Conference for Food Protection - Committee FINAL Report

Template approved: 08/14/2013
Committee Final Reports are considered DRAFT until deliberated and acknowledged by the assigned Council at the Biennial Meeting

COMMITTEE NAME: Employee Food Safety Training Committee

COUNCIL or EXECUTIVE BOARD ASSIGNMENT: Council II

DATE OF REPORT: January 15, 2016

SUBMITTED BY: Ben Chapman and Chuck Catlin

COMMITTEE CHARGE(s): Created by Council II at the 2014 biannual meeting, in response to issue 011, the Employee Food Safety Training Committee was given the following charges:
1. Make recommendations to the Conference for Food Protection in regard to:
   a. What a food employee should know about food safety, prioritized by risk.
   b. A guidance document to include recommendations for appropriate operator, regulator, and/or third-party food safety training program(s); including the criteria for the program and learning objectives.
2. Report Committee recommendations to the 2016 Conference for Food Protection Biennial Meeting.

COMMITTEE ACTIVITIES AND RECOMMENDATIONS:
1. Progress on Overall Committee Activities:
   a. December 2014 kick off for charges and initial discussions
   b. March 18, 2015, Face-to-face meeting Chicago

We divided our members into three subcommittees so that each could dig deeply into the subject matter to review and compile information to help make decisions on what to include in our final committee recommendations.

Subcommittee 1 - Industry non-regulatory delivery of food handler training

Subcommittee 1 focused on the main sources of information from existing programs that the retail and food service industry have implemented. Pertinent questions to answer included:

- What is common between the programs (content, practices, approach)?
- What is unique about any of the programs?
- Are there particular emphases?
- Delivery modes?
- Evaluation?
Conference for Food Protection - Committee FINAL Report

Subcommittee 2 - Review current state requirements and local (e.g., CA, IL, FL)

Subcommittee 2 focused on the main sources of information will be gleaned from states that currently require some sort of food handler training. Pertinent questions to answer included:

- What is common between the programs (content, practices, approach)?
- What is unique about any of the programs?
- Are there particular emphases?
- Lessons learned from the process (where did the programs/requirements start, where did they end up? what were the sticky points)?
- Delivery modes?

Subcommittee 3 - FDA Risk Factor related employee activities and research

Subcommittee 3 focused on reviewing and analyzing existing sources of data. These included:

- FDA Retail Risk Factor Study results.  
  (http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/FoodborneIllnessRiskFactorReduction/ucm230313.htm)
- Information gleaned from the 2013 Food Code that relates to food handlers.
- Peer reviewed literature and other pertinent research on food handler practices and behaviors.

c. Sub committees met three times via call and one time as a whole group in person (minutes available in attachments).
   June 17, 2015 Phone
   July 27, 2015, in Portland concurrent with IAFP (in person)
   August 12, 2015 Phone
   October 2, 2015 Phone

d. Also produced was a comparison of risk factor compliance issues taken from FDA’s Risk Factor Studies. This information was used to ensure the risk-based nature of the committee’s decision making, as well as provide a framework for charge #2 (A guidance document to include recommendations for appropriate operator, regulator, and/or third-party food safety training program(s); including the criteria for the program and learning objectives) to be carried out in future years. The document is entitled, FDA Risk Factor Study 1998, 2003 and 2008 comparison. In addition, the subcommittee compiled a list of relevant literature related to evaluating food employee training materials, entitled, Literature on evaluating food employee training programs (attached)

e. Through reviewing the outputs from each of the subcommittees, in mid-October 2015, a draft of a compiled list of what a food employee should know about food safety was distributed to the entire committee for review, (attached, entitled, CFP Food Employee Training Committee Training Component Draft)

f. On November 6, 2015, a call was held to discuss the compiled matrix. Quorum was not met so a vote was conducted via email. Attached final document, entitled, Employee Food Safety Training Topics detailing consensus-reached topics (two ‘no’ votes). This
Committee Final Reports are considered DRAFT until deliberated and acknowledged by the assigned Council at the Biennial Meeting. The document is a first-step tool for the committee to use to complete the charge provided by the Council. It is not meant to be adopted for any official action but provides a framework going forward if the Council wishes the committee to complete the charges.

2. Recommendations for consideration by Council:
   a. Future of the committee: Re-create the Committee through 2018

CFP ISSUES TO BE SUBMITTED BY COMMITTEE:

1. Acknowledge the committee report, thank the committee members, and re-create the committee for the 2016-2018 biennium with the following charges:
   a. What a food employee should know about food safety, prioritized by risk.
   b. A guidance document to include recommendations for appropriate operator, regulator, and/or third-party food safety training program(s); including the criteria for the program and learning objectives.

Report Committee recommendations to the 2018 Conference for Food Protection Biennial Meeting.

