Maternal and Child Nutrition

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Associate Medical Director-CHC/CHCO
Today’s Objectives

1. Importance of child and maternal nutrition—*The First Thousand Days*

2. Key concepts you will run into—obesity, failure to thrive, food insecurity, hunger

3. Overview of federal programs that support maternal and child nutrition

4. Examples of federal/CO legislation key to child and maternal nutrition

5. Discussion/Q and A
Why is it important to optimize child and maternal nutrition?
The power of the first 1,000 days

The right nutrition in the 1,000 days between a woman's pregnancy and her child's second birthday builds the foundation for a child's ability to grow, learn and thrive.

**Pregnancy:** Pre-pregnancy to birth
Babies developing in the womb draw all of their nutrients from their mother. If mom lacks key nutrients, so will her baby, putting the child's future health and development at risk.

**Infancy:** Birth to 6 months
Breast milk is superfood for babies. Not only is it the best nutrition an infant can get, but it also serves as the first immunity against illness and disease.

**Toddlerhood:** 6 months to 2 years
Nutrients from a variety of healthy foods are an essential complement to breast milk to ensure healthy growth and brain development.

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The impact of good nutrition early in life can reach far into the future. Children who get the right nutrition in their first 1,000 days:

- **are 10x more** likely to overcome the most life-threatening childhood diseases
- **complete 4.6 more** grades of school
- **go on to earn 21% more** in wages as adults
- **are more likely as adults to have healthier families**

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**Sources:**
3. Ibid.
4. Ibid.

www.thousanddays.org

Affiliated with
Children's Hospital Colorado
University of Colorado Anschutz Medical Campus
Key Concepts
Childhood Obesity

• Major public health problem
• Complex multi-factorial disease
• # of overweight and obese children has tripled in the past 30 years
• Definitions: Based on Body Mass Index (BMI) percentile
  • Normal BMI percentile: 5th percentile-84.9th percentile
  • Overweight BMI percentile: 85th-95th percentile
  • Obesity BMI percentile: >95th percentile
  • Severely Obese BMI percentile: >99th percentile
Body Mass Index (BMI) Growth Chart
Childhood Obesity

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• Complex multi-factorial disease
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  • Overweight BMI percentile: 85th - 95th percentile
  • Obesity BMI percentile: >95th percentile
  • Severely Obese BMI percentile: >99th percentile
• If you need state-level data: CDC
• Is risk factor for becoming an obese adult
  • *Kids are unlikely to grow out of their unhealthy weight*
• Then is at risk for cardiovascular disease, cancers, etc as adults

Key Concept
• Obesity is a clinical diagnosis
• It’s a complex issues and it’s a major problem for everyone
• Has lifelong health consequences
OBESITY
IN INFANTS TO PRESCHOOLERS

1 IN 3 CHILDREN and adolescents, ages 2-19, ARE OVERWEIGHT OR OBESE and nearly NONE meet healthy diet and physical activity recommendations.

An estimated 12.5 MILLION CHILDREN, ages 5 years or younger, spend 33 HOURS PER WEEK in CHILD CARE SETTINGS where they may CONSUME MOST OF THEIR DAILY CALORIES.

OBESITY is linked to MORE CHRONIC CONDITIONS THAN:
- SMOKING
- POVERTY
- DRINKING

increasing the RISK of more than 90 PREVENTABLE CONDITIONS, including sleep apnea, asthma, heart disease, Type 2 diabetes, osteoarthritis, high blood pressure and high cholesterol stroke.

FRENCH FRIES are the most common vegetable that children eat, making up 25% of their vegetable intake.

JUICE, which may lack important fiber found in whole fruit, makes up 40% of children’s daily fruit intake.

Between 40% and 50% of TODDLERS ages 12-35-month-old watch MORE television than is recommended.

Nearly 1/2 of PRESCHOOL-AGED CHILDREN DON’T get enough PHYSICAL ACTIVITY.

