on this status.

Sexual orientation tells you about a person's sexual and romantic attractions. Everyone has a sexual orientation. Common words used to describe sexual orientations include:

- **Lesbian** describes women who are emotionally and sexually attracted mostly to women.
- **Gay** describes men who are emotionally and sexually attracted mostly to men. Gay is sometimes used to describe all people who have same-sex attractions.
- **Bisexual** describes people who are emotionally and sexually attracted to both men and women.
- **Heterosexual (straight)** describes people who are emotionally and sexually attracted mostly to people of the opposite gender.



Harvey J. Makadon, MD

“

OUR HOPE IS THAT
BY CREATING MORE SOURCES OF CARE
WHICH ARE INCLUSIVE AND AFFIRMING TO
ALL PEOPLE – INCLUDING LGBT PEOPLE –
WE CAN BEGIN TO ELIMINATE ALL
HEALTH DISPARITIES AND TO IMPROVE
THE OVERALL WELLBEING OF SEXUAL
AND GENDER MINORITIES.

Gender Identity is one's internal sense of being a man, woman, or other gender. Everyone has a gender identity. Most people have a gender identity that is the same as the sex they were assigned at birth (for example, a person born male who feels male and identifies as male). But some people have a gender identity that is different than their birth sex (for example, a person who is born female but identifies unequivocally as male). Some people have a gender identity that is both male and female, or that is neither male nor female. People whose gender identity is not the same as the sex they were assigned at birth are generally referred to as transgender.

Transgender does not have one single accepted definition and there are many terms to describe people within this group, including transgender (trans) woman, transgender (trans) man, male-to-female (MTF), and female-to-male (FTM). Some people may choose to refer to themselves as the gender they identify with (man or woman). Transgender is also sometimes used to include all people who feel their gender does not conform to what culture and society traditionally thinks is appropriate for that gender. This includes individuals, especially younger people, who prefer not to define themselves as male or female; those who feel their gender contains both male and female parts; and those who feel their gender changes from day to day or week to week, etc. They may use identity terms such as genderqueer, queer, or gender fluid, and may use pronouns such as “they”, “zie”, and others that may be unfamiliar to you. Like anyone else, a transgender person may have partners who are male, female, or transgender, and they might consider themselves straight, gay, lesbian, bisexual, or another sexual orientation.

When taking a sexual history with transgender people, you should try to establish a good rapport before asking about sexual practices. You may also want to use more open-ended questions instead of specific questions

about anal, oral, and vaginal sex. Finally, best practice with transgender patients always includes using the patients' preferred name and pronouns, even if these do not match the name and sex on their insurance or medical records.

Improving Communication

Using the right words can help establish a trusting relationship with a patient; the wrong ones can make a bad situation worse by building new barriers to care. Suggestions for more effective communication with LGBT patients include:

- Avoid assuming that people have an opposite sex partner or spouse. For example, instead of: “Do you have a boyfriend or husband?” Ask: “Are you in a relationship?”
- Instead of asking for mother's and father's names as part of registration, ask for parents' names. Mississippi has the highest percentage of same-sex families with children,¹² and those children should not have to explain this every time they seek health care.
- Use the terms that people use to describe themselves and their partners. For example, if someone calls himself “gay,” do not use the term “homosexual.” If a woman refers to her “wife,” then say “your wife” when referring to her; do not say “your friend.”
- Ask what pronouns your patients prefer to use for themselves. This is best done on an intake form, but may also need to be done in the clinic visit. Some people change their pronoun preference:
- Ask for a preferred name or pronoun when records do not match a patient's name or gender.
- Although some of this may feel awkward to you at first; but remember our primary focus has to be on making our patients comfortable.
- Avoid asking unnecessary questions to satisfy your own curiosity (what you need to know vs want to know).

- Pay attention to your body language and facial expressions. Check in with yourself: Are you wrinkling your nose? Shaking your head “no”? Raising your eyebrows?
- Obvious “don’ts” include the use of any disrespectful language, or gossiping about a patient’s appearance or behavior.
- Don’t be afraid to politely correct your colleagues if they use the wrong names and pronouns, or if they make insensitive comments.

Table includes samples of language to use when communicating with patients.

Finally, it is important to understand that there is a wide range of sexual and gender identities and expressions, and that these can change over time. For example, some people “come out” as gay later in life, after having been in a long-term heterosexual marriage. For any number of cultural or personal reasons, some patients may identify their sexuality in a way that does not tell you who their sexual partners are. Learning to make patients feel comfortable and trust you enough to reveal such personal information will take time. Practicing and apologizing as you learn will help you develop these skills.

Conclusion

While we have focused this article on LGBT people’s sexual health care needs, there are many other health disparities experienced by LGBT people, as documented in Healthy People 2020¹³ and the Institute of Medicine’s Report on the Health of Lesbian, Gay, Bisexual and Transgender People.¹⁴ A common denominator underlying why these disparities exist relate to stigma experienced in the context of seeking health care, as well as barriers to accessing care related to cost, lack of insurance coverage, and distance from affordable care.¹⁴ Our hope is that by creating more sources of care which are inclusive and affirming to all people – including LGBT people – we can begin to eliminate all health disparities and to improve the overall wellbeing of sexual and gender minorities. ■

TABLE. Suggested scripts for communicating without making assumptions about gender identity or sexual orientation

To avoid assuming gender with new patients:

Instead of: “How may I help you, sir?”

Say: “How may I help you?”

Instead of: “He is here for his appointment.”

Say: “The patient is here in the waiting room.”

If you are unsure about a patient’s preferred name or pronoun:

“I would like be respectful – what name and pronoun would you like me to use?”

If a patient’s name doesn’t match insurance or medical records:

“Could your chart/insurance be under a different name?”

“What is the name on your insurance?”

If you accidentally use the wrong term or pronoun:

“I’m sorry. I didn’t mean to be disrespectful.”

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Vital Signs: Estimated Percentages and Numbers of Adults with Indications for Preexposure Prophylaxis to Prevent HIV Acquisition — *United States, 2015*

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Introduction

In 2014, approximately 40,000 persons in the United States received a diagnosis of human immunodeficiency virus (HIV) infection.¹ Since 2010, several randomized, placebo-controlled clinical trials have reported that with high medication adherence (measured by detectable blood drug levels), daily oral antiretroviral preexposure prophylaxis (PrEP) reduced new HIV infections by 92% among MSM,² 90% among heterosexually active men and women in HIV-discordant couples,³ and 73.5% among persons who inject drugs.⁴ In 2014, CDC published the U.S. Public Health Service's clinical practice guideline for PrEP.⁵ Since 2014, open-label studies and demonstration projects conducted among MSM in the United States have reported that high adherence is achievable in community-based PrEP delivery, and effectiveness is similar to or better than that in clinical trials.^{6,7} As a result, the National HIV/AIDS Strategy Updated to 2020 calls for the scale-up of the delivery of PrEP and other highly effective prevention services to reduce new HIV infections.⁸

PrEP is a complementary strategy to other effective HIV prevention methods, including early diagnosis and treatment of HIV infection to achieve viral suppression and consistent condom use. A randomized controlled trial demonstrated that antiretroviral treatment reduces HIV transmission to HIV-discordant heterosexual sex partners by 93%.⁹ PrEP can reduce the risk for HIV infection among HIV-negative persons with sexual or injection exposures from partners who are among the estimated 70% of HIV-infected persons in the United States who are not virally suppressed and are at high risk for transmitting infection,¹⁰ including persons with undiagnosed HIV infection, persons with diagnosed infection who are not receiving treatment, and persons receiving treatment who are not virally suppressed. The combined protective effect of treatment and PrEP has recently been demonstrated in an open-label study with HIV-discordant couples in Africa.¹¹ This report estimates the percentages and numbers of adults in the United States with indications for PrEP consistent with the 2014 U.S. Public Health Service's PrEP guideline.

Methods

Data from national population-based surveys were analyzed to estimate the percentages and numbers of persons with indications for PrEP in each of three transmission-risk populations: MSM, heterosexually active adults, and persons who inject drugs. The prevalence of surveyed behaviors most closely related to those described as indications for PrEP in the 2014 guideline⁶ were used to define the size of the target populations (*Table 1*).

The number of men aged 18–59 years not known to be HIV-positive who reported sex with a man in the past 12 months was derived from National Health and Nutrition Examination Survey (NHANES) data from 2007–2008, 2009–2010, and 2011–2012 combined.* The number of these MSM reporting sex with two or more men in the past 12 months and any condomless sex or sexually transmitted infections in the past 12 months was used to calculate the percentage of HIV-negative sexually active adult MSM with behavioral indications for PrEP use. This percentage was weighted as recommended for NHANES data

ABSTRACT

Background: In 2014, approximately 40,000 persons in the United States received a diagnosis of human immunodeficiency virus (HIV) infection. Preexposure prophylaxis (PrEP) with daily oral antiretroviral medication is a new, highly effective intervention that could reduce the number of new HIV infections.

Methods: CDC analyzed nationally representative data to estimate the percentages and numbers of persons in the United States, by transmission risk group, with indications for PrEP consistent with the 2014 U.S. Public Health Service's PrEP clinical practice guideline.

Results: Approximately 24.7% of sexually active adult men who have sex with men (MSM) (492,000 [95% confidence interval {CI} = 212,000–772,000]), 18.5% of persons who inject drugs (115,000 [CI = 45,000–185,000]), and 0.4% of heterosexually active adults (624,000 [CI = 404,000–846,000]), had substantial risks for acquiring HIV consistent with PrEP indications.

Conclusions: Based on current guidelines, many MSM, persons who inject drugs, and heterosexually active adults have indications for PrEP. A higher percentage of MSM and persons who inject drugs have indications for PrEP than heterosexually active adults, consistent with distribution of new HIV diagnoses across these populations.

Implications for Public Health Practice: Clinical organizations, health departments, and community-based organizations should raise awareness of PrEP among persons with substantial risk for acquiring HIV infection and their health care providers. These data can be used to inform scale-up and evaluation of PrEP coverage. Increasing delivery of PrEP and other highly effective HIV prevention services could lower the number of new HIV infections occurring in the United States each year.

using current population estimates† of the population of men aged 18–59 years to yield an estimate of the number of U.S. MSM with indications for PrEP. Estimates of MSM with indications for PrEP did not consider injection risk.

The number of persons aged ≥18 years who reported in the National Survey on Drug Use and Health (NSDUH) (2013)§ having injected any assessed drug during the past 12 months and used a needle that had previously been used by another person was used to yield an estimate of the number of U.S. persons who inject drugs with indications for PrEP use. The estimate for persons who inject drugs did not consider sexual risk or HIV infection status.

