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FOOD PROTECTION  
TRAINING INSTITUTE



## IFPTI Fellowship Cohort VI: Research Presentation

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# ***Community Size and Retail Risk Factors in Iowa Retail Food Establishments***

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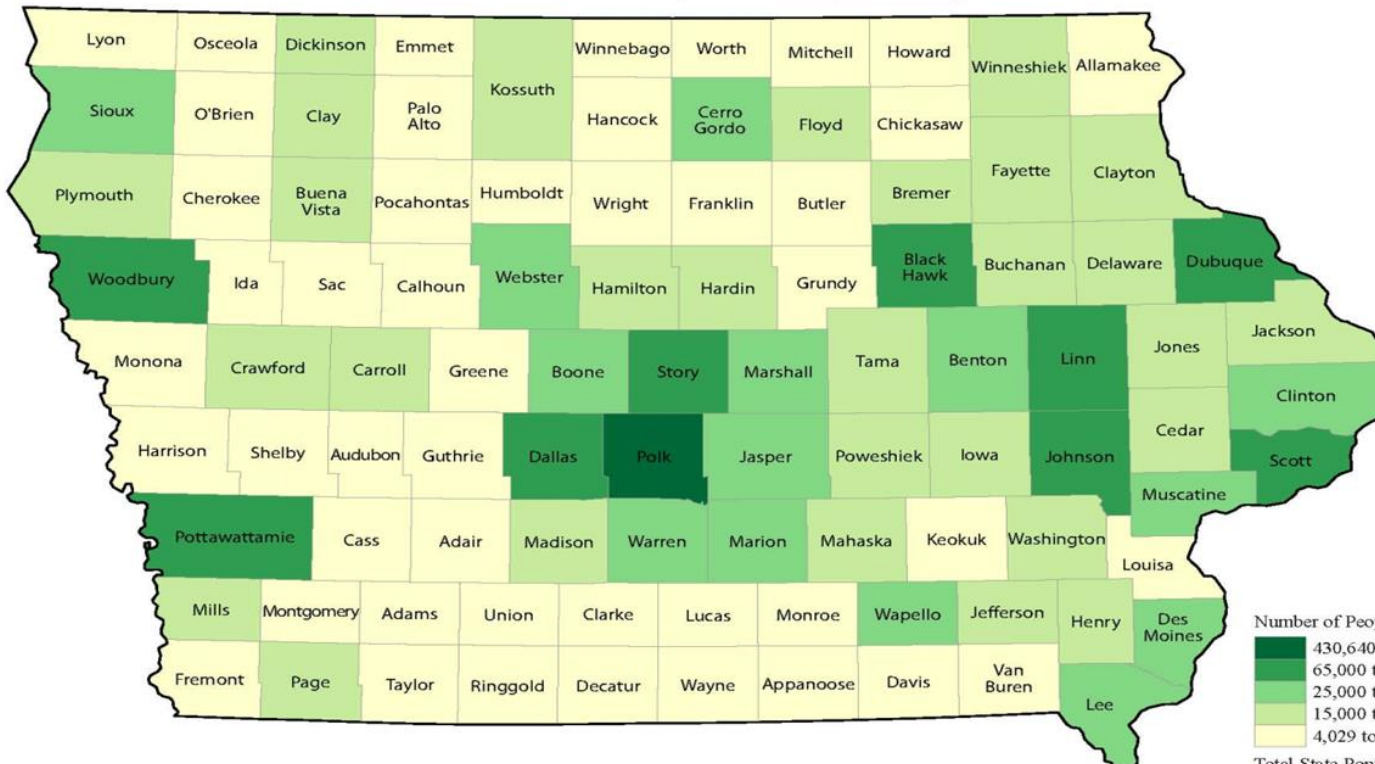
Iowa Department of Inspections and Appeals  
(DIA) Food & Consumer Safety Bureau

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“Community Size and Retail Risk Factors  
In Iowa Retail Food Establishments”

- Retail food establishments are located in a range of settings from highly urban to extremely rural locations:

**IOWA - 2010 Census Results**  
Total Population by County



**Urban:** 50,000 or more

**Urban cluster:** 2,500 – 49,999

**Rural:** 2,499 or less

Number of People

- 430,640
- 65,000 to 249,999
- 25,000 to 64,999
- 15,000 to 24,999
- 4,029 to 14,999

Total State Population: 3,046,355

Image source: <http://www2.census.gov>

- No examination of the relationship among geographic setting and foodborne illness risk factors violations found in food service establishments inspections.