The COST of obesity in the United States is staggering, totaling about $147 billion.

Children who EAT HEALTHY FOODS and GET DAILY PHYSICAL ACTIVITY have:
- FEWER SCHOOL ABSENCES
- HIGHER ACADEMIC ACHIEVEMENT
- HIGHER SELF-ESTEEM
- FEWER BEHAVIORAL PROBLEMS

DEVELOPMENTALLY, BIRTH TO AGE FIVE, is an important time to TEACH children to PREFER HEALTHY FOODS and DEVELOP GROSS MOTOR SKILLS, setting positive patterns and habits.

heart.org/healthierkids

©2011, American Heart Association 710000001
Childhood Obesity—In Real Life

- What does this look like in the office?
- We talk about making small changes
- But making behavioral changes is difficult—if it were easy, we’d all be the perfect size
  - Many barriers to healthy eating and active living
- Affects sleep, play, school performance
- Psychosocial effects—bullying is a major problem
- Heartbreaking to see in the office
Childhood Obesity: Treatment

- Optimize nutrition, eating behaviors, and physical activity behaviors
- Provide support to the family
- Help the family find community based supports
  - School-based activities
  - Safe spaces to play—parks, playgrounds
  - Access to healthy and affordable foods
  - Education—cooking classes, etc.
Poor Growth/Inadequate Growth/Malnutrition

- Sometimes called “Failure to Thrive” (FTT)
- Insufficient weight gain or inappropriate weight loss
- Body is not getting enough nutrition
- What’s the problem?
- The problem is the effect that this can have on the brain—affects brain development
- Infancy/toddlerhood is an important time of brain development
- Go back to the “First 1000 days”
Growth Chart Showing Poor Growth

Figure 1 – The patient’s weight and length from birth to age 36 months are shown. A deceleration of growth is apparent at age 9 months.
Key Concept

- FTT has lifelong health consequences
- Also, lifelong social consequences
Food Insecurity and Hunger

Food Insecurity (USDA)
A lack of consistent access to enough food for an active, healthy life
• Household level measure

Hunger (USDA)
Physiological condition that may result from food insecurity
• Individual level condition
### Rates of Food Insecurity (FI) (2017)

<table>
<thead>
<tr>
<th></th>
<th>% FI all households</th>
<th>% FI all households with children</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>11.8 (range 7.4-17.9)</td>
<td>15.7</td>
</tr>
<tr>
<td>Colorado</td>
<td>10</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: US Dept. of Agriculture ERS

1 in 6 Kids
Prevalence of food insecurity, average 2015-17

Food Insecurity Tidbits

• Food insecurity is a complex, dynamic condition (families move in and out of being food insecure throughout the year)
• When food insecurity occurs, it is usually episodic but not chronic
• For about 1/4th of food insecure households, food insecurity occurs in almost every month

• You can’t tell who is food insecure just by looking at them!
Childhood Food Insecurity can lead to:

1. Poor Health Status; Increased Hospitalizations
2. Developmental Delays
3. Detrimental Behavioral Health Effects
4. Poor Educational Outcomes
Effects of FI on Maternal and Child Health

• In one study, about 1/3rd of FI families reported they had to choose between paying for food and paying for medicine or medical care
• FI contributes to toxic stress
• Parents strategically alter or limit their intake to spare their children from the effects of FI
• Childhood malnutrition and adult health: diabetes, cholesterol problems, cardiovascular disease
Effects of FI on Maternal and Child Health

- Low birth weight
- Maternal stress
- Maternal depression
- Micronutrient deficiencies and malnutrition
- Kids <3 yr. old living in FI household
  - Poor overall health and health related quality of life
  - More hospitalizations
  - Higher risk of developmental problems
- Iron deficiency anemia
- Lower school achievement, behavioral and emotional problems
- Adolescents: increased dysthymia and suicidal ideation
- Obesity
Food Insecurity and Poor Health
Food Insecurity and Health—in real life