The number of men and women aged 18–59 years not known to be HIV-positive was derived from NHANES data from 2007–2008,

2009–2010, and 2011–2012 combined and was used to calculate the percentage of HIV-negative adults among NHANES respondents. This percentage was weighted, as recommended for NHANES data, using current population estimates of the population of men and women aged 18–59 years to yield an estimate of the number of HIV-negative adults. Next, National Survey of Family Growth data (2011–2013)⁴ were analyzed to identify the number of men and women aged 18–44 years who reported sex with two or more opposite sex partners and either of the following: 1) sex with an HIV-infected partner; or 2) any condomless sex in the last four weeks and sex with a high-risk partner in the past 12 months. High-risk partners were defined as persons who inject drugs or (for women) male partners known to also have sex with men (behaviorally bisexual). The percentage of heterosexually active adults aged 18–44 years with behavioral indications for PrEP use in the National Survey of Family Growth was multiplied by the estimated number of HIV-negative adults aged 18–59 years from NHANES to yield an estimate of the number of heterosexually active adults in the United States with indications for PrEP. Estimated heterosexually active adults with indications for PrEP did not consider injection risk. Bisexual men were assessed by indications for both MSM and heterosexually active adults and added to the populations for which PrEP indications were met.

Results

An estimated 24.7% of MSM (492,000 [95% confidence interval {CI} = 212,000–772,000]) without HIV infection aged 18–59 years who reported sex with a man in the past year have indications for PrEP (Table 2). An estimated 18.5% of persons aged ≥18 years who inject drugs (115,000 [CI = 45,000–185,000]) have indications for PrEP. An

estimated 0.4% of heterosexually active adults aged 18–59 years (624,000 [CI = 404,000–846,000]) have indications for PrEP. Among these heterosexually active adults, 157,000 (CI = 62,000–252,000) are men, and 468,000 (CI = 274,000–662,000) are women.** Overall, an estimated 1,232,000 adults (CI = 661,000–1,803,000) have substantial risk for HIV acquisition, for whom PrEP and other effective prevention methods are indicated.

Conclusions and Comments

Among adult MSM aged 18–59 years in the United States who report sexual activity in the past year, approximately 25% have indications for PrEP to prevent HIV acquisition, compared with approximately 18% of persons who inject drugs and 0.4% of heterosexually active adults. The high percentage of MSM with PrEP indications is consistent with the high number of new HIV infections among MSM. The high percentage of persons who inject drugs with PrEP indications reflects the relatively high percentage who report using a needle after it was used by another injector. The low percentage and high absolute number of heterosexually active adults is a reflection of the large heterosexually active U.S. population and the low rate of new HIV diagnoses in these adults. The actual risk for acquiring HIV infection for each of these transmission risk groups differs based on efficiency of transmission routes and likelihood of exposure to HIV.

The large percentage of persons at substantial risk for acquiring HIV infection in some transmission risk groups demonstrates a continuing need for access to, and use of, a broad range of high-impact, clinic-based HIV prevention services that includes increased access to PrEP. These services include 1) regular HIV testing for all persons at substantial risk

25%

An estimated one in four (492,000; 95% CI: 212,000–772,000) sexually active HIV-negative adult men who have sex with men (MSM) have indications for PrEP consistent with those defined in the 2014 U.S. Public Health Service preexposure prophylaxis (PrEP) clinical practice guideline.

20%

An estimated one in five (115,000; 95% CI: 45,000–185,000) HIV-negative persons who inject drugs have indications for PrEP.

1 in 200

An estimated one in 200 (624,000; 95% CI: 404,000–846,000) HIV-negative heterosexually active adults have indications for PrEP.



and their sexual or injection partners, and access to early antiretroviral treatment for persons with HIV infection to achieve viral suppression; 2) regular screening and treatment for sexually transmitted infections for persons with sexual risk when indicated, male and female condom access, and brief risk-reduction counseling to promote consistent condom use; and 3) for persons with injection risk, access to medication-assisted treatment or referral for behavioral treatment of addiction, and access to clean injection equipment for those continuing to inject. Delivering PrEP in conjunction with other effective prevention services and associated preventive health care (e.g., hepatitis B vaccination and hepatitis B or C treatment when indicated) can be expected to reduce incident HIV infections and other preventable adverse health consequences for persons at risk.



OVERALL, AN ESTIMATED 1,232,000 ADULTS (CI = 661,000–1,803,000) HAVE SUBSTANTIAL RISK FOR HIV ACQUISITION, FOR WHOM PREP AND OTHER EFFECTIVE PREVENTION METHODS ARE INDICATED.

Impact models indicate that 50% coverage and modest adherence to PrEP by high-risk MSM in the United States could reduce new infections among MSM by 29% over 20 years.¹² Impact models of PrEP use by heterosexually active adults in Botswana, where levels of viral suppression among HIV-infected persons equivalent to U.S. National HIV/AIDS Strategy 2020 goals have already been achieved, estimate that PrEP use could reduce new infections by at least 39% over 10 years.¹³ Early

ecologic evidence of the combined effectiveness of expanded treatment and PrEP provision on reducing new HIV infections has been reported in San Francisco.¹⁴

The findings in this report are subject to at least four limitations. First, estimates for MSM are limited to persons aged 18–59 years. Second, estimates for heterosexually active adults applied National Survey of Family Growth data for respondents aged 18–44 years to estimates of HIV-negative adults aged 18–59 years from NHANES, which might overestimate the number of persons with PrEP indications. Third, not all U.S. Public Health Service PrEP guideline indications could be directly matched with variables reported in the surveys analyzed. This might have underestimated the percentages and numbers for some transmission risk groups and overestimated others to an unknown degree. Fourth, an estimate of HIV-discordant monogamous couples could not be calculated using nationally representative data.

State and local health departments, community-based organizations, and health care providers should become informed about the indications for and delivery of PrEP so that it becomes available to persons at substantial risk for HIV acquisition. In a 2015 national survey of health care providers, 34% had not heard of PrEP (DocStyles, unpublished data, 2015). Increasing the number of persons with indications for PrEP who are offered it and providing support services to maintain these persons in PrEP care with high adherence will help reduce the number of new HIV infections.

The U.S. Department of Health and Human Services is supporting a range of programmatic and research efforts to incorporate scale-up of

1.2 Million

An estimated 1,232,000 (95% CI: 661,000–1,803,000) adults in the United States have substantial risk for acquiring human immunodeficiency virus (HIV) infection.

- Persons at substantial risk for HIV infection and their health care providers need to be aware of daily oral PrEP as one of several highly effective HIV prevention methods available to them.
- Reducing the number of new HIV infections in the United States can be accelerated by increasing 1) the number of persons living with HIV infection who receive diagnoses and treatment to achieve viral suppression 2) the number of persons at substantial risk for acquiring HIV infection who use PrEP, and 3) the use of other prevention strategies.
- Additional information is available at www.cdc.gov/vitalsigns.



TABLE 1.

INDICATIONS FOR PREEXPOSURE PROPHYLAXIS (PrEP) BASED ON THE 2014 U.S. PUBLIC HEALTH SERVICE GUIDELINE AND METHOD FOR ESTIMATING THE NUMBER OF PERSONS WITH INDICATIONS USING NATIONAL-LEVEL SURVEYS, BY TRANSMISSION RISK GROUP — UNITED STATES, 2015

TRANSMISSION RISK GROUP	INDICATIONS FOR PrEP IN THE 2014 GUIDELINE	METHOD TO ESTIMATE NUMBER OF PERSONS WITH INDICATIONS FOR PrEP
<p>MEN WHO HAVE SEX WITH MEN (MSM)*</p>	<ul style="list-style-type: none"> • Adult man • Without acute or established HIV infection • Any male sex partner in past 6 months • Not in a monogamous partnership with a recently tested, HIV-negative man • AND at least one of the following <ul style="list-style-type: none"> – Any anal sex without condoms (receptive or insertive in past 6 months) – Any sexually transmitted infection diagnosed or reported in past 6 months – Is in an ongoing sexual relationship with an HIV-positive partner 	<ul style="list-style-type: none"> • Man aged 18–59 years • Not known to be HIV-positive • Sex with two or more men in past 12 months • AND at least one of the following <ul style="list-style-type: none"> – Any reported condomless sex in past 12 months – Sexually transmitted infection diagnosis in past 12 months – HIV status of partners could not be established
<p>HETEROSEXUALLY ACTIVE ADULTS†</p>	<ul style="list-style-type: none"> • Adult person • Without acute or established HIV infection • Any sex with opposite sex partners in past 6 months • Not in a monogamous partnership with a recently tested HIV-negative partner • AND at least one of the following <ul style="list-style-type: none"> – Infrequently uses condoms during sex with one or more partners of unknown HIV status who are known to be at substantial risk of HIV infection (person who injects drugs or bisexual male partner) – Is in an ongoing sexual relationship with an HIV-positive partner 	<ul style="list-style-type: none"> • Man or women aged 18–59 years • Not known to be HIV-positive • Sex with two or more opposite sex partners in past 12 months • AND at least one of the following <ul style="list-style-type: none"> – Any reported condomless sex in last 4 weeks AND sex with a partner who injects drugs OR, for females, sex with a bisexual male sex partner in past 12 months – Sex with partner reported to be HIV-positive
<p>PERSONS WHO INJECT DRUGS‡</p>	<ul style="list-style-type: none"> • Adult person • Without acute or established HIV infection • Any injection of drugs not prescribed by a clinician in past 6 months • AND at least one of the following <ul style="list-style-type: none"> – Any sharing of injection or drug preparation equipment in past 6 months – Been in a methadone, buprenorphine, or suboxone treatment program in past 6 months – Risk of sexual acquisition 	<ul style="list-style-type: none"> • Man or women aged ≥18 years • HIV status could not be determined • Any injection of heroin, methamphetamine, stimulants, or cocaine in past 12 months • AND at least one of the following <ul style="list-style-type: none"> – Reported injecting with a needle used by someone else before them (other drug preparation equipment not included) – Medication-based treatment history could not be assessed – Assessed using sexual risk indications above

* Source: National Health and Nutrition Examination Survey (NHANES).

† Sources: NHANES and National Survey of Family Growth.

‡ Behaviorally bisexual men were assessed for both MSM and heterosexual risk indications.

§ Source: National Survey on Drug Use and Health.

TABLE 2.
ESTIMATED PERCENTAGES AND NUMBERS OF ADULTS WITH INDICATIONS FOR PREEXPOSURE PROPHYLAXIS (PrEP),
BY TRANSMISSION RISK GROUP — UNITED STATES, 2015

TRANSMISSION RISK GROUP	% WITH PrEP INDICATIONS*	ESTIMATED NUMBER	(95% CI)
MEN WHO HAVE SEX WITH MEN, AGED 18–59 YRS[†]	24.7	492,000	(212,000–772,000)
ADULTS WHO INJECT DRUGS, AGED ≥18 YRS[§]	18.5	115,000	(45,000–185,000)
HETEROSEXUALLY ACTIVE ADULTS, AGED 18–59 YRS[¶]	0.4	624,000	(404,000–846,000)
MEN**	0.2	157,000	(62,000–252,000)
WOMEN	0.6	468,000	(274,000–662,000)
TOTAL		1,232,000	(661,000–1,803,000)

Abbreviation: CI = confidence interval.

