







# NCCOR MEMBER CALL

November 7, 2018 2 p.m. ET

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We will begin at 2:05 p.m. to allow participants time to join the webinar.



# Agenda

- Emerging Opportunities for NCCOR
- Steering Committee Update
- Spotlight
  - Matthew Gillman, MD, SM, National Institutes of Health
- Communications Update
- Other NCCOR Activities
- Announcements
- NCCOR New Staff
- Calendar Reminder



# **Emerging Opportunities for NCCOR**



# **Steering Committee Update**

- New Steering Committee Member:
  - Jamie Bussel, RWJF
- Senior Leadership Briefing Preparation
- Science and Technology in Childhood Obesity Policy (STOP) Informational Call
- Department of Defense Collaboration Call



# New workgroup

- JPB Grant Task 3: Define next steps in measurement needs to accelerate progress in reducing childhood obesity
  - Workgroup leads are starting discussions; stay tuned for more information or email <u>asamuels@fhi360.org</u> to join



# Obesity-related Research in NIH's Environmental Influences on Child Health Outcomes (ECHO) Program

### National Collaborative on Childhood Obesity Research (NCCOR)

Matthew W. Gillman, MD, SM NIH Office of the Director November 7, 2018



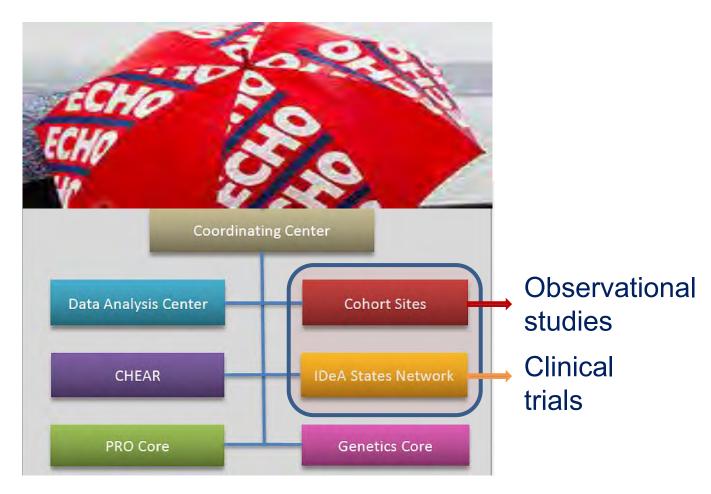
## Today

- ECHO mission, guiding principles, scientific goals
- Obesity-related observational and intervention research
  - ECHO-wide Cohort
    - Integrating 60+ ongoing maternal/child cohort studies
  - IDeA States Pediatric Clinical Trials Network
    - For rural and underserved children
- Results to date, promise for the future, opportunities to collaborate



# ECHO—A Nationwide Program



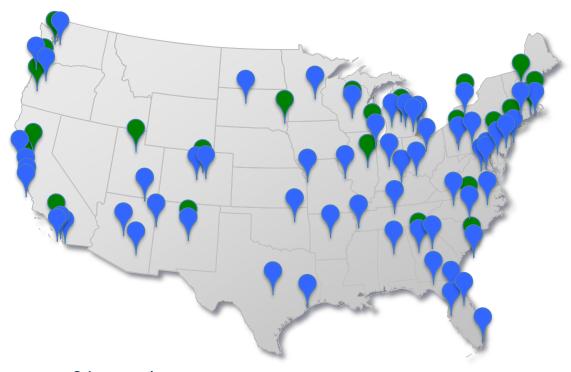


# ECHO's Observational Research

The ECHO Cohorts



### **ECHO Cohorts**



31 awards
68 principal investigators
~66 cohorts

- Majority started prenatally



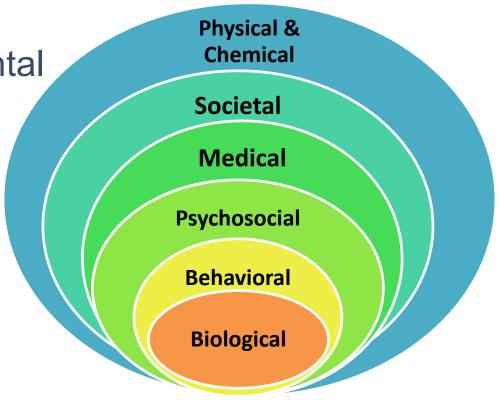


## **ECHO Overall Scientific Goal**

Answer solution-oriented questions about effects of broad range of early environmental exposures on child health and development

