Miami-Dade County Ryan White Program
Minimum Primary Medical Care Standards

Statement of Intent: *All local Ryan White Program—funded practitioners are required by contract to adhere, at a minimum, to the Public Health Service (PHS) Guidelines. These standards serve as the minimum standards by which practitioners will be measured. All clients, regardless of viral load levels, must have viral load tests every 6 months per the DHHS/HRSA standards.*

I. Requirements

Requirements for New Practitioners (Physicians, Advanced Practice Registered Nurse, and Physician Assistants/Associates):

- New practitioners should be linked to existing Ryan White Program providers, AIDS Education and Training Center (AETC) or through an American Academy of HIV Medicine (AAHIVM) specialist to support the new provider.
- New providers will receive a chart review within 6 months by supervising physician, medical director or agency team.
- When a new practitioner is working with a contracted practitioner, new practitioner is encouraged to comply within one year to complete at least 30 hours of HIV-related Continuing Medical Education (CME) Category 1 credits.

Requirements for All Practitioners (Physicians, Advanced Practice Registered Nurse, and Physician Assistants/Associates):

- Practitioners are strongly encouraged to complete at least 30 hours of HIV-related Continuing Medical Education (CME) Category 1 credits within a period of two years.

Practitioner must:

- Be a Physician (MD or DO), Advanced Practice Registered Nurse, or Physician Assistant/Associates with current and valid license to practice medicine within the State of Florida.
- Have a minimum experience treating 20 HIV+ clients over the past two years or currently working and under supervision of a practitioner meeting these qualifications.
- Treat and monitor patients in adherence with current DHHS Guidelines and other standards of care, to include, but not limited to:
  a. **American College of Cardiology/American Heart Association Guideline on the Treatment of Blood Cholesterol**
  https://www.ahajournals.org/doi/10.1161/CIR.0000000000000625
  b. **Adult Immunization Schedule**
  https://www.cdc.gov/vaccines/hcp/imz-schedules/adult-age.html?CDC_AAref_Val=https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html

c. **American Association for the Study of Liver Diseases**
https://www.aasld.org/practice-guidelines
d. **American Cancer Society Guidelines for the Early Detection of Cancer**
https://www.cancer.org/healthy/find-cancer-early/american-cancer-society-guidelines-for-the-early-detection-of-cancer.html
e. **American Medical Association Telehealth Quick Guide**
https://www.ama-assn.org/practice-management/digital/ama-telehealth-quick-guide
f. **Department of Health and Human Services (DHHS) Clinical Guidelines**
https://clinicalinfo.hiv.gov/en/guidelines
g. **Hepatitis (HEP) Drug Interactions University of Liverpool**
https://www.hep-druginteractions.org/
h. **HIV Drug Interactions University of Liverpool**
https://hiv-druginteractions.org/
i. **HIV Prevention with Adults and Adolescents with HIV in the US**
https://www.cdc.gov/hiv/guidelines/recommendations/personswithhiv.html
j. **Health Resources and Service Administration (HRSA) HIV Care for People Aging with HIV**
https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-arv/special-populations-hiv-and-older
https://ryanwhite.hrsa.gov/sites/default/files/ryanwhite/grants/aging-guide-new-elements.pdf
https://ryanwhite.hrsa.gov/sites/default/files/ryanwhite/grants/aging-guide-best-team.pdf
k. **Infectious Disease Society of America Primary Care Guidance for Persons with HIV**
https://www.idsociety.org/practice-guideline/primary-care-management-of-people-with-hiv/
l. **Miami—Dade County Ryan White Program (including Telehealth Policy and Test and Treat/Rapid Access [TTRA] program)**
https://www.miamidade.gov/global/service.page?Mduid_service=ser1482944607068715
n. **National HIV Curriculum**
https://www.hiv.uw.edu/alternate
o. **PrEP, nPEP and PEP guidelines below (Although not paid for by the Ryan White Program):**
https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2021.pdf
https://www.cdc.gov/hiv/pdf/programresources/cdc-hiv-npep-guidelines.pdf
https://www.cdc.gov/hivnexus/hcp/resources/?CDC_AAref_Val=https://www.cdc.gov/hiv/clinicians/materials/prevention.html
q. **United States (US) Preventive Taskforce**
https://uspreventiveservicestaskforce.org/uspstf/home

- Follow an action plan to address any areas for performance improvement that are identified during quality assurance reviews.

