
ASTHO Environmental Public Health Tracking: State-to-State Fellowship



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Fellowship Participant:

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Introduction/Background

Tulsa County is the most densely populated county in the state and continues to grow with rapid development in Tulsa's surrounding suburbs: Broken Arrow, Bixby, Jenks, Glenpool, Owasso and Sand Springs. Tulsa County houses the county seat, Tulsa, which is the second-largest city in the state.

The Tulsa Health Department Food Protection Service (THD-FPS) Program oversees approximately 4,400 retail food establishments in Tulsa County. THD-FPS replaced a manual inspection and paper file storage system process with a computerized, Digital Inspection System (DIS) in 2009. The DIS system utilizes a risk-based electronic food inspection form that captures the CDC Risk Factors and food code interventions recorded by inspectors. During retail food inspections, violations are categorized as "priority item," "priority foundation item" or "core item" based on hazards associated with foodborne illness or injury. The inspection form captures the compliance status of each risk factor and intervention by indicating IN compliance, OUT of compliance, Not Observed, or Not Applicable which helps establishment management understand the more serious violations.

THD-FPS pilot project for the 2018-2019 ASTHO EPHT Fellowship Program was to examine how to best utilize the retail food inspection data collected over the past ten years. While the amount and variety of data captured is thorough, the involved efforts to integrate and validate data had not been used to its full potential. Our objective is to measure food establishment trends specific to the occurrence of foodborne illness risk factors and food code interventions by USING FOOD SAFETY PROGRAM INSPECTION DATA ANALYSIS TO IMPACT ACTIVE MANAGERIAL CONTROL (AMC) PRACTICES WITHIN RETAIL FOOD ESTABLISHMENTS.

Project Plans

Ultimately our goal is to inform, educate, and empower food establishments and the Tulsa County community on food safety issues. Active Managerial Control is a preventive food safety management system. THD-FPS's plan is to use an establishment violation history data analysis tool to target and identify CDC Risk Factor and food code intervention food establishment specific trends. This data tool will interface with the DIS to generate CDC Risk Factor reports and specific intervention strategy recommendations that will impact AMC practices within retail food establishments. Utilizing AMC to prevent the risk of foodborne illness rather than responding to a foodborne illness when it occurs increases the likelihood of long-term compliance and food safety culture changes.

Once implemented, the risk factor data analysis project will generate visual illustrations that will highlight the issues that put the food establishment and consuming public most at risk of an unintended food outcome. Empowering individuals and communities with the means to detect and respond to health concerns, as well as better protect against potential threats is a win for all stakeholders involved.

An establishment specific Risk Based Prevention Plan (RBP) provides another tool for inspectors as they communicate overall food safety risks with food establishment management teams. A feedback session held with Tulsa County food establishment management teams June through August of 2018 revealed a need for THD-FPS to better communicate food safety issues by way of an educational format. The RBP will enhance collaborative efforts with food industry partners and also empower managers to embrace a proactive approach to food safety which in turn will impact long-term compliance within the establishment.

Once implemented, we envision that food establishment corporate specific data reports will be beneficial for corporate owners to see at a glance how well they control risk factor violation trends. The RBP will be a tremendous asset to corporate entities as they develop and revise retail food establishment improvement strategies. We will also use risk factor data reports to generate tailor-made onsite food establishment training presentations for those entities that have a history of non-compliance or repetitive priority/priority foundation violations.

Sustaining project beyond the project period

Funding to support the THD-FPS program is derived from several sources including fees, licenses, state contract, and ad valorem property taxes totaling over two million dollars for the 2019-2020 fiscal year. Ad Valorem taxes make up the majority of the THD-FPS budget. The second largest source of funding comes from an annually-renewed contract with the Oklahoma State Department of Health which remits 69% of the Tulsa County state food license fees collected to THD-FPS. City license fees in Tulsa, Broken Arrow, and Bixby and other permits issued by THD-FPS make up the remainder of revenue. For fiscal year 2019-2020, monies have been allocated to pay DIS for data cube creation so that the work on the data analysis project can begin.

Conferences & Site Visit

The Utah Department of Health (UDOH) agreed to serve as THD's mentor during this State-to-State Fellowship project as they had recently participated as a State-to-State fellow in 2017. THD was paired with UDOH due to project similarities involving risk factor studies. Chris Nelson served as our primary contact during this project. Mr. Nelson is the Environmental Sanitation Section Manager at the UDOH.