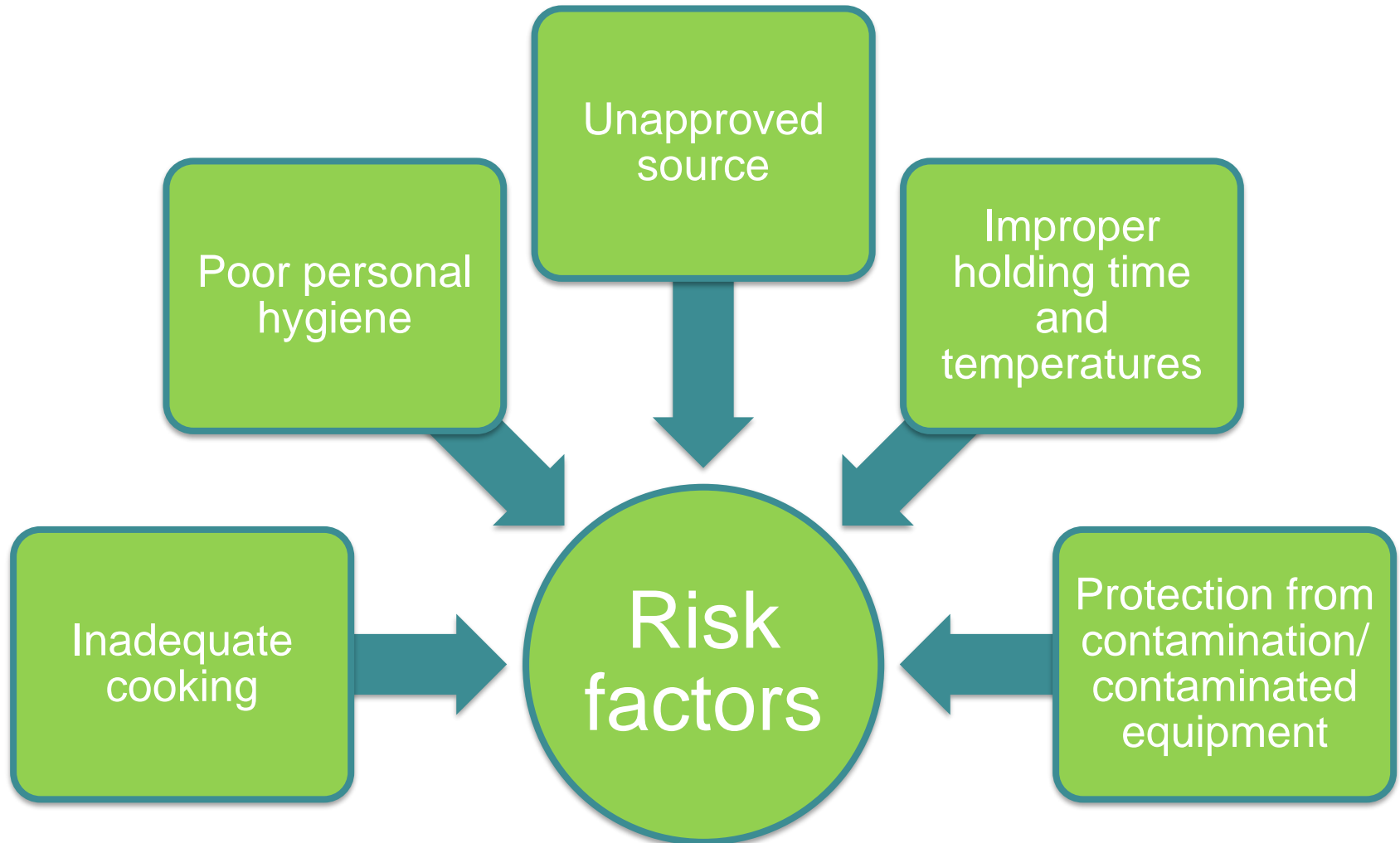
## Food service establishments inspections

