



Impact of a Food Safety Program

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PROGRAM

In Philadelphia, many non profit organizations (e.g., Health Promotion Council, Penn State Cooperative Extension, Archdiocese of Philadelphia, the Greater Philadelphia Food Bank, and Philabundance) work to provide ServSafe certification courses for food handlers working in nontraditional food service settings such as soup kitchens and pantries, homeless shelters, school settings, and community living arrangements.

PROBLEM

Although these organizations feel capable of teaching food safety via ServSafe, *they lack the tools to measure specific impact in regard to safe food handling practices and have no current methods for monitoring participants who successfully complete their food safety programs.* There are no methods in place to measure whether, as a result of attending these programs, these graduates apply the principles and change food handling behaviors.

The question arises, can these food handlers carry out the recommendations they learned in the course, given several factors in their environment:

- managers in nonprofit organizations and restaurant owners typically control the resources of the kitchen
- managers in nonprofit organizations and restaurant owners may not know where to purchase safety equipment
- managers in nonprofit organizations and restaurant owners may believe that food safety concerns are not all that important

In other words, are the expectations for impact realistic given the limited control the food handlers have over their work environment?

PROGRAM OBJECTIVES

As a result of participating in ServSafe, participants will:

- Take food temperatures throughout the flow of food
- Log food temperatures throughout the flow of food
- Use proper hand washing techniques observed
- Prevent cross contamination between meats and ready to eat food such as raw fruits and vegetables
- Record refrigerator and freezer temperatures
- Use FIFO and rotate food stock



EVALUATION OBJECTIVES

This study had three overall objectives:

1. Measure the effectiveness of the ServSafe Certification Courses taught to food handlers, cooks, and food service workers in both traditional and non-traditional food service environments.
2. Compile the barriers that food handlers face in attempting to apply principles and to change food handling behaviors.
3. Use the results to:
 - a. Provide feedback for each non-profit agency to assess needs, teaching methods, and program activities. Encourage Servsafe county extension educators to make revisions and adjustments in their courses.
 - b. Work closely with the Philadelphia Department of Health's Office of Food Protection to identify significant food safety concerns for each agency, and potential areas for food borne outbreaks.

EVALUATION STRATEGY

An evaluation strategy involves decisions about what to evaluate, how to collect the data, who to sample, and when to evaluate.

What to evaluate. We evaluated the degree to which the recommended behaviors stated in the program objectives above were adopted in the kitchens in which the participants worked. We observed the program participants and kitchen staff available on the day of the visit. We also identified the barriers that the food handlers faced in applying the principles of safe food handling. Thus, what we evaluated was the effect of the program on the entire kitchen environment.

How to collect the data. In choosing observation as the data collection method, our rationale was both methodological and programmatic. We also had reasons for avoiding other methods.

- We expected that site visits of the actual kitchens of the food handlers would yield a clearer insight than a survey into how the Servsafe course translated into behavior change and the barriers to that change.
- We lacked confidence that a typical self-report follow-up survey from the food handlers would provide valid data. Such a survey is open to social desirability bias (wanting to look good), and researcher bias (wanting to please the instructor).
- We expected that site visits would not create the respondent burden associated with surveys and that the visits would be easy to conduct, although time consuming for the extension educator.
- We expected that the site observation visit would become a learning experience for the food handlers. The visit would give the food handlers an opportunity to ask questions about how to apply the principles of the course in their specific location.
- We expected to differentiate between organizations that utilize proper food handling behaviors in their kitchens and those that do not. Experience has demonstrated that management often holds the key to whether or not safety behaviors are reinforced.
- We expected that the site visit using observation as the data collection method, would become a learning experience for county educators.

To document the observation in an unbiased way and to gather information that could be summarized across agencies, we developed an observation checklist. Specificity was key in defining both the items to be observed and the answer categories for the rating scale. The more specific the items and answer categories, the less open they are to interpretation by the observer.



For more information on this issue, see Tipsheet 37, [Observation: An Underused Method to Collect Data](#).

We field tested the observation checklist in nonprofit kitchens and refined it. The observation checklist and coding sheet are at the end of this article.

Who to sample. Given the time required to conduct site visits, this study utilized purposive sampling. We used the following criteria to select nine sites across nine agencies. Agencies had to:

- have had a food handler who had received their Servsafe certificate from a recent (February) course
- be responsible for preparing and/or serving food (not all participants prepared food regularly)
- provide only one of their sites for observation (many agencies sent food handlers from many sites)

When to evaluate. We looked for changes in food service behaviors one month after the program, the rationale being that such a period would provide sufficient time for the food handlers to adopt the recommendations from the course. The period was short enough for the food handlers to still recognize the county extension educator and feel free to ask questions about how to apply some of the recommended principles from the course to the idiosyncrasies of the particular kitchen site, a form of reinforcement and support for the food handlers. The period was also short enough so that the participants in the course would still be likely to be working at the site; turnover among food handlers is great.

We found that when using the checklist to observe food safety behaviors in a kitchen, that, it is more beneficial if at all possible, to schedule the visit during meal preparation time.