UDOH conducted an analysis of data from retail food inspections conducted in 2016 by local inspectors. The purpose of their analysis was to evaluate trends, patterns, and correlations of food code violations with the intent of finding ways of improving the efficacy and efficiency of food establishment inspections by local departments, and to identify priorities for focused training and policy development by UDOH.

Conference Calls:

The initial conference call occurred on February 8, 2019, with DeBrena Hilton (fellow), Chris Nelson (mentor), and Samantha Williams (ASTHO). During this call Mr. Nelson provided background information on UDOH 2016-2017 risk factor study and discussed THD-FPS's proposed project.

A follow-up conference call was held on March 5, 2019 with Mr. Nelson, DeBrena Hilton, Monica Rodgers (Manager, Policy & Health Analytics), Guadalupe Hernandez (THD-FPS data & technology coordinator), and Samantha Williams. The purpose of this call was to connect UDOH and THD-FPS data associates so that technical features of the pilot project could be discussed.

Mr. Nelson shared data March 12, 2019 and after review we identified that UDOH data sets were formatted VERY differently than ours. So we decided to pull together an example of our data to share with UDOH during our site visit so that they could demonstrate risk factor analysis work using the R coding language that they used for their project.

Guadalupe Hernandez and DeBrena Hilton site visit with UDOH occurred Monday, April 22nd through Tuesday, April 23rd.

Day 1: April 22nd

Corryn Silon, MPH Health Educator Environmental Public Health Tracking/Environmental Epidemiology Program and Rebecca Dick, Marketing & Messaging Coordinator/Health Educator provided an overview of the UDOH data query tools available for use on the Utah Department of Health Public Health Tracking Website. I was impressed with the community snapshot profile that produces reports based on a set of health indicators for a given community. The Community Snapshot Reports on the UDOH website provide summary tables and footnotes that use existing public health indicator reports to display data for Utah communities, along with comparison data for Utah and the U.S. where available.

We also reviewed the scope of THD-FPS project with Matt McCord (Environmental Epidemiologist/Data Manager) and talked about additional possibilities for the project once we get the basic risk factor analysis work completed.

Day 2: April 23rd

Met with Sam LeFevre, Program Manager, Matt McCord, and Greg Williams (Surveillance Section Manager) and worked through examples of R coding to pull risk factor targeted information out of THD-FPS data set provided the previous day. At the end of our meeting, we were presented with an R tutorial book and a thumb drive with examples of codes to use when conducting the analysis.

Methods

The following methods have been implemented thus far towards completion of the risk factor project:

1. Hire THD-FPS data analyst before June 30, 2019:
 - a. Job description for a new data analyst position posted in April 2019.
 - b. Interviews held April & May 2019
 - c. Candidate selected June 2019
 - d. Data Analyst start date July 15, 2019
2. Perform an assessment of DIS and its ability to integrate data into Risk Factor Tool that pulls establishment specific risk factor violation trends:
 - a. February 21, 2019- Conference call held with DIS (a.k.a. Tyler Technologies), data manager, division chief, program manager & data/technology coordinator) to discuss creation of interface in order to create custom reports in existing DIS.
 - b. Cost and deliverables of data cube development provided in order run queries for risk factor studies.
 - i. DIS proposed additional charge outside of contractual agreement to create “data cubes”
3. Continue to emphasize importance of risk factor assessments and proper documentation during retail food inspections so that THD-FPS can identify and help establishments solve Risk Factors issues occurring within their facilities that correlate to foodborne illness incidence.
4. Use exported data to develop RBP for establishment - Working with data analyst to create a working timeline for the overall project and developing measurable indicators that will show overall long-term compliance trends for each establishment.
5. Develop internal and external comprehensive policies and procedures.
 - a. In August 2018, an Operational Review team was initiated to assess the policies and procedures of FPS.
 - b. The assessment phase concluded in May 2019 and the findings of the assessment reveal the urgent need for a consistent policies/procedures structure.
 - c. Quality Improvement Continuous Improvement Plan currently underway to develop policies/procedures for THD-FPS.

