2016 City of Milwaukee Health Department Food Safety Report

Release Date: May 2016

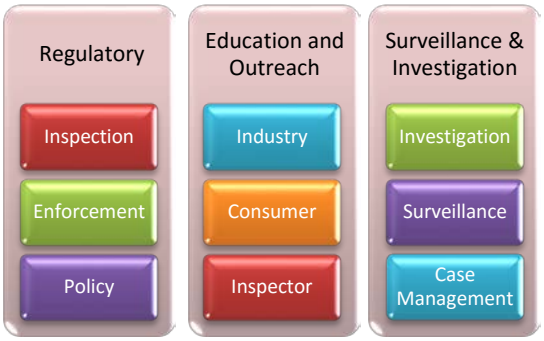
Introduction

Background and Significance

Foodborne illness in the United States is a major cause of personal distress, preventable illness and death, and avoidable economic burden. CDC estimates that each year roughly one in six Americans (or 48 million people) gets sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases. The annual cost of foodborne illness in terms of pain and suffering, reduced productivity, and medical costs is estimated to be as much as $77 billion. Nationwide, approximately 1,000 reported disease outbreaks are identified each year. Of the outbreaks with an identified cause, half are attributed to restaurants. However, most foodborne illnesses occur in persons who are not part of any recognized outbreaks.

Though the magnitude of the challenge of addressing foodborne illness upon initial review may seem insurmountable, potential intervention strategies have been documented as being effective in improving food safety. It is because of the scope of the issue and the availability of evidence based practices to address the issue that CDC has designated food safety as one of its key public health strategies. CDC has food safety as one of 10 winnable battles (http://www.cdc.gov/winnablebattles/). It is for these same reasons why the City of Milwaukee Health Department (MHD) has selected it as one of our key public health outcomes. In our efforts to improve food safety, the Department's Consumer Environmental Health Division's (CEH) intervention strategies can be grouped into three broad categories:

Figure 1: Food Safety Interventions



- Regulatory strategies - to assure the adoption of science-based food safety principles in retail and foodservice settings to minimize the incidence of foodborne illness
- Education and Community Outreach - to assure inspectors, operators, and consumers are adequately informed of the causes of foodborne illness and the key strategies to prevent foodborne illness
- Surveillance and Investigation - to assure the timely identification and response to foodborne illness in order to minimize morbidity and mortality

Purpose

This report is provided in accordance with Chapter 68-7-3 of the Milwaukee Code of Ordinances, which requires that the City of Milwaukee Health Department (MHD) annually report to the Common Council and Mayor on sanitary conditions in food establishments. This report is submitted in place of the annual "Compliance Report on Sanitary Conditions." Furthermore this report supports the complaint data analysis and review requirements of FDA Voluntary National Retail Food Regulatory Program Standard No. 5: Foodborne Illness and Food Defense Preparedness and Response as well as the risk factor study requirements under Standard No. 9: Program Assessment.

The FDA Voluntary National Retail Food Regulatory Program Standards represent effective evidence-based practices for retail food regulatory programs.[1] The standards focus on the reduction of risk factors known to cause or contribute to foodborne illness and the promotion of active managerial control of these risk factors. The nine standard self-assessment tools provides a framework for evaluation of the effectiveness of food safety interventions implemented by the department.

[1] FDA Voluntary National Retail Food Regulatory Program Standards
http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/ProgramStandards/ucm245409.htm

Guiding Principles

Food safety activities conducted by the Department are guided by the 10 Essential Environmental Public Health Services, which are:

1. Monitor environmental and health status to identify and solve community environmental public health problems
2. Diagnose and investigate environmental public health problems and health hazards in the community
3. Inform, educate, and empower people about environmental public health issues
4. Mobilize community partnerships and actions to identify and solve environmental health problems
5. Develop policies and plans that support individual and community environmental public health efforts
6. Enforce laws and regulations that protect environmental public health and ensure safety
7. Link people to needed environmental public health services and assure the provision of environmental public health services when otherwise unavailable
8. Assure a competent environmental public health workforce
9. Evaluate effectiveness, accessibility, and quality of personal and population-based environmental public health services
10. Research for new insights and innovative solutions to environmental public health problems

Cost Effectiveness

The overall average cost per case of foodborne illness is estimated to be between $1,068 and $1,626.[2] Using the annual frequency of occurrence of foodborne illness determined by CDC of one in six people translates to approximately 99,800 cases of foodborne illness annually in the city based on 2012 U.S. Census population estimates. This places the annual estimated economic burden of foodborne illness for the city at $106 to $162 million per year. A 10% decrease in foodborne illness would result in a net savings of $10 to $16 million.

