NACCHO
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2017 Model Practices

Applicant Information

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Model Practice Title

Please provide the name or title of your practice: *

Quality Improvement of the Retail Food Program at Tri-County Health Department utilizing the Lean Process

Practice Categories

Model and Promising Practices are stored in an online searchable database. Applications may align with more than one practice category. Please select all the practice areas that apply.: *

- ☐ Access to Care
- ☑ Advocacy and Policy Making
- ☐ Animal Control
- ☑ Coalitions and Partnerships
- ☑ Communications/Public Relations
- ☑ Community Involvement
- ☐ Cultural Competence
- ☐ Emergency Preparedness
- ☑ Environmental Health
- ☑ Food Safety
- ☐ Global Climate Change
- ☐ Health Equity
- ☐ HIV/STI
- ☐ Immunization
- ☐ Infectious Disease
- ☑ Informatics
- ☐ Information Technology
- ☐ Injury and Violence Prevention
- ☑ Marketing and Promotion
- ☐ Maternal-Child and Adolescent Health
- ☑ Organizational Practices
- ☐ Other Infrastructure and Systems
- ☑ Organizational Practices
- ☐ Primary Care
- ☑ Quality Improvement
- ☑ Research and Evaluation
- ☐ Tobacco
- ☐ Vector Control
- ☐ Water Quality
- ☑ Workforce
- ☐ Conference Theme: Bridging Clinical Medicine and Population Health

Other::

Is this practice evidence based, if so please explain. :

References Waters, B.A.; VanDerslice, J.; Porucznik, C.; Kim, J.; Durrant. L.; DeLegge, R. The Effect of Follow-up Inspections on Critical Violations Identified During Restaurant Inspections. Journal of Environmental Health 2015; 77(10):8-12.

Winnable Battles

To keep pace with emerging public health challenges and to address the leading causes of death and disability, CDC initiated an effort called Winnable Battles to achieve measurable impact quickly.Winnable Battles are public health priorities with large-scale impact on health and known effective strategies to address them. Does this practice address any CDC's seven Winnable Battles? If so, please choose from the following:: *

- [x] Food Safety
- [ ] HIV in the U.S.
- [ ] Nutrition, Physical Activity, and Obesity
- [ ] Tobacco
- [ ] Healthcare-associated Infections
- [ ] Motor Vehicle Injuries
- [ ] Teen Pregnancy
- [ ] None

Overview: Provide a brief summary of the practice in this section (750 Word Maximum)

Your summary must address all the questions below:

- Brief description of LHD- location, demographics of population served in your community
- Describe public health issue
- Goals and objectives of the proposed practice
- How was the practice implemented/activities
- Results/Outcomes (list process milestones and intended/actual outcomes and impacts.
  - Were all of the objectives met?
  - What specific factors led to the success of this practice?
- Public Health impact of practice
- Website for your program, or LHD.

