MADISON AND DANE COUNTY ENVIRONMENTAL HEALTH REPORT CARD SERIES - 2014

FOOD SAFETY PROGRAM
Public Health Madison and Dane County is pleased to present the Food Safety Program section of the 2014 edition of the Environmental Health Report Card series. The Environmental Report Card provides the most recent data analysis available of Dane County health issues that involve the interaction and subsequent impact between environmental quality and human health. The data presented in this report series builds upon prior editions of the Environmental Health Report Card and provides a review of environmental health topics relevant to Dane County and the City of Madison.

The data from this report has been collected from a wide variety of stakeholders including academia, private industry, and public health professionals and agencies throughout the county, state, and federal levels. When possible, each report in the series compares the data collected for the City of Madison and Dane County to established standards, desired goals and objectives, and average values of other communities or the State of Wisconsin. Additional resources used to help assess this data have come from the Health People 2020 Objectives and Healthiest Wisconsin 2020 Objectives and Focus Areas. Objectives listed in these documents focus on several areas of public health including environmental issues. Although these objectives are not always measurable at the local level, they provide a solid foundation to effectively assess the environmental issues that impact public health in Dane County.

The Environmental Public Health Report Card continues to evolve with each new edition. In the current edition, each section of the report (Air Quality, Water Quality, Food Safety, Healthy Homes and Communities, and Sustainability) will be released separately, approximately one section each quarter of the year, and followed by a full Executive Summary when each of the reports in the series have been released. The reasoning behind this change in the schedule of publication is to provide the information more efficiently and rapidly to the community. Although the primary focus of this edition of the report will focus on data from 2013 and 2014, at least five years of data will be provided (if available) and discussed to allow a better review of the current environmental health trends in our community.

Despite these changes to the report, this edition continues to utilize features from prior editions that have become useful in the presentation of the information and the understanding of the information by the community. For example, the color-coded arrow system introduced in the 2008 edition continues to be utilized in this report; the direction of the arrow indicative of the level of progress and the color (green, red, and yellow) demonstrating the type of change (positive, negative, or no significant change) for each environmental measure. In addition, potential issues and concerns that have been identified since the publication of the last report continue to be included in the appropriate section of this edition. The sustainability section of the report continues to be refined to more accurately evaluate sustainability efforts in the City of Madison and Dane County to protect our community, our environment, and preserve our rich environmental resources.

The Food Safety Program report of the Environmental Health Report Card series is the result of the collaboration of many individuals and organizations that have allowed the compilation of a wide variety of data and information that would not otherwise be possible without their assistance. References to these individuals and organizations are made in the text of this report and compiled at the end to acknowledge these efforts. We greatly appreciate their efforts on this document and apologize if any names have been inadvertently omitted.
ENVIRONMENTAL MEASURES

Foodborne illness is caused by the consumption of food and beverages that are contaminated with bacteria, viruses, parasites, and/or harmful chemicals resulting from improper harvest, processing, transportation, storage, and/or preparation. Although all food products have the potential to be contaminated, raw and under-cooked foods of animal origin including meat and poultry, eggs, unpasteurized milk, and shellfish are the most common sources of foodborne illness. Another significant source is the consumption of raw fruits and vegetables that are not properly cleaned. To avoid contamination of food products and beverages and reduce the risk of illness among consumers, food temperature control, proper sanitation, good employee hygiene practices, and proper use and storage of chemicals are essential.1-3

The CDC has identified the most important risk factors that require control to prevent foodborne illness. PHMDC food safety inspections focus efforts to ensure that the risk factors identified by the CDC are appropriately controlled in order to reduce public exposure to contaminated food and beverages.1-3 The following tables list the CDC risk factor violations by category and the number of violations observed Dane County food establishments during 2013 and 2014.

Table 1: CDC Risk Factor Violations Recorded During Inspections of Dane County Restaurants, 2013*