* Percentage of all estimated persons in each transmission risk group and demographic subset with PrEP indications.

† Based on 2007–2012 National Health and Nutrition Examination Survey (NHANES) data, weighted as recommended using current population estimates. Risk factors used to define PrEP indications included two or more male sex partners and at least one of the following: any condomless sex or sexually transmitted infection diagnosis in past 12 months.

§ Based on 2013 National Survey on Drug Use and Health. Risk factors used to define PrEP indications included injection of heroin, methamphetamine, stimulants, or cocaine, and injecting with a needle used by someone else before them.

¶ Based on 2011–2013 National Survey of Family Growth and 2007–2012 NHANES data, weighted as recommended using current population estimates. Risk factors used to define PrEP indications included two or more opposite sex partners and at least one of the following: sex with an HIV-positive partner; or any condomless sex in the last 4 weeks and sex with a male who injects drugs or bisexual male (females only) in last 12 months.

** The relative standard error for males was 30.09%.

PrEP awareness and access into high-impact HIV prevention services. CDC provides funding and technical assistance to 1) inform the broader community about PrEP and how to access it, 2) identify HIV-uninfected persons with indications for PrEP and link them to PrEP care, 3) address disparities in knowledge of PrEP and access to it, and 4) provide training and support to clinicians regarding how to effectively provide PrEP with periodic HIV testing and sexually transmitted infection diagnosis and treatment.¹⁵ In addition, CDC supports efforts to improve early diagnosis and linkage to and retention in HIV medical care for persons with HIV infection to increase rates of viral suppression. CDC also is working with state and local health departments to develop methods to monitor PrEP coverage among persons for whom it is indicated and to assess the quality of HIV prevention care provided. Evidence of increasing use is available from limited analyses but comprehensive data on uptake of PrEP nationwide are not yet available.^{16–18} Efforts also are under way to increase the number of persons receiving prescriptions for PrEP medication and associated health care with coverage by most public and private health insurers and to increase access to medication and copay assistance programs.¹⁹ Estimating the percentage and size of the populations to be reached can assist health departments scale up PrEP availability and use, inform evaluation of coverage, and assess its contribution to reducing new HIV infections.

A substantial number of MSM, persons who inject drugs, and heterosexually active adults have indications for PrEP. Efforts to increase knowledge of and access to PrEP should accompany efforts to increase early diagnosis and treatment of persons with HIV infection to achieve the prevention benefits of viral suppression. Reducing disparities in

access to clinical care for the prevention and treatment of HIV infection can accelerate achieving the National HIV/AIDS Strategy 2020 goal for reducing the number of new HIV infections in the United States. ■

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- * Available at <http://www.cdc.gov/nchs/nhanes.htm>; 2007–2008 data includes men aged 20–59 years.
- † Available at http://www.cdc.gov/nchs/data/series/sr_02/sr02_161.pdf and http://www.cdc.gov/nchs/data/nhanes/analytic_guidelines_11_12.pdf.
- § Available at <http://www.samhsa.gov/data/population-data-nsduh>.
- ¶ Available at <http://www.cdc.gov/nchs/nsfg.htm>.
- ** Does not sum to 624,000 because of rounding.

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Sexually Transmitted Diseases: Summary of 2015 CDC Treatment Guidelines

These summary guidelines reflect the 2015 CDC Guidelines for the Treatment of Sexually Transmitted Diseases. They are intended as a source of clinical guidance. An important component of STD treatment is partner management. Providers can arrange for the evaluation and treatment of sex partners either directly or with assistance from state and local health departments. Complete guidelines can be ordered online at www.cdc.gov/std/treatment or by calling 1 (800) CDC-INFO (1-800-232-4636).

DISEASE	RECOMMENDED Rx	DOSE/ROUTE	ALTERNATIVES
BACTERIAL VAGINOSIS	Metronidazole oral ¹ , OR Metronidazole gel 0.75% ¹ , OR Clindamycin cream 2% ^{1,2} ★ Treatment is recommended for all symptomatic pregnant women	500 mg orally 2x/day for 7 days One 5g applicator intravaginally 1x/day for 5 days One 5g applicator intravaginally at bedtime for 7 days	Tinidazole 2g orally 1x/day for 2 days, OR Tinidazole 1g orally 1x/day for 5 days, OR Clindamycin 300 mg orally 2x/day for 7 days, OR Clindamycin ovules 100mg intravaginally at bedtime for 3 days
CERVICITIS	Azithromycin, OR Doxycycline ³	1g orally in a single dose 100mg orally 2x/day for 7 days Consider concurrent treatment for gonococcal infection if at risk of gonorrhea or lives in a community where the prevalence of gonorrhea is high. Presumptive treatment with antimicrobials for <i>C. trachomatis</i> and <i>N. gonorrhoeae</i> should be provided for women at increased risk (e.g., those aged <25 years and those with a new sex partner, a sex partner with concurrent partners, or a sex partner who has a sexually transmitted infection), especially if follow-up cannot be ensured or if NAAT testing is not possible.	
CHLAMYDIAL INFECTIONS Adults and adolescents	Azithromycin, OR Doxycycline ³	1g orally in a single dose 100mg orally 2x/day for 7 days	Erythromycin base ⁴ 500mg orally 4x/day for 7 days, OR Erythromycin ethylsuccinate ⁵ 800 mg orally 4x/day for 7 days, OR Levofloxacin ⁶ 500mg 1x/day orally for 7 days, OR Ofloxacin ⁶ 300mg orally 2x/day for 7 days
Pregnancy ³	Azithromycin ⁷	1g orally in a single dose	★ Amoxicillin 500mg orally 3x/day for 7 days, OR Erythromycin base ^{4,8} 500mg orally 4x/day for 7 days, OR Erythromycin base 250mg orally 4x/day for 14 days, OR Erythromycin ethylsuccinate 800mg orally 4x/day for 7 days, OR Erythromycin ethylsuccinate 400mg orally 4x/day for 14 days
Infants and Children (<45 kg): urogenital, rectal	Erythromycin base ⁹ , OR Ethylsuccinate	50mg/kg/day orally (4 divided doses) daily for 14 days	★ Data are limited on the effectiveness and optimal dose of azithromycin for chlamydial infection in infants and children < 45 kg
Neonates: ophthalmia neonatorum, pneumonia	Erythromycin base ⁹ ethylsuccinate	50mg/kg/day orally (4 divided doses) daily for 14 days	★ Azithromycin 20 mg/kg/day orally, 1 dose daily for 3 days

DISEASE	RECOMMENDED Rx	DOSE/ROUTE	ALTERNATIVES
<p>EPIDIDYMITIS^{10,11} For acute epididymitis most likely caused by sexually transmitted CT and GC</p> <p>★ For acute epididymitis most likely caused by sexually-transmitted chlamydia and gonorrhea and enteric organisms (men who practice insertive anal sex)</p> <p>For acute epididymitis most likely caused by enteric organisms</p>	<p>Ceftriaxone PLUS Doxycycline</p> <p>Ceftriaxone PLUS Levofloxacin OR Ofloxacin</p> <p>Levofloxacin OR Ofloxacin</p>	<p>250mg IM in a single dose 100mg orally 2x/day for 10 days</p> <p>250mg IM in a single dose 500mg orally 1x/day for 10 days 300 mg orally 2x/day for 10 days</p> <p>500mg orally 1x/day for 10 days 300mg orally 2x/day for 10 days</p>	
<p>GENITAL HERPES SIMPLEX First clinical episode of genital herpes</p> <p>Episodic therapy for recurrent genital herpes</p> <p>Suppressive therapy¹⁴ for recurrent genital herpes</p> <p>Recommended regimens for episodic infection in persons with HIV infection</p> <p>Recommended regimens for daily suppressive therapy in persons with HIV infection</p>	<p>Acyclovir, OR Acyclovir, OR Valacyclovir¹², OR Famciclovir¹²</p> <p>Acyclovir, OR Acyclovir, OR Acyclovir, OR Valacyclovir¹², OR Valacyclovir¹², OR Famciclovir¹², OR Famciclovir¹², OR Famciclovir¹², OR Famciclovir¹²</p> <p>Acyclovir, OR Valacyclovir¹², OR Valacyclovir¹², OR Famciclovir¹²</p> <p>Acyclovir, OR Valacyclovir¹², OR Famciclovir¹²</p> <p>Acyclovir, OR Valacyclovir¹², OR Famciclovir¹²</p>	<p>400mg orally 3x/day for 7-10 days¹³ 200mg orally 5x/day for 7-10 days¹³ 1g orally 2x/day for 7-10 days¹³ 250mg orally 3x/day for 7-10 days¹³</p> <p>400mg orally 3x/day for 5 days 800 mg orally 2x/day for 5 days 800mg orally 3x/day for 2 days 500mg orally 2x/day for 3 days 1g orally 1x/day for 5 days 125mg orally 2x/day for 5 days 1000mg orally 2x/day for 1 day¹³ 500mg orally once, followed by 250 mg 2x/day for 2 days</p> <p>400mg orally 2x/day 500mg orally 1x/day 1g orally once a day 250mg orally 2x/day</p> <p>400mg orally 3x/day for 5-10 days 1g orally 2x/day for 5-10 days 500mg orally 2x/day for 5-10 days</p> <p>400-800mg orally 2-3x/day 500mg orally 2x/day 500mg orally 2x/day</p>	
<p>GENITAL WARTS¹⁵ (Human Papillomavirus) External genital and perianal warts</p>	<p>Patient Applied ★ Imiquimod 3.75% or 5%¹² cream, OR Podofilox 0.5%¹⁵ solution or gel, OR Sinecatechins 15% ointment^{2,12}</p> <p>Provider Administered Cryotherapy, OR Trichloroacetic acid or bichloroacetic acid 80%-90%, OR Surgical removal</p>	<p>See complete CDC guidelines.</p> <p>Apply small amount, dry, apply weekly if necessary</p>	<p>★ Podophyllin resin 10%–25% in compound tincture of benzoin may be considered for provider-administered treatment if strict adherence to the recommendations for application. OR Intralesional interferon, OR Photodynamic therapy, OR Topical cidofovir</p>

- The recommended regimens are equally efficacious.
- These creams are oil-based and may weaken latex condoms and diaphragms. Refer to product labeling for further information.
- Should not be administered during pregnancy, lactation, or to children <8 years of age.
- If patient cannot tolerate high-dose erythromycin base schedules, change to 250 mg 4x/day for 14 days.
- If patient cannot tolerate high-dose erythromycin ethylsuccinate schedules, change to 400 mg orally 4 times a day for 14 days.
- Contraindicated for pregnant or lactating women.
- Clinical experience and published studies suggest that azithromycin is safe and effective.
- Erythromycin estolate is contraindicated during pregnancy.
- Effectiveness of erythromycin treatment is approximately 80%; a second course of therapy may be required.
- Patients who do not respond to therapy (within 72 hours) should be re-evaluated.
- For patients with suspected sexually transmitted epididymitis, close follow-up is essential.
- No definitive information available on prenatal exposure.

