



WELCOME
to the
Strategies To Optimize Rural
Perinatal Healthcare ECHO

Funding Statement

This resource is supported by funding through the Rural Maternal Obstetric Management Strategies (RMOMS) grant from the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS), part of a 4-year award totaling \$991,467 annually with 0% financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit [HRSA.gov](https://www.hrsa.gov)



North Country Maternity Network partners

- **North Country Health Consortium**
 - Rural health network to enhance collaboration among regional health and human service providers
- **Critical access/community hospitals providing birthing services**
 - Androscoggin Valley/North Country Healthcare
 - Littleton Regional Hospital
 - Northeastern VT Regional Hospital (VT)
- **Critical access hospitals that don't provide birthing services**
 - Weeks Medical Center
 - Upper Connecticut Valley Hospital
- **Federally Qualified Health Centers**
 - Coos County Family Health Services
 - Little Rivers Health Center (VT)
- **Family Resource Center**
 - Community-based family support program
- **Women of the Mountains Birth Initiative**
 - Community-based educational and perinatal support program
- **Dartmouth Health**
 - Academic Medical Center



NCMN Partners

Series Learning Objectives

After participating in this activity, learners will be able to:

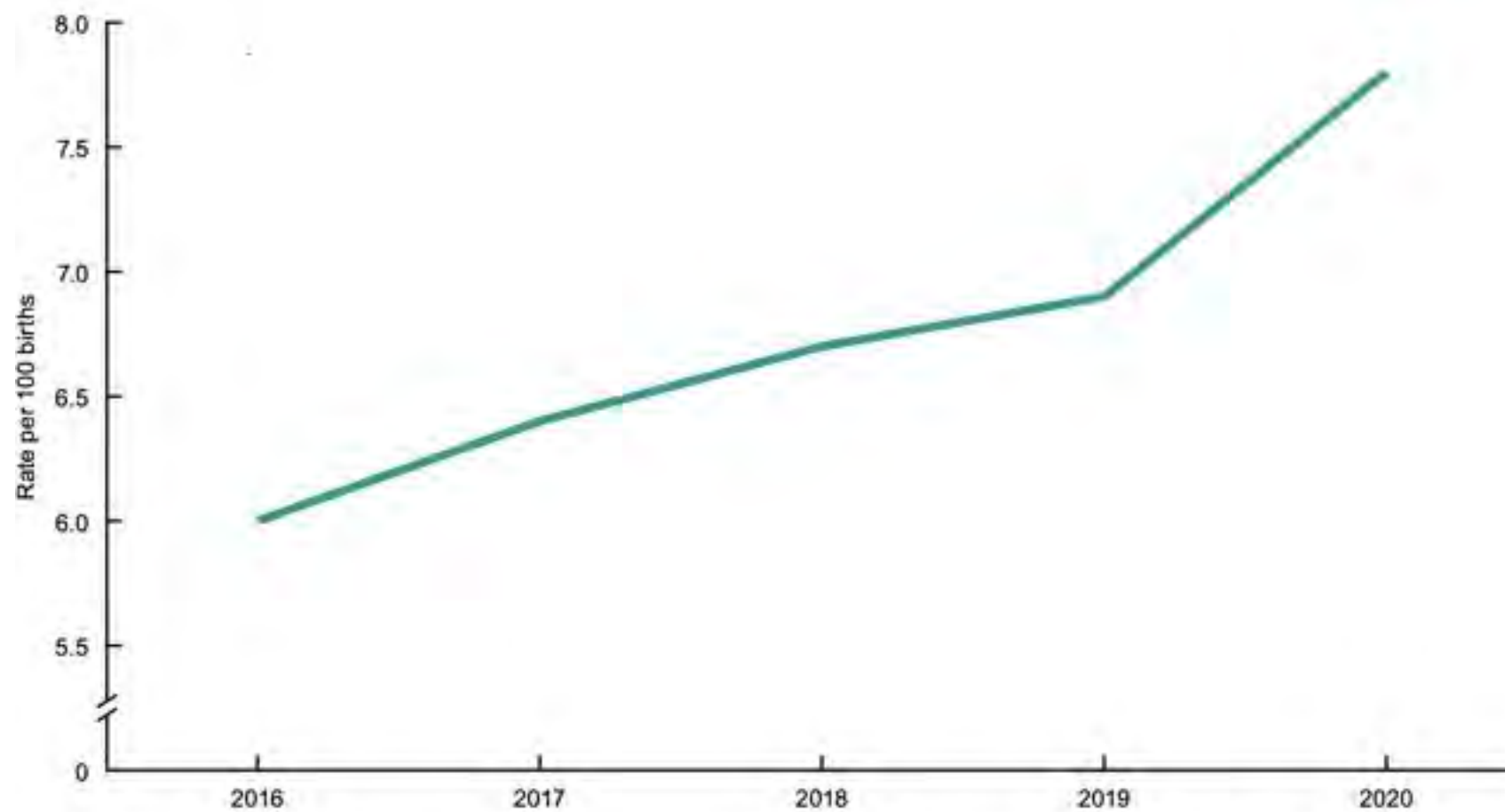
- Discuss maternal health conditions, including labor induction and prenatal/postpartum emergencies to improve management of obstetrical complications
- Develop a collaborative network of healthcare providers to support high quality, consistent care of pregnant people
- Utilize evidence-based practice resources and support

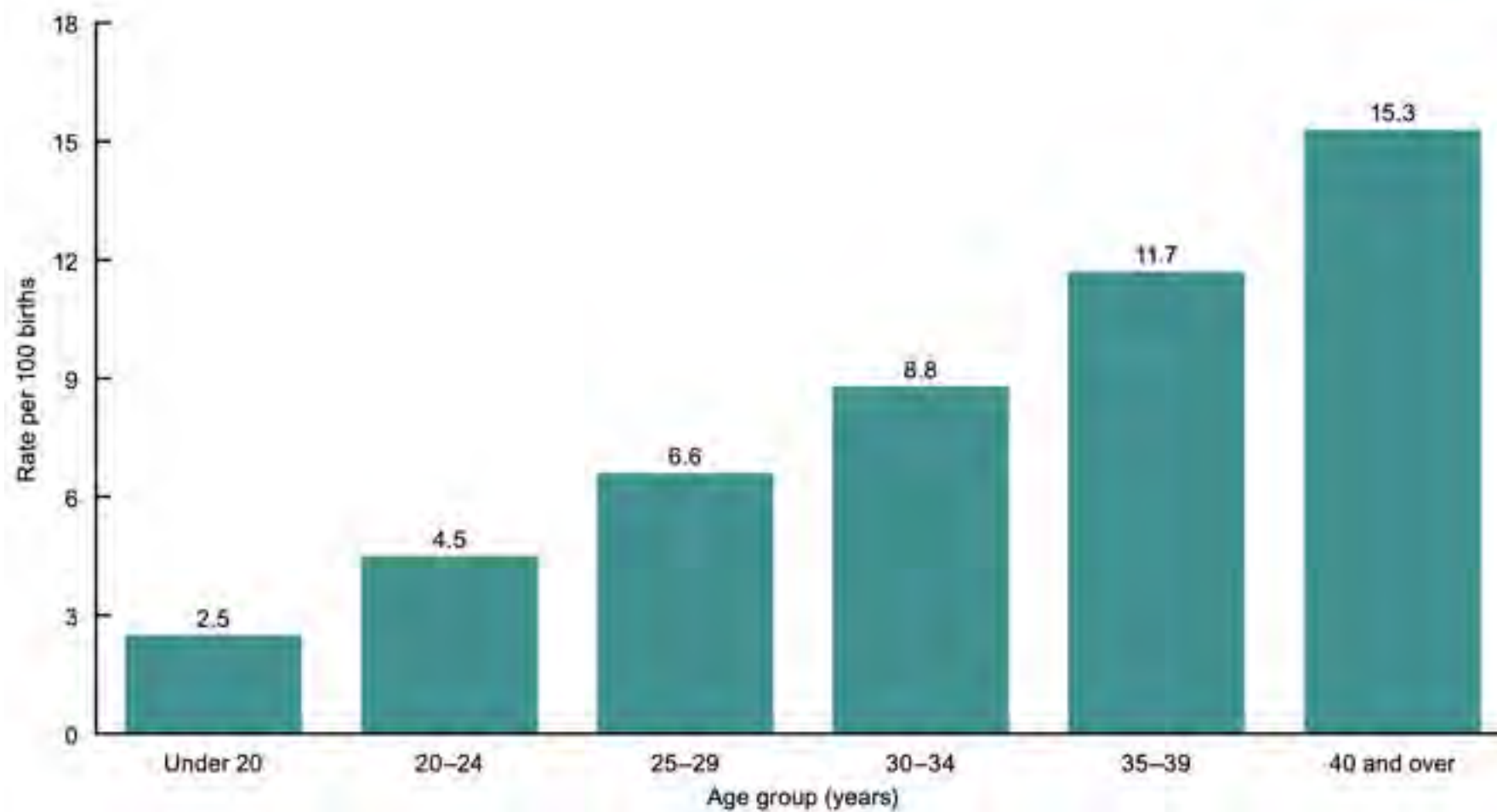
Series Sessions

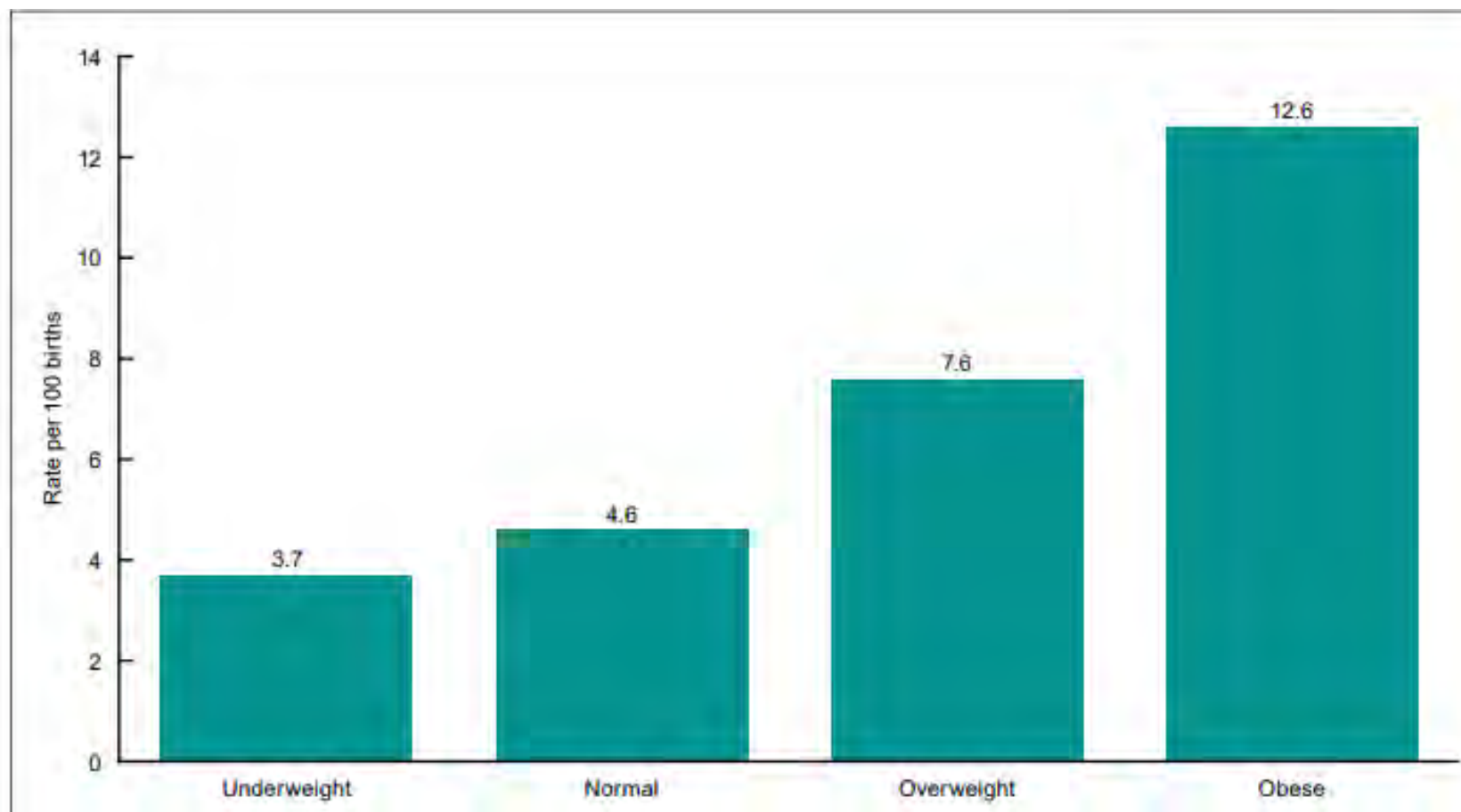
Date	Session Title
January 21	<u>Maternal Care in Rural Areas: focus on Gestational Diabetes</u>
February 18	<u>Hypertension and Pre-eclampsia</u>
March 18	<u>Mood Disorders: Prenatal and Post-partum</u>
April 15	<u>Updates on Syphilis and HIV</u>
May 20	Screening and Management of Hepatitis B and C
June 17	Risk Appropriate Care for Perinatal Substance Use Disorders
July 15	Doulas, Midwives, and Medical Providers
August 19	Advocating Current Standards in Pain Management
September 16	Best Practices in Induction of Labor
October 21	VBACs (vaginal birth after cesarian)
November 18	Decision Making for Third Trimester Obstetric Emergencies and Transport
December 16	TBD

Gestational Diabetes

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Maternal Fetal Medicine
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Pathophysiology

- Personal insulin resistance

Plus

- Steadily rising insulin resistance related to human placental lactogen.
- Immediate fall after placenta delivery

Morbidity

- Preeclampsia
- Cesarean section
- Macrosomia
- Shoulder dystocia
- Neonatal hypoglycemia
- Neonatal Jaundice
- NICU stay

Screen for pre-pregnancy diabetes by HbA1c

- BMI > 25 kg/m² or BMI >23 kg/m² in Asian Americans *with one or more of the following*
 - Physical inactivity
 - First degree relative with diabetes
 - High risk ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
 - Previously given birth to an infant weighing ≥ 4000 gm
 - Previous gestational diabetes
 - Hypertension (140/90 mm Hg or on treatment for hypertension)
 - HDL cholesterol <35 mg/dl or triglyceride level > 250mg/dl
 - Polycystic ovarian syndrome
 - HbA1c ≥ 5.7%, impaired glucose tolerance or impaired fasting glucose on previous testing
 - Other clinical conditions associated with insulin resistance (e.g. acanthosis nigricans)
 - History of cardiovascular disease
 - Age 35 years or greater
 - HIV infection

Screen for pre-pregnancy diabetes by HbA1c

- HgbA1c results

- $\geq 6.5\%$ – meets criteria for diagnosis of diabetes. Manage as a pre-existing diabetic.
- 5.7 – 6.4% - impaired glucose tolerance. Consider recommendation for nutrition counseling. Plan routine screening with 1hr GCT at 24-28w. Clinical judgement and shared decision making about starting home glucose monitoring before routine screening if additional risk factors
- $< 5.7\%$ - normal. 1hr GCT at 24-28w

Glucose challenge test tips for patients

- 50 gram is not a fasting test
- Do not restrict carbohydrates for 3 days prior to the 100 gram test
- Bring a sandwich to eat after last blood draw
- Drink it cold

Glucose cutoffs

- 50 gram \geq 135 mg/DL
- 100 gram
 - Fasting \geq 95 mg/dL
 - 1-hour \geq 180 mg/dL
 - 2-hour \geq 155 mg/dL
 - 3-hour \geq 140 mg/dL
 - Home targets
 - Fasting $<$ 95 mg/dl
 - 1-hour $<$ 140 mg/dl
 - 2-hour $<$ 120 mg/dl

Three hour 100 gram OGTT with one abnormal value

- Fasting blood glucose ≥ 95 mg/dL.
 - Consider home glucose monitoring for 7-10 days to determine need for ongoing monitoring.
 - Review recommendations for nutrition and exercise during pregnancy or refer to dietician or clinical diabetes educator
- Elevated 1, 2, or 3 hour
 - Review recommendations for nutrition and exercise during pregnancy or refer to dietician or clinical diabetes educator

Next steps after diagnosis

- Medical Nutrition Therapy
 - Refer to nutrition counselor RD
 - Clinic generated handouts
 - ADA handouts
 - Video/on line resources
 - The intention of diet changes is not to lose weight and is not to be hungry
- Exercise
 - Encourage moderate intensity aerobic exercise at least 5 days per week or a minimum of 150 minutes per week.
 - 15-to-20-minute brisk walk after meals

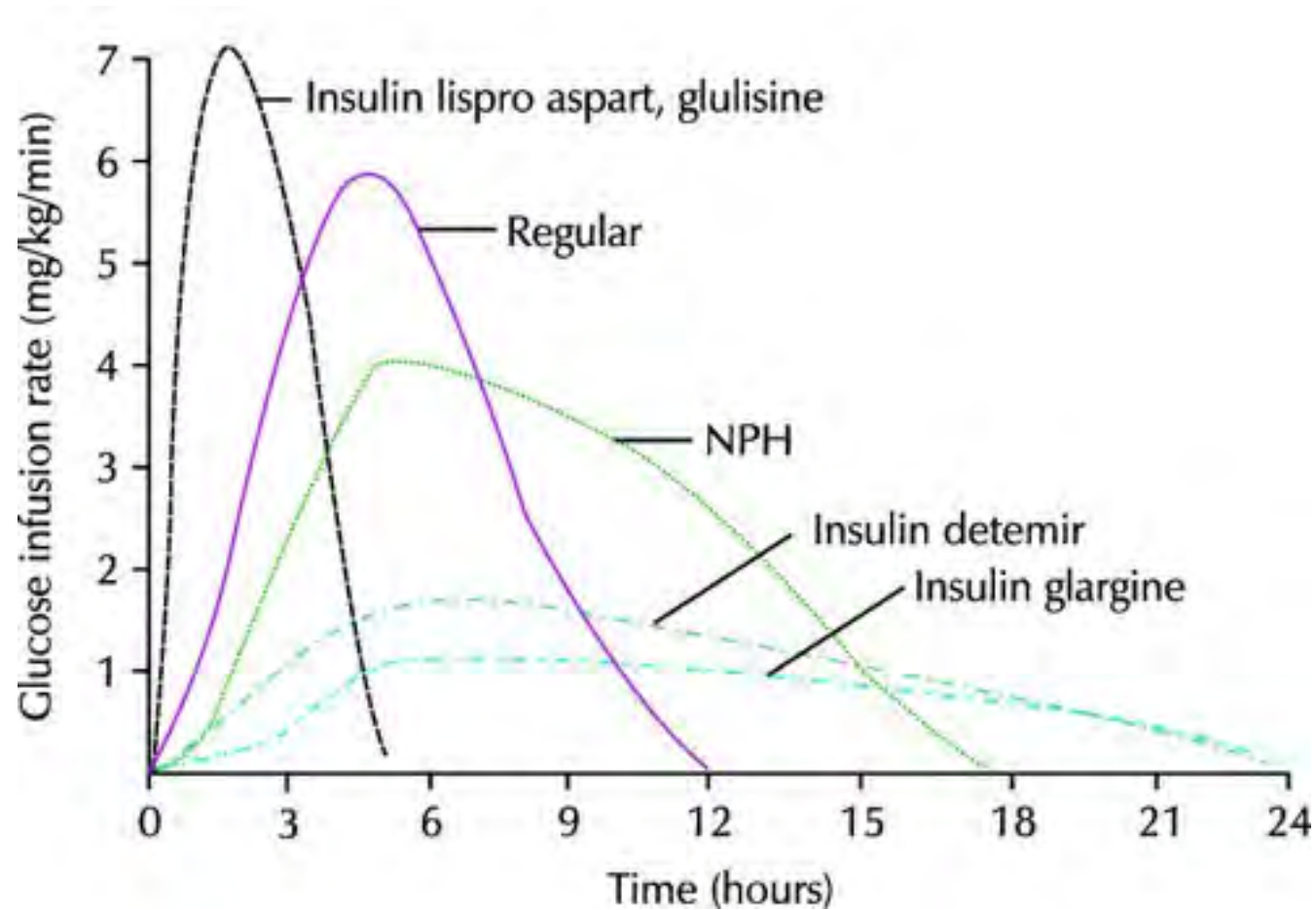
Next steps

- Home monitoring (fasting and 1 hour postprandial)
- Establish means to communicate glucose numbers (phone, fax, portal, CGM)
- Communication allows coaching and encouragement

Medication

- Insulin is the standard treatment – many reasonable option)
- Start medication if roughly 30% of a given time-frame is abnormal
- Lots of nuance and experience drives dosing decisions
- Many regimen options
- GDM patient are not “brittle”
- Can be fairly aggressive at increasing insulin dose especially when high BMI
- Expect high amount of insulin
- At extreme U500

Medication- Insulin



Medications

- Metformin
 - Metformin can be used for patients who decline insulin therapy, who cannot afford insulin therapy or for those patients whom the obstetrical care providers believe will be unable to safely administer insulin.

