Mississippi State Department of Health

Mississippi Morbidity Report

Volume 33, Number 4 December 2017

Syphilis Update, Mississippi 2017

Key Messages

- Syphilis cases are increasing in Mississippi and the United States.
  - The greatest increase is in men who have sex with men (MSM), especially in African American MSM.
  - About half of all MSM diagnosed with syphilis are co-infected with HIV.
- Obtaining a sexual history **should be** a standard part of **any** history and physical exam to identify those at risk and to direct screening activities.
- Syphilis screening is recommended for:
  - All men who have sex with men (MSM)
  - All persons with HIV infection,
  - All pregnant women, and
  - Other high-risk groups.
- Syphilis diagnosis is a two-step testing process starting with a nontreponemal test (RPR or VDRL), which is followed by a treponemal test (TP-PA), if indicated.
- Penicillin G, administered parenterally, is the treatment of choice for all stages of syphilis.
- Syphilis is a **Class 1B** reportable condition in Mississippi
  - Requiring telephone reporting within one business day of first knowledge or suspicion
  - After hours reporting is **not** required

Background: Syphilis is a bacterial infection caused by *Treponema pallidum*, a spirochete. Transmission occurs primarily through sexual activity but vertical transmission from mother to fetus also occurs. Early syphilis is defined as the first year of infection and includes cases of primary, secondary (P&S) and early latent syphilis (ELS). Individuals are most infectious during this period. Untreated early syphilis progresses to late latent syphilis (asymptomatic patients who are greater than one year from onset of infection) or rarely, tertiary syphilis (can occur after many years of latency and is characterized by spread of disease throughout the body).

In the United States, syphilis cases have been increasing since 2001 when 14,804 cases were reported (increasing rapidly since 2012) to 48,045 reported cases in 2015 (current available national data). The majority of these cases have occurred in men, especially men who have sex with men (MSM).

Mississippi Epidemiology: Mississippi has also seen a significant increase in the number of early syphilis cases. In a three year period (2014-2016), cases increased 72% from 477 to 822 (Figure 1),

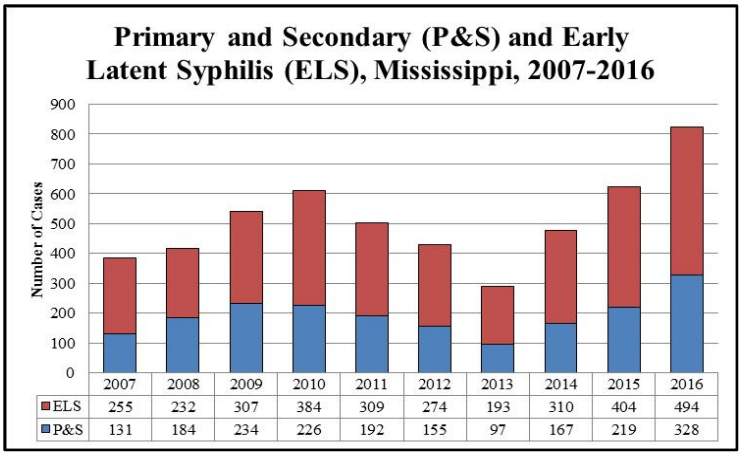
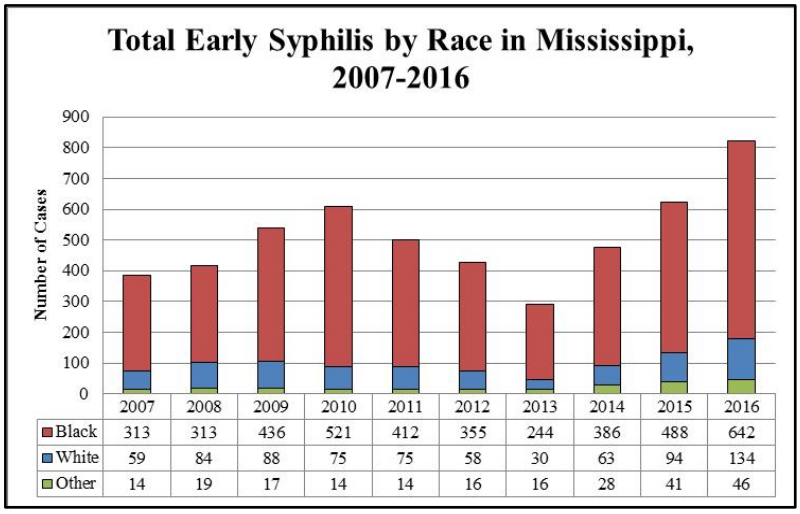