Broad Range of Early Environmental Exposures

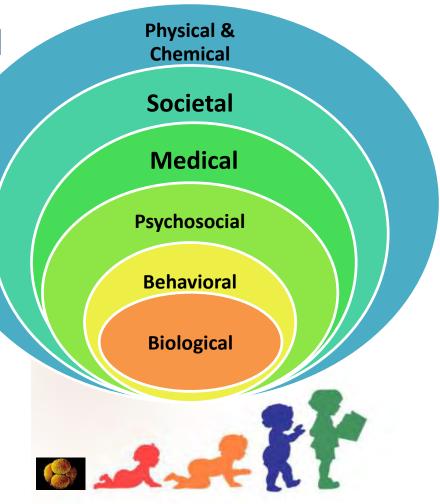
From society to biology



Broad Range of Early Environmental Exposures

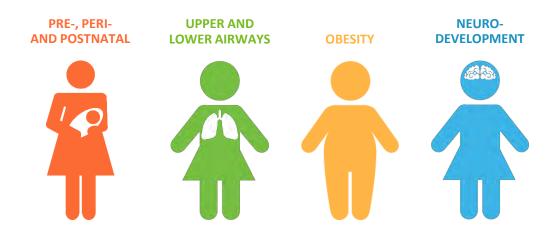
From society to biology

 Exposures from conception to age 5 years

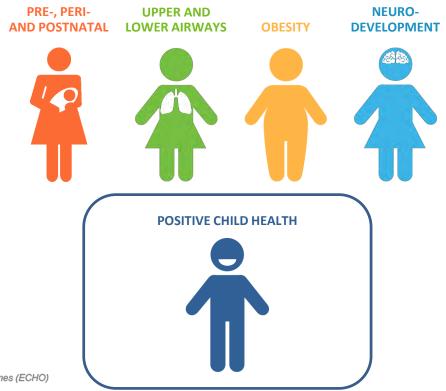




# Health Outcomes Focus on high-impact conditions throughout childhood and adolescence



# Health Outcomes Focus on high-impact conditions throughout childhood and adolescence





# POSITIVE CHILD HEALTH

- Focuses on assets that enable well-being:
- Well-being
  - Happiness
  - Life Satisfaction
  - Meaning & Purpose
  - Relationships
  - Achievement
  - Sleep

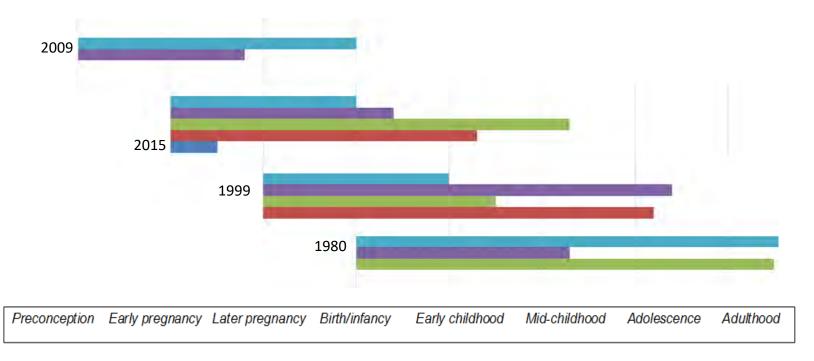


## **ECHO Cohorts**

- Create ECHO-wide Cohort
  - -Start with existing cohorts of mothers and children
    - All continue follow-up of children
    - Some also still recruiting
  - Establish single data platform to conduct etiologic and prediction research
  - Harmonize existing measures & standardize new measures



# The ECHO-Wide Cohort "Dynamic Cohort of Inception Cohorts"



Cohorts recruited at different points in the life course and in different eras, with different visit schedules and different data collection schemes



#### **ECHO-wide Cohort**

- Data Collection Protocol
  - Essential and recommended data elements
    - Prenatal, perinatal, infancy, early childhood, mid-childhood, adolescence
- Policies
  - Publications
  - Data sharing
  - Biospecimen use

	Measure		
Data Element	Preferred	Acceptable	Alternative
Essential (required to collect)	(3)	$\odot$	9
Recommended (encouraged to collect)	(3)		

