Foreword on Moving Forward

Language about **identity**, **diversity**, **equity**, and **inclusion** evolves relatively quickly. The language and terms used throughout this course reflect contemporary best practice and guidance. To ensure continuous alignment with current best practice, terminology will be reviewed and updated as guidelines evolve. For example, when color is used regarding race, capital letters are used (e.g., Black, White, Brown), as recommended by the National Association of Black Journalists.

Characters throughout this course will use varying pronouns, such as she/her, he/him, and they/them, to reflect the range of gender identities that exist within our communities.

Health Inequities in Vaccine Optimization

Supported by and educational grant from Johnson & Johnson

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Previous Activities to Check Out:

CME CAST

Equity and Health Care Disparities: The Role of Leaders in Addressing the Crisis

CME CAST

Addressing Unconscious Bias and Disparities in Health Care: A Call to Action

CME CAST

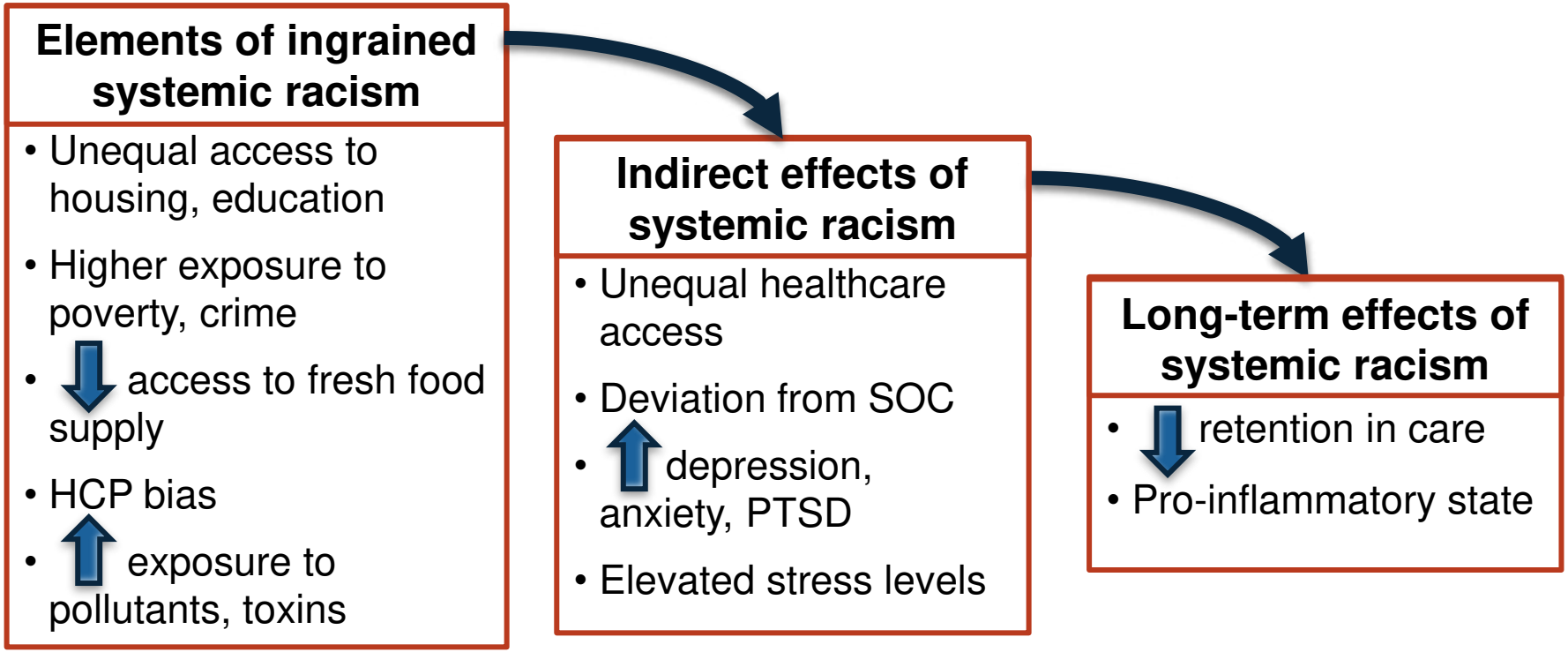
Call to Action: Racial Disparities in Maternal Health

CME OUTFITTERS

Learning Objective

Analyze the influence of unconscious bias, health disparities, and health inequities on vaccination optimization.

