Disclosures

Grant funding:
- NYS Dept of Health
- Greater Rochester Health Foundation
- NIH CBPR project
- CDC Prevention Research Center

Data Safety Monitoring Boards
- ATN & Novo Nordisk

Boards: ABOM, AAP IHCW

.....and I used to work at a TJ’s Big Boy
Objectives

• Discuss the impact of early childhood obesity

• Discuss recommendations for prevention and treatment

• Review possible community / clinical linkages to address childhood obesity

• Discuss innovative care delivery & payment models to address childhood obesity
This ENTIRE map is NY State

This Is New York City
CDC Framework for Addressing Obesity

- Communities
  - Worksites
  - Health Care
  - Schools and Child Care
  - Home

- Demographic Factors
  - (e.g., age, sex, SES, race/ethnicity)
- Psychosocial Factors
- Gene-Environment Interactions
- Other Factors

- Social Norms and Values
- Sectors of Influence
- Behavioral Settings
- Individual Factors
  - Food and Beverage Intake
  - Physical Activity
  - Energy Intake
  - Energy Expenditure
  - Energy Balance

- Government
- Public Health
- Health Care
- Agriculture
- Education
- Media
- Land Use and Transportation
- Communities
- Foundations
- Industry
  - Food
  - Beverage
  - Restaurant
  - Food Retail
  - Physical Activity
  - Leisure and Recreation
  - Entertainment

MEDICINE of the Highest Order
Can you see risk?

We are not asking you to deal with this

YES!
Can you see risk?

- This girl is 4 years old.
- What is her BMI-for-age?

- < 85th percentile Normal
- ≥85th to <95th percentile: Overweight
- ≥ 95th or Obese

Photo from UC Berkeley Longitudinal Study, 1973
Plotted BMI-for-Age

Measurements:
Age=4 y
Height=99.2 cm (39.2 in)
Weight=17.55 kg (38.6 lb)
BMI = 17.8
BMI-for-age= between 90th - 95th percentile Overweight
One city’s communities of solution

Note: Political boundaries, shown in solid lines, often bear little relation to a community’s problem-sheds or its medical trade area.

Reproduced and adapted with permission from: Folsom M. Health is a Community Affair: Report of the National Commission on Community Health Service. Cambridge, MA: Harvard University Press; 1967:3, Fig 1.

Annals Family Medicine, May/June 2012
Vol. 10 no. 3 p 250-260
Severe Obesity (>99th %tile) among US Children & Teens, or 3.8% or 2.7 million
Mismatching between directly measured and parental perceived body weight status.

Obesity: Health Risks Now and Later

- Obese children are more likely to become obese adults
  - Children (age 12) with BMI>99% followed into adulthood (age 27)
    - 100% BMI>30
    - 90% with BMI>35
    - 65% with BMI>40

- Adult obesity is associated with a number of serious health conditions including:
  - Heart disease
  - Diabetes
  - Cancers

Freedman et al., 2007, J Pediatr; Ebbeling, 2002, Lancet
Prevalence & Incidence of Obesity BOYS between Kindergarten & Eighth Grade.

Adolescents’ Perceptions of Peers Being Teased or Bullied: *Observed Frequency*

<table>
<thead>
<tr>
<th>Perceived Reason for Teasing</th>
<th>Sample 1</th>
<th>Sample 2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being overweight</td>
<td>76.4*</td>
<td>81.0*</td>
<td>78.5</td>
</tr>
<tr>
<td>Gay/lesbian</td>
<td>79.3</td>
<td>77.7</td>
<td>78.5</td>
</tr>
<tr>
<td>Ability at school</td>
<td>66.5*</td>
<td>55.3*</td>
<td>61.2</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td>43.5</td>
<td>48.5</td>
<td>45.8</td>
</tr>
<tr>
<td>Physical disability</td>
<td>31.3*</td>
<td>40.8*</td>
<td>35.8</td>
</tr>
<tr>
<td>Religion</td>
<td>23.2*</td>
<td>18.2*</td>
<td>20.8</td>
</tr>
<tr>
<td>Low income/status</td>
<td>21.1*</td>
<td>29.2*</td>
<td>24.9</td>
</tr>
<tr>
<td>N</td>
<td>812</td>
<td>730</td>
<td>1542</td>
</tr>
</tbody>
</table>

*A significant difference between the 2 samples (p < .05).*
Percentage of teen girls who report frequent weight teasing

![Graph showing weight teasing by percentage and weight status.](image)

Weight Bias Persists in Universities

Candidates for undergraduate admission

• Identical but for weight status
• Candidates with obesity judged less qualified

Study of graduate psychology programs

• Interviews favored thinner candidates
• Regardless of qualifications
Five Fruits and Vegetables per day
Healthy Weight
BMI 5 - 84%ile