Surveillance

- GDMA1
 - No antenatal testing.
 - Deliver 39w0d – 40w6d
 - Ultrasound q 4w
- GDMA2
 - NST 1-2/week depending on control
 - Deliver 39w0d – 39w6d
 - Prior to 39 weeks if very poor control
 - Ultrasound q 4week

Mode of Delivery

- ACOG

“Women with GDM should be counseled regarding the risks and benefits of a scheduled cesarean delivery when the estimated fetal weight is 4,500 g or more”

Delivery

- Intrapartum
 - Every 2 hour fingerstick with short acting insulin
 - No intermediate or long acting insulin
 - The work of labor will help keep glucose down
- After delivery: immediate resolution of placenta- mediated insulin resistance
 - 75- gram OGTT postpartum day 1-3 or at 4-12 weeks postpartum

75 gram OGTT

- Type 2 Diabetes
 - A single abnormal value on 75 gram GTT
 - Fasting ≥ 126 mg/dL
 - 2-hour ≥ 200 mg/dL
 - HBA1c $\geq 6.5\%$
 - Random plasma glucose ≥ 200 mg/dL with symptoms of diabetes
- Impaired Fasting Glucose (IFG)
 - Fasting ≥ 100 -125 mg /dl
- Impaired Glucose Tolerance (IGT)
 - 2-hour ≥ 140 -199 mg/dl

Follow up care

- Amend EMR history and problem list
- Copy the primary care provider regarding GDM
- Careful discussion with her about the risk for type 2 diabetes and repeat GDM, need for frequent testing
- Encourage breast feeding



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**Strategies To Optimize Rural
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*Session 2, Maternal Care in Rural Areas: focus on
Hypertension and Pre-Eclampsia*

February 18, 2025

Hypertensive Disorders of Pregnancy

Robert N. Blatman, MD
Maternal Fetal Medicine
Dartmouth Health

Hypertensive Disorders of Pregnancy

- Chronic Hypertension
 - Hypertension before 20 weeks and after 12 weeks postpartum
- **Gestational Hypertension**
 - Hypertension that develops after 20 weeks and resolves by 12 weeks postpartum
 - No proteinuria or
 - No sign/symptoms of end-organ dysfunction
- **Preeclampsia**
 - Hypertension that develops after 20 weeks and resolves by 12 weeks postpartum
 - Proteinuria and/or
 - Signs/symptoms of end-organ dysfunction
 - Does not require edema
- Chronic Hypertension with Superimposed preeclampsia
- Eclampsia

Epidemiology basics

- >70000 deaths worldwide
- Incidence in US is about 5% (and creeping up)
- Late onset preeclampsia (>34 weeks) is about 6 fold more common than early onset
- One third are nulliparous
- About 5% are recognized postpartum

Risk Factors Preeclampsia

- Previous preeclampsia
- Family history of preeclampsia
- Renal Disease
- Autoimmune disease
- Diabetes
- Obesity
- AMA
- Adolescent pregnancy
- Multiple Gestation

Typical Presentation of preeclampsia

- 85% present with hypertension and proteinuria after 34 weeks
 - Hypertension: Diastolic ≥ 140 or systolic ≥ 90
 - On 2 occasions 4 hours apart
- Proteinuria
 - 300mg/24 hour or
 - Urine Pr/Cr ratio of ≥ 0.3 or
 - 2+ on urine dip (only if more quantitative options are not available)

Severe Preeclampsia

- **Symptoms**

- Headache
 - Generally not responsive to pain medication
- Abdominal Pain
 - RUQ or epigastric
- Visual changes
 - Scotomata, blurred vision, rarely cortical blindness
- Pulmonary edema

- **Laboratory findings**

- Elevated LFTs (> double high end of normal)
- Thrombocytopenia (<100)
- Elevated Creatinine (>1.1)

- **Oliguria** (<500cc/24 hour)

Potential Complications of Preeclampsia

- **Seizures (eclampsia)**
- **Hypoxia**
- **Stroke**
- **Abruption**
- **Fetal Growth Restriction**
- **Stillbirth**
- **Death**

Atypical Presentations

- HELLP syndrome
 - Hemolysis
 - Elevated LFTs
 - Low Platelets
- Gestational proteinuria
 - 20-25% go onto develop preeclampsia
- Presentation <20 weeks
 - Most are associated with molar pregnancies or severe preexisting disease (Such as antiphospholipid antibody syndrome)

Management: Gestational Hypertension/Preeclampsia without severe features

- Delivery at 37 week
- <37 week, Expectant management until:
 - 37 week or
 - Development of severe features

Management:

Preeclampsia with severe features

- Admit
- Delivery may often be delayed until 34 weeks
 - Severe range blood pressure that can be controlled
 - No evidence of end-organ damage

Management:

Preeclampsia with severe features

- Delivery before 34 weeks is indicated for:
 - Fetal demise
 - Fetal surveillance indicating fetal jeopardy
 - Escalating hypertension poorly responsive to antihypertensives
 - Persistent symptoms unresponsive to pain medication
 - Headache
 - Upper abdominal pain
 - Pulmonary Edema
 - Acute renal injury
 - Escalating LFTs
 - HELLP Syndrome

Management: Preeclampsia with severe features

- Possible indications for delivery before 34 weeks
- Abruptio
- Labor
- Maternal request?

Intrapartum Management: General Principals

- OK to induce labor
- Use Continuous EFM (not a candidate for Intermittent Auscultation)
- Manage Hypertension:
 - Target BP is unclear. 130's-140's/80's-90's is probably reasonable
- May reasonable to have primary c/section for those most at risk of failing IOL:
 - Early gestational age
 - Worrisome maternal pathology
 - Very low platelets, severe symptoms

Intrapartum Management: General Principals

Seizure Prophylaxis

–Preeclampsia without severe features

- Probably doesn't need Magnesium (We usually don't)
- (but seizure risk is close to 1%)

–Preeclampsia with severe features

- Magnesium Sulfate 4-6 gram loading dose and then 2gm/hour for most people
- Adjust maintenance downward for those with high creatinine or low urine output
- Check levels clinically or with lab every 4 hours
- Continue until 24 hours postpartum. Maybe longer with neurologic symptoms.

Confounding and clinically tricky Circumstances

- Preexisting Maternal disease with
 - Proteinuria
 - Hypertension
 - Elevated LFTs
 - Headache
 - Often difficult diagnostic conundrum
- Almost severe?
 - Headache the is somewhat responsive to treatment
 - BP that is tickling severe

Prevention of Preeclampsia

- Aspirin
- Timing and best doses are not completely clear
- ACOG, SMFM and USPSTF all recommend 81mg/day
- Europe (FIGO) uses 150mg
- Society of Ob/Gyns of Canada recommends 162mg/day
- I generally recommend 162/day starting at 12 weeks and continuing until delivery



Strategies to Improve Rural Perinatal Healthcare: Maternal Mental Health

Julia Frew, MD

Department of Psychiatry, Dartmouth Health

March 18, 2025

Outline

- Epidemiology
- Screening
- Assessment
- Treatment
- Resources

Perinatal Mental Health Conditions

- Common
- Impactful
- Treatable, but often go untreated

Suicide and overdose are the **LEADING CAUSE** of death for women in the first year following pregnancy, with 80% of those deaths deemed preventable.

<https://www.cdc.gov/maternal-mortality/php/data-research/index.html>

MMHLA

Maternal Mental Health

LEADERSHIP ALLIANCE

FACT SHEET | NOVEMBER 2023

Maternal Mental Health Overview

info@mmhla.org

mmhla.org

@mmhla2

Key Facts: Maternal Mental Health (MMH) Conditions

1 in 5 Mothers are Impacted by Mental Health Conditions

Maternal mental health (MMH) conditions are the **MOST COMMON** complication of pregnancy and birth, affecting 800,000 families each year in the U.S.^{1,2}

Mental Health Conditions are the Leading Cause of Maternal Deaths

Suicide and overdose are the **LEADING CAUSE** of death for women in the first year following pregnancy.³

Most Individuals are Untreated, Increasing Risk of Negative Impacts

75% of individuals impacted by MMH conditions **REMAIN UNTREATED**, increasing the risk of long-term negative impacts on mothers, babies, and families.⁴

\$14 Billion: The Cost of Untreated MMH Conditions

The cost of not treating MMH conditions is \$32,000 per mother-infant pair, or **\$14 BILLION** each year in the U.S.⁵

Terminology

Timing and Onset of Anxiety and Depression

Of women who experience anxiety or depression in the postpartum period.⁶

If untreated, symptoms of MMH conditions can last up to 3 years.⁷

Perinatal	From conception through full year postpartum.
Antenatal / prenatal	During pregnancy.
Postpartum / postnatal	First year following pregnancy.
Postpartum Depression / PPD / Postpartum	An umbrella term describing mood changes following pregnancy.
Perinatal mood disorders (PMDs) or perinatal mood and anxiety disorders (PMADs)	Various terms used to describe mental health conditions during the perinatal timeframe.
Maternal mental health (MMH) or perinatal mental health (PMH) challenges / complications / conditions / disorders / illnesses	
Women, mothers, childbearing people, birthing people	MMHLA uses these terms to refer to individuals who are capable of giving birth, and not to refer to gender identity. We strive to use inclusive terms whenever possible.

1

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Screening

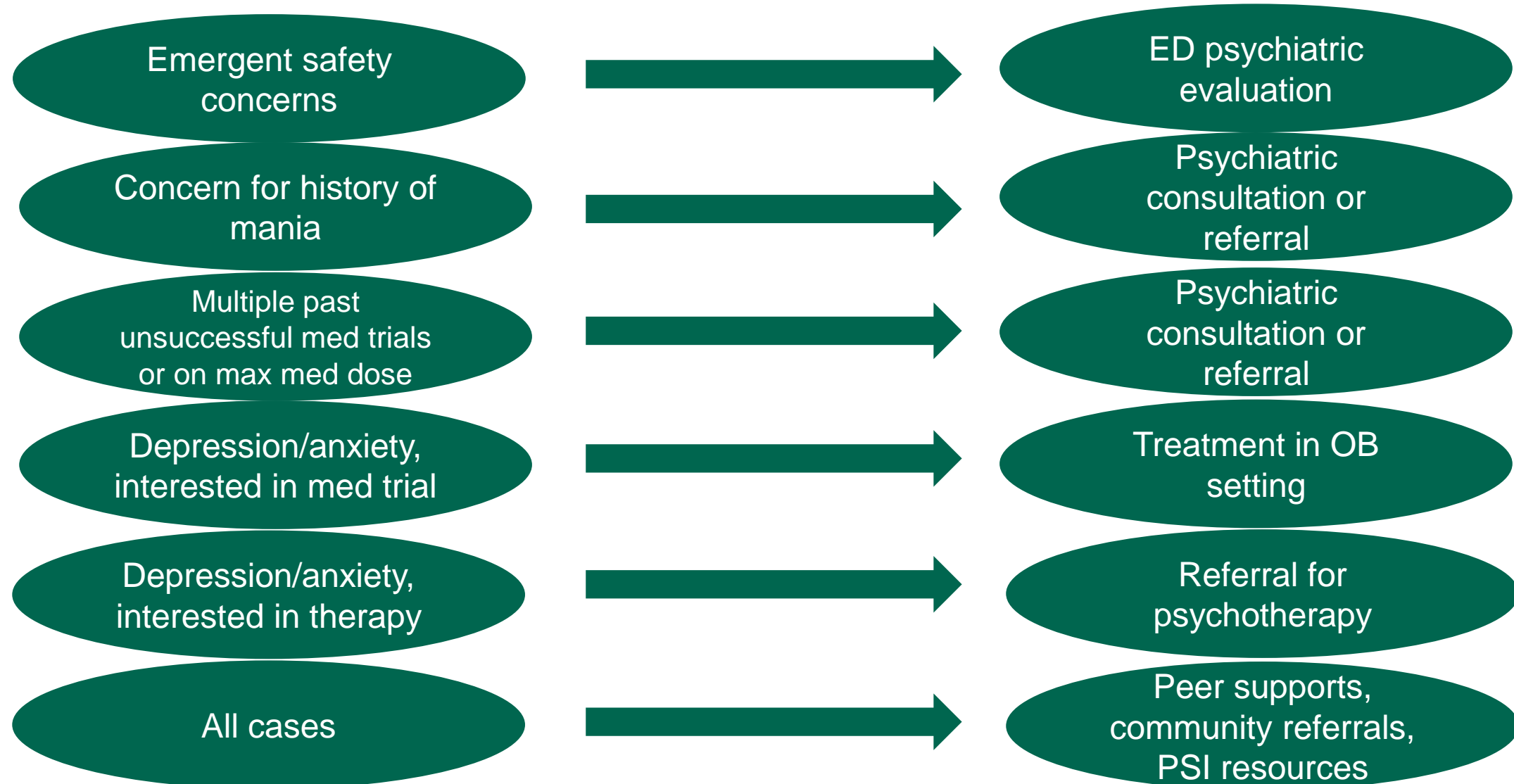
- ACOG recommends that screening for perinatal depression and anxiety occur at the initial prenatal visit, later in pregnancy, and at postpartum visits using a standardized, validated instrument.
- Lifeline for Moms has created composite screeners including:
 - Depression: PHQ9 or EPDS
 - Anxiety: GAD-7
 - Bipolar disorder: MDQ (only needs to be done once as it queries lifetime symptoms)
 - PTSD: PC-PTSD-5
 - Supplemental patient safety screener
- Screen all perinatal patients for SUD using a validated questionnaire or conversation with patient
 - Routine urine drug screening not recommended

Assessment (screening \neq diagnosis)

- Positive screening results should trigger further assessment
- At a minimum, assess:
 - Safety
 - Severity of symptoms
 - Interest/openness to treatment options (meds, psychotherapy)
 - Presence of current treatment providers

“Is this something I can address in the OB setting, or do I need additional support?”

Assessment



Treatment of MMH conditions in the OB setting

- **If:**

- No concern for history of mania
- At least moderate symptoms of anxiety/depression
- Interest in med trial

- **Then:**

- Initiate SSRI or SNRI (choose previously effective med, if applicable)
- Titrate to effect or to at least a moderate dose
 - Sertraline 100-150mg
 - Fluoxetine 40-60mg
 - Escitalopram 15-20mg

Know Your Local Resources

- Psychiatry services in your medical system
 - Collaborative/integrated care models
 - Subspecialty mental health care
 - Electronic or curbside consultation
- Community Mental Health Centers
- Family Resource Centers/Parent Child Centers
- Private Practice providers in the community
 - <https://www.psychologytoday.com/us/therapists>
- PSI Online Provider Directory:
 - <https://www.postpartum.net/get-help/provider-directory/>



ONLINE PROVIDER DIRECTORY

Looking for a knowledgeable provider or support group in your area?

Visit the PSI online directory to find qualified perinatal mental health professionals and groups in the United States and Canada. Future plans will include the UK and Australia.

Moms, families, and providers can now quickly and easily identify trained perinatal mental health providers in their area. Providers can share practice announcements, new programs and groups, and more.

FIND A PROVIDER OR GROUP

State Resources

National Network of Perinatal Psychiatry Access Programs

National Network of Perinatal Psychiatry Access Programs



Our National Network of Perinatal Psychiatry Access Programs:

- Facilitates peer learning and resource sharing among aspiring, emerging, and established Perinatal Psychiatry Access Programs and relevant partners across the U.S.
 - Nurtures relationships to promote continued support for, and innovation and expansion of, existing and future programs.
 - Facilitates quality improvement, program evaluation, and equity advancement within and across programs.
- Learn more about our commitment to equity across our Network of Perinatal Psychiatry Access Programs.**

If your state doesn't have a Perinatal Psychiatry Access Program yet and you are interested in consulting with a perinatal psychiatrist, you can contact the **Postpartum Support International (PSI) Perinatal Psychiatric Consult Line** online or by calling **877-944-4773**.

<https://www.umassmed.edu/lifeline4moms/Access-Programs/>

National Resources

- PSI Perinatal Psychiatric Consult Line

<https://www.postpartum.net/professionals/perinatal-psychiatric-consult-line/>



POSTPARTUM SUPPORT
INTERNATIONAL

Medical Providers (For Prescribers):

The PSI perinatal psychiatric consultation line is a service provided at no cost.

The consultation line is available for medical professionals who are prescribers and have questions about the mental health care related to pregnant and postpartum patients and pre-conception planning. This consultation service is available for medical providers only.

The Perinatal Psychiatric Consult Line is staffed by experts in the field of psychiatry who are members of PSI and specialists in the treatment of perinatal mental health disorders. The service is free and available by appointment.

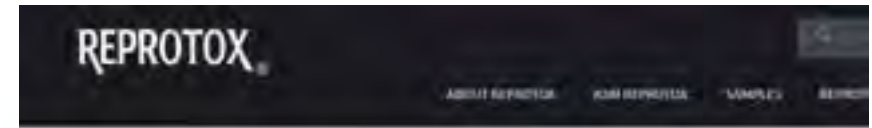
[Fill out this form](#) and we will match you with an appointment. We will respond to your request within one business day.

The presentation of perinatal mental health disorders is not always straightforward, and medication is not always immediately effective. PSI's expert perinatal psychiatrists are available to share their skills and expertise with fellow medical professionals, providing necessary guidance and reassurance on any matter, but particularly those that may be more challenging.

Online Resources for Providers



**MGH
CENTER for
Women's Mental Health**
Reproductive Psychiatry Resource & Information Center



Welcome to Reprotox

An information system developed by the Reproductive Toxicology Center for its members.

Login

REPROTOX® contains summaries on the effects of medications, chemicals, infections, and physical agents on pregnancy, reproduction, and development. The REPROTOX® system was developed as an adjunct information source for clinicians, scientists, and government agencies. Patients should consult their health care providers rather than relying on REPROTOX® summaries.

Lifeline
for moms



Fact Sheets

Answers to Your Frequently Asked Questions about Pregnancy & Breastfeeding Exposures

Quick, easy-to-understand information on 275+ exposures and how they may impact pregnancy or breastfeeding



Bumps

Best use of medicines in pregnancy



Drugs and Lactation Database (LactMed®)

Bethesda (MD): [National Institute of Child Health and Human Development](#); 2006-

[Copyright and Permissions](#)

Search this book

The LactMed® database contains information on drugs and other chemicals to which breastfeeding mothers may be exposed. It includes information on the levels of such substances in breast milk and infant blood, and the possible adverse effects in the nursing infant. Suggested therapeutic alternatives to those drugs are provided, where appropriate. All data are derived from the scientific literature and fully referenced. A peer review panel reviews the data to assure scientific validity and currency.

Online Resources for Pat



STAR LEGACY
FOUNDATION



Best use of medicines in pregnancy



Resources

- Postpartum Support International: <https://www.postpartum.net/>
- Ammon-Pinizzotto Center for Women's Mental Health at MGH: <https://womensmentalhealth.org/>
- Mother to Baby (Organization of Teratology Information Specialists): <https://mothertobaby.org/>
- Reprotox: <https://reprotox.org/>
- LactMed: <https://www.ncbi.nlm.nih.gov/books/NBK501922/>
- BUMPS (UK Teratology Information Service): <https://www.medicinesinpregnancy.org/>
- Lifeline4Moms: <https://www.umassmed.edu/lifeline4moms/>
- Star Legacy Foundation (stillbirth and infant loss): <https://starlegacyfoundation.org/>
- Resolve (infertility): <https://resolve.org/>

Syphilis and HIV

Strategies to Optimize Rural Perinatal Healthcare ECHO



Learn more at:
www.cdc.gov/sti

The State of STIs in the United States in 2023.

Sexually transmitted
infections (STIs) are
very common but
preventable.



1.6 million
cases of **CHLAMYDIA**;
9% decrease since 2019.



601,319
cases of **GONORRHEA**;
2% decrease since 2019.



209,253
cases of **SYPHILIS**;
61% increase since 2019.



3,882
cases of **SYPHILIS**
AMONG NEWBORNS;
106% increase since 2019.



Syphilis

- *Treponema pallidum*
- Spirochete - corkscrew-shaped, motile microaerophilic bacterium that cannot be viewed by normal light microscopy.
- Transmitted sexually through skin and mucous membranes (during primary or secondary stages when lesions or rash are present), and hematogenously (transplacental spread to fetus)



Syphilis in Pregnancy

- Transplacental transmission of *T. pallidum* can occur at any time during gestation but occurs with increasing frequency as gestation advances.
- Women with untreated primary or secondary syphilis are more likely to transmit syphilis to their fetuses than women with latent disease.
- If acquired within 4 years of delivery, can lead to infection in fetus in 80% of cases and may result in stillbirth or infant death in up to 40%.
 - The risk of transmission is only 2% after four years.
- *T. pallidum* is not transferred in breast milk, but transmission may occur if the mother has a chancre on her breast.