Health Disparities: How We Got Here[1-5]



HCP = healthcare provider; PTSD = post-traumatic stress disorder; SOC = standard of care

1. Hasan B, et al. *Clin Rheumatol.* 2022;31:1–13. 2. CME Outfitters, LLC. 2021. Equity and Health Care Disparities: The Role of Leaders in Addressing the Crisis. 3. CME Outfitters, LLC. 2021. Addressing Racial Disparities in Orthopedic Care. 4. CME Outfitters, LLC. 2021. Achieving Equity in the Management of Chronic Pain: Treating the Whole Patient. 5. CME Outfitters, LLC. 2021. Parameters of Pain Care: Mitigating Racial Disparities in Patients with Chronic Pain.

Reasons for Disparities in Vaccination Coverage

- Structural racism: aspects of the healthcare structure that lead to disparities
  - Insurance status
  - Not having a primary care doctor
  - Delaying care due to cost
  - Provider bias
  - Historical mistreatment leads to medical mistrust
  - Language and cultural barriers
- Vaccine hesitancy: reluctance to get vaccination due to perceptions of:
  - Safety concerns/side effects
  - Trust of medical providers
  - Low health literacy

Artiga S, et al. Kaiser Family Foundation (KFF) Website. 2020. https://www.kff.org/policy-watch/racial-disparities-flu-vaccination-implications-covid-19-vaccination-efforts/. Accessed September 16, 2022. Brewer LI, et al. *BMC Public Health.* 2021;21(1):1166. Fairless E, et al. *J Racial Ethn Health Disparities.* 2019;6(6):124401249

Health Providers: Vaccine Optimization Stakeholders

Providers

- Aware of disparities
- Need to address patient mistrust
- Should not assume patient hesitancy
- Many patients very grateful for vaccination

Health Care Workers

- Team-based approach
- Photos of everyone getting vaccinated builds trust
- RNs/MAs can also ask about vaccination during office visit

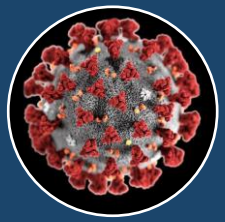
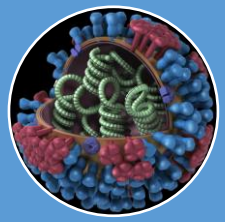
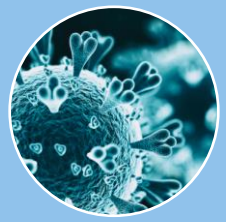
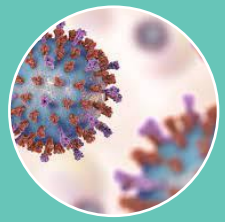
Pharmacists/Pharmacies

- Since COVID, common place for vaccination
- Alternative source of information

Community

- Provide alternate locations for vaccination
  - Pop-up clinics
  - Food pantries