Overweight
BMI 85 - 95%ile

Obese
BMI 95 - 98%ile

BMI >=99%ile

Assess Behaviors & Attitudes
Eating, Physical Activity, Sedentary Time, Motivation

Assess Medical Risks
Family History, Review of Systems, Physical Examination (BMI, BP)

Prevention Counseling
Empathize/Elicit - Provide - Elicit

Health Risks?
No
Yes

Prevention Counseling
Maintain Weight Velocity & Reassess Annually

Stage 1 Prevention Plus
Maintain Weight or Decrease Velocity & Reassess Every 36 Months
Maintain Weight or Gradual Loss & Reassess Every 3 - 6 Months
Gradual to Moderate Weight Loss & Reassess Every 3 - 6 Months

Stage 2 Structured Weight Management

Stage 3 Comprehensive Multidisciplinary Intervention

Stage 4 Tertiary Care Intervention
Healthy Weight

<table>
<thead>
<tr>
<th>BMI</th>
<th>Range</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>-</td>
<td>5 - 84%ile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>-</td>
<td>85 - 95%ile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>-</td>
<td>95 - 98%ile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>-</td>
<td>BMI &gt;=99%ile</td>
</tr>
</tbody>
</table>

Yes No

Assess ALT, AST, Fasting Glucose

Other Tests as Indicated by Health Risks

Prevention Counseling - Empathize/Elicit - Provide - Elicit

Maintain Weight Velocity & Reassess Annually

Stage 1 Prevention Plus (3)
- Maintain Weight or Decrease Velocity & Reassess Every 3-6 Months
- Maintain Weight or Gradual Loss (4) & Reassess Every 3-6 Months
- Gradual to Moderate Weight Loss (5) & Reassess Every 3-6 Months

Stage 2 Structured Weight Management (3)

Stage 3 Comprehensive Multidisciplinary Intervention (3)

Stage 4 Tertiary Care Intervention

Primary Care Setting

Assessment

Prevention

Treatment
## Summary of guidelines for pediatric obesity prevention and management

<table>
<thead>
<tr>
<th>Level of care</th>
<th>Patient characteristics</th>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary prevention</td>
<td>Applicable to all pediatric patients</td>
<td>Primary care provider (PCP)</td>
</tr>
<tr>
<td>Prevention plus</td>
<td>Mildly affected patients</td>
<td>PCP</td>
</tr>
<tr>
<td>Structured weight management</td>
<td>Moderately affected cases or those who have failed to respond to the lower level of care</td>
<td>PCP with additional training</td>
</tr>
<tr>
<td>Comprehensive multidisciplinary</td>
<td>More advanced problem cases or those who have failed to respond to lower levels of care</td>
<td>PCP with support from dietitians and/or behavioral</td>
</tr>
<tr>
<td>intervention</td>
<td></td>
<td>specialists or dedicated weight management clinics</td>
</tr>
<tr>
<td>Tertiary care intervention</td>
<td>The most severely affected cases and those who have failed to respond to lower levels of care</td>
<td>Specialized hospital-based centers</td>
</tr>
</tbody>
</table>
## Weight Loss Targets

<table>
<thead>
<tr>
<th>BMI 85-94%ile</th>
<th>BMI 85-94%ile</th>
<th>BMI 95-98%ile</th>
<th>BMI &gt;= 99%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Risks</strong></td>
<td><strong>With Risks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age 2-5 Years</strong></td>
<td>Maintain weight velocity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age 6-11 Years</strong></td>
<td>Maintain weight velocity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age 12-18 Years</strong></td>
<td>Maintain weight velocity. After linear growth is complete, maintain weight</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Excessive weight loss should be evaluated for high risk behaviors
RECOMMENDATION. The USPSTF recommends that clinicians screen children aged 6 years and older for obesity and offer them or refer them to intensive counseling and behavioral interventions to promote improvements in weight status (grade B recommendation.) Pediatrics

Recommended Interventions
Refer patients to comprehensive moderate- to high-intensity programs (>25 contact hours) that include dietary, physical activity, and behavioral counseling components.

Height and weight, from which BMI is calculated, are routinely measured during health maintenance visits.

US Preventive Services Task Force

Pediatrics

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

USPSTF, 2010, Pediatric.
The Affordable Care Act Improves Prevention and Obesity Coverage

ACA includes several provisions that promote preventive care including obesity-related services and coverage.

These provisions include an enhanced federal match for states that cover all U.S. Preventive Services Task Force (USPSTF) grade A and B recommended preventive services with no cost-sharing. Obesity screening and counseling for children, adolescents and adults is a USPSTF recommended service.