A Conceptual Framework: Cycle of Food Insecurity & Chronic Disease

Key Concept

• Food Insecurity and Hunger are BAD
• Can lead to FTT and obesity
• They have lifelong health and social consequences for children

Adapted: Seligman HK, Schillinger D. N Engl J Med. 2010;363:9-
# Programs That Address and Support Maternal and Child Nutrition Nutrition

<table>
<thead>
<tr>
<th>Supplemental Nutrition Assistance Program (SNAP)</th>
<th>Age of Patient</th>
<th>How It Works</th>
<th>Who Can Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>Monthly benefits to purchase food at grocery stores, farmers’ markets, and food retail outlets across the country that accept SNAP.</td>
<td>Gross income typically at 130% of the federal poverty level but can be higher in some states.</td>
<td>Benefits loaded onto an EBT card (much like a debit card). Asset tests may apply in some states.</td>
</tr>
<tr>
<td></td>
<td>The average benefit is about $31 for the week – or about $1.47 per person, per meal.</td>
<td>Many low-income employed individuals.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)</th>
<th>Age of Patient</th>
<th>How It Works</th>
<th>Who Can Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant, postpartum, and breastfeeding women; infants; children up to age five</td>
<td>Nutritionally tailored monthly food packages (worth approximately $50/month) that families redeem in grocery and food stores that accept WIC.</td>
<td>Low-income pregnant, breastfeeding, and postpartum women, and infants and children up to age five deemed nutritionally at risk by a health care professional.</td>
<td>Breastfeeding support, nutrition services, screening, immunization, and health referrals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Income eligibility typically at or below 185% of the federal poverty level.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Families on Medicaid.</td>
</tr>
</tbody>
</table>
# Programs That Address and Support Maternal and Child Nutrition

## National School Lunch Program and School Breakfast Program

<table>
<thead>
<tr>
<th>Age of Patient</th>
<th>How It Works</th>
<th>Who Can Apply</th>
</tr>
</thead>
</table>
| Children K-12  | Free, reduced-priced, or paid school meals in participating schools  
|                | Updated meal patterns feature more whole grains, 0 grams of trans fat per portion, appropriate calories by age, more fruit, and reduction of sodium | Children of families at low or moderate income levels can qualify for free or reduced-price meals  
|                | Free to all students at schools adopting community eligibility — which allows schools with high numbers of low-income children to offer free breakfast and lunch to all students without collecting school meal applications |

## Summer Nutrition Programs

<table>
<thead>
<tr>
<th>Age of Patient</th>
<th>How It Works</th>
<th>Who Can Apply</th>
</tr>
</thead>
</table>
| Children 18 and under | Up to two free meals at approved school and community sites during summer vacation  
|                | Meals must meet approved federal nutrition standards | Children can access meals at participating community sites, which can include schools, park and recreation centers, libraries, faith-based organizations, or community centers  
|                | No need to show identification |
# Programs That Address and Support Maternal and Child Nutrition

<table>
<thead>
<tr>
<th>Child and Adult Care Food Program (CACFP)</th>
<th>Age of Patient</th>
<th>How It Works</th>
<th>Who Can Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Typically, children up to age five</td>
<td>Up to two free meals and a snack to infants and young children at child care centers and homes; Head Start and Early Head Start</td>
<td>Children attending eligible child care centers and homes; Head Start and Early Head Start</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Afterschool Nutrition Programs</th>
<th>Age of Patient</th>
<th>How It Works</th>
<th>Who Can Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Children 18 and under</td>
<td>Free, healthy snacks and/or meals meeting federal nutrition standards in enrichment programs running afterschool, on weekends, or during school holidays</td>
<td>Children can access free meals at participating enrichment programs offered at community sites, including schools, park and recreation centers, libraries, faith-based organizations, or community centers</td>
</tr>
</tbody>
</table>
### Programs That Address and Support Maternal and Child Nutrition