COMMITTEE MEMBER ROSTER (attached):
<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Position (Chair/Member)</th>
<th>Constituency</th>
<th>Employer</th>
<th>City</th>
<th>State</th>
<th>Telephone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atkins</td>
<td>Hugh</td>
<td>member</td>
<td>State Regulator</td>
<td>TN Department of Health</td>
<td>Nashville</td>
<td>TN</td>
<td>(615) 741-5535</td>
<td><a href="mailto:hugo.atkins@tn.gov">hugo.atkins@tn.gov</a></td>
</tr>
<tr>
<td>Bhatt</td>
<td>Chirag</td>
<td>member</td>
<td>Food Service Industry</td>
<td>Bloom Branded, Inc</td>
<td>Tempe</td>
<td>FL</td>
<td>(613) 692-0641</td>
<td><a href="mailto:Chirag.Bhatt@BloomBrands.com">Chirag.Bhatt@BloomBrands.com</a></td>
</tr>
<tr>
<td>Callin</td>
<td>Chuck</td>
<td>Co-chair</td>
<td>Support</td>
<td>Food Safety RX</td>
<td>Mountain View</td>
<td>CA</td>
<td>(602) 769-1418</td>
<td><a href="mailto:callin@google.com">callin@google.com</a></td>
</tr>
<tr>
<td>Chapman</td>
<td>Ben</td>
<td>Co-chair</td>
<td>Academia</td>
<td>North Carolina State University</td>
<td>Raleigh</td>
<td>NC</td>
<td>(919) 809-3205</td>
<td><a href="mailto:benjamin.chapman@ncsu.edu">benjamin.chapman@ncsu.edu</a></td>
</tr>
<tr>
<td>Eisenbeiser</td>
<td>Ashley</td>
<td>member</td>
<td>Retail Food Industry</td>
<td>Food Marketing Institute</td>
<td>Arlington</td>
<td>VA</td>
<td>(202) 220-6689</td>
<td><a href="mailto:aeisenbeiser@fmi.org">aeisenbeiser@fmi.org</a></td>
</tr>
<tr>
<td>Feazel</td>
<td>Sue Ann</td>
<td>member</td>
<td>Food Industry Support</td>
<td>National Registry of Food Safety Professionals</td>
<td>Orlando</td>
<td>FL</td>
<td>(800) 446-0257</td>
<td><a href="mailto:sfeazel@nrfsp.com">sfeazel@nrfsp.com</a></td>
</tr>
<tr>
<td>Graham</td>
<td>Jie</td>
<td>member</td>
<td>State Regulator</td>
<td>WA State Department of Health</td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:jeie.graham@DOH.WA.GOV">jeie.graham@DOH.WA.GOV</a></td>
</tr>
<tr>
<td>Green</td>
<td>Elizabeth</td>
<td>member</td>
<td>Local Regulator</td>
<td>KAV Coalition</td>
<td>Washington</td>
<td>DC</td>
<td>(002) 223-6303</td>
<td><a href="mailto:elizabeth.s.green@wv.gov">elizabeth.s.green@wv.gov</a></td>
</tr>
<tr>
<td>Groeters</td>
<td>Susan</td>
<td>member</td>
<td>Consumer</td>
<td>Lincoln-Lancaster County Health Department</td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:susangroeters@gmail.com">susangroeters@gmail.com</a></td>
</tr>
<tr>
<td>Jensen</td>
<td>Joyce</td>
<td>member</td>
<td>Local Regulator</td>
<td>Lincoln-Lancaster County Health Department</td>
<td>Lincoln</td>
<td>NE</td>
<td>(022) 441-8033</td>
<td><a href="mailto:jensen@lincoln.ne.gov">jensen@lincoln.ne.gov</a></td>
</tr>
<tr>
<td>King</td>
<td>Hal</td>
<td>Member</td>
<td>Food Service Industry</td>
<td>Chick-fil-A Inc.</td>
<td>Atlanta</td>
<td>GA</td>
<td>(404) 765-2508</td>
<td><a href="mailto:hal.king@chick-fil-a.com">hal.king@chick-fil-a.com</a></td>
</tr>
<tr>
<td>Lang</td>
<td>Jeffrey</td>
<td>member</td>
<td>Local Regulator</td>
<td>Lane County Environmental Health</td>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:jeffrey.lang@co.lane.or.us">jeffrey.lang@co.lane.or.us</a></td>
</tr>
<tr>
<td>Lee</td>
<td>Aimee</td>
<td>member</td>
<td>Retail Food Industry</td>
<td>Publix Super Markets Inc.</td>
<td>Charlotte</td>
<td>NC</td>
<td>(704) 424-5017</td>
<td><a href="mailto:aimee_lee@publix.com">aimee_lee@publix.com</a></td>
</tr>
<tr>
<td>Lueb kemann</td>
<td>Geoff</td>
<td>member</td>
<td>Food Service Industry</td>
<td>Florida Restaurant and Lodging Association</td>
<td>Tallahassee</td>
<td>FL</td>
<td>(850) 224-2350</td>
<td><a href="mailto:gleubkemman@flra.org">gleubkemman@flra.org</a></td>
</tr>
<tr>
<td>Name</td>
<td>Monique</td>
<td>Laura</td>
<td>Ken</td>
<td>Christina</td>
<td>Alan</td>
<td>William</td>
<td>Eric</td>
<td>Stephen</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>-------</td>
<td>-----</td>
<td>-----------</td>
<td>------</td>
<td>---------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>Local Regulator</td>
<td>Food Industry Support</td>
<td>Retail Food Industry</td>
<td>Food Service Industry</td>
<td>State Regulator</td>
<td>Food Service Industry</td>
<td>CDC Advisor (non-voting member)</td>
<td>FDA member consultant</td>
<td>Alternate</td>
</tr>
<tr>
<td>Mesa County Health Department</td>
<td>Alchemy Systems</td>
<td>Jewel-Osco</td>
<td>Taco Bell (Yum!</td>
<td>Maryland State Department of Health</td>
<td>National Restaurant Association</td>
<td>Advisory</td>
<td>FDA</td>
<td>FDA</td>
</tr>
<tr>
<td>Grand Junction</td>
<td>Austin</td>
<td>Itasca</td>
<td>Irvine</td>
<td>Baltimore</td>
<td>Chicago</td>
<td>CDC</td>
<td>College Park</td>
<td>Atlanta</td>
</tr>
<tr>
<td>CO</td>
<td>TX</td>
<td>IL</td>
<td>CA</td>
<td>MD</td>
<td>IL</td>
<td>MD</td>
<td>MD</td>
<td>GA</td>
</tr>
<tr>
<td>Phone</td>
<td>(312) 637-5100</td>
<td>(630) 948-6787</td>
<td>(848) 603-4327</td>
<td>(410) 707-8447</td>
<td>(312) 715-5388</td>
<td>(404) 488-3438</td>
<td>(240) 402-2833</td>
<td>(404) 253-1267</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:monique.mull@mesacounty.us">monique.mull@mesacounty.us</a></td>
<td><a href="mailto:ken.rosenwinkel@jewelosco.com">ken.rosenwinkel@jewelosco.com</a></td>
<td><a href="mailto:christina.galegoux@tacobell.com">christina.galegoux@tacobell.com</a></td>
<td><a href="mailto:allen.taylor@maryland.gov">allen.taylor@maryland.gov</a></td>
<td><a href="mailto:wweichelt@restaurant.org">wweichelt@restaurant.org</a></td>
<td><a href="mailto:EColeman@cdc.gov">EColeman@cdc.gov</a></td>
<td><a href="mailto:stephen.hughes@hhs.gov">stephen.hughes@hhs.gov</a></td>
<td><a href="mailto:alan.tart@hhs.gov">alan.tart@hhs.gov</a></td>
</tr>
</tbody>
</table>