750 Word Maximum

Please use this portion to respond to the questions in the overview section. : *

In the spring of 2015, Tri-County Health Department (TCHD) determined that improvements to the Retail Food Inspection Program were necessary due to limited staff resources and an increasing workload. A Lean Process was initiated with a goal of optimizing workload for staff given current resources while still achieving compliance with the regulations with each retail food operation in an effort to promote quality inspections over quantity. The outcome of this process was favorably received by our overseeing authority, the Colorado Department of Public Health and Environment (CDPHE) with elements being incorporated by CDPHE and several other local health departments in their retail food programs. Tri-County Health Department (TCHD) is the largest local public health department in Colorado and serves three counties: Adams, Arapahoe, and Douglas. These counties are located in the major metropolitan area of Denver, with a population of approximately 1.4 million people. More information is available at www.tchd.org. Over the past decade, the population in our 3 counties has increased by nearly 250,000 (24%) and the number of Retail Food Establishments (RFEs) has increased by 760 (20%). One of the most difficult challenges TCHD has faced over the last few years is being limited in the ability to increase Environmental Health Specialists (EHSs) in proportion to the growing increase in workload. With a significant population to serve, it is of utmost importance to ensure that a safe food supply is provided to consumers and that all inspections are conducted as thoroughly as possible to assure compliance with the Colorado Retail Food Establishment Rules and Regulations. A high priority is placed on food safety education with each interaction of these facilities. The TCHD Environmental Health (EH) Division began an innovative approach to addressing this challenge through a Lean Quality Improvement (QI) process. The Lean process began with finding ways to be more efficient with existing resources, and to alleviate some of the increasing inspection burden with which our EHSs are faced. In reviewing statewide inspection data of many other local health departments as well as CDPHE, EH management noticed that TCHD's rate of conducting follow-up inspections was much higher than that for the rest of the state. This comparison was an important finding since research suggests that follow-up inspections may encourage temporary improvement but are not effective in promoting long term compliance (Waters et. al., 2015). Therefore, the primary goal was to reduce our follow-up inspection rate in RFEs from 42%, to a level closer to the statewide average of 25%, and in turn increase the amount of time spent during routine inspections in educating the operator. What grew from this initial idea was an entirely new inspection component that has been incorporated since January 2016. This new component provides for more education to our retail food operators with an emphasis on increased compliance on future inspections, thereby reducing our follow-up rate. EHSs now have the ability to spend more time with business operators on violations that need to be addressed by hands-on training and demonstrations. This has also helped to alleviate the weight of regulatory responsibility that often hinders an integrated working relationship between the health department and industry. Through this process, we amended the definitions of the risk categories that delineate our food establishments, and modified our inspection frequency formula which dictates how many inspections must be completed per year for each facility. The categories were modified to place more emphasis on the RFE's practices and processes versus an outdated version of specific menu items. With this approach, EHSs are able to focus on those establishments that truly have riskier food practices and therefore require more regulatory oversight. This program modification has also aided us in becoming closer aligned with the recommendations of two of the Food and Drug Administration's (FDA) Voluntary National Standards. FDA Voluntary Standard 8 recommends 280-320 inspections per FTE (Full Time Equivalent) per year, while TCHD's previous calculation was over 600 inspections per FTE per year. FDA Voluntary Standard 7 aims to increase community and industry working relationships with the regulatory authority, and this new approach at TCHD has clearly enabled this principle and made it a primary focus. This new approach will benefit public health by increasing food safety knowledge in facilities that have the riskiest food practices, and that serve large meal volumes and broader general populations. If adopted by other local health departments, it will also benefit the public and industry in working towards a uniform, statewide approach to the regulatory responsibility of health departments overseeing retail food inspection programs.

Responsiveness and Innovation

A Model Practice must be responsive to a particular local public health problem or concern. An innovative practice must be (1) **new to the field of public health (and not just new to your health department)** OR **(2) a creative use of an existing tool or practice**, including but not limited to use of an Advanced Practice Centers (APC) development tool, The Guide to Community Preventive Services, Healthy People 2020 (HP 2020), Mobilizing for Action through Planning and Partnerships (MAPP), Protocol for Assessing Community Excellence in Environmental Health (PACE EH). Examples of an inventive use of an existing tool or practice are: tailoring to meet the needs of a specific population, adapting from a different discipline, or improving the content.

- Statement of the problem/public health issue
- What target population is affected by problem (please include relevant demographics)
    - What is the target population size?
    - What percentage did you reach?
- What has been done in the past to address the problem?
- Why is the current/proposed practice better?
- Is current practice innovative? How so/explain?
    - Is it new to the field of public health
      OR
    - Is it a creative use of existing tool or practice:
      What tool or practice did you use in an original way to create your practice? (e.g., APC development tool, The Guide to Community Preventive Services, HP 2020, MAPP, PACE EH, a tool from NACCHO's Toolbox etc.)
- Is the current practice evidence-based? If yes, provide references (Examples of evidence-based guidelines include the Guide to

Community Preventive Services, MMWR Recommendations and Reports, National Guideline Clearinghouses, and the USPSTF Recommendations.)