# The ECHO-wide Cohort

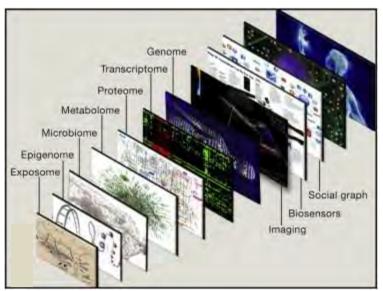
Weaving together 60+ individuals

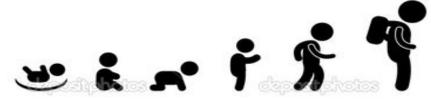


### The ECHO-wide Cohort

Many people, many layers of data, many stages of life course









# Promise of ECHO-wide Cohort

- 50,000+ children and their families
  - Address research questions that no single cohort, or even a few cohorts, can answer alone
- Solution-oriented research
  - Impact on policies, programs, practices
- Nationwide research collaboration
  - Resource for entire scientific community

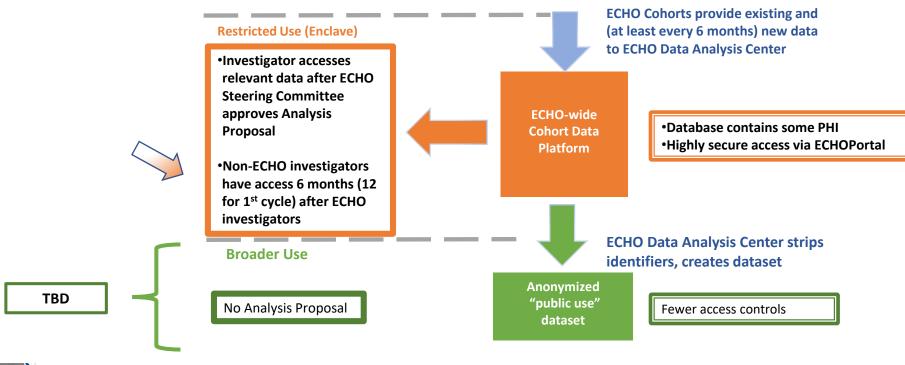




## ECHO-wide Cohort Data Sharing & Use

**Data Production** 

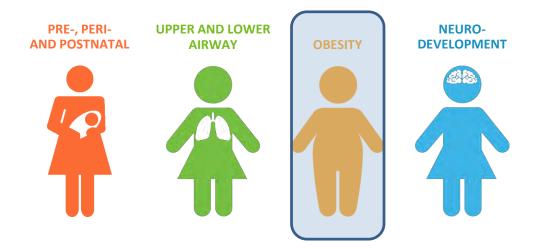
ECHO Cohorts collect data under ECHO-wide Cohort Data Collection Protocol





### Health Outcomes

Focus on high-impact conditions throughout childhood and adolescence



#### **ECHO-wide Cohort Data Collection Protocol**

#### Essential and recommended elements across life stages

Domain/Concept	Collect once	Prenatal	Perinatal	Infancy	Early Childhood	Middle Childhood	Adolescence
Family (Mother, Father, Child)			Х	Х	Х	Х	Х
Caregiving Quality (0-5yrs)			Х	Х	Х	Х	Х
Health Histories	Х						
Environmental exposures (Chemical)		Χ	Х	Х	Х	Х	Х
Built/Physical Environment		Χ	Х	Х	Х	Х	Х
Sociodemographics	Х						
Mother							
Pregnancy-Related		Χ					
Maternal Stress, Mental and global health, social support, IQ		Х	Х	х	х	Х	х
Biospecimens (hair, stool, vaginal swab, placenta, DNA, breast milk)		Х	Х				
Child							
Physical Health & Functioning		Χ	Х	Х	Х	Х	Х
Health Behaviors/Lifestyle		Χ	Х	Х	Х	Х	Х
Neurodevelopmental Health & Functioning				Х	Х	Х	Х
Social Role Performance & Functioning					Х	Х	Х
Sleep Health				Х	Х	Х	Х
Well-being				Х	Х	Х	Х
Biospecimens (Cord blood, plasma, DNA, red blood cells, meconium, nasal mucus, stool)			Х	х	х	х	Х
Father							
Biospecimens (Semen, DNA, Stool)	х	Х					

#### Diet:

- Mother- FFQ-DHQ/ ASA 24-hour recall
- Child- Infant Feeding Practices Study II (IFPS-II), NHANES Dietary Screener DTQ, Food Contaminants Questionnaire, ASA 24-hour recall

#### Physical activity:

- Pregnancy Physical Activity Questionnaire (PPAQ)
- Child physical activity (5+yrs)

#### Sleep:

- Maternal sleep quality in pregnancy
- · Child sleep health, sleep ecology

BMI and skinfold thicknesses in all cohorts

DXA, MRI in subsets

Subsets of cohorts assessing mother and/or child microbiome, epigenome, metabolome