New Voting Members:
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Industry</th>
<th>Company/Institute</th>
<th>City</th>
<th>State</th>
<th>Area Code</th>
<th>Number</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costa</td>
<td>Cynthia</td>
<td>Non-voting member</td>
<td>State Regulator</td>
<td>Hartford</td>
<td>CT</td>
<td>(860) 509-7297</td>
<td><a href="mailto:cynthia.costas@ct.gov">cynthia.costas@ct.gov</a></td>
<td></td>
</tr>
<tr>
<td>Destaurers</td>
<td>Susan</td>
<td>Non-voting member</td>
<td>Retail Food Industry</td>
<td>Springfield</td>
<td>MA</td>
<td>(413) 504-4452</td>
<td><a href="mailto:destaurers@bby.com">destaurers@bby.com</a></td>
<td></td>
</tr>
<tr>
<td>Eckhardt</td>
<td>Christina</td>
<td>Non-voting member</td>
<td>Food Industry Support</td>
<td>Aramark</td>
<td>PA</td>
<td>(267) 938-4894</td>
<td><a href="mailto:eckhardt-christina@aramark.com">eckhardt-christina@aramark.com</a></td>
<td></td>
</tr>
<tr>
<td>Eisenbeiser</td>
<td>Ashley</td>
<td>Non-voting member</td>
<td>Retail Food Industry</td>
<td>Food Marketing Institute</td>
<td>VA</td>
<td>(202) 230-0559</td>
<td><a href="mailto:eisenbeiser@lmsu.org">eisenbeiser@lmsu.org</a></td>
<td></td>
</tr>
<tr>
<td>Eisenberg</td>
<td>Miriam</td>
<td>Non-voting member</td>
<td>Food Industry Support</td>
<td>Ecosure, A Division of EcoLab</td>
<td>IL</td>
<td>(617) 597-9546</td>
<td><a href="mailto:miriam.eisenberg@ecolab.com">miriam.eisenberg@ecolab.com</a></td>
<td></td>
</tr>
<tr>
<td>Espinosa</td>
<td>Albert</td>
<td>Non-voting member</td>
<td>Retail Food Industry</td>
<td>FEI</td>
<td>TX</td>
<td>(210) 884-5763</td>
<td><a href="mailto:espinosa.albert@hotmail.com">espinosa.albert@hotmail.com</a></td>
<td></td>
</tr>
<tr>
<td>Foxett</td>
<td>Emilee</td>
<td>Non-voting member</td>
<td>Food Industry Support</td>
<td>StateFoodSafety.com</td>
<td>UT</td>
<td>(801) 865-4576</td>
<td><a href="mailto:fcliett@statefoodsafty.com">fcliett@statefoodsafty.com</a></td>
<td></td>
</tr>
<tr>
<td>Kim</td>
<td>James</td>
<td>Non-voting member</td>
<td>Food Industry Support</td>
<td>Premier Food Safety</td>
<td>CA</td>
<td>(714) 461-0076</td>
<td><a href="mailto:james@premierfoodsafty.com">james@premierfoodsafty.com</a></td>
<td></td>
</tr>
<tr>
<td>Lewis</td>
<td>Christie H.</td>
<td>Non-voting member</td>
<td>Food Industry Support</td>
<td>StateFoodSafety.com</td>
<td>UT</td>
<td>(801) 865-1872</td>
<td><a href="mailto:ch@statefoodsafty.com">ch@statefoodsafty.com</a></td>
<td></td>
</tr>
<tr>
<td>Maeston</td>
<td>Jordan</td>
<td>Non-voting member</td>
<td>Food Industry Support</td>
<td>Safer Dining LLC</td>
<td>FL</td>
<td>(727) 422-7362</td>
<td><a href="mailto:Jordan@SaferDining.com">Jordan@SaferDining.com</a></td>
<td></td>
</tr>
<tr>
<td>McMahon</td>
<td>Thomas</td>
<td>Non-voting member</td>
<td>Food Retail Industry</td>
<td>Meijer</td>
<td>MI</td>
<td>(616) 249-6235</td>
<td><a href="mailto:thomas.mcmahon@meijer.com">thomas.mcmahon@meijer.com</a></td>
<td></td>
</tr>
<tr>
<td>Nakamura</td>
<td>George</td>
<td>Non-voting member</td>
<td>Food Industry Support</td>
<td>StateFoodSafety.com</td>
<td>UT</td>
<td>(801) 494-1879</td>
<td><a href="mailto:gminka@comcast.net">gminka@comcast.net</a></td>
<td></td>
</tr>
<tr>
<td>Turner</td>
<td>Brian</td>
<td>Non-voting member</td>
<td>Food Service Industry</td>
<td>Sodexo</td>
<td>IL</td>
<td>(647) 882-5572</td>
<td><a href="mailto:brian.turner@sodexo.com">brian.turner@sodexo.com</a></td>
<td></td>
</tr>
<tr>
<td>Tyjewski</td>
<td>Susan</td>
<td>Non-voting member</td>
<td>Food Service Industry</td>
<td>GKE Restaurants Holdings, Inc.</td>
<td>CA</td>
<td>(714) 254-4502</td>
<td><a href="mailto:tyjewski@cdr.com">tyjewski@cdr.com</a></td>
<td></td>
</tr>
</tbody>
</table>
Literature on evaluating food handler training programs:

