

**Michigan Department of Agriculture
2008 Survey on the Occurrence of Foodborne Illness Risk Factors
In Michigan Retail Food Establishments
October 2008**

In 2004, a Governor’s Cabinet Action Plan was initiated titled “Reducing the Risks of Foodborne Illness.”

The CDC has identified five behaviors and practices through epidemiological data as being the most prevalent contributing factors of odborne illness or injury: poor personal hygiene, food from unsafe sources, inadequate cooking, improper holding, and contaminated equipment.

The goal of this initiative is to reduce the prevalence of the risk factors in food establishments by 25 percent by late 2011. This initiative parallels the FDA's goal to make a 25 percent reduction in the occurrence of the CDC risk factors in institutional food service establishments, restaurants, and retail food stores by October 1, 2010. A significant reduction in the prevalence of the risk factors has the potential for reducing the number of foodborne illnesses in Michigan. Nationally, it is estimated that there are 76 million people who become ill from microorganisms in food resulting in as many as 325,000 hospitalizations and 5,000 needless deaths every year.

The initiative involves a baseline survey, training and evaluation of local health department sanitarians, industry training and support, a midcourse survey, and a final survey. The information below summarizes the results of the midcourse survey.

The 2008 survey results show that the three risk factors most out of compliance are improper holding, contaminated equipment, and poor personal hygiene.

Fig. 1: 2008 Measurement for Each Facility Type (All observable IN & OUT questions)

Facility Type	Total Questions In	In Percent	Total Questions Out	Out Percent	Total Questions
Full Service Restaurants, n=92	1,544	89	188	11	1,732
Deli, n=89	1,945	88	259	12	2,204
Combined, n=181	3,489	89	447	11	3,932

Fig. 2: MDA Risk Factor Improvement Goal

Industry Segment	Facility Type	2005 Baseline	2008 Midcourse	2011 MDA Goal (+25%)
Food Service	Independent Full Service Restaurants	91%	89%	93%
Retail	Delis	81%	88%	86%
Combined		87%	89%	90%

Fig. 3A: 2008 Survey Data- Percent of establishments surveyed with at least one risk factor question out of compliance

Risk Factors	Approved Source			Inadequate Cooking			Improper Holding			Contaminated Equip.			Personal Hygiene		
	%	OUT	TOTAL	%	OUT	TOTAL	%	OUT	TOTAL	%	OUT	TOTAL	%	OUT	TOTAL
Deli	9	8	89	7	6	89	61	54	89	35	31	89	36	32	89
Full Service Rest	3	3	92	5	5	92	44	40	92	29	27	92	29	27	92

Fig. 3B: 2005 Survey Data- Percent of establishments surveyed with at least one risk factor question out of compliance

Risk Factors	Approved Source			Inadequate Cooking			Improper Holding			Contaminated Equip.			Personal Hygiene		
	%	OUT	TOTAL	%	OUT	TOTAL	%	OUT	TOTAL	%	OUT	TOTAL	%	OUT	TOTAL
Deli	2	2	90	32	29	90	79	71	90	42	38	90	54	49	90
Full Service Rest	5	6	108	16	17	108	60	65	108	33	36	108	35	38	108

Risk Factor Detail

Fig. 4: Improper Holding (10 questions)

Weak Areas $\geq 20\%$	FS % out	FS # out	FS total in/out	Deli % out	Deli # out	Deli total in/out
9A. Ready-to-eat PHF held for more than 24 hours is date marked as required (prepared on-site)	24%	21	86	34%	26	77
6A. Cooked PHF is cooled properly	55%	17	31	39%	26	66
9C. Opened commercial container of prepared RTE PHF is date marked as required	12%	8	68	30%	22	73
9B. Discard RTE PHF and/or opened commercial container exceeding 7 days at $< 41^{\circ}\text{F}$ or 4 days at $< 45^{\circ}\text{F}$	25%	19	75	17%	13	76
Areas Needing Improvement $\geq 10\text{-}19\%$						
6B PHF (prepared from ingredients at ambient temperature) cooled to 41°F or below within 4 hours	0%	0	8	15%	7	47
8A. PHF is maintained at 140°F or above, except during preparation, cooking and cooling	4%	3	85	17%	13	77
7A. PHF is maintained at 41°F or below, except during preparation, cooking and cooling	19%	17	91	9%	8	88
Strong Areas $\leq 9\%$						
6C Food received at a temperature according to Law are cooled to 41°F or below within 4 hours	0%	0	8	0%	0	63

Questions 8B and 9D were not included in this table as they were mostly not applicable or not observed.

