

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Nutrition, Food Safety & Health

2. Brief summary about Planned Program

Nutrition, Food Safety and Health Promotion programming provides research-based education to a variety of audiences across Colorado in an effort to promote safe and healthful eating habits and a physically active lifestyle. Adoption of these behaviors may reduce the incidence of foodborne disease as well as chronic diseases, such as diabetes, heart disease, obesity and cancer.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	0%		10%	
503	Quality Maintenance in Storing and Marketing Food Products	0%		10%	
701	Nutrient Composition of Food	0%		30%	
703	Nutrition Education and Behavior	30%		0%	
704	Nutrition and Hunger in the Population	5%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	5%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%		30%	
724	Healthy Lifestyle	30%		10%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Nutrition and Health Promotion Situation and Priorities

Chronic Disease in Colorado

In Colorado and across the United States, chronic diseases are the biggest threat to health and wellness. Heart disease, diabetes, cancer, lung disease and other chronic conditions continue over a long period of time, limit everyday activities and lead to increased disability. They are also the leading causes of death.

- Nearly half of all Americans suffer from at least one chronic disease.
- More than 80% of all deaths in Colorado in 2005 were due to chronic disease. Cancer and heart disease alone made up nearly 60% of deaths among Coloradans.
- In general, rates of illness and death from chronic diseases are higher among racial and ethnic minorities, persons with low income, and persons who live in rural or frontier areas of the state, although this may vary by disease.

Chronic diseases burden the health care system because they require ongoing medical care.

- Average health care costs for people with at least one chronic disease are two and a half times higher than for people with no chronic conditions.
- More than 80% of all health care spending is for persons with chronic disease.

Fortunately, chronic diseases are among the most preventable of all health problems.

· Most chronic diseases are linked to obesity, poor nutrition, lack of exercise, and tobacco use. Reducing these behaviors among Coloradans can lead to lower rates of chronic disease and fewer complications.

Adult Overweight and Obesity

Being overweight or obese increases the risk for multiple chronic diseases, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis and certain cancers. An appropriate amount, intensity and duration of regular physical activity and decreased caloric intake, especially fat, might reduce a person's body mass index (BMI). Although Colorado is one of the leanest states in the nation, the prevalence of obesity is increasing. From 1995 through 2008 the prevalence of adult obesity in Colorado increased from 10.1 to 19.1%. More than half of the adults in Colorado are overweight or obese. In 2012 the number of adult Coloradans who were overweight (BMI) $\geq 25 \text{ kg/m}^2$ was 35.2% and 20.5% were obese (BMI) $\geq 30 \text{ kg/m}^2$; 55.7% were either overweight or obese. Overweight and obesity prevalence are higher among minorities, lower educated adults, and those with the lowest incomes.

Childhood Obesity

While Colorado is considered the leanest state in the nation for adults, that is not true for children. Colorado ranks 23rd nationally for childhood obesity. Currently 14.2% of youth in Colorado are considered obese, with an additional 12.8% categorized as overweight. Efforts to address childhood obesity have increased in recent years, and in particular with First Lady Michelle Obama's 'Let's Move' campaign. In the past several years obesity prevention programs and policies have increased exponentially in number, strength and breadth. A recent poll shows that 80% of Americans recognize that obesity is a significant and growing challenge for the country. Furthermore, 50% of Americans believe that childhood obesity carries such importance that more should be invested immediately to prevent it.

Cardiovascular Disease (CVD)

CVD is the leading cause of death in Colorado, accounting for 30% of all deaths. On average one Coloradan dies every hour due to CVD. Modifiable risk factors for CVD include lifestyle behaviors (e.g., tobacco use, physical inactivity and improper nutrition), health status (e.g., hypertension, hyperlipidemia, overweight or diabetes) and policies (e.g., smoking policies in restaurants and worksites). Substantial differences in CVD death rates exist by race, age, sex, place of residence and other demographic factors.

Elevated levels of serum cholesterol can lead to development of atherosclerosis. Approximately 30% to 40% of coronary heart disease and 10% to 20% of strokes in the United States are attributable to elevated serum cholesterol. Elevated cholesterol has been associated with physical inactivity, high fat intake, tobacco use, diabetes and obesity. Lifestyle changes can reduce cholesterol and prevent heart disease among persons with elevated serum cholesterol.