<table>
<thead>
<tr>
<th>Fresh Fruit and Vegetable Program (FFVP)</th>
<th>Age of Patient</th>
<th>How It Works</th>
<th>Who Can Apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary school age students</td>
<td>The Fresh Fruit and Vegetable Program provides federal funding to elementary schools to serve fruits and vegetables as snacks to help young students improve their diets and establish healthy eating habits.</td>
<td>Elementary schools with high numbers of low-income students</td>
<td>Limited federal funding is available in all states</td>
</tr>
</tbody>
</table>
Nutrition Related Policy of Note--Federal

• Farm Bill Advocacy (2018)
  • Advocated against cuts to SNAP and stricter work requirements. Supported the Senate version of the Farm Bill which kept many provisions in place

• Child Nutrition Reauthorization (2019)
  • This year, we are advocating for the passage of child nutrition reauthorization legislation that supports a range of child nutrition and school meal programs such as WIC and the School Lunch Program
Nutrition Related Policy of Note--Colorado

• SB16-190 (2016)
  • Created an incentive for counties to look at processes in their administration of SNAP and added new food assistance staff within the Colorado Department of Human Services in order to improve the delivery of SNAP benefits for Coloradans.

• SNAP Rule Change (2017)
  • The Colorado State Board of Human Services passed a rule change to align the eligibility thresholds for SNAP, formerly known as food stamps, to 200% of the Federal Poverty Level for all Coloradans. Provides protection for families from losing SNAP benefits and expands access to these benefits for other families.
Nutrition Related Policy of Note--Colorado

  - Last year, SB13 was signed into law to expand the State’s ability to cover the reduced price school lunch co-pay cost for 6th-8th grade students on top of already existing coverage of school lunch co-pays for kids through 5th grade

- HB19-1171 (2019)
  - Governor Polis approved further expansion of the Child Nutrition School Lunch Protection Act, HB 1171. This law eliminates the reduced price school lunch co-pay for 9th-12th grade, ensuring every student in Colorado receives a lunch
Nutrition Related Policy of Note--Colorado

• Healthy Kids’ Meals (Aurora, CO) (2019)
  • Part of a local coalition to pass a local ordinance to require that beverages on children’s menus not be sugar-sweetened beverages. Instead, the drink advertised on a kids’ meal menu must be a healthy beverage such as water, milk, or sparkling water.
A few last thoughts

• Hunger/FI/obesity/FTT in childhood or during pregnancy will have lifelong implications for that child
• An ounce of prevention is worth a pound of cure
• Best investments are made sooner rather than later
• You will NOT see a ROI—this is difficult to measure
• POLICY IS IMPORTANT!!
  → Can influence behavior
  → Can influence environment
When you are considering child and maternal health policies...

“...based on science and designed with compassion”

Colleen Kraft MD, Past AAP President
Thank you!

Christina Suh, MD MPH
Christina.Suh@childrenscolorado.org
BMI Growth Chart Example

![BMI Growth Chart](image_url)

Source: Centers for Disease Control and Prevention (CDC)
CDC Overweight and Obesity
Obesity Trends* Among U.S. Adults
BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1986

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1987

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1988

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1989

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1990

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1991

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1992
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1993

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1994

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1995

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1996

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1997

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1998

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1999

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2001

(*BMI ≥30, or ~30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2002

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
# Obesity Trends* Among U.S. Adults

**BRFSS, 2003**

(*BMI $\geq 30$, or ~ 30 lbs. overweight for 5’ 4” person)

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10%</td>
<td></td>
</tr>
<tr>
<td>10%–14%</td>
<td></td>
</tr>
<tr>
<td>15%–19%</td>
<td></td>
</tr>
<tr>
<td>20%–24%</td>
<td></td>
</tr>
<tr>
<td>$\geq 25%$</td>
<td></td>
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</tbody>
</table>

No Data

![Map of Obesity Trends in the U.S.](image-url)
Obesity Trends* Among U.S. Adults
BRFSS, 2005

(*BMI ≥ 30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2006

(*BMI ≥30, or ~30 lbs. overweight for 5’4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2007

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2008

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2009

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2010

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
**Food Security Council: A Roadmap to End Child Hunger**

**Vision:** By 2023, at least 90% of Colorado’s vulnerable children will have access to timely, quality and affordable food that meets their health needs.