Though the potential cost savings for even a modest improvement in food safety is substantial, little data exists to establish the cost effectiveness of any one individual intervention strategy, further supporting the multifaceted intervention strategy being utilized by the department.

Regulatory

Regulatory strategies to improve food safety work to assure the adoption of science-based food safety principles in retail and foodservice settings to minimize the incidence of foodborne illness. Activities performed by the Department include plan review and pre-inspection of new or remodeled food establishments, routine annual inspection of food establishments, response to citizen complaints, and the development and implementation of policies that support food safety. Compliance and enforcement activities focus on critical risk factors, which are the risk factors known to contribute to foodborne illness. The five major risk factors are:

- Improper holding temperatures
- Inadequate cooking
- Cross contamination
- Food from unsafe sources
- Poor personal hygiene

The City Clerk's Office is a key partner in implementing regulatory controls. The City Clerk's Licensing Division issues all food dealer's permits, food peddler permits and temporary food permits while the Legislative Reference Bureau takes the lead on drafting changes to local ordinances.

[2] Scharff RL. Economic burden from health losses due to foodborne illness in the United States. *J Food Protect* 2012;75(1):123-31

Regulatory Performance Measures/Goals

Inspection	Status
All permanent food establishments receive an inspection prior to operating	✓
All new food establishments receive initial routine inspection within 60 days of opening	✓
All food establishments receive a minimum of one inspection per year	✓
All food peddlers receive at least one inspection per year	✓
All schools receive at least two annual routine inspections	✓

Enforcement	Status
All critical violations receive a re-inspection	✓
All critical violations receive a re-inspection within 10 business days of the compliance deadline	✗
Less than 20% of all routine inspections have one or more critical violations upon routine inspection	✗

Policy	Status
CEH is actively engaged in food policy at the local level	✓
CEH is actively engaged in food policy at the state level	✓
CEH is actively engaged in food policy at the federal/national level	✓
All CEH policies/procedures have been updated and reviewed within the past 24 months	✗
All agreements/MOUs have been updated and reviewed/resigned within the past 60 months	✗
CEH has adequate program support to meet FDA minimum inspection staffing requirements	✗
An adequate regulatory foundation is in place to support inspection, compliance and enforcement activities in food establishments	✗

Activity Tracking

Food Revenue Collected, 2014 to 2016[3]

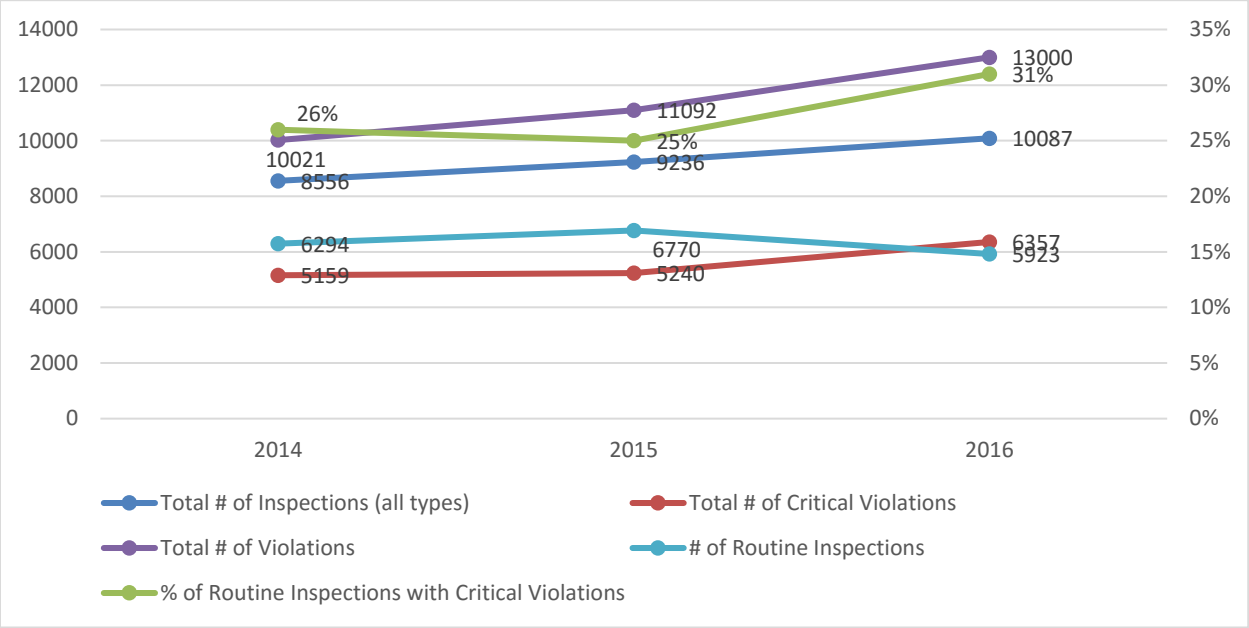
	2014	2015	2016	3 Year Average
Licenses	$ 2,234,599	$2,299,006	$2,318,596	$ 2,284,069
Inspection Fees	$ 155,421	209,782	$180,625	$ 181,942
Total	$ 2,390,020	$2,508,788	2,499,221	$ 2,466,010