<table>
<thead>
<tr>
<th>Restaurant Type</th>
<th>Unsafe Sources of Food</th>
<th>Inadequate Cooking</th>
<th>Improper Food Holding Temp</th>
<th>Cross-Contamination</th>
<th>Personal Hygiene</th>
<th>Other CDC Factors Violations</th>
<th>Total CDC Risk Factor Violations</th>
<th>Number of Inspections</th>
<th>Number of Risk Factor Violations/Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>1</td>
<td>0</td>
<td>35</td>
<td>45</td>
<td>78</td>
<td>86</td>
<td>245</td>
<td>212</td>
<td>1.16</td>
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<tr>
<td>Moderate</td>
<td>22</td>
<td>6</td>
<td>490</td>
<td>524</td>
<td>462</td>
<td>504</td>
<td>2008</td>
<td>988</td>
<td>2.03</td>
</tr>
<tr>
<td>Complex</td>
<td>10</td>
<td>1</td>
<td>232</td>
<td>178</td>
<td>175</td>
<td>185</td>
<td>781</td>
<td>285</td>
<td>2.74</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>7</td>
<td>757</td>
<td>747</td>
<td>715</td>
<td>775</td>
<td>3034</td>
<td>1485</td>
<td>2.04</td>
</tr>
</tbody>
</table>

*This table does not include retail food establishments.

Table 2: CDC Risk Factor Violations Recorded During Inspections of Dane County Restaurants, 2014*

<table>
<thead>
<tr>
<th>Restaurant Type</th>
<th>Unsafe Sources of Food</th>
<th>Inadequate Cooking</th>
<th>Improper Food Holding Temp</th>
<th>Cross-Contamination</th>
<th>Personal Hygiene</th>
<th>Other CDC Factors Violations</th>
<th>Total CDC Risk Factor Violations</th>
<th>Number of Inspections</th>
<th>Number of Risk Factor Violations/Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
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<td>48</td>
<td>109</td>
<td>242</td>
<td>191</td>
<td>1.27</td>
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<tr>
<td>Moderate</td>
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<td>598</td>
<td>562</td>
<td>513</td>
<td>589</td>
<td>2302</td>
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<tr>
<td>Complex</td>
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<td>975</td>
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<tr>
<td>Total</td>
<td>45</td>
<td>15</td>
<td>946</td>
<td>809</td>
<td>762</td>
<td>942</td>
<td>3519</td>
<td>1488</td>
<td>2.36</td>
</tr>
</tbody>
</table>

*This table does not include retail food establishments.
In the above tables, restaurants are grouped into categories representing the complexity of food handling activity reported by individual establishments.

- Simple: Minimal preparation and processing of food products. In other words, the food is prepared when ordered by the customer. An example would be a concession stand.
- Moderate: This category has an increased amount of food preparation and processing. A typical fast food restaurant is an example of moderate handling activity.
- Complex: This category has the most extensive amount of food preparation and processing. These types of establishments may cool, reheat, and/or cater food. An example of a complex establishment is a large hotel kitchen.

As indicated in the previous tables and the pie chart below, improper food handling temperature, cross-contamination, and improper hygiene (appropriate hand washing and availability of hand washing supplies) continue to be the most frequently reported specific risk factor violations in 2014; similar results were also reported in 2013 and in previous years (2010-2013) (data not shown).
Sources

The contamination of foods and beverages has led to outbreaks of foodborne illness at the local, county, and national levels. Both small scale and large outbreaks are possible due to the modern food supply system that allows the transportation of food products to consumer markets across town, across the country, and across the globe.

According to the CDC estimates of foodborne illnesses, Norovirus is the most common cause of gastroenteritis in the United States and the most common cause of foodborne disease outbreaks. Other common causes of foodborne infections and disease outbreaks include *Campylobacter*, *Salmonella*, and *Clostridium perfringens*.

Unsafe food can be found both in the home and commercial food establishments but the commercial food industry has a much greater potential impact on individual and community health. Unsafe food served in a home can result in a small number of people becoming ill, while contaminated food served in a commercial food establishment or temporary event vendor has the potential to cause illness in many people.

- 1604 permanent restaurants and 738 retail food establishments were licensed in Dane County in 2014.
- 452 temporary food vendor permits were issued in 2014.

Unsafe food handling practices such as lack of hand washing or the lack of availability of hand washing supplies and improper food holding temperature are among the prevailing causes of foodborne illness. These practices may be the result of inexperience or a lack of knowledge from inadequate employee training practices. As demonstrated in the figure above, the continuous turnover of food establishments over the last decade has created an ongoing demand for food operator training to ensure appropriate food handling practices and consumer safety.
Another source of food contamination is individuals that work in food establishments while being ill. Contact with food products and beverages by the ill worker provide a pathway for bacteria, viruses, and parasites to be passed to others. The figure below shows the number of foodborne illness outbreaks in Dane County over the past several years and demonstrates the necessity of safe food handling and preparation practices. An outbreak is defined as the report of two or more individuals that have the same exposure (i.e. contaminated food) and developed the same illness; at least 1 of the 9 reported illness outbreaks in 2013 and 2014 ill food workers were the confirmed or suspected source of infection. At least another 3 of these outbreaks during this time period were caused by improper food handling practices.