<table>
<thead>
<tr>
<th>Team members</th>
<th>Infrastructure</th>
<th>Access for Patients and Families</th>
<th>Community partnerships</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children's Hospital Colorado has the infrastructure in place to meet the healthy food needs of all Children's Colorado team members.</td>
<td>Children's Colorado has the infrastructure in place to meet the healthy food needs of all low-income patients.</td>
<td>All low-income patients are equipped to access adequate nutrition.</td>
<td>Strong collaboration exists between Children's Colorado and community partners to effectively address hunger in Colorado.</td>
<td>Policy change drives greater systemic access to food that meets the needs of vulnerable children and their families.</td>
</tr>
<tr>
<td>Eligible Children's Colorado team members are enrolled in SNAP and WIC.</td>
<td>Children's Colorado offers the nutrition education program to all low-income patients.</td>
<td>All eligible Colorado residents are enrolled in SNAP and WIC.</td>
<td>Children's Colorado and other provider groups have a shared agenda to ensure that all Coloradoans on Medicaid are enrolled in WIC.</td>
<td>Federal nutrition programs are adequately funded.</td>
</tr>
<tr>
<td>A Children's Colorado team member possesses the knowledge and skills needed to promote healthy eating behaviors.</td>
<td>Community health workers connect all low-income patients to community resources enabling healthy food access.</td>
<td>A low-income patient must have a shared agenda to ensure that all Coloradoans on Medicaid are enrolled in WIC.</td>
<td>Children's Colorado actively participates in the Colorado Health Foundation’s Blueprints to End Hunger Steering Committee and associated activities.</td>
<td>Policy change supports maximized enrollment in SNAP, WIC, and child nutrition programs.</td>
</tr>
<tr>
<td>Family-friendly practices exist around timely access to healthy and affordable food for Children's Colorado team members.</td>
<td>Community health workers connect all low-income patients to community resources enabling healthy food access.</td>
<td>A low-income patient must have a shared agenda to ensure that all Coloradoans on Medicaid are enrolled in WIC.</td>
<td>Children's Colorado actively participates in the Denver SNAP Task Force and associated activities.</td>
<td>Children's Colorado is positioned as a policy leader on child nutrition issues.</td>
</tr>
<tr>
<td>Children's Colorado is a leader in addressing hunger for team members, patients and community partners.</td>
<td>An application for food stamps is being offered to patients with the support of Epic.</td>
<td>Children's Colorado is a leader in addressing hunger for team members, patients and community partners.</td>
<td>Children's Colorado partners with local organizations to address hunger.</td>
<td>Public and political will support policies and incentives to enhance funding for healthy food access.</td>
</tr>
<tr>
<td>&quot;The primary focus of the Food Security Council over the next few years will be to address challenges that put healthy food out of reach. This includes a focus on elevating the participation of lower-income patients and families, aligning resources with areas of need, and supporting community-based solutions.&quot;</td>
<td>&quot;A low-income patient must have a shared agenda to ensure that all Coloradoans on Medicaid are enrolled in WIC.&quot;</td>
<td>&quot;A low-income patient must have a shared agenda to ensure that all Coloradoans on Medicaid are enrolled in WIC.&quot;</td>
<td>&quot;Children's Colorado partners with local organizations to address hunger.&quot;</td>
<td>&quot;Children's Colorado is positioned as a policy leader on child nutrition issues.&quot;</td>
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</tbody>
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* Eligible Children's Colorado team members are enrolled in SNAP and WIC.
* A Children's Colorado team member possesses the knowledge and skills needed to promote healthy eating behaviors.
* Family-friendly practices exist around timely access to healthy and affordable food for Children's Colorado team members.
* Children's Colorado is a leader in addressing hunger for team members, patients and community partners.

