Connecticut's Food Safety and Inspection Practices

A qualitative exploration

Britton A. Gibson, M.P.H.

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Contents

Executive Summary

Though the State of Connecticut has mandates for food safety across the state, these programs are implemented at the local health department (LHD) level. As such, implementation of food safety practices and enforcement of the Connecticut food code differ substantially across the state. This report presents a probative effort to begin understanding the common areas of consistency and variation in food safety practices at LHDs. The research for this report was conducted as part of a larger environmental health study by the Connecticut Association of Directors of Health as part of the Practice-Based Research Network, with funding in part from a grant from the Robert Wood Johnson Foundation.

While all of Connecticut's LHDs provide state-mandated environmental services, there has been little research related to the influence of organization structure and size on the cost of such services. The diversity of and variation in organizational structure of local health in Connecticut makes the state an ideal location for evaluating the role of these variations on effectiveness, efficiencies and equity of services throughout the state. The research for this report was conducted as part of a larger environmental health study by the Connecticut Association of Directors of Health as part of the Practice-Based Research Network. This component of the study focuses on food safety programs at LHDs and their food service establishment (FSE) inspection practices, specifically from the perspective of local directors of health and chief sanitarians.

Foodborne illness remains a serious public health concern across the United States. Connecticut has 1,266 laboratory-confirmed foodborne illnesses in 2012 and 156 identified foodborne outbreak sources between 2004 and 2012. The majority of these outbreaks were attributed to practices at FSEs. Despite this, no known research to date has examined the practices in place that seek to eliminate the risk of these infections. Thus, this project is a preliminary effort to explore the implementation of these practices and identify potential trends across LHDs in approach and perception.

Methods: Sampling for this study was based on a combination of LHD type (full-time municipality, part-time municipality, or district) and "Five Connecticut" designation (wealthy, rural, suburban, urban periphery, urban core) to provide diverse perspective from across the state. Qualitative in-depth key informant interviews were conducted with 6 directors of health and 6 chief sanitarians at LHDs using a semi-structured script and lasted for 45 minutes to 1.5 hours. Interviews were recorded for accuracy, transcribed, and analyzed through an iterative thematic coding process using Atlas.ti.

Findings and Conclusions: Analysis of the interview content showed seven prominent thematic families with regard to LHD food safety programs: variation in organizational structure, variation in inspection procedures, priorities, philosophies, perceptions, challenges, and best practices. Interviews revealed that for most LHDs, a lack of time, staff, and other resources leaves many LHDs unable to meet the massive demands of their mandated inspection frequencies. However, all departments saw food safety as a public health issue and used FSE inspections to focus on risk-based items in order to

prevent foodborne illness in FSE patrons. Central to several discussions was the importance of education in food safety programs. Many participants felt they were criticized by the state because of these educational approaches and that the state wanted them to focus on being "regulators, not educators." Still, they maintained their educational practice, viewing regulation-only approaches as a barrier to sustained compliance and education as a means towards sustainable compliance. Support for the FDA code was also common, with several participants feeling it would be the best thing to advance food protection efforts across the State of Connecticut.

Recommendations: Based on the data collected, we recommend the implementation of the following measures as steps to improve food safety across the state. Incorporation of standardized education into food safety inspections should adopted across the state, with formalized material and methods provided by the state to the LHDs. Additionally, the use of food rating programs can also be implemented across the state, though not without the development of a standardized, risk-based scoring algorithm that is meaningful for consumers. Lastly, there is widespread support for the FDA code in Connecticut and given the ubiquitous concern by this study's participants regarding the current Connecticut food code, we recommend adoption of the FDA code as a means of addressing issues of focus, relevancy, and subjectivity in the current code.

Introduction

Foodborne illness has plagued mankind for millennia, with one of the earliest suspected accounts dating back to the death of Alexander the Great in 323 B.C.E. However, it was not until the early 20th century that the United States began creating laws to protect consumers from unsafe food.[1] Despite over a century of legislation governing food safety practices, foodborne illness remains a major public health concern in the country today. Every year in the United States, one in every six Americans contracts a foodborne illness, or about 48 million cases that result in 128,000 hospitalizations and 3,000 deaths.[2]

Foodborne Illness Agents and Transmission

There are 31 pathogens known to cause foodborne illness, with the majority of illness, hospitalizations, and deaths caused by eight known pathogens: *Norovirus*, non-typhoidal *Salmonella*, *Clostridium perfringens*, *Campylobacter*, *Staphylococcus aureus, Toxoplasma gondii*, and *Listeria monocytogenes.* Still, these known agents only account for about 9.4 million (or approximately 20%) of foodborne illness cases. The remaining 80% of cases are attributed to unknown gastroenteritis agents that have not been previously discovered or that have not been characterized due to insufficient data on presence and pathogenicity in food.[3] An additional complication is the underreporting of foodborne illnesses, with many cases not receiving clinical care, which is necessary for classification and reporting. Thus, figures describing the foodborne illness burden across the country are best estimates derived from a small representation of the actual number of cases.[4]

Foodborne illness transmission pathways can be complex and occur at various points through the course of collection of raw materials to production and consumption. The Food and Drug Administration (FDA) identified six categories of foodborne risk, particularly for food retail venues, which include use of food from unapproved sources, inadequate cooking, improper time/temperature holding, contaminated equipment, poor personal hygiene/handing practices, and other chemical/toxic material contamination.[5] As it is important to evaluate the safety and performance of food retail venues, the FDA recommends the monitoring of these risk-based groups instead of the incidence of foodborne illness at a venue, especially given the lack of reliability in pathogen detection and correlating illness with its source.[5]

Factors associated with transmission have been studied to understand where prevention efforts should be targeted. For instance, an analysis of outbreak settings found that 68% of reported outbreaks occurred in restaurants or delis, while 9% occurred in private homes and only 5% occurred in institutions, such as schools.[6] The same study found that the most common foods associated with foodborne outbreak-related illnesses were poultry (17%), leafy vegetables (13%), beef (12%), and fruit and nuts (11%).[6] This demonstrates the need to monitor venues and focus on high-risk food items as a means of preventing foodborne illness.

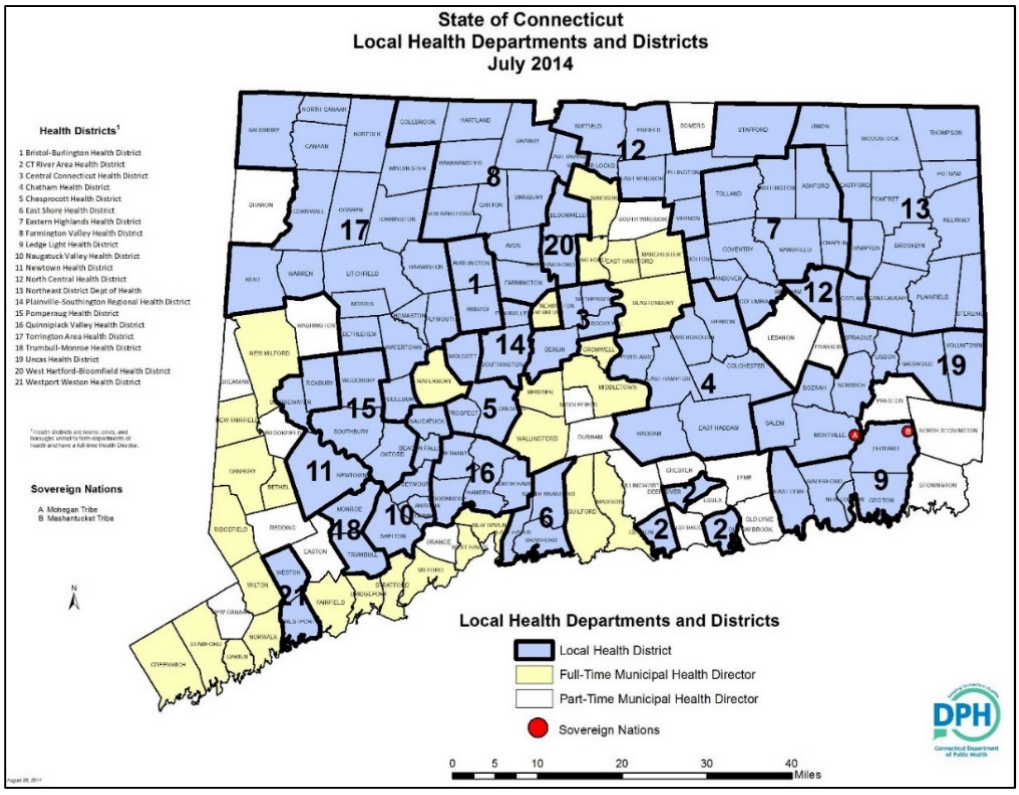
Food Safety across the Country

Across the United States, there is a common agenda to promote and monitor food safety practices in food retail venues. Each of the 50 states have adopted a version of a Food Regulation Code to be enacted at the state level.[7] However, these are often based on multiple versions of the FDA food code, dating back as early as 1991,[7] and are subject to state-level modifications that add further variability in the practices across state lines.[8] This lack of standardization of food safety and inspection practices complicates surveillance and illness reporting and prevents the comparison of efforts across the country that could inform program effectiveness and best practice protocols.

Connecticut: Health Jurisdictions, and Food Safety

Adopting a food code in 1963, Connecticut dictates the regulation of food safety practices according to Section 19-13-B40 of its Public Health Code.[9] Enforcement of this code is the responsibility of the local health jurisdictions across the state, largely through licensing and food service inspections. Though Connecticut is divided into 169 towns, its residents fall into 73 local health jurisdictions (LHD) that are either full-time or part-time. Municipalities include 29 jurisdictions with full-time departments and 23 jurisdictions with part-time departments. Additionally, there are 117 towns grouped into 21 health districts, ranging from 2 to 18 towns per jurisdiction. The state also has 2 sovereign Tribal nations with independent health departments. A map of these jurisdictions can be seen in **Figure 1**.

Figure 1: Connecticut Health Jurisdictions, July 2014[10]



The Connecticut Department of Public Health participates in the Centers for Disease Control and Prevention's Foodborne Diseases Active Surveillance Network (FoodNet), which monitors the incidence of foodborne illness and sources of foodborne outbreaks. In 2012, Connecticut had a total of 1,266 laboratory- or culture-confirmed infections by reportable foodborne bacteria or parasites*, occurring at an incidence rate of 35.4 cases per 100,000 population.[11] While the most commonly reported pathogen was *Campylobacter* (47.3%), perhaps the most concerning disease agent was *Listeria monocytogenes*, which had a 100% hospitalization rate for its 23 cases and a case-fatality ratio of 8.7%, the highest of the ten reported pathogens. Between 2004 and 2012, foodborne outbreaks were most commonly attributed to Norovirus (51%).[12] Most foodborne outbreaks have been linked to food service establishments (FSE), with 92 cases (59%) of cases attributing their source of infection to food mishandling or contamination at a FSE. Between 2004 and 2012, 64% of outbreaks occurred in FSEs, a percentage that is 2.7 times higher than the next most frequent setting, private homes.

Objectives and Research Questions

The work presented reflects an initiative to gain perspective on the Food Protection Program across the State of Connecticut, particularly from the viewpoint of LHDs. This research aims to understand the following:

- how the local health department views its food protection role
- how the inspection process fits into the overall food safety program
- the role of education in food safety programs
- the role of continuing education for LHD staff regarding food safety
- strengths, weaknesses and challenges of the program

Methodology

As a probative effort to understand food safety efforts at the LHD level, we conducted 12 semi-structured, in-depth interviews with LHD staff: 6 Directors of Health (DOH) and 6 Chief Sanitarians or Senior Sanitarians. These interviews explored the aforementioned objectives through the following methods.

* FoodNet reportable infections include: *Campylobacter, Cryptosporidium, Cyclospora, Listeria, Salmonella, Shiga toxin-producing Escherichia coli O157 (STEC) and non-O157 STEC, Shigella, Vibrio,* and *Yersinia*. Although most foodborne illness cases are attributed to *Norovirus,* surveillance remains difficult, as many healthcare settings lack the ability to detect it from samples and thus state, local, and territorial health departments are not currently required to report *Norovirus* cases.