The law calls for states to design public awareness campaigns to educate Medicaid enrollees on the availability and coverage of preventive services, including obesity-related services. To help states, CMS will host calls and webinars regarding coverage and promotion of preventive services, develop fact sheets that address Medicaid coverage of preventive services, and share examples of state Medicaid program efforts to increase awareness of preventive services.

http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Quality-of-Care/Reducing-Obesity.html
Treating Overweight & Obesity

Stage 1 – a prevention program managed by a primary care physician

Stage 2 – a structured weight management program managed by a primary care physician together with a pediatric health care provider, such as a dietitian

Stage 3 – a comprehensive intervention involving a multidisciplinary obesity care team that can provide structured monitoring, counseling and assessment at specified intervals and interventions as needed, often at a children’s hospital. **

Stage 4 – tertiary care interventions that can include medication, very low calorie diets or bariatric surgery
# Treatment Goals - Weight Loss Targets

<table>
<thead>
<tr>
<th>Age 2-5 Years</th>
<th>BMI 85-94%ile No Risks</th>
<th>BMI 85-94%ile With Risks</th>
<th>BMI 95-98%ile</th>
<th>BMI &gt;= 99%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain weight velocity</td>
<td>Decrease weight velocity or weight maintenance</td>
<td>Weight maintenance</td>
<td>Gradual weight loss of up to 1 pound a month if BMI is very high (&gt;21 or 22 kg/m²)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age 6-11 Years</th>
<th>BMI 85-94%ile No Risks</th>
<th>BMI 85-94%ile With Risks</th>
<th>BMI 95-98%ile</th>
<th>BMI &gt;= 99%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain weight velocity</td>
<td>Decrease weight velocity or weight maintenance</td>
<td>Weight maintenance or gradual loss (1 lb per month)</td>
<td>Weight loss (average is 2 pounds per week)*</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age 12-18 Years</th>
<th>BMI 85-94%ile No Risks</th>
<th>BMI 85-94%ile With Risks</th>
<th>BMI 95-98%ile</th>
<th>BMI &gt;= 99%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain weight velocity. After linear growth is complete, maintain weight</td>
<td>Decrease weight velocity or weight maintenance</td>
<td>Weight loss (average is 2 pounds per week)*</td>
<td>Weight loss (average is 2 pounds per week)*</td>
<td></td>
</tr>
</tbody>
</table>

* Excessive weight loss should be evaluated for high risk behaviors.
<table>
<thead>
<tr>
<th>Stage</th>
<th>Delivery</th>
<th>Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1 – Prevention Plus</strong></td>
<td>Office-based support, with scheduled follow-up</td>
<td>About 15% of 2-19 yr olds</td>
</tr>
<tr>
<td><strong>Stage 2 – Structured Weight Management</strong></td>
<td>Specially-trained staff in office with support from referrals (RD)</td>
<td>If 1/4th w/ Ob come / follow up = 4%</td>
</tr>
<tr>
<td><strong>Stage 3 – Comprehensive Multidisciplinary Intervention</strong></td>
<td>Dedicated weight management program or registered dietician referral; weekly follow-up for 8-12 weeks</td>
<td>More frequent contact, more frequent monitoring; 1/3rd structured monitoring, goal-setting</td>
</tr>
<tr>
<td><strong>Stage 4 – Tertiary Care</strong></td>
<td>Pediatric weight management center with multidisciplinary team; clinical or research protocol</td>
<td>If 1/4th continue, then ~ 0.2% (&gt;$6yr)</td>
</tr>
</tbody>
</table>
Think Global / Act Local
Parents estimation of child’s weight status vs. measured weight, 2-9yo

<table>
<thead>
<tr>
<th>Parent Description</th>
<th>Measured Weight Status, N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal Weight$^b$</td>
</tr>
<tr>
<td>Very underweight or a little underweight</td>
<td>32 (24)$^a$</td>
</tr>
<tr>
<td>About right</td>
<td>99 (74)</td>
</tr>
<tr>
<td>A little overweight or very overweight</td>
<td>3 (2)</td>
</tr>
</tbody>
</table>

Estimation of weight 193 parent/child dyads from Strong Pediatrics

Children and Adolescents age 2 to 18 yo, 2007

Percent of Obese Children in Monroe County by Towns

- Hamlin
- Clarkson
- Sweden
- Parma
- Ogden
- Gates
- Rochester
- Greece
- Irondequoit
- Webster
- Penfield
- East Rochester
- Perinton
- Pittsford
- Henrietta
- Wheatland
- Chili
- Rush
- Mendon

Legend:
- 0.0% - 10.0%
- 10.1% - 15.0%
- 15.1% - 20.0%
- >20.0%
Retail Food Environment Index (RFEI)

- RFEI measure used for local food environment\(^1\)

\[
\text{RFEI} = \frac{\text{Fast Food + Convenience stores}}{\text{Grocery Stores + Produce Vendors}}
\]

\(^1\) Designed for Disease, April 2008
Results

Monroe County, NY

Obesity by Neighborhood

- RFEI =

Unhealthy Food Source

Healthy Food Source

5.0% - 10.0%
10.1% - 15.0%
15.1% - 20.0%
20.1% - 24.0%
Results: Individual

Odds of obesity for a 5 unit increase in RFEI

- Unadjusted
- Urban
- Income

* P < 0.05
Obesity Study 2012:

Table 5: Comparison of Obesity Rates by age group, gender and location in Monroe County 2007 to 2012.

