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Syphilis Response 2023

Please take a moment to inform our efforts:

Snapshot:
Syphilis in Houston

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Background

Goal: To better understand who is affected by syphilis and where is it spreading

- By syphilis stage
- By sex-at-birth (counts and rates)
- By race-ethnicity group (rates)
- By age group (rates)
- Spatial hotspots (relative density)

Sample: syphilis cases reported to the Texas Department of State Health Services (DSHS), assigned to the HHD jurisdiction

Data source: TB, HIV, STD Integrated System (THISIS) morbidity report

Time frame: 2017-2022 (*2022 data is subject to change)*

Annual Case Count

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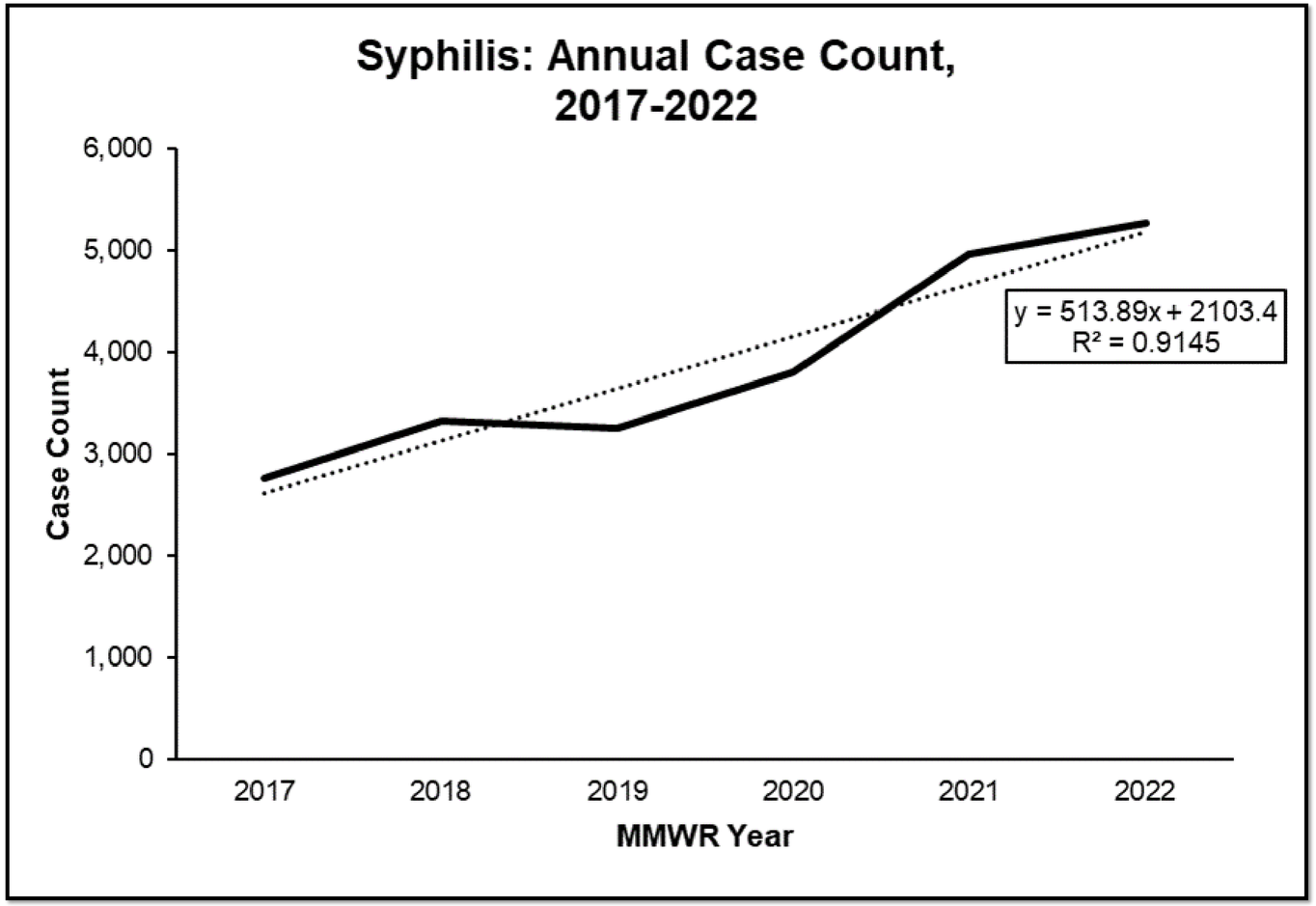
The annual syphilis case count (all stages) for the Houston-area increased from 2017 to 2022.



Annual Case Count/Rate by Sex-at-birth

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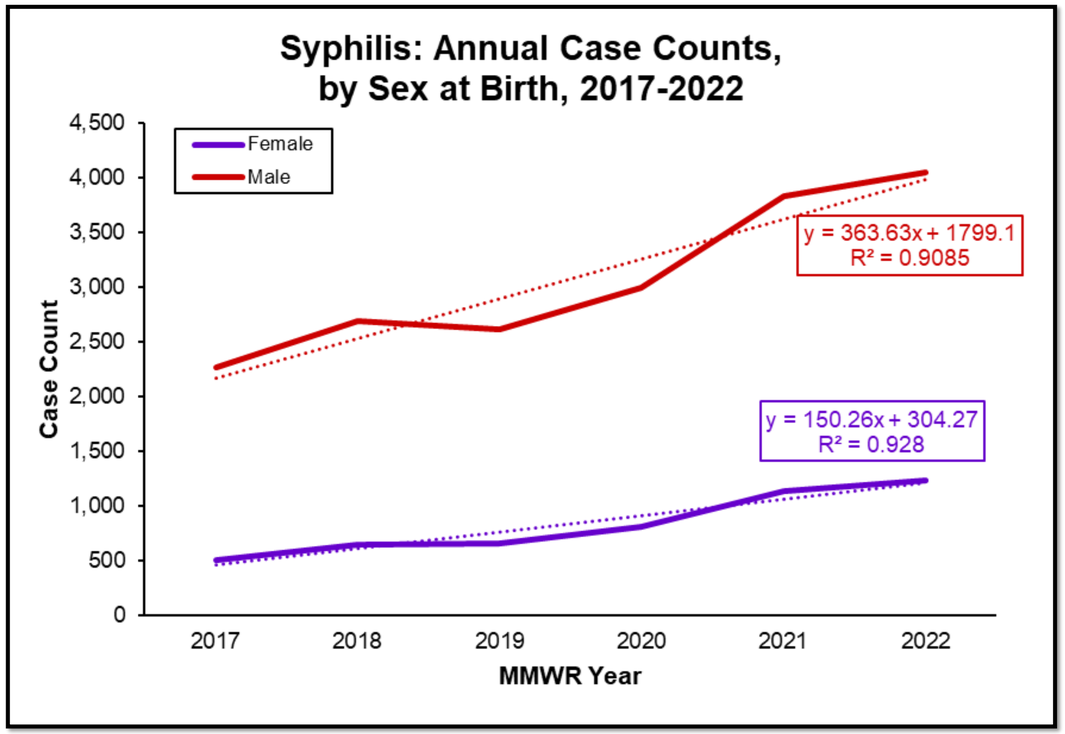
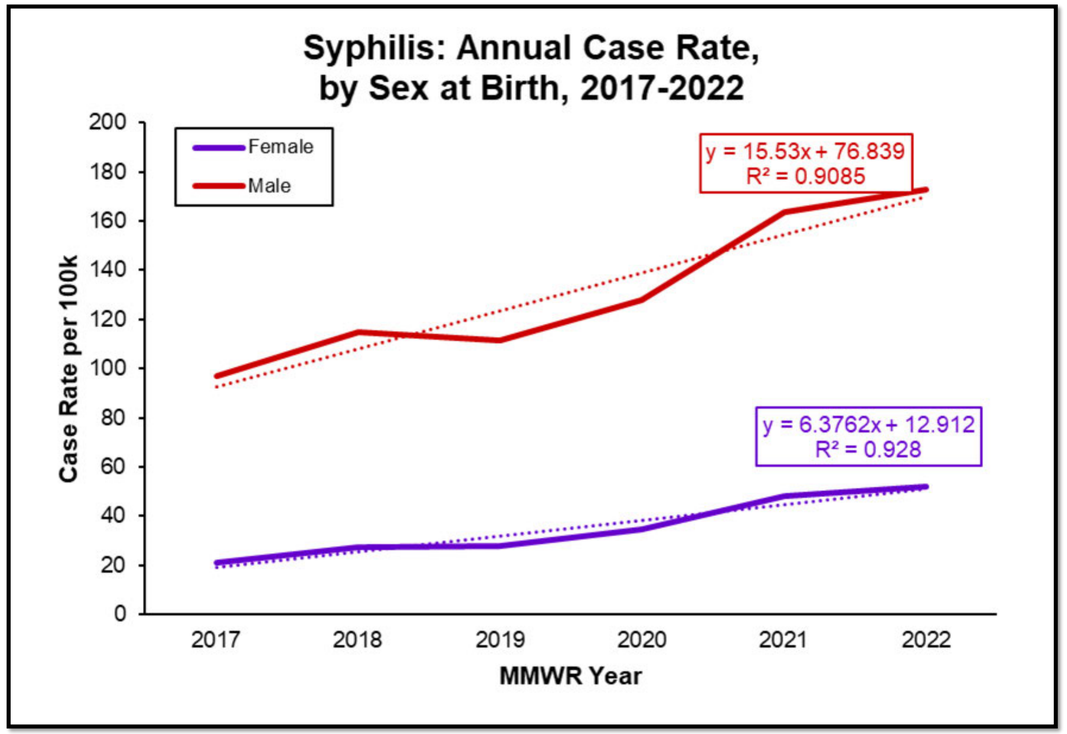
Both male and female annual counts and case rates have **increased**.

Males consistently made up a **majority of our syphilis cases** and the case rate in males **increased at a more rapid rate** when compared to that of females.





Annual Case Count by Stage

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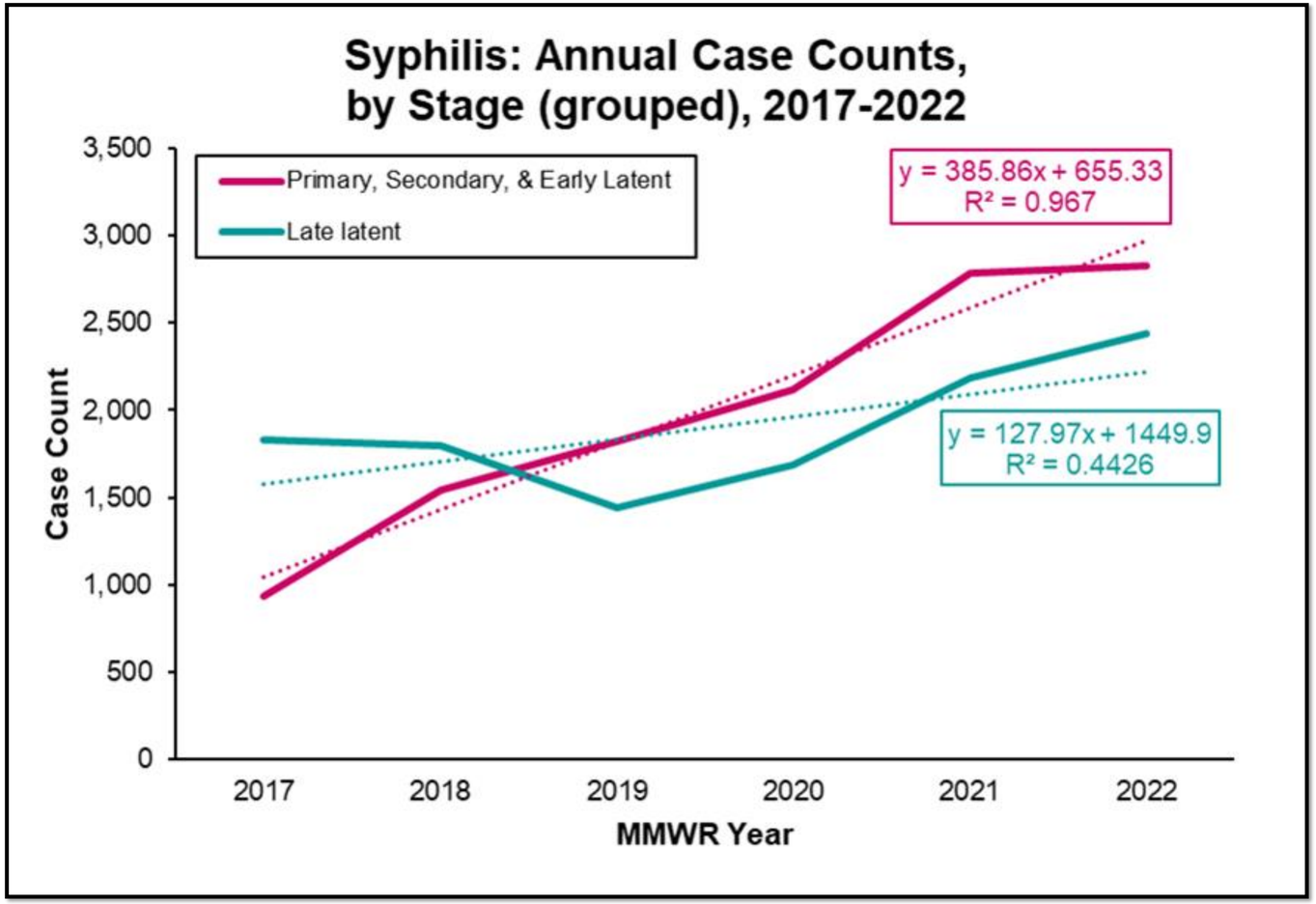
The annual syphilis case **counts for early syphilis** (primary, secondary, early latent) and **late latent syphilis** have **increased**.