II. Assessments and Referrals

1. **Annual –** At each annual visit:
   a. Adherence to medications
   b. Age-appropriate cancer screening
   c. Behavioral risk reduction
   d. Gynecological exam per guidance for females
   e. Interval changes in vital signs addressed, especially trend in weight/BMI over time
   f. Mental health and substance abuse assessment
   g. Physical examination, including review of systems
   h. Preconception counseling for men and women
   i. Rectal examination
   j. Safer sex practices – discussions may include PrEP, PEP, nPEP, for sexual partners and should include condom usage
   k. Sexually transmitted infection assessment
   l. Update comprehensive initial history, as appropriate
   m. Vital signs, including weight, BMI, height (no shoes)
   n. Wellness exam for females

   Assess and document health education on:
   o. Advance Directives (completion or review)
   p. Birth control
   q. Domestic violence
   r. Drugs/Alcohol/Tobacco (including smokeless) assessment/care
   s. Exercise
   t. Frailty screening, as appropriate
   u. Mental Health assessment (particularly clinical depression, care, mood, libido, sleep patterns, concentration, and memory)
   v. Neurology and/or neuropsychology referral for assessment of neurocognitive disorders, dementia, and focal neuropathies, as appropriate
   w. Nutritional assessment/care (including appetite), as appropriate
   x. Oral health care

2. **Additional Charting/Documentation at least annually:**
   a. Allergies list complete and up to date
   b. Immunization list complete and up to date
   c. Medications list complete with start and stop dates, dosages
   d. Problem list complete and up to date

   Item to be covered by subrecipient staff: If a client knows of others who need PrEP or Test and Treat / Rapid Access, information and referral are offered.

3. **Initial –** At initial visit:
   a. Access to stable housing, food, and transportation
   b. Adherence to medications
   c. Age-appropriate cancer screening
   d. Behavioral risk reduction
   e. Comprehensive initial history

f. Dates of last: mammogram, bone density, colonoscopy, abnormal aortic aneurysm screening, dental visit, and dilated eye exam
g. Education that they should never run out of ART medications and need to call the FDOH—MDC clinic if they cannot obtain ART
h. Gynecological exam per guidance for females
i. If enrolled as Test and Treat/Rapid Access (TTRA) client (patient), follow TTRA protocol for visit
j. Mental health and substance abuse assessment
k. Physical examination, including review of systems
l. Pregnancy Planning:
   1) Preconception counseling for men and women
   2) Contraceptive counseling for men and women including assessment and type of birth control method
m. Rectal examination
n. Safer sex practices — discussions may include PrEP, PEP, nPEP for sexual partners and should include condom usage
o. Sexually transmitted infection assessment as appropriate including at a minimum GC, Chlamydia at anatomical sites of potential exposure, RPR, and for females trichomoniasis NAAT of vaginal secretions.
p. Social supports and disclosure history
q. Targeted initial history and physical examination with expectation that a complete history and physical examination will be completed within 3 months.
r. Vital signs, including weight, BMI, height (no shoes)
s. Wellness exam for females

Item to be covered by subrecipient staff: Documented HIV education, including transmission, reduction of morbidity/mortality with ART; resistance; compliance with ART and office visits and lab monitoring; life expectancy; divulging HIV status and state statute.

4. Interim Monitoring and Problem-Oriented visits – At every visit:
a. Adherence to medications and lab and office visits for monitoring
b. In women of childbearing age, assessment of adequate contraception
c. Interval changes in vital signs addressed, especially trend in weight over time
d. Interval risk for acquiring STD and screening as indicated
e. Physical examination related to specific problems, as appropriate
f. Risk reduction
g. Safer sex practices – discussions may include PrEP, PEP, nPEP for sexual partners and should include condom usage
h. Vital signs, including weight/BMI – may not occur every time with telehealth

5. Telehealth
Telehealth may be used in place or conjunction with an office visit. Necessary assessments will be conducted as needed and follow-ups will be scheduled, as appropriate.

