

## C. Institutional Food Service-Elementary Schools

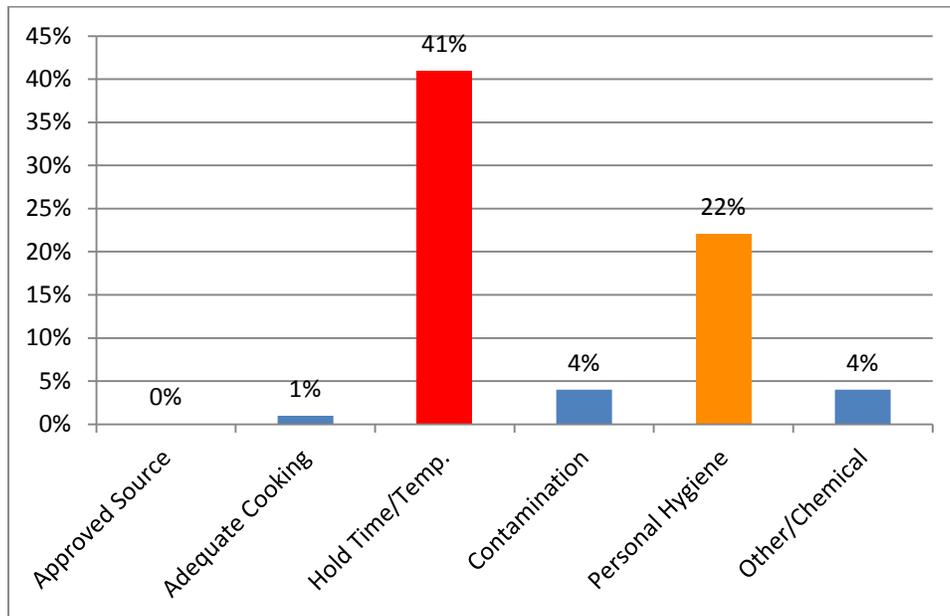
### Introduction

For the 2010 Wake County Baseline survey, 57 elementary school kitchens were surveyed. For the 46 possible individual data items on the survey instrument, 1,257 observations were made at 57 elementary school kitchens. See Appendix C for complete data related to elementary schools.

*Certified food protection managers (82%):* For this survey, a certified food protection manager had to be present, and possess a State-approved course certificate, in order to be marked IN compliance. A certified food protection manager was present at 47 of the 57 facilities (82% IN compliance). Of the nine facility types surveyed, elementary school kitchens had the highest percent of certified managers present.

### Results and Discussion

**Table Elem-1:** The following diagram represents OUT of compliance risk factors by category as a percentage of total observations.



The same data is shown in the table below with the actual number of OUT of compliance observations relative to the total number of observations (IN and OUT).

Foodborne Illness Risk Factor Risk Factor OUT of compliance:	Elementary Schools		
	% OUT	# OUT observations	Total Observations
Food from Unsafe Source	0%	0	115
Inadequate Cooking	1%	3	224
<b>Improper Holding/Time-Temperature</b>	<b>41%</b>	<b>126</b>	<b>309</b>
Contaminated Equipment/Contamination	4%	7	175
<b>Poor Personal Hygiene</b>	<b>22%</b>	<b>75</b>	<b>342</b>
Other/Chemical	4%	4	92
Totals	17%	215	1257

The foodborne illness risk factors needing priority attention are:

- Improper Holding/Time and Temperature (41% OUT of compliance)
- Poor Personal Hygiene (22% OUT of compliance)

Tables Elem-2 and Elem-3 show the breakdown of these risk factors into the specific individual data items on the survey instrument that need priority attention.

**Table Elem-2: Improper Holding/Time-Temperature (41% OUT)**

Data Item	# OUT	Total Obs.	% OUT
<b>RTE, PHF discarded after seven days 10b</b>	<b>37</b>	<b>53</b>	<b>70%</b>
<b>Commercially prepared RTE, PHF date marked 10c</b>	<b>33</b>	<b>49</b>	<b>67%</b>
<b>RTE prepared on site, PHF date marked 10a</b>	<b>14</b>	<b>31</b>	<b>45%</b>
<b>Cold Hold 8a</b>	<b>23</b>	<b>57</b>	<b>40%</b>
<b>Hot Hold 9a</b>	<b>15</b>	<b>15</b>	<b>29%</b>
Proper Cooling Procedure (Cooked and cooled) 7a	3	3	20%
Proper Cooling Procedure (Received and cooled) 7c	1	1	3%

*\*Items with  $\geq 25\%$ , with significant sample size, are shown in **bold**.*

Date marking (Individual Data Items 10a, 10b, and 10c): Date marking of refrigerated ready-to-eat, PHF foods is an important food safety system component designed to promote proper food rotation and limit the growth of *Listeria monocytogenes* during cold storage. Discarding ready-to-eat, PHF that has remained in cold storage beyond the parameters described in the FDA Food Code prevents foods with a harmful level of *Listeria monocytogenes* from being served.