Studies of training programs

- ServSafe programs
    - Abstract: The number of foodborne illnesses traced to improper food handling in restaurants indicates a need for research to improve food safety in these establishments. Therefore, this 2-year longitudinal study investigated the effectiveness of traditional ServSafe (National Restaurant Association Educational Foundation, Chicago, IL) food-safety training and a Theory of Planned Behavior intervention program targeting employees' perceived barriers and attitudes toward important food-safety behaviors. The effectiveness of the training and intervention was measured by knowledge scores and observed behavioral compliance rates related to food-safety practices. Employees were observed for handwashing, thermometer usage, and proper handling of work surfaces at baseline, after receiving ServSafe training, and again after exposure to the intervention targeting barriers and negative attitudes about food-safety practices. Repeated-measures analyses of variance indicated training improved handwashing knowledge, but the intervention was necessary to improve overall behavioral compliance and handwashing compliance. Results suggest that registered dietitians; dietetic technicians, registered; and foodservice managers should implement a combination of training and intervention to improve knowledge and compliance with food-safety behaviors, rather than relying on training alone. Challenges encountered while conducting this research are discussed, and recommendations are provided for researchers interested in conducting this type of research in the future.

- Roberts et al., 2008: https://krex.k-state.edu/dspace/bitstream/handle/2097/806/RobertsFPTApr2008.pdf;jsessionid=EBCE1BAFFD47F3A77D6DE777F3D36203?sequence=1
  - Abstract: Statistics show that 59% of foodborne illnesses are traced to restaurant operations. Food safety training has been identified as a way to assure public health, yet evidence supporting the effectiveness of training has been inconclusive. A systematic random sample of 31 restaurants in three midwestern states was selected to assess the effect of training on food safety knowledge and behavior. A total of 402 employees (242 pretraining and 160 post-training)
participated in this study. Pre and post-training assessments were conducted on knowledge and behavior related to three key food safety practices: cross contamination, poor personal hygiene, and time/temperature abuse. Overall knowledge (P ≥ .05) and compliance with standards of behavior (P ≥ .001) improved significantly between pre- and post-training. When each practice was examined independently, only handwashing knowledge (P ≥ .001) and behavior (P ≥ .001) significantly improved. Results indicated that training can improve knowledge and behaviors, but knowledge alone does not always improve behaviors.

- Non-ServSafe or multi-program studies
  - Ehiri, Morris, and McEwen, 1997:
    - Abstract: This paper reports the findings of a study which investigated the effectiveness of a food hygiene training course in Scotland, and discusses the implications these may have for food safety control in the UK and elsewhere. One hundred and eighty-eight individuals who undertook the elementary food hygiene training course of the Royal Environmental Health Institute of Scotland (REHIS), and a comparison group comprising two hundred and four employees of a City Council were surveyed by means of a structured self-completion questionnaire. Food hygiene knowledge, attitudes and opinions of the course participants were assessed before and after training, and compared with those of the comparison group. The training course evaluated by the study is typical of many certificated training courses applied in the food industry. After training, no significant improvements were observed in course participants' pre-course knowledge of a number of crucial aspects of food safety, including food storage, cross contamination, temperature control, and high risk foods. The findings highlight problems likely to arise from reliance on training designs which primarily emphasise the provision of information that seldom translates into positive attitudes and behaviours. This suggests a need for the adoption of approaches which take account of social and environmental influences on food safety, thus, ensuring that food hygiene training is seen, not as an isolated domain which sole purpose is to produce certificated personnel, but as part of an overall infrastructure for effective food safety control.

- Online programs
  - Croker and Liu, 2006 (dissertation):
    - [http://dl.acm.org/citation.cfm?id=1168405](http://dl.acm.org/citation.cfm?id=1168405)
Abstract: The purpose of the study was to identify preferences among foodservice employees for traditional classroom or computer-based training (CBT) based upon age, gender, and educational level; examine how employee preferences toward traditional classroom training or CBT differ in two franchise restaurant types, fast food restaurants and full service restaurants; explore learning preferences among foodservice employees toward using traditional classroom training or CBT; and analyze the possible relationships between age, gender, educational level, type of restaurant, and learning style in the attitudes toward CBT among foodservice employees in Southeastern Idaho. A self-reporting inventory was designed to collect data. Results of this study showed that older employees were less comfortable with CBT than younger employees, females were less comfortable with CBT than males, and employees in full service restaurants were also less comfortable than those in fast food restaurants. Employees with a diverger learning style more often preferred traditional classroom training than CBT. As to the attitudes among foodservice employees toward CBT, the results revealed that female and older employees, employees with lower education levels, employees in full service restaurants and employees with a diverger or an assimilator learning style had more negative attitudes toward CBT in terms of format, presentation, confidence, learning motivation, and usefulness of CBT. These findings might contribute to a better understanding of employee preferences for different training methods, employee attitudes toward CBT and examine CBT usage and programs.


Abstract: Foodborne illness in Canada is an ongoing burden for public health and the economy. Many foodborne illnesses result from improper food handling practices. If food handlers had a greater knowledge of what causes foodborne illness, perhaps these illnesses would have less of an impact on society. This study gave researchers the opportunity to examine the current food safety knowledge of food handlers by using a standardized questionnaire. Questionnaires were distributed by environmental health officers to food handlers working in the food service industry during on-site inspections, and responses were used to evaluate immediate knowledge of key food safety issues. Both certified and noncertified food handlers were evaluated. Information also was collected on the number of years since food safety
certification was achieved and the number of years experience noncertified food handlers had in the food service industry. Results indicated that certified food handlers had a greater knowledge of food safety information than did noncertified food handlers. The highest failure rates were observed among noncertified food handlers with more than 10 years of experience and less than 1 year of experience. The results support the need for mandatory food safety certification for workers in the food service industry and for recertification at least every 10 years. Although the study was not sufficiently rigorous to evaluate existing food safety courses, data collected provided valuable insight into what issues should be emphasized in existing food safety courses and which should be targeted by future food safety initiatives.