#### **ECHO-wide Data Collection Protocol Overview:**

www.echochildren.org

• Protocol version 1.1 in Sept. 2018

#### ECHO Cohorts...in the meantime...

- Individual cohort analyses
  - –>100 published to date
- Collective analyses
  - "Send programs to data"
  - Preterm birth, obesity, asthma, autism spectrum disorder
- Review articles
- Positive health pilot
- Opportunities and infrastructure fund



### Obesity-related Specific Aims of Cohorts

	COHORT (s) -
CONTACT PI and MPIs	INSTITUTION
BLAIR, CLANCY, B	Family Life Project- NEW YORK UNIVERSITY
DABELEA, DANA	HEALTHY START- UNIVERSITY OF COLORADO DENVER
FERRARA, ASSIAMIRA, (contact); CROEN, LISA, A  GILLILAND, FRANK, D. (contact); BRETON, CARRIE, VAN DOREN	KPN AND PETALS -KAISER FOUNDATION RESEARCH INSTITUTE CHS, MADRES, LA-DREAMERS UNIVERSITY OF SOUTHERN CALIFORNIA
LEVE, LESLIE, DIANE (contact); GANIBAN, JODY, M.; NEIDERHISER, JENAE, M.	EARLY GROWTH AND DEVELOPMENT PEDIATRIC COHORT. UNIVERSITY OF OREGON
O'CONNOR, THOMAS, G (contact); BUSS, CLAUDIA, ; MILLER, RICHARD, KERMIT; SIMHAN, HYAGRIV, N; WADHWA, PATHIK, D	MAGEE and ROCHESTER. UNIVERSITY OF ROCHESTER
OKEN, EMILY, (contact); KLEINMAN, KENNETH, P.	PROJECT VIVA- HARVARD PILGRIM HEALTH CARE, INC.
PERERA, FREDERICA, P (contact); HERBSTMAN, JULIE, BETH	MOTHERS AND NEWBORNS, SIBLINGS AND FAIR. COLUMBIA UNIVERSITY HEALTH SCIENCES
TRASANDE, LEONARDO, (contact); JADDOE, VINCENT,  VENA, JOHN, EDWARD (contact);	TDES and GEN-NYC. NEW YORK UNIVERSITY SCHOOL OF MEDICINE NATIONAL FETAL GROWTH STUDY. MEDICAL UNIVERSITY OF SOUTH
WAPNER, RONALD,  WRIGHT, ROSALIND, J (contact);  WRIGHT, ROBERT, O	PRISM, ICLS, ACCESS. ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI

# Specific aims related to, but not limited to:

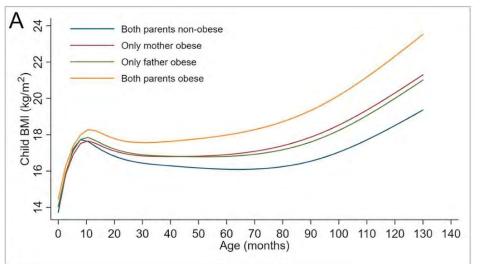
- Mediation by biological (e.g., hormones, DNA methylation) and behavioral (e.g., dietary) pathways
- Modification by a priori hypothesized factors from genes to society.
- Prenatal exposure to near-roadway air pollution, metals (As, Pb, Cd, Hg) and how these exposures affect BMI trajectories and body composition across childhood into emerging adulthood.
- Critical or sensitive periods for emergence, resilience, or resolution of phenotypes
  - Trajectory analysis