Data Collection

Survey Instrument

This study sought to explore LHD food safety and inspection practices through five domains: **priority**, **process**, **philosophy**, **perception**, and **best practices**. A description of these domains and probative topics are included in **Table 1**.

Table 1: Description of Qualitative Domains

Domain	Description	Probes
Priority	To describe the amount of time and resources dedicated to food safety at the LHD	• Participants Involvement in food safety role • Percentage of Time Spent on Inspections • Emphasis Placed on Meeting Mandates
Process	To understand how food protection practices are implemented at various LHDs	• New Establishment Application and Licensure • Re-Licensing • Inspection • Re-Inspection and Corrective Action
Philosophy	To examine the attitudes, motivations, and approaches towards food safety at LHDs	• Overarching Goals of Inspections • Focus Areas while inspecting • Relationship with FSE
Perception	To explore thoughts on the impact, efficiency, efficacy, and equity	• Effectiveness of Inspections • Variability across departments, state • Barriers and Challenges in Food Safety
Best Practices	To determine the opinions towards, aspirations for, and implementation of practices in the field to enhance food safety efforts	• Additional Efforts Made at Department • Prospective Actions • Best Practices in other Jurisdictions • Recommendations for improvement

Sampling Framework

Sampling for this study was based on two levels of stratification to provide diversity in the recruited LHDs. The first stratification was based on jurisdiction type: full-time municipality, part-time municipality, and health district. The second level of stratification was based on a report developed by the Connecticut State Data Center at the University of Connecticut that conceptualizes the socio-demographic inequality across the state of Connecticut. Connecticut has the second highest Gini coefficient of the fifty states, indicating that the state has one of the greatest income inequality problems in the country.[13] This has implications for vast differences in the living and working conditions of citizens across the state.

Given the reality of Connecticut's income inequality, the "Five Connecticuts" report groups each of the 169 towns of Connecticut into one of five "distinct, enduring, and separate" categories based on multiple variables related to population density, median household income, and poverty.[14] The report describes the five domains as follows:

Wealthy: exceptionally high income, low poverty, and moderate population density

Suburban: above average income, low poverty, and moderate population density

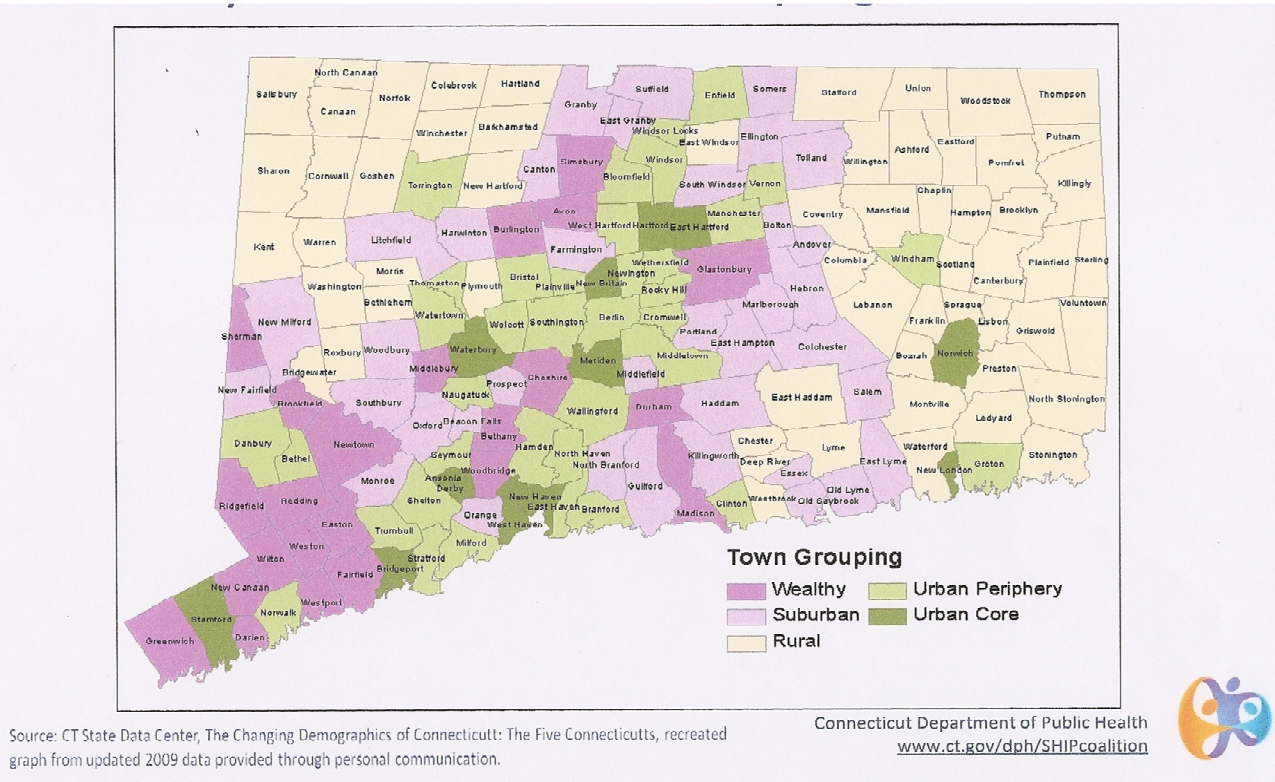
Rural: average income, below average poverty, and lowest population density

Urban Periphery: below average income, average poverty, and high population density

Urban Core: lowest income, highest poverty, highest population density

A map of these town groupings can be found in **Figure 2**.

Figure 2: Map of "The Five Connecticut" Groupings, 2009[14]



Source: CT State Data Center, The Changing Demographics of Connecticutt: The Five Connecticutts, recreated graph from updated 2009 data provided through personal communication.

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www.ct.gov/dph/SHIPcoalition

Combining these two levels of stratification, we developed a sampling framework that

5 C's Category	LHD Type
Wealthy	FT Municipality
Wealthy	PT Municipality
Wealthy	District
Suburban	FT Municipality
Suburban	PT Municipality
Suburban	District
Urban Core (>100,000 population)	FT Municipality
Urban Core (<100,000 population)	FT Municipality
Urban Periphery	FT Municipality
Urban Periphery	District
Rural	PT Municipality
Rural	District

addresses each of the possible combinations of the two levels (**Table 2**).

Table 2: Sampling Framework

Participant Recruitment

All LHDs were grouped into one of the twelve categories listed above and LHDs were randomly selected for recruitment. Once the twelve LHDs were selected, we randomized selection for sanitarians and DOHs. Recruitment emails were sent and followed up with phone calls. For those initially selected recruits that declined participation, a second randomly selected LHD was identified with the intention of adhering as closely as possible to the original sampling framework.

In-Depth Interviews

Interviews were conducted with participants at their LHD. All participants provided informed consent prior to interviews. Following a semi-structured interview guide, the interviewer conducted an in-depth dialogue with participants on the qualitative domains described above, with all interviews lasting between 45 minutes to 1.5 hours. The qualitative script used can be found in **Appendix A**. Interviews were recorded for accuracy and transcribed for data analysis.

Data Analysis

Transcribed interviews were analyzed using Atlas.ti to determine prominent themes.[15] Coding was an iterative process by which the coder (B.A.G.) reviewed all documents, categorized emergent themes into families, and presented to the research group and the CADH PBRN Advisory Committee for feedback and discussion. After this first iteration, interviews were re-reviewed to ensure accurate and thorough coding.

Results

Findings from the analysis of in-depth interviews are included below, with codes presented under larger overarching thematic groupings derived directly from the interviews.

Summary of Participants

A total of 12 interviews were conducted with DOHs (n=6) and chief or senior sanitarians (n=6). **Table 3** shows the description of the final sample based on the sampling framework. One DOH requested to include a sanitarian in conversation to discuss daily duties.

Table 3: Description of Final Sample

5 C's Category	LHD Type	Position at LHD
Wealthy	FT Municipality	Director of Health
Wealthy	PT Municipality	Director of Health (& Sanitarian)
Wealthy	District	Director of Health
Suburban	FT Municipality	Senior Sanitarian
Suburban	PT Municipality	Director of Health/Sanitarian Dual Role
Urban Core (>100,000)	FT Municipality	Chief Sanitarian
Urban Core (<100,000)	FT Municipality	Senior Sanitarian
Urban Periphery	FT Municipality	Chief Sanitarian
Urban Periphery	District	Director of Health
Urban Periphery	District	Chief Sanitarian
Rural	PT Municipality	Director of Health
Rural	District	Senior Sanitarian

Participants had an average of 24.9 years of experience (range: 8 – 50 years) working in some capacity at LHDs and had been at their current LHD for an average of 13.1 years (range: 7 months – 27 years). Most participants received a bachelor's or master's degree in environmental sciences, public health, or a similar field. The average number of food service establishments was 293, ranging from 9 to 1,055 FSEs. Interviews revealed a significant amount of variation in structure and practices at LHDs but also showed a number of consistencies in perceptions and emphasis. Prominent overarching themes are presented below with supporting quotations.

Variation on Organizational Structures

Given that the state is comprised of three types of health jurisdictions, it is natural to assume some organizational variation. The first thematic family, presented below, reflects some of this assumed variation, but also shows differences in perspective and approach towards the organizational aspects related to food safety.

Departmental Hierarchy and Staffing Structure

Discussion of department structures highlighted the variation in organizational structure between health departments. For instance, some departments consisted of only a DOH who was also responsible for sanitarian duties or had a DOH who assisted a sanitarian with their duties. Other larger departments varied in the presence of a senior sanitarian or chief environmental health officer and their level of involvement in sanitarian field duties. Organizational structure varied at least slightly different across each site and could likely be attributed to multiple factors such as funding, work demands, and workforce turnover.

The role of the DOH across the department and food safety was substantially different across regional and jurisdiction types. For instance, one participant served as both the

DOH, more of an administrative role, and the sanitarian, a role comprised largely of field work.

> *"The position is part time, about 18-20 hours a week and I'm responsible for being the director of health and doing kind of the typical work a director of health might do, in terms of budget and planning, communicable disease investigations, et cetera. But also, I'm responsible for being the registered sanitarian for the community so I have to do the soil test work for septic systems, review the plans for the septic systems, responsible for inspecting the food establishments, investigating the complaints, whatever might come up that's more of an environmental health nature."- **DOH***

In other LHDs, the DOH provided support for inspection caseload demands in departments with only one sanitarian, which included doing some of the inspections themselves and playing a more active role in cases of non-compliance and re-inspection.

> *"I will do some. I do the barber shops, beauty salons, tattoo parlors, schools, nurseries, that kind of business. I'll do those… When we have problems, I'll do that. I'll let my sanitarian do the [food service establishment] inspection but if we find a problem, I'll just catalogue the problem."- **DOH***

Variation also existed in the organizational hierarchy of sanitarians. Three sanitarian participants were from LHDs that had "Chief Sanitarians" or "Chief of Environmental Health" who serve in managerial roles for the LHD's sanitarians.

> *"If they're having serious issues with a food service establishment and have to issue legal orders, that's at the point where I may step in to assist. But on a day-to-day basis, I'm not involved in the day-to-day business of inspecting the restaurants…unless there's a problem…I'm responsible for the plan reviews. So, I deal with the new owners, new construction, remodeling, and change of ownerships. I deal with all of that."- **Sanitarian***

The other three sanitarian participants were from LHDs who allow sanitarians to self-manage and report directly to the DOH.

> *"We have three inspectors who are sanitarians, and we each have a certain divisions of the city that we cover… So we get our lists, once every couple of months, of what to do and we kind of make our own schedules, as to what places are going to be checked on what day. So, it's not like I have boss who stands over me and says 'Okay, you have to go to this place, this place, and this place'… the three of us work together. We're all actually all seniors."- **Sanitarian***

Division of Labor

The division of labor, both for environmental health services as a whole and for the food safety component, was also different across LHDs. For instance, some departments choose to have one dedicated food inspector, while others chose to divide all environmental health responsibilities across each of their sanitarians.