  - Abstract: In both their enforcement and training role environmental health officers (EHOs) may influence businesses’ attitudes to hygiene training. A survey was conducted to examine EHOs’ experience and perceptions of the provision and effectiveness of food hygiene training in small food businesses. The results indicate that officers had concerns about the content and the delivery of hygiene courses and about the quality of other hygiene trainers. Officers use the industry guides to advise on training but receive limited guidance on the assessment of hygiene training in the workplace. The checking of training records was considered to be less important than the use of observation and questioning for assessing hygiene training effectiveness. Environmental factors, such as supervisor support and situational aids were judged by officers to be important factors in the implementation of workplace hygiene training. They reported low levels of formal refresher training and active support of training by management.
  - See Methods section for survey details

  - Abstract: This is a systematic review conducted to identify and assess the methodological strategies used in training programmes designed to enhance food safety in food services. Fourteen original articles
were selected from the Scopus, Scielo and Medline digital databases. The topics most dealt with in the educational programmes were personal hygiene, food safety and best practices. The resources most widely used during the training courses were interactive media, audiovisual materials, videos, lectures and recreational activities. In addition to being low cost, hand washing activities yield positive results in food safety. Employee training assessment is carried out by using questionnaires, analytical monitoring, a check list and the Likert scale. Hand washing is the most assessed item. The activities most widely accepted by the employees during training courses are interactive media and hands-on activities. These activities contribute toward the enhancement of employees’ skills and knowledge, and encourage changes in attitude and behaviour.

Studies on evaluation

- Ko, 2010:
  
  o Abstract: This study investigates food safety perceptions and agricultural food handling practices, as well as satisfaction with the work performance of such handlers. Data are collected from 333 food handlers at agricultural food processing companies or restaurants. Data is analyzed by SPSS, with statistical analyses including descriptive statistics, t tests and regression analyses. **Dimensions pertaining to food safety perception and practices include personal sanitation, pre-handling food preparation, food preparation and after food preparation.** The scales of food safety perception during analysis are higher than what are typically found in practice, and some gaps are identified. Analysis results indicate that food preparation and after food preparation dimensions have significantly higher mean values than those associated with pre-food handling and personal sanitation. Regression analysis further demonstrates that satisfaction with work performance can accurately predict food safety perception and practice components. Moreover, their handling practices mediate how perception affects satisfaction with work performance of food handlers.

- Medeiros et al., 2001:
  
  o Abstract: Traditionally, nutrition educators have used a fairly global approach to teach food safety by teaching a broad range of safe food handling behaviors in the expectation that this will lead to the avoidance of foodborne illness. This approach can be confusing and lead to evaluation data that are difficult to interpret. This article suggests that food safety education and evaluation in the future be organized around five behavioral constructs: practice personal
hygiene, cook foods adequately, avoid cross-contamination, keep foods at safe temperatures, and avoid food from unsafe sources. These five constructs are derived from data on actual outbreaks and estimated incidences of foodborne illness. **Research is needed to establish reliable and valid evaluation measures for these five behavioral constructs.** Evaluation instruments can be tailored to fit specific education programs. If evaluation instruments focus on these five behavior areas, the result will be meaningful evaluation data that can be more easily summarized across food safety education programs for consumers.

  - Old study on evaluating the effectiveness of public health programs
### FDA Risk Factor Study 1998, 2003 and 2008 comparison

#### % Out of Compliance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>4.7</td>
<td>2.3</td>
<td>36.2</td>
<td>17.6</td>
<td>17.1</td>
<td>14.6</td>
<td></td>
</tr>
<tr>
<td>Nursing Homes</td>
<td>2.1</td>
<td>9.6</td>
<td>29.2</td>
<td>16.8</td>
<td>16.0</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>Elementary Schools</td>
<td>3.7</td>
<td>1.8</td>
<td>27.5</td>
<td>14.7</td>
<td>14.9</td>
<td>13.4</td>
<td></td>
</tr>
<tr>
<td>Fast Food</td>
<td>2.4</td>
<td>7.4</td>
<td>38.2</td>
<td>17.4</td>
<td>24.2</td>
<td>31.4</td>
<td></td>
</tr>
<tr>
<td>Full Service</td>
<td>12.0</td>
<td>15.4</td>
<td>54.7</td>
<td>35.0</td>
<td>40.9</td>
<td>25.2</td>
<td></td>
</tr>
<tr>
<td>Delis</td>
<td>4.3</td>
<td>9.4</td>
<td>50.8</td>
<td>18.8</td>
<td>20.5</td>
<td>28.4</td>
<td></td>
</tr>
<tr>
<td>Meat &amp; Poultry</td>
<td>2.3</td>
<td>-#</td>
<td>19.9</td>
<td>17.0</td>
<td>6.8</td>
<td>14.1</td>
<td>#low observations</td>
</tr>
<tr>
<td>Seafood</td>
<td>11.4</td>
<td>-#</td>
<td>32.5</td>
<td>13.6</td>
<td>8.9</td>
<td>9.6</td>
<td>#low observations</td>
</tr>
<tr>
<td>Produce</td>
<td>1.5</td>
<td>-#</td>
<td>34.7</td>
<td>16.1</td>
<td>15.1</td>
<td>10.2</td>
<td></td>
</tr>
</tbody>
</table>

The highest percentage out of compliance for all 9 types of facilities that were visited was Improper Holding Time/Temperature.