Congenital Syphilis

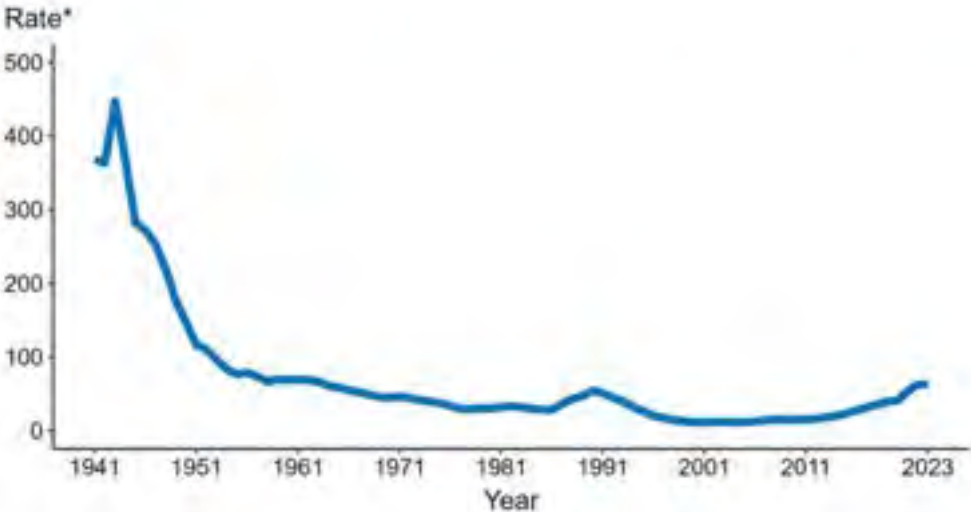
- Wide spectrum of clinical manifestations
- Only severe cases are clinically apparent at birth
 - 60-90% of live-born neonates with congenital syphilis are asymptomatic at birth
- Bones, liver, pancreas, intestine, kidney, and spleen are the most frequently and severely involved



Pediatr Infect Dis J. 2012;31(9):988

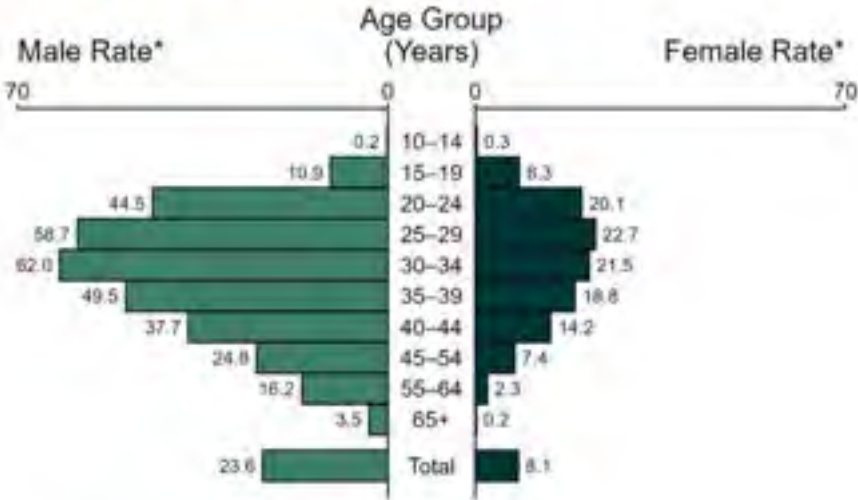
MMWR Morb Mortal Wkly Rep. 2015;64(44):1241

Syphilis — Rates of Reported Cases by Year, United States, 1941–2023

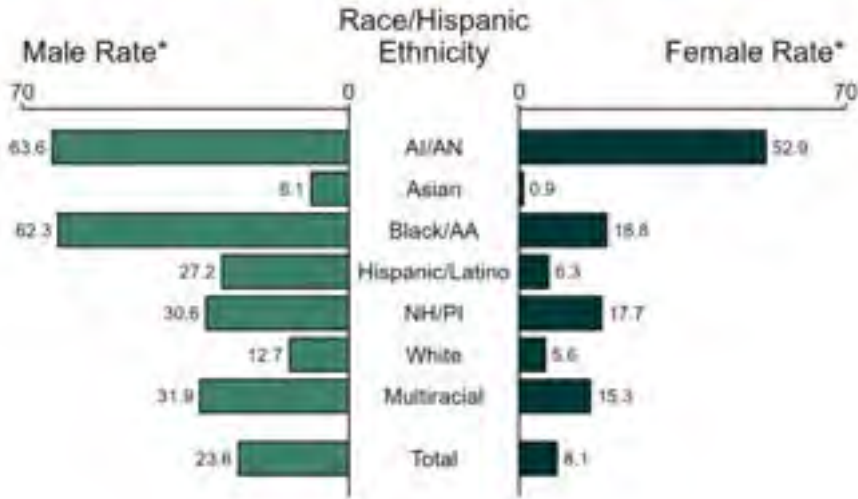


* Per 100,000
 NOTE: Includes all stages of syphilis and congenital syphilis.

Primary and Secondary Syphilis — Rates of Reported Cases by Age Group and Sex, United States, 2023

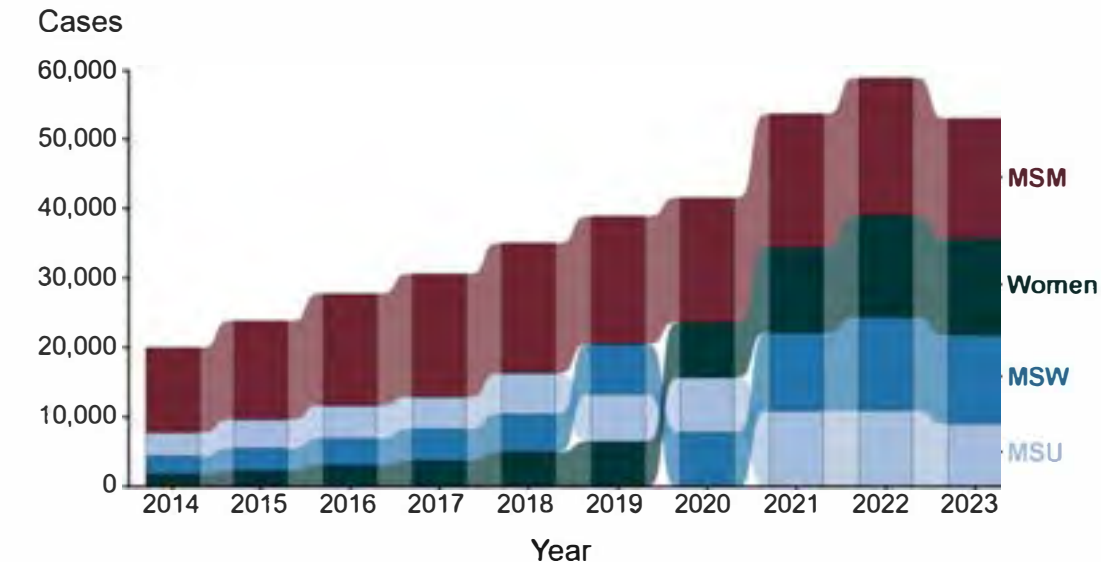


Primary and Secondary Syphilis — Rates of Reported Cases by Race/Hispanic Ethnicity and Sex, United States, 2023



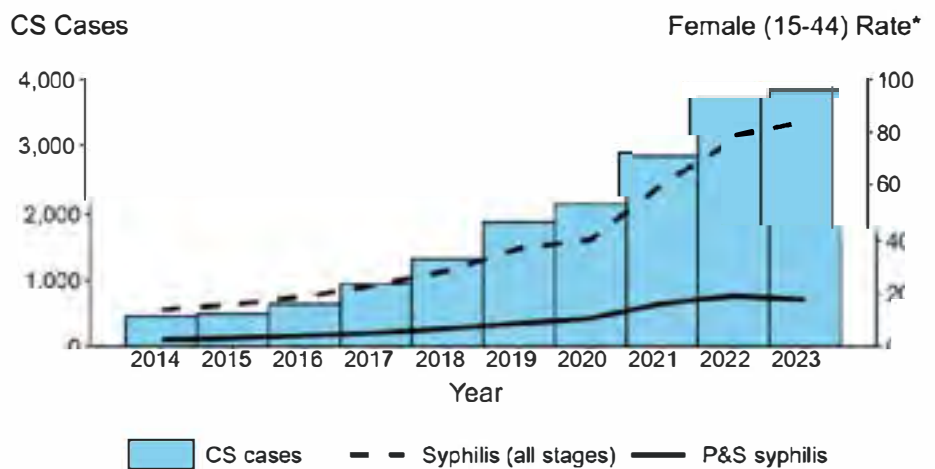
* Per 100,000
 ACRONYMS: AI/AN = American Indian or Alaska Native; Black/AA = Black or African American; NH/PI = Native Hawaiian or other Pacific Islander
 NOTE: In 2023, 1,292 primary and secondary syphilis cases among men (5.8%) and 647 cases among women (4.7%) had missing, unknown, or other race and were not reported to be of Hispanic ethnicity. These cases are included in the total rates.

Primary and Secondary Syphilis — Reported Cases by Sex and Sex of Sex Partners and Year, United States, 2014–2023



ACRONYMS: MSM = Men who have sex with men; MSU = Men with unknown sex of sex partners; MSW = Men who have sex with women only

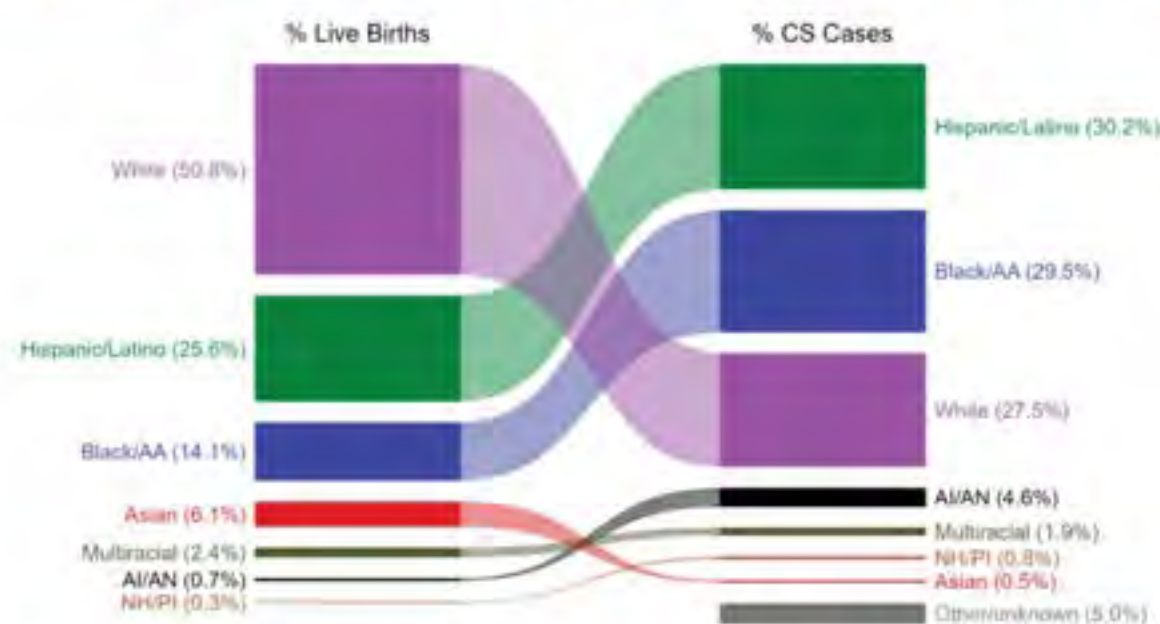
Congenital Syphilis — Reported Cases by Year of Birth and Rates of Reported Cases of Primary and Secondary Syphilis and Syphilis (All Stages) Among Women Aged 15–44 Years, United States, 2014–2023



* Per 100,000

ACRONYMS: CS = Congenital syphilis; P&S Syphilis = Primary and secondary syphilis

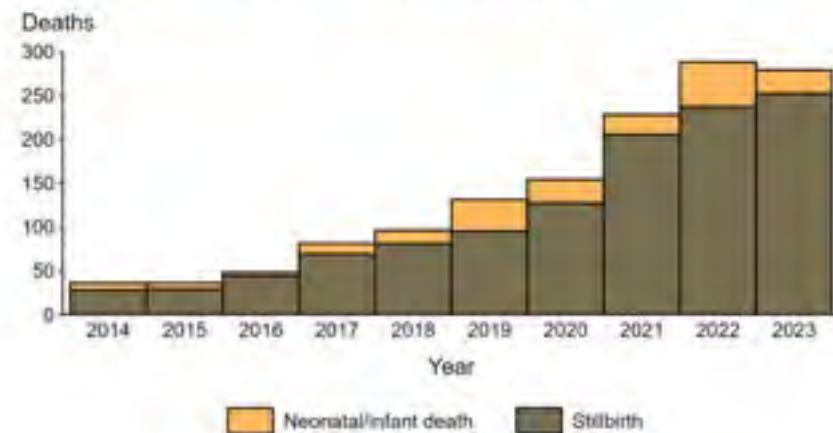
Congenital Syphilis — Total Live Births and Reported Cases by Race/Hispanic Ethnicity of Birth Parent, United States, 2023



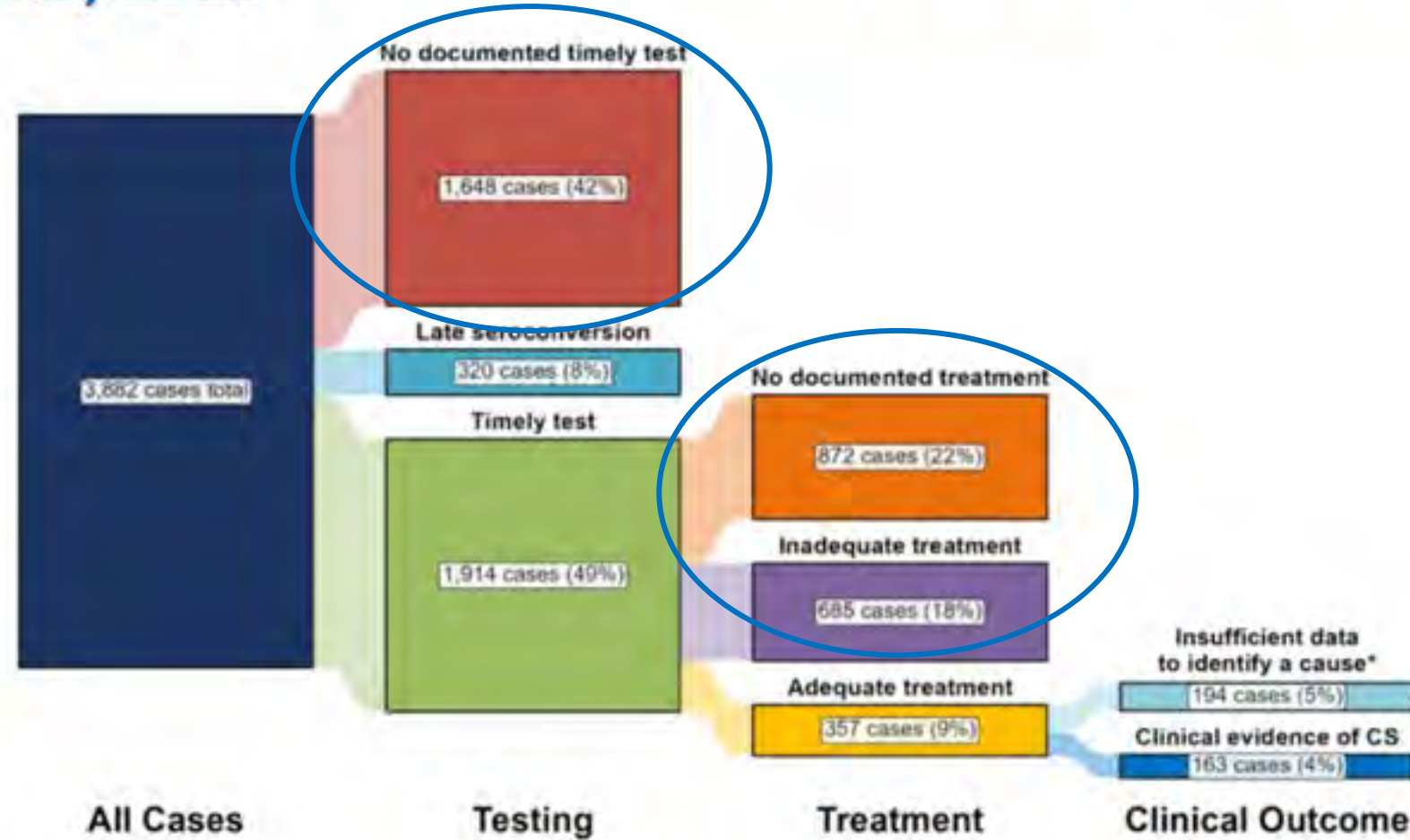
NOTE: In 2023, a total of 193 congenital syphilis cases (5.0%) had missing, unknown, or other race and were not reported to be of Hispanic ethnicity. These cases are included in the "other/unknown" category.

ACRONYMS: AI/AN = American Indian or Alaska Native; Black/AA = Black or African American; NH/PI = Native Hawaiian or other Pacific Islander

Congenital Syphilis — Reported Stillbirths and Neonatal/Infant Deaths by Year, United States, 2014–2023



Congenital Syphilis — Distribution of Receipt of Testing and Treatment by Pregnant Persons with a Congenital Syphilis Outcome, United States, 2023



* Cases with insufficient data to assign a likely missed opportunity were due to missing or incomplete data in case notification data at CDC. More complete data on these cases may be available at the jurisdictional level, allowing for ascertainment of the likely missed opportunity.

NOTE: Percentages represent the number of congenital syphilis (CS) cases among the 3,882 total CS cases reported among states and the District of Columbia in 2023.

Vital Signs: Missed Opportunities for Preventing Congenital Syphilis — United States, 2022

10x

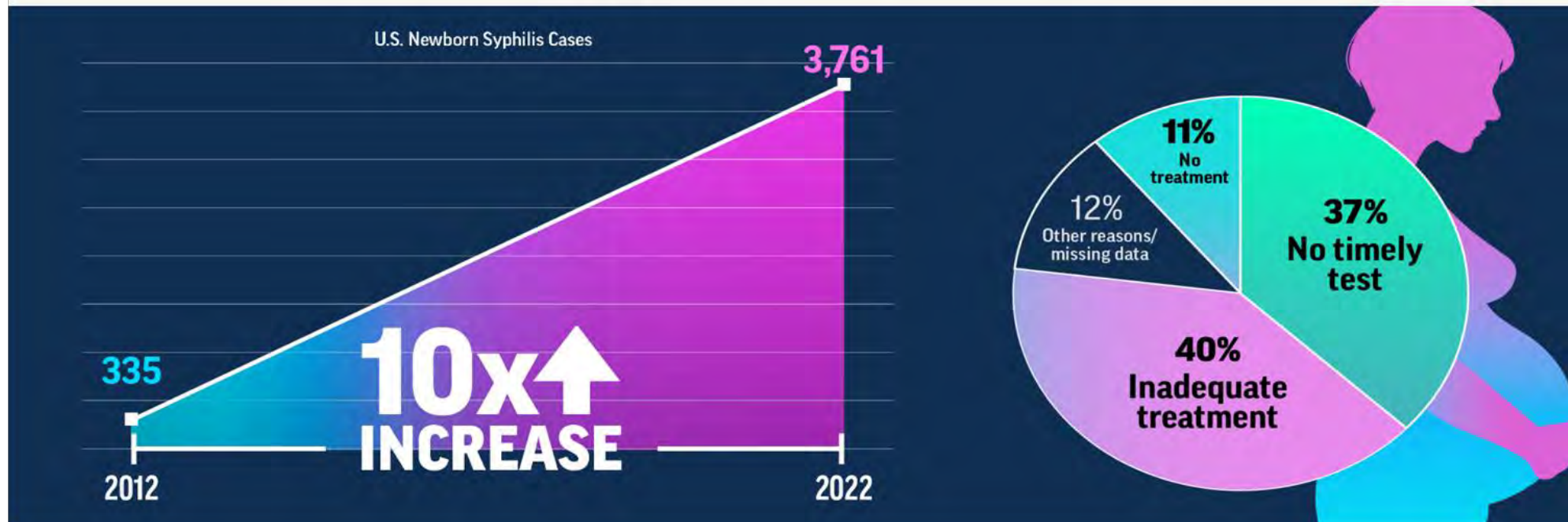
Over 10 times as many babies were born with syphilis in 2022 than in 2012.

9 in 10

Timely testing and treatment during pregnancy might have prevented almost 9 in 10 (88%) cases in 2022.

2 in 5

Two in 5 (40%) people who had a baby with syphilis did not get prenatal care.



USPSTF Screening Recommendations for Syphilis

2022

Population	Recommendation	Grade
Asymptomatic, nonpregnant adolescents and adults who are at increased risk for syphilis infection	The USPSTF recommends screening for syphilis infection in persons who are at increased risk for infection.	A

- **Risk of syphilis is higher in men who have sex with men; persons with HIV infection or other sexually transmitted infections; persons who use illicit drugs; and persons with a history of incarceration, sex work, or military service.**
- However, clinicians should be aware of how common syphilis infection is in their community and assess patient's individual risk.

2018

Population	Recommendation	Grade
Pregnant women	The USPSTF recommends early screening for syphilis infection in all pregnant women.	A

CDC STI Guidelines 2021

- All pregnant women should be tested for syphilis at their first prenatal visit.
- For women at high risk for infection*, serologic testing should be performed twice during the third trimester: once at 28–32 wk gestation and again at delivery.
- Any woman who has a fetal death after 20 wk gestation should be tested for syphilis.
- No mother or neonate should leave the hospital without maternal serologic status having been documented at least once during pregnancy, and if the mother is considered high risk, documented at delivery.
- Concurrent HIV screening recommended for all pregnant woman.