Early syphilis cases increased more rapidly than late latent syphilis cases (by about **3x the rate**).

There was a dip in late latent cases from 2018 to 2019, with counts continuing to increase from 2019 onwards.



Annual Case Count by Stage and Sex-at-birth

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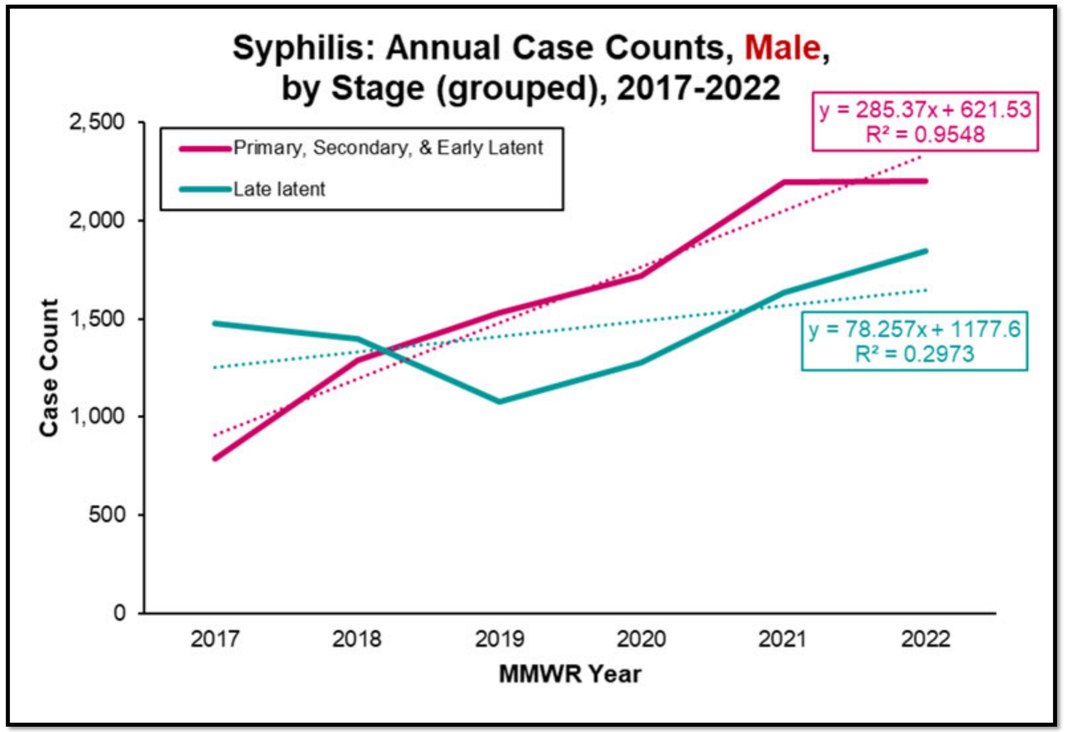
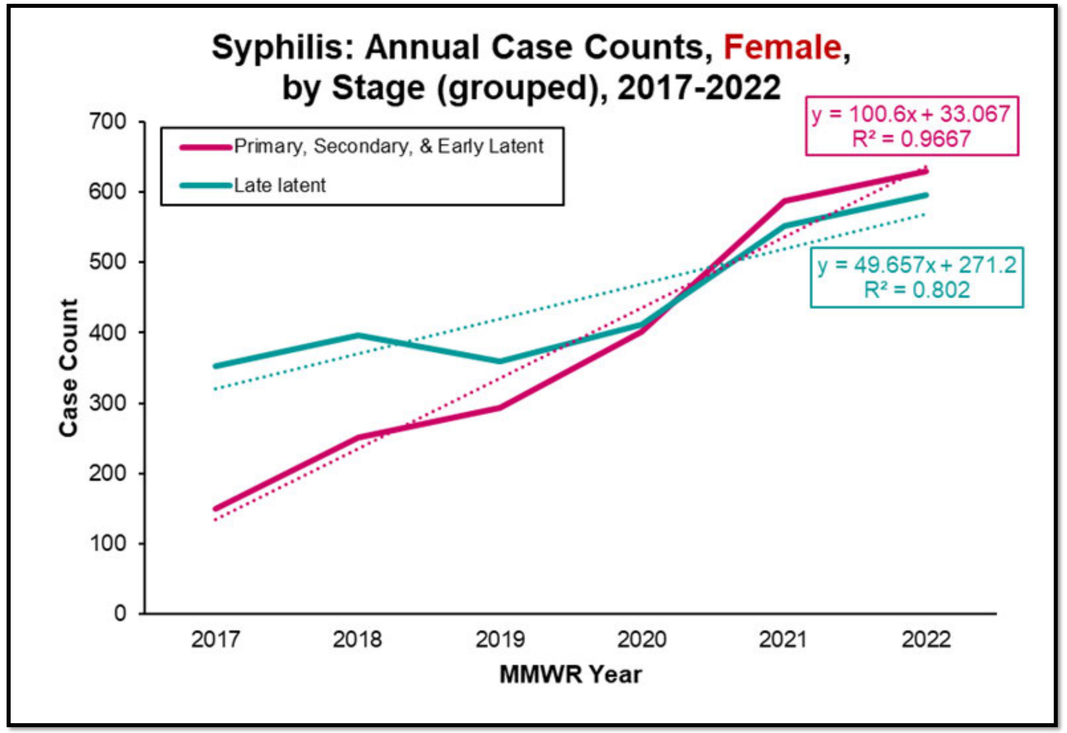
Annual syphilis counts **increased for both males and females *across* stages**.

The early syphilis and late latent syphilis trend lines have **slightly different shapes/patterns between male and female cases**.





Annual Case Rate by Race-Ethnicity Group

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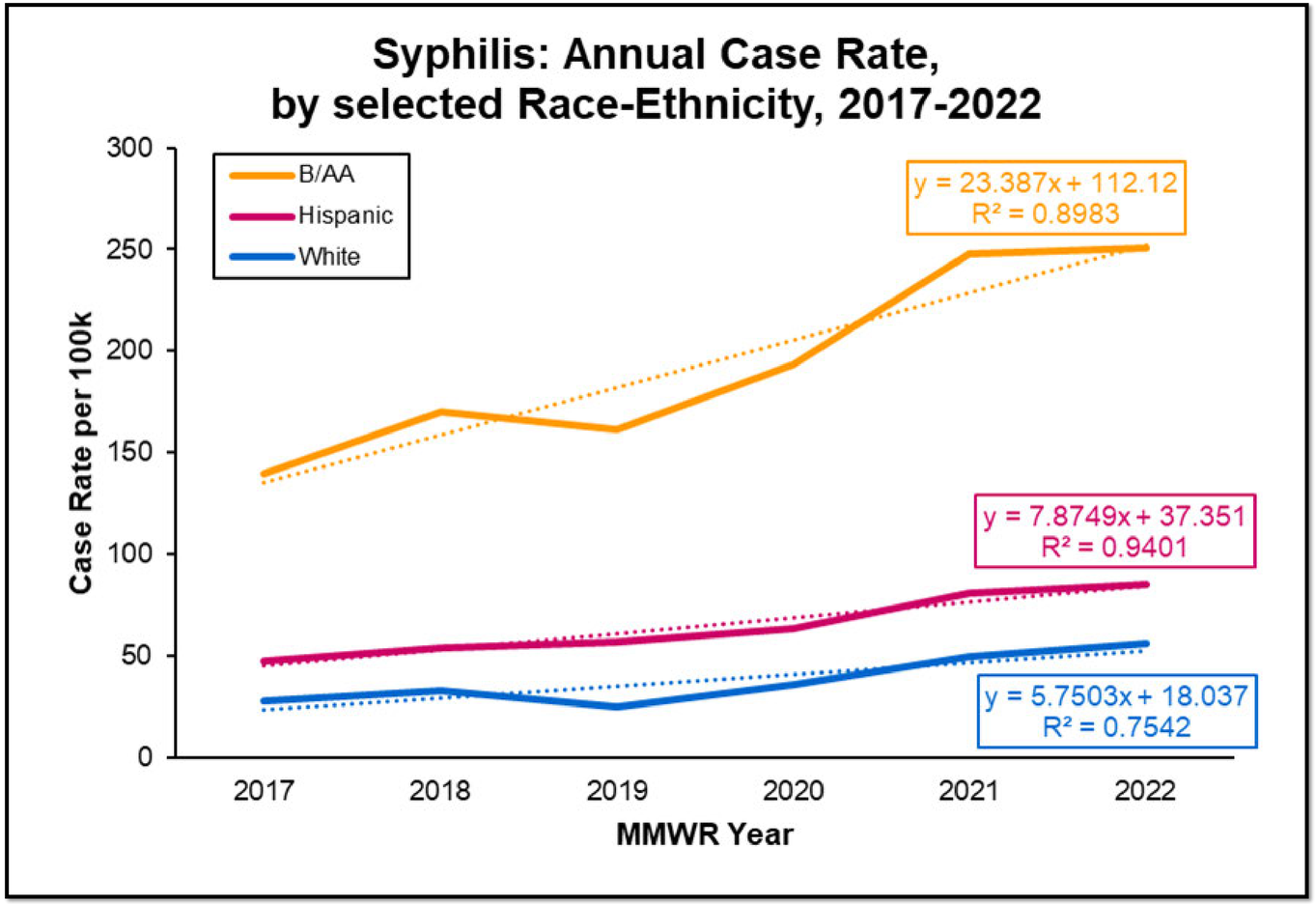
The annual syphilis **rates** have **increased across race-ethnicity groups**.

The **non-Hispanic Black group** consistently had the **highest rate** and its **rate increased faster** when compared to other race-ethnicity groups (**3x faster than Hispanic cases**, and **4x faster than NH White cases**).