### Trajectory analysis may suggest potential sensitive windows for intervention

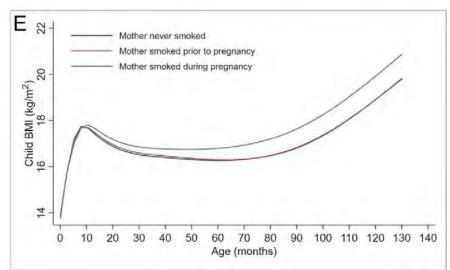
Single cohort analysis

# Parental Obesity

# Curves diverge in infancy



#### Maternal Smoking during Pregnancy Curves diverge in early childhood





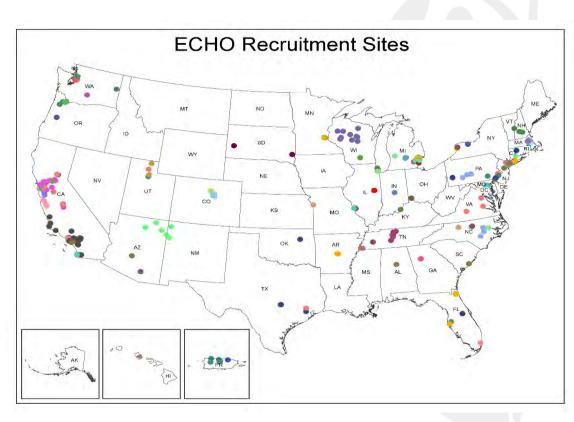


# Childhood Obesity in ECHO "Collective Analysis"

FA Tylavsky, A Ferrara, D Catellier, X Li, D Dabelea, E Oken, A Rundle, D Gilbert-Diamond, M-F Hivert, A Law, C Breton, AE Cassidy-Bushrow, NT Mueller, KJ Hunt, S Arteaga, T Lombo, S Mahabir, D Ruden, K Sauder, M Hedderson, Y Zhu, S Polk, N Mihalopoulos, M Vos, L Pyles, M Roary, J Aschner, L Trasande, for the ECHO Program

# **ECHO Pediatric Cohorts**

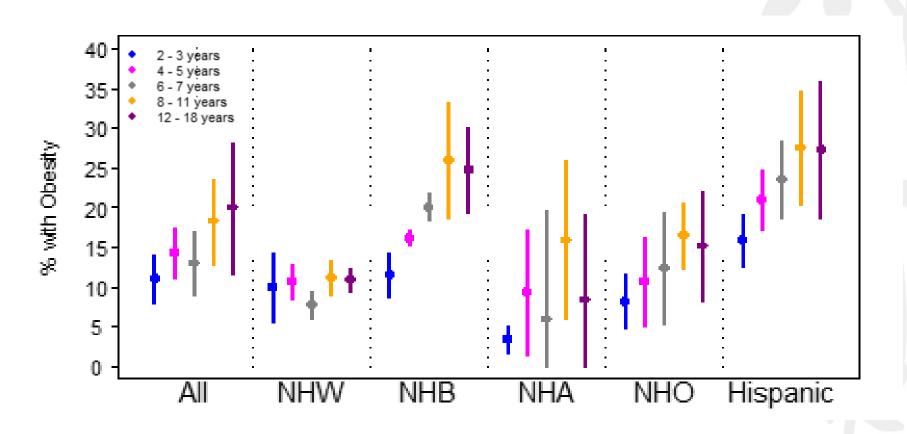
- 84 Cohorts initially funded
- 70 Cohorts after exclusions
  - Self-reported height and weight
  - No height or weight measured
  - No measures since 2003
- 46,222 participants available
- 37,603 after exclusions
  - Missing data
  - Less accurate measures
  - Measures before 2003



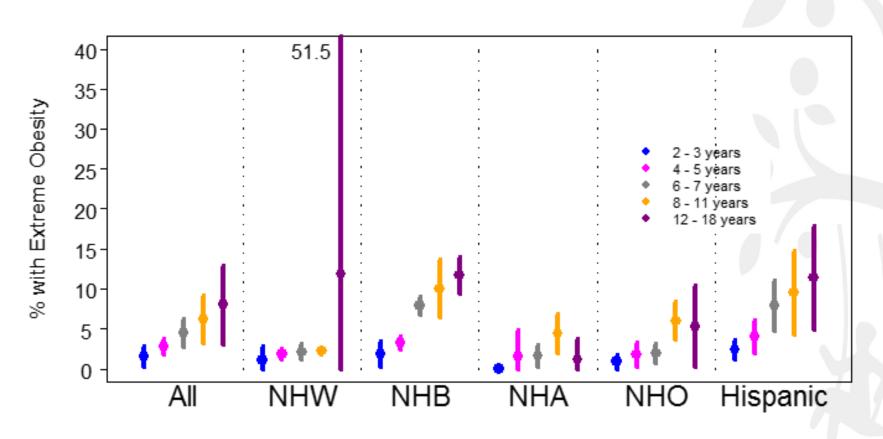
# **Analysis**

- Cohort level meta-analyses—"Send program to data"
- Each Cohort...
  - Collected self-reported data or abstracted from medical record
    - Age, sex, race/ethnicity
    - · Length/height, weight
  - -Calculated BMI (kg/m<sup>2</sup>)
    - Then determined prevalences
      - <2 years: BMI ≥97.7<sup>th</sup> percentile per WHO standard (term births only)
      - $-\ge 2$  years, per CDC growth reference
        - Overweight, > 85<sup>th</sup> and <95<sup>th</sup> percentile
        - Obesity, ≥95<sup>th</sup> percentile
        - Extreme obesity, ≥120% of the 95<sup>th</sup> percentile
  - -Sent tabulated results to ECHO Data Analysis Center