RESULTS

The county educator observed a wide range of kitchen sites one month following the program.

- Some sites reflected that the main impact of the training was to assist those in the kitchen in fine tuning their safety practices.
- Other sites reflected poor safeguards for safety, and if any impact was felt at these sites, it was in basic issues such as organization of storage areas, separation of food items from kitchen cleaners and pesticides, and adoption of new storage units or shelves.

The observation revealed that the kitchens that are sending food service workers to the course reflect training needs that span a wide continuum. Although all sites appear to have been impacted by the training, some sites are in the very early stages of awareness on the issue of safety.

The observation process itself has been very helpful to the county educator in terms of familiarizing him with the very real hurdles these kitchen workers must address. The county educator has already considered how to deal with the various stages of awareness among the food handlers as well as the many ways to make the trainings more hands-on. For example, the county educator will have the participant complete the observation checklist as an activity at the end of the course. The process of completing the checklist will assist the participant in preparing for the visit from the observer and establish baseline data to measure changes in the kitchen.



OBSERVER: Ask the program participant to come along and observe the items on the checklist with you. In order to create a list of barriers, do the following: If any answer in the checklist is "NO," *diplomatically* ask the program participant why the behavior is not being done.

Food Safety Observation Checklist

Name of site: _____ Date: _____
Number of staff observed: _____ Start time of visit: _____
Number of staff ServSafe certified: _____ End time of visit: _____
Length of time for observation: _____ Dates of certifications: _____

TAKE FOOD TEMPERATURES THROUGHOUT THE FLOW OF FOOD

Thermometers are available to food handlers, in pockets or at stations. (circle number)

1. YES
2. NO → If NO, ask...

Food handlers are observed taking food temperatures at various points in the flow of food. (circle number)

1. YES
2. NO → If NO, ask...

If yes, at which point throughout the flow of food were food handlers observed taking food temperatures? (circle all that apply)

1. RECEIVING
2. STORAGE
3. PREPARATION
4. COOKING
5. HOLDING (AFTER COOKING)
6. PRIOR TO SERVING
7. COOLING
8. REHEATING

LOG FOOD TEMPERATURES THROUGHOUT THE FLOW OF FOOD

Logs are observed at or near work stations, current recordings are noted. (circle number)

1. YES
2. NO → If NO, ask...

Food handlers are observed logging food temperatures. (circle number)

1. YES
2. NO → If NO, ask...

If yes, at which point throughout the flow of food were food handlers observed logging food temperatures? (circle all that apply)

1. RECEIVING
2. STORAGE
3. PREPARATION
4. COOKING
5. HOLDING (AFTER COOKING)
6. PRIOR TO SERVING
7. COOLING
8. REHEATING



USE PROPER HAND WASHING TECHNIQUES OBSERVED

Hand washing station properly stocked with soap, warm water, single-use towels, trash can, and posted hand washing sign. (all 5 items) (circle number)

1. YES
2. NO → *If NO, ask...*

Food handlers are observed washing hands for at least 20 seconds with warm water and soap. (circle number)

1. YES
2. NO → *If NO, ask...*

If yes, check which task preceded proper hand washing? (circle all that apply)

1. AFTER TOUCHING RAW PHF
2. IN BETWEEN CHANGING TASKS
3. AFTER EATING
4. AFTER SMOKING
5. AFTER SNEEZING, COUGHING, SCRATCHING BODY, OR TOUCHING SORES, CUTS, OR SKIN INFECTIONS
6. AFTER EMPTYING GARBAGE
7. AFTER USING REST ROOM

PREVENT CROSS CONTAMINATION BETWEEN MEATS AND READY TO EAT FOODS SUCH AS RAW FRUITS AND VEGETABLES

Separate cutting boards, separate cookware, gloves, and/or sanitizing equipment are available for use. (circle number)

1. YES
2. NO → *If NO, ask...*

Food handler(s) are observed using proper methods to prevent cross contamination. (see list below) (circle number)

1. YES
2. NO → *If NO, ask...*

If food handlers are observed using proper methods to prevent cross contamination, which method was observed? (circle all that apply)

1. USE OF SEPARATELY LABELED OR COLOR CODED CUTTING BOARDS
2. USE OF SEPARATE COOKWARE FOR PHF'S AND RAW FRUITS AND VEGETABLES
3. CHANGES DISPOSABLE GLOVES IN BETWEEN TASKS
4. WASHES HANDS BEFORE AND AFTER, WHEN WORKING WITH RAW FOODS
5. CLEANS AND SANITIZES FOOD CONTACT SURFACES THAT TOUCH CONTAMINATED FOOD BEFORE THEY COME IN CONTACT WITH COOKED OR READY TO EAT FOOD (TABLETOPS, EQUIPMENT, AND UTENSILS)
6. STORES RAW OR CONTAMINATED FOOD BELOW COOKED OR READY-TO-EAT FOODS TO PREVENT FOOD FROM TOUCHING OR DRIPPING FLUIDS



RECORD REFRIGERATOR AND FREEZER TEMPERATURES

Refrigerator temperatures are recorded daily. (circle number)