Study also found all 9 types of facilities did not have adequate written employee health policies. All had greater than 50% out of compliance.
### 1998, 2003 and 2008

Data Items in Need of Priority Attention for Each Risk Factor

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Data Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food from Unsafe Sources</td>
<td>Shellstock tags retained for 90 days;</td>
</tr>
<tr>
<td>Inadequate Cooking</td>
<td>Rapid reheating; poultry, stuffed fish, meat, pasta cooked;</td>
</tr>
<tr>
<td>Improper Holding Time/Temperature</td>
<td>cooling; cold-holding; hot holding; date-marking; discarding of foods;</td>
</tr>
<tr>
<td></td>
<td>time alone used as a public health control;</td>
</tr>
<tr>
<td>Contaminated Equipment/Protection from</td>
<td>Surface/utensils cleaned/sanitized; separation of raw/RTE foods;</td>
</tr>
<tr>
<td>Contamination</td>
<td>protection from contamination; raw animal foods separated</td>
</tr>
<tr>
<td>Poor Personal Hygiene</td>
<td>Proper, adequate handwashing; handsink convenient/accessible;</td>
</tr>
<tr>
<td></td>
<td>good hygienic practices; prevention of contamination of hands; handsink,</td>
</tr>
<tr>
<td></td>
<td>cleaner/drying device;</td>
</tr>
<tr>
<td>Other (Chemical Contamination)</td>
<td>Poisonous or toxic materials properly identified, stored and used</td>
</tr>
</tbody>
</table>
FDA Risk Factor Study

**Recommendations**

<table>
<thead>
<tr>
<th>For Whom</th>
<th>Task</th>
<th>Including</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Managers</td>
<td>Develop and Implement SOPs</td>
<td>Detail monitoring &amp; corrective action for time/temperature control; training should be covered in employee orientation and in refreshers</td>
</tr>
<tr>
<td>Industry Managers</td>
<td>Provide necessary resources, equipment, and supplies</td>
<td>Thermocouples, temperature logs, hand soap &amp; towels, chemical sanitizers, test kit</td>
</tr>
<tr>
<td>Industry Managers</td>
<td>Verify employees are following monitoring procedures</td>
<td>Daily oversight; provide employees with necessary knowledge &amp; skills</td>
</tr>
<tr>
<td>Industry Managers</td>
<td>Identify methods to routinely assess effectiveness of SOPs</td>
<td>Could be based on internal review; regulatory inspections, or third party evaluation; risk factor violations noted during inspections should motivate managers to respond with active managerial control</td>
</tr>
<tr>
<td>Industry Managers</td>
<td>Overall – active managerial control over the risk factors</td>
<td>High out of compliance percentages of data items related to handwashing, bare-hand contact with ready to eat foods, time/temperature control, and contaminated equipment indicate needed improvement in those areas</td>
</tr>
<tr>
<td>Regulatory Programs</td>
<td>Conduct quality, risk-based inspections</td>
<td>Spend more time observation employee practices – handwashing, food handling, cooling of foods, and clean-up procedures; provide inspection tools; consider alternate working schedules to allow inspections at different times – observe cooling when it is occurring</td>
</tr>
<tr>
<td>Regulatory Programs</td>
<td>Providing onsite education and achieving voluntary compliance</td>
<td>Make use of existing training programs; establish open dialogue; obtain immediate corrective action; assist operators with SOPs and risk control plans; develop intervention strategies</td>
</tr>
<tr>
<td>Regulatory Programs</td>
<td>Implementing consistent and effective enforcement protocol</td>
<td>Develop procedures and strategies; look for active managerial control over risk factors; ensure credibility by applying enforcement actions uniformly</td>
</tr>
<tr>
<td>Regulatory Programs</td>
<td>Continuous program improvement</td>
<td>Self-assessment outlined in Program Standards</td>
</tr>
</tbody>
</table>

"...It is important to note that the risk factors and data items in need of priority attention remain the same as in previous data collection periods for each of the facility types. This is an indication that more action is needed by the industry and regulatory bodies."  
FDA Risk Factor Study, page 150
Employee Food Safety Training Committee Meeting Minutes

**Date:** Wednesday, December 17, 2014

**Time:** 3:00 p.m. (EST)

**Facilitator:** Hal King

Introduced himself as Chair and Ben as Vice Chair... Ben is not on the call due to illness.

1. Thanked everyone for agreeing to be a participant on the committee and explained that there is a lot of work to do
2. 19 voting members, Linda Catalan will not participate due to change in job duties
3. 18 participants on the call. Hal allowed the pragmatic system to announce callers.
4. Hal read the Antitrust Statement (conference for Food Protection, Inc.). Wants to be clear that everyone has a copy and understands.
5. Read the Committee Charge
   1. Make recommendations to the Conference for Food Protection in regard to:
      a. What a food employee should know about food safety, prioritized by risk.
      b. A guidance document to include recommendations for appropriate operator, regulator, and/or third-party food safety training program(s); including the criteria for the program and learning objectives.
   2. Report Committee recommendations to the 2016 Conference for Food Protection Biennial Meeting.

   Committee has one year as opposed to two years to complete the charge.
   - Hal stated that he wants to make sure that every voice is heard, and solicits everyone’s input
7. The process of gathering information will allow to “close the gaps” in standards of food safety.
   - Christina . . . likes how process is layed out. Question: What can we gain from the training??
   - William . . . not a regulated thing from gov’t perspective. It is a requirement for food safety training.
   - Chirag . . . understands that the focus is retail food protection and not the manufacturing side.
8. We are only talking about “line” employees. Don’t want miss what we can learn from other sectors. The goal is to make sure that the food handler is ready.
9. Alan – Does anyone have a job that is based on Job Task Analysis (JTA)? Wants to prevent any assumptions as to what a food worker should know. The committee should decide what a food handler should really know. He and Hal have been through the JTA process. It would be great to stay as close to the JTA process as possible.
10. Take a look across the board at processes in different states (William). Agreed to be a part of this process and get ASTM standard information. Want to compare the states that are represented, just to see if there is a gap in what states are using.
11. Next call can be based on reports of gaps by members. Will collect info via email prior to call.
12. Steven (FDA) made suggestion to first figure out where programs are. Then look at them as a committee to agree on the actual gaps.
13. Aimee volunteered to get info on the grocery/retail side. Ben will search on the academic side.
14. Janice suggested to start at the state level.
15. Jeff Lang willing to serve with Ben on the academic sector.
16. Regardless of industry, there should not be that big of a difference.
17. A little confusion as to what the motive or goal is. As a baseline, it was suggested to start with the ASTM standard.
18. Hal thanked everyone for the comments and suggestions. The next call should take place at the end of January. Send emails or templates to Hal to assist. The goal is to make more progress.
19. Scheduling of future calls – suggested to preset calls. Select dates that will work for Hal and Ben. Then to send committee to vote on those dates. FDA can’t use doodle. Meeting Wizard works best for FDA. Suggested to have calls more frequently.
20. Call ended at 4:25 p.m.