2000 Word Maximum

Please state the Responsiveness and Innovation of your practice (2000 Word Maximum) : *

Statement of the problem/public health issue: TCHD has limited staff resources to conduct an effective retail food inspection program. Compliance with the retail food regulations is imperative, yet, challenging with many RFEs. TCHD was challenged with too much time being spent on follow-up inspections to achieve compliance, with too few inspectors, and it was clear that changes needed to be made to become more efficient with the increasing workload. What target population is affected by the problem? What is the target population size? What percentage did you reach? TCHD serves 1.4 million people in the greater Denver metropolitan area. There are approximately 4,600 regulated RFEs in TCHD's jurisdiction, making food safety a top priority due to the popularity of food establishments for a large population of consumers. What has been done in the past to address the problem? TCHD has always routinely conducted follow-up inspections in response to violations observed on regular inspections within a limited time frame, and continued those follow-up inspections until compliance was achieved. If compliance was not achieved, then an enforcement process with the offending establishment was initiated, and food safety training was recommended, though not required. Why is the current/proposed practice better? The new approach initiated by TCHD has a more specifically defined risk-based methodology that identifies those RFEs that necessitate a higher level of regulatory oversight based on three general factors. These factors include higher risk and more complex food and menu items combined with, elaborate food preparation practices such as cooking, cooling, and reheating or even reduced-oxygen packaging, for example, and larger serving meal volumes such as buffets and special event venues. This incentivizes EHSs to spend more time in those highest risk establishments resulting in a higher quality interaction versus very low risk facilities such as convenience stores. By concentrating time in the highest risk facilities, staff effort is utilized more effectively to encourage compliance by having more ability to conduct hands-on food safety training with the operators of the establishments, rather than recommending training and pursuing enforcement action. This approach reduces the number of follow-up inspections that need to be conducted for an establishment with poor inspection results, and affords responsibility to the operator and key food staff to correct the violation with supervision from our EHSs. The FDA defines Active Managerial Control "as the purposeful incorporation of specific actions or procedures by industry management into the operations of their business to attain control of the foodborne illness risk factors." For TCHD, this became the primary goal of our approach; to provide a quality- versus quantity-based approach that promotes encouragement and responsibility of food safety techniques from the RFE while protecting the integrity of the food supply to the consumers. Is the current practice innovative? How so/explain: Is it new to the field of public health OR is it a creative use of existing tool or practice? TCHD pioneered a new approach to this problem by using the Lean method, where the core principle is to create more value for customers by removing the steps that don't create value. This current practice is an innovative approach to promoting food safety through an improved educational approach versus a regulatory approach. It defines a greater focus on those food establishments with the greatest risk and concentrates efforts for improved food safety by working together as a team with key food operations personnel and kitchen staff. This not only improves working relationships, but promotes an environment that encourages learning and application, not only on the part of the food service worker, but also on that of the regulatory staff. This builds a team-based approach, and simultaneously improves compliance with more time spent in an educational manner, and less with redundant follow-up regulatory inspections. This approach has been reviewed by our overseeing authority, CDPHE, with the new risk definitions and frequency calculations being incorporated into the state's database for use by CDPHE and many other health departments statewide.

LHD and Community Collaboration

The LHD should have a role in the practice's development and/or implementation. Additionally, the practice should demonstrate broad-based involvement and participation of community partners (e.g., government, local residents, business, healthcare, and academia). If the practice is internal to the LHD, it should demonstrate cooperation and participation within the agency (i.e., other LHD staff) and other outside entities, if relevant. An effective implementation strategy includes outlined, actionable steps that are taken to complete the goals and objectives and put the practice into action within the community.