Annual Case Rate by Race-Ethnicity and Sex-at-birth

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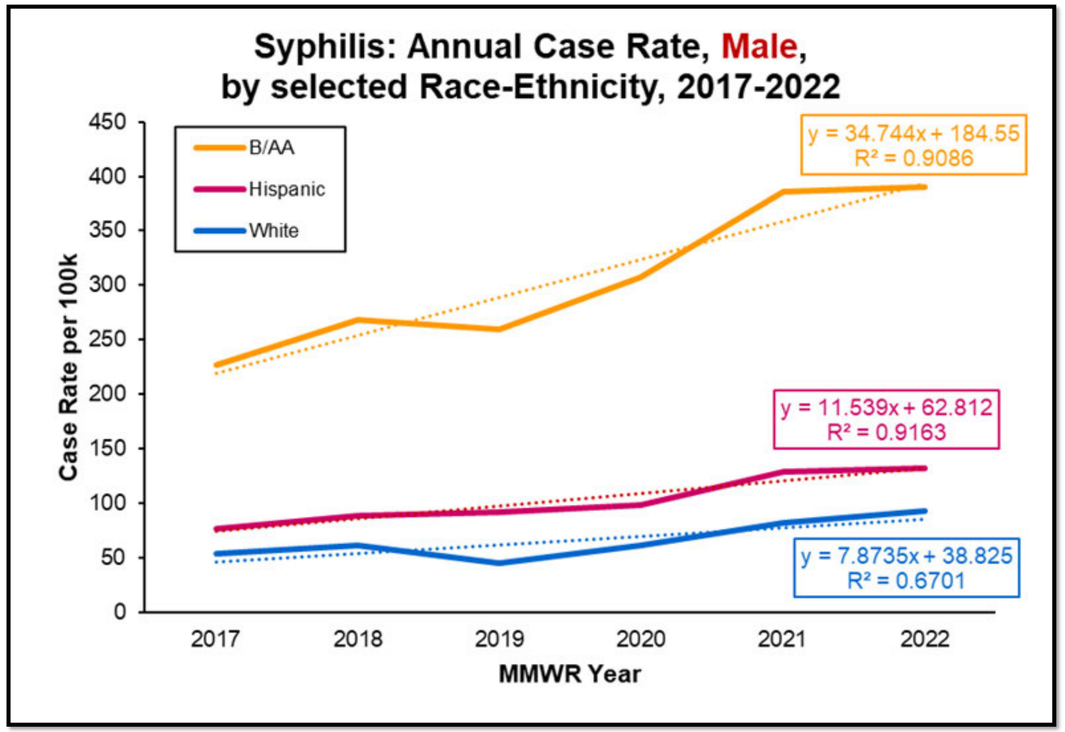
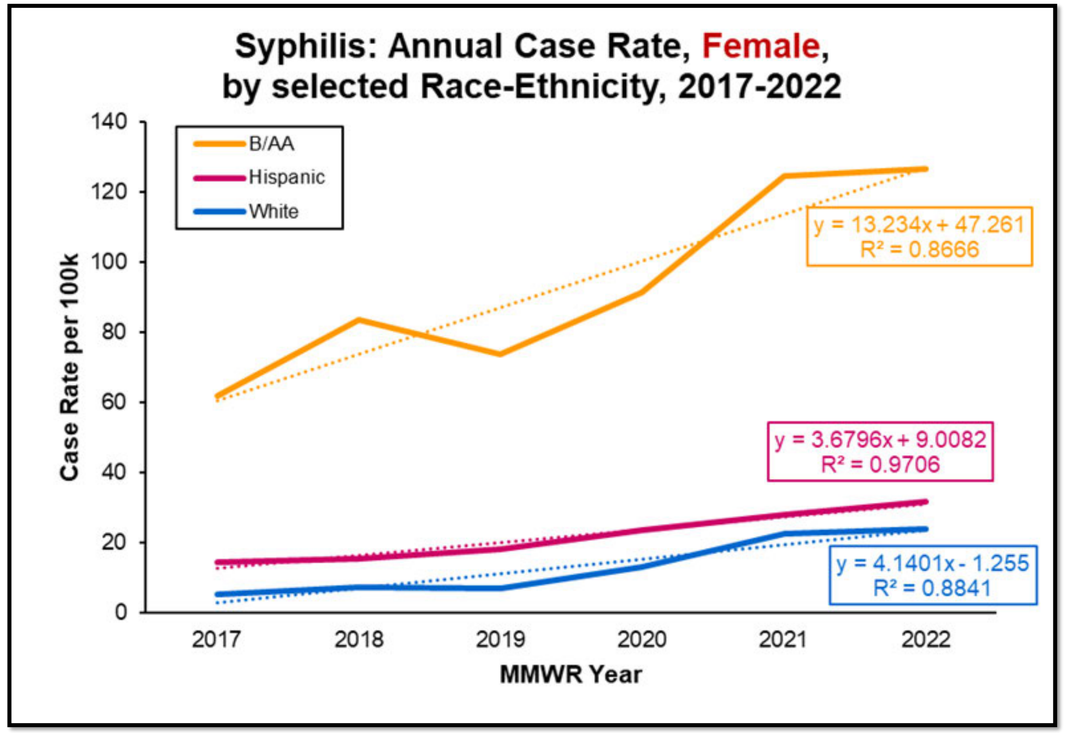
For **both** male and female cases, the annual syphilis rates have **increased for each race-ethnicity group**.

For **both** males and females, the **NH Black** group has both the **highest rate** and the **highest rate increase**.





Annual Case Rate by Age Group

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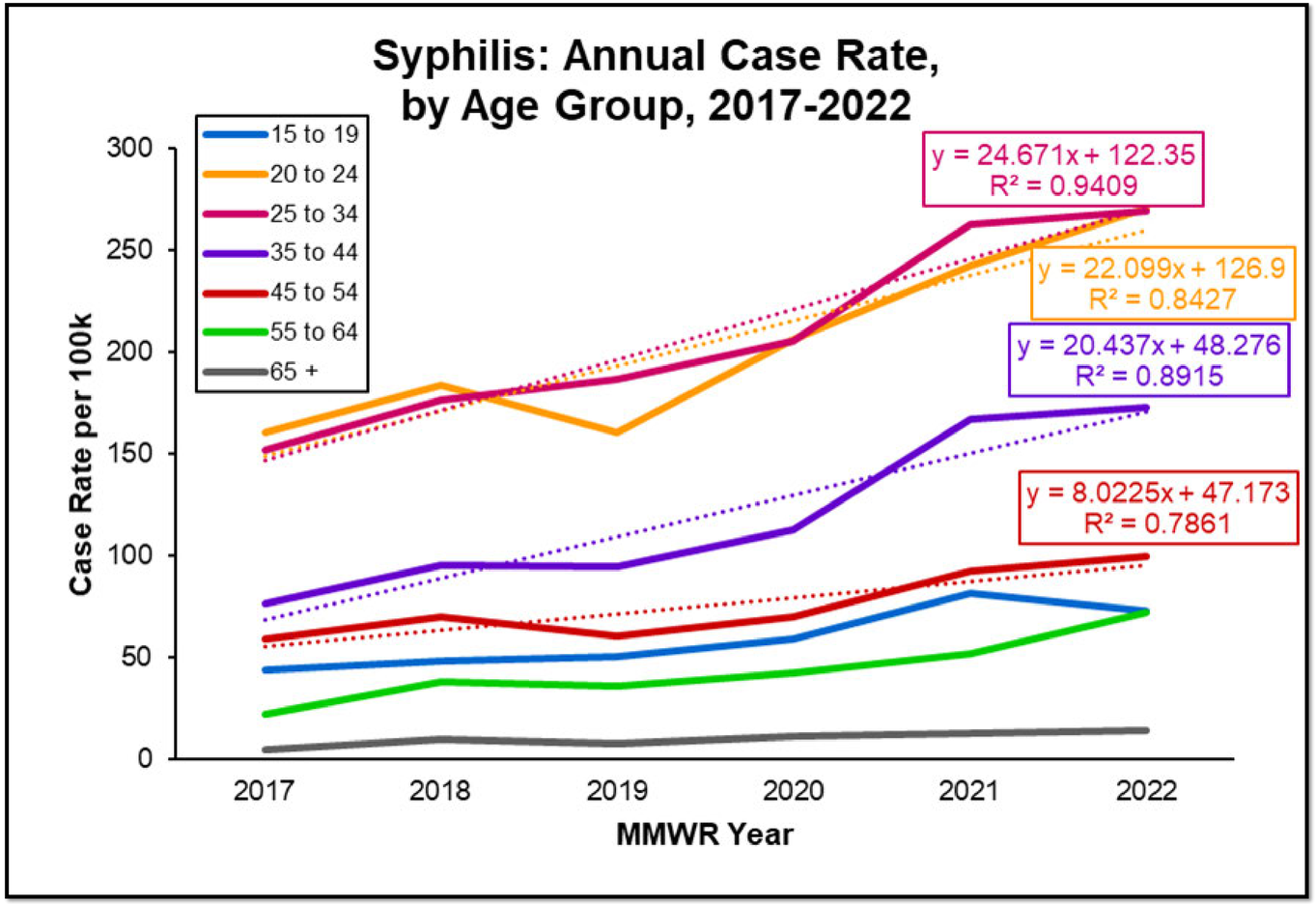
The annual syphilis **rates** have **increased** for **most age groups**.

The **20 to 24** and **25 to 34** age groups consistently had **the highest rates** and their **rates increased faster** when compared to other age groups.



Annual Case Rate by Age Group and Sex-at-birth

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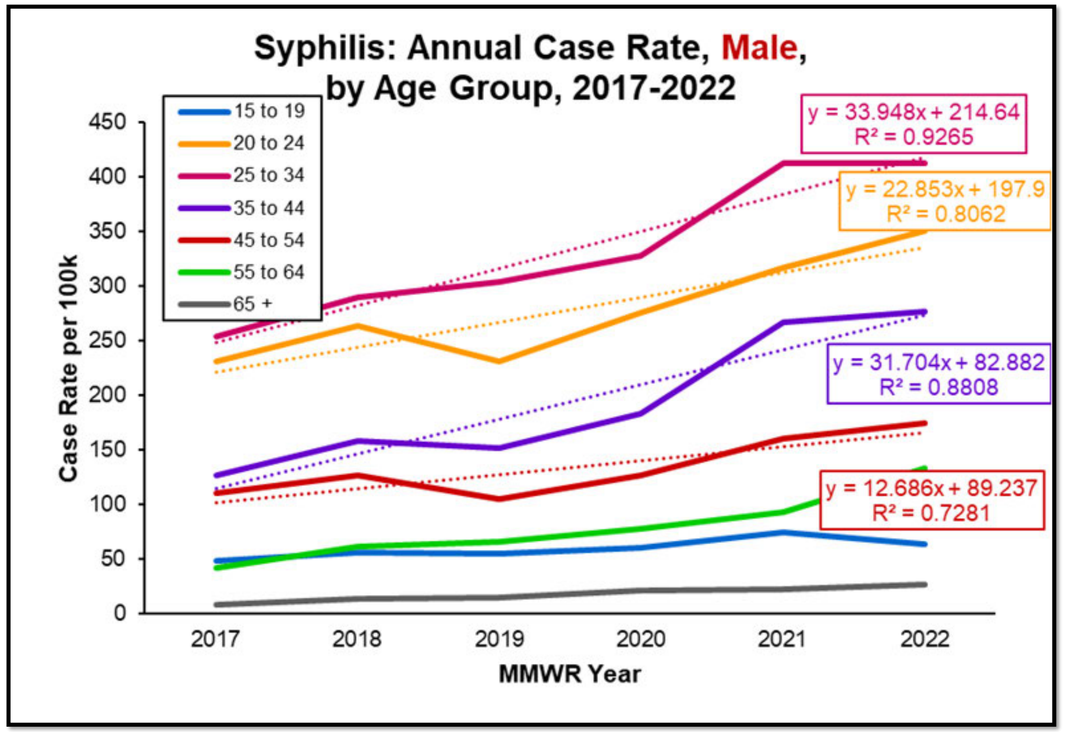
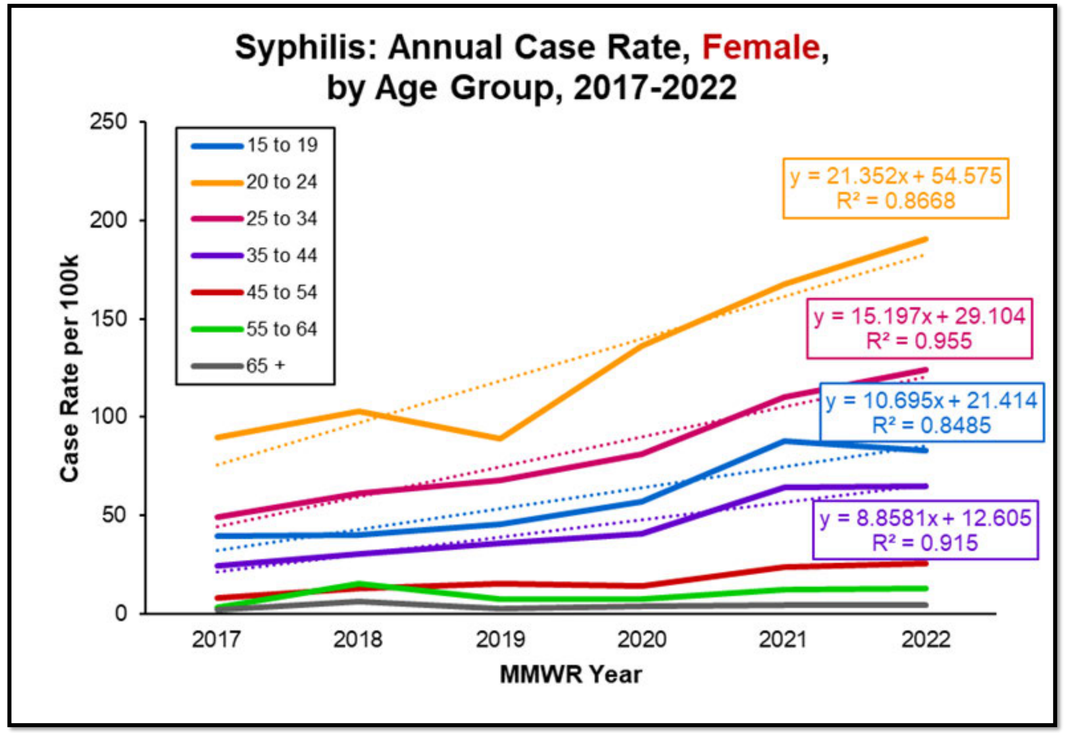
For **both male** and **female** cases, the annual syphilis **rates** have **increased for most age groups**.