*Women at high risk

- Diagnosed with a STI during pregnancy
- Exchanging sex for drugs or money
- Multiple sex partners
- Late entry into care (second trimester or later)
- No prenatal care
- Residence in an area of high syphilis prevalence
- Methamphetamine or heroin use
- Incarceration of woman or her partner
- Unstable housing or homelessness

Legal requirements for syphilis screening among pregnant women by time of test and state

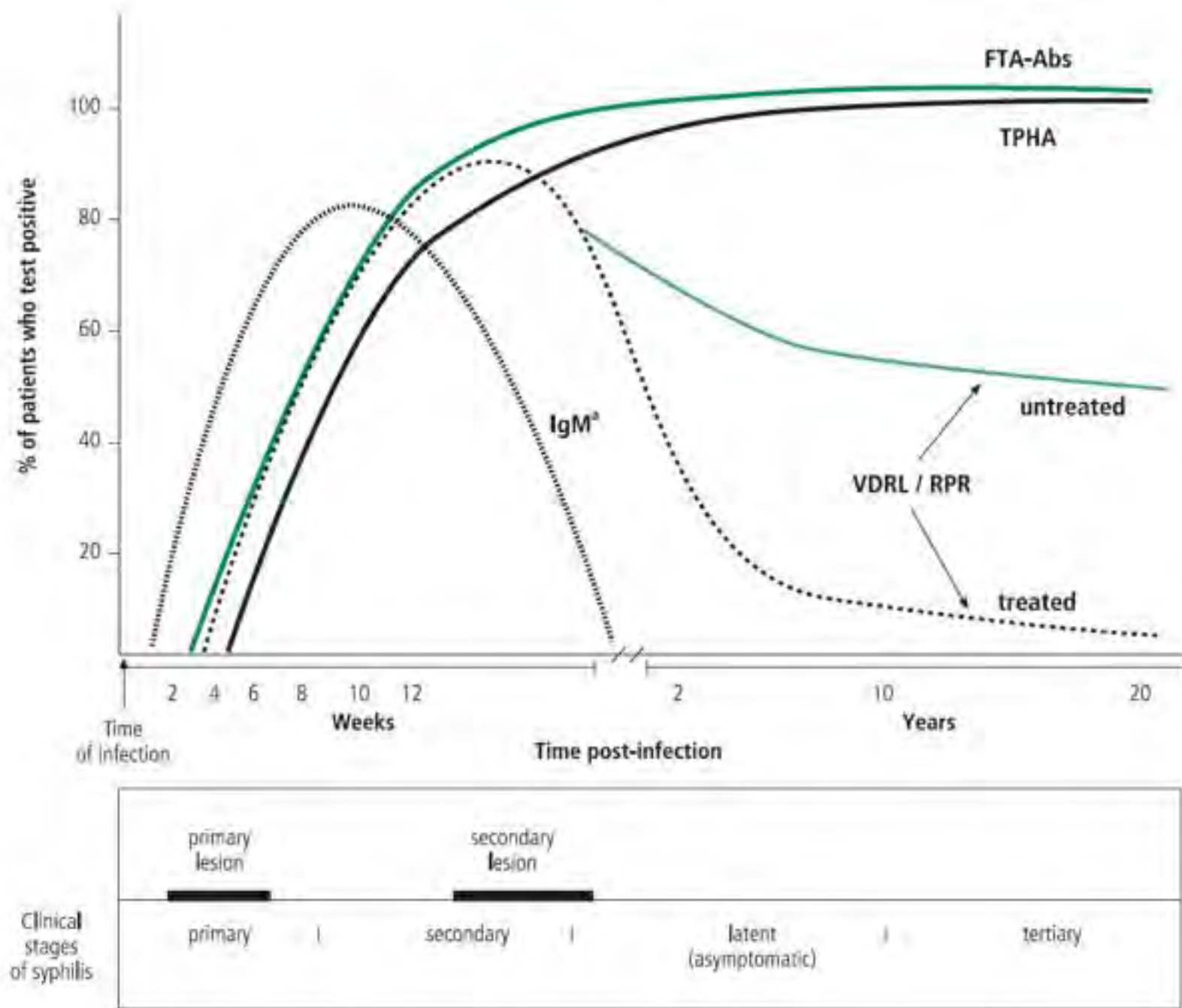
	First Visit	Third Trimester	Delivery
Alabama	X	X	X
Alaska	X		
Arizona	X	X	X
Arkansas	X	X	
California	X	X	O
Colorado	X		
Connecticut	X	X	
Delaware	X	X	
DC	X	X	
Florida	X	X	O
Georgia	X	X	X
Hawaii			
Idaho	X		
Illinois	X	X	
Indiana	X	O	
Iowa			
Kansas	X		
Kentucky	X		
Louisiana	X	X	O
Maine			
Maryland	X	X	O
Massachusetts	X		
Michigan	X	X	O
Minnesota			
Mississippi	X	X	X
Missouri	X	O	O
Montana	X		
Nebraska	X		
Nevada	X	X	O
New Hampshire			
New Jersey	X		X
New Mexico	X		
New York	X	X	
North Carolina	X	X	X

	First Visit	Third Trimester	Delivery
North Dakota			
Ohio	X		
Oklahoma	X	O	O
Oregon	X		
Pennsylvania	X	O	
Rhode Island	X		
South Carolina	X		
South Dakota	X		
Tennessee	X	O	
Texas	X	X	X
Utah	X		
Vermont	X		
Virginia	X		
Washington	X		
West Virginia	X		
Wisconsin			
Wyoming	X		

X	Screening required
O	Screening Required only if at increased risk

Serologic Tests

- Nontreponemal – nonspecific, low cost, able to quantify response to treatment
 - Rapid plasma reagin (RPR)
 - Venereal Disease Research Laboratory (VDRL)
 - Tolidine Red Unheated Serum Test (TRUST)
- Treponemal – more complex, expensive, specific, qualitative
 - Fluorescent treponemal antibody absorption (FTA-ABS)
 - *T. pallidum* particle agglutination assay (TPPA)
 - *T. pallidum* enzyme immunoassay (TP-EIA)
 - Microhemagglutination test for antibodies to *Treponema pallidum* (MHA-TP)
 - Chemiluminescence immunoassay (CIA)

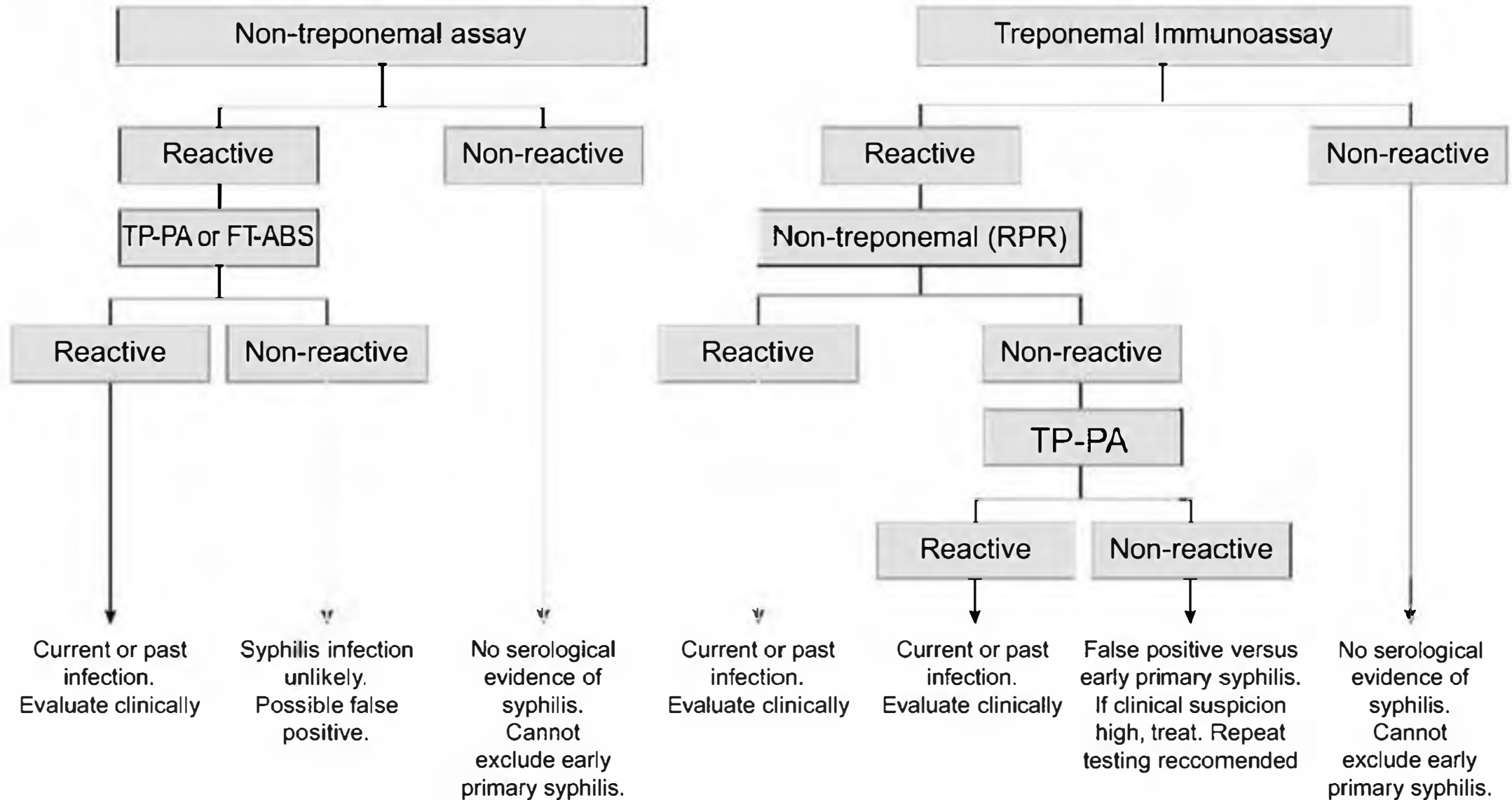


B

Screening Algorithms

Traditional

Reverse



False-positive tests

Nontreponemal tests

- Biologically due to pregnancy
 - 31% FP VDRL
- Acute febrile illness
- Recent immunization
- Autoimmune disorders
- IVDU
- Chronic liver disease
- HIV

Treponemal tests

- Biologically due to pregnancy
 - 47-88% FP TP-EIA or CIA
- Advanced age
- Tumor
- Dialysis
- Autoimmune disease
- Other spirochetal infections, malaria, leprosy

Hence all positive tests need confirmatory testing!

False-negative nontreponemal test

- Very early infection (primary or secondary)
 - 20-30% of patients presenting with chancre will have negative nontreponemal test
- Prozone reaction
 - Antibody titers are high (as often seen in secondary syphilis), an overabundance of antibodies interferes with clumping of antigen-antibody complexes
 - Occurs in pregnancy, HIV and neurosyphilis
- Early treatment preventing antibody formation
- Late infection (nontreponemal tests become nonreactive over time)

HIV

- *Human Immunodeficiency Virus*
- Attacks the immune system and without treatment leads to AIDS (acquired immunodeficiency syndrome)
- Spreads through anal or vaginal sex, sharing needles or other drug injection equipment, or during pregnancy
- No cure, but treatment saves lives and prevents transmission to others

Perinatal Transmission



HIV can be passed from mother-to-child anytime during pregnancy, childbirth, and breastfeeding. This is called *perinatal transmission*.

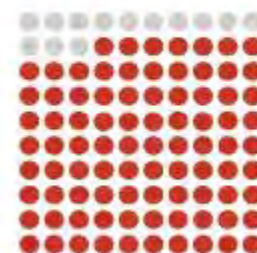
HIV and Pregnancy

- 3,000 HIV infected women give birth annually in the US
- Estimated rate of perinatal transmission in the absence of intervention is about **25%**
 - 20% of transmission occurs before 36wks
 - 50% occurs between 36wks and delivery
 - 30% occurs during active labor and delivery
- Acute HIV infection **during pregnancy or while breastfeeding** confers very high risk of HIV transmission to the child due to high levels of HIV RNA in maternal plasma, genital tract and breastmilk.
- With the use of suppressive **ART during pregnancy**, followed by postnatal **infant ART prophylaxis**, the current rate of perinatal HIV transmission in the US is **<1%**.



In 2022, an estimated
1.2 million people had HIV.

For every 100 people with HIV



87

knew their
HIV status.

Estimated HIV infections in the US by transmission category, 2022

There were **31,800** estimated new HIV infections in the US in 2022. Of those:



were among gay, bisexual,
and other men who reported
male-to-male sexual contact*



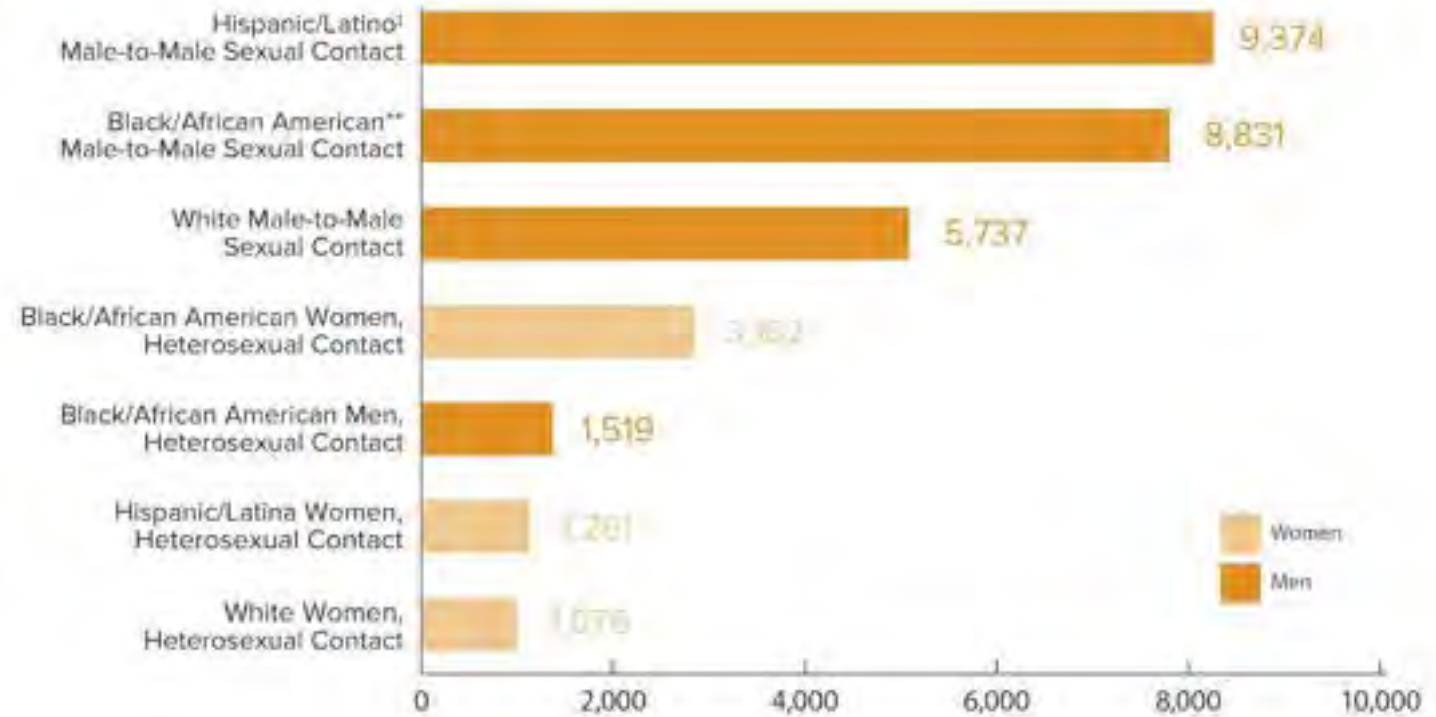
were among people who
reported heterosexual
contact



were among people
who inject drugs

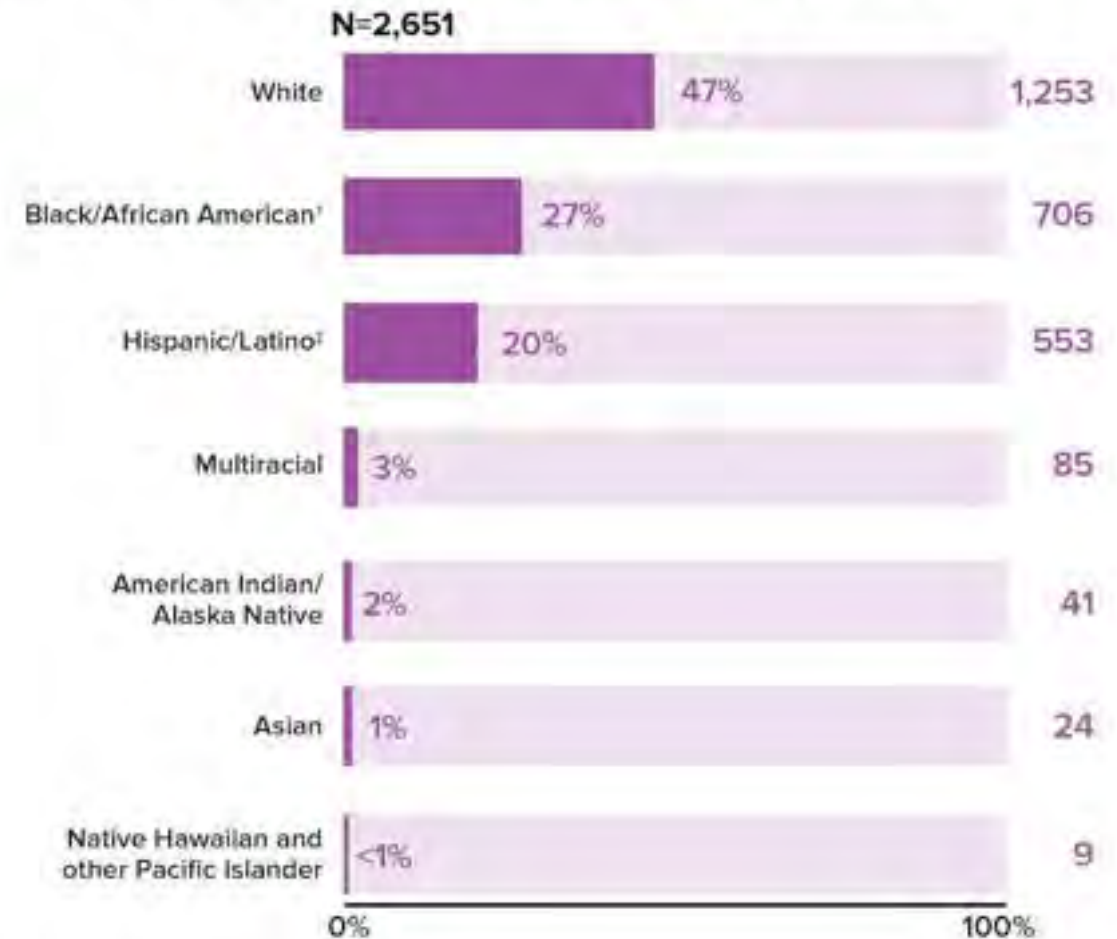
HIV diagnoses in the US and 6 territories and freely associated states for the most-affected subpopulations, 2022*†

Gay and bisexual men are the population most affected by HIV.



HIV diagnoses among people who inject drugs in the US and 6 territories and freely associated states by race and ethnicity, 2022*

White people accounted for the highest number of new HIV diagnoses among people who inject drugs.



Total may not equal 100% due to rounding.

* Among people aged 13 and older.

[†] Black refers to people having origins in any of the Black racial groups of Africa. *African American* is a term often used for people of African descent with ancestry in North America.

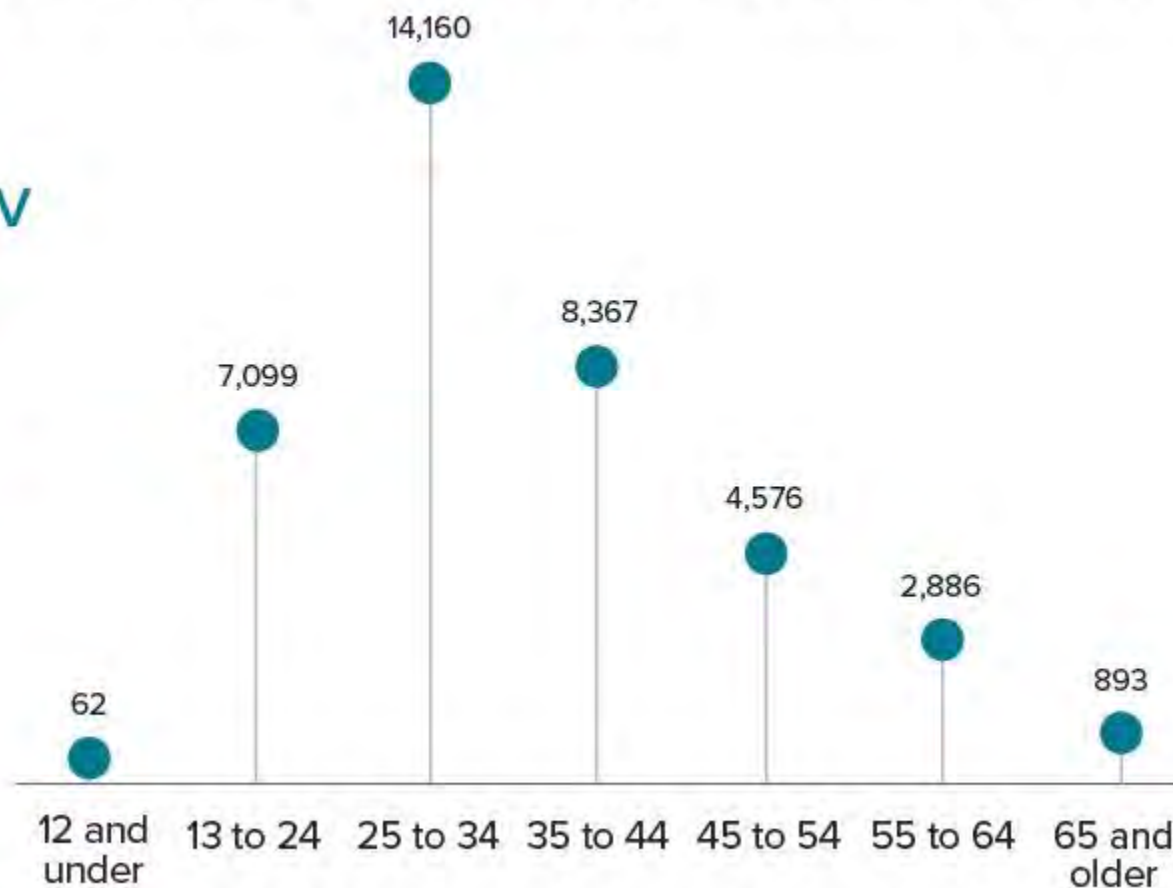
[‡] Hispanic/Latino people can be of any race.

[Fast Facts: HIV in the United States | HIV | CDC](#)

Source: CDC. Diagnoses, deaths, and prevalence of HIV in the United States and 6 territories and freely associated states, 2022. *HIV Surveillance Report*, 2024; 35.