Results/Outcomes

Data and Technology Coordinator has been reviewing R codes and preparing for the arrival of data analyst. Once data analyst arrives, we will start working towards a successful assessment of FDA Standard 9 – Program Assessment (see current assessment in Appendices) to assure that the following requirements are met:

1. A RISK FACTOR STUDY on the occurrence of the five foodborne illness risk factors is conducted and repeated at least once every 60 months to measure trends in the occurrence of the risk factors;
2. An analysis is made of the data collected and a report on the outcomes and conclusions of the RISK FACTOR STUDY is written; and
3. A targeted intervention strategy designed to address the occurrence of the risk factors(s) identified in their RISK FACTOR STUDY is implemented and the effectiveness of such strategy is evaluated by subsequent RISK FACTOR STUDIES or other similar tools.

The CDC risk factor violation history data analysis tool that we develop will identify risk factors most in need of priority attention so that we can work with food establishments to develop strategies to reduce their occurrence. The tool will also evaluate risk factor trends over time to determine whether progress is being made toward reducing their occurrence.

THD-FPS's vision is to make Tulsa County the healthiest county in the country and implementation of this project will enable us to measure our program against national criteria and demonstrate an overall improvement in food safety in our jurisdiction.

Conclusion

THD-FPS expects that the provision of food establishment specific CDC risk factor trends to food establishment owners and managers will protect Tulsa citizens from foodborne illnesses that are directly related to uncontrolled CDC risk factors. Our hope is that this project will empower establishment managers and THD-FPS staff with information-driven results that will have a tremendous impact on ensuring that food served in Tulsa County establishments is safe.

Data and insights from using the risk factor data analysis tool will also help clarify where gaps in knowledge exist amongst our inspectors and food industry partners.

Appendices

Standard 9: Program Assessment Program Self-Assessment and Verification Audit Form

PROGRAM SELF-ASSESSMENT SUMMARY

Printed Name of the Person who conducted the Self-Assessment: DeBrena Hilton			
Self-Assessor's Title: Manager, Food Protection Services Program			
Jurisdiction Name: Tulsa Health Department			
Jurisdiction Address: 5051 S 129th E Ave. Tulsa, OK 74134			
Phone: 918-595-4302		FAX: 918-595-4339	
E-mail: dhilton@tulsa-health.org			
Date the Standard 9 Self-Assessment was Completed: June 1, 2019			
Self-Assessment indicates that the Jurisdiction MEETS the Standard 9 criteria: YES NO <input type="checkbox"/>			
<i>I affirm that the information represented in the Self-Assessment of Standard 9 is true and correct.</i>			
Criteria	Jurisdiction's Self-Assessment		Self-Assessor's General Comments
	YES	NO	
I. Risk Factor Study			
a) A study on the occurrence of foodborne illness risk factors has been completed and includes data for each facility type regulated by the jurisdiction collected over the study cycle.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	April 2019 Manager, Policy & Health Analytics resignation <ul style="list-style-type: none"> • THD interview process underway for new manager to oversee THD data projects July 15, 2019 THD/FPS data analyst (new position) onboarding
b) The data collection form includes items pertaining to the following Center for Disease Control and Prevention (CDC) identified contributing factors to foodborne illness. 1. Food from Unsafe Sources; 2. Improper Holding/Time and Temperature; 3. Inadequate Cooking; 4. Poor Personal Hygiene; and 5. Contaminated equipment / Protection from contamination.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
c) The data collection form provides for marking actual observations of food practices within an establishment (IN, OUT, NO, and NA).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Criteria	Jurisdiction's Self-Assessment		Self-Assessor's General Comments
	YES	NO	
a) A report is available that shows the results of the data collection from the jurisdiction's foodborne illness risk factor study.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Awaiting data analyst to start project work
b) The report provides quantitate measurements upon which to assess the trends in the occurrence of foodborne illness risk factors over time.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	See note above
Criteria	Jurisdiction's Self-Assessment		Self-Assessor's General Comments
	YES	NO	
a) A targeted intervention strategy designed to address the occurrence of the risk factor(s) identified in their risk factor study is implemented and the effectiveness of such strategy is evaluated by subsequent risk factor studies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	THD's current intervention strategy is to perform a courtesy visit with establishment management following a non-compliant inspection. Risk factor study pending. Follow- up tracking implemented as of June 2019
b) Documentation is provided of performed interventions, action, or activities designed to improve control of foodborne illness risk factors.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	THD currently provides self-inspection monitoring forms, educational posters and handouts. We also issue notices of correction, warnings, compliance letters and/or citations.