Figure 1

with the majority of cases being diagnosed during the early latent stage. Increases were noted in both men and women, with the majority of cases occurring in men (78% in 2016); the most affected age group is individuals aged 15-44 years.

Rates of early syphilis have increased in all races as well (Figure 2) with the majority of cases (78% in 2016) occurring in African Americans, especially African American men. Concomitant increases have also been noted in women, raising concerns for increased reports of congenital syphilis, which have been noted nationally. In 2016, two cases of congenital syphilis were reported in Mississippi, compared to one case from 2013-2015.



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Black	313	313	436	521	412	355	244	386	488	642
White	59	84	88	75	75	58	30	63	94	134
Other	14	19	17	14	14	16	16	28	41	46

Figure 2

Combining male gender and race with identification as MSM, the data indicates that the majority of cases (55% of all cases; 70% of male cases in 2016) occurred in MSM (Figure 3). And the population at highest risk of early syphilis is African American MSM (43% of all cases, 55% of male cases). It is also important to note that over half of MSM (53% in 2016) diagnosed with syphilis were co-infected with HIV.

Screening Recommendations: Because healthcare providers cannot predict who is at risk for syphilis, it is important to routinely take a sexual history on all patients and to repeat it periodically. Patients should be assured that this is routine and that confidentiality will be maintained. Initial screening questions are:

- Have you been sexually active in the last year?
- Do you have sex with men, women, or both?
- How many people have you had sex with in the last year?

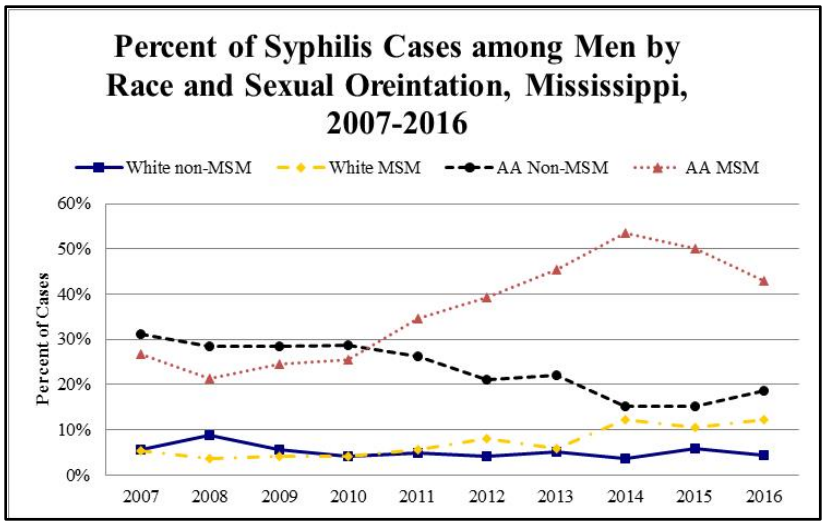


Figure 3

Information on taking a sexual history can be found at the following link:
https://issuu.com/jmsmamanagingeditor/docs/december_2015_jmsma_epub

Patients with identified risk factors should be screened. MSDH recommends screening for individuals who are at higher risk of syphilis:

- All MSM (every 6 months)
- All HIV positive patients (every 3-6 months in conjunction with routine CD4 and viral load testing)
- All pregnant women (at the first prenatal visit, at the beginning of the third trimester and at delivery)

- All patients with the following risk factors:
    - Illicit/injecting drug use
    - Exchange of sex for money or other commodities
    - Previous history of other sexually transmitted infection

Clinical Presentation – Syphilis by the Stages*: The clinical presentation of syphilis is varied and is divided into stages – primary, secondary, latent and tertiary syphilis. Because of the variability of presentation, it is known as the great imitator. In primary syphilis a chancre develops at the site of inoculation (usually the penis, labia, perianal region or mouth) approximately 3 weeks after infection. The chancre is an ulcer that tends to be well circumscribed, round, indurated and painless. Because of its location, lack of pain and the fact that it heals without treatment, the lesion often goes unnoticed. Non-tender, lymphadenopathy proximal to the lesion is common.