> *"We have recently found the money to put a full time food inspector back on staff… On a daily basis…she's a dedicated full time food inspector and then I have two other staff individuals that are certified in food and do some component of it but they're doing other things for the most part…depending on our needs, people's daily duties will shift around to accommodate but again we have one full-time dedicated food inspector."- **DOH***

> *"Some health departments choose to have one person do food, one person do septic, one person do another and that has certain benefits because they can get a depth of knowledge that potentially could be greater in a particular area but it also limits a program, an overall environmental program to say "Well that person deals with that and that person deals with that." Whereas, we take an approach that everybody does everything so it kind of minimizes that food component."- **DOH***

For departments with multiple sanitarians performing food safety inspections, there was variation in the division of workload. For some, labor was geographically divided.

> *"I assigned work by number of restaurants and things like that. But…when you have 13 or 14 towns, sanitarians have to travel a lot. Which means, you don't want to have them do one restaurant and then you have to travel 45 minutes to do the next. You really want them to stay in a town or two towns or three towns and address the work that's needed in that town because you get more bang for your buck and you'll be able to get more time"- **Sanitarian***

> *"The city is divided into 3 sections so we more or less try to keep them within those sections but again, nothing fits perfectly so to keep the numbers even, we may, if it's near a perimeter, we may put it in a different area than that area should have. But for the most part, we try to get them in those." **Sanitarian***

Others chose to divide labor based on the entire workload at the department.

> *"We balance the work out based on the different tasks. Because this sanitarian has a lot more field work, the hours to complete for food service, it might be way too much. So, I would then look at these hours and I would reassign some of these food service establishments to [the sanitarian from another town] because they relatively have a light load*

*when it comes to the towns work… we have a decentralized model right now, so that you have a person that works in [Town A] and one in [Town B], but the person in [Town A] has very little sub-surface sewage disposal work, very little complaints, for a variety of reasons. And because of that, I really need for him to pick up the work that's in another town where there's much more work to be done."-**Sanitarian***

With the division of labor, there was also differences in methods of delegating inspection locations. Most LHDs thought it was beneficial to regularly rotate designated FSEs between inspectors.

*"We divide the city into three areas, we rotate the inspectors once a year so that they're not looking at the same food service establishments, year after year after year. They get a two year reprieve on that food service establishment… there's things that we find or that we're going to notice going into a facility that somebody that is there every day isn't going to notice. Just because they get kind of blind to that. And that's [a] reason why we change, rotate every year. Because you get used to the way it is so they're not necessarily going to notice that."- **Sanitarian***

*"I mix it up because I want to avoid…where they start going in and think of these places as their friends or anything like that. And I also want a new set of eyes… As sanitarians, we always have our things that we focus on…. By us rotating, it's a different sanitarian every year to get that sanitarians opinions. Even though we're all supposed to be looking at the same thing, we always have little things that we focus in on. So, 1) I think it gives us new opinions and 2) I think it helps a little bit with the friend factor that if, you're going in there time after time, you end up talking more about their kids or vacations and you kind of miss the point sometimes of why you're there."- **DOH***

*"We have 4 inspectors, 4 lists, and every 2 years we switch those lists so that the inspectors have a new set of establishments. So essentially, we're trying to get a new set of eyes on the establishments, and so that the inspectors would have relationships with all of the establishments in town. So if there is an off-hours thing, they would likely know whoever their dealing with and have a relationship with them already."- **DOH***

However, some participants felt that rotating inspectors impeded progress and that by maintaining the same inspectors, it helped to build rapport and relationships with the FSEs in their LHD.

*"We'll switch off probably…every other year…which can be hard if you're trying to work with someone because the one thing we try to do is try to get people from Point A to Point B. And then you throw someone new in there, they kind of step back a little bit."- **Sanitarian***

*"[We] pretty much [inspect the] same [places] every year…people start to know you, people start to respect you. You build rapport."- **Sanitarian***

Funding Structures and Fee Collection

In order to receive state funding ($1.18 per capita), a municipality must have a full-time director of health, receive at least $1 per capita funding from the town, have more than 50,000 residents in their jurisdiction, and have an approved public health program plan and budget.[16] Health districts can obtain state funding of $1.85 per capita if they have three or more towns in their jurisdiction or have 50,000 residents in their jurisdiction, receive at least $1 per capita funding from member towns, and have an approved public health program plan and budget.[17] Part-time municipalities are not eligible for state funding. Multiple participants mentioned the burden of not having state funding because of these statutes.

*"We lost state funding, the state no longer provided us with a per capita funding. And so, I had to cut to make ends meet, 26% of staff. We started hiring part time people to get out there and do what we did and existing staff that's certified to do food inspections were also doing inspections but they had to balance now all the other environmental work they had to with restaurants. I could see that things were also going downhill in terms of the dedicated time allowed to get stuff done. Funding went down, the staff reductions were made, [but] we actually had some of our busiest environmental years in history, we actually broke records last year for the amount of new septic work and non-restaurant kind of activities…building never stopped completely. And so no, we were not meeting our restaurant frequency goals at that point in time. Certainly, when hot spots or stuff came up, staff, resources would be allocated to go deal with those issues but it was an economic reality we had to deal with."- **DOH***

*"This is a part time department… just simply because I don't get paid for more than 24 hours in the course of a week, doesn't mean that I don't work more than 30 plus hours in the course of a week. So, the simple break up of part time departments and full time departments is fallacious at best. Nonetheless, we're listed as a part-time department. We get no real reimbursement of any kind from other sources other than our own municipalities. We get no federal or state funds as a result of that. A simple change in mnemonics might change the entire way we are financed, which makes things a little difficult sometimes."- **DOH***

Funding of LHD activities took different forms with most notable differences based on LHD type, specifically the differences between municipalities and districts. Municipalities are financed as part of the town's overall budget and thus, had less autonomy in spending.

*"It all goes back into the general fund, not to be spent by us. No matter what fees we collect, whether its temporary food service fees, those all go back into the general fund."- **Sanitarian***

Health districts seemed to have more control over their funding, this was not without drawbacks.

*"A [municipality], they have a health department. It's part of the town's structure. They work for the town, they get their money from the town, just like any money that they get goes back into the town general fund. Health districts are where towns got together to form a district… We don't necessarily get money from the towns. We charge them a per capita so, we get a set amount…They pay that in quarterly installments and it's up to me to run it like a business, really. So, we do our own payroll, pay our own vehicles. I can't go back to the town for any more expenses. So, if we come up short, I can't go and ask them to transfer more money from one budget over to our budget. It's up to me to manage it so that we don't come up short…The nice thing, if we do have a surplus, we're able to keep it to use in future years for other programs. Where in a town, if the health department had a surplus of money, it goes back to the town's general fund."- **DOH***

Participants felt the variation in the funding mechanisms and amount of funding available to LHDs influenced the services they are able to provide and their ability to meet mandates.

*"The money has got to come from somewhere and there needs to be decisions made by the director of health… if today, my director of health told me, "We're laying off a sanitarian." I'd know immediately, we will not get our mandated inspections done. There is no way…You try to redistribute your resources in a way that you try to get things done. But essentially, if you don't have money, it's really going to impact your program area, that's all there is to it."- **Sanitarian***

*"There are many departments [with] budgets [that only cover] the work that's done [that] is mandated work- septic systems, wells, food inspections, day cares, salons- it's all mandated work and so, if you want to choose to violate the mandates, okay…Most communities are choosing to try to meet the mandates in those program areas, but when you have a health educator or a community health coordinator and you're offering some of the "nice to haves" but they're not a mandated, you might have to say, "You know what, we're not going to do that anymore. We have to focus on the mandate."**- DOH***

All participants reported at least one type of fee that their LHD charged for their food protection program. These fees varied based on the LHD type and the structure within

the LHD. All but one LHD required licenses for their FSEs; these licenses were issued with a fee. Participants also reported a range of LHDs fees for services, such as plan review, mandated inspection, re-inspection, chronic non-compliance citations, and late fees for payments. In general, fees were correlated with the services provided, e.g. licensing fees varied by FSE class to reflect the additional level of effort required to meet inspection mandates.

> *"We base our fees, unlike some of the other health departments, based upon square footage. Say 1500 square feet or less is $150, 1500 to 3000 is $275 and over 3000 is $475. Some of the other towns charge based upon the classification, so Class 1 pays one, because they say Class 4s take more time for inspections than a Class 1 does. People haven't really griped about our fees though."- **Sanitarian***

For some, particularly health districts, fees were seen as necessary because they are directly used to fund the department.

> *"Fees are quite different across the state and some of them are like, "you've got to be kidding me!" And they're different because your municipality, I think municipalities are much more friendly regarding fees. They don't want to nickel and dime everyone…So, some of the struggles that we're kind of working through [as a district] is that our fee schedule, we work with non-profit organizations, which non-profits, you think well, why should we charge them anything? But it costs us money to go out there and economics being what they are, we can't give a free pass to anybody."- **Sanitarian***

> *"The fees are designed to our cost allocation plan to cover our cost. Because, as a district, we do ask for money from our towns but a lot of what we do is self-funded. So, we kind of operate a little bit like a small business… How much time do you think it's going to take to review [a FSE] plan? To do it properly, we're talking 4, 5, 6 hours. And when I look at our cost allocation plan, you know, environmental health, at a minimum it's costing me $85.25 per hour for somebody to do environmental work. So, the fee that we're asking is legit."- **DOH***

> *"[Fees] very much run the health district. So, salaries, expenses, everything else. We probably take in, our budget is about $750,000 a year. So we probably take in right around $750,000 and we probably pay out about $720,000, $725,000. So, each year we're trying to get a little surplus of maybe about 20 to 25 thousand dollars. Because, when things like Ebola come around, the past week I've spent $5,000 on supplies. So there's a bigger business side in a health district compared to a health department because I can't go back and say "Oh, I've got to spend five grand on Ebola supplies. Could you move money from the police department over to here so I can cover it?" So, I'm on my own if I*

*choose to spend that five grand, I better be sure I have five grand to back it up."- **DOH***

Others viewed fees as important for corrective action for non-compliant FSEs.

*"We charge a re-inspection fee of $90, if that's not paid by that two weeks, there's a certain date we put on there so it's usually that two week period. If it's not paid prior to that [re-]inspection, then they tag on another $80 because when we found that when we weren't doing that they just weren't taking care of what they needed to take care of. And then, if we go back and they fail that re-inspection, then they're brought in for a hearing, which I want to say is $230 and $100 for the third inspection."- **Sanitarian***

*"If it's more of a minor issue but it's still something that we want corrected… we'll send out a $50 citation. Or if it's a repeat offense, we might send out $100 citation. But we'll send out a citation. That's for when you can't close them over this issue but we still want the issue corrected. They're still supposed to be always striving for that 100 and they're supposed to always be fixing every violation that they get. So, we might send out a $50 citation just to, kind of, remind them."- **Sanitarian***

Variation in Food Safety Procedures

While all LHDs essentially provided the same types of services provided for FSEs, such as plan reviews, inspections, and re-inspections, there was notable variation in the methods behind these activities.

Plan Review Procedures

Every participant mentioned that their LHD enacted some form of plan review process as part of the application for new FSEs. However, the philosophy, methodology, and thoroughness of the plan review process varied across LHDs. Participants mentioned that conducting plan reviews helped to ensure the FSE was meeting the various codes for health, building, fire, etc. prior to opening for operation.

*"They submit [the plan review application], we review that… if they're doing a remodel or if it's an establishment that's closed and a new owner comes in, we make them fill [the application] out because if they need to make upgrades, at that point we make them do it before they open. We also require that they have the building, fire, zoning, all sign off and the water, water pollution if they're public sewer, that type of thing. Especially for the 3's and 4's if they have to have the FOG (refers to State Department of Energy and Environmental Protection regulations for Fats, Oils and Grease) -the grease trap thing."- **Sanitarian***

Some felt the plan review process was essential to providing FSEs a foundation that will help them maintain compliance in the future and thus made extra accommodations for a more thorough review.