<table>
<thead>
<tr>
<th></th>
<th>2007 Normal</th>
<th>Over Weight</th>
<th>Obese</th>
<th>2012 Normal</th>
<th>Over Weight</th>
<th>Obese</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N All</td>
<td>5,468</td>
<td>1,189</td>
<td>1,193</td>
<td>5,287</td>
<td>1,253</td>
<td>1,215</td>
<td>0.08</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-10 yrs.</td>
<td>71.2%</td>
<td>14.3%</td>
<td>14.5%</td>
<td>68.0%</td>
<td>16.4%</td>
<td>15.6%</td>
<td>0.008</td>
</tr>
<tr>
<td>11-18 yrs.</td>
<td>67.4%</td>
<td>16.2%</td>
<td>16.5%</td>
<td>68.1%</td>
<td>16.5%</td>
<td>15.4%</td>
<td>0.60</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>68.9%</td>
<td>14.9%</td>
<td>16.2%</td>
<td>67.4%</td>
<td>17.0%</td>
<td>15.6%</td>
<td>0.07</td>
</tr>
<tr>
<td>Female</td>
<td>70.3%</td>
<td>15.4%</td>
<td>14.3%</td>
<td>68.6%</td>
<td>15.9%</td>
<td>15.5%</td>
<td>0.31</td>
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<tr>
<td>Practice Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td>74.5%</td>
<td>13.8%</td>
<td>11.7%</td>
<td>71.0%</td>
<td>16.1%</td>
<td>12.9%</td>
<td>0.001</td>
</tr>
<tr>
<td>Urban</td>
<td>60.7%</td>
<td>17.5%</td>
<td>21.8%</td>
<td>62.2%</td>
<td>17.1%</td>
<td>20.7%</td>
<td>0.58</td>
</tr>
</tbody>
</table>
Community Policy strategies
Childhood Obesity Community Coalition for Policy Change

HEALTHI Kids: Healthy Eating and Active Living Through policy and practice Initiatives for Kids
Partnerships:

• Finger Lakes Health System Agency
• University of Rochester
  • Dept of Pediatrics
  • Center for Community Health
• Children’s Agenda

Photo Source: The Prevention Institute
5 Main Policy Approaches

1. Improve the safety of, the perception of safety of, and access to recreational facilities, bike trails, parks, and green spaces, while expanding after-hour access to schools and promoting safe play.

2. Require that K-12 grade students are provided with 45-minutes of moderate to intense physical activity daily.

3. Create policies that are supportive of breastfeeding throughout the community and all hospitals in Monroe County meet the WHO Baby Friendly Hospital Criteria (Ten Steps to Successful Breastfeeding for Hospitals).
......after

Medicine of the Highest Order
5 Main Policy Approaches

4. Eliminate the availability of food in schools that compete with the national school breakfast and lunch program. Mandate the development and execution of nutritional standards so all food available on school campuses is consistent with a set of community standards.

5. Mandate the development and execution of nutritional standards for preschools, childcare centers, and school-age childcare programs, so that food and drinks available comply with Dietary Guidelines for Americans or equivalent community standards.
When can policy Back Fire????
We need safer parks
Rec on the Move

What does Recreation on the Move offer?
The Recreation on the Move vehicles and their engaging staff bring recreation and much more to underserved neighborhoods:

- Sports and group games like Jurassic Park, a dino-sized version of capture the flag!
- Read-aloud program & free book giveaways
- Health and wellness info and free fresh and healthy snacks
- Homework help
- Arts, music, and creative fun
- Environmental and horticultural projects and games
- Information about City R-Centers and youth programs, libraries, and other City facilities and services
- And more!
What other community partners can do

Screen for Food Insecurity in Medical Home

Add to EHR

Refer to community resources
Childcare level strategies
Good resources:
Childcare standards

STAFF NOTES
FEEDING BABIES IN A HEALTHY WAY

Why Is This Important?
- Babies who are breastfed for at least 6 months are more likely to have a healthy weight as they grow up.
- Mothers often report that breastfeeding is harder than they thought; moms may be more likely to stop breastfeeding if they feel unsupported and have nowhere to turn for help.
- Parents, for many reasons, may choose not to breastfeed. These parents have questions and need support to feed their infants in a healthy and safe way, too.
- When babies are fussy, it doesn’t always mean they are hungry. Using a bottle or breastfeeding to soothe infants can contribute to overfeeding.
- Babies should be ready to start eating solid foods around 6 months. Babies who start eating solid foods too early are more likely to have weight problems as children and adults.