For **males**, the age group with the **highest rate was 25 to 34**, followed by 20 to 24 and 35 to 44 years.

For **females**, the age group with the **highest rate was 20 to 24**, followed by 25 to 34 and 15 to 19 years.





Age group breakdown by Race-Ethnicity Group (2017-2022)

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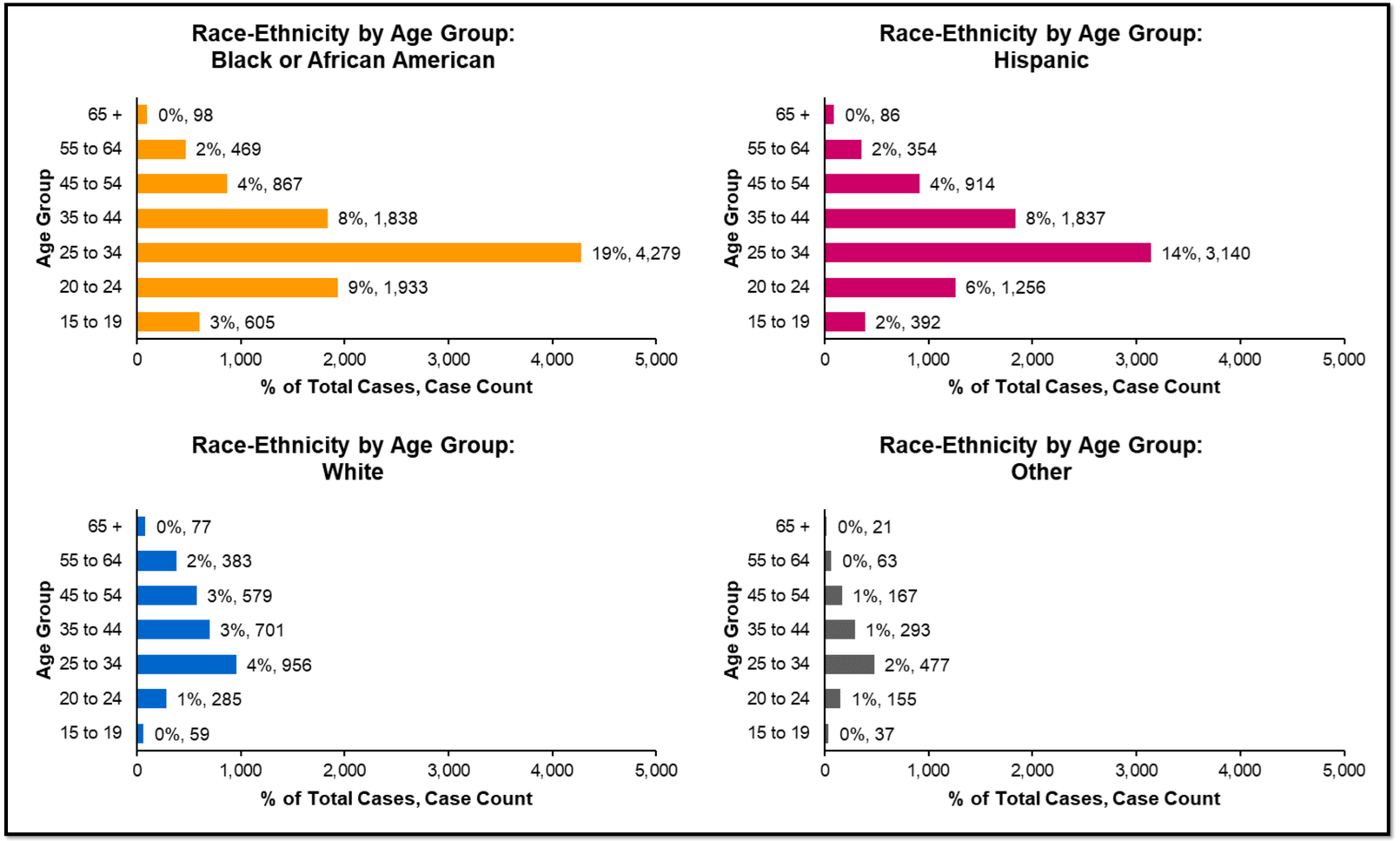
Across race-ethnicity groups, the **highest proportion of cases** are in the age group **25 to 34 years**.

The **NH Black, ages 25 to 34 make up a majority of our syphilis cases** (19%), followed by Hispanic, ages 25 to 34 group (14%).



Age group breakdown by Race-Ethnicity Group & Sex-at-birth: NH Black & Hispanic

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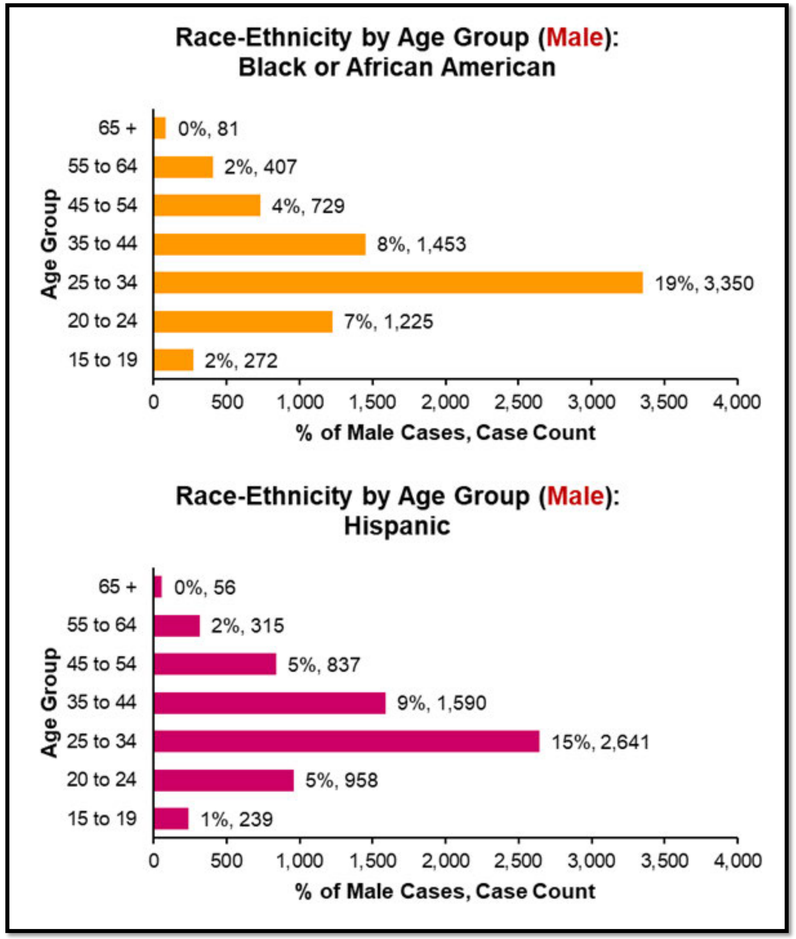
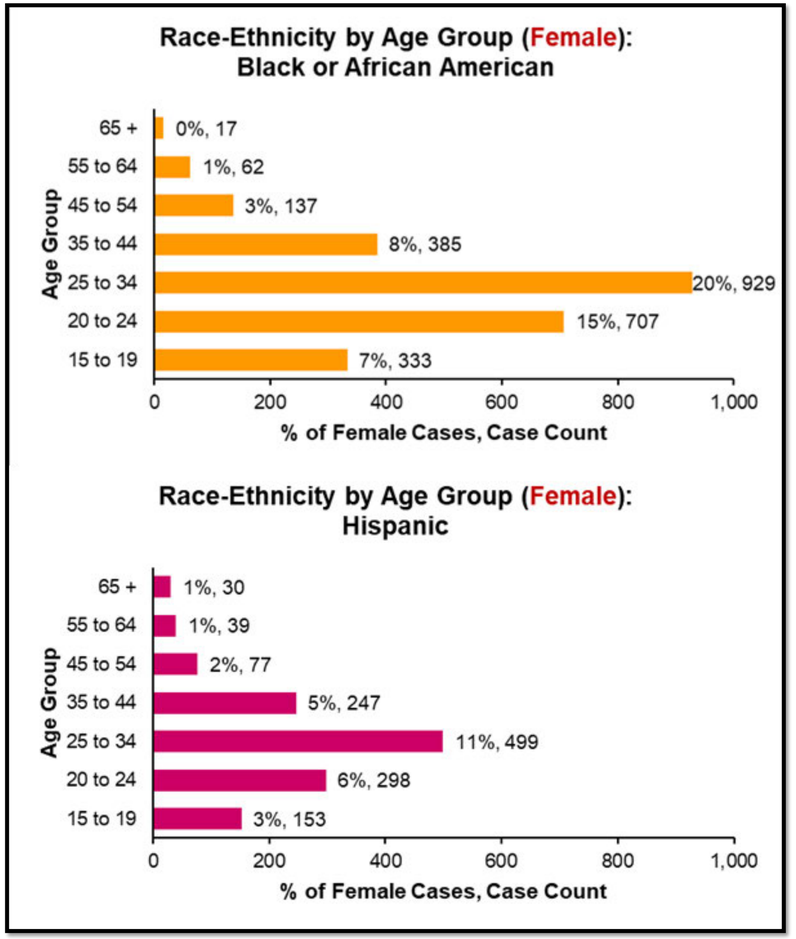
For **males**, the **highest proportion** of syphilis cases are **NH Black ages 25 to 34**, followed by **Hispanic ages 25 to 34**.

For **females**, the **highest proportion** of syphilis cases are **NH Black ages 25 to 34**, followed by **NH Black ages 20 to 24**.





Hotspot Analysis for Syphilis

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- The maps on the next few slides were produced using ArcGIS's heat map feature.
- They show the relative density of points (case addresses) with a color scale ranging from cool colors (sparse density) to hot colors (high density).
- This spatially allows us to see where our cases exist at a different level than a ZIP code map, while still maintaining privacy/confidentiality.

Hotspot Map: All Stages

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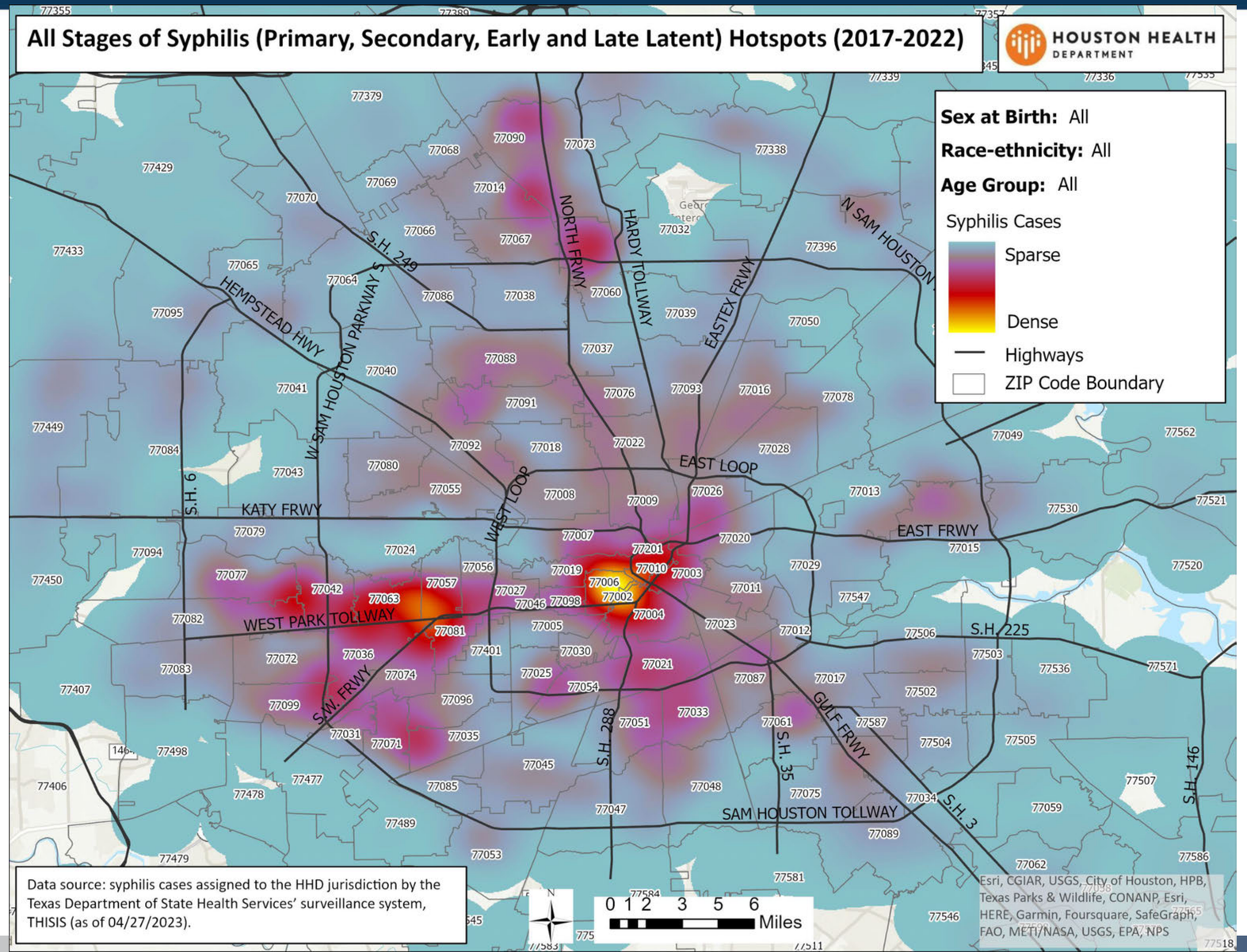