HIV diagnoses in the US and 6 territories and freely associated states by age, 2022

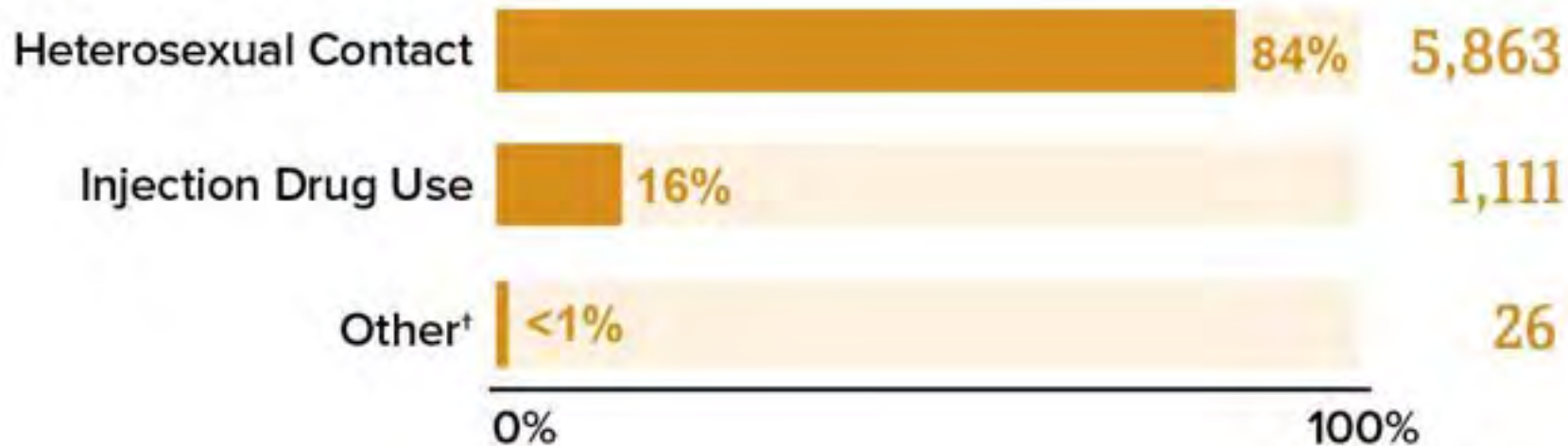
In 2022, 37,981 people received an HIV diagnosis in the US and 6 territories and freely associated states. People aged 13 to 34 accounted for more than half (56%) of new HIV diagnoses in 2022.



Source: CDC. Diagnoses, deaths, and prevalence of HIV in the United States and 6 territories and freely associated states, 2022. *HIV Surveillance Report*, 2022;35.

There were **36,801 new HIV diagnoses** in the US and dependent areas in 2019. Of those, **19% (6,999)** were among women.

Most new HIV diagnoses among women were attributed to heterosexual contact.



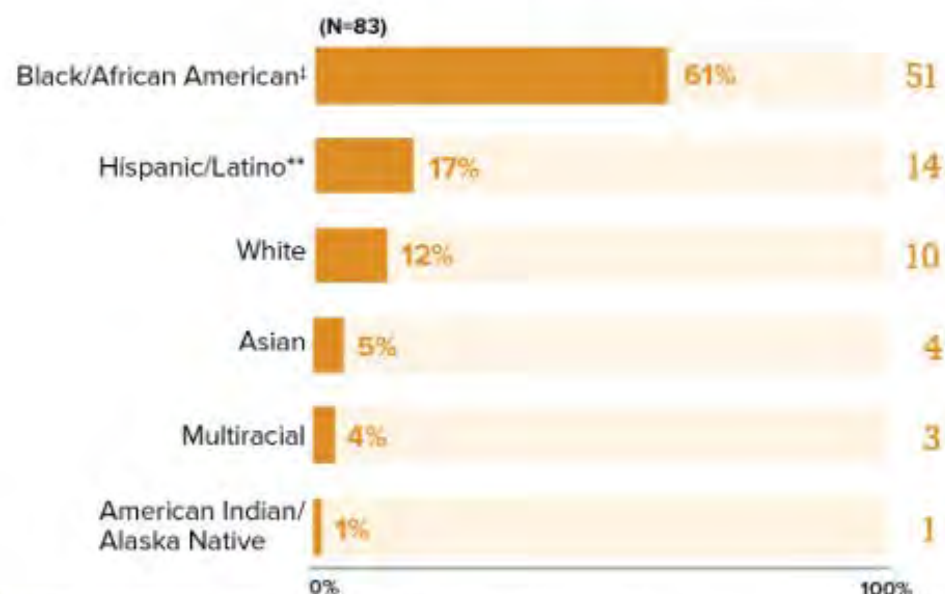


Of the **36,801 new HIV diagnoses** in the US and dependent areas in 2019, **<1% (84)** were due to perinatal transmission.*

*Includes HIV diagnoses attributed to perinatal transmission among adults, adolescents, and children.

New Perinatal HIV Diagnoses in the US and Dependent Areas by Race and Ethnicity, 2019*†

New perinatal HIV diagnoses disproportionately affect certain racial and ethnic groups.



* In 2019, there were no cases of perinatal HIV among Native Hawaiian and other Pacific Islander people.

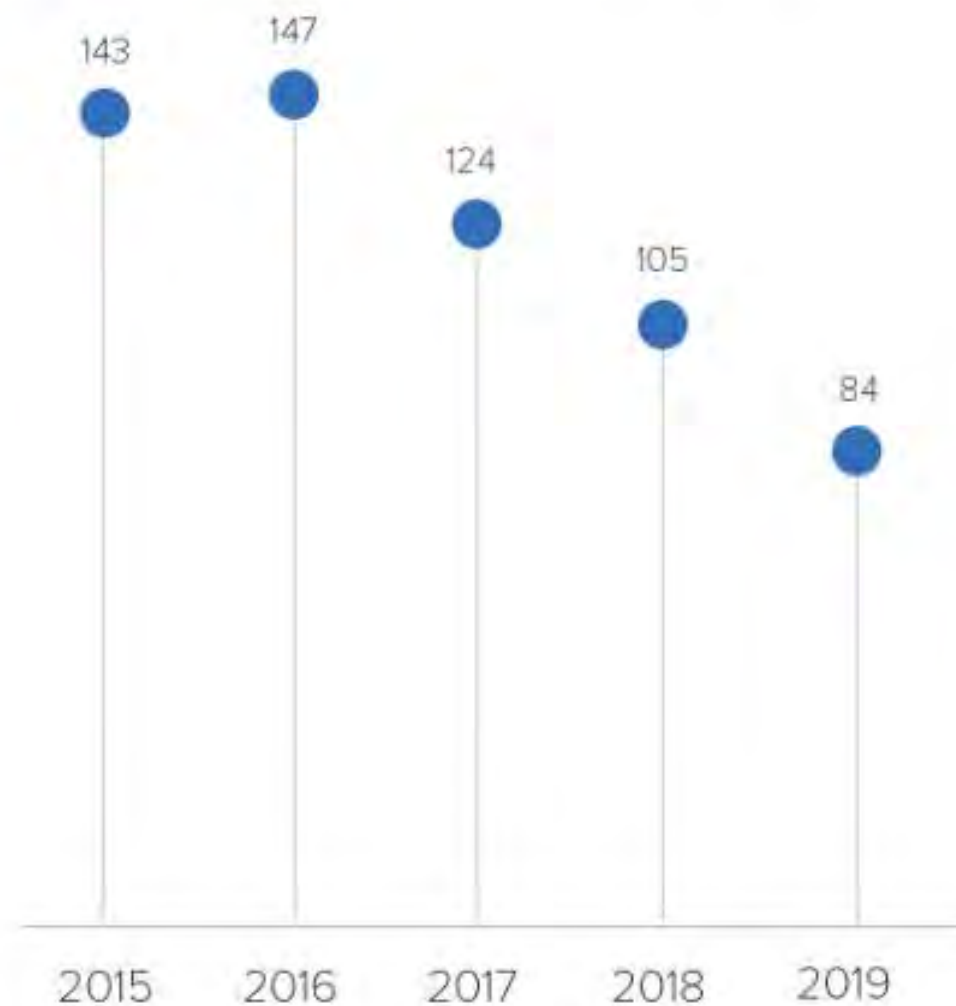
† Includes HIV diagnoses attributed to perinatal transmission among adults, adolescents, and children. Data have been statistically adjusted to account for missing transmission category.

‡ *Black* refers to people having origins in any of the Black racial groups of Africa. *African American* is a term often used for people of African descent with ancestry in North America.

** Hispanic/Latino people can be of any race.

Trends in New Perinatal HIV Diagnoses in the US and Dependent Areas, 2015-2019*

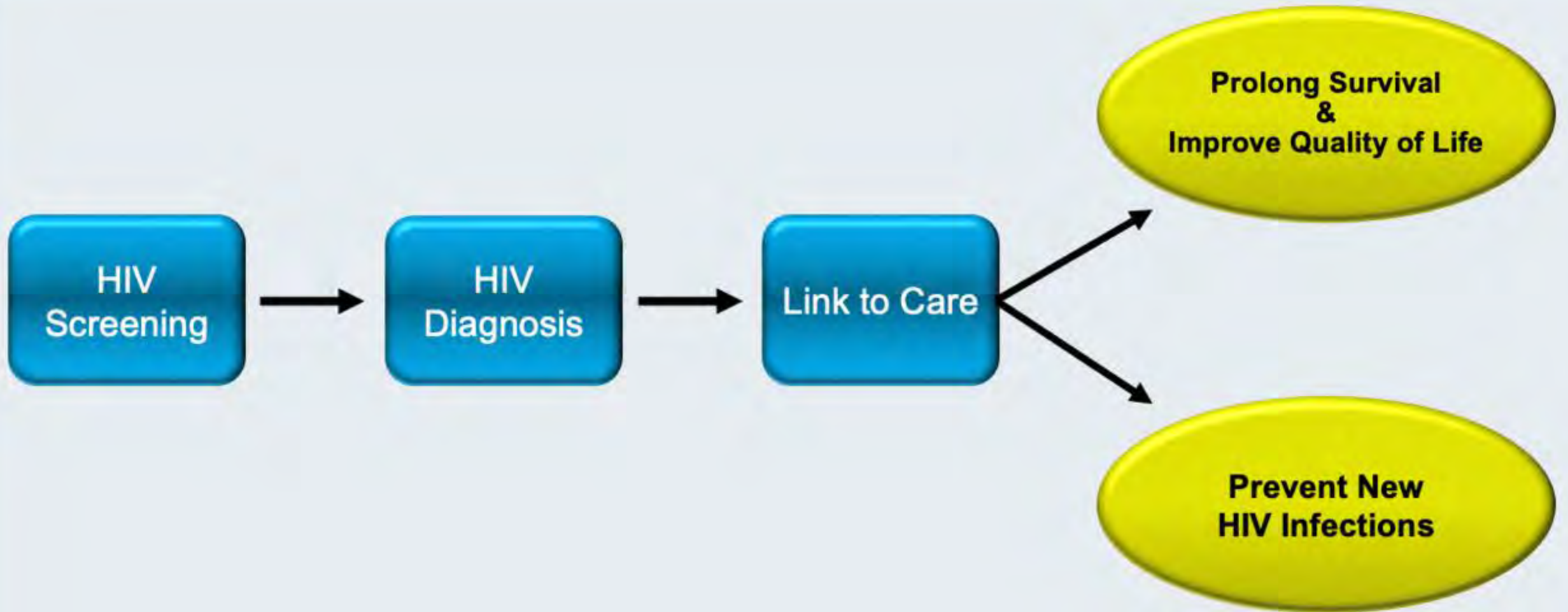
Perinatal HIV diagnoses decreased 41% from 2015 to 2019.



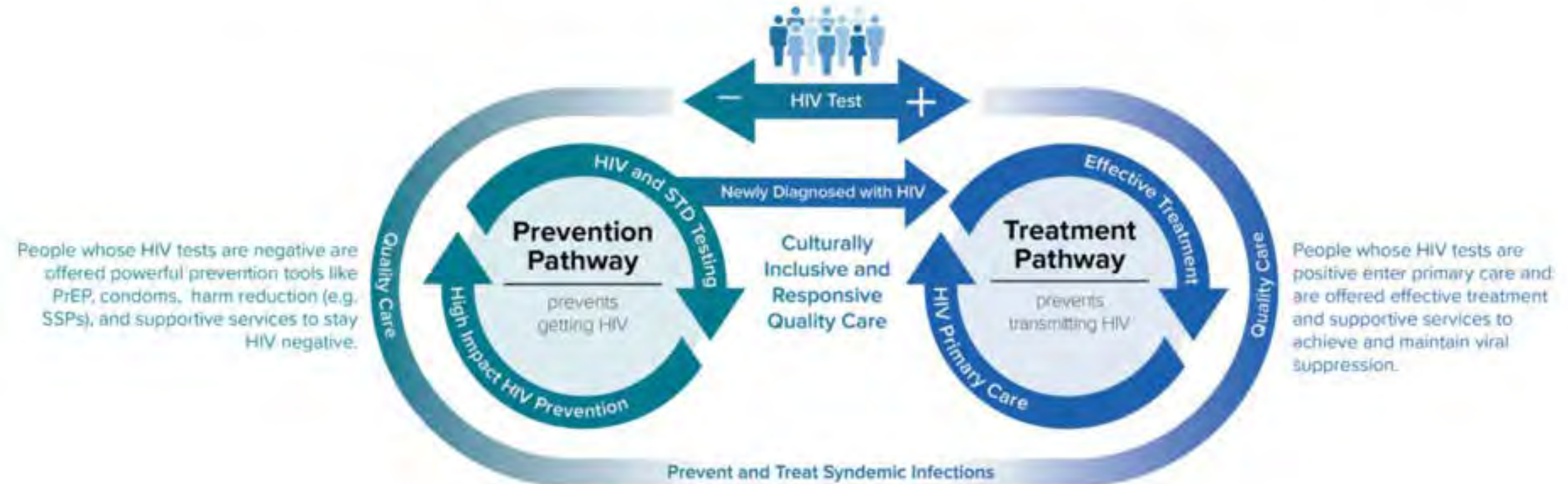
*Includes HIV diagnoses attributed to perinatal transmission among adults, adolescents, and children.

Source: CDC. [Diagnoses of HIV infection in the United States and dependent areas, 2019](#). *HIV Surveillance Report* 2021;32.

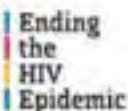
Goals of routine screening



Status Neutral HIV Prevention and Care



Follow CDC guidelines to test people for HIV. Regardless of HIV status, quality care is the foundation of HIV prevention and effective treatment. Both pathways provide people with the tools they need to stay healthy and stop HIV.



Persons using assistive technology might not be able to fully access information in this file. For assistance, please send e-mail to: mmwrq@cdc.gov. Type 508 Accommodation and the title of the report in the subject line of e-mail.

Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings

- Opt-out screening for:
 - All persons age 13 through 64 yrs
 - All patients with TB
 - All patients with STI
- Persons at high risk should be screened at least annually
 - MSM
 - HIV + sex partner
 - >1 partner
 - IVDU and their sex partners
 - Exchange sex for drugs or money
- **Routine prenatal screening with repeat screening in 3rd trimester in certain high risk populations (2001)**

USPSTF 2019 HIV Screening Recommendations

Recommendation Summary

Population	Recommendation	Grade
Pregnant persons	The USPSTF recommends that clinicians screen for HIV infection in all pregnant persons, including those who present in labor or at delivery whose HIV status is unknown.	A
Adolescents and adults aged 15 to 65 years	<p>The USPSTF recommends that clinicians screen for HIV infection in adolescents and adults aged 15 to 65 years. Younger adolescents and older adults who are at increased risk of infection should also be screened.</p> <p>See the Clinical Considerations section for more information about assessment of risk, screening intervals, and rescreening in pregnancy.</p>	A

Maternal HIV Testing and Identification of Perinatal HIV Exposure

[Maternal HIV Testing and Identification of Perinatal HIV Exposure | NIH](#) (1/2024)

- HIV testing is recommended for all sexually active women and a routine component of preconception care.
- All women should be tested as early as possible during each pregnancy.
- Partners of all pregnant women should be referred for HIV testing when their status is unknown.
- Repeat HIV testing in the third trimester is recommended for pregnant women who are at increased risk of acquiring HIV*.
- Repeat HIV testing is recommended for pregnant women with a STI or with signs and symptoms of acute HIV infection, or ongoing exposure to HIV, as well as referral for initiation of PrEP if HIV testing is negative.
- Expedited HIV testing should be performed during labor or delivery for women with undocumented HIV status and for those who tested negative early in pregnancy but are at increased risk of HIV infection* and were not retested in the third trimester.

*Women at increase risk of HIV...

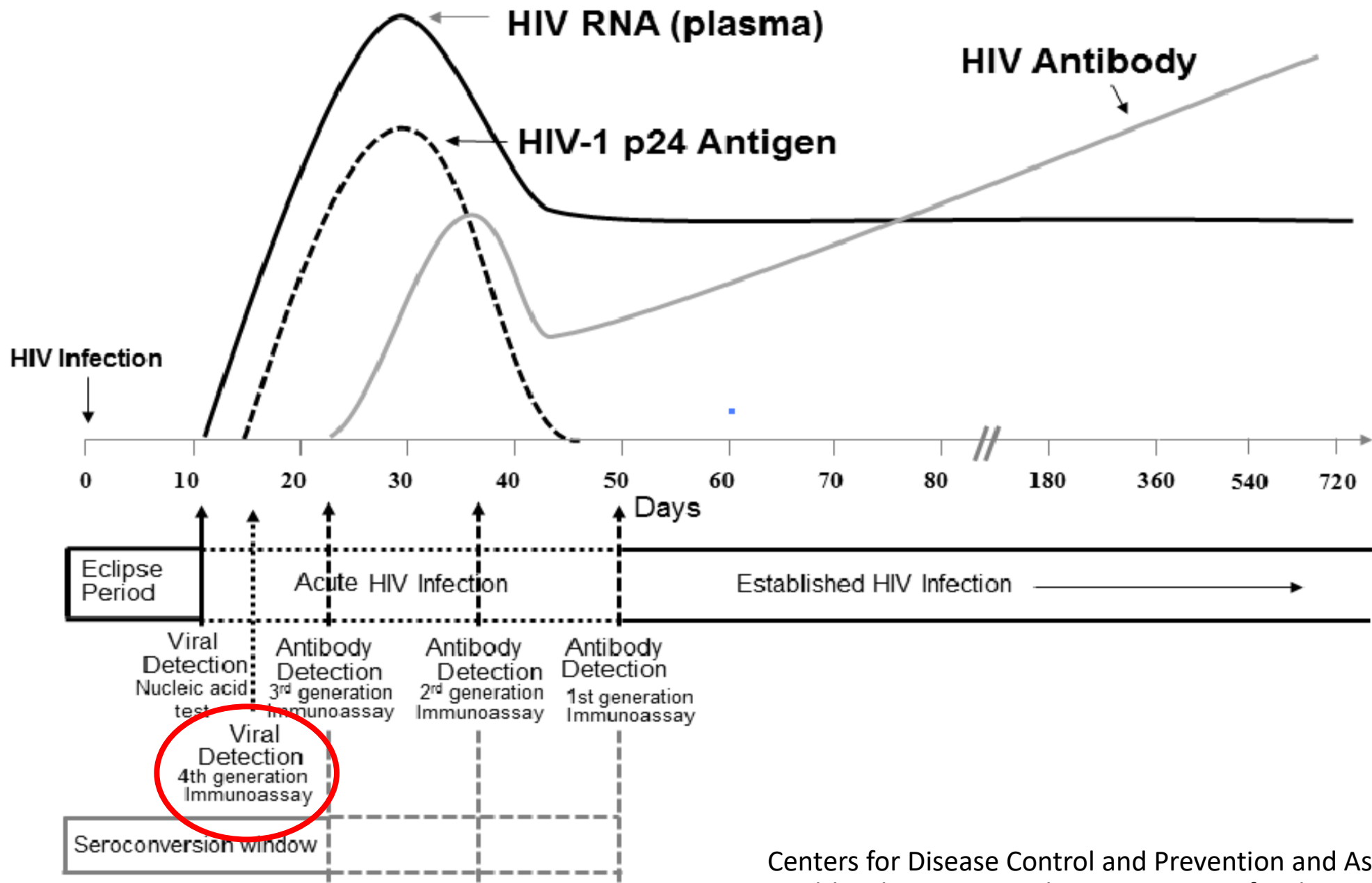
- Those who are injection drug users or have sex with people who inject drugs
- Those who exchange sex for money or drugs
- Those who are sex partners of individuals with HIV
- Those who have had a new sex partner or more than one sex partner during the current pregnancy
- Those who have a suspected or diagnosed STI during pregnancy

...should have repeat HIV testing during the third trimester, before 36 weeks gestation.