In secondary syphilis, clinical findings usually occur 4 to 8 weeks after the occurrence of the chancre as a nonpruritic rash on the chest, back, and palms of the hands and soles of the feet. Other signs may include lymphadenopathy, mucous patches, condylomata lata and alopecia. The symptoms of secondary syphilis are often the first ones recognized by the patient. Untreated, up to 25% of patients will experience a relapse within the first year.

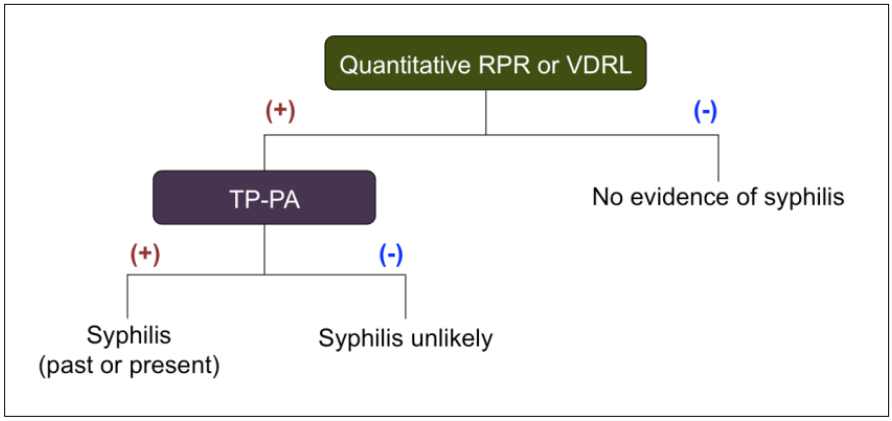
Early latent syphilis occurs in persons without signs or symptoms of syphilis, who have no previous diagnosis of syphilis and have documentation that the infection occurred in the last twelve months. Documentation can be seroconversion or a four-fold or greater rise in titer of a nontreponemal test, seroconversion of a treponemal test, history of sexual exposure to a person with syphilis, or first sexual event occurred within the last 12 months.

Neurosyphilis and ocular syphilis can occur at any stage of the disease so all patients need to be screened for these. Tertiary syphilis is rarely seen due to antibiotic use but can occur in up to 30% of untreated patients within 1-20 years of initial infection. The hallmark of tertiary syphilis is gummatous lesions that can occur anywhere.

*Note: For surveillance purposes, changes related to reporting syphilis stages will be put place in 2018. "Early latent syphilis" is changing to "Early non-primary non-secondary syphilis" and "Late latent syphilis" will change to "Unknown duration or late syphilis" among other changes to the reporting classifications for syphilis to provide additional clarity. These designations do not affect testing or treatment recommendations. Those interested may see the Council of State and Territorial Epidemiologists Position Statement at CSTE position statement.

Diagnosis: Testing for the presence of infection with syphilis is a two-step process (Figure 4). The first step is a nontreponemal test (RPR or VDRL). If negative, there is no indication of a syphilis infection. If positive, a treponemal test (TP-PA) should be performed to confirm the diagnosis. If this test is negative, then a diagnosis of syphilis is unlikely. The CDC recommends treating for presumptive syphilis when clinical findings and serological tests conflict.

Figure 4 Traditional Testing Algorithm



National STD Curriculum: Syphilis. page 57.

MSDH recommends use of this traditional testing algorithm. However, providers should be aware of and familiar with a reverse sequence testing algorithm that has been used in some settings (see the CDC report at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6005a1.htm?s_cid=mm6005a1_w).

The nontreponemal test measures are not specific for *T. pallidum* and usually become nonreactive after treatment, however, a low level titer (< 1:8) may persist for years or a lifetime. Nontreponemal tests are used when it is necessary to determine treatment response. The treponemal test measures specific antibodies directed against *T. pallidum*. In general, it remains positive for life. Because of the high rate of lifetime positivity, this test is not used to determine treatment response.

