HEALTHY BIRTH, GROWTH & DEVELOPMENT

knowledge integration

NL ‘Shasha’ Jumbe, PhD
Biometrics | Quantitative Sciences | Integrated Development | Global Health
TRUTH
CONFLUENCE OF INFLUENCE: TRANSLATING SCIENCE FROM DESCRIPTION TO PREDICTION AND SOLUTIONS
DATA GRAVEYARD FATE OF DESCRIPTIVE DEDUCTIVE SCIENCE
STUNTING:
A key indicator of failure to thrive
predicts immediate and lifelong disadvantages

These boys share their birthday and live 200m apart ....

.... there the similarity ends
DESCRIPTIVE SCIENCE:
GROWTH & DEVELOPMENT NETWORK WEB

Child’s early experience at age 0-24 months

Neurocognitive Growth & Development

- Language development
- Cognitive development
- Motor development
- Infant temperament
- Breastfeeding status
- Micronutrient intake
- Iron status
- Nutrient intake
- Growth velocity
- HAZ scores
- Repeated enteric infections
- Depressive symptoms
- Reasoning skills
- Socioeconomic status
- Home
- Mother/caretaker

Somatic growth
What does this mean for the hopes, aspirations of the most vulnerable
De-identified, invisible, unaccounted, unrepresented
SYSTEMS APPROACH: TO CHARACTERIZE HETEROGENEITY OF EFFECTS OF FACTORS DRIVING GROWTH/DEVELOPMENT OUTCOMES

**Input:** $C(t)$

**Growth outcome:** $G(t)$

**Corrected age**

**Thermic energy, Eff**

**Elimination, t1/2**

**Modulators/confounders/filters**

**Catabolism**

**Anabolism**

$\text{INSULT}$
Leveraging technology and data to quantify causal link between Nutrition and Cognition
LINKING BUILT ENVIRONMENT ECOSYSTEMS (BEE) AND CHILD ACTIGRAPHY AND HEALTH MONITORING SYSTEMS
A FUTURE STATE OF SHARED DATA FOR INDIVIDUAL AND COMMUNAL GOOD
JOIN US IN DRIVING FOR CATALYTIC CHANGE...

• Build for impact
• Be fearless
• Blaze the trail
• Be one mind
• Big bets
• Be a world of good