Listening to Community Voices in the Development of an Early Childhood Intervention

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Acknowledgements

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Acknowledgements
Roadmap of Today’s Talk

Disease Impact
What We Know
Community Conversations
Shared Vision

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Why Do People Die?

Table 1. Leading Causes of Death in the United States in 2000*

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>No. of Deaths</th>
<th>Death Rate per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>710,760</td>
<td>258.2</td>
</tr>
<tr>
<td>Malignant neoplasm</td>
<td>553,091</td>
<td>200.9</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>167,661</td>
<td>60.9</td>
</tr>
<tr>
<td>Chronic lower respiratory tract disease</td>
<td>122,009</td>
<td>44.3</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>97,900</td>
<td>35.6</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>69,301</td>
<td>25.2</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>65,313</td>
<td>23.7</td>
</tr>
<tr>
<td>Alzheimer disease</td>
<td>49,558</td>
<td>18</td>
</tr>
<tr>
<td>Nephritis, nephrotic syndrome, and nephrosis</td>
<td>37,251</td>
<td>13.5</td>
</tr>
<tr>
<td>Septicemia</td>
<td>31,224</td>
<td>11.3</td>
</tr>
<tr>
<td>Other</td>
<td>499,283</td>
<td>181.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,403,351</strong></td>
<td><strong>873.1</strong></td>
</tr>
</tbody>
</table>

*Data are from Minino et al. 2004; Minino et al. 2002
Cost of All That Chronic Disease

Costliest Chronic Conditions
Total expenditures on top 10 most costly conditions among men and women, adults age 18 and older, 2008

$50 billion

Heart disease | Cancer | Mental disorders | Trauma-related disorders | Osteoarthritis | COPD, asthma | Hypertension | Diabetes | Back problems | Hyperlipidemia

Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, 2008

(Bush 2012)
Why People Actually Die!

Table 2. Actual Causes of Death in the United States in 1990 and 2000

<table>
<thead>
<tr>
<th>Actual Cause</th>
<th>No. (%) in 1990*</th>
<th>No. (%) in 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>400 000 (19)</td>
<td>435 000 (18.1)</td>
</tr>
<tr>
<td>Poor diet and physical inactivity</td>
<td>300 000 (14)</td>
<td>400 000 (16.6)</td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td>100 000 (5)</td>
<td>85 000 (3.5)</td>
</tr>
<tr>
<td>Microbial agents</td>
<td>90 000 (4)</td>
<td>75 000 (3.1)</td>
</tr>
<tr>
<td>Toxic agents</td>
<td>60 000 (3)</td>
<td>55 000 (2.3)</td>
</tr>
<tr>
<td>Motor vehicle</td>
<td>25 000 (1)</td>
<td>43 000 (1.8)</td>
</tr>
<tr>
<td>Firearms</td>
<td>35 000 (2)</td>
<td>29 000 (1.2)</td>
</tr>
<tr>
<td>Sexual behavior</td>
<td>30 000 (1)</td>
<td>20 000 (0.8)</td>
</tr>
<tr>
<td>Illicit drug use</td>
<td>20 000 (&lt;1)</td>
<td>17 000 (0.7)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1 060 000 (50)</strong></td>
<td><strong>1 159 000 (48.2)</strong></td>
</tr>
</tbody>
</table>

*Data are from McGinnis and Foege. The percentages are for all deaths.

(Mokdad et al. 2004)
Costs of Inactivity and Obesity

Inactivity = $39 Billion

Obesity = $112 Billion
  ◦ Adjusted to 2017 dollars

(Colditz 1999)
21% of American preschoolers are overweight

31% of Oklahoma preschoolers are overweight

38% of Native American preschoolers in OK are overweight

Native American children are 19% more likely to be obese

(Ogden et al. 2014; Weedn et al. 2011; Weedn et al. 2014; Sisson et al. 2017)
"For years your teachers kept telling you to settle down and sit still. You can stop now."
Roadmap of Today’s Talk

Disease Impact

What We Know

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What’s on the Menu?

