Coordinating Care Among Stakeholders to Raise Healthy Families

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Symposium Objectives

• Discuss community and clinical care stakeholders’ beliefs regarding roles and responsibilities for care domains and their attitudes toward electronic data coordination solutions

• Highlight key lessons learned on developing systems to coordinate coordinating care between clinical and community providers

• Discuss the importance of mental health screening in community and clinical settings and how coordinating care will improve health services
The Problem

1 of 3 children in the United States are overweight or obese before age 5
In less than 2 decades
42% of today’s kids will be obese²

¹Pan, et al., JAMA, 2012; 2012;308:2563-2565
The first 1000 days

- Rapid change in diet, metabolic, and behavioral systems are *opportunities*
- Early onset obesity comorbidities are more serious
- Infants and toddlers don’t tend to “grow out of it”
- Dietary patterns are established early in life
- Experimental studies suggest promising strategies for early obesity prevention (T1 and T2)

*Summerbell et al Cochrane review, 2005; Harris et al, 2009; Haynos & O’Donohue, 2012*
The Intervention Nurses Start Infants Growing on Healthy Trajectories (INSIGHT) Study

Primary Aim: To test the efficacy of an intervention designed to prevent rapid weight gain in infancy and overweight at 3 y by providing guidance on responsive feeding and healthy dietary choices.

Study protocol: Paul et al. 2014 BMC Pediatrics
INSIGHT Intervention Components

- Feeding
- Responsive Parenting
- Fussing and Soothing
- Sleep
- Active Social Play
Lower weight-for-length percentile at 1y in parenting intervention group

5.5% in parenting infants
12.7% of control infants were overweight

Overweight = weight/length ≥95th percentile

*Kolmogorov Smirnov Two-Sample Test p<0.01;
Savage et al. presented at PAS meeting, 2015; In Preparation, 2015
Next step: translation to broader population

• Large trials like INSIGHT demonstrate program efficacy, but....
  • Expensive, not feasible on large scale
  • Home delivery intervention
  • Homogenous population – highly educated, high income, low depression
  • Inclusion criteria: first time mothers
  • May not translate well to other populations

• How do we translate to broader populations?

\(^1\) Redsell et al. 2015 Mat Child Nutr; \(^2\) Paul et al. 2011 Obesity; \(^3\) Wen et al. 2012 BMJ
Goal of R40

Develop an individually-tailored behavioral intervention designed to prevent overweight among low-income infants by providing coordinated, personalized care on responsive parenting across multiple settings.

- Mom and Infant
- WIC Nutritionist
- Geisinger Pediatrician
Goal of R40

Coordination of care is definition:

- Deliver the same, consistent messages
- Providers will communicate preventive care plans and education with each other

<table>
<thead>
<tr>
<th></th>
<th>3-5 day</th>
<th>1 mo</th>
<th>2 mo</th>
<th>6 mo</th>
<th>9 mo</th>
<th>12 mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCV</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>WIC</td>
<td>X</td>
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<td>X</td>
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<td>X</td>
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Research Project Overview

Y1
- Phase 1
- Focus groups
- Data sharing, integration, display
- Training

Y2
- Phase 2
- Recruitment Observational then RCT

Y3
- Y2
- Data analysis
- Manuscripts
- Next Grant
Phase 1 Lessons Learned: Formative Research

1. Establishing an interdisciplinary team that includes community partners takes TIME and requires administrative leadership
Establishing an Interdisciplinary Team that includes Community Partners

- Center for Childhood Obesity Research
- Geisinger Health Systems Obesity Institute
  - Maternal and Pediatric Obesity Research
  - Department of Pediatrics
  - Center for Clinical Innovations
  - EPIC programmers
Interdisciplinary Team Members

• Center for Childhood Obesity Research

• Geisinger Health Systems Obesity Institute

• American Academy of Pediatrics
  • Sandra Hassink, President, American Academy of Pediatrics
  • Janice Liebhart: Evaluation Manager, Institute for Healthy Childhood Weight
  • Alison Baker: Institute for Healthy Childhood Weight
  • Jeanne Lindros, Manager, Institute for Healthy Childhood Weight