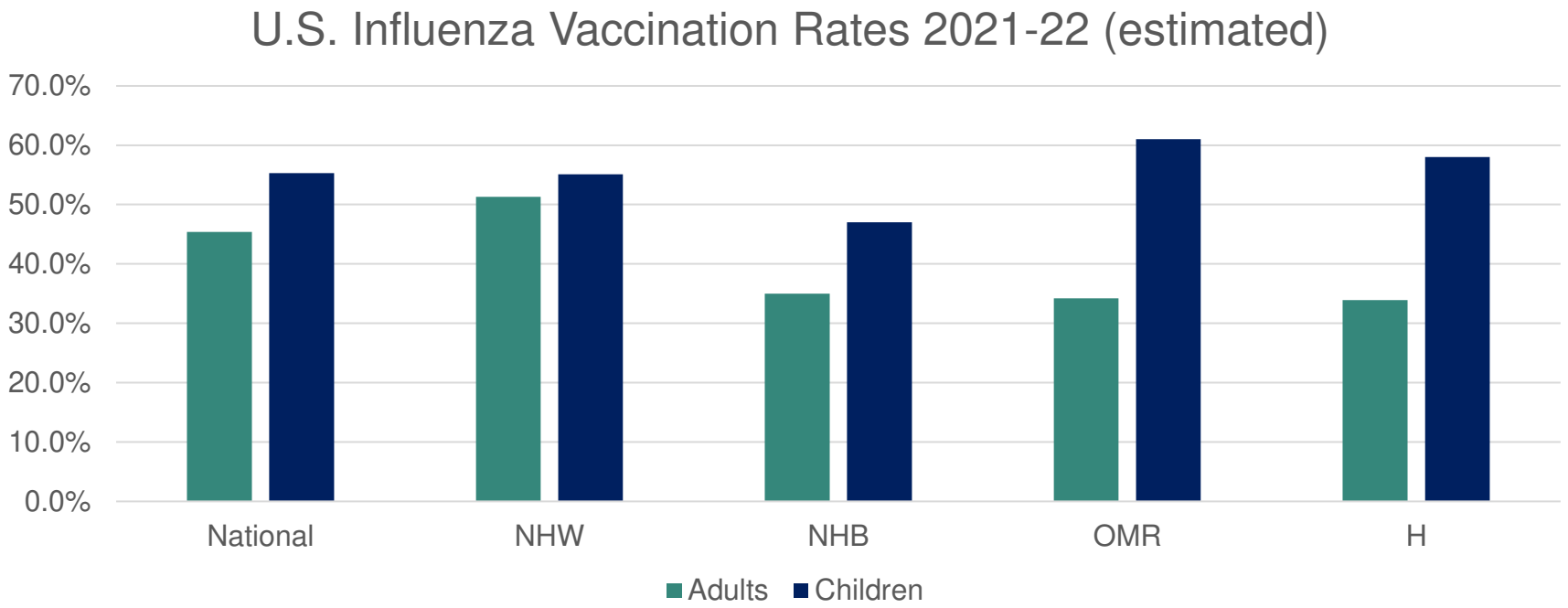
Inequitable Factors in Specific Vaccines

COVID-19	Influenza	HIV	RSV	Vaccine Hesitancy	Other Concerns
					
-AAMR Latino 77% ⬆ vs. White -AAMR Black 67% ⬆ vs. White -Highest AAMR = Indigenous Americans - ⬆ Death in POC	-Highest group vaccinated only 51% -POC less than half vaccinated -Low pre-pandemic and now bigger gap with COVID and Monkeypox	-14% still undiagnosed -42% new infections in African Americans -Need to normalize sexual health in conversation	- ⬆ Hosp. admits in populations with poverty and crowding - ⬆ Rate of hosp. in children; parents miss work -More common than “common cold”	-3x ⬆ in vaccine hesitancy among Black population - ⬇ trust among men - ⬇ trust in rural communities -Role of social media in vaccine hesitance	-Screening -Monkeypox -Polio & Measles -Perpetuated myths

AAMR = age-adjusted mortality rate, POC = people of color, RSV = respiratory syncytial virus

Centers for Disease Control and Prevention (CDC). CDC Website. 2022. https://www.cdc.gov/flu/fluvaxview/dashboard/vaccination-dashboard.html#:~:text=Flu%20Vaccination%20Coverage&text=9.5%20percentage%20points%20lower%20this,season%20compared%20with%20March%202020. Accessed September 16, 2022. Gawthrop, E. American Public Media (APM) Research Lab Website. 2019. https://www.apmresearchlab.org/covid/deaths-by-race. Accessed September 29, 2022. Haukoos J, et al. *J AM Coll Emerg Physicians Open.* 2020;1(4):484-486. Holmen JE, et al. *BMC Infect Dis.* 2021;21(1):293. McElfish PA, et al. *J Prim Care Community Health.* 2021;12:21501327211040746.