Talking Points About Breastfeeding
- If breastfeeding is harder than you thought it would be, you are not alone!
- Lots of people say that breastfeeding just comes “naturally” but for many moms, it doesn’t.
- Going back to work and wanting to get back into a normal family routine can make it hard to stick with breastfeeding. Using a breast pump can help ensure your baby still gets the best nutrition.
- If you need support or help at any time while you are breastfeeding, talk to us or call 1-800-994-9962 (the National Breastfeeding Hotline) for free breastfeeding support.

Talking Points About Bottle Feeding
- Don’t use pillows or other objects to help hold a bottle for your baby. This makes it hard for her to spit out the bottle when she’s done—it can cause her to keep eating after she’s full.
- Make sure you take the bottle away if your baby falls asleep. If you let the baby keep the bottle in her mouth when she’s sleeping, formula can stick in her mouth and can damage her teeth or cause her to choke.
- Stick with ONLY breast milk or formula for feeding your baby until she is 6 months old. Unless your doctor tells you something different, adding cereal to baby’s bottle adds extra calories to her diet that she doesn’t need.

Talking Points About Starting Solids
- If your baby is around 6 months old, it’s time to start simple solids like rice cereal.
- After cereal, move on to vegetables and meats first. That way your baby will learn to like those flavors before he gets used to the sweet flavors of fruit.
- Start with small servings—just 1–2 small spoonfuls at a time. Don’t make your baby eat if he’s not hungry. If he leans back or turns away, he is full. Let your baby have at least 2–3 days to get used to a new food before introducing something else.
Toddler Food Images

Breakfast for Toddler

Lunch for Toddler

Dinner for Toddler

Snack for Toddler
Infant Food Images

Breakfast for Infant

Lunch for Infant

Dinner for Infant

9month old foods
Screen time
Clinical level strategies
The Expanded Care Model

- Build healthy public policies
- Create supportive environments
- Strengthen community action

Community

- Self-Management Support/Develop personal skills
- Delivery System Design/Reorient health services
- Decision Support
- Information Systems

Health System

Activated Community

Activated Patient

Population Health Outcomes / Functional & Clinical Outcomes

Informed, Activated Patient

Prepared Proactive Community Partners

Prepared Proactive Practice Team

Productive Interactions & Relationships
Drink and Cereal Display

How much sugar are your kids consuming?
BMI Charts on the back of exam room door

Smaller size laminates for easy reach at desk
Parents remark about portion size, realizing that the portions served are much larger than recommended.
What other community partners can do
Newer Clinical Tools
There’s an APP for that

Change Talk: Childhood Obesity
Pediatric e-Practice: Optimizing Your Obesity Care
WHERE DOES PAYMENT REFORM FIT?
Transition in Both Payment and the Delivery systems

SOURCE: Author’s analysis.
What is FFS and what is total capitation

Fee for service: Puts all the risk on the Payer / rewards the provider for high volume

Full Capitation: Puts all the risk on the payer, provide all the care needed for one price, whether it’s enough or not. If you have healthy population = great, if you have a sick population = NOT great.

Leads to cherry picking and lemon dropping
The Medical Home model to promote coordinated care

- A “medical home” or “health home” -- clinical setting that serves as a central resource for a patient’s ongoing care.
- Currently no Medicare payment for many activities that facilitate the provision of patient-focused, longitudinal, coordinated care
- Payment reforms
  - Per-member, per-month medical home fee, in addition to fee-for-service payments.
  - Payment would vary depending on the severity of illness of the enrolled patient.
  - Support increased access to primary care services, more time spent with patients, and a team approach to care.
- Allows for physicians to get paid for increased level of care coordination.

Value-Based Payment (Pay for performance, P4P)

- Align payments with value, not volume
- Stimulate improvements in the quality of care and, in some cases, reductions in costs.
- Variety of performance measures
- Funding:
  - Hold a portion of current payments for future payment increases
  - Add new money to existing payments
  - Share savings from cost reductions.
  - Increase payment for each service delivered.

What is happening with Medicaid (NY)

NYS Medicaid Roadmap – moving away from FFS toward VBP

- Bundling payments for chronic care conditions
- Example: Depression is both episodic and continuous
- Can the same be done for childhood obesity services?

<table>
<thead>
<tr>
<th>Integrated Physical &amp; Behavioral Primary Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes social services interventions and community-based prevention activities</td>
</tr>
</tbody>
</table>

- Maternity Care (including first month of baby)
- Acute Stroke (incl. post-acute phase)
- Depression
- ... (continued)

- Chronic care (Diabetes, CHF, Hypertension, Asthma, Depression...)
- Hemophilia
- Chronic Kidney Disease
- AIDS/HIV
- Multimorbid disabled / frail elderly (MLTC/FIDA population)
- Severe BH/SUD conditions (HARP population)
- Care for the Developmentally Disabled

Population Health focus on overall Outcomes and total Costs of Care

Sub-population focus on Outcomes and Costs within sub-population/episode of Care
Can Brief Motivational Interviewing in Practice Reduce Child Body Mass Index?