1. YES
2. NO → If NO, ask...

Freezer temperatures are recorded daily. (circle number)

1. YES
2. NO → If NO, ask...

USE FIFO AND ROTATE FOOD STOCK

PHF's are properly labeled, dated, and rotated (all 3 items). (circle number)

1. YES
2. NO → If NO, ask...

Food handler(s) are observed properly labeling, dating and rotating PHF's. (circle number)

1. YES
2. NO → If NO, ask...

If yes, which task was observed? (circle all that apply)

1. PHF'S LABELED (NAME OF PRODUCT)
2. PHF'S DATED
3. PHF'S ROTATED PROPERLY (FIRST IN, FIRST OUT)

At the end of the observation visit, ask the program participant:

Did you get a chance to tell most of the other food handlers in the kitchen about what you learned in the course? (circle number)

1. NO, not yet
2. YES

What topics did you discuss?

Did you get a chance to tell the kitchen manager about what you learned in the course? (circle number)

1. NO, not yet
2. YES

What topics did you discuss?



Food Safety Observation Checklist Coding Sheet

Name of site: _____
Number of staff observed: _____
Number of staff ServSafe certified: _____
Length of time for observation: _____

Date: _____
Start time of visit: _____
End time of visit: _____
Dates of certifications: _____

TAKE FOOD TEMPERATURES THROUGHOUT THE FLOW OF FOOD

YES = Thermometers **are** available to food handlers, in pockets or at stations. _____
NO = Thermometers are **not** available to food handlers, in pockets or at stations.

1. Staff observed taking food temperatures at 2 or more points in the flow of food.
2. Staff observed taking food temperatures at 1 point in the flow of food.
3. Thermometers are available to food handler(s), in pockets or at stations, no use observed.
4. No thermometers or use thereof observed. _____

COMPILE BARRIERS

TAKE FOOD TEMPERATURES THROUGHOUT THE FLOW OF FOOD

YES = Thermometers **are** available to food handlers, in pockets or at stations. _____
NO = Thermometers are **not** available to food handlers, in pockets or at stations.

1. Staff observed taking food temperatures at 2 or more points in the flow of food.
2. Staff observed taking food temperatures at 1 point in the flow of food.
3. Thermometers are available to food handler(s), in pockets or at stations, no use observed.
4. No thermometers or use thereof observed. _____

COMPILE BARRIERS



Food Safety Observation Checklist Coding Sheet

PROPER HAND WASHING TECHNIQUES OBSERVED

YES = Hand washing station properly stocked with soap, warm water, single use towel, trash can, and posted hand washing sign (all 5 items).

NO = Hand washing station not properly stocked. _____

1. Staff observed properly washing hands after 2 or more of the tasks listed above.
2. Staff observed properly washing hands after 1 of the tasks listed above.
3. Hand washing station properly stocked with soap, warm water, single use towel, trash can, and posted hand washing sign, hand washing not observed.
4. No hand washing station available, food handlers not observed washing hands. _____

COMPILE BARRIERS

PREVENT CROSS CONTAMINATION BETWEEN MEATS AND READY-TO-EAT FOODS SUCH AS RAW FRUITS AND VEGETABLES

YES = Separate cutting boards, separate cookware, gloves, and/or sanitizing equipment are available for use.

NO = Separate cutting boards, separate cookware, gloves, and/or sanitizing equipment not available for use. _____

1. Staff observed using 2 or more methods for preventing cross contamination.
2. Staff observed using 1 method for preventing cross contamination.
3. Separate cutting boards, separate cookware, gloves, and/or sanitizing equipment available for use, no use observed.
4. No methods for preventing cross contamination observed or noted. _____

COMPILE BARRIERS



Food Safety Observation Checklist Coding Sheet

RECORD REFRIGERATOR TEMPERATURES

Refrigerator temperatures are recorded daily.

YES = Refrigerator logs are observed at site and recent recordings are noted.

NO = No refrigerator logs are recorded. _____

1. Staff are observed recording refrigerator temperatures.
2. Refrigerator logs are observed at the site, recent recordings are noted.
3. No logs or logging of refrigerator temperatures are observed. _____

COMPILE BARRIERS

RECORD FREEZER TEMPERATURES

Freezer temperatures are recorded daily.

YES = Freezer logs are observed at site and recent recordings are noted.

NO = No freezer logs are recorded. _____

1. Staff are observed recording freezer temperatures.
2. Freezer logs are observed at the site, recent recordings are noted.
3. No logs or logging of freezer temperatures are observed. _____

COMPILE BARRIERS

USE FIFO AND ROTATE FOOD STOCK

YES = PHF's **are** properly labeled, dated, and rotated (all 3 items).

NO = PHF's are **not** properly labeled, dated, and rotated _____

1. Staff observed using 2 or more methods for rotating stock or using FIFO.
2. Staff observed using 1 method for rotating stock or using FIFO.
3. PHF's were shown to be properly labeled, dated, and rotated.
4. No methods for rotating stock or using FIFO observed or noted.

COMPILE BARRIERS

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