> *"So, what a plan review does is look at the facility, the menu, and basically the time and effort spent, storage space, even dry storage, how does that meet the operation and how does that enhance safety of food? So when we look at plan review. That gives us our best view of what to expect [in future inspections] because it's risk-based. And you're focusing on just that." –**DOH***

> *"I'm responsible for the plan reviews… [It's] a uniform program that I've developed here for new and improved, renovated or change of ownership for food service establishments. It puts everybody on the same playing field… I think [our] plan review is an accommodation that we make to get them all off on the right foot and restaurants do see that, they appreciate it because the days of "well this one didn't tell me to do that and the other one did" are over with [our plan review protocol]."- **Sanitarian***

Inspection Form Used During Inspections

While participants unanimously mentioned the focus of their LHDs inspections to be on risk-based items, the greatest difference in inspection practices was seen in the use of inspection forms. Some individuals chose to still use the older version of the inspection form, termed the "red and black" form by participants.

> *"We all use the "red and black" form even though the state would like us to use the "green and white" forms …We were all taught on the "red and black" forms, so it's kind of comfort for us. No matter how many times the state tries to teach us how to use those "green" forms, it just doesn't stick. It just doesn't stick. It's like okay, comply or not comply, you checking, checking the whole thing. It just doesn't feel right."**- Sanitarian***

Others were exclusively using the "green" form, which is the most recent version of the food inspection form released by the state.

> *DOH: "We have the state-designated, it's the "green" form, they call it. I think most people are probably using it. There's also the older "red and black" form, which we don't use."*

> *Sanitarian: "[We were] using the "red" form…I don't feel it was really making that big of a difference. But I do [think] the "green" form does go a little more into detail so that could definitely help for the education purposes. I do feel like [the "green" form is] different but it seemed to*

*accomplish the same results [as the "red and black" form]. But it's just different ways to do things."- **DOH & Sanitarian***

Half of participants were using a combination of the two types of forms at their LHDs.

*"Okay, we use the two different forms. We use the focus food form for our threes and fours and then we use the regular one sheet forms for ones, twos, nonprofits. And if it's a quick easy inspection, we will probably just fill out the one sheet form. But other than that, we use the green form, the focus form."- **Sanitarian***

*"I use [the black and red form], [for a] class four, three times a year. But I use the green form…once a year. The reason why, [the green form is] a little more detailed but I don't like to use it too much because…we weren't accomplishing what we wanted to do. It was just kind of repeating too much stuff. Whereas, I do [the green form] once a year, in January, everybody is kind of slow after the holidays, so then we go back through bit by bit."- **Sanitarian***

Re-Inspection of FSEs

All participants noted that a "failed" inspection resulted from any four-point violations or a score of less than 80. However, methods for re-inspection of these FSEs varied.

*"That's part of the dilemma of the existing code because, if you were to hear the state say what should happen, when you go out there and you have that score of less than 80 or one of those four pointers, when you go back to make your inspection, inspect the entire facility and come up with a brand new score. That's what you're supposed to do. Is everybody doing that? Eh, I don't know. A lot of times, what we do is we go back and we look to see that the five things that I asked you to fix are fixed. Thank you. See you next time. But I don't spend the hour or the hour and half to do the entire facility again, start to finish."**-DOH***

Inspection of Temporary Events and Farmer's Markets

Most participants also spoke about inspections at temporary events and farmer's markets as an area without much procedural structure or support. This created a lot of confusion and variability in the way these events were inspected.

*"There's a lot of variability in that regard and so people are doing it differently throughout the state…with temporary events, there's a lot of variability, that whole program is not built out at all and sanitarians are going out there and making calls in the field."- **Sanitarian***

"We go out to all public events so if there's a fair, a carnival, a street festival, a block party. There will be an inspector there... So every Friday, Saturday, Sunday nights in the summer, one of us is down there covering.

*So we take the temporary events, I think, really, really, really seriously. [But Farmer's Markets], that's very confusing. Extremely confusing. Um, I'm still not clear on half the stuff."- **Sanitarian***

Because of this and the lack of structure around their inspection, LHDs are left to their own discretion, weighing factors such as size, staffing, and economic feasibility to decide if and how a temporary event or farmer's market should be inspected.

*"If you think that the regular inspections are different from town to town, the temporary ones definitely [are]. Some places will go and inspect every festival and they hold their booths to the same standards that the restaurants have to have. Others don't inspect any of them…We're somewhere in the middle. We inspect the big ones but the little events where there might be one person selling food, it's just not economically feasible for me to send somebody out all the time to all the events... We know that they're not going to be perfect as far as like, but like, we look for the major things- are the temperatures okay? Are they able to wash their hands okay? Is the food off the ground? Do they have the right equipment to keep things hot? Keep things cold? And do they have like a safe water supply? So that's really what we're looking at but that's a huge part of our food program."- **DOH***

Overall, most LHDs felt these events were a significant added burden to their already-stretched departments and some questioned their efficacy.

*"Our inspector also does food suppliers, like markets. And also, temporary events, which is a big pain in the butt because they always occur on weekends, which means overtime, taking "x" time for [our sanitarian]. They always occur on weekends and that whole temporary event thing needs to be looked at it because it's just crazy. We give them a temporary event permit…and we license them for that particular event…but it's so crazy. It's not worth the output, it's not worth the effort. Because if you have an outbreak at a mass gathering, you're going to have an outbreak at a mass gathering. Your inspection is going to prevent very little. It's usually secondary contamination which [everyone] is totally not aware of."- **DOH***

Priorities

When discussing priorities for food inspections, participants were consistent in things that they placed more and less emphasis on.

Focus on Risk-Based Items

Participants unanimously described an emphasis on "critical control points," or looking for risk-based violations such as temperatures, hot holding, cooling, hand washing, etc., during the inspection process.

*"The ideal inspection process would be the physical aspects of the facility looking pretty good, you know, floors, walls, ceilings, condition of equipment. It's all looked at and if attention has to be paid to that, we do. But, primarily we want to see the critical control points, you know, focus on some of the critical control points relative to cross-contamination, temperature control, food protection, storage of food, things like that."- **Sanitarian***

*"[We] concentrate on the high hazard risk factors. It's not that you just ignore the others, you most certainly don't. But you kind of put them aside until such time that you've assured yourself that you've reviewed all the primary high-hazard risk factors first."- **DOH***

For these more critical violations, participants mentioned the emphasis of ensuring on-the-spot corrections of these violations and placed an extra emphasis on re-inspection within 2 weeks.

*"If I'm seeing bad food, I'm going to say throw it out. It's one of those [things where] you do corrections on the spot. If I see something bad, I'm going to say throw it out and clean the area. That's it…I mark it off [that] I found it but then it's been taken care of. So, sometimes you might go in there and you might find something but you correct it right on sight. We'll work that way because [the FSEs] want to keep moving, they don't want to be closed down completely."-**Sanitarian***

*"[We are] really looking at temperature issues, hand washing issues, food handling and those types of things. We try to make sure that if it's something really bad, that it's addressed before we leave. So, it's not, "Hey, I'll be back in two weeks." Well, wait a minute. Let's get rid of this. If it's a big issue and it needs to be or it should be addressed right then and there, then let's just address it then and there. Doesn't mean that we're not coming back in two weeks. It just means that I don't want to leave and have this problem still there, trusting that they're going to rectify it."-**Sanitarian***

Addressing "Floors, Walls, and Ceilings"

Many participants spoke about an emphasis on the "floors, walls, and ceilings" sections on the inspection form and the food code.

*"I think our intent was to comply with the code. But the code is difficult to interpret, there's not a strong guidance behind it, and the state's emphasis has been on cracks, and stuff like that. Not really risk-based factors. It just, it was focused on the score."-**DOH***

"You have to check [floors, walls, and ceiling violations] off and it's something that's visual and you're spending the same amount of time

*on floors, walls, ceilings, lighting, that kind of business, as you are on anything else to check off…Walls, floors, and ceilings can be important if we have a pest problem. It can be important on a cross-contamination issue. But, the food code doesn't quantify what cleanliness is. It's subjective. In other words, it's called- not only for floors, walls, and ceilings but also to utensils and that stuff- clean to sight and touch. That can get dodgy."-**DOH***

However, participants felt that these violations should be less of a priority during the inspection process than other factors that pose a risk for foodborne illness.

*"Temperature is one of the big [priorities], food handling…We try to work with establishments that are a lot older, older buildings. Because the building is like 200 years old and they have a cracked tile, I'm not going to keep nailing them on that. We try to focus on the food and if it's kept clean, it's going to be less of an issue."-**Sanitarian***

*"If you can focus on the big things and not worry about the little things. You know, if there's a tear in the screen on the back door or a cracked tile on the floor or the wall… I'm not exactly overly concerned about that. We want it fixed eventually, but you know, we want you to focus on risk factors."-**DOH***

As a result, there seemed to be more leniency on these items and FSEs are given more time and flexibility to take corrective action for these types violations.

*"If [a FSE has] a lot of [violations] like floors, walls, ceilings for an old establishment, we'll work out a timeframe and we're always going to give them more time for things like that because the floors, walls, ceilings aren't making anybody sick. So, if they say they need 3 months, we'll say "you know what, take 5 months." But the important stuff that's going to make people sick, we just let them know that it has to be corrected right away."-**DOH***

Meeting Inspection Mandates

The perceived importance of meeting inspection frequency mandates and the ability to do so varied across departments. Participants mentioned the legal importance of meeting these mandated frequencies. However, some questioned the impact and relevance of imposing such mandates.

*"In terms of food, we have to make so many inspections as per law. They're meaningless. I think they're meaningless…A food inspection or a retail food inspection without the benefit of good health education program either by the sanitarian or by a health educator, follow through with epidemiologists who share stuff…is just a political thing that I've got to do. It's a mandate that really has very little [impact]."-**DOH***

> *"Do we have to be in every establishment four times a year? Some of them, probably. Others, no. I don't think you can- there are some that really need babysitting and others that it's just crazy. They know what they're doing, they're very professional, they keep everything up to where it's supposed to be at."-**Sanitarian***

Only four of the twelve participants interviewed said that their LHD was meeting the mandated inspection frequencies. Reasons for not meeting these frequency mandates were interrelated factors of time, staffing, and funding.

> *"There's not enough time. If we were to do what the State wants us to do, there's just not enough time…there are times when it's like "well, why can't we get more done?" I can only do so much with 7 hours a day."-**Sanitarian***

> *"I can't say that we're getting every single inspection done, we're not. It's almost an impossibility with the amount of staff that we have."-**Sanitarian***

> *"If you score less than 80 or you have one or more four-point demerit items or violations, the local health department is required to get those conditions corrected to either eliminate the four or get your score greater than 80 within 2 weeks. And so that's been tricky to do also, just time wise… There are may be 50 or 60 routine inspections, but then you have re-inspections and so I'm still trying to resolve or solve that- it's kind of like a resource issue, really."-**DOH***

One Chief Sanitarian remarked about another department, describing how they are not staffed to meet the demands of the inspection frequency mandates, saying:

> *"[There are] like 1100 or 1200 establishments. Can you really think that 3 people are going to stay on top of it? And the focus now, different than it was then, is on things that are going to make your inspection longer, not shorter. So, you know, they're not staffed the way they should be. There's no way."-**Sanitarian***

Incorporating Education into Inspections

Most participants felt that it was important to incorporate an educational component into their inspection process.

> *"With some of the newer establishments, people that struggle a little bit more, it will often more be like a co-joint inspection and teaching them how to self-inspect their establishment and what kind of things to look for."-**DOH***

Much of this education was done with restaurant owners or qualified food operators, especially during a "debriefing" period after the inspection has finished.

*"When you go through that continuation page [of the inspection form], it's important to ensure that the operators understand what you found, why is it a violation, what is this problem and why is it a violation, and what can be done to fix it."-**DOH***

*"It is much better to do a quality inspection with all the education piece and I've left there and I feel good about it [but] miss the next quarterly inspection or be late for that quarterly inspection then it is to race through that quarterly inspection and catch them right on time next quarter and to spend my 30 minutes. And hopefully I will have pay dirt, so to speak, with the operator when I'm there and I take the time and invest in their education."- **Sanitarian***

Philosophies

Participants reflected on what they perceived to be the overarching goals and philosophies behind their food protection program and their inspection processes. These fell into four overarching, and largely related, themes.

Education versus Regulation

Central to all food protection approaches discussed with participants was the emphasis on education and its balance with regulation. All participants discussed education as part of inspections to some degree.