Hotspot Map: Early Stages

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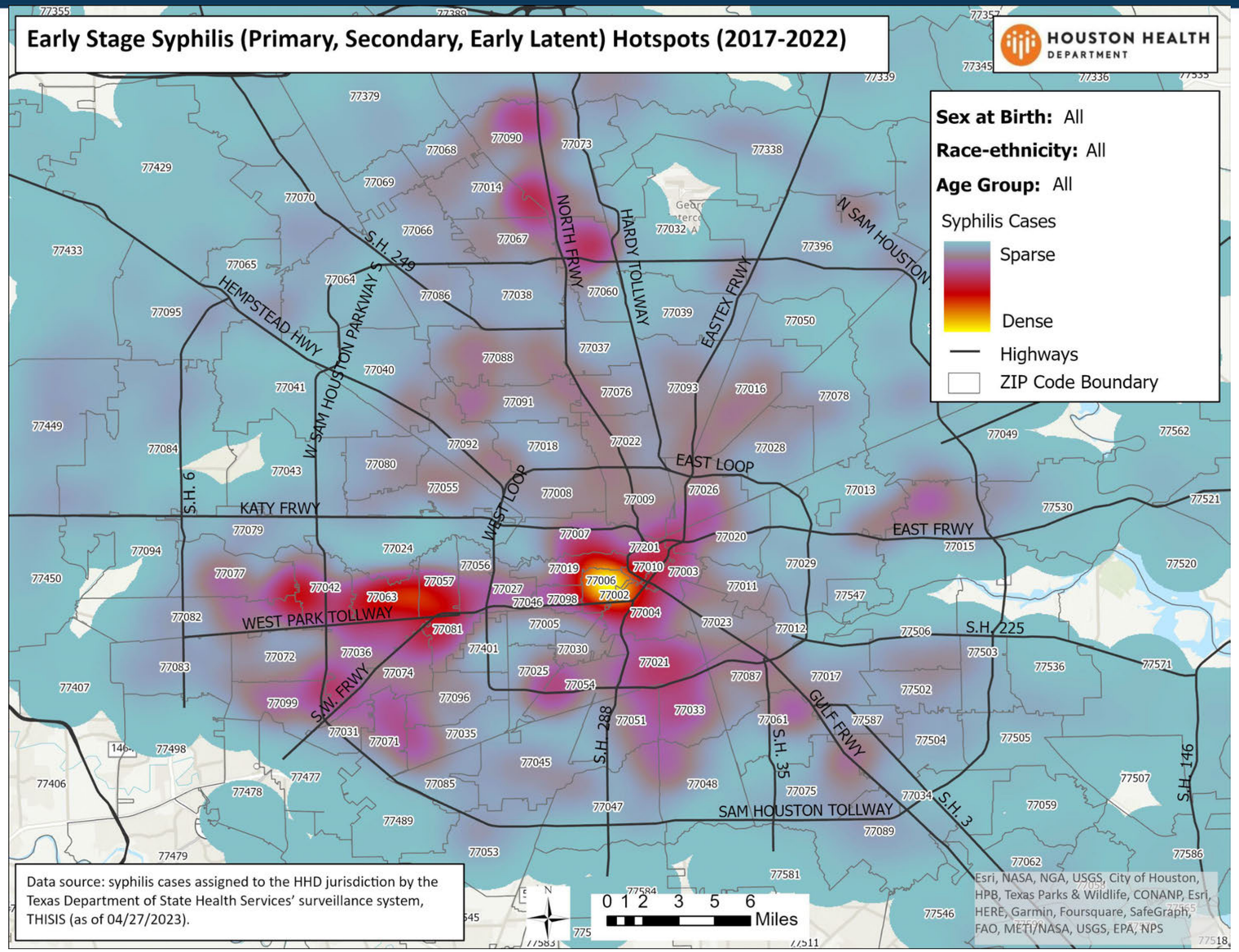

Summary Points

- Syphilis in the HHD jurisdiction has been on the rise since at least 2017. Increases are seen across clinical stage, sex, race-ethnicity, and most age groups.
- A majority of our cases are males, who also the highest case rate.
  - However, syphilis *is increasing* in females and there are potentially different behaviors in trends when considering clinical stages/other demographics.
- We see the highest rates and the greatest increase in rates in:
  - NH Blacks, overall and in both males and females separately.
  - Age groups covering 20 to 34y, overall. Rates in males slightly skew to older age groups (35 to 44), while female rates skew slightly younger (15 to 19).
- A majority of syphilis cases were NH Black ages 25 to 34 (19%), followed by Hispanic ages 25 to 34 (14%) overall.
- Hotspots of syphilis cases for NH Black and Hispanic groups differ between males and females.

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Syphilis 101: Dx & Tx

Jeannette Lopez Belen
Epidemiologist Generalist

What is syphilis?

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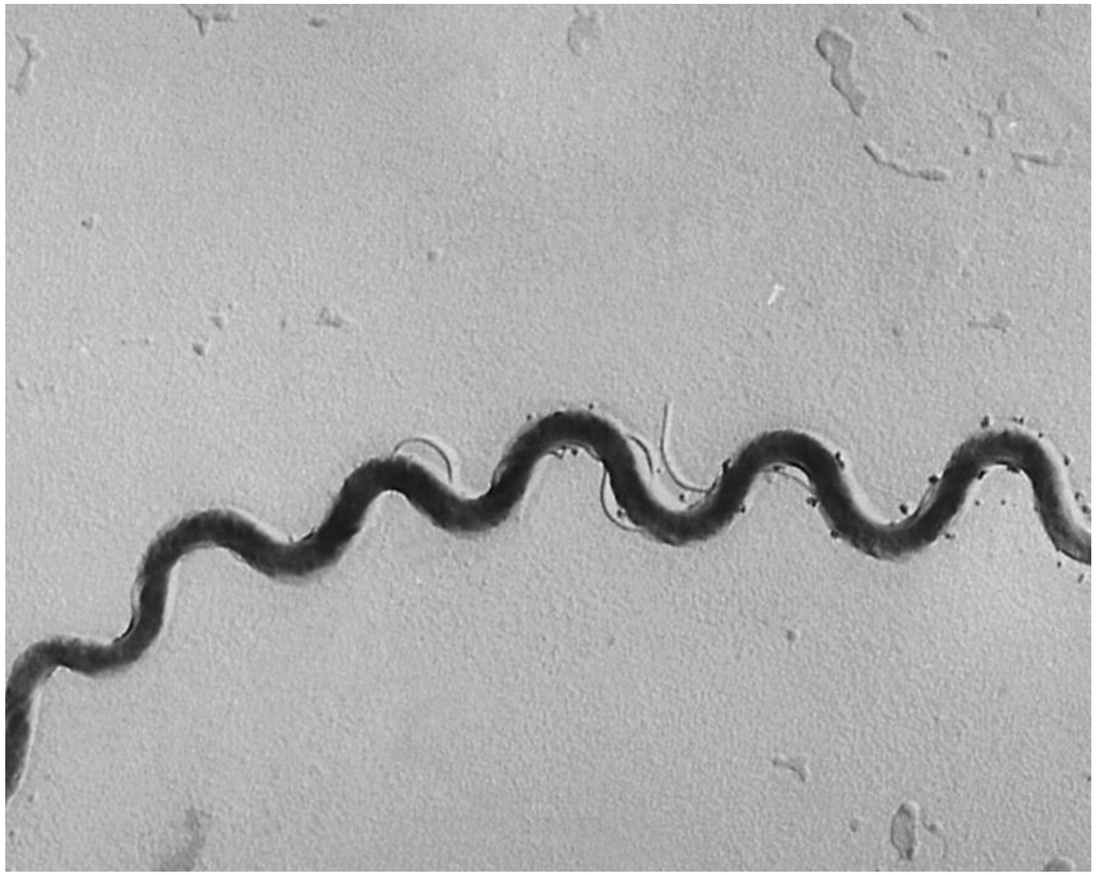
- Syphilis is systemic infection caused by a bacteria, *Treponema pallidum.*
- *T. pallidum* is a spirochete bacterium transmitted primarily through sexual activity or vertical transmission during pregnancy.
- **Syphilis has often been called “the great imitator”, so many of the signs and symptoms may be difficult to differentiate from those of other diseases**



Primary Syphilis Symptoms

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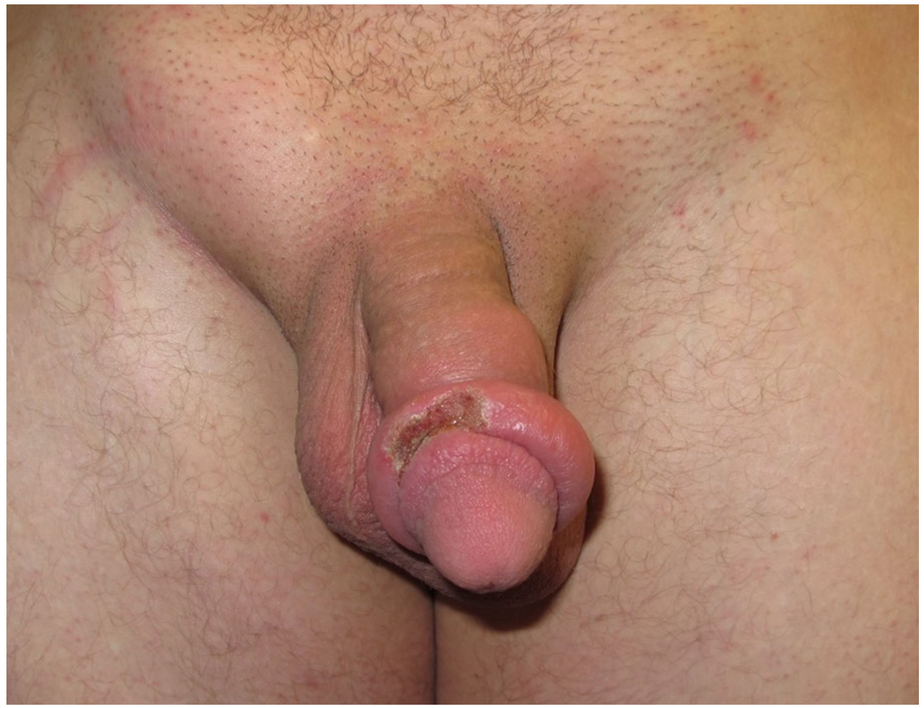
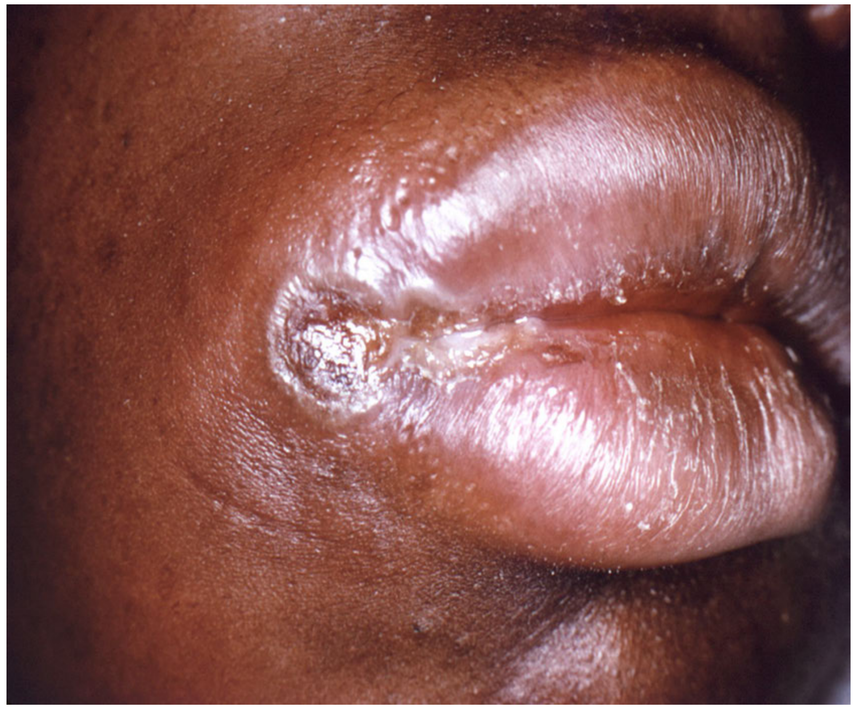
Chancre

- Following the inoculation of *T. pallidum* at the entry site, organisms proliferate, sensitize lymphocytes, and activate macrophages, causing the formation of a primary lesion or “chancre” at the site of inoculation.