[3] Revenue collected by calendar year for both the Health Department and the City Clerk's Office related to food establishments. License fees are collected by the City Clerk's Office. Inspection fees are collected by the Health Department.

Establishment Type

License Type	2015-2016
Permanent	**2843**
Retail Food Establishments	956
Restaurants	1388
Restaurants - Additional Sites	153
Schools (exempt)	266
Community Food Program	76
Bed and Breakfast	4
Seasonal, Temporary, or Mobile	**910**
Vehicles, Carts, or Containers	232
Temporary Events	458
Seasonal or Farmers Markets	220
Total	**3753**

Figure 2: Trends in Food Establishment Inspection and Violations, 2013-2015



Food Establishment Inspections and Critical Violations Citywide, 2014-2016

		2014	2015	2016	3-Year Avg.
Total # of Inspections (all types)		8556	9236	10,087	9293
Inspections by Type	Retail	2907	3300	3428	3212
	Restaurant	4869	5013	5663	5182
	School	780	786	996	854
Total # of Violations		10021	11092	13,000	11,371
Total # of Critical Violations		5159	5240	6,357	5585
# of Routine Inspections		6294	6770	5923	6329
# of Routine Inspections with Critical Violations		1661	1783	1848	1764
% of Routine Inspections with Critical Violations		26%	26%	31%	28%
Violations by Critical Risk Category	Unsafe Source	164	150	177	163
	Inadequate Cooking	24	20	25	23
	Improper Hold	1249	1444	1528	1407
	Cross Contamination	1252	1293	1616	1387
	Personal Hygiene	1502	1456	1771	1576
	Other	968	877	1240	1028

Food Establishment Inspections and Critical Violations by Aldermanic District, 2016

2016		All Inspections				Routine Inspections			Violation by Risk Categories					
		# of Permanent Establishments	# of Inspections	# of Violations	# of Critical Violations	# of Routine Inspections	# with Critical Violations	% with Critical Violations	Unsafe Source	Inadequate Cooking	Improper Hold	Cross Contamination	Personal Hygiene	Other
Citywide		2843	10087	13000	6465	5923	1848	31%	177	25	1528	1616	1771	1240
District	**1**	137	540	775	386	305	106	35%	15	1	95	104	111	60
	2	133	508	659	271	267	82	31%	9	1	66	84	67	44
	3	268	1006	1984	914	567	210	37%	26	3	195	227	231	232
	4	507	1561	1839	857	939	290	31%	23	2	263	201	219	149
	5	136	473	704	347	285	95	33%	3	0	97	98	86	63
	6	181	814	1429	806	484	188	39%	23	8	122	209	264	180
	7	102	470	654	308	224	69	31%	12	0	62	72	97	65
	8	149	466	492	200	294	84	29%	8	0	48	39	62	43
	9	90	564	674	359	337	113	34%	5	2	95	104	94	59
	10	211	556	538	253	421	99	24%	5	2	57	55	81	53
	11	109	332	247	139	206	51	25%	2	0	25	44	54	14
	12	248	920	1080	519	489	147	30%	23	1	133	125	134	103
	13	219	743	595	332	419	122	29%	4	0	96	94	86	52
	14	201	553	528	293	354	91	26%	5	3	92	69	73	51
	15	152	581	802	373	332	101	30%	14	2	82	91	112	72

Food Establishment Inspections and Critical Violations by Aldermanic District, 2015