Fig. 5: Poor Personal Hygiene (5 questions)

Weak Areas $\geq 20\%$	FS % out	FS # out	FS total in/out	Deli % out	Deli # out	Deli total in/out
No questions $\geq 20\%$ out of compliance						
Areas Needing Improvement $\geq 10-19\%$						
12A. Hands are clean and properly washed when and as required	15%	13	88	19%	17	89
Strong Areas $< 9\%$						
14A. Employees do not contact exposed, ready-to-eat food with their bare hands.	8%	7	84	8%	7	89
13A. Food Employees eat, drink, and use tobacco only in designated areas / do not use a utensil more than once to taste food that is sold or served / do not handle or care for animals present. Food employees experiencing persistent sneezing, coughing, or runny nose do not work with exposed food, clean equipment, utensils, linens, unwrapped single-service or single-use articles	6%	5	83	7%	6	86
15A. Hand wash facilities conveniently located and accessible for employees	9%	8	91	9%	8	89
15 B. Handwash facilities supplied with hand cleanser / sanitary towels / hand drying devices	8%	7	91	7%	13	89

Fig. 6: Contaminated Equipment (5 questions)

Weak Areas $\geq 20\%$	FS % out	FS # out	FS total in/out	Deli % out	Deli # out	Deli total in/out
10A. Food is protected from cross contamination by separating raw animal foods from raw ready-to-eat food and by separating raw animal foods from cooked ready-to-eat food	19%	16	84	27%	21	77
Areas Needing Improvement $\geq 10-19\%$						
11A. Food-contact surfaces and utensils are clean to sight and touch and sanitized before use	13%	12	91	16%	14	89
10C. Food is protected from environmental contamination – critical items	6%	5	90	10%	9	89
Strong Areas $< 9\%$						
10B. Raw animal foods are separated from each other	7%	6	83	8%	6	72

during storage, preparation, holding, and display						
10D. After being served or sold to a consumer, food is not re-served	0%	0	29	0%	0	87

Fig. 7: Inadequate Cooking (12 questions)

Weak Areas $\geq 20\%$	FS % out	FS # out	FS total in/out	Deli % out	Deli # out	Deli total in/out
No questions $\geq 20\%$ out of compliance						
Areas Needing Improvement $\geq 10-19\%$						
5A. PHF that is cooked and cooled on premises is rapidly reheated to 165°F for 15 seconds for hot holding	11%	3	28	4%	2	51
5B. Food reheated in a microwave is heated to 165°F or higher	17%	1	6	11%	3	28
4A. Raw shell eggs broken for immediate service cooked to 145°F for 15 seconds. Raw shell eggs broken but not prepared for immediate service cooked to 155°F for 15 seconds	0%	0	11	11%	1	9
Strong Areas $\leq 9\%$						
4C. Roasts, including formed roasts, are cooked to 130°F for 112 minutes or as Chart specified and according to oven parameters per Chart	0%	0	1	0%	0	9
4B. Comminuted Fish, Meats, Game animals cooked to 155°F for 15 seconds	0%	0	18	0%	0	39
4D. Poultry; stuffed fish, stuffed meat, stuffed pasta, stuffed poultry, stuffed ratites, or stuffing containing fish, meat, poultry or ratites cooked to 165°F for 15 seconds	0%	0	8	4%	2	56
4G. Ratites, injected meats are cooked to 155°F for 15 seconds	0%	0	0	0%	0	3
4H. All other PHF cooked to 145°F for 15 seconds (pork etc.)	0%	0	3	0%	0	65
5C. Commercially processed ready to eat food, reheated to $\geq 140^\circ\text{F}$ for hot holding	8%	1	12	0%	0	52

Questions 4E, 4F and 5D were not included in this table as they were mostly not applicable or not observed.

Fig. 8 Unsafe Food Source (7 questions)

Weak Areas $\geq 20\%$	FS % out	FS # out	FS total in/out	Deli % out	Deli # out	Deli total in/out
No questions $\geq 20\%$ out of compliance						
Areas Needing Improvement $\geq 10-19\%$						
No questions $\geq 20\%$ out of compliance						
Strong Areas $< 9\%$						
1A. All food from Regulated Food Processing Plants/ No home prepared/canned foods	2%	2	91	2%	2	89
1B All shellfish from NSSP listed source; no recreationally caught	0%	0	4	5%	1	20
2A. Food received at proper temperatures/ protected from contamination during transportation and receiving/food is safe, unadulterated	0%	0	91	0%	0	89

Questions 1C, 3A, 3B, 3C were not included in this table as they were mostly not applicable or not observed.

*Deli surveys were conducted on randomly selected establishments within the city of Detroit, Oakland County, and Kent County areas and full service surveys were conducted during regularly scheduled local health department accreditation field reviews, between February and August 2008. Five MDA employees conducted the surveys using a standardized survey form. Two surveyors were FDA certified and the remaining three were standardized by FDA certified, MDA staff to assure accurate and consistent results. The minimum statistically valid sample size for each establishment type surveyed was 87 establishments. For a more thorough discussion of sampling methodology, see the FDA publication “Developing a Baseline on the Occurrence of Foodborne Illness Risk Factors, Data Collection Instruction Manual,” Annex III, 4/28/03.