DISEASE	RECOMMENDED Rx	DOSE/ROUTE	ALTERNATIVES
<p>GONOCOCCAL INFECTIONS¹⁶ Adults, adolescents, and children >45 kg: uncomplicated gonococcal infections of the cervix, urethra, and rectum</p> <p>Pharyngeal¹⁸</p> <p>Pregnancy</p> <p>Adults and adolescents: conjunctivitis</p> <p>Children (≤45 kg): urogenital, rectal, pharyngeal</p>	<p>Ceftriaxone PLUS Azithromycin⁷</p> <p>Ceftriaxone PLUS Azithromycin⁷</p> <p>See complete CDC guidelines.</p> <p>Ceftriaxone PLUS Azithromycin⁷</p> <p>Ceftriaxone¹⁹</p>	<p>250mg IM in a single dose 1g orally in a single dose</p> <p>250mg IM in a single dose 1g orally in a single dose</p> <p>1g IM in a single dose 1g orally in a single dose</p> <p>25-50mg/kg IV or IM, not to exceed 125mg IM in a single dose</p>	<p>If ceftriaxone is not available: ★ Cefixime¹⁷ 400mg orally in a single dose PLUS Azithromycin⁷ 1g orally in a single dose</p> <p>If cephalosporin allergy: Gemifloxacin 320mg orally in a single dose PLUS Azithromycin 2g orally in a single dose OR</p> <p>Gentamicin 240mg IM single dose PLUS Azithromycin 2g orally in a single dose</p>
<p>LYMPHOGRANULOMA VENEREUM</p>	<p>Doxycycline³</p>	<p>100mg orally 2x/day for 21 days</p>	<p>Erythromycin base 500mg orally 4x/day for 21 days</p>
<p>NONGONOCOCCAL URETHRITIS (NGU)</p> <p>★ Persistent and recurrent NGU^{3,20,21}</p>	<p>Cazithromycin⁷ OR Doxycycline³</p> <p>Men initially treated with doxycycline: Azithromycin</p> <p>Men who fail a regimen of azithromycin: Moxifloxacin</p> <p>Heterosexual men who live in areas where <i>T. vaginalis</i> is highly prevalent: Metronidazole²² OR Tinidazole</p>	<p>1g orally in a single dose 100mg orally 2x/day for 7 days</p> <p>1g orally in a single dose</p> <p>400mg orally 1x/day for 7 days</p> <p>2g orally in a single dose 2g orally in a single dose</p>	<p>Erythromycin base⁴ 500mg orally 4x/day for 7 days, OR Erythromycin ethylsuccinate⁵ 800mg orally 4x/day for 7 days, OR Levofloxacin 500mg 1x/day for 7 days, OR Ofloxacin 300mg 2x/day for 7 days</p>
<p>PEDICULOSIS PUBIS</p>	<p>Permethrin 1% cream rinse OR Pyrethrins with piperonyl butoxide</p>	<p>Apply to affected area, wash off after 10 minutes</p>	<p>Malathion 0.5% lotion, applied 8-12 hrs then washed off OR Ivermectin 250 µg/kg, orally repeated in 2 weeks</p>
<p>PELVIC INFLAMMATORY DISEASE¹⁰</p>	<p>Parenteral Regimens Cefotetan PLUS Doxycycline OR</p> <p>Cefoxitin PLUS Doxycycline</p> <p>Recommended Intramuscular/ Oral Regimens Ceftriaxone PLUS Doxycycline WITH OR Metronidazole WITHOUT OR Cefoxitin PLUS Probenecid PLUS</p> <p>Doxycycline WITH OR Metronidazole WITHOUT</p>	<p>2g IV every 12 hours 100mg orally or IV every 12 hours</p> <p>2g IV every 6 hours 100mg orally or IV every 12 hours</p> <p>250mg IM in a single dose 100mg orally twice a day for 14 days 500mg orally twice a day for 14 days</p> <p>2g IM in a single dose 1g orally administered concurrently in a single dose 100mg orally twice a day for 14 days 500mg orally twice a day for 14 days</p>	<p>Parenteral Regimen Ampicillin/Sulbactam 3g IV every 6 hours PLUS</p> <p>Doxycycline 100mg orally or IV every 12 hours</p> <p>The complete list of recommended regimens can be found in CDC's 2015 STD Treatment Guidelines.</p>

DISEASE	RECOMMENDED Rx	DOSE/ROUTE	ALTERNATIVES
SCABIES	Permethrin 5% cream OR Ivermectin	Apply to all areas of body from neck down, wash off after 8-14 hours 200 µg/kg orally, repeated in 2 weeks	Lindane 1% ^{23,24} 1 oz. of lotion or 30g of cream, applied thinly to all areas of the body from the neck down, wash off after 8 hours
SYPHILIS Primary, secondary, or early latent <1 year	Benzathine penicillin G	2.4 million units IM in a single dose	Doxycycline ^{3,25} 100mg 2x/day for 14 days OR Tetracycline ^{3,25} 500mg orally 4x/day for 14 days
Latent >1 year, latent of unknown duration	Benzathine penicillin G	2.4 million units IM in 3 doses each at 1 week intervals (7.2 million units total)	Doxycycline ^{3,25} 100mg 2x/day for 28 days OR Tetracycline ^{3,25} 500mg orally 4x/day for 28 days
Pregnancy Neurosyphilis	See complete CDC guidelines. Aqueous crystalline penicillin G	18–24 million units per day, administered as 3–4 million units IV every 4 hours or continuous infusion, for 10–14 days	Procaine penicillin G 2.4 MU IM 1x daily PLUS Probenecid 500 mg orally 4x/day, both for 10-14 days.
★ Congenital syphilis	See complete CDC guidelines.		See CDC STD Treatment guidelines for discussion of alternative therapy in patients with penicillin allergy.
Children: Primary, secondary, or early latent <1 year	Benzathine penicillin G	50,000 units/kg IM in a single dose (maximum 2.4 million units)	
Children: Latent >1 year, latent of unknown duration	Benzathine penicillin G	50,000 units/kg IM for 3 doses at 1 week intervals (maximum total 7.2 million units)	
TRICHOMONIASIS	Metronidazole ²² OR Tinidazole ²⁶	2g orally in a single dose 2g orally in a single dose	Metronidazole ²² 500 mg 2x/day for 7 days
Persistent or recurrent trichomoniasis	Metronidazole If this regimen fails: Metronidazole OR Tinidazole If this regimen fails, susceptibility testing is recommended.	500mg orally 2x/day for 7 days 2g orally for 7 days 2g orally for 7 days	

13. Treatment may be extended if healing is incomplete after 10 days of therapy.
 14. Consider discontinuation of treatment after one year to assess frequency of recurrence.
 15. Vaginal, cervical, urethral meatal, and anal warts may require referral to an appropriate specialist.
 16. CDC recommends that treatment for uncomplicated gonococcal infections of the cervix, urethra, and/or rectum should include dual therapy, i.e., both a cephalosporin (e.g., ceftriaxone) plus azithromycin.
 17. CDC recommends that cefixime in combination with azithromycin or doxycycline be used as an alternative when ceftriaxone is not available.
 18. Only ceftriaxone is recommended for the treatment of pharyngeal infection. Providers should inquire about oral sexual exposure.
 19. Use with caution in hyperbilirubinemic infants, especially those born prematurely.
 20. MSM are unlikely to benefit from the addition of nitroimidazoles.
 21. Moxifloxacin 400mg orally 1x/day for 7 days is effective against *Mycoplasma genitalium*.
 22. Pregnant patients can be treated with 2 g single dose.
 23. Contraindicated for pregnant or lactating women, or children <2 years of age.
 24. Do not use after a bath; should not be used by persons who have extensive dermatitis.
 25. Pregnant patients allergic to penicillin should be treated with penicillin after desensitization.
 26. Randomized controlled trials comparing single 2 g doses of metronidazole and tinidazole suggest that tinidazole is equivalent to, or superior to, metronidazole in achieving parasitologic cure and resolution of symptoms.
- ★ Indicates update from the 2010 CDC Guidelines for the Treatment of Sexually Transmitted Diseases.

Reviewed by the CDC 6/2015

State of the ART: Characteristics of HIV infected patients receiving care in Mississippi (MS), USA from the *Medical Monitoring Project*, 2009-2010

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Introduction

The American South had the highest rate of new HIV diagnoses in 2013 at 20.5 per 100,000 accounting for 51% of the new infections as compared to 15.9 in the Northeast, 10.8 in the West and 9.0 in the Midwest.¹ The South accounted for 40% of all people living with HIV and for nearly 50% of all deaths in people with AIDS in the US in 2012. The survival with HIV and AIDS was also the lowest in the South in 2013.² African Americans represented nearly 44% of new HIV infections and 41% of all people living with HIV in 2012 and have poorer outcomes at every point of the HIV care continuum.¹



IN 2012, MISSISSIPPI HAD THE TENTH HIGHEST RATE OF NEW HIV DIAGNOSES.

In 2012, Mississippi had the tenth highest rate of new HIV diagnoses.³ The capital city of Jackson had the 8th highest rate of new HIV diagnoses of any metropolitan area in the country.¹ Mississippi had the highest adjusted case fatality rates among 37 US states studied between 2001 and 2007.⁴ Similar to racial/ethnic disparities observed on a national-level, African Americans accounted for 76% of all HIV infections in the state, though only composing 37% of the population in Mississippi in 2013.⁶ While this may suggest contextual issues such as disparities in quality of HIV care affecting survival and mortality, these factors are poorly understood in African Americans in the Deep South.

In Mississippi, out of an estimated 8,861 People Living with HIV/AIDS (PLWHA) in 2012, 45.6% had been diagnosed with AIDS.¹ Viral load suppression is considered the goal of being in care for HIV, not only because of its impact on the patient's health but because of its implications in reducing HIV transmission to others. Therefore, our goal with this

study is to evaluate the characteristics of those receiving care for HIV in Mississippi and the factors associated with viral load suppression.

Methods

The Medical Monitoring Project (MMP) is an ongoing, multi-cross sectional surveillance project of people who are receiving care for HIV in 23 US cities, which represents a population base of 80% of known HIV cases in the US.² The objectives of the MMP are to identify the factors associated with the progression of HIV and learn more about the experiences and needs of PLWHA.