Results of a 2-year Randomized Controlled Trial

Ken Resnicow, PhD, Alison Bocian, MS, Donna Harris, MA, Robert Schwartz, MD, Linda Snetselaar, PhD, RD, Esther Myers, PhD, RD, Jaquelin Gotlieb, MD, Susan Woolford, MD, MPH, Richard Wasserman, MD, MPH

Funding provided by a grant from National Heart Lung and Blood Institute (R01HL085400), PROS core funding from the Health Resources and Services Administration Maternal and Child Health Bureau (R60MC00107) and the American Academy of Pediatrics
### MI Delivery and Training

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usual care only</td>
<td>Up to 4 MI sessions with pediatricians</td>
<td>Up to 4 MI sessions with pediatricians and up to 6 MI sessions with registered dietitians</td>
</tr>
</tbody>
</table>

Group 2 and 3 pediatricians and dietitians attended a 2-day MI training session and received follow up skill assessments by phone with MI experts.
# Year 2 BMI Percentile and Percentile Change

<table>
<thead>
<tr>
<th>Study Group</th>
<th>N</th>
<th>Year 2 BMI Percentile(^)^ (SE)</th>
<th>BMI Percentile Difference#(^)^ (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 Usual Care</td>
<td>158</td>
<td>90.3(^1) (0.94)</td>
<td>1.8(^2) (0.98)</td>
</tr>
<tr>
<td>Group 2 Pediatricians</td>
<td>145</td>
<td>88.1 (0.94)</td>
<td>3.8 (0.96)</td>
</tr>
<tr>
<td>Group 3 Pediatricians &amp; RDs</td>
<td>154</td>
<td>87.1(^1) (0.92)</td>
<td>4.9(^2) (0.99)</td>
</tr>
</tbody>
</table>

\(^1\) Groups with matching superscripts differ \(p < .05\)

\(^2\) Subtracting post-intervention BMI percentile from baseline BMI percentile

\(^\text{#}\) Adjusted for age, race, sex, baseline BMI, household income, parent BMI, pediatrician age, and practice effects (clustering)
## MI SESSIONS COMPLETED

<table>
<thead>
<tr>
<th>Study Group</th>
<th>Number and Percent of MI Contacts Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>Group 2 Pediatricians</strong></td>
<td></td>
</tr>
<tr>
<td>(n =145)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2.1%</td>
</tr>
<tr>
<td><strong>Group 3 Pediatricians</strong></td>
<td></td>
</tr>
<tr>
<td>(n =154)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1.9%</td>
</tr>
<tr>
<td><strong>Group 3 RDs</strong></td>
<td></td>
</tr>
<tr>
<td>(n =154)</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>13.6%</td>
</tr>
</tbody>
</table>
Treatment Outcomes of Overweight Children and Parents in the Medical Home

![Graph showing the comparison between IC Group and Intervention Group in Children % over 50%tile BMI over months.]
3yr old WCC w/ pt Not Mykid
Pt NW, first seen at 3yrs and noted to be obese

PNP informed pt in ‘Red zone’ as unhealthy. Can we discuss?

<table>
<thead>
<tr>
<th>Age</th>
<th>Height</th>
<th>Weight</th>
<th>BMI</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.07 years</td>
<td>37.36 in.</td>
<td>37.48 lbs.</td>
<td>18.87</td>
<td>&gt;97%</td>
</tr>
<tr>
<td>4.04 years</td>
<td>40.12 in.</td>
<td>43.21 lbs.</td>
<td>18.87</td>
<td>&gt;97%</td>
</tr>
<tr>
<td>5.00 years</td>
<td>42.64 in.</td>
<td>46.08 lbs.</td>
<td>17.82</td>
<td>93.92%</td>
</tr>
<tr>
<td>5.99 years</td>
<td>45.08 in.</td>
<td>50.93 lbs.</td>
<td>17.62</td>
<td>89.58%</td>
</tr>
<tr>
<td>6.29 years</td>
<td>45.47 in.</td>
<td>50.71 lbs.</td>
<td>17.24</td>
<td>85.99%</td>
</tr>
<tr>
<td>6.52 years</td>
<td>46.46 in.</td>
<td>49.82 lbs.</td>
<td>16.23</td>
<td>69.15%</td>
</tr>
</tbody>
</table>