*Low-income means: Children's Colorado participates in programs for low-income patients. This includes but is not limited to WIC, EBT, SNAP, TANF, AFDC, food assistance, food security services, and financial assistance. Low-income patients are defined as having family income at or below 185% of the Federal Poverty Level. (FPL).
*Children's Colorado participates in programs for low-income patients. This includes but is not limited to WIC, EBT, SNAP, TANF, AFDC, food assistance, food security services, and financial assistance. Low-income patients are defined as having family income at or below 185% of the Federal Poverty Level. (FPL).
VISION: All Coloradans have access to affordable and healthy food in their communities.

GOAL 1: Increase public understanding and awareness that solving hunger is vital to the health and well-being of all individuals and families, the Colorado economy and every local community.

GOAL 2: Increase the number of Coloradans who can access affordable, nutritious food in their communities.

GOAL 3: Increase the number of Coloradans who can access food assistance and nutritious food through community-based organizations.

GOAL 4: Maximize SNAP and WIC enrollment to propel Colorado to become a leading state for enrollment in these health and nutrition benefits.

GOAL 5: Maximize participation in Federal Child Nutrition programs, moving Colorado to become a national leader in delivery of these vital programs.
Definitions according to USDA

What Is Food Security?
• Food security for a household means access by all members at all times to enough food for an active, healthy life. Food security includes at a minimum:
  • The ready availability of nutritionally adequate and safe foods.
  • Assured ability to acquire acceptable foods in socially acceptable ways (that is, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).

…and Food Insecurity?
• Food insecurity is the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

(Definitions are from the Life Sciences Research Office, S.A. Andersen, ed., “Core Indicators of Nutritional State for Difficult to Sample Populations,” The Journal of Nutrition 120:1557S-1600S, 1990.)
Levels of Food Security

Food Security—These households had access, at all times, to enough food for an active, healthy life for all household members.

High food security: no reported indications of food-access problems or limitations.

Marginal food security: one or two reported indications—typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.

Food Insecurity

Low food security: reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.

Very low food security: Reports of multiple indications of disrupted eating patterns and reduced food intake.

The defining characteristic of very low food security is that, at times during the year, the food intake of household members is reduced and their normal eating patterns are disrupted because the household lacks money and other resources for food.
Health Care in the US
## Health Care System Performance Rankings

<table>
<thead>
<tr>
<th>Category</th>
<th>AUS</th>
<th>CAN</th>
<th>FRA</th>
<th>GER</th>
<th>NETH</th>
<th>NZ</th>
<th>NOR</th>
<th>SWE</th>
<th>SWIZ</th>
<th>UK</th>
<th>US</th>
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<tbody>
<tr>
<td><strong>OVERALL RANKING</strong></td>
<td>2</td>
<td>9</td>
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<td>4</td>
<td>4</td>
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<td>6</td>
<td>1</td>
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<tr>
<td>Care Process</td>
<td>2</td>
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<tr>
<td>Administrative Efficiency</td>
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<td>6</td>
<td>9</td>
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</tr>
</tbody>
</table>

Source: Commonwealth Fund analysis.
Health Care Spending as a Percentage of GDP, 1980–2014

GDP refers to gross domestic product. Data in legend are for 2014.
Source: OECD Health Data 2016. Data are for current spending only, and exclude spending on capital formation of health care providers.
Moving in the right direction: The Triple Aim

The IHI Triple Aim

Population Health

Experience of Care
Per Capita Cost
Population Health...in nutshell

80%-90%
10% of $$$

10%-20%
90% of $$$