The MMP nationally has a three stage sampling design which first samples areas with different prevalence rates. The next two sampling stages are relevant to individual project areas like Mississippi as it includes sampling from large, medium and small practices or facilities providing HIV care in the entire state. The third stage includes sampling of the patients in care at these facilities, and 400 individuals are sampled each year in Mississippi from people who attended one clinic visit during the project defined period i.e. January 1 to April 30. Inclusion criteria are that they have to be at least eighteen years of age, HIV positive and seen for HIV related care at that facility.⁵

Data for this study were taken from the 2009 cycle of MMP where 11 facilities agreed to participate. Four hundred PLWHA receiving HIV care in Mississippi were selected to participate in MMP. Of these, 214 were contacted and agreed to participate. Individuals underwent an interviewer-administered questionnaire, and their medical records were abstracted, including information on AIDS diagnosis, medication use and viral load status. The interviews were conducted by trained personnel. Data were collected from HIV provider outpatient visits and any reports of inpatient hospital stays through the entire surveillance period for participants interviewed during the 2009 cycle when available. The surveillance period was defined as the 12 months prior to the date

that the participant completed the interview. Our final analysis cohort was 212 PLWHA, which after applying weighting methods previously described (CDC. *Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection – Medical Monitoring Project*, United States, 2010. HIV Surveillance Special Report 9. http://www.cdc.gov/hiv/pdf/MMP_2010_surveillancesummary.pdf. Constituted a representative sample size of the 3190.4 (3191) PLWHA in care.

Outcomes

Antiretroviral Therapy (ART) use and viral load suppression through most recent viral load data were ascertained during the medical record abstraction and from interviews.

Statistical analysis

Demographic and sexual behavior characteristics are presented using descriptive means (95% confidence interval) and percentages. Clinical outcome data such as CD4 cell count and viral load are presented using a stratified mean (standard deviation) and count (proportion). We used Rao-Scott Chi-square test statistics for categorical variables and t-tests for continuous variables.

Multivariable models were used to estimate associations between ART and viral suppression (outcomes) and individual-level covariates. We estimated odds ratios (ORs) and 95% confidence intervals (CIs) from multivariable regression models using the PROC LOGISTIC procedure in SAS.



ABSTRACT

Background: Mississippi, the poorest state in the US, has a very high prevalence of HIV and among the highest HIV infection rates and AIDS-adjusted mortality rates in the country. African Americans, who suffer the worst health care disparities in the US, account for 76% of people with HIV in MS. The purpose of this study is to describe those in care for HIV and determine the factors associated with anti-retroviral treatment (ART) and viral suppression.

Methods: The CDC's Medical Monitoring Project collects surveillance data from 23 project areas in the US, including Mississippi, using annual probability sampling of persons in care for HIV. Data were collected from in-person interviews and medical record abstraction in 2009. The surveillance period was the 12 months prior to the interview date.

Results: 212 randomly selected participants represented a nationally representative weighted sample of 3190.4. Participants had a mean of 3.71 provider visits during the surveillance period. Geometric mean for CD4 count = 438.91 (95% CI 402.25-475.56). Overall 80.80% (95% CI 75.30%-86.29%) were on ART, and 68.12% (95% CI 62.69%-73.56%) had undetectable viral load. Males (65.15%) were less likely to achieve undetectable viral load compared to females (78.30%) after controlling for individuals who were on ART ($p=0.01$). Viral suppression was not associated with age, race or sexual risk factors.

Conclusions: Although Mississippi has a high proportion of individuals out of HIV care, the majority in care is on ART and has suppressed viral loads. However, men are less likely to achieve virological suppression than females.

Results

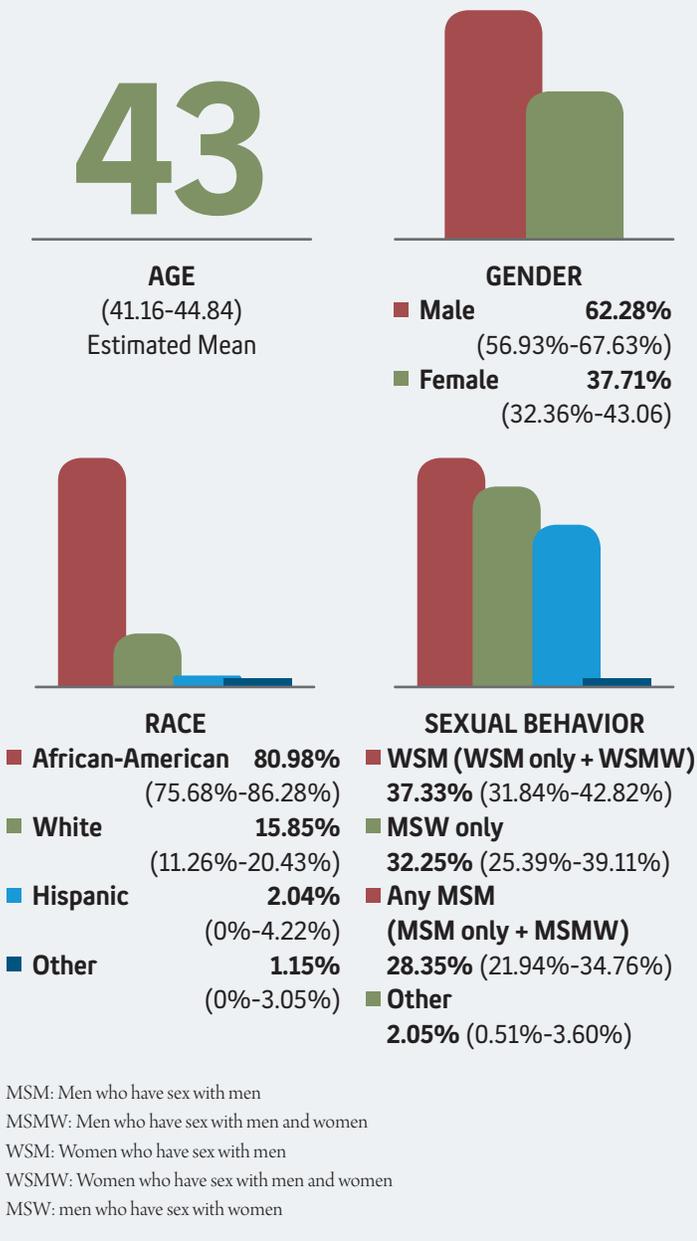
Demographic characteristics of PLWHA in care in Mississippi.

African Americans made up 82.2% of the sample, consistent with the HIV epidemiological profile in MS. Males made up 62.3% of the sample, females made up 37.7% of the sample. Individuals identified as transgender constituted the remaining 1.4%. The mean age of the sample was 43 years. 54.1% were under the age of 44 years, but 34% of the sample was between 45 and 54 years (*Table 1*).

Our adjusted response rate for interviews was 60.6%. Those receiving care in large facilities and over the age of 35 were more likely to participate. Gender, years since diagnosis, race and ethnicity were no different between those who participated and those who did not. Those who were not interviewed were not interviewed largely because we were not able to contact them (29%). Only 13.7% of those contacted refused to participate in the interview.

Socioeconomic: 72.5% of the sample had at least a high school diploma. 43.5% had Medicaid in the past year and 29.4% had Medicare. 31.8% had

TABLE 1.
DEMOGRAPHIC CHARACTERISTICS



Ryan White or no coverage. These values are not mutually exclusive as participants could report having more than one type of coverage in the past year.

Health literacy: When compared to those who did not know their most recent CD4 value (22%), participants who claimed to know their most recent CD4 count (78%) had significantly more years of education, greater confidence in their health literacy and significantly more recent CD4 test done (3.7 months vs 7.3 months). There was no significant difference between age, gender, race, actual CD4 count value, years since diagnosis of HIV, lower income or ART status.

Similarly, those who knew their most recent viral load value had significantly more years of education, greater confidence in their health

literacy (described as reporting confidence in filling out medical forms or reading hospital materials), a more recent viral load test, and a lower viral load (2.9 log copies/ml vs 3.9 log copies/ml).

Clinical characteristics The average CD4 count of the participants was 438.9. 65.2% of the sample either had a prior diagnosis of AIDS or a nadir CD4 count of <200. 17.6% had a diagnosis of depression from their medical record abstraction (MRA). While 21.5% reported using alcohol in the past 12 months, only 24.5% (n=28 out of 114 respondents) reported having greater than 4 drinks on each occasion. The MRA data on alcohol use was present for only 26 participants and 19.2% (n=5) of them had documentation of alcohol abuse.

Access to care Only 4 (1.8%) of the 214 participants reported not seeking care within 3 months of being diagnosed with HIV. Eight (3.7%) participants had not had a clinical care visit in the past 6 months. The average time it took to get to their usual HIV care facility was 37 minutes.

ART prescription and adherence A majority of the participants interviewed (83.6%) acknowledged being on ART currently. Seven percent said they had been on ART in the past but were not taking it currently and 9.4% denied ever taking ARTs. Compared to MRA data, 80.8% (N= 173) had documentation of being on an ART at present. 18.2% (n=37) had been listed as not being on ART and 0.93% (n=2) had no data.

Per MRA data, there were no statistically significant differences between those on ART and those not on ART with respect to age, gender, race, sexual risk categories, average CD4 count or CD4 count categories (Table 2).

39.9% reported never missing their medications while 21.4% reported missing their medications in the past week. 26.5% had missed their medications between 2 weeks to 3 months prior to the interview. 12.3% had missed their medications greater than 3 months previously. Of those who missed their medications, 25.7% claimed they had a problem with their prescription or refill. 21% said that they simply forgot to take them. 19.5% reported missing medications due to a change in routine such as travel. 10.6% missed their medications because they were too sick to take them.

Viral load suppression

Viral load data was not available for every participant. Of those who were listed as being on ART (n=173), viral load data was present in 97.2% (n=169). But, of those who were listed as not being on ART (n=37), viral load data was present in only 80.6% (n=30). 55.1% of the total sample had a recent viral load that was undetectable.