CFP Food Service Employee Training Committee Meeting
Chicago, IL - March 18, 2015
Minutes of the Meeting

Attendance (see below)

1. Introductions
The members introduced themselves and their interest in this committee.

2. An industry and regulatory perspective on the process (Chuck Catlin)
Co-Chair Chuck Catlin presented an overview of perspectives for the Committee to consider as it frames its work. It was noted that the typical food employee sees their activity as “low risk,” a dangerous perspective. Catlin also reminded the members that consensus is important, and asked them to leave personal and business biases aside, and deliberate with open-mindedness.

3. Framing behavior-based training (Ben Chapman)
Co-Chair Ben Chapman suggested that the Committee could work on “knowledge based” guidance, but miss the opportunity to focus on changing behavior. Looking at the food safety requirements and risk factors viewed through the “why” of best practices, in a “behavior based” frame might yield greater impact. Identifying desirable behaviors and advancing their adoption and implementation is the opportunity. Chapman went on to present some academic background information for the members’ consideration, including:

- A good analogy for our work is to consider employees that clean hospital rooms: it’s known that they care, and understand that their interventions (sanitizing to control infection) matters.
For our purposes, how do we ensure that food employees care? Teaching and showing them that people get sick when they fail to adhere to standards, and that is largely preventable by food employees. Training must show them how to do this, and getting them talking to each other about this is essential to its successful adoption.

- Methods that matter:
  1. Using stories more than numbers
  2. Putting the info into relatable context for the employee
  3. Generating surprise
  4. Generating ongoing dialog

4. Review of the committee charge, clarification of scope

Charge 1
Make recommendations to the Conference for Food Protection in regard to:
  a. What a food employee should know about food safety, prioritized by risk.
  b. A guidance document to include recommendations for appropriate operator, regulator, and/or third-party food safety training program(s); including the criteria for the program and learning objectives.

Charge 2
Report Committee recommendations to the 2016 CFP Biennial Meeting.

Chapman asked Council II member Brian Turner to perspective on this Committee’s genesis, and about what audience we should focus on. Turner explained that discussion about forming this Committee centered on the need for consistent criteria for “frontline” training, and how to provide value (impact) to that training.

Discussion ensued regarding the jobs/people this Committee should focus on impacting, and it was suggested that while position-specific information might be useful, starting with the Food Code definition of “food employee” is a better, more general, and broader reaching start. Consensus of the Committee is to use the Food Code definition of “food employee.” Discussion ensued regarding the study and creation of JTAs, and consensus reached that this would not be undertaken by the Committee.

Chapman then asked the Committee to consider clarifying its understanding of the term “prioritized” in the charge, and consensus was reached that this means starting with the known risk factors and prioritizing their importance in training content. Chapman will communicate this “reading” of the prioritization charge to the CFP Executive Board.

Additional consensus was reached by the Committee that:
- the Committee’s work will apply to employees in any place the Food Code applies to.
- the learning objectives in the Committee charge are from section a) of the charge (with perspective provided from Council II by Brian Turner).
5. Review cataloged documents/data sources
- Job Task Analysis (JTA) and the process
- Current industry outlines
- Compliance/behavior change literature related to employee food safety training
- FDA risk factor study insights

Chapman overviewed documents that Committee members were provided, and asked for others to be submitted. Differentiation was established between “certificate” (that uses learning objectives), and “certification” (that uses a JTA) work. Committee consensus is to proceed based on learning objectives, rather than JTAs.

Discussion ensued regarding CA and IL programs, and their basis in ASTM 2659, which does require a JTA, and consensus reached that what the Committee produces must be “measurable and reportable,” and provide a template for national consistency.

Opposition was voiced to moving in any way toward ASTM 2659 and/or employee testing. It was pointed out that demonstration of knowledge via employee questions currently exists in the Food Code. Steven Hughes, FDA consultant to the Committee, pointed out that three main areas exist in our review: Content, Mechanics (Implementation), and Food Code relativity, and suggested the Committee focus on the Content mission.

6. Establish subcommittees for each group
Chapman reviewed three proposed subcommittees scopes of work:
1. Review current Industry non-regulatory delivery
2. Review current state requirements (i.e., CA, IL, FL)
3. FDA Risk Factor related employee activities (FC sec. 203.11; “must haves” and “nice to haves”).

The Committee Co-Chairs will call for volunteers to subcommittees, then when formed those groups will select their chairs.

Catlin pointed out that the Committee should be creative in its objectives and activity, not simply use existing “check boxes,” and be aware of the opportunity to create work product based in or derived from something that does not yet exist.

7. Milestone setting
- Co-Chairs set March 27 as the deadline for subcommittee sign up.
- Subcommittees will meet at their own direction, and once empanelled the Committee Co-Chairs will establish reporting deadlines for the reminder of the CFP 2014-16 cycle.
- Committee Co-Chairs will poll Committee members for three proposed Committee meetings moving forward, with integration of the subcommittee schedules. Potential dates:
  - May 2015, in Chicago concurrent with the NRA show
  - July 24-27, 2015, in Portland concurrent with IAFP
8. Adjourn
With unanimous consent the Committee adjourned at 1:40 PM.
Food Handler Training subcommittee: Industry non-regulatory delivery of food handler training
June 15
12pm ET- 1pm ET

Attending: Ben Chapman, Suzanne Feazell, Susan Delauris, Chirag Bhatt, Chuck Catlin, Aimee Lee, Stephen Hughes

- Reviewed the charge and approved the charge subcomponents.