Disparities in Influenza Vaccination Rates

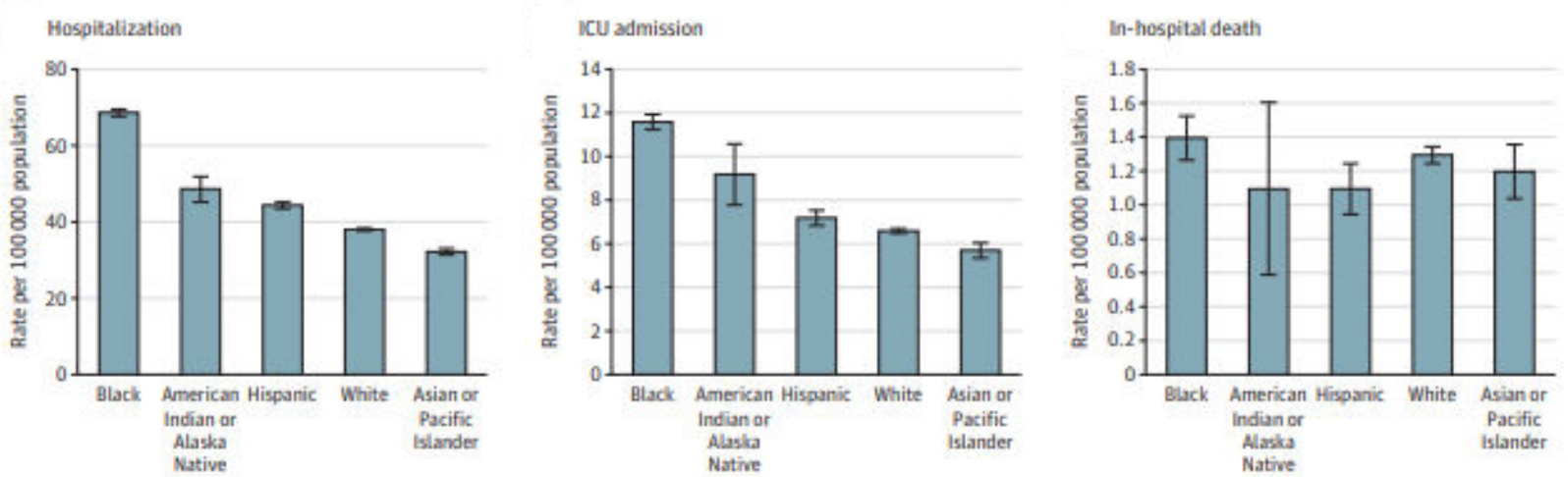


H = Hispanic, OMR = other minority race

Centers for Disease Control and Prevention (CDC). CDC Website. 2022. https://www.cdc.gov/flu/fluvaxview/dashboard/vaccination-dashboard.html#:~:text=Flu%20Vaccination%20Coverage&text=9.5%20percentage%20points%20lower%20this,season%20compared%20with%20March%202020. Accessed September 16, 2022.

Disparities in Influenza Disease Burden

- Over 10 seasons (2009-19), Black, American Indian/Native Alaskan and Hispanic patients most affected by severe influenza, measured by higher rates of hospitalization, ICU admission and in-hospital death



- How do these rates relate to vaccination rates?

O'Halloran AC, et al. *JAMA Netw Open.* 2021;4(8):e2121880.

Disparities in RSV

- Black children have higher RSV-associated hospitalization rates compared to White children
- RSV-associated hospitalization correlates with crowding level and poverty at the census-tract (CT) level
- Native American infants in the U.S. are 2.5x more likely to be hospitalized for RSV; develop severe consequences including airway inflation, bronchiolitis, and pneumonia

RSV season duration is greatest (23 days) in areas that include disproportionately high percentages of Black people: Alabama, Georgia, Mississippi, North Carolina, and South Carolina.

Holmen JE, et al. *BMC Infectious Diseases.* 2021;21(1):293. Iwane MK, et al. *AM J Epidemiol.* 2013;177(7):656-665. National Medical Association (NMA). Respiratory syncytial virus and African Americans.NMA Website. 2010. https://cdn.ymaws.com/www.nmanet.org/resource/resmgr/Docs/RSV/rsv_final_paper.pdf. Pinsk, A. Johns Hopkins Bloomberg School of Public Health Website. 2022. https://publichealth.jhu.edu/2022/a-new-shot-prevents-serious-illness-from-rsv. Accessed September 29, 2022.