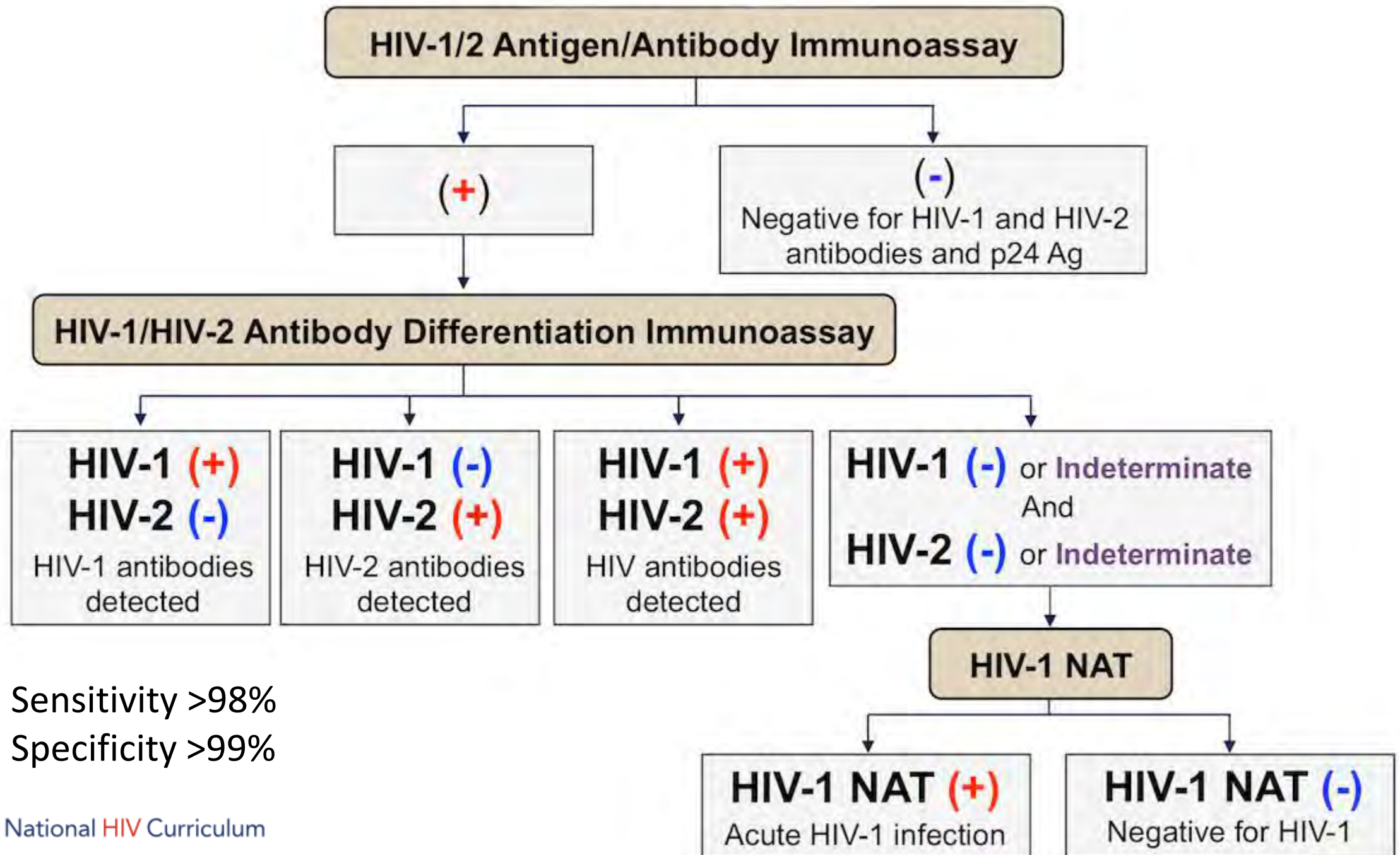


Serologic tests

- Screening tests
 - HIV antigen-antibody laboratory-based tests
 - *HIV antigen-antibody point-of-care tests*
 - HIV antibody laboratory-based tests
 - *HIV antibody point-of-care tests*
- Diagnostic tests
 - HIV-1/2 differentiation assays
 - HIV nucleic acid diagnostic tests



Centers for Disease Control and Prevention and Association of Public Health Laboratories. Laboratory Testing for the Diagnosis of HIV Infection



Sensitivity >98%
Specificity >99%

False negatives

- A false-negative HIV antibody (or antigen-antibody) test result most often occurs when performing testing in:
 - A person with acute HIV
 - Laboratory error
 - Following receipt of potent antiretroviral therapy very early after HIV acquisition
 - Persons who have defects in HIV-specific immunity and thus fail to generate certain antibodies
 - Persons who have acquired HIV while receiving preexposure prophylaxis
 - Persons with hypogammaglobulinemia
 - Persons who recently received potent immunosuppressant medications
- A false-negative p24 antigen test can occur in the first several weeks after HIV acquisition (usually positive by day 17)
- A false-negative HIV RNA tests can occur in the first week or two after HIV acquisition (typically positive by day 10) and in persons chronically infected with HIV who have inherently strong immunologic control of HIV and thus may have undetectable HIV RNA levels in the absence of antiretroviral therapy.

False positives

- A false-positive HIV test may occur due to polyclonal cross-reactivity, which is more common in the setting of pregnancy, recent inoculation with influenza vaccine, autoimmune disorders, receipt of an investigational HIV-1 vaccine, receipt of gamma globulin, prior blood transfusions, HTLV-1/2 infection, recent incident viral infection, collagen vascular diseases, and laboratory errors.
- A false-positive HIV NATs may occur in persons who received chimeric antigen receptor (CAR) T-cell therapy, due to the lentivirus used as the vector in manufacturing these individualized therapies; in these cases the lentivirus vector used had incorporated a transgene plasmid that contained part or all of the HIV *gag* sequence.¹

Determining whether a person's HIV screening test result is accurate depends on the pretest probability and the prevalence of HIV in the testing community.

Summary

- In order to end both epidemics, syphilis and HIV screening should be done during each and every pregnancy at least once, and sometimes more than once.
- Those who test negative for HIV should be offered preventive services.
- Those who test positive for HIV should be immediately referred for treatment.



<https://www.staccn.org/>



[National Clinician Consultation Center](https://www.nccc.nih.gov/)



Maternal Care in Rural Areas

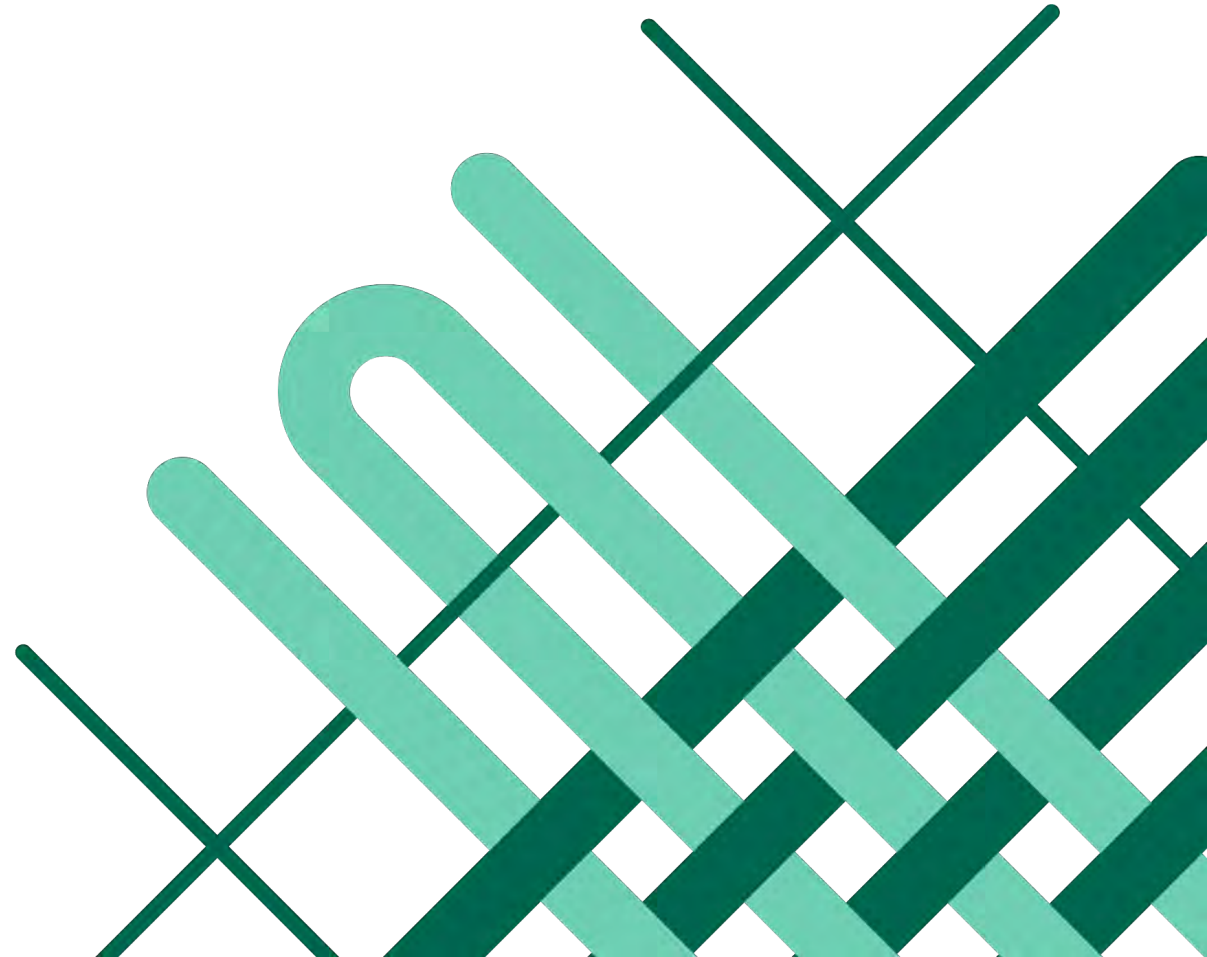
Screening and Management of Hepatitis B and C

David de Gijzel, MD

Section of Infectious Diseases & International Health

May 20th, 2025

Hepatitis B virus



Epidemiology

Prevalence

HBcAb positive

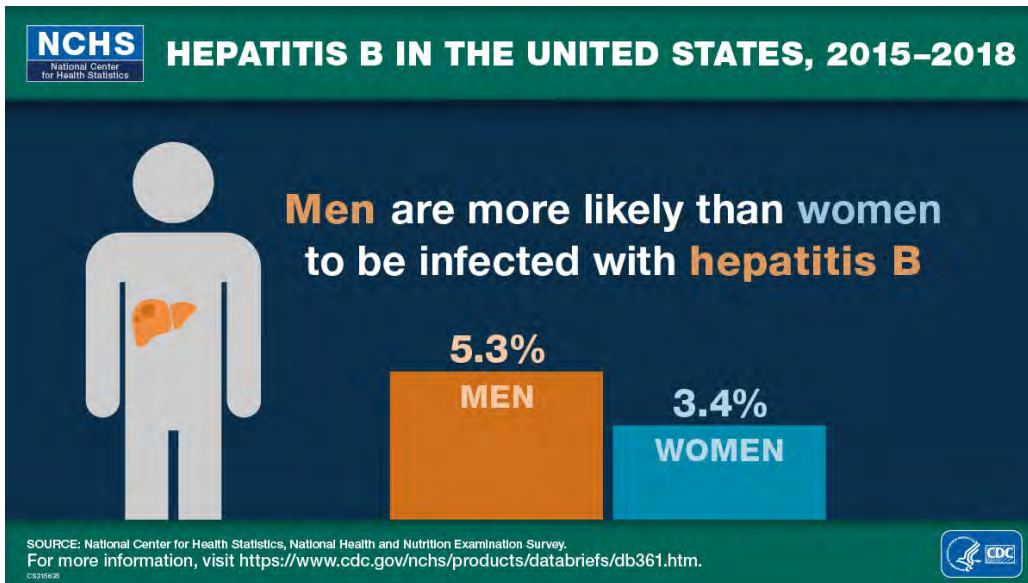
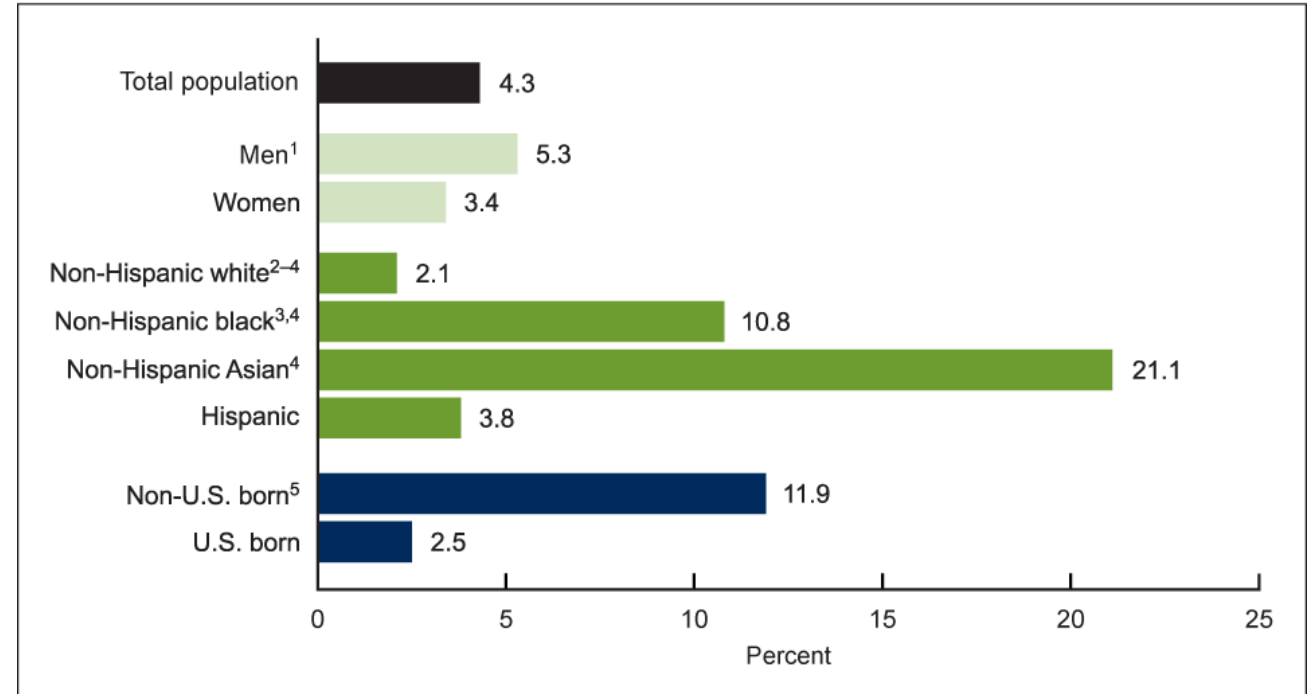


Figure 1. Age-adjusted prevalence of past or present hepatitis B virus infection among adults aged 18 and over, by sex, race and Hispanic origin, and U.S. birth status: United States, 2015–2018



¹Significantly different from women.

²Significantly different from non-Hispanic black persons.

³Significantly different from non-Hispanic Asian persons.

⁴Significantly different from Hispanic persons.

⁵Significantly different from U.S.-born persons.

NOTES: The presence of antibody to hepatitis B core antigen is evidence of past or present infection. Percentages are age adjusted by the direct method to the 2000 projected U.S. population using age groups 20–29, 30–39, 40–49, 50–59, and 60 and over. U.S. born includes persons born within the 50 United States and the District of Columbia. Access data table for Figure 1 at: <https://www.cdc.gov/nchs/data/databriefs/db361-tables-508.pdf#1>.

SOURCE: NCHS, National Health and Nutrition Examination Survey, 2015–2018.

Screening

HBsAg

Hepatitis B *surface antigen*

HBsAb

Hepatitis B *surface antibody*

HBcAb

Hepatitis B *core antibody*

Update: All adults should be tested at least once for hepatitis B. Have you been tested?

- Hepatitis B infection can cause liver cancer and early death
- Most people with the virus don't know they have it
- Treatment is available —
schedule your screening today

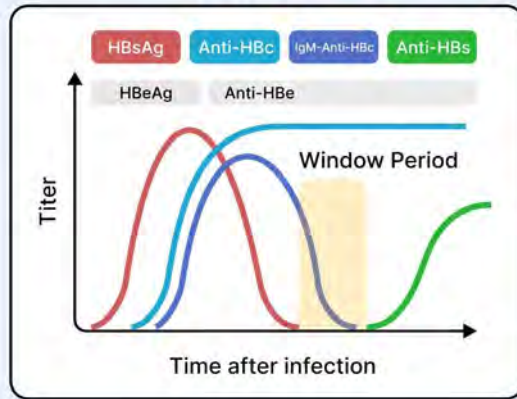


bit.ly/rr7201a1

MARCH 10, 2023

MMWR

COURSE



MARKERS

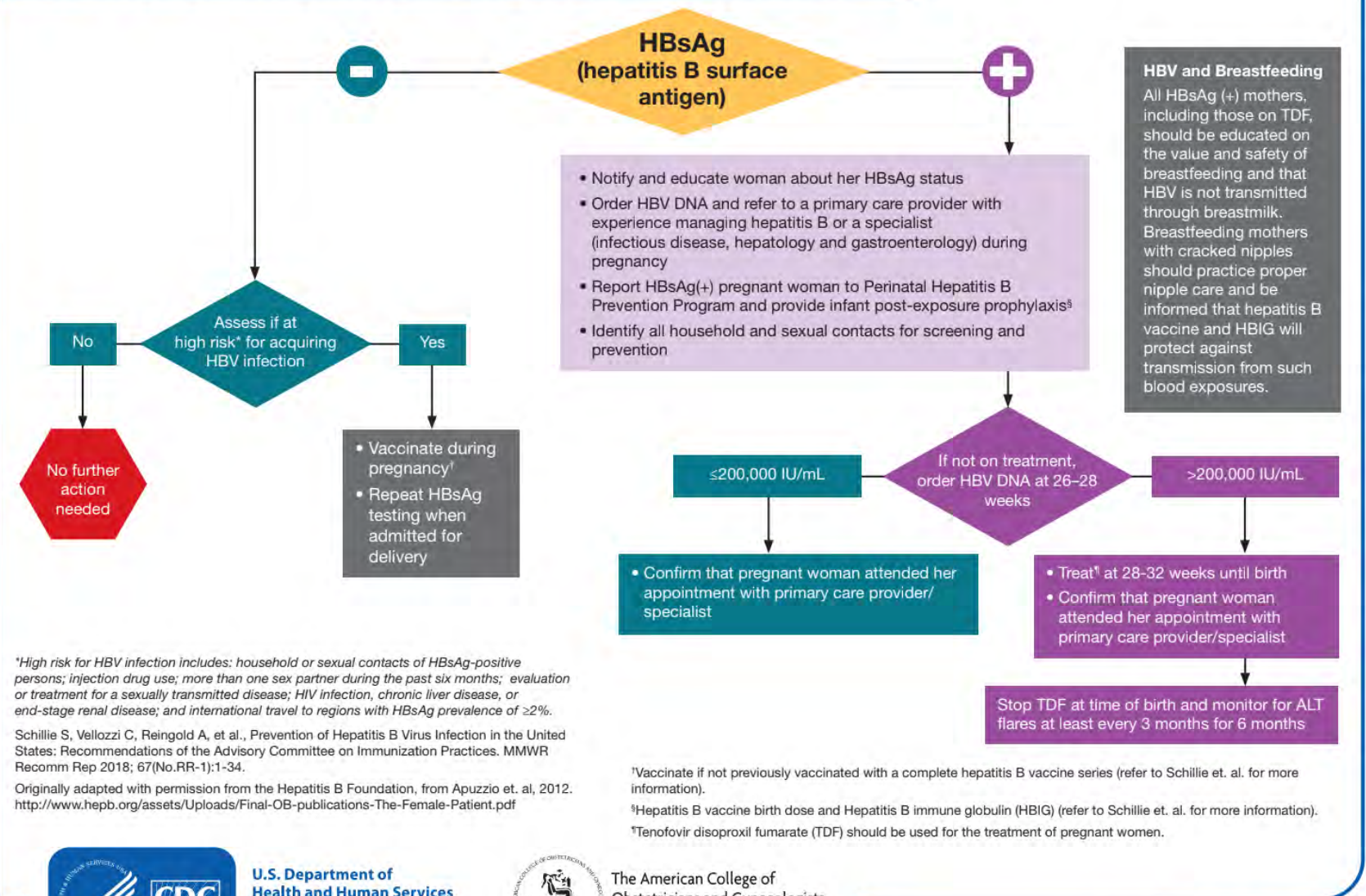
HBsAg	Name → Surface Antigen Marks → Infection
Anti-HBs	Name → Surface Antibody Marks → Immunity
Anti-HBc	Name → Total Core Antibody Marks → Exposure
IgM-Anti-HBc	Name → Core Antibody IgM Marks → Duration

Interpretation of Hepatitis B Serologic Test Results

HBsAg	Anti-HBc	IgM Anti-HBc	Anti-HBs	Interpretation
-	-	-	-	Susceptible to HBV infection
-	+	-	+	Immune due to natural hepatitis B infection
-	-	-	+	Immune due to hepatitis B vaccination
+	+	+	-	Acute HBV
+	+	-	-	Chronic hepatitis B infection
-	+	-	-	Interpretation unclear; four possibilities: 1. Resolved infection (most common) 2. False-positive anti-HBc, thus susceptible 3. "Low level" chronic infection 4. Resolving acute infection