# Obesity (2–18 years) more common in older kids, blacks, Hispanics



# Large enough sample sizes to show similar patterns in extreme obesity (2–18 years)



# ECHO Comparable to NHANES

Age	ЕСНО	NHANES1
7.90	Pre	valence (%)
2-5 y	11	9-14
6-11 y	18	17-18
12-18 y	20	21-25

Race/	ЕСНО	NHANES <sup>1</sup>	
ethnicity	Prevalence (%)		
Hispanic	16-28	16-26	
NH black	11-26	9-22	
NH white	7-11	3-19	
NH Asian	3-16	3-11	

<sup>1</sup>Skinner AC, et al Prevalence of Obesity and Severe Obesity in US Children, 1999-2016. *Pediatrics*. 2018. Ogden C et al. *JAMA*. 2014;311(8):806-814; Ogden et al. *JAMA* 2016;315(21):2292-2299; Hales CM et al. 2018 319(16):1723-1725.

# How will ECHO generate rigorous data to help lessen the burden of overweight and obesity on individuals, families, and society?

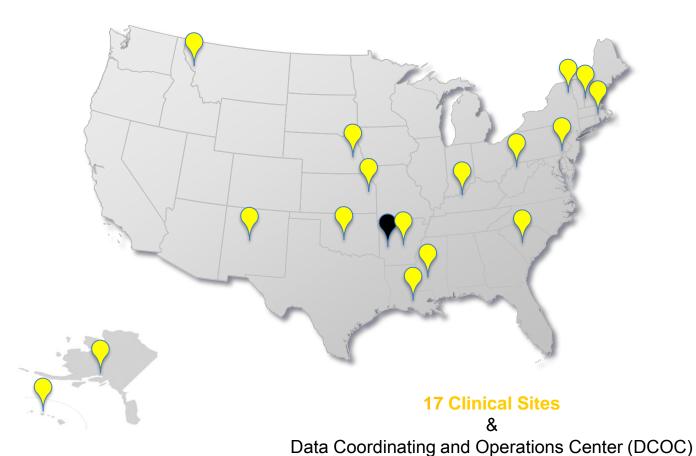
- Ongoing recruitment/retention, longitudinal data, large sample sizes
  - Sufficient power for subgroup analyses
  - Study exposures during sensitive developmental periods
    - Pre-conception through adolescence/young adulthood
- ECHO-Wide Cohort Data Collection Protocol promotes universal collection of environmental exposures (data, biospecimens) in all cohorts
  - Ability to study pathways and mechanisms that promote overweight/obesity
    - microbiome, epigenetics, genetics, metabolomics
- IDeA States Pediatric Clinical Trials Network
  - Opportunity to test novel interventions

### ECHO's Intervention Research

The IDeA States Pediatric Clinical Trials Network



#### IDeA States Pediatric Clinical Trials Network





# IDeA States Pediatric Clinical Trials Network Overall Goals

- Provide access to state-of-the-art clinical trials
  - Medically underserved and rural populations
- Build national pediatric research capacity
  - To conduct clinical trials
    - professional development
    - infrastructure and team support
- 2 obesity-related trials
  - "Homegrown"
  - Additional trials in collaboration with other networks



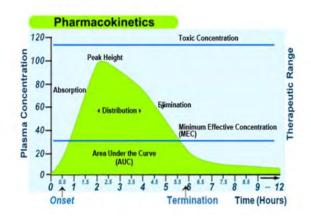


#### IDeA States Pediatric Clinical Trials Network

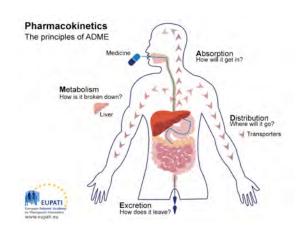


# Vitamin D Supplementation in Children with Obesity-Related Asthma VDORA-1





# Background & Objectives



#### Background

- Obesity and asthma co-exist
- Vitamin D levels are lower among children with obesity
- Vitamin D supplementation may alleviate asthma symptoms
- Few data on how much vitamin D is needed to achieve adequate levels in children with asthma and obesity

#### Objective

- Characterize vitamin D pharmacokinetics among children who have
  - Obesity and asthma and
  - Vitamin D levels indicating insufficiency or deficiency
- Exploratory endpoints: Inflammatory markers and asthma control
- 16-week pilot trial
- To inform potential efficacy trial