Disparities in COVID-19 Disease Burden and Prevention

Rural vs. Urban

- Vaccination coverage with ≥1 doses = **lower in rural counties** (all ages)
  - Biggest difference = ages 12–17 years (38.7% rural, 64.9% urban).
- Adults in **rural areas 3x more likely** to say they, **"definitely won't get a COVID-19 vaccine"** than adults in urban areas.

Rates of Death / Hospitalization

- Compared to NHW population, **rate of death** is:
  - 2.1x higher for **Native American and Alaskan Native,** 1.7x higher for **NHB,** 1.8x higher for **Hispanic** populations
- Compared to NHW population, **rate of hospitalization** is:
  - 2.7x higher for **Native American and Alaskan Native,** 2.3x higher for **NHB,** 2.0x higher for **Hispanic** populations

Vaccine Hesitancy

- **Black adults** are more vaccine hesitant than White adults due to **anti-vaccine beliefs:**
  - The government is hiding the truth about COVID-19 vaccine risks
  - Vaccines were developed too quickly
  - Vaccine gives people the infection
- Anti-vaccine beliefs account for **70.6% of the Black-White disparity in vaccine hesitancy**

NHB = non-Hispanic Black, NHW = non-Hispanic White

Centers for Disease Control and Prevention (CDC). CDC Website. 2022. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html. Accessed September 29, 2022. Frisco ML, et al. *Soc Sci Med.* 2022;307:115183. Saelee R, et al. *MMWR Morb Mortal Wkly Rep.* 2022;71:335–340.

Disparities in HIV Prevention and Outcomes

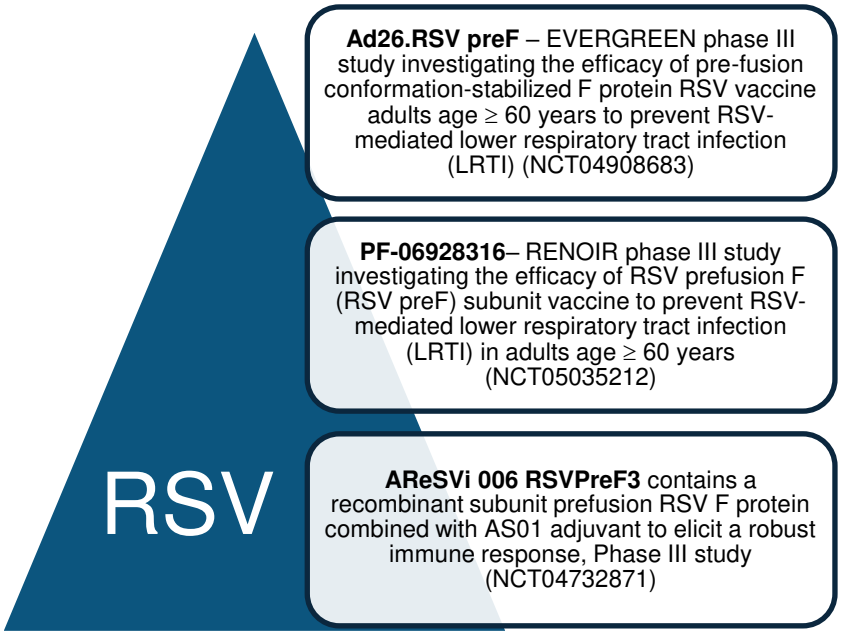
- Awareness of PrEP among White population is twice as high as awareness among Black population (34% vs 16%)
- Black people do not engage in more high-risk behaviors, but have poorer: outcomes for diagnosis, linkage and retention in care, ART prescription, adherence, and viral suppression
- Southern states have the highest transmission rates (more than half of all new HIV cases), but have the lowest PrEP utilization (only 21% of PrEP users in 2021)

- Black men are > 6x more likely to acquire HIV during their lives compared to White men
- Lifetime HIV risk is 17x greater among Black women than White women

ART = antiretroviral therapy. PrEP = preexposure prophylaxis

AIDSVu. AIDSVu Website. 2022. https://aidsvu.org/resources/deeper-look-south. Accessed September 29, 2022. Hojilla JC, et al. *JAMA Network Open.* 2021;4(8):e2122692. Nunn A, et al. *AIDS Behav.* 2019;23(Suppl 3):319-339. Yang C, et al. *J Health Care Poor Underserved.* 2021;32(1):537-549.