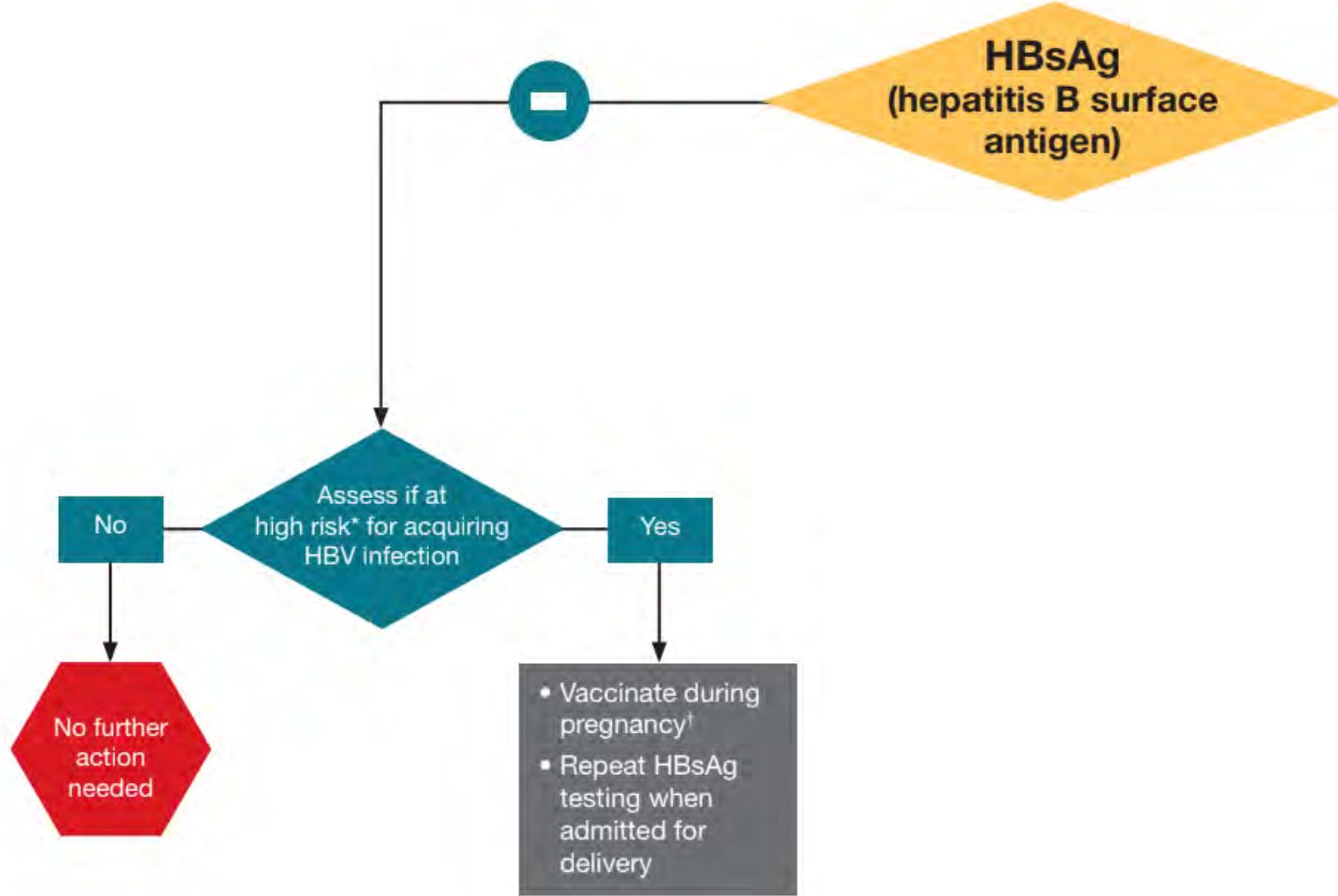
Screening Pregnant people

Screening and Referral Algorithm for Hepatitis B Virus (HBV) Infection Among Pregnant Women



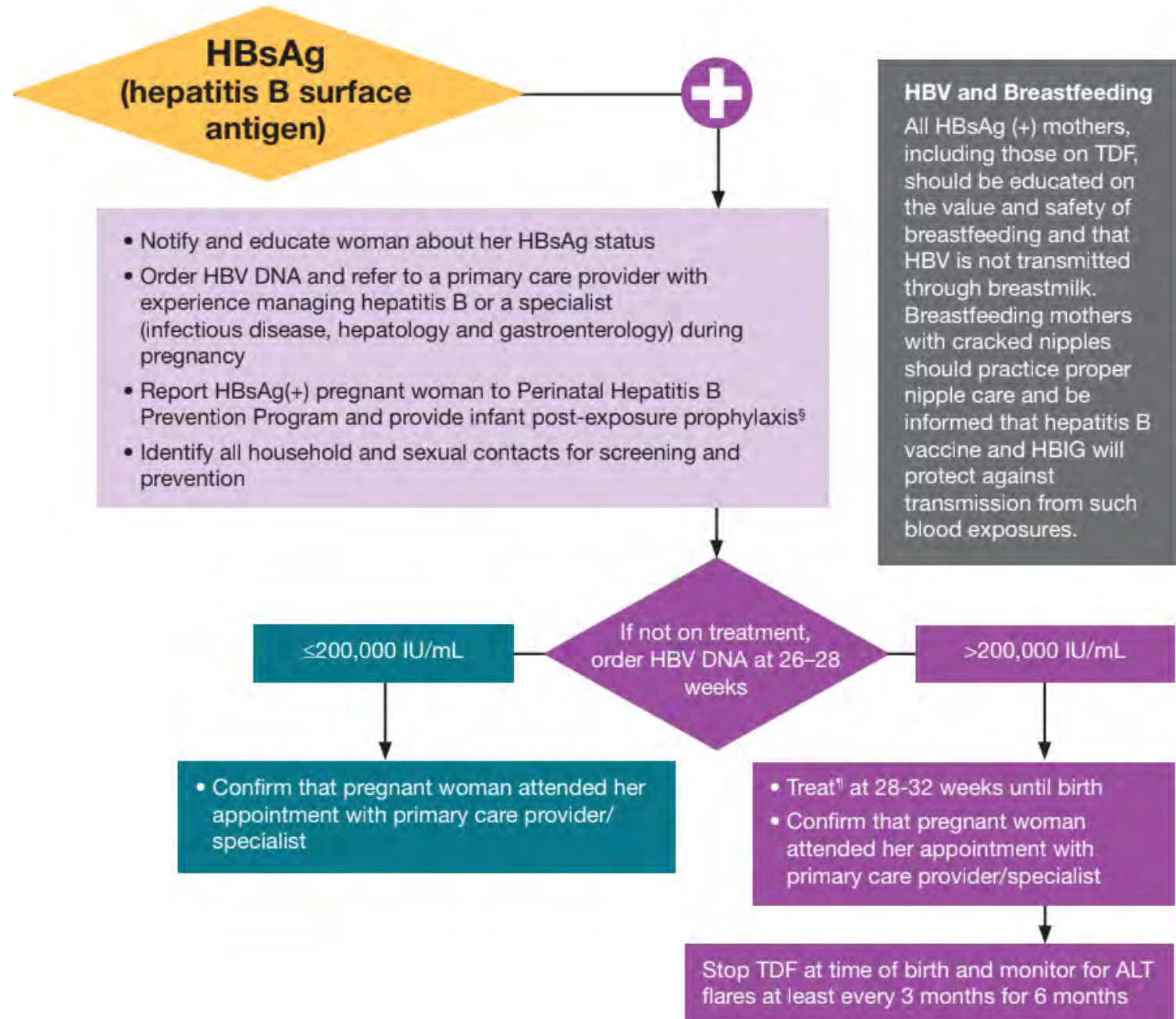
HBsAg

negative



HBsAg

Positive



Prevention

Vaccinate and give HBIG to infants born to people with active HBV

Management of Infants Born to Women with Hepatitis B Virus Infection for Pediatricians

Management of Perinatally Hepatitis B Virus (HBV)-Exposed Infants with Birth Weights $\geq 2,000$ grams (≥ 4.4 lbs)

Administer hepatitis B immune globulin (HBIG) and single-antigen vaccine in separate limbs at birth (≤ 12 hours).
Complete vaccine series with 2 additional doses of single-antigen vaccine (3 total doses) OR with 3 additional doses of combination vaccine (4 total doses).

	≤ 12 hours of birth	1 mo	2 mos	4 mos	6 mos
Single-Antigen Vaccine Series*	1 st dose	2 nd dose			3 rd dose
Single-Antigen and Combination Vaccine Series*	1 st dose (<i>single-antigen vaccine</i>)		2 nd dose	3 rd dose	4 th dose

*Administer the final dose no earlier than 6 months of age (minimum age 164 days includes 4-day grace period). Complete postvaccination serologic testing (PVST) at 9–12 months of age (or 1–2 months after final dose, if series delayed) by testing for ONLY hepatitis B surface antigen (HBsAg) and antibodies to hepatitis B surface antigen (anti-HBs). Do NOT test for antibodies to hepatitis B core antigen (anti-HBc).











Management of Perinatally Hepatitis B Virus (HBV)-Exposed Infants with Birth Weights $< 2,000$ grams (< 4.4 lbs)

Administer HBIG and single antigen vaccine in separate limbs at birth (≤ 12 hours).
Complete vaccine series with 3 additional doses of single antigen or combination vaccine (4 total doses).

	≤ 12 hours of birth	1 mo	2 mos	3 mos	4 mos	6 mos
Single-Antigen Vaccine Series*	1 st dose	2 nd dose	3 rd dose			4 th dose
Single-Antigen and Combination Vaccine Series*	1 st dose (<i>single-antigen vaccine</i>)		2 nd dose		3 rd dose	4 th dose




*Administer the final dose no earlier than 6 months of age (minimum age 164 days includes 4-day grace period). Complete postvaccination serologic testing (PVST) at 9–12 months of age (or 1–2 months after final dose, if series delayed) by testing for ONLY hepatitis B surface antigen (HBsAg) and antibodies to

Prevention - vaccines




U.S. Children and Adult Hepatitis B Vaccine Schedules For children ≥ 1 and adults <small>Note: the first dose should be given as soon as possible. Additional doses require minimum time intervals required between doses in order for the vaccine to be effective.</small>			
Vaccine	Dose 1	Dose 2	Dose 3
 3 dose vaccine series Brand names: Engerix-B, Recombivax HB, Twinrix (hepatitis A and B - Adults ≥ 18 Years)	Now 	1 month after dose 1 	6 months after dose 1 
 2 dose vaccine series Adults ≥ 18 Years Brand name: Heplisav-B	Now 	1 month after dose 1 	
Key	 = Monovalent hepatitis B vaccine (protection against hepatitis B only)  = Approved for adults  = Approved for children		


CDC now recommends all adults ages 19–59 years get vaccinated against hepatitis B

Facts about hepatitis B

-  Spread through contact with blood and body fluids
-  Causes liver failure and liver cancer
-  Vaccination prevents infection

Who should get a hepatitis B vaccine?

-  All infants and unvaccinated children
-  All adults ages 19 through 59 years ***NEW***
-  All adults ages 60 and older with risk factors

 **Talk to your healthcare provider about hepatitis B vaccination**

bit.ly/mm7113a1 **MMWR**

Hepatitis C virus



Epidemiology

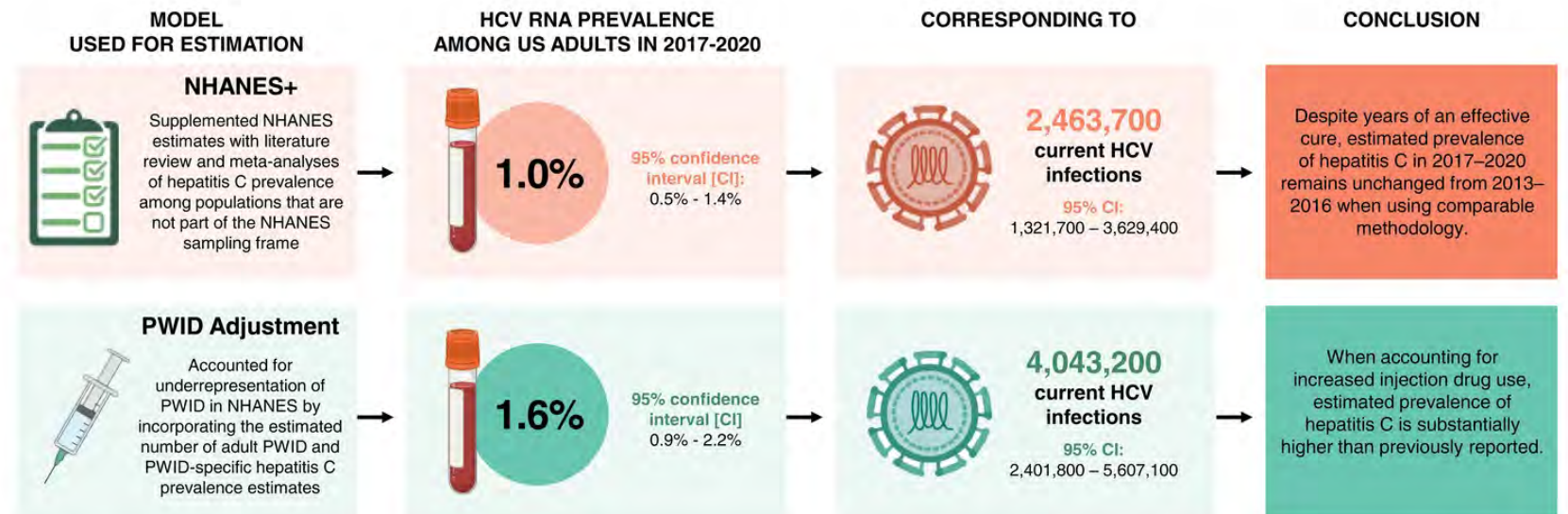
Prevalence

HCV RNA = viremic

Estimating Hepatitis C Prevalence in the United States, 2017-2020

The National Health and Nutrition Examination Survey (NHANES) underestimates the true prevalence of hepatitis C virus (HCV) infection.

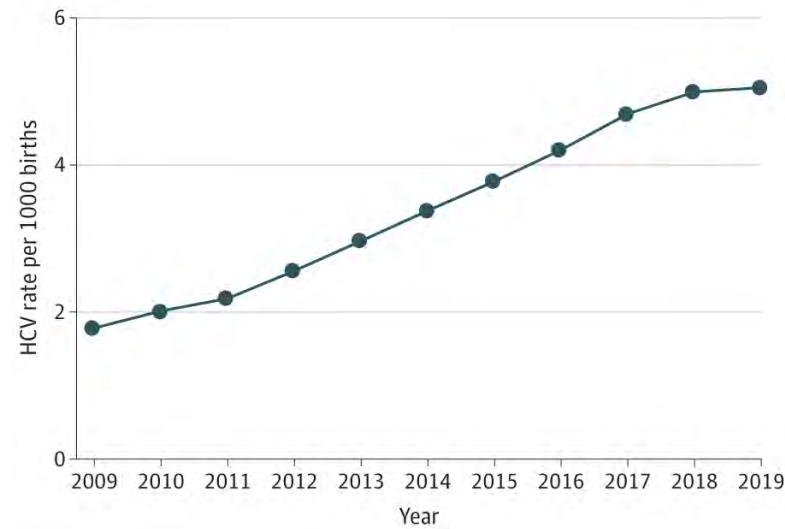
By accounting for populations inadequately represented in NHANES, we created two models to estimate the national hepatitis C prevalence among US adults during 2017–2020.



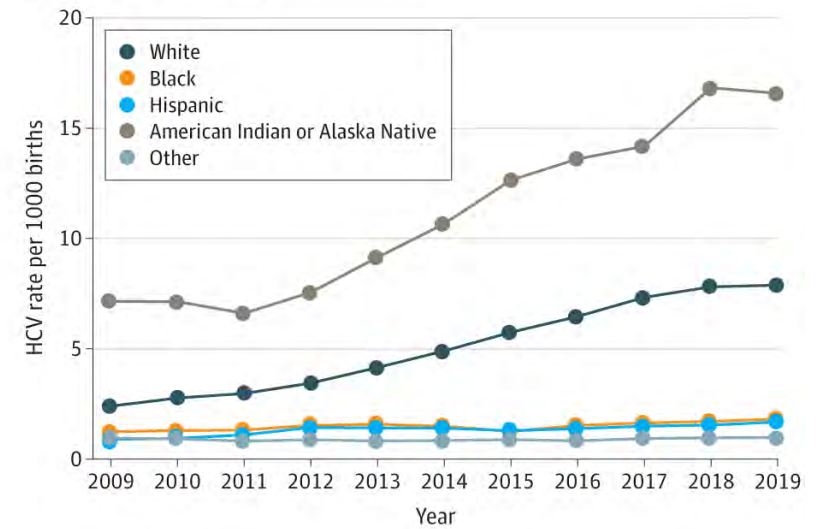
Hepatitis C Infections Among Pregnant People Delivering Live Births in the US, 2009 to 2019

2

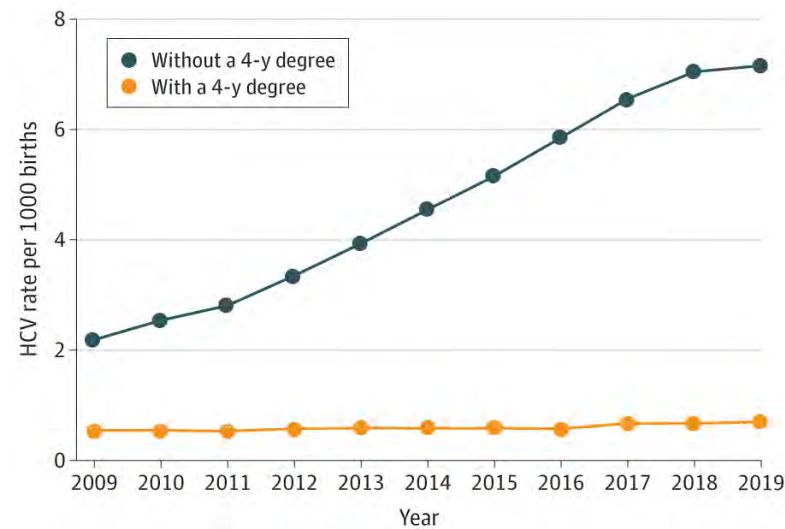
A Overall



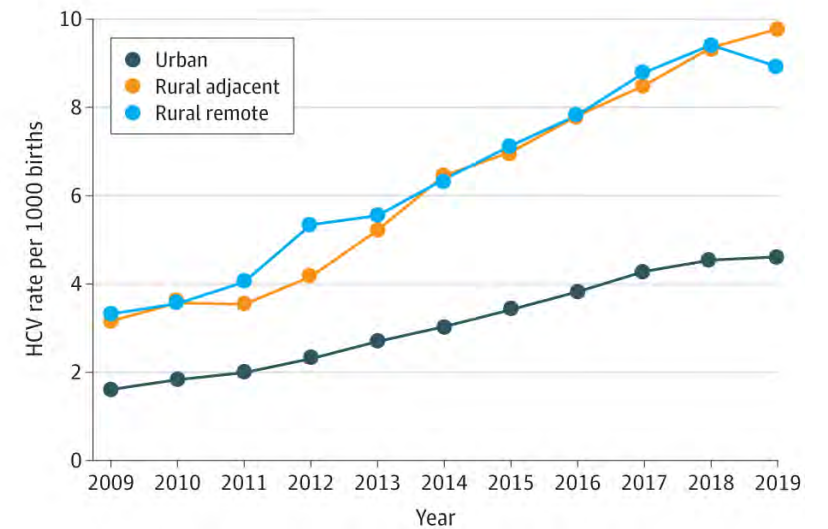
B By race and ethnicity



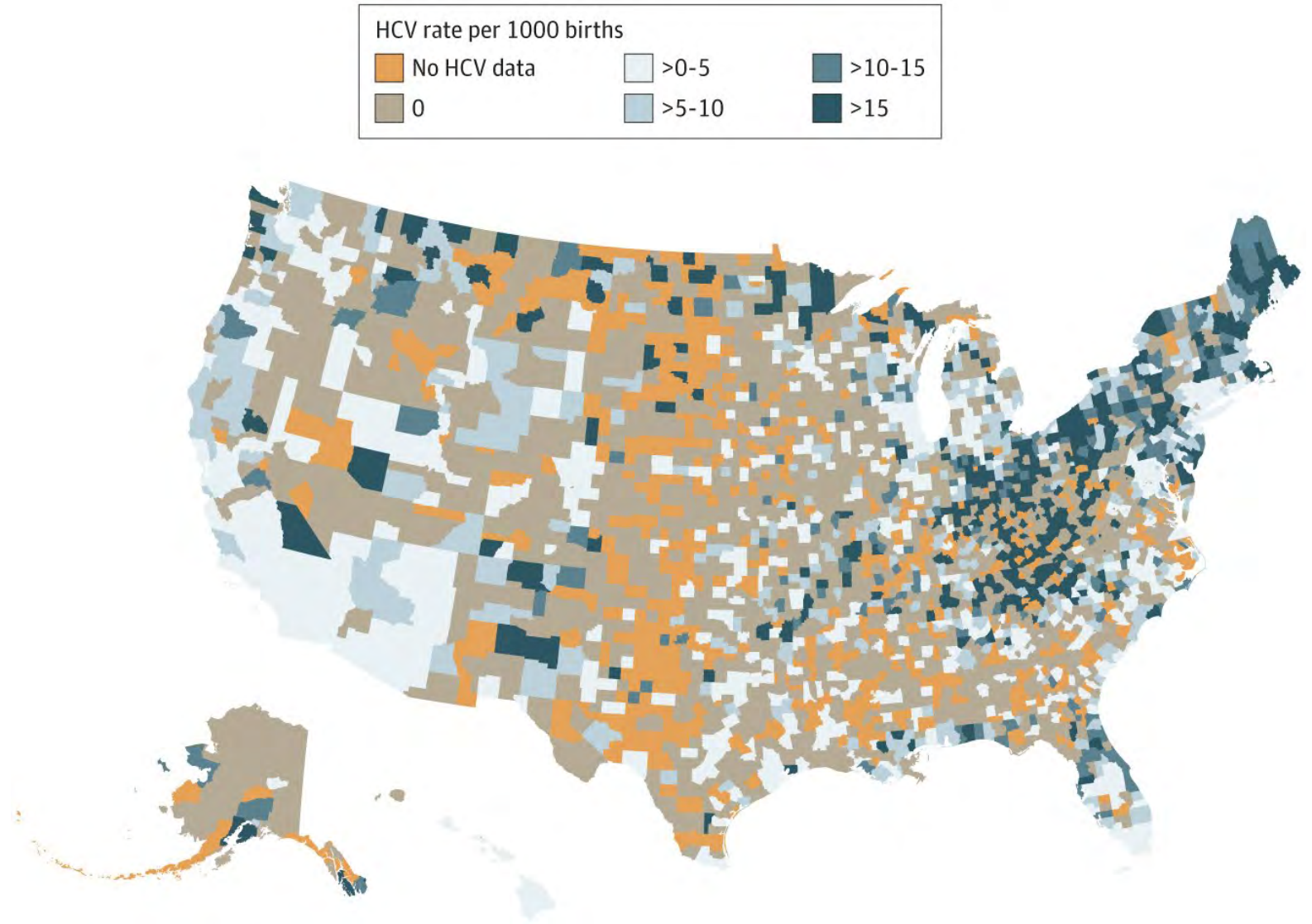
C By education



D By rurality

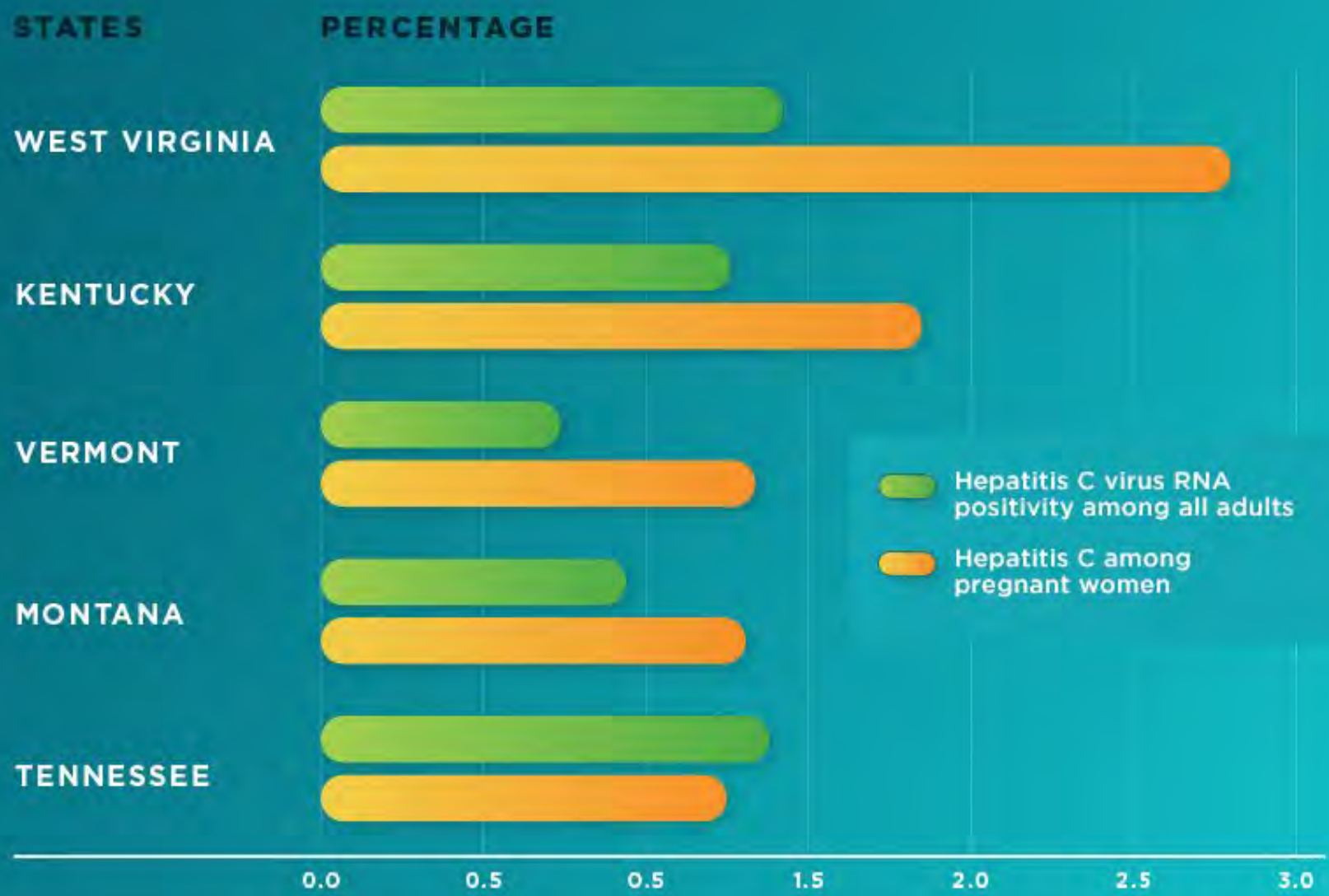


County Geographic Variation in Hepatitis C Infections Among Pregnant People in the US, 2019



According a 2015 analysis, **West Virginia, Kentucky, Vermont, Montana,** and **Tennessee** had the **highest prevalence of Hepatitis C among pregnant women.**

CDC now recommends testing for **all pregnant women** during each pregnancy.



ESTIMATED PREVALENCE OF HEPATITIS C VIRUS RNA POSITIVITY AMONG ALL ADULTS AND HEPATITIS C AMONG PREGNANT WOMEN, BY STATE

Screening

WHO SHOULD GET TESTED FOR HEPATITIS C?

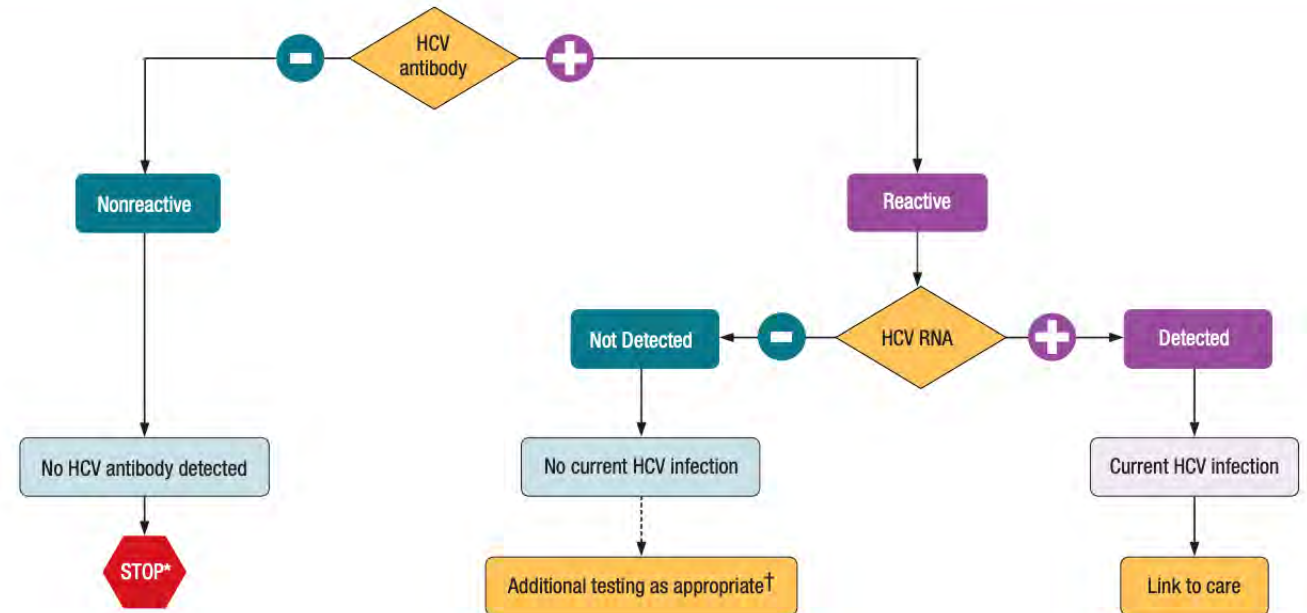


SOURCES: CDC Recommendations for Hepatitis C Screening, MMWR, April 2020
CDC Vital Signs, April 2020

Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention



* For persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended. For persons who are immunocompromised, testing for HCV RNA can be considered.

† To differentiate past, resolved HCV infection from biologic false positivity for HCV antibody, testing with another HCV antibody assay can be considered. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.

Source: CDC. Testing for HCV infection: An update of guidance for clinicians and laboratorians. MMWR 2013;62(18).

Viral Hepatitis in Pregnancy

Committee on Clinical Practice Guidelines—Obstetrics. This Clinical Practice Guideline was developed by the ACOG Committee on Clinical Practice Guidelines—Obstetrics in collaboration with Brenna L. Hughes, MD, MSc; and Denise J. Jamieson, MD, MPH; with consultation from Kathleen F. Brookfield, MD, PhD; Gweneth B. Lazenby, MD, MSCR; and Rhoda S. Sperling, MD.

ACOG recommends that all patients be screened for hepatitis C virus antibodies in each pregnancy. (**STRONG RECOMMENDATION, LOW-QUALITY EVIDENCE**)

ACOG recommends prepregnancy screening for hepatitis C virus infection and treatment, when possible, before pregnancy. (**STRONG RECOMMENDATION, MODERATE-QUALITY EVIDENCE**)

Management of Hepatitis C Virus Infection for Pregnant, Intrapartum, and Postpartum Patients

The risk of vertical transmission of hepatitis C virus associated with amniocentesis is generally low. Use shared decision making when counseling patients regarding risk of vertical transmission. **(GOOD PRACTICE POINT)**

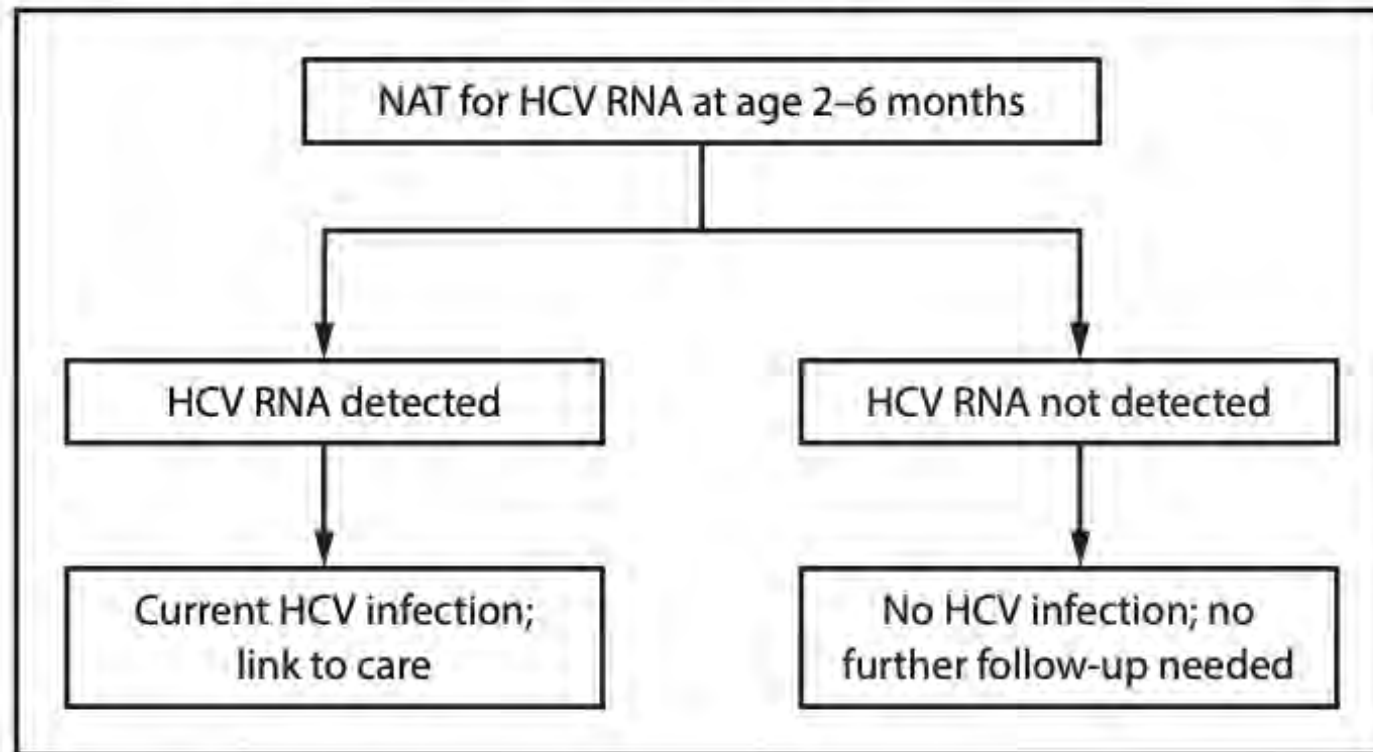
The risk of vertical transmission of hepatitis C virus associated with chorionic villus sampling is generally low. Use shared decision making when counseling patients regarding risk of vertical transmission. **(GOOD PRACTICE POINT)**

Breastfeeding is not discouraged among individuals with hepatitis C virus infection. **(GOOD PRACTICE POINT)**

Viral Hepatitis in Pregnancy

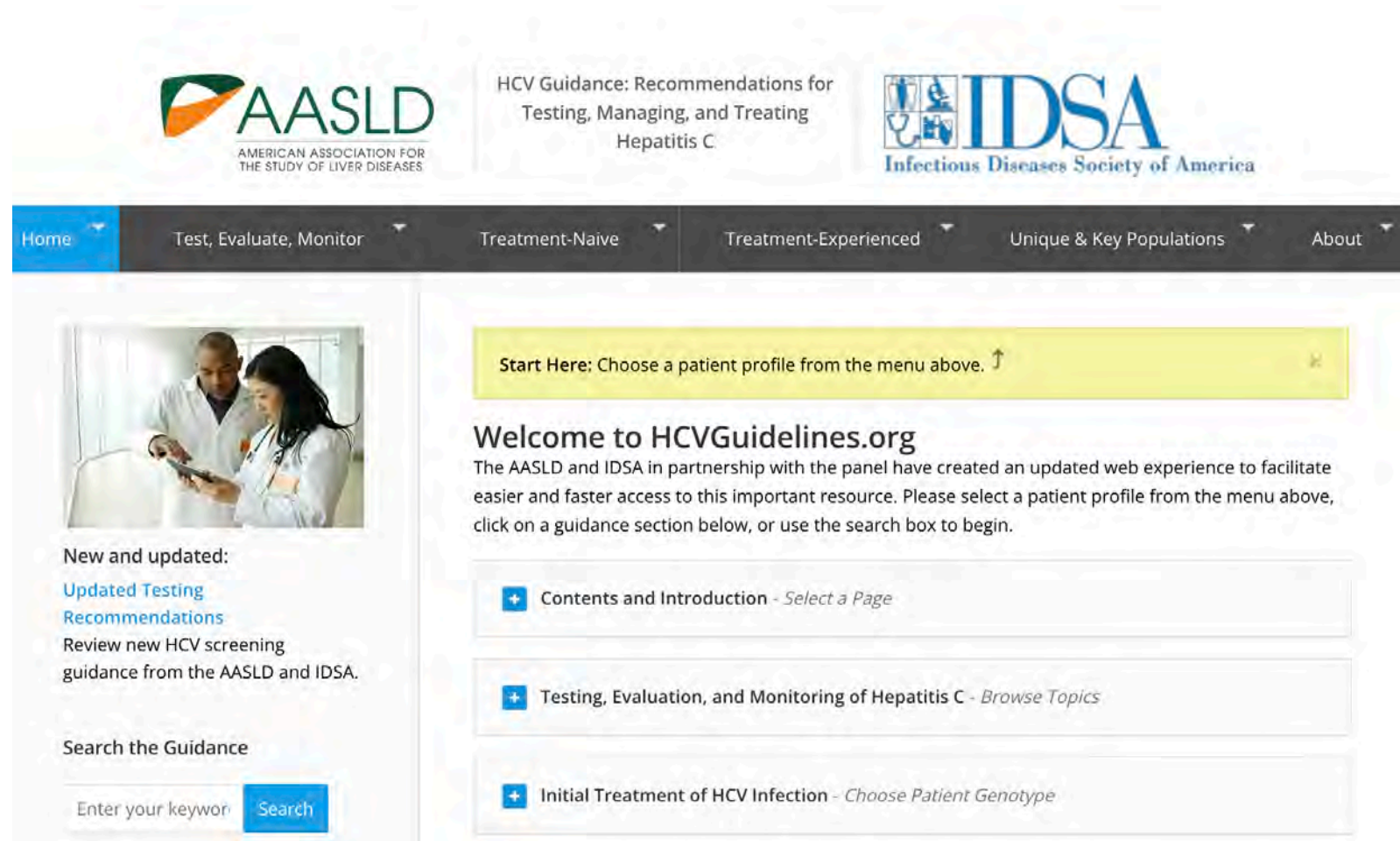
Committee on Clinical Practice Guidelines—Obstetrics. This Clinical Practice Guideline was developed by the ACOG Committee on Clinical Practice Guidelines—Obstetrics in collaboration with Brenna L. Hughes, MD, MSc; and Denise J. Jamieson, MD, MPH; with consultation from Kathleen F. Brookfield, MD, PhD; Gweneth B. Lazenby, MD, MSCR; and Rhoda S. Sperling, MD.

FIGURE 3. Algorithm for hepatitis C virus testing of perinatally exposed children — United States, 2023^{*,†,§,¶}



**CDC Recommendations for Hepatitis C Testing
Among Perinatally Exposed Infants and Children —
United States, 2023**

Treatment



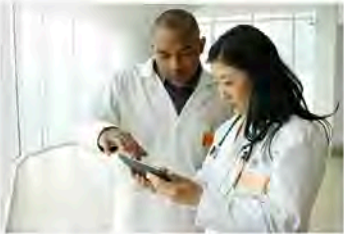
The screenshot displays the HCVGuidelines.org website. At the top, there are logos for AASLD (American Association for the Study of Liver Diseases) and IDSA (Infectious Diseases Society of America). Below these is a navigation bar with links: Home, Test, Evaluate, Monitor, Treatment-Naive, Treatment-Experienced, Unique & Key Populations, and About. The main content area is divided into two columns. The left column features a photo of two healthcare providers and a section titled 'New and updated: Updated Testing Recommendations' with a brief description. Below this is a search bar labeled 'Search the Guidance'. The right column has a yellow banner with the text 'Start Here: Choose a patient profile from the menu above.' followed by a welcome message. Below the welcome message are three expandable sections: 'Contents and Introduction - Select a Page', 'Testing, Evaluation, and Monitoring of Hepatitis C - Browse Topics', and 'Initial Treatment of HCV Infection - Choose Patient Genotype'.

AASLD
AMERICAN ASSOCIATION FOR
THE STUDY OF LIVER DISEASES

HCV Guidance: Recommendations for
Testing, Managing, and Treating
Hepatitis C

IDSA
Infectious Diseases Society of America

Home Test, Evaluate, Monitor Treatment-Naive Treatment-Experienced Unique & Key Populations About



New and updated:
[Updated Testing Recommendations](#)
Review new HCV screening guidance from the AASLD and IDSA.

Search the Guidance
Enter your keyword

Start Here: Choose a patient profile from the menu above. ↑

Welcome to HCVGuidelines.org
The AASLD and IDSA in partnership with the panel have created an updated web experience to facilitate easier and faster access to this important resource. Please select a patient profile from the menu above, click on a guidance section below, or use the search box to begin.

- [Contents and Introduction - Select a Page](#)
- [Testing, Evaluation, and Monitoring of Hepatitis C - Browse Topics](#)
- [Initial Treatment of HCV Infection - Choose Patient Genotype](#)

Treatment

Simplified HCV Treatment* for Treatment-Naive Adults Without Cirrhosis

Who Is *NOT* Eligible for Simplified Treatment (Without Cirrhosis)

Patients who have any of the following characteristics:

- Prior hepatitis C treatment
- Cirrhosis (see simplified treatment for treatment-naive adults with compensated cirrhosis)
- HBsAg positive
- Current pregnancy
- Known or suspected hepatocellular carcinoma
- Prior liver transplantation

(see [HCV guidance](#) for treatment recommendations for these patients)

Who Is Eligible for Simplified Treatment

Adults with chronic hepatitis C (any genotype) who do not have cirrhosis and have not previously received hepatitis C treatment

Simplified HCV Treatment Algorithm for Treatment-Naive Adults With Compensated Cirrhosis

Who Is *NOT* Eligible for Simplified Treatment (With Cirrhosis)

Patients who have any of the following characteristics:

- Current or prior episode of decompensated cirrhosis, defined as Child-Turcotte-Pugh (CTP) score ≥ 7 (ascites, hepatic encephalopathy, total bilirubin >2.0 mg/dL, albumin ≤ 3.5 g/dL, or INR ≥ 1.7)
- Prior hepatitis C treatment
- End-stage renal disease (ie, eGFR <30 mL/min/m²) (see [Patients with Renal Impairment](#) section)
- HBsAg positive
- Current pregnancy
- Known or suspected hepatocellular carcinoma
- Prior liver transplantation

(see [HCV guidance](#) for treatment recommendations for these patients)

Who Is Eligible for Simplified Treatment

Adults with chronic hepatitis C (any genotype) who have compensated cirrhosis (Child-Pugh A) and have not previously received hepatitis C treatment

Liver biopsy is not required. For the purpose of this guidance, a patient is presumed to have cirrhosis if they have a FIB-4 score >3.25 or any of the following findings from a previously performed test.

- Transient elastography indicating cirrhosis (eg, FibroScan stiffness >12.5 kPa)
- Noninvasive serologic tests above proprietary cutoffs indicating cirrhosis (eg, FibroSure, Enhanced Liver Fibrosis Test, etc)
- Clinical evidence of cirrhosis (eg, liver nodularity and/or splenomegaly on imaging, platelet count $<150,000/\text{mm}^3$, etc)
- Prior liver biopsy showing cirrhosis



HEPATITIS FREE NORTHERN NEW ENGLAND

[HFNNE HOME](#) | [ABOUT HFNNE](#) | [CALENDAR](#) | [PLANNING GROUP](#) | [STEERING COMMITTEE](#) | [PLAN PROGRESS](#) | [HFNNE RESOURCES](#)

A tri-state initiative providing evidence-based, localized, and actionable strategies that will free NNE (New Hampshire, Maine and Vermont) from hepatitis B and hepatitis C.

Hepatitis Free Northern New England (HFNNE) is a broad, community-based coalition with members and participants from all over the three states, who are living with, affected by, or work in the field of viral hepatitis. This initiative formed in 2021, and we welcome new participants to join the journey toward viral hepatitis B and C elimination at any time.

A primary goal of HFNNE is to bring the widest range of voices to the table as the Northern New England 2025 Viral Hepatitis Elimination Plan is created. [The Planning Group](#) meets [once every other month](#), starting in February 2024. The plan will be published in January 2025.