*"We're there to educate, we're not going as food cops. We're not going out to bust people, to shut them down. We're going out to make sure the public is protected from foodborne illness. So we want to help educate our food service establishments."-**Sanitarian***

*"Educate them. Tell them how to fix it. Sometimes they don't know how to fix it. Sometimes it might be out of their realm, you know. They know food but they don't know construction. You know, if you see something on the walls, you say, you've got a bad spot over here, why don't you fix it? We're not going to do it for you but we'll point it out, this is a way you can do it."-**Sanitarian***

Many felt that there was an "education versus regulation" spectrum and it was important to find a good balance for an effective food protection program.

*"It's educational but you know, you have to balance education with "eh, you've got some problems here that need to be fixed." So, you can't be a buddy-buddy and you can't do just education, that's not going to cut it. So that's why I also like to see some action on the part of the operators."-**DOH***

"We try to say that our role here is to enforce and ensure that you're complying with the code but we also have an education component to that where we want to get you, we can just tell you what to do but we

*want to get you to a point where you understand why you have to do things these ways."-**DOH***

*"We acknowledge the fact that we are charged to enforce health code but we also understand that public health is a practice where you have to educate, it's a profession where you are an educator as well as an enforcer. So we believe that education is a key component in making certain or helping food service establishments succeed."-**Sanitarian***

Promote Health & Prevent Illness

Whether through regulation, education, or a combination of both, all participants recognized that food protection programs aimed to prevent foodborne illness.

*"I think [the most important thing is] maintaining that a food borne illness will not occur. Or at least the antecedents to the foodborne illness will not cause something to happen. Now, again, anything is possible. We walk out the door. Anything is possible. So, you know, I've had places that I've inspected and a month later I get a phone call, four people get sick."-**Sanitarian***

Building towards Sustainable Compliance

Linking the prevention of foodborne illness with the balance of education and regulation is the goal of sustainable compliance. Most participants mentioned the importance of working towards sustained compliance in all restaurants, using their regulatory and educational roles to help FSEs continuously operate in a safe manner that minimizes foodborne risk to their patrons.

*"I think our big thing is getting the regulatory inspection done, but in a way that's going to continue their behavior in a positive way. We want to teach you, we want to sit down, we want to show you what you're doing." -**Sanitarian***

*"We try to focus on education. You've got to remember, we're their maybe one to three times a year. These operators are there 365 days a year. It's important for them to know the right and wrong ways of doing it so that they're doing it every day instead of just the three days that we're there."-**DOH***

"Some of the problems that you have, and any town will have this, but the establishments that "yo-yo". They score a 58. You go back in two weeks, they get an 88. You go back in 3 months, it's back to a 59. You go for re-inspection and it's back up to a 90. Well, that's really not the intent of the public health code. The public health code, you're supposed to be operating day to day within scoring above an 80, no four point violations, so on and so forth… when we see that kind of a

*pattern, we'll have them come in, we'll meet with them, explain to them that that's not obviously the intent, and that we can't continue to see these patterns. We'll talk to them about developing programs that are not only going to correct the violation today but to keep the violation from occurring in the future. That's the big trick."-**Sanitarian***

Understanding of mutual best interest for FSE and LHD

Some participants felt that a major goal for their food protection program was to maintain a recognition of the common goal and mutual best interest between the LHD and the FSEs in their jurisdiction.

*"I think our goal is just to make sure that the owners of the food service establishments or the managers of the chain-type restaurants understand that whatever we talk about is for both of our best interests and we walk away with a good feeling. We want every inspection to end on a good note with restaurant owners understanding what we're trying to do, and for us to walk away feeling like, "Hey, I did something positive for these people." And the true recipient of that spirit of cooperation is going to be the patron."-**Sanitarian***

Perceptions

Participants spoke about several of their perceptions, both positive and negative, regarding the food protection program at their LHD and at the state level.

Effectiveness of Food Protection Programs

Opinions of the effectiveness of food safety programs varied on the perception of the end goal, namely concerning FSE compliance with the public health code and the prevention of foodborne illness.

When asked if they thought food safety efforts, such as inspections, were effective, one participant answered:

*"I have to believe yes, it is. I have to believe, left to their devices, [the FSEs are] going to try to operate the same way no matter what. But that's not 100% of them by any stretch of the imagination. But there's also things that we find or that we're going to notice going into a facility that somebody that's there every day isn't going to notice…So, I mean, the violations that we find and the violations that we cause to be corrected and everything, yeah, I've got to figure that their preventing somebody from getting sick. I can't imagine that they're not."-**Sanitarian***

Others felt there were caveats to determining whether food safety efforts were effective or not.

"A food inspection or a retail food inspection without the benefit of good health education program either by the sanitarian or by a health educator, is just a political thing that I've got to do. It's a mandate that

really has very little- we'll go through, we find stuff, but for the most part…you spend the amount of time on floors, walls, and ceilings as you do with some of the programs that you're looking at- the handling programs, the hand washing. So, what good is that? If you don't sit and watch an operation for an hour or two, you're not doing an inspection." ***–DOH***

Interviewer: "Do you think [the food protection program] is effective?"

Participant: "For who? That's a loaded question? Is it effective statewide? Is it effective for who? It works if it's done correctly. It works if it's done uniformly."

Interviewer: "And do you think that it is?"

Participant: "No."- ***Sanitarian***

Some participants felt they could not determine if the programs were effective for various reasons.

*"Yes and No. I think [inspections] help remind the operators that there's a public health code. I think it helps remind them that if they don't do certain things they can really 1) put the public at risk and also put their business at risk. But, from years of doing them, there's a lot of places that, a month after you're there, they forget. So I don't know. I can't say for sure, yes, because [the FSEs] just repeat violations time after time."–****DOH***

"Overall, I think that it's important to do inspections because you need to set a baseline, that's for certain. But how it connects to risk over the long haul, it might have something to do with it, I'll grant you that. But how much that is statistically significant, that's a whole different issue."- ***Sanitarian***

*"We talk about evidence-based practice and there's no evidence-based practice in food service because nobody measures results. Or if they do, they certainly don't talk about it much and they certainly don't get it back to the people on the street… obviously, you say to yourself, well I'm going to focus on the high risk factors and I'm going to stop this particular practice or alter this particular practice and will it make a difference? Possibly. Do I know that it will make a difference? No, we don't because we don't have any end result data."-****DOH***

Efficiency of Inspections

Across all participating LHDs, food inspection took up a significant portion of participant's workload. DOHs spent less time on food safety, with the reported

proportion of their time dedicated to food taking up as little as "a couple of days a year" according to a rural part-time municipality DOH and as much as 15% for other DOHs. Sanitarians had a more sizeable portion of their time dedicated to food safety but this varied, with chief sanitarians who operated more as managers reporting between 20% and 50% of their time was spent on food safety. Sanitarians who were performing food inspections reported spending 45% to 85% of their time on food safety. Given the sizeable amount of time devoted to food safety in many departments, multiple participants spoke of efficiency of inspections in terms of time, particularly in comparing routine inspection times at LHDs with state training inspection times.

> *"They're in the food service establishments with their training program for like 4 hours or 3 hours or whatever it may be. Some ungodly amount of time. And they're waiting for somebody to do something wrong so they can mark something down, because it is training and I understand that. But our staff isn't going to sit there for 2 hours watching the Subway employee for the one time they don't wash their hands so we can mark it down as a violation. They changed their gloves but they didn't wash their hands that one time, so here's my violation. Sure, if it happens while you're there doing your inspection, and you're going to watch them, yeah. But not for the length of time that [the state] will because it's training."-**Sanitarian***

> *"[The state] puts [the FSEs] under a microscope. And you can't put food service establishments under a microscope. All you can do is do the right thing to try to produce the end result, which is to reduce the incidence of foodborne infections. And if you've done that and your community does not have a problem with foodborne infections, then you can maintain- it's not that you can lower your standards, but you can keep your standards at a certain level and not have to raise them so high that it's going to put a good number of these food service establishments out of business."-**DOH***

One participant mentioned the need for efforts they are taking to monitor the time and efficiency of their food safety inspections.

> *"Our inspectors are working the full day and this is one component of their day, their food service responsibilities, and then to implement everything you want to do, it just takes time. We're starting a process now where we're looking at that and [seeing] where can we look at efficiencies and free up some time to allow us to do more education potentially, to free up time to increase our frequency a little bit better so we're getting closer to [the mandated frequency]. So I would say that's the biggest challenge to us. Our inspectors are well paid but it's essentially a 6 to 7 days a week job for some of them every week that we have temporary events, farmer's markets, and all sorts of things going*

*on [during] the weekends. That in addition to all of their other responsibilities- housing, food complaints, all the other things that they do. They don't have the luxury to be able to focus solely on food and that has an effect."-**DOH***

Equity and Variability in Inspections

Participants mentioned variability as a common issue across multiple domains.

All participants felt that there was variation between inspectors, though views varied regarding if the variation had a meaningful impact on inspections and what could be done for standardization.

*"It would be great if we were all on the same page, I completely agree with that. But I don't know if it's viable. I don't know if you can ever standardize everybody to look at the same thing. Because the code is written so general, it's your best interpretation when it comes to, "#15, good hygienic practices" Define what a good hygienic practice is. How I view and how you view it may be two completely different ways. They'll give us the compliance guide, so the state puts out this guide called the compliance guide, which is their recommendations for how to score each number 1 through 62 violation on the sheet. But it's just their recommendations. How I view it and how you view it may be two totally different ways. So there's things on there that I don't know if you could ever standardize somebody on."-**Sanitarian***

*"On the large issues, are [the sanitarians] all getting the same things? Sure. And again, it's, I think, are they all marking everything the same? Not always. And there's a variety of factors that can go into that ranging from they're relationship with the operator, the mood they're in that day, how close it is to a staff meeting where I may have said something like "you need to be marking things more" or "you need to get your frequencies up." I would say they're standardized on the key issues and then… there are things that some people will say, you know, we don't really want you to [worry]- if you can focus on the big things and not worry about the little things."- **DOH***

*"The piece that is a challenge and we will always work to, is standardization. Standardization of inspections. Some districts and departments of health, they rotate their sanitarians so that you might get a quote-unquote tough sanitarian this year but next year you're going to have the easy sanitarian, you know what I'm saying? So, part of it is getting your sanitarians standardized, which the outcomes are not always certain. There's always going to be variability."- **Sanitarian***

Many participants also speculated that there is a significant amount of variation across LHDs in the state.

*"Yes, we all enforce the same code but that enforcement process, policies, procedures, and how we do all of that, that probably fluctuates town to town. Yeah, and trying to ensure more consistency is really hard. You know, you've got political influences, and local influences, and we all have our constraints that we kind of function under."-**DOH***

Perhaps driven by time and high inspection demands, some participants mentioned focusing more on certain FSE types, namely the "mom and pop" type FSEs, than others when trying to complete inspections and ensure compliance with the public health code.

*"I had over 260 establishments that I had to inspect. There was no way I could get to them. No way with the other duties. So you pick on the worst one, the ones where you know you're going to see adulteration... I would not go after, very rarely do you have any problems with a McDonalds, Burger King, or Subway, or KFC of any of those. Very, very rarely."-**DOH***

*"So, with new food service establishments, it's really critical to be there more than just for that opening inspection and then three months later because a lot can happen in three months. It's hard to do given the work load, especially with a mom and pop because they don't have a lot of experience many times. If you have a McDonald's or a lot of these chain restaurants, they have a really comprehensive educational program so that the people that are working there know what to do. But with "mom and pops" it's a different story and so there's a lot of questions on our end"-**Sanitarian***

*"So, we believe that education is a key component in making certain or helping food service establishments succeed. More so for the "mom and pops." I mean, you look at franchised food service establishments, the chain restaurants, you know, they have various layers of management that they have to go through- regional, district, national. So they have that aspect of professionalism that takes care of a lot of the guess work in those establishments, whereas the "mom and pops" don't have that. They have a will to work, they have a yearning to make money, they have a passion for cooking, and they need help. They need more help so we do try to really concentrate our efforts in helping the "mom and pops" out because they're the ones that need the help the most."-**Sanitarian***

Quality and Relevance of Food Code

Participants made several comments about their perceptions regarding Connecticut's food code. While they recognized the role of the food code, they questioned the relevancy and adequacy of its current form.

"I think the failure is that we have to inspect according to law using an antiquated code and the innovation is not allowed. So, our code, our current code and inspection frequency does not enhance food safety." ***-DOH***

"The focus of the state code is you must do your inspections. There's no licensing process under the state code. You just have to do your inspections. There's no fee process under the state code. You can charge fees but the state focuses on you need to get your routine inspections done… You [can] go [into] the restaurant, the operator, the existing staff, nothing changes and it's always a 70. But when you go back, now you've corrected those things and you've passed. Alright, so you go back the next quarter and you fail again. But your re-inspection, you pass. It's very hard to get compliance in that you are required to pass every single routine inspection, because after all, the code allows you to fail and then essentially, you get a second chance." ***-Sanitarian***

"You know, because we don't double debit, if we have a lot of temperature control issues or a lot of food protection issues, which is a 2-point violation, you know, you can have 6 pages of food protection issues and come out with a 98... You can score a 90 or an 86 with four or five little things- a dirty floor, an open back door, a dirty cutting board, and a broken gasket on a cooler, and a chipped prep table. Now, you're already in the mid-80s right there. With somebody's cell phone and a personal beverage sitting on the shelf over a prep table. You just got like an 85 or 86- how many people is that going to kill? But, I can give you 3 pages of documented food protection issues and temperature control issues and you get a 98. Still an A. It doesn't make sense." ***-Sanitarian***

"Connecticut has a code that was initially adopted, I can't even tell you when, back in the 70s or something. And they've really never changed it. It's the same old model. What they've done over the years is tack on this, or take away a little of this. But sometimes you have to throw away the old stuff and just start new. And Connecticut has tried to patch the holes in their code, piecemeal. So we kind of have a piecemeal code." ***-DOH***

Important to note is the perception that the Connecticut food code may impede development in the state, as it discourages franchises and restaurant chains with internal protocols adhering to the FDA food code from creating establishments in the state.

"If you put Chlorox or some smelly stuff near the cheesecake, what happens? Cheesecake takes on the flavor because of the fats, the butter fats. So, what Cheesecake Factory does not want are the

quaternaries or the Chlorox or any of those things, because that will off-flavor their product. They can't use [electrolyzed water as a cleaner] here in this state. Cheesecake Factory will not locate in Connecticut because of the food code." ***-DOH***

"I think, with any of the chain restaurants, Connecticut, they have to do everything different based on our code, which isn't right for them because if the rest of the country is saying FDA is the way to go and then they come into Connecticut to operate out of a code written in 1964, it makes us look bad."- ***DOH***

Relationship between State and LHDs

Mixed opinions on the relationship between the state and LHDs were expressed by participants. Some had a positive view of the State Department of Public Health and its food protection program.

"I think generally when the work needs to get done and in general, with the Department of Public Health as a whole, we have a very positive working relationship with them, in the sense that we have to work a little bit closer with the food protection program, there's opportunity there for a little bit more bumps in the road but I think we respect their role and work with them as best as we can."- ***DOH***

"I feel as though I have a really good working relationship with the state health department, not just in the food part, but to me they're the experts so when I have an issue that I need an expert on sewage or water supply or food or epi or whatever, they're the experts and they're very good at that. And that's another great resource for the state." ***-DOH***

Others felt that their relationship with the state was antagonistic and expressed feeling patronized and unsupported by the food protection program.

"I always feel like [the state is] looking down on us, like what I told you at the conference a couple of weeks ago, they're saying to us, you know, you're regulators, you're not educators. How can you change somebody if you don't teach them? Because if I tell you to do it, you're just doing it because I'm telling you, you're not doing it because you understand it. And that's sad."- ***Sanitarian***

"I think that, and I would say across the state, there is a disconnect between local health and state health. I don't know why that is. I know that if I have a question regarding food service and an interpretation for something in the code and the state's like, well that section is so and so. And I say, "Well, can you please interpret it for me because I'm having a hard time understanding what that means." Well, it means what it says. Very frustrating. I'm like, I need more guidance than that. But I assume

*that based on responses like that, that at their level, they're not to do interpretations of the code because those are legal questions now. Or I'll call the state and I'll speak with somebody that works there and they'll give me an answer. So now I'm like, okay everybody, we're doing it this way. I'll call [another health department], "Oh by the way, did you guys ever have this problem up there?" "Well, yes I did." "Well how did you handle it?" "We called the state and they told us to do X." and I realize their "X" is different than my "Y"…and they called the state with the exact same question."-**Sanitarian***

Relationship between LHD and FSEs

In general, participants felt that, despite some resistance to regulation, there was a positive relationship between the LHD and the FSEs in their jurisdiction.

*"Most of [the FSEs], I think, they know that we're there and that we have a job to do and it's to benefit them. You do have ones that, you know, "you're just out to get me" kind of thing. But those are really the ones that don't understand the whole process no matter how much you try to educate. They just put this block, block up, I guess you'd say, to get them to understand, to change their habits can be hard."-**Sanitarian***

*"We work with [the FSEs], not against them. If they've got something wrong, I'll try to correct it or I'll give them the latest information… We say we're here to help you, not to beat you down. I think some inspectors [have] that problem. They think, "Oh, I'm the authority, you have to listen to me." You have a two-way conversation that you have going and you've got to remember, this fellow knows the business better than you do. You may be there for inspection, but he knows the business better than you do. And you try to work with them the best that you can."-**Sanitarian***

*"But that's always the struggle, trying to balance that, to maintain an effective relationship of mutual respect. So, they understand we have a role here that is set by laws and obligations and you have an obligation to comply with that, as demonstrated as part of your being licensed to be able to do this food service. So, we tend to lean more towards the relationship and education… the relationship we have with the establishment and the restaurant operators, it's one that I think is- it's not confrontational."-**DOH***

Challenges

In reflecting on challenges at their LHD, participant commented on four main areas that complicated their work.

Competition with Other Responsibilities

Time, staffing, and other resources were mentioned as barriers to meeting inspection frequency mandates at LHDs. Part of this struggle was also due to the several other responsibilities expected of sanitarians within their department.

> *"There is a constant competition and usually what happens is the soils will win out over the food. We've tried to prevent that but it's still, because it's a little bit more of people screaming service wise and you're not having restaurant owners banging on your door for inspections, so that has the tendency to take precedence." –**Sanitarian***

> *"I'm spread out across 6 different places. You don't have that time to just focus on food all the time. I try to make it a priority, like I said, It's 50% of my time… This is just the food, not including test holes, housing complaints, lead complaints, I do flu clinics… My Ebola line is all getting going there. Plus you work with the fire department at chemical spills."-**Sanitarian***

> *"[Residents] were building things like swimming pools and tennis courts and a phenomenal amount of environmental activity. So, those were pressing concerns. People would come in, they would want stuff done right away. And unfortunately, you know, "oh okay, we can do that restaurant that we were going to do today, we'll do it tomorrow." And then tomorrow becomes the next tomorrow and eventually things slide. And so no, we were not meeting our restaurant frequency goals."-**DOH***

Cultural/Linguistic Barriers

A common concern among many participants was related to cultural barriers, and to a lesser extent, linguistic barriers among FSEs in their jurisdiction.

> *"For us here, we would need [the inspection form] also in Spanish. But we have quite a bit of educational material we've gotten throughout the years in Spanish to help out. And then quite frankly, you get a lot of the workers and even when we're dealing with an establishments where they predominately speak English but where the staff in the back speak Spanish. That's probably the bigger dilemma because they're the ones doing all the work and if they can't communicate and straighten them out. So, we give out educational material in Spanish when we notice that that might be a problem. We'll say here, obviously it's not for you, it's for your workers, it may help them understand a little bit better."-**Sanitarian***

> *"For many of these people, particularly foreign born, they have a different attitude towards sanitation, a different idea of transmission of disease, a different idea of dress codes, a different idea of sanitation. And I don't think that they've been, I hate to use the term,*

*"Americanized"…in the way of what they're years of lifestyle have brought them to in setting up a food service establishment in this country… if you've been raised over the years in one culture, it's extremely difficult to move into a [different] culture and change your ways."-**DOH***

*"Asian restaurants are most difficult because we don't have the inspection forms and we don't have anyone on staff that speaks Mandarin. And we are challenged in that regard. And in Asian restaurants, the person that does speak English is generally not the chef and it's the chef who's the central person of the restaurant and makes it operate. So we're not getting really to the person who is the operator in the truest sense. So there's always interpretation going back and forth and it is quite challenging… we have restaurants like Asian restaurants or Indian where there is a language barrier and we have to work through that and it takes a lot of work on our part to do the right thing, to be able to convey what's in the Connecticut Public Health Code and what the expectations are."-**Sanitarian***

Communication between Departments and with State

Another challenge mentioned was the dearth of communication between LHDs and also struggling to communicate between departments at the state level.

*"None of the health departments, we don't talk to each other. At all. We don't talk. Not unless I have friends in the other departments. But no, we, no health department really communicates with each other."-**Sanitarian***

*"There's definitely a little bit of a tension between the state and the local health department and I'll blame both sides of the issue and it's always been there. I mean, I've been doing this over 20 years and it was there when I first started and it's still there now. I think the gap is a little bit more now…They're great when it comes to outbreaks because they're also epidemiological, there's field epis in 5 areas of the state so they work with the field epis. So that combination during an outbreak to have epi, the food protection program, the lab, and I think they're a tremendous support during that. I think the other just day-to-day stuff, I think it's just lacking. I don't think there's great communication on either end of it."-**DOH***

Part of the communication challenge with the state and LHDs was conveying information that has been added to the food code and that must reach FSEs.

"I think that's part of the dynamics between the state and locals and I don't think the state does a fairly good job at communicating changes or necessarily the educational component. When you talk directly to food protection people, and I don't mean this the wrong way, they

*emphasize enforcement. I can't tell you how many times I've seen it, heard it said, "You're regulators. Why are you trying to help these people? You're regulators. You cite them for the violation." Okay. And you know what, you should cite them for the violation, particularly if they're serious violations. That's how you have a record of stuff. But then you also should make them, my opinion, you should make them understand why it's a violation."-**DOH***

*"I think it's the whole communication between consumer [protection], state, department of [agriculture], and local [health departments]. The state seems to, okay they go back and forth between themselves. We're more or less out here saying 'okay, whatever, we made these changes.' If we don't get that information, we can't act on it either."-**Sanitarian***

Workforce Development and Turnover

Difficulties in training and certification of food safety inspectors/sanitarians in Connecticut was discussed by participants. In order to receive state certification, an individual had to be employed by a LHD. This meant that LHDs had to maintain the salary for an individual while they received their training but could not help alleviate the workload at the LHD. Given this, many LHDs are hesitant or unable to take on individuals without training because of funding and time restraints and thus, limits the number of jobs available to individuals without food safety certification.

"The way the program works now in Connecticut to become a certified food inspector… it's like a "catch-22". You go to the class at Southern and it's only once a year, at Southern, for four weeks or whatever it is. The food class. You take that class, you pass the exam. That's step one. Step two, to become a certified food inspector, is you have to get a job at a local health department. You have to work there for a while shadowing people, then you have to get an appointment with the state inspector to go out in the field, make a dozen or fifteen inspections with the state inspector, and once you've done all of that and the State inspector thinks you know what you're doing combined with the classroom portion, then you can become a certified food inspector. So that's how you become a certified food inspector in the state of Connecticut. Okay, so I go to the class and let's say I do that as an undergraduate. Okay, so now I graduate, jobs are advertised, uh there's a job announcement for [a health department, they're looking for a sanitarian certified in food. Well, this person that just graduated, they're not certified in food yet. They need to get that job first, but you can't get the job unless you're certified in food… If I hired somebody in May, they haven't gone to that class yet. I have to wait until January, send them to the class, they have to pass all of that. I have to keep them still employed. I've hopefully exposed them before that to everything, then I've got to schedule the state to come out- it's a bottleneck there. So

*the time period before you can give that person their forms and their list of establishments and say "go make inspections," it's a while."-**DOH***

However, once an individual is certified, their value in the workforce drastically increases and there seems to be a significant amount of workforce turnover and movement through departments for sanitarians and food safety inspectors.