Penile chancre



Oral chancre

Secondary Syphilis

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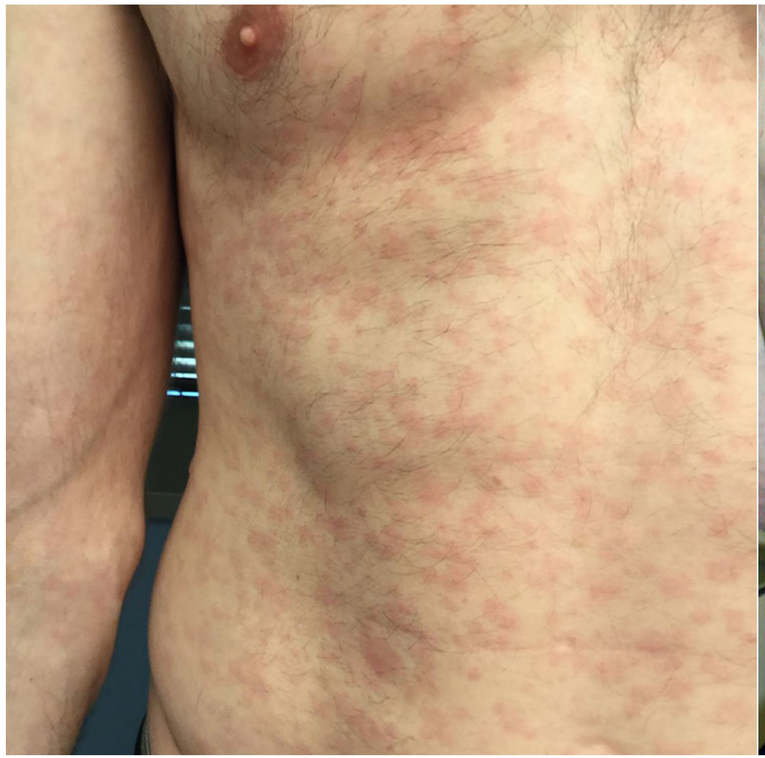
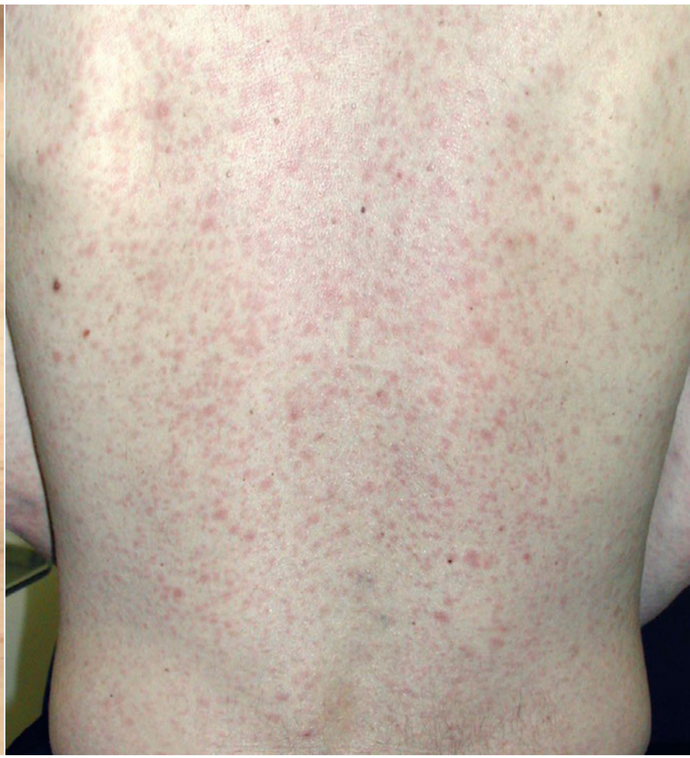
- Secondary sx reflect hematogenous dissemination of *T. pallidum*
- Occurs in more than 75% of persons with secondary syphilis and is usually nonpruritic.
- The rash characteristically involves the chest, back, palms, and soles
- **Generally, appear 4 to 10 weeks after the onset of the primary chancre**





Maculo-papular Rash on Palms and Soles

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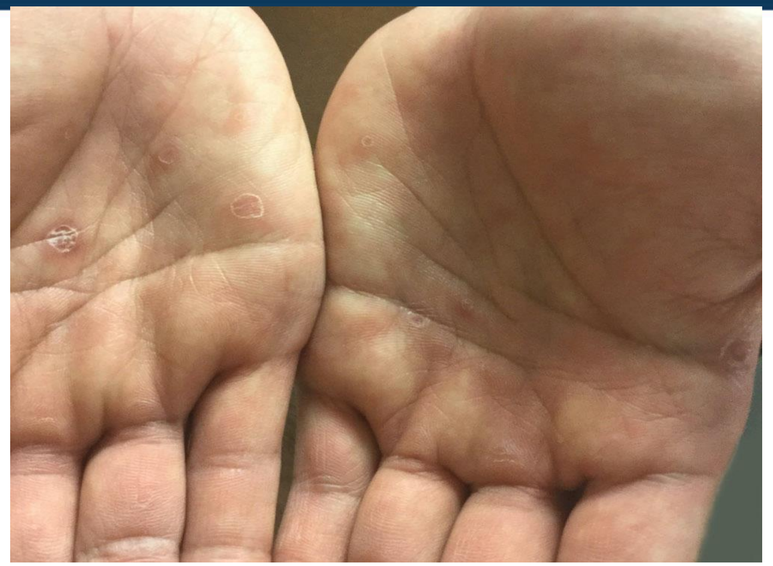