Sandra Hassink, MD
Interdisciplinary Team Members

- Center for Childhood Obesity Research
- Geisinger Health Systems Obesity Institute
- American Academy of Pediatrics
- Women, Infants, and Children
  - Shirley Sword: Chief, Nutrition Services Section
  - William Cramer: Director, WIC
  - Greg Johnson: IT, WIC
  - Local agency

Shirley Sword, MS, RD
Interdisciplinary Team Members

• Center for Childhood Obesity Research
• Geisinger Health Systems Obesity Institute
• American Academy of Pediatrics
• Women, Infants, and Children
• INSIGHT intervention PIs

Ian Paul, MD, MSc
Professor of Pediatrics and Public Health Sciences
Chief, Division of Academic General Pediatrics

Leann Birch
Professor of Nutrition
University of Georgia
Phase 1: Formative Research

1. Establishing an interdisciplinary team that includes community partners

2. Stakeholders we have spoken with:
   • Focus groups: WIC nutritionists (n = 35)
   • Interviews: Primary care providers (n = 15)
   • Interviews: GHS patients/WIC parents: (n = 28)

   • Interviews were transcribed and grounded-theory approach was used to independently open-code transcripts. Categories were identified and emerging themes reported.
Phase 1: Lessons learned from parents

- Dislike the rigidity of the nutrition education provided by the WIC program

- Receive conflicting information from WIC, health care providers and their own families

- Think “every baby is different” and “I know best, instincts” when making decisions about feeding and caring for infant or toddler

- Want more individualized messages on feeding and caring for their child.

Savage et al. (under review) Maternal and Child Nutrition
Phase 1: Lessons learned from Community Nutrition and PCP

**Data sharing:** WIC nutritionists and pediatricians were enthusiastic about sharing and having access to data (e.g., progress note, immunizations, anthropometrics, formula)

**Coordination of care**

**WIC:**
- Conflict in messaging is prevalent (not clear the source: mother reporting bias or actual doctor reports… “grapevine effect”)
- Concerns: time management/work flow, and technology access (i.e., web access)

**GHS Primary Care Providers:**
- Value feeding guidance provided by WIC, but disagree with some WIC policies/guidance (e.g., juice)
- Conflict in anthropometric measures between PCP and WIC
- Have little concern about time to review WIC information
Phase 1: Lessons learned from Community Nutrition and PCP

Who is the expert?

- WIC nutritionists reported trivializing their training as the expert by deferring to the physicians ("ask your physician").
- Mothers/caregivers trust advice based on relationship; less dependent on credentials.
- Both WIC and Pediatricians express that “it takes an army to parent a child” and that responsive parenting guidance is a shared responsibility.
Phase 1: Lessons learned from Community Nutrition and PCP

Depression

• WIC (half willingly) expands practice to screening for depression. Concerns about not being trained and lack of resources/referral procedures. Need for formal training

• Doctors report being unprepared to handle mental health referrals

• Scope of practice: parent chart is hard to get
Maternal psychosocial factors (e.g., depression) may also influence feeding behavior and child weight

- Depression rates are high among low-income mothers (40-59%)
- Some evidence shows that depressed mothers are:
  - Less sensitive and more negating to their children (Murray et al. 1996)
  - More likely to endorse a non-responsive feeding style (Hurley et al., 2008) and tend to have heavier children (Gross et al. 2013)
Research Project Overview

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Phase 2: Randomized Controlled Trial

Treatment (n=145):
Responsive Parenting Curriculum
Personalized Messaging
Data Sharing
Care Plan Coordination

Standard of Care Control (n=145)
Intervention components: Responsive Parenting

Healthy Active Living for Families

Start today: Help your child stay at a healthy weight for life.

Food & Feeding

- Good eating habits begin early.

- Tips for Parents

- Being a parent is an important job.

Early Insight: Helping parents raise healthy babies in the first 4 months

Your Baby is Unique!