On the Horizon: New Vaccines in Development



Ad26.RSV preF – EVERGREEN phase III study investigating the efficacy of pre-fusion conformation-stabilized F protein RSV vaccine adults age ≥ 60 years to prevent RSV-mediated lower respiratory tract infection (LRTI) (NCT04908683)

PF-06928316– RENOIR phase III study investigating the efficacy of RSV prefusion F (RSV preF) subunit vaccine to prevent RSV-mediated lower respiratory tract infection (LRTI) in adults age ≥ 60 years (NCT05035212)

AReSVi 006 RSVPreF3 contains a recombinant subunit prefusion RSV F protein combined with AS01 adjuvant to elicit a robust immune response, Phase III study (NCT04732871)

HIV

Mosaico Phase 3 clinical trial (NCT03964415); two vaccine regimen

Ad26.Mos4.HIV vaccine
At months 0 and 3, 6 and 12

Clade C/Mosaic gp140 HIV bivalent vaccine
At months 6 and 12

HIV-1 seronegative cis-gender men and transgender individuals in Argentina, Brazil, Italy, Mexico, Peru, Poland, Spain, and the U.S.

GlaxoSmithKline. *Immunogenicity, Safety, Reactogenicity and Persistence of an Investigational Respiratory Syncytial Virus (RSV) Vaccine in Adults Aged 60 Years and Above.* ClinicalTrials.gov Identifier: NCT04732871. First Received 2021. Accessed September 30, 2022. Janssen. *A Study of an Adenovirus Serotype 26 Pre-fusion Conformation-stabilized F Protein (Ad26. RSV. preF) Based Respiratory Syncytial Virus (RSV) Vaccine in the Prevention of Lower Respiratory Tract Disease in Adults Aged 60 Years and Older (EVERGREEN).* ClinicalTrials.gov Identifier: NCT04908683. First Received 2021. Accessed September 30, 2022. Janssen. *A Study of Heterologous Vaccine Regimen of Adenovirus Serotype 26 Mosaic4 Human Immunodeficiency Virus(Ad26.Mos4.HIV), Adjuvanted Clade C gp140 and Mosaic gp140 to Prevent HIV-1 Infection Among Cis-gender Men and Transgender Individuals Who Have Sex With Cis-gender Men and/or Transgender Individuals (MOSAICO).* ClinicalTrials.gov Identifier: NCT03964415. First Received 2019. Accessed September 30, 2022. Pfizer. *Study to Evaluate the Efficacy, Immunogenicity, and Safety of RSVpreF in Adults (RENOIR).* ClinicalTrials.gov Identifier: NCT05035212. First received, 2021. Accessed September 30, 2022.

Approaches to Minimizing Disparities

Assess SDoH	Review	Ask	Examine	Integrate	Educate
Assess healthcare access points (urban vs. rural), housing/group living, ethnicity, discrimination, education access points, technology Screening is crucial	Review vaccine-related education Consider inflammatory status, epigenetic risk, age, portals of disease entry, myths, and beliefs	Ask about barriers to accessing vaccinations and boosters Ask about where vaccinations and healthcare education are accessed (e.g., word of mouth, social media, family, news)	Influence of vaccination education access points & media outlets on information dissemination Note misalignment with current science and impact on stigma, trust, & vaccination optimization	Telehealth and digital therapeutics, screening, and education tools as appropriate Ensure fellow providers, community members & patients/family are familiar with education delivery models & the science	Patient/family about vaccine options and the care plan to encourage SDM Recognize cultural or language barriers and offer appropriate educational materials

SDM = shared decision making, SDoH = social determinants of health

SMART Goals

Specific, Measurable, Attainable, Relevant, Timely

- Identify health disparities that may impact vaccination optimization for each patient, including prior healthcare experiences, SDoH, patient unconscious bias, and health literacy.
- Develop individualized treatment plans that consider health disparities, screening, diversity, modes of education, healthcare accessibility, vaccination options, and social support needs.
- Educate patients and community members to minimize inequities in vaccination optimization.
  - Patient and community education materials need to reflect diversity and learning preferences while considering health literacy.
- Integrate all members of the care team to develop holistic action plans with individualized SMART goals for all patients.

CME OUTFITTERS

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