All Height and Weight data points containing non-numeric data have been removed from the BMI Report. If you feel that a data point is missing, please verify vital data Weight in Allscripts Enterprise.
Center of Excellence
### SCREENING FOR OBESITY IN CHILDREN AND ADOLESCENTS:
**CLINICAL SUMMARY OF USPSTF RECOMMENDATION 2010**

<table>
<thead>
<tr>
<th>Population</th>
<th>Children and adolescents 6 to 18 y of age</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommendation</strong></td>
<td>Screen children aged 6 y and older for obesity. Offer or refer for Moderate (&gt;25 hrs over 6 months) to High (&gt;75hrs over 12 months) intensive counseling and behavioral interventions.</td>
</tr>
</tbody>
</table>

**Grade: B**

**Grade B Definition:** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.

**Suggestions to practice:** Offer/provide this service.
Community Collaboration Model from Autism

Social And Environmental Context

Community and Agency Services
- ASD Services
- Primary Medical Home
- Individual with an ASD and Family

Community Collaboration Model:
- Public and Private Financing
- Evidence-based Practice Guidelines
- Professional Training
- State and Federal Education and Disability Law
- Public Health and Safety
- Cultural Factors

Diagnostic and Assessment Services
- Specialized Medical Care
- Specialized Behavioral Programs and Therapies
- Social Competence Groups
- Educational Consultation
- Transition Services
- Parent Training
- Family Support Services

Primary Care and Health Care
- Developmental Screening
- Care Coordination

Regular and Special Education
- Child Care and Respite Services
- Community Mental Health Services
- Community Health Clinics and Hospitals
- State Agencies
- Protection and Advocacy Services
- Independent Living and Vocational Support Agencies
- Residential Care
- Family-to-Family Supports
What we all can do

Advocate for payment of tertiary care / referral services for obesity treatment at a children’s hospital / department of pediatrics

Advocate for Evidence based guidelines as part of policies for early childcare

Think outside the box for new roles in clinic

Ask / screen parents Wt for height just of obesity

SW or Cert Health Educator to deliver parenting style or behavioral health or Master’s level mental health provider

Try to link with community resources like YMCA, but also bring/bridge those resources to other community setting like after school programs
Pediatrician’s Positive Influence

• Encourage parents, schools, and communities to find rewards other than food.

• Help families and schools create “tease-free” environments, especially because weight-related teasing starts in the home and spreads to the community and school, with potentially devastating effects on a child’s self-esteem.

• Teach media literacy to decrease the “pester power” of children for high-calorie, low nutrient-dense food choices.

• Join a school health advisory board or other community collaborative network to be an agent of change.

• Link with academic medical centers to help with program design and evaluation that can measure impact and disseminate evidence-based best practices and policies.
DEPARTMENT OF HEALTH EDUCATION
ROCHESTER PUBLIC SCHOOLS
Hang this card in your home where you can read it every day. Follow the health rules carefully and lower THE PER CENT OF MALNUTRITION IN YOUR SCHOOL.

CARD WHITE
ALL RIGHT

Name ____________________________
Height 54 inches
Average weight for height 71
Actual weight 67
Pounds underweight 4

“ALL RIGHT” means that you are up to approximately average weight for your height and are in the Safety Zone.
This card shows that you have received an A rating in nutrition.
You will be weighed twice each term.
Try to keep your weight up to average by following the Rules of the Health Game as found on the reverse side of this card.
(SEE OTHER SIDE)
RULES OF THE HEALTH ME

(1) Sleep ten hours every night with windows open.
(2) Brush your teeth before going to bed and before coming to school every day.
(3) Eat regularly three times a day, chewing slowly.
(4) Eat fruit and vegetables (other than potato) every day.
(5) Drink at least two glasses of milk and four glasses of water each day, but never drink tea or coffee.
(6) Have a bowel movement at the same time every day.
(7) Enter vigorously into the daily morning health inspection, daily schoolroom setting-up drills, games, hygiene and gymnastic work.
(8) Take at least one complete bath every week.
Questions??

@DrSteveCook
The Effect of Maternal Obesity on the Offspring.

Prevalence of childhood body mass index (BMI) $\geq$95th percentile by maternal pre-pregnancy BMI and breastfeeding. US National Longitudinal Survey of Youth, Child, and Young adult data 2 to 14 years of age (n=2636).