Effect of ART

For those on ART: Males (65.15%) were less likely to achieve undetectable viral load compared to females (78.30%) (p=0.01). After controlling for ART prescription in the logistic regression model, men had lower odds of virological suppression [OR 0.57, p = 0.02]. Race and age were not significantly associated with viral load suppression when controlling for ART prescription; however, having a higher CD4 count of greater than 350 cells/cm³ was associated with a greater odds of virological suppression (OR 4.72 to 4.87, p <0.001). Those on ART had a lower

TABLE 2.
DEMOGRAPHIC AND HEALTH STATUS CHARACTERISTICS FOR PERSONS KNOWLEDGEABLE ABOUT THEIR CD4 COUNTS

Characteristics	KNEW MOST RECENT CD4 COUNT (N=133)		DID NOT KNOW MOST RECENT CD4 COUNT (N=36)		P VALUE
	Mean	SD	Mean	SD	
Age	40.3	6.3	41.5	6.5	NS
Years of education	12.8	2.3	11.9	2.0	0.03
Years HIV positive	7.9	4.7	8.7	4.2	NS
Months since most recent CD4 count*	2.4	3.7	4.5	7.3	0.01
Mean CD4 count*	327.3	285.5	252.7	236.3	NS
	N	%	N	%	
Male	84	61	28	76	NS
Female	51	37	8	22	
Transgender	2	2	1	5	
White	26	19	2	6	NS
African American	100	73	33	92	
Other ethnicity	11	8	1	2	
Annual Income < 10,000 USD	90	66	25	71	0.06
Taking ART	101	74	24	65	NS

* By Medical record abstraction
NS = Non significant

TABLE 3.
DEMOGRAPHIC AND HEALTH STATUS CHARACTERISTICS FOR PERSONS KNOWLEDGEABLE ABOUT THEIR VIRAL LOAD

Characteristics	KNEW MOST RECENT VIRAL LOAD (N=102)		DID NOT KNOW MOST RECENT VIRAL LOAD (N=66)		P VALUE
	Mean	SD	Mean	SD	
Age	40.9	6.5	40	6.0	NS
Years of education	13.2	2.1	11.7	2.2	0.01
Years HIV positive	8.1	4.9	8.1	3.9	NS
Months since most recent Viral load*	1.9	2.2	3.2	3.7	0.01
Viral load (log)*	2.9	2.1	3.9	1.6	0.01
	N	%	N	%	
Male	70	65	42	63	NS
Female	35	33	24	36	
Transgender	2	2	1	1	
White	21	20	7	11	NS
African American	77	72	56	85	
Other ethnicity	9	8	3	5	
Annual Income < 10,000 USD	66	62	49	75	NS
Taking ART	86	80	39	54	0.01

* By Medical record abstraction
NS = Non significant

TABLE 4.
DIFFERENCES BETWEEN PARTICIPANTS IN CARE WHO ARE ON ART AND NOT ON ART

	TOTAL		ON ART	
	N(%)	95% CI	N(%)	95% CI
Age	41.65 (±0.87)	[39.93,43.36]	42.19 (±0.77)	[40.66,43.71]
Gender	210 (100%)		173 (81.56%)	[76.41,86.71]
Male	128 (61.93%)	[56.71,67.16]	108 (51.96%)	[45.48,58.44]
Female	82 (38.07%)	[32.84,43.29]	65 (29.6%)	[25.38,33.82]
Race	210 (100%)		173 (81.56%)	[76.41,86.71]
White, non-Hispanic	33 (16%)	[11.37,20.63]	27 (12.99%)	[8.8,17.18]
Black, non-Hispanic	171 (80.81%)	[75.51,86.1]	140 (65.38%)	[59.61,71.14]
Hispanic	4 (2.07%)	[0,4.24]	4 (2.07%)	[0,4.24]
Other	2 (1.13%)	[0,3.09]	2 (1.13%)	[0,3.09]
Sexual Partner	210(100%)		173 (81.56%)	[76.41,86.71]
Any MSM (MSM only+MSMW)	59 (28.24%)	[21.8,34.69]	52 (24.67%)	[18.02,31.32]
MSW only	65 (31.99%)	[25.04,38.94]	54 (26.53%)	[19.28,33.79]
WSM (WSM only+WSMW)	81 (37.69%)	[32.33,43.04]	64 (29.22%)	[24.96,33.48]
Other	5 (2.08%)	[0.51,3.64]	3 (1.14%)	[0,2.64]
CD4 Count	438.91 (±18.5)	[402.25,475.57]	432.5 (±22.36)	[388.19,476.81]
CD4 Categories				
0-199	25 (12.06%)	[5.83,18.3]	23 (10.88%)	[3.94,17.82]
200-349	52 (27.05%)	[21.89,32.21]	47 (24.09%)	[18.7,29.49]
350-499	59 (28.48%)	[24.11,32.86]	50 (24.13%)	[19.97,28.29]
=>500	65 (32.41%)	[27.07,37.75]	50 (24.71%)	[20.57,28.84]
Total	201 (100%)		170 (83.81%)	[77.79,89.84]

average CD4 count. (472.1 Vs 432.5) compared to those who were not on ART which may be a reflection of the previous guidelines for initiation of ART only in those with CD4 counts less than 350 in 2009.

Discussion

This study is the first of its kind on evaluating factors affecting virological suppression on a statewide level in Mississippi. Several interesting and unexpected trends have emerged from this data.

Firstly, it appears that those in care are older (mean age 43 years) and more likely to identify as heterosexual (70%) in contrast to those who are being diagnosed with HIV in our state for the past several years who are younger and in a large proportion MSM. Per the 2013 MS State HIV epidemiological profile, 54.3 % of the newly diagnosed cases reported being MSM as a risk factor, 18.3% reported heterosexual transmission and 24.8 % did not report their transmission risk. This may also represent the deep effect of stigma in Southern culture, where MSM are less likely to participate in the surveillance project. It is possible that stigma to HIV and homophobia may be a factor keeping gender and sexual minorities from accessing and being retained in HIV care. One observation that may support this theory is that while 75% of all HIV infected people in MS are male, in our analysis only 61.7% were male.

The data also reveals the high proportion of our population that is dependent on public benefits through Medicare (29.4%) or Medicaid

(43.5%)- higher than what it is reported for the general population in the state of Mississippi (22% on Medicaid and 13% on Medicare), which in turn is still higher than the national average (16% Medicaid and 12% Medicare). This points to the significant socioeconomic challenges faced by our HIV infected population in terms of navigating through public services with limited resources.

With respect to socioeconomic status in our study, health literacy proved more complex to evaluate as it was not a lower income that affected a person's knowledge of his/her state of health with respect to HIV but their level of education and the timing of their care visits.

In terms of access to care, over 90% of those sampled reported establishing care within 3 months of diagnosis. Their average travel time to their HIV care facility was less than an hour (37 minutes). Our sample, while economically disadvantaged, reveals itself to be one that has had few barriers to linkage, access and adherence to care visits. Again, this may be due to the bias of sampling those recently in care that were successfully contacted to participate in the interview which may select for a highly motivated group of individuals.

There were no disparities noted between those who receive ART and those who did not, with respect to gender, race, age, sexual risk factors or CD4 status. Significant health disparities among racial groups in terms of quality of care does not seem to be reflected in the in-care group. Compared to the national averages, those in care in MS have slightly lower rates of

NOT ON ART		
N(%)	95% CI	P VALUE
38.8 (±2.4)	[34.04,43.56]	0.08
37 (18.44%)	[13.29,23.59]	0.08
20 (9.97%)	[6.57,13.37]	
17 (8.47%)	[5.44,11.49]	
37 (18.44%)	[13.29,23.59]	0.51
6 (3.01%)	[1.05,4.97]	
31 (15.43%)	[10.65,20.21]	
0		
0		
37 (18.44%)	[13.29,23.59]	0.13
7 (3.57%)	[1.53,5.61]	
11 (5.46%)	[3.24,7.67]	
17 (8.47%)	[5.44,11.49]	
2 (0.94%)	[0.02,1.86]	
472.1 (±22.19)	[428.12,516.08]	0.27
		0.17
2 (1.18%)	[0.19,2.18]	
5 (2.95%)	[0,6.86]	
9 (4.35%)	[2.15,6.55]	
15 (7.7%)	[4.92,10.48]	
31 (16.19%)	[10.16,22.21]	

being on ART (80 vs 88%) and being virologically suppressed (55% vs 68%). The ultimate marker of adherence to medications, i.e. virological suppression, was reflective of a gender disparity with men less likely to achieve virological suppression (65%) than women (78%). This is contrary to national data where on an average 79% of men and only 71% on women on ART had a recent suppressed viral load.⁹ This may be multifactorial and bears further investigation. Men may have different occupational, economic, and cultural pressures in the South driving this outcome. A self-reported marker of adherence revealed that about 40% of our sample had never missed their medications but those who missed, mostly did so in the past week before their visit (21%) with the most common reason for missing their medication was a system based issue—such as a problem with their refill or prescription.

This descriptive analysis of our MMP data has allowed us to identify core issues affecting the population in care that warrant further evaluation through a targeted study designed to explore them.

The implications of these findings are several. First, it highlights the need for public policy to be attuned to the needs of PLWHA in Mississippi who are dependent on public benefits. Secondly, it highlights that men in this region, in general, have greater challenges to virological suppression. It also reveals a smaller proportion of MSM in care than those living with HIV. These need to be explored to better target care strategies to our population living with HIV.

There were several system level and individual data level limitations in our study. Our sample size was small. Surveillance data is not designed to capture confounding associations and interactions between various variables. Participants could choose not to answer several questions leading to multiple missing variables. In addition, the medical record abstraction is limited by the quality of documentation of health care providers. Of note though, 6% of our sample (n=13) had unknown or missing viral load status and ART status, thus limiting our analysis.

In general, the quality of care received by the participants may not reflect the universe of people who are in care as the study design is biased towards people who are not just in care but recently in care. Nonetheless, the proportion of patients on ART and the proportion that are virologically suppressed in our sample are similar to the proportion of people in ARV and achieving viral suppression in the national cascade of care.⁹

Conclusions

Those in HIV care in Mississippi have lower than the national average rates for being on ART and being virologically suppressed. Men in Mississippi are less likely to achieve viral load suppression than women, contrary to national trends where women have decreased virological suppression. Those in care are also greatly dependent on public benefits for their care. Knowledge of their health status was affected by level of education and timing of care visits. ■

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art donors, art patrons, sponsors and media, to help people with HIV/AIDS live healthy, independent lives and works to prevent the spread of HIV. An annual tee shirt designed by popular Mississippi artists (and occasionally high school students) is another successful profit-generating project. Also, board members have taken part in other community fairs and festivals to raise awareness about the organization and its mission.

Each year HeARTS dedicates the benefit to an individual or organization who has made a special contribution to helping Mississippians living with HIV/AIDS. Past recipients of this dedication include Sister Dorothy Ann Kudinger, Colonel Robert S. McGowan of Grace House, and *The Clarion-Ledger*, among others. The 2014 honoree was the late Hal White, brother of entrepreneur Malcolm White, who together opened Jackson landmark Hal and Mal's restaurant and bar located in a former freight depot building on South Commerce Street. Recognized for welcoming (with open arms and an open mind) the Jackson artists who came to him 23 years ago in need of a location to host a benefit to raise money for AIDS, Hal was honored posthumously for his continued annual support despite the stigma often associated with HIV.

For more information visit www.heartsagainstaids.org. — *Karen A. Evers, Managing Editor*



Sharon McDonald, MD

Pediatric Oncologist, University of Mississippi Medical Center



Dr. Sharon McDonald is a strong, confident single mother of two who loves her job, her kids, and bringing joy to people's lives, which she tries to do daily as a Pediatric Oncologist at

University of Mississippi Medical Center. As a young child, Dr. McDonald had a chronic illness that required numerous ER visits and hospital stays – an experience that set her on a path toward becoming the passionate physician she is today.

As a young woman pursuing a career in medicine, Dr. McDonald learned to ignore her male classmates who told her she 'had to be a nurse because she was a girl.' She recalls the numerous female physicians who provided her with support and guidance during medical school, as she was trying to grapple with the idea of balancing a full time career with a future family. "During medical school, the prevailing opinion was that girls go into Pediatrics. I tried very hard to swim against this public opinion, but in the end the children won me over," Dr. McDonald explains. "I loved their strong spirits in the face of diversity and their willingness to play even when strapped to IV poles and scared. They made me appreciate every minute of my life, and I loved being there for them."