- Recognize and appropriate response to infant hunger and fullness cues
- Alternatives to feeding in order to soothe infant
- Promoting adequate sleep, self-soothing, "settling"
- Developmentally appropriate introduction of solid foods and portion sizes
Intervention Components: Data Sharing

- Name (child/parent)
- Date of birth
- Child’s health insurance
- WIC participant
- Brand and product name of formula
- Breastfeeding status
- Hemoglobin/Hematocrit
- Length/Weight
- Food allergies
- Special pediatric conditions
- Neurological and psychiatric disorders
- Gastrointestinal disorders
- Hepatic, pancreatic, and biliary disorders
- Endocrine disorders
- Nutrition disorders
- Musculoskeletal disorders
- Cancer
- Renal disorders
- Cardiovascular disorders
- Immunizations
- Well child visit date
- WIC visit date
Intervention Components: Early Healthy Living (EHL) Screening Tool to provide clinical decision support to personalize messaging

- Examples of Care Coordination Topics

<table>
<thead>
<tr>
<th>2. Select beverages that your child drank in the past week.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Breastmilk</td>
</tr>
<tr>
<td>☐ Formula</td>
</tr>
<tr>
<td>☐ Milk</td>
</tr>
<tr>
<td>☐ Water</td>
</tr>
<tr>
<td>☐ 100% Juice</td>
</tr>
<tr>
<td>☐ Fruit punch, fruit drink, iced Tea, Lemonade, Soda</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. How sleepy is your child when you put him/her to bed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Wide awake</td>
</tr>
<tr>
<td>☐ Awake but drowsy/sleepy</td>
</tr>
<tr>
<td>☐ Already asleep</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. I sometimes nurse, give a bottle, or something to eat as a way to keep my child quiet or to calm my child when he/she is upset.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. I try to get my child to finish his/her bottle, snacks or meals.</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. Do you usually use a cellphone, laptop or computer, or have the television on when you are feeding or playing with your child?</th>
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<tbody>
<tr>
<td>☐ Yes</td>
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<table>
<thead>
<tr>
<th>15. Is the television usually on in the room where your child goes to sleep at night?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes</td>
</tr>
</tbody>
</table>
## Intervention Components: Coordinated Care

### Conceptual view of Epic (PCP View)

<table>
<thead>
<tr>
<th>EHL Topic</th>
<th>Patient-Reported Data (Report Date: 11/01/15)</th>
<th>Topic Discussed during WCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverages in past week</td>
<td>Formula; 100% Juice</td>
<td></td>
</tr>
<tr>
<td>Child put to sleep (start/end)</td>
<td>8:00 PM/12:00 AM</td>
<td></td>
</tr>
<tr>
<td>WIC Note: Reoccurring topic. Co-</td>
<td>WIC Discussion (Report Date: 10/07/2015): Beverages</td>
<td></td>
</tr>
<tr>
<td>sleeping. Family stressor.</td>
<td>WIC Discussion (Report Date: 10/07/2015): Sleep Routine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WIC Note: Reoccurring topic. Co-sleeping. Family stressor.</td>
<td></td>
</tr>
</tbody>
</table>
Intervention Components: Coordinated Care
Conceptual view of Quick WIC (Nutritionist View)

HRSA Nutritional Survey and WIC Information

Demographics

Child First Name: Timmy
Child Last Name: Little
Child Middle Name: 
Date of Birth: 1/1/2015
Child Current Age: 2 months, 30 days
Child Study ID: 1
Child WIC Person ID: 24630372

Caretaker First Name: Mamma
Caretaker Last Name: Little
Caretaker Middle Name: A
Caretaker Date of Birth: 12/31/1990
Caretaker Current Age: 25 years, 3 months
Caretaker Study ID: 2
Caretaker WIC Person ID: 24630303