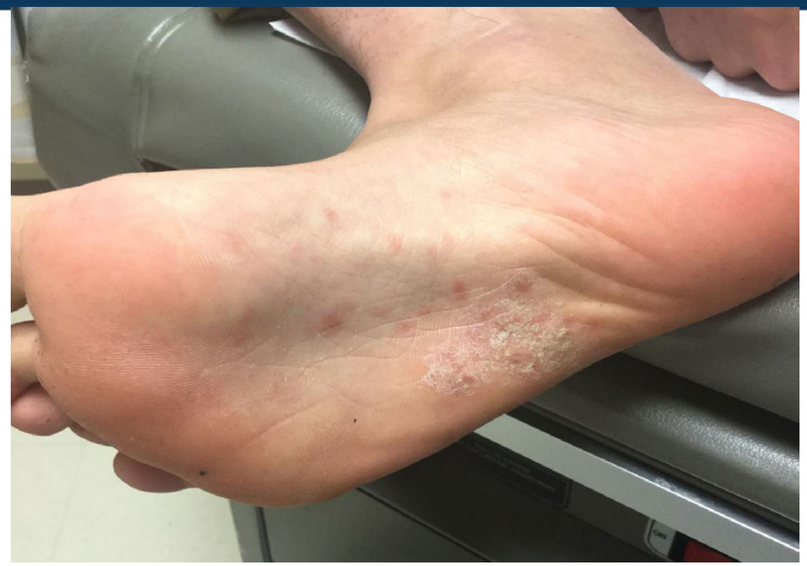

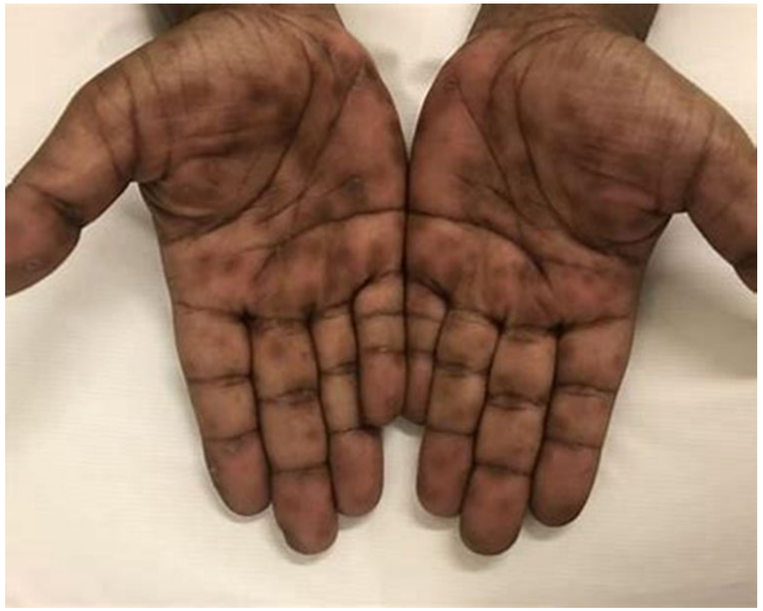

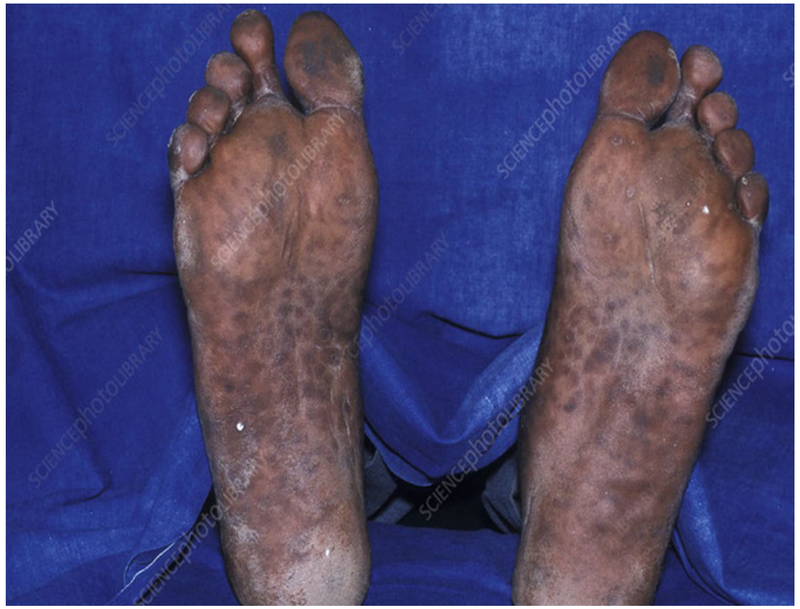

Secondary symptoms:
Mucuos patches & Condylomata Lata

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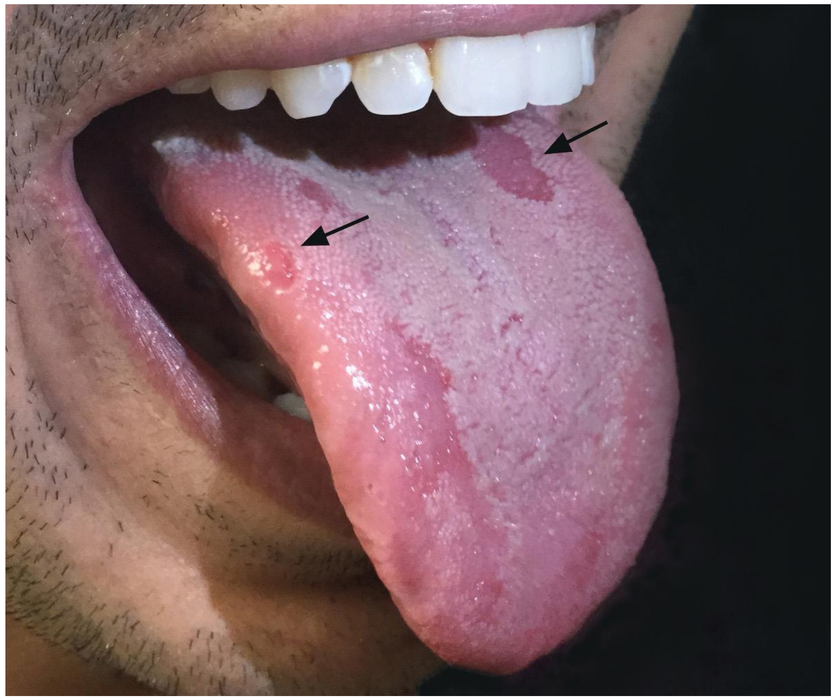
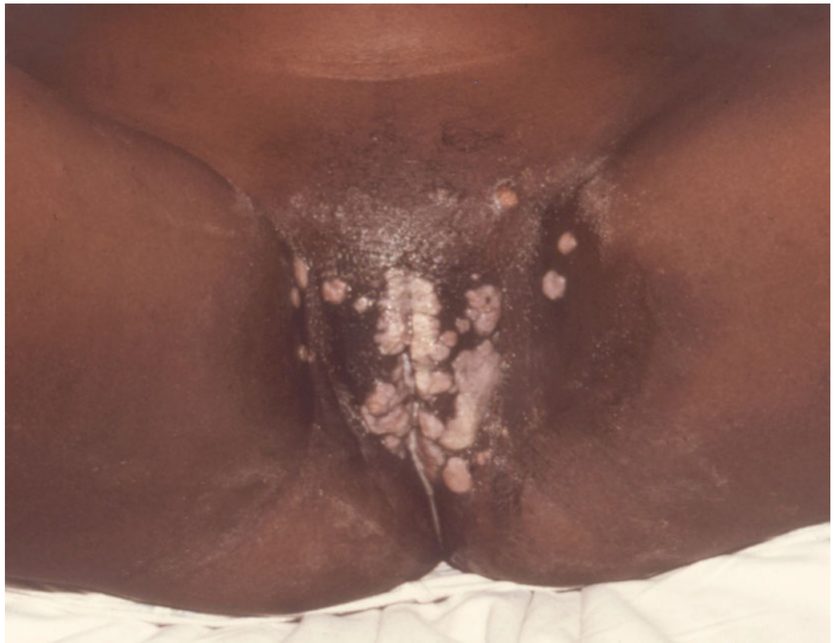
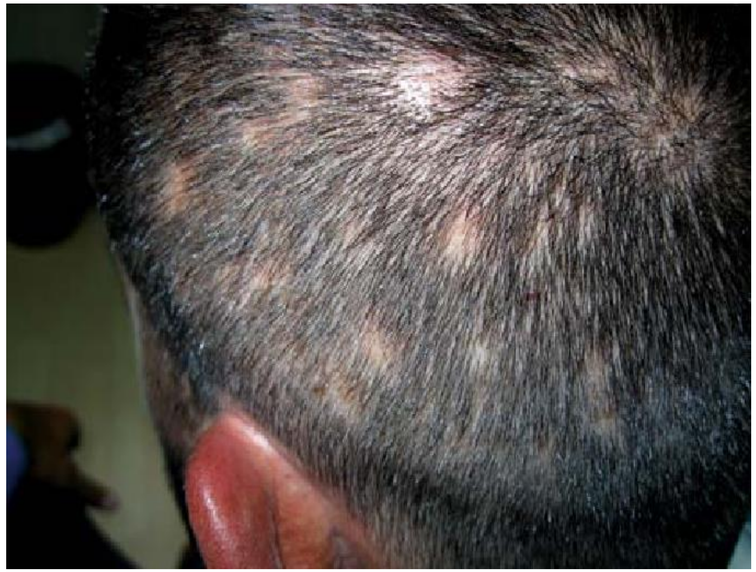


Mucous Patches: The development of mucous patches occurs in 6 to 30% of patients and manifest as flat patches located in the oral cavity, pharynx, larynx, or genital region.

Condylomata Lata:
Approximately 10 to 20% of persons with secondary syphilis will have condylomata lata lesions.
Appear as moist, wart-like papules in warm areas (most commonly gluteal folds, perineum, and perianal)
These lesions are highly contagious.



Secondary Symptoms:



Alopecia: About 5% of patients develop patchy alopecia.
Most often in the occipital or bitemporal scalp region.
Some patients will have loss of the lateral region of the eyebrows.

Other secondary symptoms

- **Lymphadenopathy**: Approximately in 50 to 86% of persons, may be diffuse.
- **Systemic Symptoms**: malaise, fever, and other nonspecific constitutional symptoms.
- **Visceral Organ Involvement**: In some cases, liver, kidney, lungs, gastrointestinal tract, and spleen.
    - Most common: nephritis and hepatitis (high alkaline phosphatase level).

Latent Syphilis: Early Latent & Late Latent

Early Latent Syphilis:
Infection of Less than 1 Year in Duration

- Documented seroconversion within the prior 12 months
- Fourfold or greater increase in titer (longer tan 2 weeks)
- Unequivocal symptoms of primary or secondary syphilis within the prior 12 months
- Contact in the prior 12 months with a sex partner in early stages
- Documented reactive nontreponemal and treponemal tests, and the only possible exposure occurred during the prior 12 months

Late Latent Syphilis
(Syphilis of unknown duration)

- Period of time when there are no signs or symptoms
- If left untreated, syphilis can persist in the body for years without signs or symptoms

Congenital Syphilis

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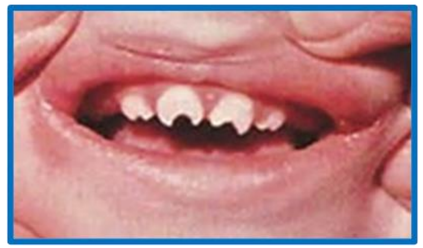
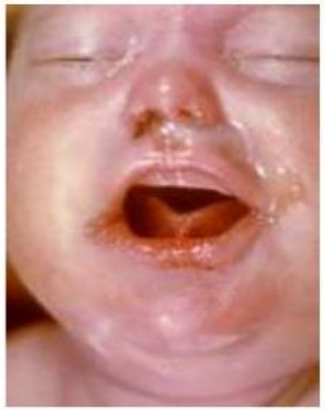
40% will be **stillborn or die** in the hospital.

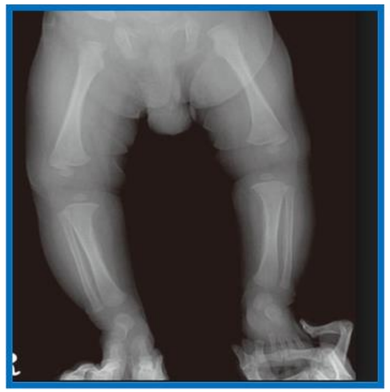
Transmission can occur during **any stage** of syphilis and **during any trimester of pregnancy.**

Can cause:

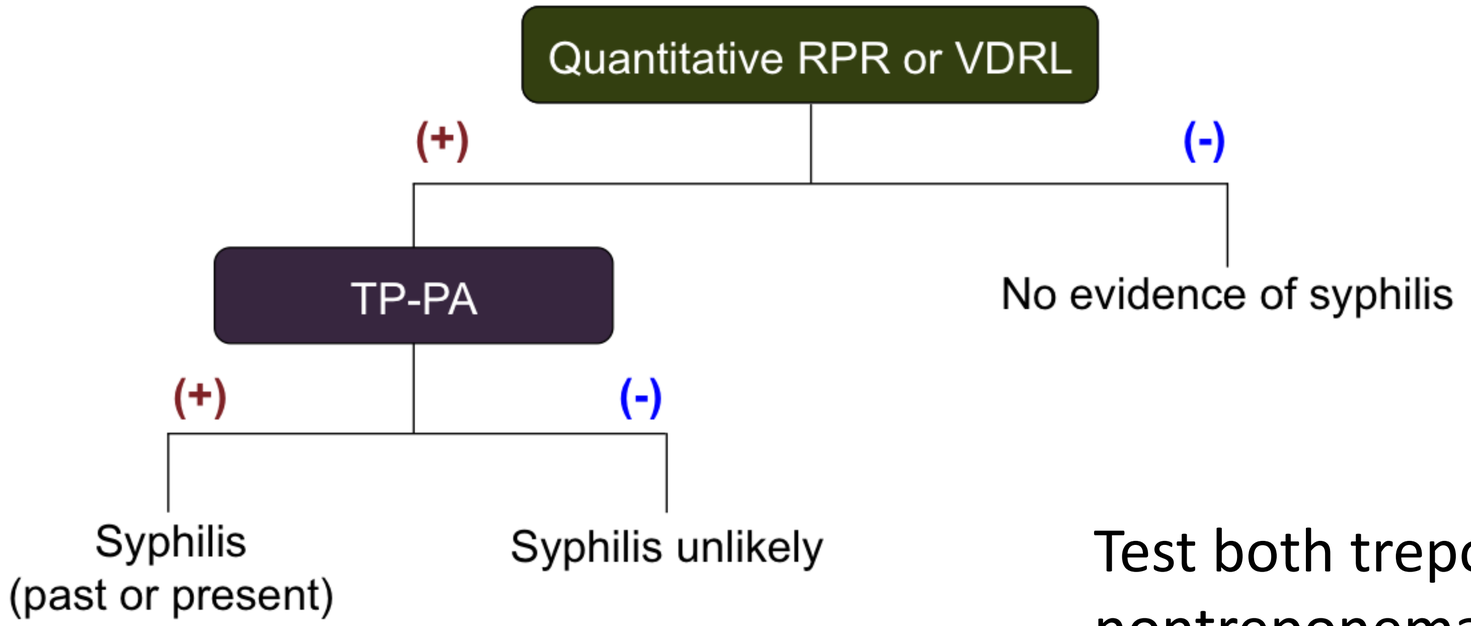
- **Prematurity**
- **Birth defects**
- **Hutchinson's teeth**
- **Osteochondritis**
- **Developmental delays**







Testing



Test both treponemal and nontreponemal simultaneously

DO NOT USE FTA-ABS (false positives are common)

Syphilis Treatment

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Appropriate Treatment Options for Women During Pregnancy

Stage of Syphilis	Benzathine Penicillin G	
	2.4 million units IM in a single dose	7.2 million units IM in 3 doses at 1 week intervals
Primary Syphilis	X	
Secondary Syphilis	X	
Early Latent Syphilis	X	
Late Latent Syphilis		X

NOTE: IM = intramuscular; Please review the CDC's 2015 Treatment Guidelines for patients who have an allergy to penicillin: https://www.cdc.gov/std/tg2015/default.htm

Other adequate alternatives for non-pregnant patients:

- Doxycycline 100 mg BID x 14 days (primary, secondary, early latent)
- Doxycycline 100 mg BID x 28 days (late latent)

Houston Health Department
Bureau of HIV/STD and Viral Hepatitis Prevention

Syphilis Outbreak Response Plan

Presented by: Marlene McNeese, Deputy Assistant Director
Bureau of HIV/STD and Viral Hepatitis Prevention
July 14, 2023

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Overview

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The Syphilis Outbreak Response Plan outlines the coordinated intervention efforts between the HIV/STI Program, other internal collaborative areas within HHD, regional/state health authorities, community-based organizations, healthcare providers, and the media to eliminate syphilis in Houston/Harris County. The plan highlights the specific intervention activities that will contribute to the reduction of syphilis morbidity during an outbreak episode. Increased syphilis rates will be contained through intensified efforts that involve the following six (6) components:

- **Enhanced Surveillance**
- **Disease Investigation and Public Health Follow-up**
- **Outreach Screening and Education**
- **Community Involvement and Mobilization**
- **Enhanced Diagnostic and Treatment**
- **Public Information and Awareness**

The HHD stakeholders that have assisted in the development of this response plan include the HHD Executive Leadership, Pharmacy, 340B Administration and Compliance, Clinic Operations, Nursing Services and IQUE.

Enhanced Surveillance and Evaluation

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Active surveillance activities will be conducted during episodes of increased syphilis rates. As a component of evaluating the impact of the response, surveillance data thresholds and monitoring of key evaluation metrics will be used to determine the escalation or de-escalation of the response. Activities include:

- Monitoring and assessing reporting practices to ensure timely and accurate reporting of syphilis cases.
- Analyzing data to determine incidence, demographics, and behavior risk factors.
- Determining the threshold levels of early syphilis that will trigger escalation or de-escalation of the response (red, yellow, green).
- Conducting weekly analysis of early syphilis cases, especially primary and secondary cases.
- Wastewater analysis

Responsible Units: HHD Data Services, Bureau of Epidemiology, Bureau of HIV/STI and Viral Hepatitis - STI Surveillance Unit & the Policy & Evaluation Unit

Disease Investigation & Follow-up

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STD partner services include the identification, location, and notification of the sex and substance using partners of infected persons, and the referral of those partners to evaluation, treatment, and care.