Dr. McDonald's current work is in the emerging field of Clinical Informatics, with a focus on oncology data collection, evaluation, and treatment support. Though she loves what she does and being a part of the team at UMMC, Dr. McDonald admits that her specialty can be tolling at times. "Giving bad news, unexpected complications, and the inevitable death of a child can all weigh heavily on you when you care for this patient population. But those challenges are met with incredibly rewarding moments: when you are able to tell a patient and her family that she is in remission, when you are given unsolicited hugs, or when being called 'garbage' across the clinic by a cute and sweet 3-year-old is the best sound you've heard all day."

One of Dr. McDonald's greatest strengths and accomplishments as a physician is her ability to adapt to change. During her ten years of practice, she has seen the healthcare field and medical community undergo significant changes in both practice and administration. Navigating those changes inspired her to get involved with organized medicine, and try to steer the direction of future change. "I know that the swift forward moving force of technology will continue to transform medicine," she says, "and I am hoping that more doctors will step up to leadership roles and become involved beyond their job to ensure the continued integrity of healthcare for patients and physicians." ■

This is the second installment in a spotlight series on the MSMA Physician Leadership Academy class of 2016.

EVEN WITH MANAGED CARE, MOST MEDICAID PHYSICIANS SHOULD BE ABLE TO PARTICIPATE IN DEFERRED COMPENSATION PLAN

2015 RESOLUTION 22

LOSS OF PHYSICIAN DEFERRED COMPENSATION PLAN MUST BE RECTIFIED.

RESOLVED, that MSMA continue to express to legislators and other state leaders the importance of the Medicaid Deferred Compensation Plan to physician participation in Medicaid and stress to them the demoralizing and negative effects that its elimination has had on physicians, especially those in primary care specialties in rural and underserved areas, who often have no other retirement plans; and

RESOLVED, that MSMA explore other possible options for the inclusion of a deferred compensation plan for physician-providers who care for Medicaid patients in other state-sponsored health plans.

For decades Mississippi physicians who participate in the Medicaid program have been able to rely on a state plan to set aside all or a portion of Medicaid reimbursement into a tax-free deferred compensation program. The Mississippi Deferred Compensation (MDC) Plan is offered through the Mississippi Public Employees' Retirement System. A physician is eligible to participate in the state deferred compensation program as an independent contractor of the Division of Medicaid.

A participating physician is allowed to defer up to \$18,000 annually. Only fee-for-service Medicaid reimbursement that is paid directly by the state to the physician can be deferred. For example, Medicaid payment can be deferred if it is received for care to a patient who is not enrolled in managed care. This group of patients includes nearly 31% of Medicaid recipients or some 232,418 beneficiaries.

Reimbursement can be deferred if it is received for services to a patient who is dually-eligible for both Medicaid and Medicare. This group of patients includes about 20% of Medicaid recipients or some 146,800 beneficiaries.

Fees may be deferred for services to a patient who qualifies for Medicaid through a waiver. This group of patients includes about 3.5% of the Medicaid recipients or some 25,690 beneficiaries.

Finally, the physician may defer payment for services to any patient who opts out of the managed care program. This group of patients includes about 7.5% of Medicaid recipients or some 55,700 beneficiaries.

However, reimbursement from either of the two managed care organizations (Magnolia Health Plan and United HealthCare) is excluded and may not be deferred as part of this program. Nonetheless, most physicians accepting Medicaid are likely to have enough patients who are not in managed care to reach the annual \$18,000 limit. Consider these figures:

The average annual care cost per person receiving Medicaid benefits is **\$6,323**.^{FY 2012}
 At least **30%** of the Medicaid population is in fee-for-service; that's more than **230,000 patients**.
 Physician reimbursement for Medicaid fee-for-service was more than **\$217 million**.^{FY 2014}
 Average physician reimbursement per patient in fee-for-service Medicaid is **\$943 year**.

Thus, a physician could reach the maximum deferral threshold with as few as 19 Medicaid patients in fee-for-service (i.e., over age 65 or blind or disabled).

It is slightly more difficult to defer Medicaid fee-for-service payments for the physician in a group practice who bills Medicaid with a group billing number. A group/clinic cannot qualify as an independent contractor per the Internal Revenue Service. Thus, a physician cannot defer Medicaid reimbursement if he/she bills with a group/clinic number. This applies to any physician who bills using any tax identification number other his/her own individual social security number.

In order to qualify for deferred compensation the physician who is part of a group/clinic and has an individual provider number may bill Medicaid claims up to the \$18,000 deferred compensation limit as an individual. Once the \$18,000 limit is met, all other Medicaid claims can be filed using the group number. A step-by-step guide follows.



DEFERRED COMPENSATION AS AN INCENTIVE TO TREAT MEDICAID PATIENTS

The Mississippi Medicaid program allows physicians to invest Medicaid payments in a deferred compensation plan. The Mississippi Deferred Compensation (MDC) Plan is offered through the Mississippi Public Employees' Retirement System.

An individual Medicaid provider is an independent contractor of the state of Mississippi and is eligible to defer a portion of Medicaid income on a pre-tax basis. The deferred compensation plan is authorized by the IRS and allowed by the Mississippi State Legislature. It is only available to individual contractors "who provide a service for the State of Mississippi for which compensation or statutory fees are paid by the state." So, an individual physician may be an "independent contractor" under IRC subsection 457(e)(2) but a group, corporation or partnership is not.

TECHNIQUES TO MAXIMIZE CONTRIBUTIONS TO MEDICAID DEFERRED COMPENSATION PLAN

1. Bill using an individual Medicaid provider number which is linked to your personal social security number (required by IRS). For questions concerning the provider number, contact Xerox Provider Enrollment at (800) 884-3222.
2. A physician who normally bills as a part of a group/clinic can participate by billing a portion of fee-for-service Medicaid with an individual provider number. Consider options that work best in your practice.
 - a. Bill the first two* months of the year as an individual contractor, then switch to the group number for the remainder of the year. (*or whatever time frame gets you to the \$18,000 maximum)
 - b. Bill with your individual number for certain procedures that are likely to qualify (the need for glaucoma screen increases with age and is thus more likely to apply to your patients who are dually eligible for Medicaid and Medicare).
 - c. Use your individual number to bill a segment of your patient base. For example, women of child-bearing age may qualify for the Medicaid Family Planning Waiver and all services to dually eligible patients and hemophilia patients can be deferred.

TO ENROLL OR CHANGE ELECTIONS

[HTTP://MDCPLAN.GWRS.COM](http://MDCPLAN.GWRS.COM)

1. Complete a Participation Agreement online.
2. Designate the MS Division of Medicaid as your employer.
3. Review prospectuses, Plan Document, Question & Answer Booklet, etc., included with the written confirmation of your enrollment mailed to your address.

NOTE: Deferred Medicaid fees may be in addition to any contributions made on your behalf to a qualified retirement plan established by your group or individual practice such as a 401 (k) plan, a profit sharing plan, a money purchase pension plan or a defined benefit plan.

FOR MORE INFORMATION, VISIT WWW.MDCPLAN.COM OR CALL 800-846-4551 OR 601-355-0090.

Daily Pill Can Prevent HIV

Reaching people who could benefit from PrEP

Preexposure prophylaxis (PrEP) is a medicine taken daily that can be used to prevent getting HIV. PrEP is for people without HIV who are at very high risk for getting it from sex or injection drug use. People at high risk who should be offered PrEP include about 1 in 4 sexually active gay and bisexual men*, 1 in 5 people who inject drugs, and 1 in 200 sexually active heterosexual adults. When taken every day, PrEP is safe and highly effective in preventing HIV infection. PrEP is even more effective if it is combined with other ways to prevent new HIV infections like condom use, drug abuse treatment, and treatment for people living with HIV to reduce the chance of passing the virus to others. Many people who can benefit from PrEP aren't taking it. If more health care providers know about and prescribe PrEP, more HIV infections could be prevented.

Health care providers can:

- Test patients for HIV as a regular part of medical care. Discuss HIV risks and continued use of prevention methods, including condom use, with all patients.
- Follow the 2014 PrEP Clinical Practice Guidelines to perform recommended tests and prescribe PrEP to patients without HIV who could benefit.
- Counsel patients who can benefit from PrEP on how to take it every day and help them apply for insurance or other programs to pay for PrEP.
- Schedule appointments for patients using PrEP every 3 months for follow-up, including HIV testing and prescription refills.

*This fact sheet refers to all men who have sex with men (MSM) as gay or bisexual. Sexually active refers to people who have had sex in the past year.

90%

Daily PrEP can reduce the risk of getting HIV from sex by more than 90%.

70%

Daily PrEP can reduce the risk of getting HIV among people who inject drugs by more than 70%.

1 in 3

1 in 3 primary care doctors and nurses haven't heard about PrEP.

Want to learn more? www.cdc.gov/vitalsigns/HIVPrEP



Centers for Disease Control and Prevention
National Center for HIV/AIDS,
Viral Hepatitis, STD, and
TB Prevention

Problem:

Many people at very high risk for HIV infection are not getting PrEP.



PrEP is for some people at very high risk for getting HIV:

- 1 in 4 sexually active gay and bisexual adult men without HIV who:
 - ▶ Have an HIV-positive partner, or
 - ▶ Have multiple partners, a partner with multiple partners, or a partner whose HIV status is unknown and
 - Have anal sex without a condom, or
 - Recently had a sexually transmitted infection (e.g. syphilis).
- 1 in 5 adults without HIV who inject drugs who:
 - ▶ Share needles or equipment to inject drugs, or
 - ▶ Recently went to a drug treatment program (specifically, a methadone, buprenorphine, or suboxone treatment program), or
 - ▶ Are at risk for getting HIV from sex.
- 1 in 200 sexually active heterosexual adults without HIV who:
 - ▶ Have an HIV-positive partner, or
 - ▶ Have multiple partners, a partner with multiple partners, or a partner whose HIV status is unknown and
 - Do not always use a condom for sex with people who inject drugs, or
 - Are women who do not always use a condom for sex with bisexual men.

Not enough health care providers know about PrEP.

- In 2015, 34% of primary care doctors and nurses had never heard of PrEP (2015 survey).
- All prescribing health care providers can deliver PrEP care, including test for HIV, ask about sex and drug use behaviors to determine their patient's risk of getting HIV, and prescribe PrEP when indicated.

40,000

About 40,000 HIV infections are diagnosed each year in the US.

