

#### Introduction

- Approximately 48 million cases of foodbor illness occur annually in the U.S., yielding 128,000 hospitalizations and 3,000 deaths (Scallan et al., 2011).
- Young children are highly susceptible to foodborne illnesses.
- Schools serve an estimated 32 million mea daily through the National School Lunch Program (USDA, 2011).
- In the 2004 Child Nutrition and WIC Reauthorization Act, Congress mandated schools to adopt a food safety program based on Hazard Analysis Critical Control Point (HACCP) principles.
- To-date, no studies have validated the effectiveness of these programs.



Department of Hospitality **Management & Dietetics** 





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# **HACCP Programs in School Foodservice Operations**

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	Purpose & (				
orne	sta im	e purpose of this stud tus and effectiveness plementation in schoo ild Nutrition and Rea			
als	• Sp •	ecific objectives inclue Identify which compone and prerequisite program			
	•	Determine specific challe foodservice directors and implementing and maint			
		Determine the relationsh			

Determine the relationships between HACCP program implementation and actual food safety behaviors.

### Methodology

- Schools will be categorized based on total enrollment:
  - Small (< 2,500 students)
  - Medium (2,500 19,999 students)
  - Large (20,000 44,999 students)
  - Mega (> 45,000 students)
- One state from each of the USDA seven regions will be selected.
- Within each state, the largest mega school district will be chosen. A large, medium, and small district will then be randomly chosen within a 200 miles radius of each mega district (n=35 schools).

### **D**bjectives

dy was to assess the of HACCP ols since the 2004 authorization Act.

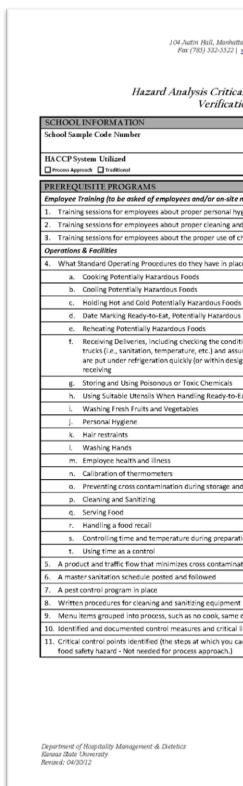
#### Ide:

ents of the HACCP system ms have been implemented.

lenges and barriers school d employees experienced in taining their HACCP plan.

### Methodology, Continued

- to conduct the inspections.



statistics and correlations.

## **Conclusions & Applications**

• Within each district, one school will be randomly chosen to participate in the study.

• Trained researchers will visit each school to conduct a HACCP inspection.

• A HACCP Verification Checklist will be utilized

ol Points (HAC	CP)	HACCP PROGRAMS 12. Established monitoring procedures.	-		Yes No N/A	
klist		If so, which of the following items are	In HACCP Plan	Documented	Corrective Action Taken?	
		a. Receiving temperatures of food	Yes No N/A		/A Yes No N//	
		b. Temperatures of refrigerators and freezers	Yes No N/A		/A Yes No N//	
roduction System		c. End-point cooking temperatures	Yes No N/A			
	Ready-Prepared Assembly Serve	d. Cooling time/temperatures of food	Yes No N/A			
		e. Dry storage temperature log	Yes No N/A	Yes No No		
		f. Holding Temperature Log	Yes No N/A			
	Yes No	g. Serving Temperature Log	Yes No N/A			
		h. Food transportation log	Yes No N/A			
		i. Calibration log	Yes No N/A			
		j. Damaged/discarded products log	Yes No N/A			
		k. Sanitizer concentrations or temperatures	Yes No N/A			
	Yes No N/A	I. Dish machine temperatures	Yes No N/A			
	Yes No N/A	m. Microbial Tests	Yes No N/A	Yes No No	/A Yes No N/	
		If yes, for which products?				
		13. Training for employees on monitoring critical limits			Yes No N/A	
- lie feidelik en ei	Yes No N/A	14. Procedures for maintaining monitoring records		_	Yes 🗌 No 🗌 N/A	
supplier's delivery tially hazardous foods		If so, how long are records retained?				
riod) upon	Yes No N/A	15. Has the HACCP Plan been updated since it was initially	developed?		Yes 🗌 No 🗌 N/A	
		If so, what is the last revision date?				
	Yes No N/A	16. Does the school conduct comprehensive HACCP self-audits?			Yes No N/A	
	Yes No N/A			Internal Extern		
	Yes No N/A		If so, is it conducted internally or does an external 3 <sup>rd</sup> party conduct the audit?			
	Yes No N/A	How often are audits conducted?		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	Yes No N/A	17. Are samples of food products served kept?	17. Are samples of food products served kept?		Yes 🗌 No 🗌 N/A	
	Yes No N/A	If so, how long?	If so, how long?			
	Yes No N/A					
	Yes No N/A	CHECKLIST OF ITEMS TO ACOULBE WHILE O	NUCTTE			
	Yes No N/A		CHECKLIST OF ITEMS TO ACQUIRE WHILE ON-SITE			
	Yes No N/A	<ol> <li>Recent inspection reports (two most recent, minimum of one</li> </ol>	18. Recent inspection reports (two most recent, minimum of one - current inspection)		Yes 🗌 No 🗌 N/A	
	Yes No N/A	19. A copy of all menus for the current month		Yes 🗌 No 🗌 N/A		
	Yes No N/A					
	Yes No N/A	COMMENTS		Fo	ood Code Temps	
	Yes No N/A			13	5°F - Hot hold	
	Yes No				45°F - Eggs, seafood, and	
	Yes No			St	eaks/chops/Roasts (bee	
	Yes No				ork, lamb, & veal)	
	Yes No N/A				5°F – Mechanically	
	Yes No N/A			be	nderized meats, ground ef, ground pork, ground	
	Yes No N/A			lau	mb, & ground veal	
e, or eliminate a	Yes No N/A				5°F - Poultry, stuffing,	
				an	d stuffed meats	
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• SPSS will be utilized to calculate descriptive

• Validating the effectiveness of HACCP implementation and assessing the potential gaps between practices and requirements will identify changes needed in USDA food safety and HACCP guidelines and training.

• Regulatory agencies can use this data to determine HACCP implementation needs in other segments of the industry.