III. Assessments at Incremental Visits

General Health including Labs

1. **ALT, AST, Total Bilirubin** [i] – Entry into care; ART initiation or modification; 4-8 weeks after ART initiation or modification; every 6 months; or if ART initiation is delayed, every 6-12 months; or if clinically indicated.

2. **Annual wellness visit (females)** [iv] **–** Should include screenings for anxiety, breast cancer, cervical cancer, interpersonal and domestic violence, obesity prevention (midlife women), sexually transmitted infections, urinary incontinence, and contraception. For those who are pregnant, lactation support and screenings for diabetes mellitus (including post-pregnancy), as applicable.

3. **Basic metabolic panel** [i] – Entry into care; ART initiation or modification; 4-8 weeks after ART initiation or modification; every 6 months; if ART initiation is delayed, every 6-12 months; or if clinically indicated. Serum Na, K, HCO_3, Cl, BUN, creatinine, glucose, and creatine-based estimated glomerular filtration rate. Serum phosphorus should be monitored in patients with chronic kidney disease who are on tenofovir disoproxil fumarate (TDF)-containing regimens. Consult the HIV Medicine Association of the Infectious Diseases Society of America's (HIVMA/IDSA) Clinical Practice Guidelines for the Management of Chronic Kidney Disease in Patients Infected with HIV for recommendations on managing patients with renal diseases. More frequent monitoring may be indicated for patients with evidence of kidney diseases (e.g., proteinuria, decreased glomerular dysfunction) or increased risk of renal insufficiency (e.g., patients with diabetes, hypertension).

4. **Bone Densitometry** [iii] – Baseline bone DEXA should be performed in all postmenopausal women and men greater than or equal to 50 years old.

5. **CBC w/ differential** [i] – Entry into care; ART initiation or modification; every 3-12 months if monitoring CD4 count (if required by lab); or when clinically indicated. CBC with differential should be done when a CD4 count is performed. When CD4 count is no longer being monitored, the recommended frequency of CBC with differential is once a year. More frequent monitoring may be indicated for persons receiving medications that potentially cause cytopenia [e.g., trimethoprim-sulfamethoxazole (TMP-SMX)].

6. **Colon and Rectal Cancer Screening** [iii] – Colorectal cancer screening recommended for individuals between 45-75 years of age if average risk (including personal and family history). For ages 76-85, individualized screening based on overall health and prior screening. Consider screening earlier if first-degree relatives are diagnosed with colon cancer prior to age 50. Screening tests include: stool based screening (gFOBT, FIT, FIT-DNA) every year, or colonoscopy every 10 years if normal, or more frequently if polyps are identified.

7. **Glucose (Random or Fasting)** [i] – Entry into care; ART initiation or modification; treatment failure; or if clinically indicated. If random glucose is abnormal, fasting glucose should be

obtained. HbA1C is no longer recommended for diagnosis of diabetes in person with HIV on ART, see American Diabetes Association Guidelines.

8. **Gynecological Exam** [iii] (females) – In women and adolescents with HIV, initiation of cervical cancer screening (Pap) should be conducted within one year of onset of sexual activity, but no later than 21 years of age. For those age 21-29, Pap should be done at diagnosis of HIV, repeated yearly for 3 years, then if all normal, Pap every 3 years. For those less than 30 years, no HPV testing unless abnormalities are found on Pap test. For those over 30 years old, Pap at diagnosis of HIV, repeat yearly x 3 years, then if all normal, Pap every 3 years or Pap with HPV testing, if both negative then Pap with HPV every 3 years. Abnormal Pap and/or HPV follow-up similar to general population; in general, continue screening past 65 years.

9. **Hepatitis A Screening** [ii] **–** At initial screening, if non-immune, offer vaccination and after vaccination received do postvaccination serologic testing 1 or 2 months or at the next scheduled visit. After the second vaccine to assess for immunogenicity. A repeat vaccine series is recommended in those who remain seronegative.