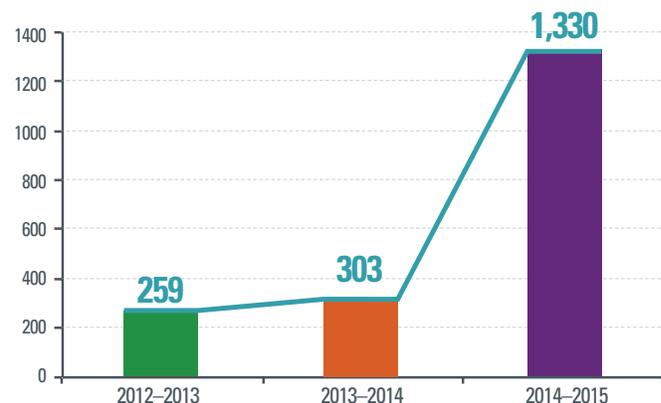
Increasing PrEP Use

A focused effort by New York State

to increase PrEP uptake started in June 2014 and included:

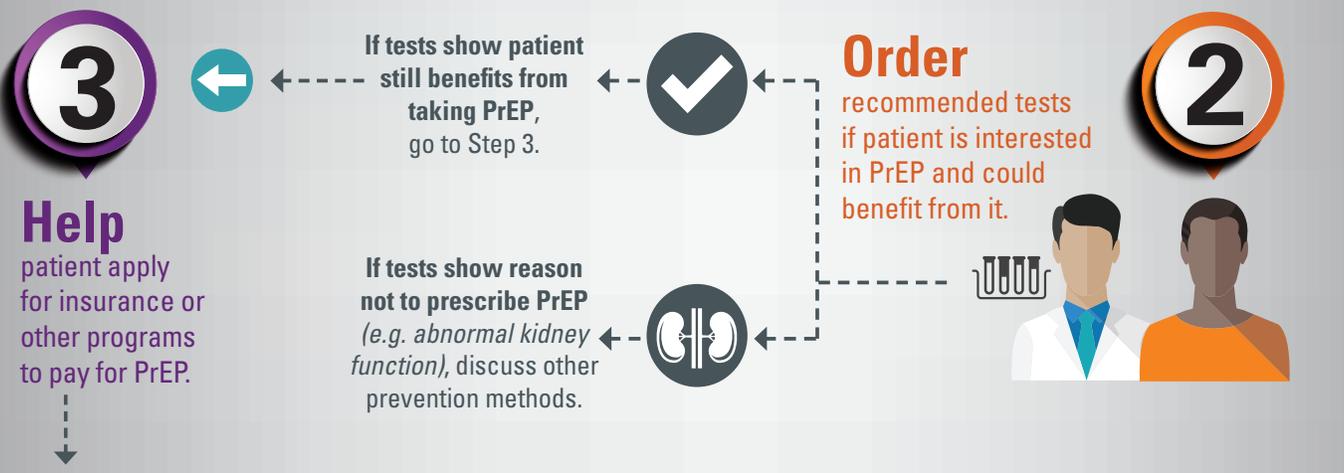
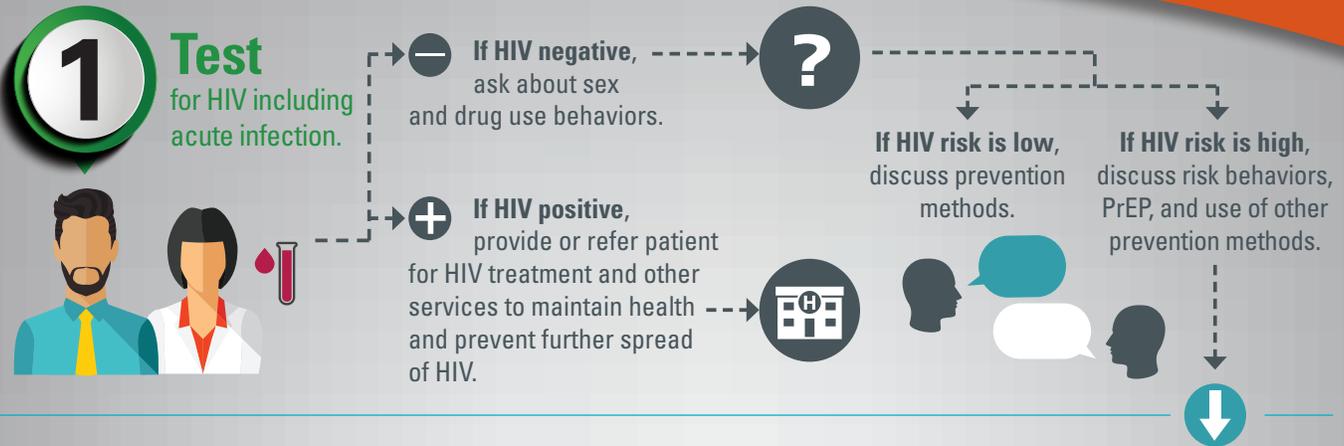
1. **Provider Training**
2. **Raising Awareness**
3. **Ensuring Medicaid Coverage**

Number of New York State Medicaid beneficiaries receiving PrEP.



SOURCE: NYS Medicaid Data Warehouse (based on Medicaid data loaded through July 2015).

Any prescribing health care provider can deliver PrEP care.



Most public and private insurance programs cover PrEP, and patients can get help with their co-payments.

Drug assistance programs can help patients without insurance pay for PrEP.



Currently Truvada®* is the only medicine approved by the FDA for PrEP.

*Tenofovir disoproxil fumarate/emtricitabine



SOURCE: 2014 PrEP Clinical Practice Guidelines.

Have questions?

Read the full 2014 PrEP Clinical Practice Guidelines:
www.cdc.gov/hiv/pdf/PrEPguidelines2014.pdf

Call the PrEP Clinician Helpline:
 (855) 448-7737
 or (855) HIV-PrEP

What Can Be Done?



The Federal government is

- Increasing access to PrEP and other HIV prevention and health care services as recommended in the National HIV/AIDS Strategy for the United States. www.aids.gov/federal-resources/national-hiv-aids-strategy/overview/
- Ensuring coverage of recommended preventive services, such as HIV testing, without cost sharing in most health insurance plans.
- Educating health care providers and people at high risk about PrEP through health department programs, social marketing campaigns, and other training and technical assistance efforts.
- Helping to monitor PrEP use and its effects.

Health care providers can

- Test patients for HIV as a regular part of medical care. Discuss HIV risks and continued use of prevention methods, including condom use, with all patients.
- Follow the 2014 PrEP Clinical Practice Guidelines to perform recommended tests and prescribe PrEP to patients without HIV who could benefit.
- Counsel patients who can benefit from PrEP on how to take it every day and help them apply for insurance or other programs to pay for PrEP.
- Schedule appointments for patients using PrEP every 3 months for follow-up, including HIV testing and prescription refills.

State and local health departments and community-based organizations can

- Raise awareness about PrEP use, train health care providers, and develop policies and procedures that will increase access to PrEP.

- Monitor PrEP use among those at highest risk for HIV.
- Educate people about risky sexual and drug use behaviors and ways to reduce their risk, including PrEP and how to get it.

Everyone can

- Get tested for HIV and know their status.
- Learn how HIV is transmitted and how it can be prevented.
- Talk to their health care providers about HIV risk and ways to prevent it, including PrEP, condom use, abstinence, drug treatment, and HIV treatment for people with HIV.

Everyone taking PrEP can

- Take PrEP every day to give it the best chance to work.
- See their health care provider every 3 months for follow-up, including HIV testing and PrEP refills.
- Take other actions to further reduce HIV and STD risk.

www.cdc.gov/hiv/basics/prevention.html

For more information, please contact
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TTY: 1-888-232-6348

www.cdc.gov
Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
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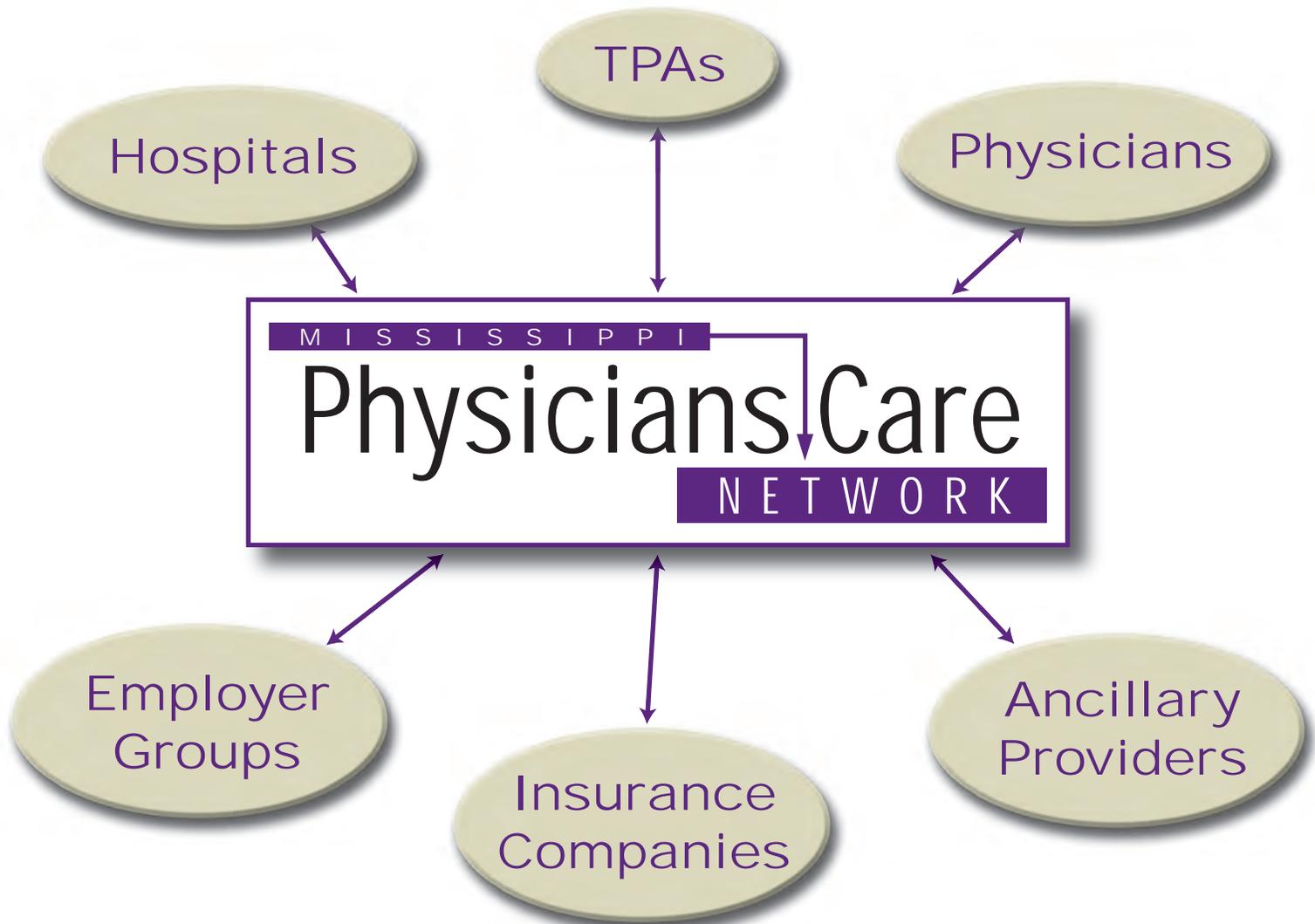
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