- Quick thoughts on the charge, focused on generating a common outline capturing the elements of current programs.

- Suggestion to create a matrix, using risk factors as a foundation, in order to compare 'apples to apples' of different programs. What elements were similar?

- Discussion on recognizing that specific departments may result in specific requirements: produce department and pizza are different.

- Specific to job tasks should be recognized, not in the generic outline.

- Lets focus on the common knowledge, skills and behaviors.

- We need to try to achieve that the syllabus is universal as the baseline knowledge, skills and understanding

- Suggestion to align the matrix by the suggested inspection code

- Additional resources for this group: Brian Chapman State Food Safety & Kate Piche with NRA

Action 1: Reach out to William on NRAs members looking like
Action 2: Susan Feazell - create a template to compare apples to apples - Susan to send to Ben
Action 3: Chirag to send to a quick email to restaurants food service to
gather FMI info.

Action 4: Chuck to reach out to additional resources noted above
Ben talked about the charge, what we need to do.

Introductions

Expectations were confirmed – review state programs and discuss common elements

Allergens were discussed as a hot topic as they relate to food handlers - need to take into consideration and what’s out there and not being used

Joe for context - states that already have it that go into the code interesting conversation, code requirement

Ken Shared: IL - Contentious issues were not really even within scope of content but related to implementation of assessment.

Some very basic criteria food employee training/food handler
Little of basic components - cleaning and sanitizing, temperature controls, personal hygiene
Should it be ANSI approved or not
* IL rule as a compromise - two classifications of training (restaurant vs non-restaurant) no such thing as restaurant vs. non-restaurant component
In IL - Certificates that required after three years

Joe from WA shared:

30 min training requirement as a minimum
Every two years
Food allergy awareness is included
Manual
36 questions are provided in the assessment they are risk based and weighted
Offered in 7 languages - not required in the code

Actions: Joe to send us a food handler info an populate the matrix.
(completed)

Food employees

ANSI landminds

FL experience from Allergens Safe Staff
GA requirements
JTAs
Jordan – shared that there are not JTAs available from Florida

Wrap-up and next meeting confirmed for August 12, 2015.
CFP Employee Training Committee Meeting
July 8, 2015
Conference call

Attendees:
Tom McMahan
Susan Feazell
Ashley Eisenbeiser
Chirag Bhatt
Ben Chapman
Stephen Hughes

Chirag provided details on a few programs:
Cracker Barrel
Waffle House and Starbucks, to be added to matrix

Susan’s discussed the matrix including common competencies and unique foci

Pest control - brief of and concise - inform supervisor as - control measures related to pest control

Tom suggested that cleaning and sanitizing - is a core item (specifically the difference between cleaning and sanitizing)

Identifying core items - pest control/cleaning and sanitizing should that maybe be required under.

Some discussion around allergens - potential around adding allergens for food handler core

Focused some discussion of knowledge of a food handler diseases:
Reportable illnesses

- Knowledge know and understand the 6 reportable illnesses
- Shouldn’t come to work if they are feeling sick
- Obligation when they have certain symptoms
- Some kind of documentation and a diagnosis is a manager
- If they are throwing up with diarrhea - because of the symptoms
- The problem with the anecdote, is that the indicated pathogens
- Sort of need to know why they are reporting it
- Teach them the symptoms vs. the pathogen
- Need to make sure that the knowledge

Wrap Up
CFP Employee Training Committee Meeting  
IAFP Conference – Portland, OR  
Monday, July 27, 2015  
Portland Convention Center

A meeting of the CPF Training Committee was called to order by Chairman Ben Chapman at noon on July 27, 2015. Those in attendance were Ben Chapman, Susan Feazell, Hal King, Geoff Luebkemann, William Weichelt, Chuck Catlin, Davene Sarrocco-Smith, Bryan Chapman, George Nakamura, Jeff Lang, Joe Graham, .......

Chairman Chapman explained that the purpose of the meeting was to report on the progress of the work of the three subcommittees and clarify any matters.

Subcommittee 1:  Looking at current Industry Practices with regard to food safety employee training.
There was some discussion regarding the different levels of training across the food service industries and the differing categories of food industries – grocery, restaurant, wholesale, etc. It was noted that the subcommittee should not describe in detail what is in the training program but that a subject matter is present.

Subcommittee 2:  Looking at State Food Service Employee Training Programs.
It was noted that there appears to be little consistency between State food service training programs and requirements. A request went out for more state program information.

Subcommittee 3:  Looking at Risk Factors as they relate to food safety employee training.
In reviewing the literature, it appears that there are five common risk factors being addressed across several training programs. They include Cross Contamination, Personal Hygiene/Hand Washing, Temperature Control, Employee Illness Reporting, and Cleaning/Sanitizing. There was some discussion regarding clarification of terms of employee illness reporting with regard to exclusion/restriction, reportable disease and symptom reporting. It was felt that symptom reporting was key to the discussion.

It was reported that some of the outliers being noted were issues like Pest Control, Allergens, etc.

It was noted that an important factor in evaluating training programs for the food serving employee would be to access the learning level of the population. It was also noted that when putting in place the California statutes for food training there were political hurdles which needed to be overcome and should be considered when making recommendations to Council. Two new committee members volunteered to work with Subcommittee 2 in looking at state programs.

It was reported that all three subcommittees were collecting data and information and building matrixes for the purpose of comparison and concluding recommendations.

Chairman Chapman advised that what we would be submitting to Council would be “guidelines” for what should be in any food server training program.
The subcommittees will be meeting by conference call monthly to complete their matrixes and will attempt to schedule a call of the full committee around the Thanksgiving time frame. Chairman Chapman thanked everyone in attendance and those on the phone.