2015		All Inspections				Routine Inspections			Violation by Risk Categories					
		# of Permanent Establishments	# of Inspections	# of Violations	# of Critical Violations	# of Routine Inspections	# with Critical Violations	% with Critical Violations	Unsafe Source	Inadequate Cooking	Improper Hold	Cross Contamination	Personal Hygiene	Other
Citywide		3,392	9236	11092	5240	6770	1783	26%	150	20	1444	1293	1456	877
District	**1**	144	510	587	256	366	95	26%	12	2	66	68	63	45
	2	142	438	636	290	304	90	30%	11	1	64	87	76	51
	3	302	790	926	520	611	181	30%	14	2	120	134	147	103
	4	580	1498	1801	842	1143	300	26%	21	4	240	171	250	156
	5	148	390	594	330	302	94	31%	1	0	92	104	84	49
	6	233	652	717	367	429	117	27%	10	3	97	90	110	57
	7	124	418	573	269	260	79	30%	9	0	56	77	75	52
	8	234	441	421	196	366	98	28%	11	1	78	33	54	19
	9	148	469	566	290	319	79	25%	3	0	91	70	70	56
	10	219	444	337	146	364	67	18%	6	2	49	40	36	13
	11	114	365	447	198	261	63	24%	4	1	68	42	45	38
	12	335	962	1080	509	704	185	26%	18	1	153	104	146	87
	13	239	711	928	444	489	146	30%	13	2	124	129	103	73
	14	234	612	724	350	499	120	24%	2	1	90	97	127	33
	15	189	509	746	228	341	67	19%	15	0	54	47	68	44
	OT*	7	27	6	5	12	2	16%	0	0	2	0	2	1

* OT district is designated for out of town operators who hold City of Milwaukee Temporary Event or Peddler licenses

Food Establishment Inspections and Critical Violations by Aldermanic District, 2014

2014		All Inspections			Routine Inspections			Violation by Risk Categories					
		# of Inspections	# of Violations	# of Critical Violations	# of Routine Inspections	# with Critical Violations	% with Critical Violations	Unsafe Source	Inadequate Cooking	Improper Hold	Cross Contamination	Personal Hygiene	Other
Citywide		8556	10021	5159	6294	1661	26%	164	24	1249	1252	1502	968
District	**1**	420	493	226	312	84	27%	6	2	31	67	72	48
	2	409	725	309	282	84	32%	14	2	65	91	90	47
	3	781	958	525	578	165	29%	12	3	129	113	164	104
	4	1225	1309	703	918	246	27%	26	3	196	152	191	135
	5	419	595	358	324	100	33%	5	4	95	82	113	59
	6	598	670	360	437	123	27%	13	3	53	75	139	77
	7	310	407	206	226	66	28%	7	1	29	70	64	35
	8	386	385	212	312	75	24%	12	0	61	43	59	37
	9	570	849	457	359	98	28%	13	3	126	113	120	82
	10	485	387	191	393	91	22%	5	0	52	47	57	30
	11	333	297	123	244	49	20%	2	0	51	21	30	19
	12	781	980	509	559	146	26%	18	0	119	106	137	129
	13	719	790	439	498	138	29%	10	2	115	133	108	71
	14	634	604	302	486	105	21%	3	1	77	85	92	44
	15	486	572	239	366	91	24%	18	0	50	54	66	51

Peddler Inspections, 2014-2016

	2014	2015	2016	3-Year Avg.
Total Number of Inspection Occurrences	537	658	463	553
Total Number of Violations	256	343	330	310
Total Number of Inspections with a Critical Violation	72	101	80	84
% of Occurrences with a Critical Violation	13%	15%	17%	15%

Workforce

Number of FTEs assigned to conduct food inspections (fully staffed, all inspection types) 19
Number of FTEs assigned to conduct weights and measures inspections 3
Number of FTEs involved in technical support, management and administrative support..... 5
Total number of FTEs in CEH 27
Number of standardized trainers 4

Inspectional Capacity versus Inspectional Workload

Establishment Type	Number of Establishments	Number of Annual Inspections Required			
		Current Practice[4]		Minimum Required[5]	
Restaurants	1388	1818		1543	
Restaurants - Additional Sites	153	200		168	
Retail	956	1252		1347	
Schools	310	812		682	
Community Food Programs	76	100		84	
Peddlers	232	271		255	
Complaints	598	783		658	
Temporary/Seasonal Events	678	888		746	
Total	4,391	6,124		5,483	
Inspection FTEs		19		19	
Ratio		323		288	
FDA Staffing Goal		320	280	320	280
Required FTE		20	22	18	20
Additional FTE Needed		1	3	0	1

Policy

Members of Consumer Environmental Health are engaged at the local, state and the national level in the development of policy. Activites in 2016 include:

- CEH staff serving on various MATC curriculum planning committees;
- CEH staff serving on the statewide DATCP temporary event and equpiment committees;
- CEH staff serving on the City of Milwaukee Food Council;
- CEH staff sserving on the Southeast Wisconsin Food Safety Task Force
- CEH staff participating on Conference for Food Protection (CFP) workgroups.

