4.0 Childhood Obesity and Nutrition

Brief Summary of Program

Childhood obesity prevention research and education are based upon an ecological approach focusing on individuals and their interaction among the multiple environments that surround them. This approach recognizes that there are inherent multiple levels of influence that affect a child’s body weight. Faculty research topics include nutrition and hunger, nutrition education and behavior, built and community natural environments, promoting physical activity, healthful food availability, food product development and health care organization, services and policies.

Extension programs are designed to 1) connect research and practice, 2) result in behavior change, 3) build on the strengths of families and youth, 4) develop strong collaborations resulting in community changes for optimal health promotion and 5) provide policymakers with the knowledge to develop appropriate policies to promote healthy lifestyles. Extension programs target children, families and the community at large, are collaborative and work directly with key community organizations.

With an emphasis on low and moderate income audiences, CCE programs enable participants to improve the diet, health, and well-being of themselves, their families, and their communities. Food resource management, nutrition, health and fitness knowledge, food preparation and breastfeeding promotion are components of programs for individuals and families. Community initiatives emphasize activities and policies affecting childhood obesity related to foods available and opportunities for physical activity. Cornell Cooperative Extension educators build their capacity to lead and make substantive contributions to integrated action plans for intervention in their communities through continuing professional development such as through the Cornell NutritionWorks 6-week in-depth course on Preventing Childhood Obesity: An Ecological Approach.

4-H Healthy Living is a 4-H Youth Development initiative emphasizing physical activity, healthy eating and changes in the home, school and community environments. In one particular program, Choose Health, 4-H Professionals, adult volunteers and 4-H Teen ambassadors use evaluated curricula and pilot-tested activities designed to make healthy behaviors the norm. Programming occurs in camps, after school and with parents and other caregivers.

CCE child-based projects include family support and involvement. Parenting, nutrition and fitness education are woven together through work with parents and other adults who influence children and shape the environments where children live, learn, and play. Projects promote adult and child cooperation for health through activities such as preparing food together and family oriented physical activities.

At the community level, CCE education connects families with farmers’ markets and local food initiatives increasing access to healthful foods. Educators contribute to school-based efforts such as “Farm to School”, parent involvement in school health and nutrition campaigns, and student in-school and after school education.

Situation and Priorities Statement

Nearly one-fifth of children in the United States are overweight and have a greater risk for health problems that are placing a major strain on the U.S. health system and economy. Obesity is positively correlated with increased risk of chronic diseases such as cardiovascular disease, diabetes, stroke, hypertension, and some forms of cancer. An estimated 61% of overweight young people have at least
one additional risk factor for heart disease, such as high cholesterol or high blood pressure. There is an increasing frequency of type 2 diabetes in children, even pre-adolescent children. Overweight children are at greater risk for bone and joint problems, sleep apnea, and social and psychological problems such as stigmatization and poor self-esteem.

Factors contributing to obesity in children include unhealthy dietary behaviors such as high consumption of sweetened beverages, low fruit, vegetable and dairy consumption and limited physical activity. Healthy lifestyle habits, including healthy eating and physical activity, can lower the risk of becoming overweight and developing diseases associated with increased obesity. Food insecurity and obesity or overweight can exist at the same time. This necessitates addressing hunger issues for some populations within programs on childhood obesity.

At the individual child level, both psychosocial influences (including food norms, preferences, knowledge, attitudes, skills, supports and role models) and biological influences (including: age, gender, genes, and physiology) interact within the child to direct eating and activity behaviors. The individual child is also interacting within a family that brings another level of influences on behaviors that include feeding practices, parent and childcare provider interaction related to feeding, family attitudes and attention to health care. At the community and organizational level, the interaction between the individual environment that children are in when not at home further influences their behaviors. Factors such as access to healthy and unhealthy foods in schools and after-school programs, access to healthy foods and activity opportunities in the child’s community, local public health programs and policies will all impact the child.

Effective programs are those that target children’s eating and activity-based behaviors through approaches aimed at children directly, as well as parental and community involvement, and environmental change. By taking an ecological approach to childhood obesity prevention, CCE professionals consider the many factors associated with childhood obesity and determine how to best create many points of impact that can result in positive change. In some communities, CCE may be a leader and form a coalition to take action on childhood obesity. In other locations, CCE will join existing coalitions and augment projects to increase effectiveness and target populations reached.

Assumptions

Childhood overweight and obesity is best addressed ecologically through support of integrated community and family systems. These systems are necessary to promote improved eating and physical activity behaviors of New York State children and to reduce the prevalence of childhood obesity.

The National Institute of Food and Agriculture supports childhood obesity research and education programs on affordable and available nutritious foods and guidance for individuals and families enabling science-based decisions about health and well-being. In New York State, research on the etiology of obesity and chronic disease is applied by Cornell Cooperative Extension (CCE) to locally based nutrition and wellness education developed in partnership with families, youth, health and wellness professionals, and other community-minded individuals and groups. Cornell and other academic research are applied to CCE programs promoting healthful and secure community food systems to address childhood obesity. Neighborhood and community resources complement federal, state, and local government support to implement this outreach.

Ultimate Goals of Program

• Affordable, available nutritious foods
• Guidance for families to make science-based decisions about health and well-being
• Prevention of childhood overweight and reduction of long term risks for chronic disease by encouraging healthy eating and increased physical activity
• Improved community food security and healthful food-choice options
**Activity**

This is a statewide multi-disciplinary extension program with emphases cutting across many content areas and audiences. Campus-based faculty and extension associates provide leadership and participate in work teams with CCE educators. Programs draw upon Cornell and other academic research. All are involved in designing, implementing and evaluating tailored outreach. Trained Extension nutritionists and parenting and 4-H educators lead local program activities. Researchers in horticulture and agricultural economics and marketing investigate options for improving local production and direct marketing of fresh produce into areas where they are currently lacking.