These small number of outbreaks resulted in multiple cases of reported human illness; two notable examples from the past two years are shown below.

- In 2013, a group of 10 co-workers had lunch at a local restaurant. Four of these individuals ordered the tuna salad melt and all four developed symptoms for scombroid fish poisoning; a toxin that forms when fish is held at temperatures that are too high. It is unknown if the temperature abuse of this tuna occurred at the restaurant or prior to its arrival to the restaurant during shipping, package, or storage.
- In 2014, individuals from three different groups of patients were diagnosed with the same strain of Salmonella. Each patient had attended events that had been catered by the same establishment during the same weekend. Inspection of the caterer revealed poor food handling practices and numerous opportunities for cross-contamination which likely led to the contamination of food items served at each of the three separate events under investigation. A total of 18 confirmed cases and 24 probable cases of the disease were reported.

GRADE: NO SIGNIFICANT CHANGE

The number of reported foodborne illnesses outbreaks in Dane County similar to the previous reporting years.
HUMAN HEALTH IMPACTS

According to the CDC, an estimated 48 million foodborne related illnesses occur annually in the United States from over 250 described foodborne diseases. Although the majority of these cases are mild, some reported cases can be much more severe; an estimated 128,000 hospitalizations and 3,000 deaths are derived from foodborne causes each year. Typically, foodborne illnesses are cause by a variety of bacteria, viruses, and/or parasites that may be present in contaminated food products resulting in reported symptoms that include nausea, fever, vomiting, abdominal cramps, and/or diarrhea. However, other food product contamination such as poisonous concentrations of chemicals and/or harmful toxins may also result in symptoms in exposed persons.¹

LOCAL RESPONSE

Individual Actions

➢ Wash your hands thoroughly prior to handling food products, following handling of raw meats, and before eating. Alcohol-based gels or sanitizers are not adequate substitutes to hand washing when preparing food by food workers.⁵
➢ Cook meat, poultry, and eggs thoroughly. Using a thermometer to measure the internal temperature of these items is an excellent method to ensure proper cooking of the foods.
➢ Keep your refrigerator at or below 40°F and refrigerate leftovers promptly.
➢ Do not cross-contaminate one food with another. This can be avoided by washing hands, utensils, and cutting boards after contact with raw meat or poultry before they touch another food item.
➢ Rinse fruits and vegetables thoroughly.
➢ Report illnesses that are suspected to have come from eating food as soon as possible to Public Health Madison and Dane County. Patrons can either call PHMDC directly at (608) 266-4821 or use our safe online questionnaire to report their illness. The questionnaire is available at: www.publichealthmdc.com/environmental/food/foodbornillness/reporting.cfm.
Community Actions

- Ensure safe handling and proper storage of food by conducting inspections of food establishments.
  - In 2013, a total of 2191 regular and 407 follow-up re-inspections were performed in Dane County food establishments; a total of 2106 regular and 451 re-inspections were performed in 2014.

- Investigate all potential occurrences of foodborne illness to prevent and/or reduce the occurrence of disease outbreaks.
  - Public Health Madison Dane County staff investigated 3 foodborne illness outbreaks in 2013 and another 6 outbreaks in 2014. These totals are similar to previous annual totals reported in Dane County since 2005.

- Educate food service operators.
  - Staff educated 317 food service operators and workers about safe food handling in 2013 and an additional 493 in 2014.

- Correct repeated food safety problems through the use of referrals for legal action, temporary license suspensions, and permanent license revocations.
  - In 2013, a total of 5 enforcement actions were taken against problem food establishments; all five of these actions were City Attorney referrals for fines. In 2014 an additional 4 enforcement actions were taken; each of these four actions were compliance conferences with the establishment.
  - In 2013, a total of 15 temporary license suspensions were reported; twelve were reported in 2014.
  - No permanent license revocations were reported in 2013 or 2014.
ACKNOWLEDGEMENTS

Many thanks to the individuals and organizations that provided data, reviewed the report sections, and provided suggestions to improve the final report. This report would not have been possible without their efforts. The following individuals, organizations, and databases provided the information presented in the Food Safety Program report of the Environmental Health Report Card series.

Beth Cleary & Amanda Kita-Yarbro, Public Health Madison & Dane County
REFERENCES