Centers in NYC
- 83% served less than half MyPyramid recommendations for vegetables
- 58% served less than half for fruits

Centers in North Carolina
- Only 13% met MyPyramid for whole grains
- 17% met for vegetables
- 21% met for fruits

When examining Dietary Reference Intakes
- Menus are too high in sodium and fat, fiber, and lacking micronutrients

(Erinosho et al. 2011; Ball et al. 2008; Oakley et al. 1995, Briley et al. 1993; Romaine et al. 2007; Frampton et al. 2014)
What Has Been Observed At Lunch

North Carolina
- Less grains, dark vegetables, fruits, meats/beans than recommended
- 50% of milk was whole
- 75% of meat was high-fat or fried
- 59% served a sweet snack

North Carolina
- 16% no vegetable
- 7% no fruit
- 88% no whole grain

NYC
- Only 12% consumed adequate amount of vegetables

Texas
- Inadequate vegetables, grains

(Ball et al. 2008; Benjamin-Neelon et al. 2012; Erinosho et al. 2011; Briley et al. 1999)
Foods Served at Early Care Programs

Menu analysis: 327 ± 36 Kcals served: 426 ± 164 Kcals consumed*: 312 ± 160

Protein was 3 times the daily recommendation

Acceptable range of carbohydrates and fat

1.2 fruits served/1.0 consumed
1.8 vegetables served/1.2 consumed

A physically active preschooler needs 1200-1600 kcals/day

(myplate.gov; Rasbold et al. 2015; Anundson et al. 2017)
### Who Serves More Nutritious Meals?

Servings of Nutrient and Energy Dense Foods consumed by Preschool-Aged Children (3-5 years) by Location

<table>
<thead>
<tr>
<th>Food</th>
<th>Childcare (Mean ± SD)</th>
<th>Home (Mean ± SD)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td>0.92 ± 0.82</td>
<td>0.15 ± 0.26</td>
<td>≤.0001*</td>
</tr>
<tr>
<td>Vegetable</td>
<td>1.47 ± 1.43</td>
<td>0.62 ± 0.60</td>
<td>≤.0001*</td>
</tr>
<tr>
<td>Total Fruit and Vegetable</td>
<td>2.39 ± 1.80</td>
<td>0.75 ± 0.62</td>
<td>≤.0001*</td>
</tr>
<tr>
<td>Low-Fat Dairy Products</td>
<td>0.83 ± 0.32</td>
<td>0.07 ± 0.19</td>
<td>≤.0001*</td>
</tr>
<tr>
<td>Whole-grains</td>
<td>0.18 ± 0.33</td>
<td>0.11 ± 0.20</td>
<td>0.067</td>
</tr>
<tr>
<td>High-Fat Meat</td>
<td>0.37 ± 0.40</td>
<td>0.37 ± 0.35</td>
<td>0.915</td>
</tr>
<tr>
<td>High-Fat/High-Sugar Foods</td>
<td>0.08 ± 0.18</td>
<td>0.43 ± 0.39</td>
<td>≤.0001*</td>
</tr>
<tr>
<td>High-Fat/High-Sugar Condiments</td>
<td>0.3± 0.54</td>
<td>0.13 ± 0.22</td>
<td>0.003</td>
</tr>
<tr>
<td>Sugar Drinks</td>
<td>0.22 ± 0.41</td>
<td>0.39 ± 0.35</td>
<td>≤.0001*</td>
</tr>
</tbody>
</table>

(Sisson et al. 2017)
What Makes Kids Move?

Opportunities for physical activity indoors and outdoors

Outdoor physical activity

Access to portable play equipment

Few opportunities for sedentary time

Staff training on physical activity

Policies at site encouraging movement

(Alhassan et al. 2007; Pate et al. 2004; Reilly et al. 2010; Vanderloo et al. 2014; Vanderloo et al. 2015; Bell et al. 2015; Bower et al. 2008; Brown et al. 2009; Dowda et al. 2009; Gubbels et al. 2011; Henderson et al. 2015; Tandon et al. 2015; Rice et al. 2014)
Physical Activity in ECE

- Average 5.9 ± 1.7 hours of wear
- 4.3 ± 2.2 minutes/hour in MVPA
- 38.8 ± 45.5 min/day watching TV

(Sisson et al. 2017)
A healthier total environment was associated with 9% lower odds of overweight and obesity (Sisson et al. 2016; Sisson et al. 2017).
What is the Role of Health Care and Parents?