Programs for children and youth are delivered through a variety of settings: 4-H camps, clubs, fairs and afterschool as well as through child-parent/grandparent involvement projects and in-school student education. Family-focused programs promote a positive parent/care-giver-child feeding relationship and planning for good nutrition and physical activity. Extension staff collaborate with community leaders to improve the local environment for healthy eating and active living. Activities include sequential learning events, "community workshops” and engagement with community and civic leaders to improve the environment for nutrition and wellness and support of the local food system.

**Description of Target Audiences**

Audiences reached include: moderate and low income families; 4-H youth; children in and out of school; nutrition, health, and family professionals; front-line family workers; school food service staff; community leaders; and government and agency leaders at the local, state, and federal level.

**Output and Outcome Indicators** Highlighted indicators are collected annually. Codes in parentheses are (new) and (old) classification system.

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Near-Term Outcomes</th>
<th>Mid-Term Outcomes</th>
<th>Long-Term Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td># patents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># publications</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.1 Healthy Eating and Active Living

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Near-Term Outcomes</th>
<th>Mid-Term Outcomes</th>
<th>Long-Term Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4.1a) # children, youth, parents/caregivers and other adults reached via healthy eating and active living programs</td>
<td>(4.1d1) # of children and youth who demonstrate knowledge or skill gains related to healthy eating and active living</td>
<td>(4.1g) # of youth program participants documented to have applied healthy eating and/or active living, recommendations</td>
<td>(4.1j) # of vulnerable children and youth documented to have reduced incidence of overweight and obesity as a result of participating in relevant educational programs.</td>
</tr>
<tr>
<td>(4.1b) # of women and health providers completing education programs addressing healthy weight gain during pregnancy and breastfeeding</td>
<td>(4.1d2) # parents/caregivers and other adults who demonstrate knowledge or skill gains related to healthy eating and active living</td>
<td>(4.1h) # of adult program participants documented to have applied healthy eating and/or active living, recommendations</td>
<td>(4.1k) # of adult program participants documented to have reduced one or more chronic disease indicators associated with overweight.</td>
</tr>
<tr>
<td>(4.1c) # of extension educators and/or volunteers participating in training programs to enhance obesity prevention educational</td>
<td>(4.1e) # of women and health providers demonstrating increased knowledge or skill gains related to healthy weight gain</td>
<td>(4.1i) # of extension educators and/or volunteers reporting increased delivery of healthy living-related programs.</td>
<td></td>
</tr>
</tbody>
</table>
opportunities for children and youth, and adults who care for them during pregnancy and breastfeeding

(4.1f) # of extension educators or volunteers demonstrating knowledge or skill gains related to healthy eating and active living programs for obesity prevention

<table>
<thead>
<tr>
<th>4.2 Food Resource Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outputs</strong></td>
</tr>
<tr>
<td>(4.2a) # of program participants reached to improve their food resource management and food security</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.3 Decision Makers/Policy Education</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outputs</strong></td>
</tr>
<tr>
<td>(4.3a) # of community and/or government/agency members completing educational programs on issues related to childhood obesity prevention programs and policy related to healthy living</td>
</tr>
</tbody>
</table>

(4.3d) # of participating schools and/or communities documented to have made practice and/or policy changes to promote healthy eating and active living

**External Factors**

The scope and scale of outcomes is greatly enhanced by augmenting Federal Formula Funds with external sources of support. However, external grant funds may only support certain activities or aspects of this plan. Local governments, an important funder for local extension staff, face diminished revenues and increased mandated costs outside of the non-mandated extension programs. Thus having professionals available to implement new research-based programming is not always possible. A very slow recovery from the recession and pockets of high unemployment in the state affect how public and private funds are allocated to educational activities. In some instances, family subsistence will be a higher priority than improved nutrition and opportunities for physical activity. As an example of the latter, in New York State, cost cutting proposals include closing some public parks and reducing recreational physical...
activity programs. Some decision-makers and others in the community may not agree with all aspects of an ecological approach to childhood obesity prevention. They may disagree with community or institutional policy changes such as eliminating non-nutritious snacks from after school activities and place all responsibility on the individual and within the family, disregarding most environmental factors outside the family.

Evaluation

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations. Because each of the plans addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we are working to provide educators with recommended evaluation strategies and standard instruments for their use. We will continue our work with the Cornell Office for Research on Evaluation to develop these resources. This year, we reviewed the draft national outcome framework and have selected several to link to our statewide outcome framework. We expect to continue work to align our evaluation priorities with the national framework in coming years.

Some examples of specialized evaluation for this plan are:

- Initial pilot testing, and cognitive-testing of an after-school food and activity self-assessment tool, designed to help after-school staff think about ways to make healthy choices easier for youth in their programs. The tool will be used in both the Choose Health Ambassador project and in other youth oriented programs.
- Surveys of school food service directors to document perceived changes in personnel and student attitudes toward fresh fruits and vegetables and increased consumption of these foods in conjunction with extension provided program support resources for food service, teachers, and students to increase awareness and to encourage the use of NYS-grown fruits and vegetables.
- Pre- and post-course surveys evaluate the Cornell NutritionWorks course to document effectiveness in increasing knowledge, skills and self-efficacy of nutrition and health professionals to address childhood obesity using an ecological approach. Participants’ intended behavior and actual implementation of strategies six months post-course are also studied.