Approximately 20% to 30% of coronary heart disease and 20% to 50% of strokes in the United States are attributable to uncontrolled hypertension. Blood pressure-related cardiovascular complications can occur before the onset of established hypertension. Lifestyle risk factors for hypertension include high sodium intake, excessive caloric intake, physical inactivity, excessive alcohol consumption and deficient potassium

intake. Lifestyle changes can reduce blood pressure.

Diabetes

The burden of diabetes in the United States has grown with the increasing prevalence of obesity. Diabetes affected about one in 13 Colorado adults (or 7.4% of the adult population) in 2012 impacting their quality of life and ability to work. Prevalence was highest among African Americans (12.1%), Hispanics (11.5%), those with less than a high school degree (12.6%), and those with annual incomes less than \$15,000 (12.3%). While Colorado death rates for diabetes consistently have been lower than those nationally since 1994, it remains one of the top ten leading causes of death in the state. Obesity contributes greatly to the onset of diabetes in children, adolescents and adults.

Healthy Lifestyles

Approximately 400,000 deaths each year in the United States are attributable to physical inactivity and poor nutrition. Fruit and vegetable consumption and physical activity are all lifestyle behaviors that contribute to overall good health. The Nutrition and Health Promotion work team will focus programming on healthy eating, specifically fruit and vegetable consumption, physical activity, and lifestyle behaviors.

Fruit and Vegetable Consumption

Dietary intake of five or more servings of fruits and vegetables per day is associated with reduced risk of coronary heart disease and certain types of cancer including cancer of the colon, rectum, oral cavity, pharynx, stomach and esophagus. In 2009, approximately one in four adults (24.8%) in Colorado and in the United States (23.5%) consumed five or more servings of fruit and vegetables daily. Between 2008 and 2010, approximately one in ten children (10.1%) in Colorado aged 2 to 14 consumed five or more servings of fruit and vegetables daily.

Between 1994 and 2005 approximately one in four adults (25.4%) in Colorado consumed five or more servings of fruit and vegetables daily, and consumption of fruits and vegetables varied among demographic groups:

- A higher proportion of women consumed the recommended amount than men (30% vs. 18.9%);
- Of those aged 55 and older 30.8% consumed the recommended amount compared to 22.2% of those younger than 55 years of age;
- A lower proportion of Hispanics (19.6%) and African-Americans (17.9%) consumed five or more servings compared to non-Hispanic Whites (25.7%);
- The number of college graduates who consumed five or more servings 29.4% compared to 21.4% of those without a college degree;
- A statistically higher proportion of adults earning \$25,000 or more per year (25.3%) consumed five or more servings daily compared to adults earning less than \$25,000 per year (19.3%).

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Lifestyle factors, such as poor diet, physical inactivity and tobacco use, account for approximately 51% of one's health status. The impact of improved nutrition and physical activity behaviors on chronic

diseases can be quite significant. Extension has the potential to improve the health of Colorado citizens by offering programming in Nutrition and Health Promotion which improves knowledge of chronic disease risk, enhances positive dietary and physical activity behaviors, and encourages environmental changes conducive to living a healthy lifestyle. The potential long-term impact of Extension programming includes decreased prevalence of chronic diseases.

Food safety illnesses and food recalls will continue to be a significant problem across the country. CDC reports that foodborne illness rates are not decreasing and there continues to be a decline in basic consumer food safety practices such as washing hands with soap and water (89% in 2010 vs. 92 % in 2008). Food safety education can decrease the risk of contamination and foodborne illness. Food safety practices and restaurant inspection scores have been reported to increase following employee food safety training. Young adults today often have limited opportunities to learn safe food handling and are reported to take more risks in regards to food safety. The work force employed in food preparation and serving operations tends to be young with little background training in food safety. Emerging pathogens and food system changes will continue to challenge food safety efforts, especially to individuals at increased risk of foodborne illness. Education to pregnant women, the elderly and other high risk consumers, as well as health professionals who work with these groups is essential in helping reduce incidence of foodborne illness and thereby saving lives. Since the passing of Colorado legislation in 2012 allowing cottage food businesses, a need exists in providing food safety training to cottage foods entrepreneurs and vendors who sell these foods to the public.

2. Ultimate goal(s) of this Program

The goal of this Planning & Reporting Unit (PRU) is to promote adoption of healthful eating and activity patterns and ensure an abundant and safe food supply for all. Adoption of healthful eating and activity patterns can enhance the overall health and wellbeing of children, youth, adults, and the growing senior population. Adoption of food safety knowledge and safe food handling practices will ultimately reduce the incidence of foodborne disease in Colorado, especially among the most vulnerable populations (infants, young children and individuals who are immuno-compromised through aging, medical intervention, and illness).

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2015	45.0	0.0	2.0	0.0
2016	45.0	0.0	2.0	0.0
2017	45.0	0.0	2.0	0.0
2018	45.0	0.0	2.0	0.0
2019	45.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct basic and applied research on nutrition and wellness.

HEALTH PROMOTION & DISEASE PREVENTION (NH) programs include:

- Strong Women, Strong Bones

- Heart Disease Awareness & Prevention
- Diabetes Awareness, Prevention and Management
- Nutrition Education for Low-income Audiences
- Nutrition and Wellness
- Multi-lesson series: Dining with Diabetes, Small Changes Make a Big Difference, Strong Women-Strong Bones, Moving Toward a Healthier You, Healthy Heart, Smart-START for a Healthy Heart
- Self-paced program - Self-Care for a Healthy Heart
- Single lessons - Workable Wellness (work site wellness).
- Youth programs: Food Friends-Making New Foods Fun for Kids, Eating Right Is Basic, Chef Combo's Fantastic Adventures in Tasting and Nutrition, Professor Popcorn

FOOD SAFETY (FSAFE) Education

- Food Safety training for consumers, high risk audiences and their caregivers.(Eat Well for Less, La Cocina Saludable, Work site Wellness, Safe Home Food Preparation and Preservation, Promotion at Farmers Markets.)
- Food Safety Training for Food Service Managers and Workers (Food Safety Works, ServSafe, Food Safety for Food Bank Workers).Some of these programs are fee-based.

Promoting Food Security

- Multi-lesson series programs-Eat Well for Less, La Cocina Saludable]
- Single event programs targeting limited resource families
- Newsletters-Senior Nutrition News Research
- Development of new technologies for improving food safety
- Determine important relationships between diet, food composition, and health

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Public Meetings) 	<ul style="list-style-type: none"> • Public Service Announcement • Newsletters • Web sites other than eXtension • Other 1 (Newspaper columns & News release)

3. Description of targeted audience

For Nutrition, Health & Food Safety - Adults and children in Colorado, including but not limited to consumers, high- risk audiences (pregnant, immune-compromised, elderly);food handlers and their managers at retail food establishments.

For Research: - Producers and processors of plant and animal agricultural products.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- 1. Number of group educational events: classes, trainings, workshops, demonstrations, field days, providing content expertise, fairs, shows, booths, other group events. NH 5) Community Meetings Convened [examples: Advisory Groups, Councils, Coalition Meetings, Boards].
 - 2. Individual Education: one-on-one direct client contacts by site visit, office drop-in, e-mail, telephone, Ask an eXpert, etc.
 - 3. Number of meetings convened and/or facilitated; includes strategic participation that contributes to program development.
 - 4. Number of kits or similar resources loaned or provided.
 - 5. Number of Extension-related research and assessment projects. External funding proposals, including local, state, federal. NH 9) Newsletters - This is number of newsletters, not number mailed or number of Coloradans who received them, such as Family Matters & others.
 - 6. Number of peer-reviewed publications including fact sheets, decision tools, curricula, multimedia, etc.
 - 7. Number of media releases: indirect contacts through media releases, appearances, newsletters, blog posts, other non-peer reviewed publications, kit development, non-peer reviewed curriculum, PowerPoints or videos.
 - 8. Number of online posts: Web posts, hits.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	NFSH A1.1a Action Outcome (Intent to Change): NFSH A1.1a The number of Coloradans that reported an intention to eat more of healthy foods.
2	NFSH A1.1b Action Outcome (Behavior Change): NFSH A1.1b The number of Coloradans that reported eating more of healthy foods.
3	NFSH A1.2a The number of Coloradans that reported an intention to eat less of foods/food components which are commonly eaten in excess.
4	NFSH A1.2b The number of Coloradans that reported eating less of foods/food components which are commonly eaten in excess.
5	NFSH A2.1a The number of Coloradans that reported an intention to increase their physical activity and/or reducing sedentary time.
6	NFSH A2.1b The number of Coloradans that reported increasing their physical activity, reducing sedentary time, or meeting the recommended amount of physical activity.
7	NFSH A3.1 Participants will adopt recommended food safety practices (including safe food production, processing, transport, preparation, preservation, consumption and storage practices).
8	NFSH A3.2. Participants will adopt skills necessary to teach others about food safety practices that reduce risk of foodborne illness.