Geisinger Visit Information 2016-03-17

Encounter DX or Active PL

- Adrenoleukodystrophy:
- Bronchopulmonary Dysplasia:
- Cardiovascular Disorder: 
- Cleft Palate: 
- Cystic Fibrosis: 
- Downs Syndrome: 
- Failure to Thrive:
- Food Allergies: 
- Hematology: 
- Hirschsprung's Disease: 
- Inborn Errors of Metabolism: 
- Musculoskeletal Disorders: 
- Necrotizing Enterocolitis: 
- Nutritional Rickets: 
- Phenylketonuria: 
- Renal Disorders: 
- Tyrosinemia: 
- Biliary Atresia: 
- Cancer: 
- Cerebral Palsy: 
- Congenital Heart Disease: 
- Cystinosis: 
- Endocrine Disorders: 
- Fetal Alcohol Syndrome: 
- Gastrointestinal Disorder: 
- Hepatic, Pancreatic and Diliary Disorders: 
- Homocystinuria: 
- Maple Syrup Urine Disease: 
- Myelomeningocele: 
- Neurological and Psychiatric Disorders: 
- Nutrition Disorders: 
- Prader-Willi Syndrome: 
- Spina Bifida and Neural Tube Defects: 
- Wilson's Disease (Hepatolenticular Degeneration): 
**Intervention Components: Coordinated Care**

**Conceptual view of Quick WIC (Nutritionist View)**

**Immunizations**

- DTP/DTAP: ●
- Hep B: ●
- MMR: ●
- Polio: ●
- Varicella: ●

**EHL Questionnaire**

**What is your relationship to the child being seen for an appointment today?** I do not live with the child, but care for the child regularly

- The child has had Formula in the past week: ●
- The child has had 100% Juice in the past week: ●

- When preparing a bottle, how many ounces did you put in the bottle at each feeding? 1-2 oz.

- When it comes to eating, the child doesn't eat enough: ●
- When it comes to eating, the child is always hungry: ●

- When it comes to eating, the child spits out healthy food: ●

- I try to get the child to finish their bottle, snacks or meals: ●

- How sleepy is the child when you put them to bed? Awake but drowsy/sleepy

- The child has had Breastmilk in the past week: ●
- The child has had Milk in the past week: ●
- The child has had Water in the past week: ●

- The child has had Fruit punch, fruit drink, iced tea, lemonade or soda in the past week: ●

- I sometimes nurse, give a bottle, or something to eat as a way to keep the child quiet or to calm them when they are upset: ●

- When it comes to eating, the child eats the right amount: ●
- When it comes to eating, the child eats too much: ●

- When it comes to eating, the child is picky: ●

- Do you usually feed the child when they wake at night: ●

- What time did you usually put the child to bed at night? 6:00 PM
Intervention Components: Coordinated Care

Conceptual view of Quick WIC (Nutritionist View)

Other

Age at date of visit: 2 months, 16 days
Weight: 12.3
Hematocrit: .2
Health Insurance: Aetna
Comments: Test Data!

Height: 5.2
Hemoglobin: 1.11
Infant Formula Brand: Ensure

WIC Visit Information

Nutritional Education Topics

E1: Milk supply/signs of getting enough - Child
H3: Formula preparation - Caretaker
I7: Inappropriate foods for infants - Caretaker
H8: Food for the baby 0-6 months - Caretaker

H15: Dental health/nursing bottle mouth - Child
H6: Assessing readiness for solid foods - Child
I7: Inappropriate foods for infants - Child
H8: Food for the baby 0-6 months - Child

Other

Age at date of visit: 2 months, 30 days
Weight: Unknown
Hematocrit: Unknown
Breast Fed: 
Comments:

Height: Unknown
Hemoglobin: Unknown
Infant Formula Brand: 12.4 oz Similac Advance pwd

Sign off on WIC Appointment: Sign off

Comments Save
Summary of Lessons Learned

- Conflict in messaging was commonly reported by all stakeholders, but the majority were enthusiastic about sharing and having access to data.
- A challenge has been establishing a health information exchange platform (i.e., data management system) and data sharing agreements.
  - Data sharing agreements among state/federal agencies, health care systems, and academics take months to execute.
  - IT support is critical for data sharing: Epic and Quik WIC Systems.
- Need for mental health screening, referral/treatment operating procedures, and provider training.
- Stay tuned for efficacy results…
Questions?