10. **Hepatitis B Serology (HBsAb, HBsAg, HBcAb total)** [i] – At entry into care; at ART initiation or modification, in patients not immune to hepatitis B (HBV), consider retesting if switching to a regimen that does not contain tenofovir disoproxil fumarate (TDF) or tenofovir alafenamide (TAF); as clinically indicated including before starting hepatitis C direct-acting antiviral (HCV DAA). If a patient has HBV infection (as determined by a positive HBsAg or HBV DNA test result), TDF or TAF plus either emtricitabine (FTC) or lamivudine (3TC) should be used as part other ART regiment to treat both HBV and HIV infections. If HBsAg, HBsAb, and HBcAb test results are negative, hepatis B vaccine series should be administered. Most patients with isolated HBcAb have resolved HBV infection with loss of HBsAb. Consider performing an HBV viral load test for confirmation. If the HBV viral load test is positive, the patient may be acutely infected (and will usually display other signs of acute hepatitis) or chronically infected. If the test is negative, the patient should be vaccinated. Refer to the HIVMA/IDSA's Primary Care Guidance for Person with HIV and the Adult and Adolescent Opportunistic Infection Guideline for detailed recommendations.

11. **Hepatitis C Screening (HCV antibody or, if indicated, HCV RNA)** [i] – At entry into care; every 12 months, for at-risk patients—injection drug users, person with a history of incarceration, men with HIV who have unprotected sex with men, and persons with percutaneous/parenteral exposure to blood in unregulated settings are at risk for hepatitis C (HCV) infection; or when clinically indicated. The HCV antibody test may not be adequate for screening in the setting of recent HCV infection (defined as acquisition within the past 6 months), or advanced immunodeficiency (CD4 count <100 cells/mm^3). HCV RNA screening is indicated in persons who have been successfully treated for HCV or who spontaneously cleared prior infection. HCV antibody-negative patients with elevated ALT may need HCV RNA testing.

12. **Lipid Profile** [i] – Entry into care;4-8 weeks after ART initiation or modification; consider 1-3 months after ART initiation or modification; every 12 months if normal at baseline but with cardiovascular risk. If normal at baseline, every 5 years or if clinically indicated. If random

lipids are abnormal, fasting lipids should be obtained. Consult the American College of Cardiology/American Heart Association's 2018 Guideline on the Management of Blood Cholesterol for diagnosis and management of patients with dyslipidemia.

13. **Lung Cancer Screening** [iii] – Annually with low-dose computer tomography (LDCT) for patients aged 50-80, who are currently smoking or former smokers with a 20 or more pack-year smoking history. Additional information at: https://www.cancer.org/cancer/types/lung-cancer.html.

14. **Mammogram (**females) [iii] – From ages 40-49, inform of the potential risks and benefits of screening and offer screening every 2 years. From ages 50-75, mammography performed at least every 2 years. Additional information at: https://www.cancer.org/cancer/types/breast-cancer.html.

15. **Pregnancy test** [i] (For people of childbearing potential) – At entry into care; ART initiation or modification or when clinically indicated.

16. **Prostate-specific antigen (PSA) Screening** [iii] (males) – For ages 55-69 digital rectal exam, should be considered primary evaluation before PSA screening. For those age 50-69, they discuss the risks and potential benefits of PSA screening. For those ages 70 and older, PSA screening is not recommended. The impact of HIV on prostate cancer risk is not yet known. African Americans and people with a relative with prostate cancer have a higher burden of prostate cancer. Clinicians should follow USPSTF or American Cancer Society guidelines and consider patient wishes. Additional information at: https://www.cancer.org/cancer/prostate-cancer/detection-diagnosis-staging/acs-recommendations.html.

17. **TB Testing** [iii] – Perform annually in persons at risk for tuberculosis, either with a tuberculin skin test or IGRA.

18. **Urinalysis** [i] – Entry into care; or if clinically indicate e.g., in patients with chronic kidney disease (CKD) or diabetes mellitus (DM). Consult the HIV Medicine Association of the Infectious Diseases Society of America's (HIVMA/IDSA) Clinical Practice Guidelines for the Management of Chronic Kidney Disease in Patients Infected with HIV for recommendations on managing patients with renal disease. More frequent monitoring may be indicated for patients with evidence of kidney disease (e.g., proteinuria, decreased glomerular dysfunction) or increased risk of renal insufficiency (e.g., patients with diabetes, hypertension). Urine glucose and protein should be assessed before initiating tenofovir alafenamide (TAF)-or tenofovir disoproxil fumarate (TDF)-containing regimens and monitored during treatment with these regimens.