The goal is to identify and treat undiagnosed infections and interrupt the chain of transmission at a level sufficient to reduce morbidity. An important aspect of partner services is the ability to intervene in disease progression (including incubating disease) and spread. Activities will include:

- Staffing considerations, including number, disciplinary mix, and specific responsibilities of response team members.
- Evaluation of the effectiveness of the response.
- Notification to the Centers for Disease Control and Prevention, the Texas Department of State Health Services (DSHS) and other regional partners about the response episode.
- Convening response planning team meetings during the response episodes.

Responsible Units: HHD Data Services, Bureau of Epidemiology, Bureau of HIV/STI and Viral Hepatitis - Field Services Team & Congenital Syphilis Team; COVID Contact Tracing Teams

Outreach Screening & Education

HHD teams responsible for mobile disease testing, treatment, and vaccination efforts will collaborate to expand screening activities in impacted areas alongside community partners. Community organizations will be elicited for assistance with the response effort by conducting outreach recruitment, testing and behavioral intervention activities. Mobile screening activities will also take place at neighborhood clinics, hotels, and other high impact venues in identified geographic areas.

- Increase HIV & syphilis testing, referral, treatment, and/or vaccination for affected and high-risk individuals
- Maintain a consistent outreach schedule throughout the response period.
- Increase education/information for key populations by deploying street canvas teams for outreach in hot spot apartment complexes, and small businesses
- Distribute educational materials at population related events, planning meetings, and community task forces and advisory group meetings.
- Provide STI/HIV Education through other existing HHD programs; such as WIC and Vital Statistics offices

Responsible Units: Bureau of HIV/STI and Viral Hepatitis Prevention - Contracts Unit & Outreach Team, HHD Programs that touch the affected population (i.e., WIC, Vital Statistics, Asthma Control, Health Education, Healthy Families, Human Services, Bureau of Youth and Adolescent Health community organizations), COVID Outreach Team, and MVU Teams.

Community Involvement & Mobilization

HOUSTON HEALTH DEPARTMENT

HHD will work with local, regional, and state community partner organizations, civic and neighborhood groups, and HIV/STI/Hepatitis community planning group leaders to increase awareness of syphilis, congenital syphilis, and the disease response efforts within their communities.

Responsible Parties: Bureau of HIV/STI and Viral Hepatitis Prevention - Contracts Unit & Outreach Team, Field Operations Team, the HIV Prevention Community Planning Group, Ryan White Planning Council, HIV/STI Community Task Forces, and the Fetal Infant Mortality Review on Congenital Syphilis and Perinatal HIV (FIMRSH) Committee.

Enhanced Diagnostic & Treatment

HOUSTON HEALTH DEPARTMENT

The HHD Bureau of HIV/STI and Viral Hepatitis will work closely with HHD Clinical Operations to enhance capacity for the diagnosis and treatment of cases as well as preventively treat contacts within HHD clinics and other external clinical facilities. The Chief Physician responsible for HIV/STI will assist with the development, revision, and implementation of relevant clinical protocols including making special provisions to bypass normal clinic processes to accommodate patient members of vulnerable populations. Goals will be to:

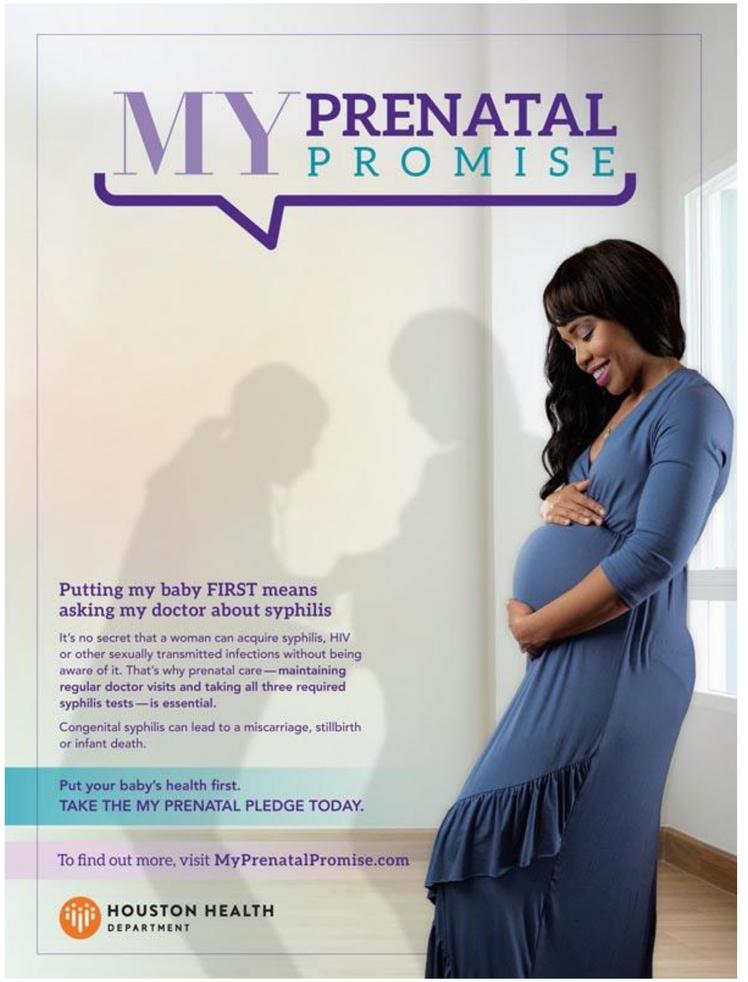
- Increase treatment of women of childbearing capacity, regardless of pregnancy status.
- Increase treatment of early cases and sex partners (SPT) in the field.
- Ensure appropriate diagnosis, staging and treatment of all syphilis cases and contacts

Responsible Parties: HHD Public Health Authority, HHD Chief Physician, Nursing Services, MVU Team, HHD Pharmacy, HHD Laboratory, Bureau of Epidemiology (provider visits), Walgreens, CVS, Infectious Disease Providers

Public Information & Awareness

The HIV/STI and Viral Hepatitis Prevention Bureau will work with the HHD Communications and Health Education teams to inform and educate the public on disease prevention and treatment options, as well as the HHD syphilis response activities.

- Worked with HHD Communications team to create the provider education packets
- Participated with DSHS podcasts for congenital syphilis education & awareness
- Houston Chronicle article on CS (May 2023)
- NYT article on congenital syphilis & Prenatal Promise pending (July)



Responsible Parties: Bureau of HIV/STI and Viral Hepatitis, HHD Communications, and HHD Health Education

Additional Recommendations?

HOUSTON HEALTH DEPARTMENT

HOUSTON HEALTH DEPARTMENT

Syphilis Notification and Report

HOUSTONHEALTH.ORG

Which sexually transmitted diseases do health care providers need to report in Texas?

Texas Law and Administrative Code requires **health care providers** to report the following diseases:

- **HIV and AIDS**
- ***Syphilis***
- **Chlamydia**
- **Gonorrhea**
- **Chancroid**
- **Hepatitis C**

HOUSTON HEALTH DEPARTMENT

Syphilis Reporting

How do I report primary and secondary syphilis cases?

- ***Call your local authority* within one working day at *855-264-8463***
- ***Submit a completed confidential report of sexually transmitted disease form (STD-27) to your local reporting authority within seven calendar days***

- **REPORT by efax: *(832)395-9683***

HOUSTON HEALTH DEPARTMENT

CONFIDENTIAL STD MORBIDITY REPORT FORM

HOUSTON HEALTH DEPARTMENT

Houston Health Department
ATTN: Bureau of Epidemiology – STD Surveillance 4th floor
8000 North Stadium Drive Houston, Texas 77054
Tel: (832)393-5080 Fax: (832)393-5233

HOUSTON HEALTH DEPARTMENT

Instructions: Please complete all fields on this form. If information is not available, write "NA." Fax completed forms to 832-393-5233.

Reported by: **Facility/Clinic:** **Phone Number:** **Date:**

PATIENT DEMOGRAPHIC DATA

Last Name: **First Name, MI:**

DOB: **Social Security #:** - - **Sex:** □M □ F

Race: □ White □ Black/African American □ Asian/Pacific Islander □ Other □ Unknown **Hispanic:** □Y □ N

Address: **Home Phone:** ( ) --

City, State Zip code: **Other Phone:** ( ) --

Emergency Contact Name: **Contact Phone:** ( ) --

Marital Status: □Single □Married □Divorced □Widowed □Unknown

Pregnancy Status: □N/A □No □Yes (Expected delivery date___/___/___) □ Unknown(Last menstrual date___/___/___)

Reason for Test: □ Routine screening □ Prenatal Screening □ Immigration Screening □ Screening due to partner's treatment/diagnosis
□ Signs and Symptoms □ Employment screening □ Other reason:_____

DISEASE DATA

Check Reportable Disease(s):
□ Syphilis** □ Gonorrhea □ Chlamydia □ Chancroid

Patient's chief complaint(s):_____
Describe any signs and symptoms:_____
Symptom Onset Date:_____ **Duration of symptoms:**_____ **Provider diagnosis:**_____
Provider follow-up appointment date:_____
Referred to provider name:_____ **Provider phone:**_____
Syphilis only:
Stage of syphilis: □Primary □Secondary □Early Latent □Late Latent □Other:_____
Last negative RPR test date:_____ **Other previous syphilis serology results:**

LABORATORY DATA

Was patient tested for syphilis? □ Yes □ No
Test date:___/___/___ Reporting lab:_____
□ **RPR Titer:** □ Reactive – Titer 1:_____ □ Non-reactive
□ **VDRL Titer:** □ Reactive – Titer 1:_____ □ Non-reactive

□ **TP-PA:** □ Reactive □ Non-reactive
□ **FTA-ABS:** □ Reactive □ Non-reactive
□ **MHA-TP:** □ Reactive □ Non-reactive
□ **EIA (IgG/IgM):** □ Reactive □ Non-reactive

Other test results:
_____
_____

Was patient tested for HIV? □ Yes □ No
□ IFA □ W. Blot □ Rapid □ EIA □ Ag/Ab □Ab DIF Date:___/___/___ □ Pos □ Neg
□ IFA □ W. Blot □ Rapid □ EIA □ Ag/Ab □Ab DIF Date:___/___/___ □ Pos □ Neg
Reporting lab:_____

Was patient tested for Gonorrhea/Chlamydia? □ Yes □ No
Chlamydia Test Date:___/___/___ □ Pos □ Neg
Specimen source: □Urine □Cervix □Urethra □Pharynx □Rectum □Unknown
Gonorrhea Test Date:___/___/___ □ Pos □ Neg
Specimen source: □Urine □Cervix □Urethra □Pharynx □Rectum □Unknown
Reporting lab:_____

Has patient been notified of test results? □Y □ N **If yes, date of notification:**_____ **and for which lab(s):**_____
Please share with your patient that he/she will be contacted by the health department for counseling and public health follow-up.

TREATMENT INFORMATION

Was patient treated? □Yes □No **Treatment date(s):**_____

Prior History of Treatment: □Yes □No □ Unknown Date of Previous Treatment___/___/___
Method of Prior Treatment_____

Current medication(s) prescribed:

□ Benzathine penicillin G 2.4 MU IM x 1
□ Benzathine penicillin G 2.4 MU IM x 3
□ Doxycycline 100mg PO BID for 7d
□ Doxycycline 100mg PO BID for 10d
□ Doxycycline 100mg PO BID for 14d
□ Doxycycline 100mg PO BID for 28d
□ Amoxicillin 500mg PO TID x 7d
□ Azithromycin 1 gm PO x 1
□ Ceftriaxone 125mg IM x 1
□ Ceftriaxone 250mg IM x 1
□ Erythromycin base 500mg PO TID 7d
□ Erythromycin base 500mg PO QID 7d
□ Cefixime 400mg PO x 1
□ Other not listed, please list:
_____
_____
_____
_____

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JUST A CALL AWAY

CONGENITAL SYPHILIS TEAM

855-264-8463

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COMMUNITY PARTNERSHIP

HOUSTON HEALTH DEPARTMENT

Q & A

THANK YOU

HOUSTON HEALTH DEPARTMENT

Please take a moment to inform our efforts: