

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Food Safety

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	100%		100%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	6.5	0.0	3.0	0.0
Actual	6.9	0.0	1.5	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
99528	0	65992	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
99528	0	127856	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
672611	0	113145	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

County Extension Agents were trained and approved by the Texas Department of State Health Services (DSHS) to become a qualified instructor for the Food Protection Management Program. The program includes a Certified Food Manager program and a Food Handler program. Additional training was provided/identified so current instructors could earn continuing education which is required by DSHS.

The program is implemented in counties across the state that have a County Extension Agent who is qualified to teach the program. Program materials are available in both English and Spanish. The food handler course is also available on-line in both English and Spanish.

The Certified Food Manager (CFM) course was evaluated by surveying participants 30-days after they completed the program. This evaluation process took place throughout the year. Another evaluation point used was the pass rate on the CFM exam. The evaluation of the food handler program was conducted by comparing the pre- and post-test scores of participants.

The food handler's course also will be offered by qualified instructors (CEA-FCS) in both English and Spanish. An on-line (English language) is being offered now but a Spanish version will be launched in late spring of 2009. Pre and post knowledge surveys will be used to evaluate the course.

2. Brief description of the target audience

Individuals who are currently employed or wish to gain employment in the retail food service industry. This includes cooks, managers, and owners who are affiliated with foodservice establishments including restaurants, school food service, bed and breakfasts, prisons, and other establishments that prepare and serve food to individuals.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	3500	12000	100	0
Actual	3892	16357	876	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	0	25	

Actual	0	16	16
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V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of group educational sessions conducted.

Year	Target	Actual
2010	250	407

Output #2

Output Measure

- # of research-related projects.

Year	Target	Actual
2010	10	17

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	FPM Pass/Fail Rate - percentage of participants who pass the DSHS Certified Food Manager exam on the first attempt.
2	Self-reported adoption of washing hands for 20 seconds using soap and hot water (% of participants who report practicing this behavior "always" after participating in the program).
3	Self reported increase in the adoption of using a thermometer to determine the doneness of food (percentage of participants who report practicing this behavior "always" after participating in the program).
4	Percentage of employees who clean and sanitize food contact surfaces and utensils between uses as a result of what they learned in the CFM program.
5	Percentage of employees who store raw foods below ready-to-eat foods in the refrigerator 'always' as a result of what they learn in the CFM course.
6	Percentage increase in knowledge as a result of completing the food handler's course.

Outcome #1

1. Outcome Measures

FPM Pass/Fail Rate - percentage of participants who pass the DSHS Certified Food Manager exam on the first attempt.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	85	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Passing the exam is required for food service workers who wish to have the credential Certified Food Manager. It also verifies that critical knowledge was gained in areas of food safety that can reduce the risk for causing foodborne illness.

What has been done

The Certified Food Manager course offers face-to-face instruction and hands on activities to help participants learn the knowledge necessary to successfully challenge the exam.

Results

Of the 1026 participants who had received their Certified Manager Exam score, 837 (81.6%) passed. Due to the need to change exams in 2010, we offered a new Certified Food Manager exam from a different vendor (DSHS no longer offers their own Certified Food Manager exam). This may explain the slight drop in the % of participants who passed the exam on the first attempt.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #2

1. Outcome Measures

Self-reported adoption of washing hands for 20 seconds using soap and hot water (% of participants who report practicing this behavior "always" after participating in the program).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	85	96

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Proper hand washing can greatly reduce the risk of food borne illness.

What has been done

During the Certified Food Manager program, participants are shown how easily hands can become contaminated with "germs" and how proper handwashing (using soap and warm water and scrubbing hands and nails) can reduce germs.

Results

30 days after individuals completed the Certified Food Manager program, they were contacted and invited to complete a survey to assess the extent to which targeted behaviors had been adopted. Of those who completed the program (n=1026), 268 individuals responded to the survey. Of those who responded to the question on handwashing (n=184), 72% reported "always" washing hands with soap and warm water before the program; after the program ended, 96% were "always" washing their hands.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #3

1. Outcome Measures

Self reported increase in the adoption of using a thermometer to determine the doneness of food (percentage of participants who report practicing this behavior "always" after participating in the program).

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	75	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The only way to correctly determine if a food has been cooked to a safe internal temperature is by using a food thermometer. For those foods that are potentially hazardous, improperly cooking foods or failing to reheat them to a proper temperature can lead to a foodborne illness.

What has been done

In the Certified Food Manager program participants are taught not only how to properly use a food thermometer but also how to calibrate it so it is properly measuring the internal temperature of food. In addition, participants are given a food thermometer to take with them when they complete program.

Results

30 days after individuals completed the Certified Food Manager program, they were contacted and invited to complete a survey to assess the extent to which targeted behaviors had been adopted. Of those who completed the program (n=1026), 268 individuals responded to the survey. Of those who responded to the question about how frequently they used a food thermometer (n=170), 41% stated that before they attended the program they used one "always." Thirty days later, that percentage had risen to 80%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #4

1. Outcome Measures

Percentage of employees who clean and sanitize food contact surfaces and utensils between uses as a result of what they learned in the CFM program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	90	96

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Cross-contamination can be defined as the transfer of harmful pathogens from one person, object, or place to another. Preventing cross-contamination is an important step in reducing the risk of foodborne illness.

What has been done

During the Certified Food Manager program, participants are shown ways that cross-contamination can occur within a food establish. In addition, they are taught how/when to sanitize equipment, food contact surfaces, and utensils to prevent the spread of pathogens that can cause illness.

Results

30 days after individuals completed the Certified Food Manager program, they were contacted and invited to complete a survey to assess the extent to which targeted behaviors had been adopted. Of those who completed the program (n=1026), 268 individuals responded to the survey. For those who responded to the question about how frequently they cleaned and sanitized food contact surfaces and utensils, 72% reported they did so "always" before the program began; 96% reported doing so 30-days after the program ended.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #5

1. Outcome Measures

Percentage of employees who store raw foods below ready-to-eat foods in the refrigerator 'always' as a result of what they learn in the CFM course.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	85	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Storing raw foods such as meat and poultry below food that are ready-to-eat prevents those ready-to-eat (RTE) foods (which will not be cooked but rather served directly to the public) from being cross-contaminated.

What has been done

During the Certified Food Manager program, participants learn why it is important to store raw and RTE foods properly and the possible consequences of not doing so. Hands-on activities help test participants' understanding of the concept (making sure they know where in the refrigerator to store selected foods).

Results

30 days after individuals completed the Certified Food Manager program, they were contacted and invited to complete a survey to assess the extent to which targeted behaviors had been adopted. Of those who completed the program (n=1026), 268 individuals responded to the survey. Of those who responded to the question on storing raw and RTE foods (n=165), 58% said they stored raw foods below RTE foods "always" before the completed the program. 30-days after the program, 82% of the participants were doing so "always."

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

Outcome #6

1. Outcome Measures

Percentage increase in knowledge as a result of completing the food handler's course.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	30	30

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Food handlers' are responsible for preparing foods in eating establishments. If they do not have sound food handling practices or present with poor personal hygiene, the risk for foodborne illness increases.

What has been done

Poor food handling practices, poor personal hygiene, not preparing and storing foods correctly, and engaging in habits that promote cross-contamination can increase the risk for foodborne illness. The food handler course is a 2-hour course that focuses on the basics of food safety to address those issues.

Results

During 2010, 1774 individuals completed the program in a group setting. Analysis of pre and post tests show that participant knowledge upon entry to the program was 66 (answered 66% of the questions correctly). After the program ended, mean knowledge score had significantly risen to 86%.

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Government Regulations
- Competing Public priorities
- Other (sample size for the follow-up survey)

Brief Explanation

Although we met nearly all of our goals, the sample size for our 30-day followup survey was much lower than anticipated, which makes it difficult to demonstrate meaningful results. The expense of conducting the survey is outweighing the responses that we are getting so in 2011 we will be exploring other alternatives to conduct the follow-up survey. We could utilize a survey to assess participants' intent to change their behavior but having the follow-up survey and actually asking them if they have changed their behavior is more meaningful.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- Other (pass rate on CFM exam)

Evaluation Results

For the Certified Food Manager program, we contacted participants 30 days after they completed the program and used a retrospective post survey to assess the extent to which targeted behaviors were being followed.

During 2010, 1145 individuals completed the Certified Food Manager (CFM) program. An additional 2662 individuals completed the food handler program (1774 completed the program via group methods; 888 completed the program on-line). For individuals completing the CFM program, more than 80% passed the exam. Analysis of the follow-up survey data (completed by 268 participants) suggests marked improvements in targeted behaviors that can reduce the risk for foodborne illness. For example, when asked how often they date marked potentially hazardous, ready-to-eat (RTE) foods, 56% of those responding (n=170) said they did so "always" before completing the CFM program. Thirty-days later, 91% of those who responded to the question reported doing so "always." Less than half of the participants (42.5%) reported "never" touching ready-to-eat foods with their bare hands; 30-days later that percentage had risen to 60%. Additional evaluation results are noted in the State Defined Outcomes section of the report.

For the food handler program, participants are asked to complete and pre- and post-test which allows us to assess change in knowledge. For the 1774 individuals who completed the program in a group setting, mean knowledge score rose from 66 (pre) to 86 (post).

Key Items of Evaluation

Key evaluation items with respect to the improvement in targeted food safety practices are noted in the State Defined Outcomes section. **Certified Food Manager program:** For individuals who completed our 30-day follow-up survey (n=268) there were noted increases in the percentage of individuals who used a food thermometer to check the doneness of food, used the 2-stage cooling method to cool foods to 41 degrees or lower, and washed their hands with soap and water. The number of participants who reported showing other employees the proper way to wash hands also increased (up from 109 pre to 158 30-days later).