HIV Specific

19. **ARV therapy is recommended and discussed** [i] – Risks and benefits are discussed including reduced morbidity and mortality and prevention of HIV transmission to others and if treatment initiated, follow-up with adherence. If refused, document in record and refer to ARTAS and or Department of Health Treatment Adherence Specialist.

20. **CD4 cell count** [i] – Entry into care; at ART initiation or modification; every 3 months, if CD4 count is <300 cells/$mm^{3;}$ every 6 months during the first 2 years of ART, if CD4 count is ≥300 cells/$mm^{3;}$; every 12 months after 2 years on ART with consistently suppressed viral load, CD4 count 300-500 cells/mm^3, if CD4 count >500 cells/mm^3: CD4 monitoring is optional; if ART initiation is delayed monitor every 3-6 months; if treatment failure or if clinically indicated. *In accordance with the HRSA HAB performance measures, the local program defines consistently suppressed viral load as <200 copies/ml.*

21. **Genotypic Resistance Testing (PR/RT Genes)** [i] – Entry into care; at ART initiation or modification; if ART initiation is delayed; treatment failure or clinically indicated. Standard genotypic drug-resistance testing in ART-naïve persons should focus on testing for mutations in the PR and RT genes. If transmitted INSTI resistance is a concern, or if a person has a history of INSTI use in PrEP or treatment, or a person presents with viremia while on an INSTI, providers also should test for resistant mutation in the IN gene. In ART-naïve patient who do not immediately begin ART, repeat testing before initiating of ART is optional if drug-resistance testing was performed at entry into care. In patients with virologic suppression who are switching therapy because of toxicity or for convenience, viral amplification will not be possible; see the Drug-Resistance Testing section for a discussion of the potential limitations and benefits of proviral DNA assays in this situation. Results from prior drug-resistance testing should be considered because they can be helpful in constructing a new regimen.

22. **Genotypic Resistance Testing (Integrase Genes)**[i] – Entry into care, if transmitted INSTI resistance is suspected or if there is a history of cabotegravir long acting (CAB-LA) use for PrEP ; at ART initiation or modification, if transmitted INSTI resistance is suspected or if there is a history of INSTI use; treatment failure if there is a history of INSTI use; or clinically indicated, if there is a history of INSTI use. Standard genotypic drug-resistance testing in ART-naïve persons should focus on testing for mutations in the PR and RT genes. If transmitted INSTI resistance is a concern, or if a person has a history of INSTI use in PrEP or treatment, or a person presents with viremia while on an INSTI, providers also should test for resistant mutation in the IN gene. In ART-naïve patients who do not immediately begin ART, repeat testing before initiation of ART is option if drug-resistance testing was performed at entry into care. In patients with virologic suppression who are switching therapy because of toxicity or for convenience, viral amplification will not be possible; see the Drug-Resistance Testing section for a discussion of the potential limitations and benefits of proviral DNA assays in this situation. Results from prior drug-resistance testing should be considered because they can be helpful in constructing a new regimen.

23. **HIV viral load** [i] – Entry into Care; at ART initiation or modification; 4-8 weeks after ART initiation or modification if HIV RNA is still detectable, repeat testing every 4-8 weeks until viral load is suppressed to <50 copies/mL. Thereafter, repeat testing every 3-6 months. For

patients on ART, viral load typically is measured every 3-6 months. More frequent monitoring may be considered in individuals having difficulties with ART adherence or at risk for nonadherence. However, for adherent patients with consistently suppressed viral load and stable immunologic status for more than 1 year, monitoring can be extended to 6-month intervals but is necessary for stable patients; if ART initiation is delayed, repeat testing is optional; or if treatment failure or if clinically indicated.

24. **HLA-B*5701** [i] – At ART initiation or modification if considering start of abacavir (ABC) and document in record carrying data forward to most current volume. *(Currently not paid for by the Ryan White Program due to payer of last resort restrictions; must access ViiV sponsored testing directly through labs. For LabCorp, HLA-AWARE HLA-B*5701 ViiV code #006940 and for Quest Diagnostic ViiV HLA-B*B5701 test code #19774).*

25. **Treatment of opportunistic infections and prophylaxis for opportunistic infections** [ii] – Specifically, but not limited to, Mycobacterium avium complex (MAC), Pneumocystis jirovecii pneumonia (PCP), and Toxoplasmosis (Toxo) prophylaxis per DHHS Guidelines.