"The lot of fat children is a sad one. They are bashful and ashamed of their shapeless figures, yet unable to conceal them. Wherever they go they attract attention…..Obesity is a serious handicap in the social life of a child, even more so of a teenager. Obesity does not have the dignity of other diseases..."
Framework for Integrated Clinical and Community Systems of Care
# Treatment of Obesity in Children and Adolescents

<table>
<thead>
<tr>
<th>Stage</th>
<th>Delivery</th>
<th>Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1 – Prevention Plus</strong></td>
<td>Office-based support, with scheduled follow-up</td>
<td>5 fruits and vegetables, &lt; 2 hrs of screen time, &gt; 1 hr of physical activity</td>
</tr>
<tr>
<td><strong>Stage 2 – Structured Weight Management</strong></td>
<td>Specially-trained staff in office with support from referrals</td>
<td>Reduced-calorie eating plan, &lt; 1 hr of screen time</td>
</tr>
<tr>
<td><strong>Stage 3 – Comprehensive Multidisciplinary Intervention</strong></td>
<td>Dedicated weight management program or registered dietician referral; weekly follow-up for 8-12 weeks</td>
<td>More frequent contact, more frequent monitoring; 1/3rd continue, then ~3%</td>
</tr>
<tr>
<td><strong>Stage 4 – Tertiary Care</strong></td>
<td>Pediatric weight management center with multidisciplinary team; clinical or research protocol</td>
<td>More medication, surgery, meal replacement, ongoing behavior change; 1/3rd continue, then ~1%</td>
</tr>
</tbody>
</table>

Adapted from Katzmarzyk 2014

About 30-35% of 2-18 yr olds

If 1/3rd come / follow up= 10%

If 1/3rd continue, then ~3%

If 1/3rd continue, then ~1%
Why are we here?

1970 - U.S. child obesity estimated at 4 percent.

1972 - HBO launches.

1975 - Apple II computer debuts. JVC markets the first VCR.

1977 - Half of the U.S. workforce is women, accelerating consumption of food outside the home.

1978 - McDonald's sells the first Happy Meal.

1984 - 7-Eleven introduces 44-ounce Super Big Gulp.

1987 - More than 60 percent of U.S. households own VCRs.

1988 - Nintendo releases Game Boy.

1989 - Congress urges state and local governments and school systems to provide daily physical education programs to all grades.

Nutrition Facts

- Serving Size: 1 cup (228g)
- Amount Per Container: 2

- Calories: 533
- Calories from Fat: 14%
- Total Fat: 16g
- Saturated Fat: 5g
- Trans Fat: 0g
- Cholesterol: 30mg
- Sodium: 16mg
- Total Carbohydrate: 31g
- Dietary Fiber: 5g
- Sugars: 1g
- Protein: 8g
- Vitamin A: 1%

Average cheeseburger tops 533 calories.

Americans dine out 25 percent of the time.

White potatoes, iceberg lettuce and canned tomatoes make up half of Americans' vegetable servings.

65 million households have cable TV; cable networks total 171, more than twice as many as in 1989.

“Husky” car seat is marketed for young children up to 80 pounds.

Sesame Street’s Cookie Monster stops gorging on sweet and sugary cookies and eats a sometimes-fortifying breakfast.

One in three children and adolescents is overweight, including the 15 percent of youth who are obese.

1990 - Federal law is passed requiring packaged food labels to list nutrition information.

1992 - Center for Science in the Public Interest calls for less use of trans fats.

1994 - Now federal regulations are issued to limit fat in school lunches.

1995 - Federal government sets goal of cutting childhood obesity from 13.9 percent to 5 percent by 2010.

1996 - U.S. Surgeon General issues “Call to Action to Prevent and Decrease Overweight and Obesity.”

1997 - Arkansas becomes the first state to require confidential reporting of students’ BMI to parents.

1998 - Beverage industry announces voluntary removal of high-calorie soft drinks from school vending machines by 2009-10 school year.

2001 - Kellogg avoids a lawsuit by agreeing to adopt nutrition standards for foods it advertises to younger children.
Payment Reform

Payment reform
- Bundled payments for acute care episodes (Hip replacement)
- Value-based payment (Pay for Quality P4Q)
- Accountable care organizations
- Patient-centered medical home

Medicaid (Medicare)

ACO

Employer / Commercial Plan
Accountable Care Organizations

• A coordinated network of providers with shared responsibility for providing high quality and low cost care to their patients.*
• Couples risk-based provider payment with health care delivery system reform
• Accepts performance risk for quality and cost

How Obesity might fit

- Prevention model with PCP as lead and within the patient centered medical home.
- Use ESDPT codes and less severe or less complicated level of obesity.
- PCP would have to be on board/trained.
- Could link to community service or embed therapists into PCP/Medical home.
- Could be Value-based payment?
How Obesity might fit

• Treatment model with referral to specialty ctr
• Could link w/ community resource but must be high enough level of intensity/dose with right specialty and approach
• Would accommodate more complicated or more severe children/teens with obesity
• This might still be FFS but could move to discounted FFS or PMPM?
Who are we really treating?

Those with Overweight and above?? 25-30%

Those with Obesity only?? 12-22%

OW or OB and a parent w/ OW or OB? ➔ 2/3 of youth w/ OW or OB

Or

Those with Severe Obesity (>99th percentile or > 120% of Obesity)

• 3-4 % of youth in your region.