The importance of date marking of ready-to-eat, PHF is accentuated in the elementary school environment because the meals are primarily served to a highly susceptible population. North Carolina’s current rules do not require date marking. During the 2010 Wake County survey, all three individual data items that address date marking ranked high for the Improper Holding/Time-Temperature risk factor category.

Cold Holding at 41F (Individual Data Item 8a): Maintaining potentially hazardous food (PHF) foods under the cold temperature control of 41°F limits the growth of pathogens that may be present in or on the food and may help prevent foodborne illness. Temperature has significant impact on both the generation time of an organism and its lag period. Control of the growth of *Listeria monocytogenes (Lm)* is the basis for the cold holding temperature of 41°F. North Carolina’s cold holding temperature requirement is 45°F.

Hot Holding (Individual Data Item 9a): Holding PHF at the proper hot temperature of 135°F is critical to preventing the growth of bacteria. Equipment, processes and monitoring procedures related to maintaining temperature control for PHF need to be assessed and corrective action should be taken if necessary.

Proper Cooling Procedure (Individual Data Items 7a and 7c): Safe cooling requires rapid removal of heat from foods quickly enough to prevent the growth of spore-forming pathogens. Elementary school cafeteria foodservice directors and managers need to ensure their practices and procedures are capable of rapidly cooling PHF. Item 7a represents those items that are cooled from a cooked state and 7c addresses cooling after receiving food shipments. These sample sizes were small for comparison; however, rapid cooling is an important component for the risk factor.

**Table Elem-3: Poor Personal Hygiene (22% OUT)**

Data Item	# OUT	Total Obs.	% OUT
<b>Employee Health Policy 17a</b>	<b>57</b>	<b>57</b>	<b>100%</b>
Proper Handwashing 13a	8	57	14%
Good Hygienic Practices 14a	5	57	9%
Handwash facilities (accessible) 16a	2	57	4%
Handwash Facilities (soap and towels) 16b	2	57	4%
Prevention of Hand Contamination 15a	1	57	2%

*\*Items with  $\geq 25\%$ , with significant sample size, are shown in **bold**.*

Employee Health Policy (Item 17a): The development and effective implementation of an employee health policy based on the provisions in the Food Code may help to prevent foodborne illness associated with contamination of food by ill or infected food employees. 100% of observations for this individual item at elementary schools were OUT of compliance with the Food Code specifications for a health policy. Current North Carolina rules do not require an employee health policy.

Proper Handwashing (13a): Handwashing is a critical factor in reducing fecal-oral pathogens that can be transmitted from hands to RTE food as well as other pathogens that can be transmitted from environmental sources. Many employees fail to wash their hands as often as necessary, and even those who do may use flawed techniques.

The data for other items is presented in Table Elem-3. The sample size for these OUT observations is relatively low; however, each of these items will be described in the overall report. Controlling each item is a significant control for reducing the risk of foodborne illness.

**Summary**

**Table Elem-4: foodborne illness risk factor categories and individual data items in need of priority attention**

Foodborne Illness Risk Factor in need of priority attention	Individual data items in need of priority attention with % OUT
<b>Holding/Time-Temperature (41% OUT)</b>	<b>RTE, PHF discarded after seven days 10b (70% OUT)</b>
	<b>Commercially prepared RTE, PHF date marked 10c (67% OUT)</b>
	<b>RTE prepared on site, PHF date marked 10a (45% OUT)</b>
	<b>Cold Hold 8a (40% OUT)</b>
	<b>Hot Hold 9a (29% OUT)</b>
	Proper Cooling Procedure (Cooked and cooled) 7a (20% OUT)
<b>Personal Hygiene (22% OUT)</b>	Proper Cooling Procedure (Received and cooled) 7c (3% OUT)
	<b>Employee Health Policy 17a (100% OUT)</b>
	Proper Handwashing 13a (14% OUT)
	Good Hygienic Practices 14a (9%)
	Handwash facilities (accessible) 16a (4% OUT)
	Handwash Facilities (soap and towels) 16b (4% OUT)
Prevention of Hand Contamination 15a (2% OUT)	

*\*Items with  $\geq 25\%$ , with significant sample size, are shown in **bold**.*