Prioritizing Electronic Health Record Measures for Interventions to Reduce Childhood Obesity in Health Disparity Populations

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Unprecedented high obesity prevalence responsible for 4 million deaths globally

Children Age 6 years Obesity Prevalence 2016

http://ncdrisc.org/obesity-prevalence-map-ado.html

The GBD 2015 Obesity Collaborators, NEJM. 2017; NCD Risk Factors Collaboration, The Lancet. 2017; Ogden, JAMA. 2018
Racial, ethnic, and socioeconomic disparities in obesity start in childhood.
Childhood Obesity Research Demonstration Study (CORD)

Multi-sector, Multi-level Approach in Low-Income Communities

- Community
- Primary Care
- Women, Infants, and Children (WIC)
- School & After School
- Early Child Education and Care
Multi-sector, multi-level approach

• **Improved BMI outcomes in MA-CORD site #2**
  • Primary care (age 2-12 years): -0.16 BMI z-score units/year

• **Potential to reduce racial/ethnic disparities**
  • Most effective among African-American WIC children (p< 0.01)

• **Improvements in prevalence of risk-reducing behaviors**
  • Avoidance of sugar-sweetened beverage intake
  • Sleep sufficiency

Woo Baidal, et al. Obesity; 2017
Taveras, et al. Obesity; 2017
Critical Periods of Health Inequities

Before conception
- Preconceptional exposures
- Exposure of gametes
- Epigenome (parental)
  - Genome (parental)
  - Genome (offspring)

Fetal life
- In utero exposures
- Epigenome at birth
  - Epigenome in childhood

Childhood and adult life
- Early life exposures
- Adult life exposures
- Adult life/aging epigenome
- Programming of disease risks

Neighborhood Disparities in Obesity

- **Washington Heights/Inwood**
  - 47% children: overweight or obesity

- **New York City – Small decline**
  - 38% overweight or obese

Data2Go: Washington Heights, Inwood & Marble Hill.” data2go.Nyc, Measure of America of the Social Science Research Council and Helmsley Charitable Trust
NewYork-Presbyterian

- Academic healthcare system in NYC and Westchester
- 10 campuses
- 2 Medical Schools
  - Columbia
  - Weill Cornell
ANCHOR: NYP’s Center for Medicare and Medicaid Innovations Accountable Health Communities (CMMI AHC)

[Diagram of the process]

- Beneficiary enters Clinical Delivery Site
  - Screening for health-related social needs
  - (+) Screen: Any health-related social need present
  - (-) Screen: No health-related social need present

- Risk Stratified
  - High risk (> 2 ED visits within 12 months)
    - Receives Alignment Intervention and Usual Care
  - Lower risk (≤ 2 ED visits within 12 months)
    - Receives Awareness Intervention and Usual Care

- Partner Alignment (Quality Improvement Approach)
  - Community Referral Summary
    - Community Service Navigation

[Annotation]

LINC: Leveraging IT for Neighborhoods in Childhood

Multi-level Effects on Infant Weight Trajectories
- Individual: Universal screening for SDoH
- Residential neighborhood characteristics: Geospatial methods

Mitigating effects of social service utilization

Parental and provider perceptions and unintended consequences
Columbia / NYP Food Insecurity Response to COVID (March 16, 2020 – February 19, 2021)

- 6,452 Families
- 25,939 individuals
- 1,000,000 Pounds of food
- Evaluation
  - Food security, diet, health
  - In-depth interviews
Opportunities and Challenges: SDoH Data to Address Disparities in Childhood Obesity

Systematically collect patient-level data on race, ethnicity, and health-related social needs

Apply a life course lens and consider the household unit of measure

Cost, cost-effectiveness – who benefits? Who pays?

Cultivate community relationships and strategies for timely interventions
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