Geographic setting



Foodborne illness risk factors violations

- Overall, there are approximately 15,000 restaurants in Iowa
- Iowa retail food establishment inspections are:
  - Carried out by standardized DIA inspectors and county contract inspectors
  - Performed every 6 months to 3 years for the average food establishment
- Inspections of these retail food establishments include:
  - Examination for foodborne illness risk factor violations,
  - Public health interventions, and
  - Good retail risk factor violations.



The differences in type and number of foodborne illness risk factor violations among urban, urban cluster, and rural area food establishment in Iowa is unknown.



Image source: Courtesy of Dale Klein (past resident of Balltown, IA)

1. Are there differences in the risk factors among Iowa retail food establishments in urban, urban cluster, and rural communities?
2. Are there differences in violation rates for specific retail risk factors among Iowa retail food establishments located in urban, urban cluster, and rural communities?
3. Are observed differences in the prevalence or specific risk factors or the rate of violations observed for specific risk factors related to other non-population related factors tracked in the Iowa Department of Inspections and Appeals U.S.A. Food Safety database?
  - Factors include type of ownership (franchise, corporate, sole proprietor)



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- Conduct phone interviews with DIA's food inspectors
  - Use the USA Food Safety database to select inspections for review
  - Use inspections to identify establishments in 2011-2016
  - Extract foodborne illness risk factor violation data

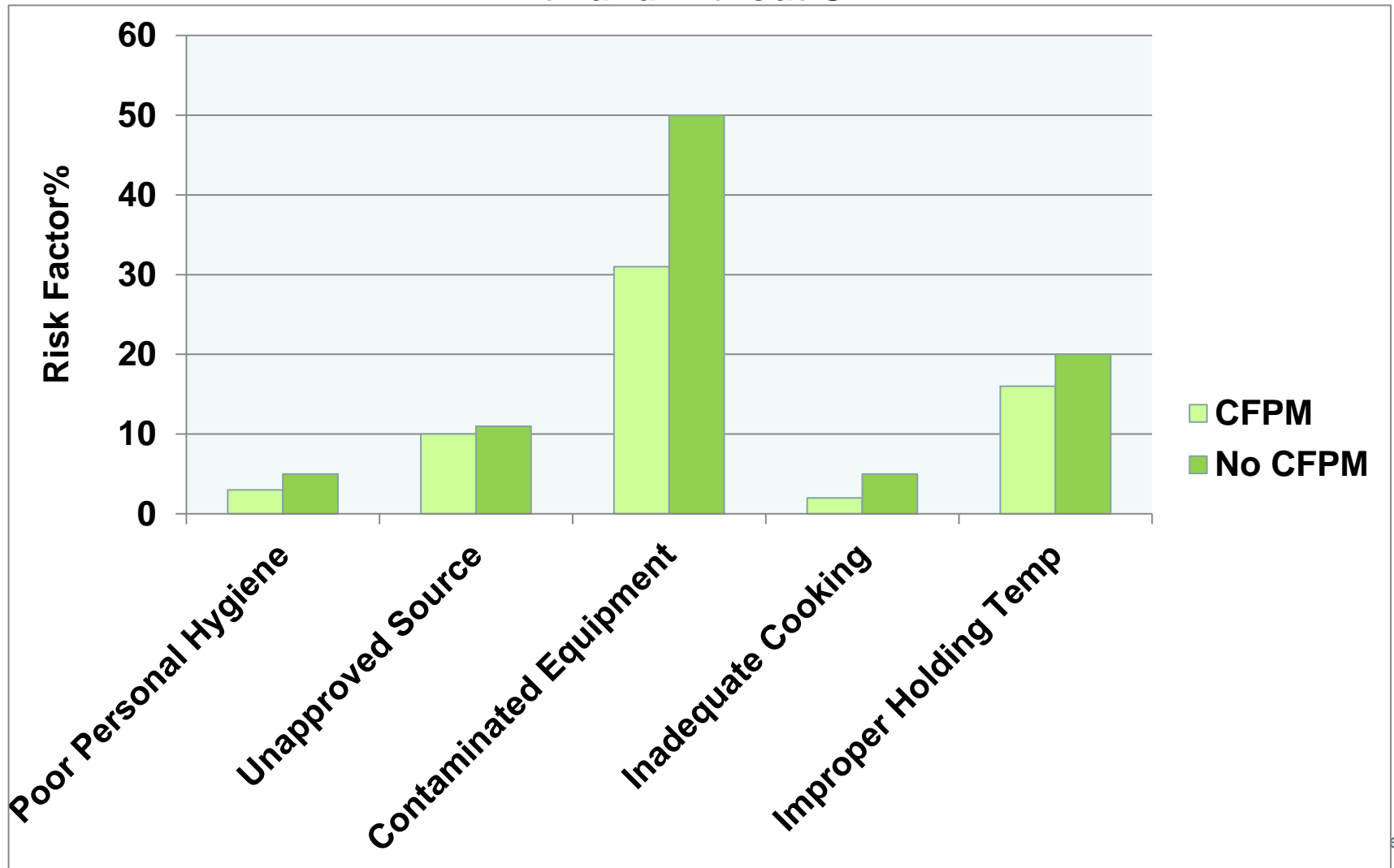
- Extract data relating to ownership, ownership length, certified food protection manager
- Sort by U.S. Census population types:
  - Urban
  - Urban cluster
  - Rural
- Look for associations among the risk factors