Treatment and Follow-up: Parental penicillin G is the treatment of choice for syphilis though dosing varies based on the stage of disease and the presence or absence of neurological findings. In addition, all patients with early syphilis need to be tested for HIV infection. Retesting in 3 months is recommended for those with a negative test who live in areas with a high prevalence of HIV. Once treated, serological follow-up, assessing for treatment failure should occur as outlined by the CDC. Treatment and follow-up guidance can be found at following link: https://www.cdc.gov/mmwr/pdf/rr/rr6403.pdf.

Reporting: MSDH actively investigates all reported cases of syphilis following up with contacts to assure testing and treatment is performed as indicated. Reporting is critical and enables contact tracing to occur in an attempt to stop further disease spread. In Mississippi, syphilis is a Class 1B reportable condition and requires a telephone report within one business day of **first knowledge or suspicion** of the diagnosis. Lab confirmation is **not** needed before reporting and after hours reporting is not required. Reports may be made to the MSDH STD/HIV Office at 601-576-7723 or the Office of Epidemiology at 601-576-7725.

References available on request

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Mississippi
Provisional Reportable Disease Statistics
November 2017

		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	Nov 2017	Nov 2016	YTD 2017	YTD 2016
Sexually Transmitted Diseases	**Primary & Secondary Syphilis**	2	0	1	2	4	1	1	1	7	**19**	34	250	277
	Early Latent Syphilis	5	0	1	4	4	1	0	1	1	**17**	40	389	421
	Gonorrhea	112	161	127	96	231	85	58	98	115	**1,083**	569	7,367	5,586
	Chlamydia	315	256	264	223	567	225	137	240	269	**2,496**	1,182	16,892	15,447
	HIV Disease	3	2	1	5	18	2	3	2	1	**37**	41	393	376
Myco-bacterial Diseases	**Pulmonary Tuberculosis (TB)**	1	0	1	0	0	0	0	0	2	**4**	4	40	36
	Extrapulmonary TB	0	0	0	0	0	0	0	0	0	**0**	2	4	9
	Mycobacteria Other Than TB	0	7	1	4	7	4	1	2	8	**34**	42	340	330
Vaccine Preventable Diseases	**Diphtheria**	0	0	0	0	0	0	0	0	0	**0**	0	0	0
	Pertussis	0	0	2	0	0	0	0	0	0	**2**	0	30	2
	Tetanus	0	0	0	0	0	0	0	0	0	**0**	0	0	1
	Poliomyelitis	0	0	0	0	0	0	0	0	0	**0**	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	**0**	0	0	0
	Mumps	1	0	0	0	1	0	0	0	0	**2**	0	25	1
	Hepatitis B (acute)	0	1	0	0	0	0	0	0	2	**3**	5	33	25
	Invasive *H. influenzae* disease	0	1	0	0	1	1	1	0	2	**6**	4	48	51
	Invasive Meningococcal disease	0	0	0	0	0	0	0	0	0	**0**	0	2	0
Enteric Diseases	**Hepatitis A (acute)**	0	0	0	0	0	0	0	0	0	**0**	0	2	3
	Salmonellosis	10	28	9	19	23	11	8	11	11	**130**	145	972	1,054
	Shigellosis	0	7	2	0	5	1	0	0	1	**16**	5	134	58
	Campylobacteriosis	3	9	3	3	6	1	0	3	12	**40**	36	406	213
	***E. coli* O157:H7/STEC/HUS**	0	0	0	0	0	0	0	0	0	**0**	4	18	20
Zoonotic Diseases	**Animal Rabies**	0	0	0	0	0	0	0	0	0	**0**	0	1	3
	Lyme disease	0	0	0	0	0	0	0	0	0	**0**	0	1	0
	Rocky Mountain spotted fever	0	0	0	0	0	0	0	1	0	**1**	5	150	102
	West Nile virus	1	0	0	0	2	0	0	0	0	**3**	11	62	40

*Totals include reports from Department of Corrections and those not reported from a specific District.