#### iAmHealthy Feasibility Pilot



- Background:
  - In urban/suburban settings, interventions to moderate weight gain among school-age children with obesity appear to work if enough contact hours (USPSTF)
  - Access more challenging for children in rural areas, who have higher obesity risk
- Overall goal of iAmHealthy:
  - Among rural children, assess intervention to reduce weight gain among school-age children with overweight or obesity
  - Group-based behavior change intervention using distant tablet technology

	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks	Weeks
	1-8	9-12	13-16	17-20	21-24	25-28	29-32
iAmHealthy	8 weekly sessions	1 session					





#### iAmHealthy Feasibility Pilot



#### Objective:

 In 6 rural primary care practices in ISPCTN states, assess approaches to participant recruitment and retention, intervention dose, and staff blinding



# Summary

- ECHO supports observational and intervention solution-oriented research related to childhood obesity
- ECHO-wide Cohort
  - 50,000+ children and families
  - Broad array of early environmental factors
- IDeA States Pediatric Clinical Trials Network
  - For rural and underserved children
- Opportunities to collaborate

# **ECHO Mission**

Enhance the health of children for generations to come



# **Communications Update**

- NCCOR Tools: Updates & Promotion
  - National Childhood Obesity Awareness Month
  - Twitter Chat
- American Public Health Association (November 2018)
- Connect & Explore



### NCCOR Tools: Updates & Promotion

#### Analytics June–October 2018

Tool	Page Views
NCCOR Homepage	16,322
Measure Registry	5,487
Measures Registry User Guides	13,881
Catalogue of Surveillance Systems	2,184
Youth Compendium of Physical Activities	5,141



# NCCOR Tools: Measures Registry

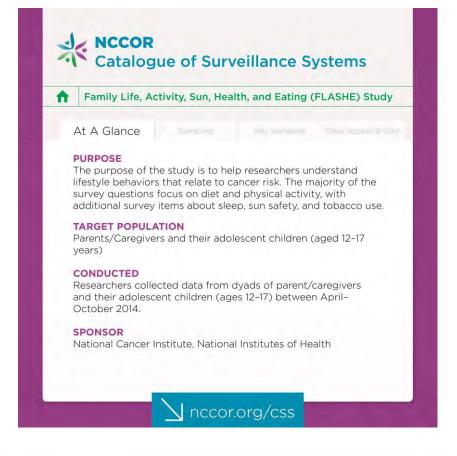
- 188 new articles added to the Measures Registry!
- A sampling of these new tools is highlighted below:
  - Behavioral Lifestyle Changes Questionnaire for youth aged 9–17 years
  - International Fitness Scale (IFIS) for youth aged 9-17 years
  - Farm to School Activity Tracker (F2SAT) for Third to Fifth Graders
  - Home Opportunities for Physical Activity Check-Up (HOP-Up) for children aged 2-5 years





#### **NCCOR Tools: CSS**

 Updated FLASHE system with public use geoFLASHE dataset with neighborhood variables





#### National Childhood Obesity Awareness Month







# Participated in Twitter Chat





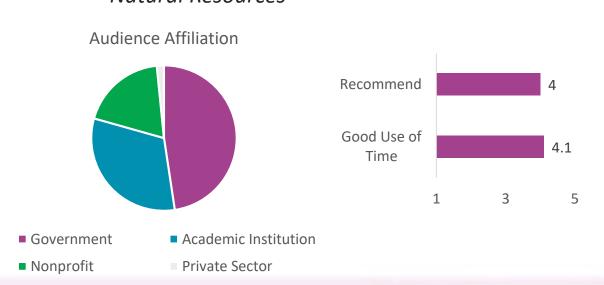


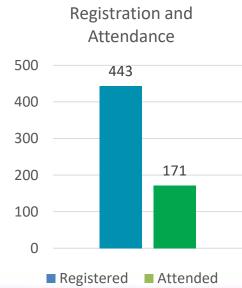


# Connect & Explore | Sept. 25, 2018

- The Healthy Communities Study: How Community
   Programs and Policies are Related to Children's Health
  - S. Sonia Arteaga, PhD, National Institutes of Health
  - Stephen Fawcett, PhD, MA, University of Kansas
  - Russell Pate, PhD, University of South Carolina

 Lorrene Ritchie, PhD, RD, University of California Division of Agriculture and Natural Resources