- Data was collected from approximately from 300 food establishments
- Data collected was comprised of:
  - **Two most recent** routine inspection reports per food establishment (**total of 600 inspection reports reviewed**)
  - Foodborne illness risk factor violations
  - Type of ownership
  - Length of ownership
  - Community size (urban, urban cluster, rural)
  - Certified Food Protection Manager (CFPM)

Risk Factors	Rural %	Urban Cluster %	Urban %
Poor Personal Hygiene	3	3	7
Unapproved Source	12	7	7
Contaminated Equipment	38	38	42
Inadequate Cooking	1	3	3
Improper Holding Temperatures	11	21	18

<b>Risk Factor Violations</b>	<b>Sole Proprietor %</b>	<b>Corporate LLC %</b>	<b>Corporate Franchise %</b>
<b>Poor Personal Hygiene</b>	<b>3</b>	<b>3</b>	<b>1</b>
<b>Unapproved Source</b>	<b>10</b>	<b>5</b>	<b>.5</b>
<b>Contaminated Equipment</b>	<b>34</b>	<b>20</b>	<b>7</b>
<b>Inadequate Cooking</b>	<b>2</b>	<b>2</b>	<b>.2</b>
<b>Improper Holding Temperatures</b>	<b>16</b>	<b>8</b>	<b>4</b>

## Comparison of risk factor violations in food establishments with and without CFPM



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- Overall the differences in risk factors in retail food establishments in different community sizes are minor.
  - The non-population parameters, such as the ownerships, in particular sole proprietor, have more documented risk factors in 3 of the 5 risk factor categories.
  - The retail food establishments with a CFPM on staff, do have lower risk factors than food establishments without a CFPM.

1. Survey and analyze data concerning risk factor violations annually.
2. Share results with DIA staff and local county contracts.
3. Design and conduct research to determine cause of higher risk factors associated sole proprietor owned retail food establishments.
4. Design and conduct research about the effect of a CFPM on staff and prevalence type and number of risk factors.



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# Questions?

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- [Possible Future Presentations](#)
- [Risk Level Classifications](#)