Additional Practices and Participant Recommendations

Participants had several recommendations of things that they thought would have a positive impact on food protection programs. Discussed below are the current or planned practices at participants' LHDs and recommendations for improving their food protection program.

Technological Support and Advancement

Electronic Inspection Forms

*"We have tablets now, our inspections are done through computer system. But we still utilize the green and red and black forms for the cover page and then they print out- this way everything is printed out, no problem reading anybody's handwriting, that type of stuff."-**Sanitarian***

Centralized Restaurant Inspection Database

*"If there was a central website with all the restaurants in Connecticut, where all that information was uploaded, I think that would really change things. Now, again, are you going to connect it to risk? There's a lot of factors, like, does posting an inspection score, does that affect the risk of a foodborne outbreak? Does it reduce the risk? That's where we need the data. So you know what, every program you implement, you have to follow the data."-**Sanitarian***

Additional Efforts to Support their FSEs

Posting Inspections with Risk-Based Scoring

*"There's the issue of grading and to me, it should be statewide and it should be, we all do the same thing. Four forks, three forks, two forks. One hat, two hats, three hats. Stars. Whatever. And we all should agree as to how you earn those stars, those hats. That's all different across the board. So if you look at who has grading systems- Norwalk has a grading system, Farmington Valley has a grading system, Hartford had a grading system. They all did it differently, you earned your grade differently so it can be confusing to the consumer. So, there's really two things, you know, the posting of the inspection results and the findings, but then also a grading system."-**DOH***

Educational and Supportive Materials for FSEs

*"Now, [the FSEs are] supposed to have a statement of disclosure [on the menu] and the asterisk on it. And we're like oh, now we have to go back and tell everybody that they have to have this statement besides the disclosure, which wasn't before. So [the state] kind of changes, they just add things without really letting anybody know in a sense. It's like "Where'd that come from? Are you sure?" You know, so that can be a pain to try to get that information out… I'm trying to do up a thing showing the menu, how it's going to look and I think we're just going to hand them out and say next time you get your menus done up, it's going to have to look like this. That's the easiest thing we can do. I'm not going to go fail everyone for not having that on their menu, even though it's a four-point violation, it's just ridiculous."-**Sanitarian***

*"It would probably be good to have some kind of a statewide databank of resources or information sheets or guides or whatever, just so that we're all the same way and we're all giving out the same information, so it's not different from town to town."-**Sanitarian***

Language Support and Cultural Competency

*"I know the FDA did a class on it at one point, but I don't think they ever did it on Spanish, how does the Spanish culture view food practices? We took [courses] about the Chinese all the time. We bash the Chinese all the time, which is sad. But there are tons of other cultures out there that [have similar practices], but we don't know about them."-**Sanitarian***

*"I think it helps when it's needed that the back of the green forms, particularly the Chinese, that you can flip it over and kind of, if you know where it is in the English version, you can point to where it is to kind of make the point. So, it's available to them... We do offer, when we do the exam, we offer it in a variety of different languages so we do have some people that choose to take it in Chinese or Spanish. And mostly it's those exams have it in English and that language so they can kind of compare. So they'll say, "Well, I'll read it in English and if I don't understand it, I'll move to the Spanish or the Chinese version of it."-**DOH***

*"I think something with the inspection form, like what I was saying with the green and white one, it'd be nice if it were in Spanish. Because at least then, so when we do outbreak investigations, they have the script in Spanish. So, I can read one line, then the Spanish is right below it. So, I can read one line and then point for them, do you understand this? I can point to it. If I had something that, the inspection sheet that I'm using that they could look at it…I'd like to see the Spanish inspection form."-**Sanitarian***

Qualified Food Operator Training Requirements

*"The QFO, the qualified food operator, you go through the QFO training course and you're a QFO for life in Connecticut. Our thought, get the QFOs in here and give them an update. You know, you're a QFO from 4 years ago. Here's what's changed in the food industry. Here's the stuff we're seeing on a national level, the new food risks that weren't identified four years ago."-**DOH***

*"At the very top in the state, there needs to be a standardized model, there needs to be expectations, there needs to be tools for us. For instance, laws, if qualified food operators, they don't get a free pass once they pass that test, to operate without additional training, any training, in perpetuity. No, no, no. You have to go back every three or four years."**-Urban Periphery District DOH***

*"We changed our qualified food operator code. We were the strictest in the state having a 3-year re-certification required, whereas the rest of the state is you get it once and you're good forever. And so, we were the first ones to have that in the state, 1976 they put that in place to have a training and exam requirement. And up until last year, it was required that every three years they take a new exam just to…ensure that they're up to date and current with current thinking, current codes. We recently worked to, based upon some comments and feedback, extend that period to 5 years."**-DOH***

Sanitarian and Food Safety Inspector Training

*"I think standardization of inspections through field inspections, through field re-certifications, I think that's the key. In a classroom, you can have discussion-based lessons all day long, with PowerPoints and videos. But until you get them into restaurants..."-**Sanitarian***

*"There's variability based on what sanitarians see in the field, when their training was, you know, when they were trained, and there's a certification program that the state has in order to maintain you certification, you have to have so many hours a year… But you know, if you sit in a class, you will see slides of different violations and sanitarians are asked, "What violation is this? Is it a 20? Is it a 23?" It's a little different than being in the field and that would be really nice, I think that would help with standardization if there were a field component where every sanitarian would be re-standardized in the field but obviously, that takes a lot of money."-**Sanitarian***

"I think, the availability of training. The [FDA] does training on a regular basis. And I think [with the FDA code], you're going to be able to have a

*train the trainer program, such that a local health department could have an in-house trainer to then train the local staff at that department. And that's the other biggie, by the way, the way the program works now in Connecticut to become a certified food inspector, it's tricky."-**DOH***

Workforce Development

To try to ameliorate the issue of workforce turnover, one department spoke about their workforce development agendas.

*"I want to develop my workforce, I don't want turnover. Which means, paying people fairly, giving them the support that they need and the tools that they need to do their job. And it's not about slamming work on somebody, it's being equitable. It's having ongoing meetings and discussing problems as they arise in the process, because there always will be. There's always something new that's going to be down the horizon. So, in that regard, I'm very proud of what we have here in the district.'-**Sanitarian***

Evaluation of Statewide Food Safety Efforts and Communication of Results

*"We get very little data on what results all of these food inspections produce. Are we seeing a reduction in the overall incidence of foodborne disease? We keep getting all these statistics about 600,000 cases of norovirus this year throughout the United States. Well, where? I haven't seen a one. I've seen a couple of outbreaks in water or at recreational areas, passed from kids to kids to kids, but I've never seen a Norovirus outbreak in a food service establishment. Where are they? Nobody is studying the end. They're saying we've got to do this, this, this, and this but the question is, what has it accomplished? We can give them the reasons why, as a course of prevention but what has it prevented? What are the end results and what are the end statistics? And I think that's the kind of thing that we need to know. Why are we doing all of this? There are reasons for doing it to prevent disease but what has that accomplished? Nobody gives us that kind of data. They give us these empirical statistics from the sky and that doesn't mean anything on a local basis."-**DOH***

*"So the whole program needs to be re-evaluated and looked at for what do we want… if we can't as a group see how many outbreaks are happening in our towns, how can we evaluate risk at all? We get numbers from across the United States- "Oh, there's this many cases of norovirus and there should be this many cases that don't get reported." It doesn't hit home."-**Sanitarian***

Adoption of the FDA Code

While adoption of the FDA code was not part of the interview script, it was mentioned by almost every participant. There was widespread enthusiasm and support for the FDA code, though some had reservations about the logistics of its adoption.

> *"It sounds to me like it's the right move for Connecticut so I would support moving to [the FDA] code. The focus of the work seems like it would have better outcomes for both the local health department and for the establishments in what you're looking at, why you're looking at it, how the code reads, how you follow the code… I think some of the benefits are you've got the power of the FDA behind it. You've got annual reviews, you can do regular updates. You know, we've got right now these segmented codes. The FDA puts it all into one. So, you have the power of the FDA, you have the ability to update, there are people nationwide that are examining trends, activities, new processes, new procedures, you know, what's the latest and the greatest and then that gets incorporated into FDA. So, I think to me, it says fresh, it stays current."-**DOH***

> *"I'm excited to see the FDA code come into place. I think it's going to require a whole new training of the staff, of everybody who is certified, and I think that would be great because we have an older workforce. They've been doing this a long time and we all have our own thought and I think we need to kind of erase some of them and really, like focus on it again. So, my idea, if FDA comes in, we have to kind of forget, maybe the crutch that we had where we could say "I need to take a couple of points off for this place, I'll get them on this." And we learn what food safety is all about. And I'm hoping the FDA code does that."-**DOH***

> *"If Connecticut can adopt the FDA code, we're all going to need to be retrained. All Connecticut certified food inspectors will now have to be retrained and certified and standardized to be an FDA inspector. Lots of benefits to it. It's actually a greater local responsibility. It's going to mean more work, more effort, more resources and all that stuff. But in terms of best practices, I don't think there's any better way, any better best practices, that we could adopt here in Connecticut than the FDA code. And then if we achieve that, then I think we'd be into that whole national system of "Oh, what are they doing over here?" I think that sharing of information, best practices, will come through the FDA."-**DOH***

> *"I'm looking with this FDA code…Now they want to standardize everybody, which essentially means retrain us. Sure, we don't mind retraining but how can we take away from the other duties for retraining and then do all the things- like they want quarterly reports of how your*

*quality is doing. You'd have to be dedicated just for food and…if you look at the organizational chart, you'll see I'm spread out across 6 different places. You don't have that time to just focus on food all the time. I try to make it a priority, like I said, it's 50% of my time. But sometimes it isn't."-**Sanitarian***

"So there's a lot of rumblings to go to the FDA code and the FDA code doesn't have interval requirements for inspections. But, if there isn't the requirement to do a number of inspections, I'm concerned because of the lack of resources in the state and pretty much most health districts I would say are really, and town, it's like –well, it's not a priority. And some of this is that we don't see [foodborne illness] as an emergency."- ***Sanitarian***

Discussion of Findings

While probative in nature, the study presented demonstrates the variety of views, perceptions, and practices occurring across the State of Connecticut with regard to food protection programs. Connecticut's LHDs have a number of responsibilities for environmental health and yet, for most LHDs, food protection takes up a significantly higher proportion of time than these other duties. Thus, LHDs are forced to find a balance in their ability to manage the mandates for these various areas. For food safety in particular, a lack of time, staff, and other resources leaves many LHDs unable to meet the massive demands of their mandated inspection frequencies.

Perhaps the most important findings from this work was the unanimous focus on food safety inspections as public health issue. While some variation in procedure and emphasis did exist in food safety programs, all LHDs noted the importance of focusing on risk-based items that presented the threat of foodborne illness, while minimizing the importance of other factors, namely the "floors, walls, and ceilings" violations that did not pose those same foodborne risks. Participants had mixed opinions on the impact of FSE inspection mandates on public health outcomes, with some feeling that mandates only serving as a reminder of regulation and a common understanding that the inspection frequencies were too high for some FSEs but not frequent enough for other problematic FSEs.

There was also an important trend of having positive relationships with FSEs and balancing regulation with education during the inspection process to help minimize risk and improve compliance with the food code. All participants mentioned education within their food protection program, with approaches ranging from incorporating "teachable moments" into inspections to offering multiple food safety and health educators within their food programs. However, many participants also felt they were criticized by the state because of these educational approaches, as they felt the state wanted them to focus on being "regulators not educators." Still, many maintained their educational practice, viewing regulation-only approaches as a barrier to sustained compliance. Education as viewed as a bridge to adherence to the food code and

also as a way to lighten load of the departments, as it reduced the risk of foodborne illness and also lessened the amount of time spent on re-inspections and corrective action.

Support for the FDA code was a major topic that organically arose in most interviews, with most participants, especially DOHs, feeling it would be the best thing to advance food protection efforts across the State of Connecticut. There were some reservations, predominately from sanitarians, who were concerned about the time and logistics for recertification based on the FDA code. They also remained skeptical that enactment of the FDA code could help alleviate subjectivity and variation in the interpretation of the food code. However, in general, the FDA code was viewed as an improvement to the current code, which most participants felt was outdated, inadequate, subjective, and prohibitory. Further discussion of the FDA code in Connecticut is discussed in **Appendix B**.