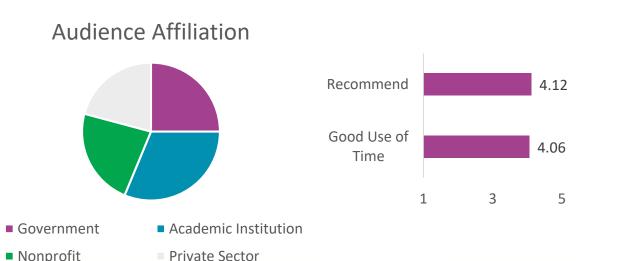


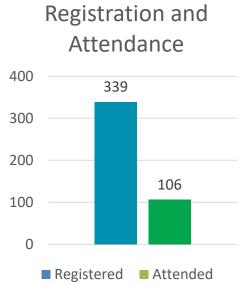




# Connect & Explore | Oct. 23, 2018

- Innovations in Behavioral Design to Enhance Active Living and Healthy Eating
  - Jeri Brittin, PhD, HDR
  - Joel Kimmons, PhD, Centers for Disease Control and Prevention
  - Kimberly Rollings, PhD, University of Notre Dame

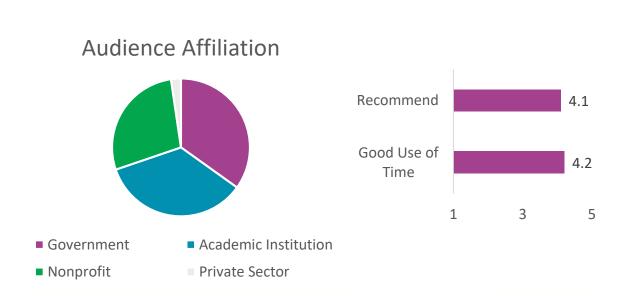


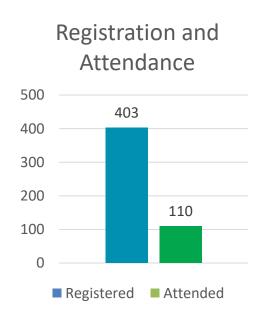




# Connect and Explore | Nov. 6, 2018

- America's Eating Habits: Food Away From Home
  - Michelle Saksena, United States Department of Agriculture







#### American Public Health Association 2018

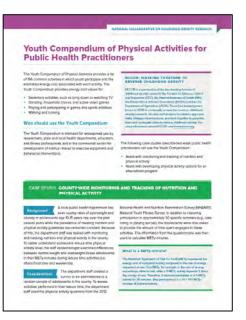
- Tools of the Trade: NCCOR Resources for Evidence-Based Practice in Diet and Physical Activity
- Tuesday, November 13, 2018; 3:00–4:30 p.m. PT
- Speakers:
  - Laura Kettel Khan, PhD, CDC
  - Jim Sallis, PhD, UC San Diego
  - Jamie Chriqui, PhD, UIC at Chicago
  - Barbara Ainsworth, PhD,
     University of Arizona
- NCCOR Exhibit Booth #2021



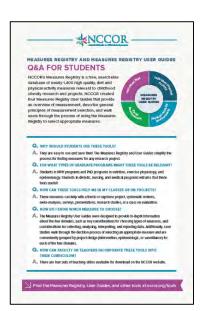


#### New communications materials

 NCCOR developed new communications materials for APHA













#### Other NCCOR Activities

- Catalogue of Surveillance Systems
- Childhood Obesity Declines:
   Exploring Promising Approaches
- CORD
- Economics and Obesity
- Engaging Health Care Providers and Systems
- FLASHE Study
- Food Patterns Equivalents Database
- Get Research Used
- Health, Behavioral Design, and the Built Environment
- Healthy Communities Study
- Healthy Eating Index

- Healthy Food Incentives
- Johns Hopkins Global Obesity Prevention Center
- Lessons Learned from Global Efforts
- Measures Registry
- National Leadership on Evaluating Obesity Prevention Efforts
- Physical Activity
- Registry of Studies
- School Wellness Survey
- SNAP-Ed
- Youth Energy Expenditure
- Other

For updates on the progress of NCCOR's workgroups, visit: <a href="http://nccor.org/internalresources">http://nccor.org/internalresources</a>



#### Announcements



#### NCCOR CC New Staff

- NCCOR CC has two new staff members!
  - Rudhdi Karnik rkarnik@fhi360.org / 202-884-8000
  - Alice Gribbin agribbin@fhi360.org / 202-884-8329



#### Calendar Reminders

#### Member Meetings

- March 7, 2019 (Washington, DC)
- June 13, 2019 (Atlanta, GA)
- September 12, 2019 (Washington, DC)

#### Member Calls

- January 16, 2019
- April 17, 2019
- July 17, 2019
- November 20, 2019