26. **Tropism testing** [i] – At ART initiation or modification if considering use of CCR5 antagonist; or for treatment failure if considering a CCR5 antagonist, or if the patients with virologic failure on a CCR5 antagonist; or if clinically indicated. If performed, record carried forward to most current volume.

Immunizations

Document in medical record carrying data forward to most current volume

27. **COVID-19 vaccination** [v] – Vaccinate per CDC guidance.

28. **Hepatitis A vaccination** [v] – Offer vaccination if not immune per guidance. Assess for response 30-60 days after vaccination by performing Hep A IgG antibody or Hep A Total antibody.

29. **Hepatitis B vaccination** [v] – Offer vaccination if not immune per guidance. Assess for response 30-60 days after vaccination by performing Hepatitis B surface antibody quantitative (anti-HBs).

30. **Human Papillomavirus (HPV) Vaccine** [v] – HPV vaccination as indicate by current guidelines.

31. **Influenza vaccination** [v] – Offer IIV3 or RIV3 annually.

32. **Meningococcal vaccination** [v] – Use 2-dose series Menveo or MenQuadfi at least 8 weeks apart and revaccinate every 5 years if risk remains. See vaccination guidelines**.**

33. **Mpox vaccination** [v] – Vaccinate per CDC guidance. Additional information at: https://www.cdc.gov/mpox/hcp/vaccine-considerations/index.html

34. **Pneumococcal vaccination** [v] –Vaccinate per guidelines**.** For guidance on which pneumococcal vaccine should be used go to: https://www2a.cdc.gov/vaccines/m/pneumo/pneumo.html.

35. **Tetanus, diphtheria, pertussis (Td/Tdap)** [v] – One dose Tdap, then Td or Tdap booster every 10 years.

36. **Varicella** [v] – Vaccination may be considered (2 doses 3 months apart); VAR contraindicated for HIV infection with CD4 percentage <15% or CD4 count <200 cells/mm^3.

37. **Zoster vaccination** [v] — Use 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2-6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). See vaccination guidelines for detailed information and considerations: https://www.cdc.gov/shingles/hcp/vaccine-considerations/immunocompromised-adults.html**.**

STI Screenings

38. **Anal Dysplasia Screening** [iii] – For all patients with HIV should have digital anorectal exam performed at least annual if asymptomatic. Anal pap: screen transgender women and men over 35 years of age who have sex with men, and all other people with HIV over 45 years of age, with anal Pap smears if there is access to, or ability to, refer for high-resolution anoscopy and treatment. Abnormal anal Pap should prompt referral for high-resolution anoscope. Additional information at:
HIV Clinical Guidelines Now Recommend High Resolution Anoscopy as Part of Anal Cancer Screening Program for People with HIV | National Institutes of Health

39. **Bacterial STIs (Syphilis**, **N. gonorrhoeae** (GC), **C. trachomatis** (Chlamydia) and **parasitic STIs (Trichomoniasis)** [ii] – At the initial HIV care visit, providers should test all sexually active persons with HIV infection for curable STDs (e.g., syphilis, gonorrhea, and chlamydia) and perform testing at least annually during the course of HIV care. More frequent screening might be appropriate depending on individual risk behavior and the local epidemiology. Additional information at https://www.cdc.gov/std/treatment-guidelines/screening-recommendations.htm

Footnotes

[i] Guidelines for the Use of Antiretroviral Agents in HIV-1 Infected Adults and Adolescents. https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-arv/whats-new-guidelines. Accessed on November 13, 2024.

[ii] Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV. https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-opportunistic-infections/whats-new. Accessed on December 16, 2024.

[iii] Primary Care Guidance for Persons With Human Immunodeficiency Virus: 2024 Update by the HIV Medicine Association of the Infectious Diseases Society of America. https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciae479/7818967. Accessed November 13, 2024.

[iv] Women's Preventive Service Guidelines. https://www.hrsa.gov/womens-guidelines. Accessed November 13, 2024.

[v] Recommended Adult Immunization Schedule for Ages 19 years or older, United States, 2025. https://www.cdc.gov/vaccines/hcp/imz-schedules/adult-schedule-vaccines.html. Accessed December 16, 2024.