[4] Number of inspections required for current practice is based upon schools receiving two routine inspections per year and all other establishments inspected once per year. It also assumes that 31% of establishments will have one or more critical violations requiring a re-inspection. This reflects the minimum routine inspection frequency along with MHD's current practice to re-inspect all critical violations found regardless of the operator's ability to initially correct the violation at the time of inspection.

[5] Minimum required is based upon schools receiving two routine inspections per year and all other establishments inspected once per year. Re-inspection would be done upon the next routine inspection except for critical violations the operator is unable to correct onsite equating to a 10% re-inspection rate. This reflects the minimum routine inspection and the minimum re-inspection requirement permitted.

Education and Community Outreach

The purpose of education and outreach is to assure inspectors, operators, and consumers are adequately informed of the causes of foodborne illness and the key strategies to prevent foodborne illness. External education and outreach activities currently conducted by the Department include posting of inspection reports online, development and distribution of fact sheets and guidelines for operators, participation on the Food Safety Advisory Committee, and operator training sessions. Internal education activities include the development and implementation of a structured curriculum for new inspectors, adopting the FDA procedures for retail food inspector standardization and quality assurance.

CEH has two key partners in implementing education and outreach activities, the Health Department's Communications and Graphics section which assists with website and educational material development as well as media issues, and ITMD which maintains the online inspection portal.

Education and Outreach Performance Measures/Goals

Industry	Status
An actively engaged food safety advisory committee that meets at least annually to review and discuss food safety policy	✓
CEH is actively involved in industry sponsored forums	✓
Provided at least 50 food establishment operator trainings per year	✓
Provided training to at least 250 operators per year	✓
All operator education materials are reviewed and updated (when required) every 36 months	✗
Implemented strategies to increase food safety awareness	✓

Consumers	Status
All retail and restaurant routine food inspections are available online	✓
All consumer education materials are reviewed and updated (when required) every 36 months	✗
CEH is actively involved in community sponsored forums	✓
Increase the proportion of consumers who follow key food safety practices	✗

Inspectors	Status
100% of EHS with 18 months of experience have completed the FDA core food inspection curriculum	✓
100% of EHS with 18 months of experience have completed standardization	✓
100% of EHS, coordinators and supervisors receive 16 hours of relevant continuing education per year	✓
100% of EHS with 18 months of experience have taken a retail HACCP course within the past 5 years	✗
<20% of EHS have less than 24 months of experience in food inspection	✗

Activity Tracking

Industry/Consumer

Number of food handler training sessions performed..... 189
Number of food handlers trained 1,235

Regulatory Staff

% of EHS with more than 18 months experience who have completed core training curriculum 100%
% of EHS with more than 18 months experience who have completed standardization..... 100%
% of EHS with less than 24 months of experience 43%
% of CEH staff with less than 24 months experience in their position..... 67%

Surveillance & Investigation

The purpose of disease surveillance and investigation is to ensure the timely identification and response to foodborne illness in order to minimize morbidity and mortality. Interventions include the investigation of all cases of reportable enteric disease, the investigation of all outbreaks or potential outbreaks, the evaluation of communicable disease, inspection and complaint investigation findings to identify trends and evaluate program performance and the testing of clinical and food samples to identify foodborne disease or food contamination. Enteric diseases are bacterial or viral infections that enter the body through the mouth and intestinal tract and are usually spread through contaminated food and water or by contact with vomit or feces. Enteric diseases are the causative agents of foodborne illness.

Key partners in the surveillance and investigation include the MHD Public Health Laboratory which conducts analysis of clinical, environmental and food samples and MHD Communicable Disease (CD) Program which investigates reportable disease. Members from CEH, CD, and the Lab all serve on the Department's Outbreak Response Team/Foodborne Illness Workgroup.