Outcome # 1

1. Outcome Target

NFSH A1.1a Action Outcome (Intent to Change):

NFSH A1.1a The number of Coloradans that reported an intention to eat more of healthy foods.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

NFSH A1.1b Action Outcome (Behavior Change):

NFSH A1.1b The number of Coloradans that reported eating more of healthy foods.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

NFSH A1.2a The number of Coloradans that reported an intention to eat less of foods/food components which are commonly eaten in excess.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

NFSH A1.2b The number of Coloradans that reported eating less of foods/food components which are commonly eaten in excess.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

NFSH A2.1a The number of Coloradans that reported an intention to increase their physical activity and/or reducing sedentary time.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

NFSH A2.1b The number of Coloradans that reported increasing their physical activity, reducing sedentary time, or meeting the recommended amount of physical activity.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

NFSH A3.1 Participants will adopt recommended food safety practices (including safe food production, processing, transport, preparation, preservation, consumption and storage practices).

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

NFSH A3.2. Participants will adopt skills necessary to teach others about food safety practices that reduce risk of foodborne illness.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

Natural Disasters:

- Wild fires, power outages brought on by weather extremes (flooding, storms, tornados,) or other reasons creates the need for timely and effective food safety education during both the crisis and recovery period involving collaboration with public health and government agencies, the media, emergency response networks and others depending on the situation.

- An emergency may also result from loss of employment, therefore decreasing financial resources available to purchase foods. Whatever the situation, knowledge of food safety and storage is important.

Economy:

- Can affect food safety, nutrition and health, such as affordability and accessibility to safe and wholesome foods. Families with limited resources can benefit from information such as how to stretch food dollars to provide healthful and safe foods. Individuals seeking jobs need support with entrepreneurial efforts such as starting a Cottage Foods business.

Public policy changes:

- Can affect food safety, nutrition and health, such as affordability and accessibility to safe and wholesome foods. Examples may include changes to school wellness policies; training opportunities for school personnel and food service staff, increases in funding for childhood obesity in the state and communities.

Government regulations:

- Changes in FDA food code effect food safety training opportunities for retail food and school food service staff. Legislation changes regarding the cottage food industry may require focused effort by this PRU to develop and deliver targeted food safety education. Funding for SNAP-ED and EFNEP is provided through federal sources. Changes in funding or program guidelines are plausible. Additionally, legislation regarding the School Nutrition program and the Farm bill may influence Extension programming.

Competing Public priorities

- In today's economic climate, Extension staff and partner agencies are being asked to do more with less. Nutrition, food safety and health promotion programming may be a lower priority in some areas due to competing public priorities at both the local and state levels.

Population Changes:

- Increased numbers of Spanish speaking audiences requires greater accessibility to educational materials translated into Spanish.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

For this PRU, evaluation will be performed by distributing surveys to program participants.

- The surveys will be done both pre and post program, depending on the specific program.
- The surveys will ask questions focused primarily on changes in knowledge, intent to change behavior, and reported behavior change.
- The surveys will help us measure the percentage of program participants who increased their

knowledge pertaining to the program topic.

- The results of the surveys will be used in writing impact statements or reports that highlight the efforts of this PRU.
- CSU Extension Website hits both State site and County sites, and other social media is used to disseminate information throughout the State.