Obesity prevention in primary care has modest effects

24 minutes/year average child time with physician

Multi-stakeholder community initiatives are more successful

Family engagement is essential

(Hearn et al. 2008; Seburg et al. 2015; American Academy of Family Physicians; Chang et al. 2010; Chomitz et al 2010; Cousins et al 2011; Economos et al 2007; Karanja et al 2010; Samuels et al 2010; Wine et al. 2013 )
How We Organize Our Initiative: A Model

Figure 1. Elements of the Household Community Integrated Management of Childhood Illness Framework

Element 1: Improving partnerships between health facilities and the community they serve

Element 2: Increasing appropriate and accessible health care and information from providers

Element 3: Integrating promotion of key family practices critical for child health and nutrition

Optimizing a multi-sectoral platform to support sustainable child health and nutrition

(Winch et al. 2002)
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Inception of WATCH
Our Original Goal

Develop and evaluate a culturally-relevant, multi-stakeholder intervention including tribal early care and education programs and clinics to reduce body mass index and increase health behaviors in Native American preschool children.
Project Progression

2015 – Phase 1
◦ Presbyterian Health Foundation
◦ Interviews with stakeholders (n=60)

2016 – evidence base
◦ Literature searches
  ◦ health care obesity prevention interventions
  ◦ behavioral interventions working with Native American groups

2016 – 2017 Phase 2
◦ Harold Hamm Diabetes Center
◦ Stakeholder meetings and intervention development
  ◦ April 2017 Round 1 meetings – Shared interview findings and prioritized intervention components
  ◦ September 2017 Round 2 meetings – shared intervention shell and solicited feedback
Community Meetings

8 meetings across Oklahoma
  ◦ April and September 2017

Lunch provided

Compensation for time

Invited parents, preschool teachers, health care providers (3Ps)
Round 1
60 Formative Interviews

**Teachers:**
- Value role as caregiver, not as health educator or role model
- Struggle with personal health
- Limited interaction with health care but welcome that opportunity
- Parents have barriers for health

**Parents:**
- Acknowledged their importance is creating health for family
- Time and community barriers
- Children already sufficiently active
- Value personal connection
- Distrust for clinic; trust for ECE

(Kracht et al. 2018; Kracht et al. 2018; Kracht et al. in review)

**Health Care Providers:**
- Importance of working with family
- Felt ECE was logical place for health education
- Notable disconnect in understanding this environment
- Parents have barriers for health
Responses ranged from 1 to 7; 7 = most trust or perception of particular behavior

Childcare providers perceived the most cooperative and least monitoring behaviors, but no category’s mean response differed significantly by role.
Round 2
Key Components: Early Care Program

- Environmental evaluation and plan for improvement
- Menu modification
- Classroom curriculum
- Responsive feeding training
- Family WATCH nights
- Garden
Key Components: Parents

Menus to complement early care program
Family WATCHwork
Family WATCH night
Body mass index charts and information
Child milestone information
Key Components: Health Clinic

Healthy weight sensitivity and referral training
Implementation of same curriculum with handouts and video loop in waiting areas
Lifestyle behavior training and information to give and educate families
Billing and reimbursing for nutrition services
Interaction and involvement with the early care programs
Rebranding

No terms were not selected at all
Round 2 Team Trust

Responses ranged from 1 to 7; 7 = most trust or perception of particular behavior

Only the mean response on questions relating to cooperative behaviors differed significantly, and only between Health Care Providers and Child Care providers.

<table>
<thead>
<tr>
<th></th>
<th>Question Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HCP</td>
</tr>
<tr>
<td>Propensity to Trust</td>
<td>6.6</td>
</tr>
<tr>
<td>Perceived Trustworthiness</td>
<td>4.8</td>
</tr>
<tr>
<td>Cooperative Behaviors</td>
<td>4.8</td>
</tr>
<tr>
<td>Monitoring Behaviors</td>
<td>3.8</td>
</tr>
<tr>
<td>Survey Average</td>
<td>5.2</td>
</tr>
</tbody>
</table>
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Goal Revisited

Develop and evaluate a culturally-relevant, multi-stakeholder intervention including tribal early care and education programs and clinics to reduce body mass index and increase health behaviors in Native American preschool children

- Enhance communication and relationship between and across parents, preschools, and health care providers
- Create healthy spaces for young children to learn and grow
Community Partnership

Southern Plains Tribal Health Board and Oklahoma Area Tribal Epidemiology Center

- Wyandotte Nation & Eastern Shawnee Tribe of Oklahoma
We Must Hear the Community!

Advisory Board (community leaders, teachers, pediatrician, parent, elders)

What goals does the community have?

What aspects of the intervention are most salient and interesting?

What aspects of the intervention are not of interest or feasible?
Personal Inspiration To Create Healthy Spaces for Young Children to Learn and Grow
We’ve reached the end of the road...

Thank you for your participation!

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https://alliedhealth.ouhsc.edu/Labs/Behavioral-Nutrition-Physical-Activity-Lab