Surveillance and Investigation Performance Measures/Goals

Investigation	Status
100% of foodborne illness complaints are investigated, the final disposition for each complaint is obtained and tracked	✓
100% of foodborne illness complaints investigations are initiated within 1 business day of being reported to the department	✓
The department has an active functioning multidisciplinary outbreak team with defined roles and responsibilities and written policies and procedures reviewed in the previous 24 months	✓

Surveillance	
Incidence of key enteric disease is at or below the Healthy People 2020 target	✗
An annual review of communicable disease, inspection and complaint data is performed to identify trends and possible risk factors related to food safety and foodborne illness	✓
An active retail food sampling program is in place to identify bacterial contamination in high risk foods	✓

Case Management	Status
100% of reportable cases of enteric disease in Milwaukee residents are investigated	✓
Investigation of cases of reportable enteric disease are initiated within 2 business days of report to the department	✓
100% of food handlers who are either cases of enteric disease or contacts to cases of enteric diseases are evaluated to determine if work restrictions and/or clinical testing is required	✓

Activity Tracking

Complaint Investigations, 2014 to 2016

Type of Complaint	2014	2015	2016	3-Year Average
Foreign Object	21	31	9	20
Illness	73	72	66	70
Labeling	3	4	3	3
Quality/Unwholesome Food	118	124	95	112
Facility Cleanliness	84	122	85	97
Pests/Vermin	86	72	67	75
Other/ Miscellaneous[6]	343	519	184	349
Facility Repairs	24	19	21	21
Garbage/Litter	35	27	42	35
Personal Hygiene	28	23	26	26
Total Food Complaints	815	1013	598	808

Cases of Enteric Disease, 2014 to 2016[7]

Cases Reported	2014	2015	2016	Three Year Average	Estimated # of Cases Per Case Reported[8]	Total Estimated Cases 2016	Total Estimated Cases Three Year Average
Campylobacter	64	48	45	53	29.3	1395	1633
E. coli 0157	10	8	16	11	26.1	432	297
Listeria	3	3	1	2	2.1	3	7
Salmonella	80	77	77	78	29.3	2387	2428
Vibrio	0	1	1	1	142.4	143	95
Yersinia	1	1	1	1	122.8	123	123

[7] City of Milwaukee enteric disease cases from Wisconsin Public Health Information Network, Analysis, Visualization, and Reporting (AVR), on March 21, 2017. Please note that data are provisional and subject to change.
[8] FoodNet Progress Report http://www.cdc.gov/foodnet/data/trends/trends-2012-progress.html

Incidence of Enteric Disease, 2014 to 2016

Incidence per 100,000 Population[9]	2014	2015	2016	Three Year Average	2015 National Rate[10]	2020 Target[11]	Status[12]
Campylobacter	10.8	8.1	7.5	8.8	13.0	8.5	✓
E. coli 0157	1.7	1.3	2.7	1.8	1.0	0.6	✗
Listeria	0.5	0.5	0.2	0.4	0.2	0.2	✓
Salmonella	13.4	12.9	12.9	13.1	15.9	11.4	✗
Vibrio	0.0	0.2	0.2	0.1	0.4	0.2	✓
Yersinia	0.2	0.2	0.2	0.2	0.3	0.3	✓

CIFOR Team Investigation, 2014 to 2016

	2014	2015	2016	Three Year Average
Investigations	2	1	1	1

Food Sampling Program, 2016

	Deli	Frozen Dessert	Beef	Total
# of establishments sampled	21	37	52	110
# of samples tested	41	224	72	337
# of high counts	0	80	6	86
% of samples with high counts	0%	36%	8%	25%

Key Accomplishments/Opportunities

Key accomplishments for 2016:

- Recruited and hired 3 Environmental Health Specialists (EHS);
- Completed more than 10,000 inspections and addressed more than 13,000 food safety violations;
- Number of EH Coordinators to attain DATCP Standardization Certification = 1.

[9] Incidence calculated using 2010 U.S. Census Population data.
[10] CDC FoodNet 2015 Preliminary Data: Tables and Figures
https://www.cdc.gov/foodnet/reports/data/infections/html#table2b accessed 3/21/2017
[11] Food Safety, Healthy People 2020
http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=14
[12] Based on comparison between 2014 City of Milwaukee incidence with 2020 target.

Key activities planned in 2017 to enhance food safety and to meet key performance goals include:

- Continue the development of Health Space reporting features;
- Engage operators and consumers in the continued development of a food establishment grading system
- Assess consumer food safety knowledge and begin to identify potential interventions to address gaps identified;
- Complete the verification audit of FDA Standards 2 and 7;
- Continue work toward meeting remaining FDA Standards;
- Complete an FDA Risk Factor Study for baseline data to develop intervention strategies and analyze change over time.