Variation between inspectors, LHDs, and the State Department of Public Health was a common trend. Connecticut is certainly a diverse state and the workload at LHDs (i.e. septic, FSE inspections, etc.) varies based on factors, such as region, population size, and socioeconomic status within a jurisdiction. However, much of the variation mentioned referenced to organizational, procedural, and perception differences that were pervasive both laterally across departments and vertically across hierarchies. While standardization efforts are made at both the state and local level, some felt that differences would remain because of personal habits, a subjective food code, and departmental demands.

Less consistent across interviews was the perception of and relationship with the state. Some departments felt the Food Protection Program at the State Department of Health was extremely helpful, supportive, and easy to work with. Others felt the exact opposite, citing references to patronizing remarks at trainings, antagonistic encounters when looking for support, and inconsistency in information from the state. There were not differences in these views, or many others, between sanitarians and DOHs. However, one area that did seem to have notable differences between DOHs and sanitarians was opinions regarding the logistics of adopting the FDA food code. DOHs were largely optimistic about its adoption and enactment at LHDs, while sanitarians seemed to be more concerned about learning the FDA code and becoming recertified, while also remaining skeptical that adoption of the FDA code would eliminate subjective interpretations and varied enforcement practices across the state.

Perhaps the more significant differences across participants was based on LHD type and their "Five Connecticuts" designation, which accounts for differences in population and economic resources. Participants from more rural or suburban areas had fewer FSEs in their jurisdictions and spent more of their time working in sewage and water sanitation activities. Participants from more urbanized areas cited a higher volume of FSEs and thus, mandated inspections. This meant the majority of sanitarians' time was spent doing inspections and many found difficulty balancing FSE inspections with the other demands. As districts were in charge of raising and managing their own funds,

they seemed to have more autonomy than municipalities in the programs and services they were able to offer beyond what was mandated by law, though this was not without its own struggles. Still, most departments experienced some level of monetary hardship, especially given recent economic conditions and changes in the eligibility for and amount of state per capita allocations. Many mentioned having to cut services due to lack of funding. For some part-time departments, this was especially difficult as they received no state funding and must operate on often limited funds based on their town's budget.

Recommendations for Best Practices

During each interview, participants were asked about practices that their LHD had adopted to improve food safety or "best practices" from other areas that they were familiar with. Based on a synthesis of these comments and the rest of the information provided during these interviews, we have provided some recommendations of potential best practices to help improve food safety across the State of Connecticut.

Participants unanimously focused on the importance of education incorporated into the FSE regulatory inspection. However, multiple approaches to providing education were mentioned. Most participants sought to incorporate "teachable moments" into their inspections by either conducting the inspection with a QFO or FSE manager or by debriefing the inspection with a QFO or manager after it is conducted to explain the rationale behind violations. Some departments also provided in-house food safety programs, such as ServSafe certification, QFO certification, and generic food safety courses to keep FSEs up to date on the food code. Still, availability of these in-house courses were not locally available to all jurisdictions and educational approaches were not consistent across departments. Thus, we recommend a standardized approach to incorporating education into FSE regulatory inspections that can be applied across the state, such as State-issued educational materials to provide during inspections or consistent methodology for debriefing inspections with FSE operators.

All participants were familiar with FSE inspection rating systems that publicly announce inspection scores to consumers. While multiple LHDs across the state have implemented this practice, only one LHD was currently posting their scores and were only doing it online. Perceptions on the benefit of posting inspections varied for both scoring posted at restaurants and scores posted online. However, participants expressed concerned over the scoring methods for these ratings. There was unanimous concern with using inspection scores, as these scores were not reflective of risk and were meaningless to consumer. Some LHDs across the state have developed their own risk-based scoring system that has potential for widespread use across the state. Given this, we recommend a developed consensus on a risk-based formula that can be applied for all FSE inspections across the state to provide a rating that is meaningful to consumers.

Conclusions

Though a small state, there are many different aspects to Connecticut and the food protection programs at the local level are not exempt from this. Despite several points of variation between LHDs, many commonalities exist in inspection focuses and food safety priorities. Still, all LHDs had suggestions for improvements that could take place across the state. Whether in the adoption of the FDA code, incorporating technologies into inspections, modifying trainings for QFOs and sanitarians, or creating statewide resources and databases, participants felt that there was work to be done to standardize food protection practices across the state. While this study was small and probative in nature, it is the first look at food safety practices at LHDs across the state. The commonalities and variation presented highlights the need for further research, including a more in-depth evaluation of current food safety efforts at both the state and local levels.

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Appendix A: Qualitative Interview Script

- Let's start by having you tell me a bit about you and your work at your local health department (LHD).
    - What is your role at the LHD? What duties does this entail?
    - How long have you worked at the LHD? How long have you worked in your current position?
    - What is your career and training background? How has your training and experience shaped your work at your current position?
- As you know, this component of our study is focused on food safety and the inspection process. Could you tell us about what this looks like at your local health department?
    - Could you describe your role in food safety and inspection process?
    - *(if not inspecting)* How do you involve yourself in the various activities regarding food safety and inspection?
    - How much **priority** does food inspection take at your LHD? or what percentage of your LHD's efforts goes in to food safety and inspection? Is this more or less than what you would expect or would like to see?
    - How many times does your LHD inspect a food service establishment (FSE) in a given year? How much emphasis is placed on meeting the mandated inspection frequency? Why is that?
    - What types of fees does your LHD require for food licensing and inspection? Why are these fees charged? How important are these fees to your food safety and inspection process?
- Can you walk me through the **process** at your LHD that a FSE would need to go through to obtain licensing and remain open?
    - Is there any application requirement? Why? What do you look for in the application?
    - For what reasons would there be inspections? Why are these inspections important?
- Can you also walk me through the **process** that an inspector from your LHD would use to evaluate if a FSE is fit for operation?
    - What equipment is taken into the field? Or what resources are provided for the inspectors?
    - What forms are inspectors at your LHD currently using for this? Do you feel the form plays any role in the quality of the inspection?
    - How is the FSE involved in the inspection process?
    - How is information regarding the inspection conveyed to the FSE? Is there a standardized procedure for conveying inspection results to the FSE?
- How do inspectors at your LHD deal with violations that occur during food safety inspections?
    - How is action taken for inspections that score 80 or less? Are warnings or citations issued to these FSEs?
    - What steps are taken to ensure these violations are corrected? How do you ensure compliance after an inspection?

    - How does your LHD deal with FSEs who chronically perform poorly on their inspections?
    - What would warrant the closing of a FSE by the LHD? What is that process like?
- In general, what is the relationship like between the LHD food inspectors and the FSEs?
    - How does the LHD view its responsibility to FSEs?
    - How do you think FSEs view your LHD and the inspection process? Why do you think this is?
    - Do the views of the LHD influence the way staff provide inspections? If yes, in what ways?
    - Do the perceptions of FSEs about the LHD and inspections influence their business operations? If yes, in what ways?
- So overall, what would be your LHD's **philosophy** on these inspections? What is your LHD's overarching goal in providing food safety and inspection services?
    - How does that influence the way inspectors approach the FSEs?
    - What does your LHD stress as the most important components of the inspection process?
- What are your **perceptions** about food safety inspections?
    - Why do you perform each step of the licensing and inspection process?
    - Do you think these processes are effective? How would you improve them?
    - Do you think there is a substantial degree of variation in the way different individuals provide these services in your department? Why do you think that?
    - Are there measures taken to try to standardize the inspection process among all inspectors? What are these? Why are they done?
- Does your LHD place any extra efforts into supporting its food safety goals?
    - Are there checks and balances in place (i.e. re-inspection by the chief sanitarian, team inspections)? What are these? Why are they done?
    - Does your LHD take any extra steps to improve its inspection services?
        - Are inspectors evaluated? Are inspectors able to present cases and receive feedback?
    - Does the LHD provide any extra resources for FSEs (i.e. trainings, language accommodations, announced inspection walk-throughs, etc.)? If yes, why are these done? What are the goals of these extra initiatives?
- Could you reflect a little on what are some of the successes and hardships of your LHD's food safety program?
    - What does your LHD do well when it comes to food safety and inspections?
    - Does your LHD evaluate in anyway the effectiveness of its food safety efforts?
        - If so, how? If not, how would you provide an assessment on if your LHD's methods for promoting food safety are working?
    - What are some of the barriers or challenges faced by your LHD regarding food safety and inspections? What is needed to overcome these barriers?

    - What other resources would you like to have to improve your LHD's food safety program? How would you use these resources? What impact do you think they would have?
- Are you familiar with other models that are considered "best practices" for LHDs to improve food safety (i.e. grade cards, announced inspections, publicly available inspection scores)? If yes, what are they?
    - Has your LHD adopted any of these models? If yes, why?
    - If no, do you think these models could be relevant to your LHD? Would you like to see them implemented within your LHD? Why? What impact do you think they would have?
- Do you think there are differences in food safety and inspections between LHDs in Connecticut? If yes, what are these differences? What do you think about them?
    - Do you think that standardization of procedures and requirements for food safety and inspection should occur statewide? What impact do you think this would have?
- To wrap things up, would you like to see the role of food safety and inspections change, both within your LHD and in the state of Connecticut? If so, how and why would you like to see it change?
    - Do you think your LHD can be doing better in the way it provides food safety services? If so, how? Why is that important? What do think would be needed?
    - Do you think the state can be doing better in its food safety initiatives? If so, how? Why is that important?
- Do you have anything else you'd like to share with us?

Appendix B: Commentary on the FDA Code in Connecticut

In 2013, the Connecticut State Department of Public Health's Environmental Health Section and the Food Protection Program convened the Food Safety Advisory Group (FSAG), a diverse membership comprised of private food industry leaders, Federal and State agencies, and local health department/district representatives to discuss the current Food Protection Program in Connecticut and areas needing improvement. As a result, the FSAG unanimously voted in favor of Connecticut pursuing adoption of the FDA Food Code, by reference. The distinction "by reference" allows an automatic update of the Connecticut Food Protection Program to enforce the most current version of the FDA Food Code, into the future.

It is anticipated that many of the concerns expressed by practitioners in the field within this report may be addressed and even resolved with the adoption of the FDA Food Code in Connecticut. For, example, it is especially important to taxpayers today to believe their tax dollars supporting their local health jurisdiction are making a positive difference for them and their community.

The FDA has developed an internal assessment process of nine standards to be aspired to and accomplished. The standards are intended to guide local departments through online training programs for professional advancement and education as well as a tool that facilitates internal assessment of local food protection programs and compares programs on a national level. This access to comparable inspection data is key to building of food safety programs that are effective and an asset to any community.

In contrast to current practices that may focus equally on dirty floors as proper food handling, the FDA Food Code requires a Risk-Based Inspection, focusing on the five most common risk factors associated with food-borne illness. The FDA inspection form can be provided electronically to allow much more efficient access to inspection information access, which in turn improves work flow management. Also, supportive resources can be readily accessed in the field through the FDA Food Code Annexes that provide the scientific explanation behind each item in the food code.

The FDA food code also provides guidance for the inspectors on processes, such as sous-vide or reduced oxygen processes, that remain absent from Connecticut's food code. The FDA also allows a formal opportunity to bring technical questions before a scientific review board every two years, and it is the option of the State whether to adopt a recommended decision or guidance.

From a workforce development perspective, CEU's are earned online and certification and training of inspectors is done using a train-the-trainer model within the health jurisdiction. Since this is a national certification, the opportunity to hire FDA Food Code trained inspectors from other states greatly expands the pool of potential candidates in Connecticut, while providing reciprocity for Connecticut's food inspectors moving to other states.

The attributes presented demonstrate that there are notable differences between Connecticut's current food code and the FDA food code. It is the opinion of many that the adoption and implementation of the FDA Food Code in Connecticut will address many of the concerns presented in this report and as such, will enhance the food safety statewide.

Maryann Cherniak Lexius, MPH, RS, Director of Health, Manchester Health Department (010915)