- Goal(s) and objectives of practice
- What did you do to achieve the goals and objectives?
    - Steps taken to implement the program
- Any criteria for who was selected to receive the practice (if applicable)?
- What was the timeframe for the practice
- Were other stakeholders involved? What was their role in the planning and implementation process?
    - What does the LHD do to foster collaboration with community stakeholders? Describe the relationship(s) and how it furthers the practice goal(s)
- Any start up or in-kind costs and funding services associated with this practice? Please provide actual data, if possible. Otherwise, provide an estimate of start-up costs/ budget breakdown.

5000 words maximum

Enter the LHD and Community Collaboration related to your practice (5000 words maximum): *

Goal and Objectives: Feedback received from EHSs was that retail food follow-up inspections were high in frequency and they did not have enough time to complete all the assigned inspections while also working in multiple other programs such as inspections of child care centers, swimming pools and onsite wastewater. In addition, not enough funding, an increase in the number of restaurant establishments, along with a growing population had contributed to each EHS having approximately 668 RFE inspections per year. FDA National Voluntary Standard 8 recommends a maximum of 320 RFE inspections per FTE per year in order to provide quality, educational inspections. With almost double the amount of recommended inspections, it was increasingly difficult to maintain consistency and uniformity in our approach, along with compliance, to support state statutes and regulations. TCHD wanted to focus on improving customer service through educational opportunities with the restaurant operators. In other words, we wanted our inspectors to focus on quality versus quantity (or number) of inspections. Our overarching goal became: “By the end of 2017, reduce by 50% the average time and activities supporting follow-up inspections.” Steps taken to implement the program: 1. Examine the Current Approach Current practices and processes revealed a need for educational information, need for improved compliance with FDA Standard 8, and a need for sustained and improved relationships with operators. 2. Identify Potential Solutions The group comprising the Lean Team met together and mapped out challenges to focus on related to our high rate of follow-up inspections. This was done utilizing a Lean tool called a “fishbone diagram” in which all working parts of the program are listed under specifically-prescribed headings. The two areas that stood out the most for improvement from the group perspective fell under the “People” (staff responsibilities) and “Procedures” (policy changes) headings. 3. Develop an Improvement Theory A “punch list” of improvement areas was created: • Update risk-based category definitions. • Modify inspection frequency formula as to how often we will inspect a restaurant based on their risk value. • Food program policy change that details when to conduct a follow-up and how interventions will be used. • Purchase of additional equipment for educational interventions to be conducted by all EHSs (thermometers, cutting boards, glow germ, etc.) rather than a designated team • Allow inspectors to correct more violations on site. • Maintain average minutes per routine inspection at 90 minutes or more. 4. Test the Improvement Theory In order to test the theory, the following first had to be accomplished: • Provide training to all staff regarding the policy changes for follow-up inspections. • Provide training to inspectors regarding the Critical Violation report and how to interpret it. • Provide educational intervention examples. Educational Interventions may take place of a routine inspection, and should focus on the repeat Food Borne Illness critical violations identified from past inspections. • Field Supervisors include a standard agenda item during staff meetings to discuss changes and intervention opportunities. • The department’s inspection database (Envision Connect) updated for inspection frequency formula and capturing educational intervention information. • Capture metrics that detail follow-up inspection rate by agency, office, and employee. • Obtain feedback from restaurant operators in regards to the type of educational opportunities that they are seeking. 5. Check the Results Data must be used to study the results of the test. It was decided that the metrics would be captured quarterly over 2016 and 2017 in the following fashion: • Quarterly reviews with EHSs and Field Supervisors as to their individual progress and feedback. • Target follow-up inspection rate per employee at 25% (while acknowledging that this target may not always be feasible due to the type of violation noted). • Share feedback with QI team and make corrections or adjustments as needed. Any criteria for who was selected to receive the practice? Those RFEs that performed poorly on an initial inspection that required a subsequent follow-up inspection would be ideal cases for conducting an educational intervention. At any time, an EHS felt that increased food safety knowledge was warranted, they would be allowed and encouraged to perform the educational intervention and utilize additional hands-on training. Empowering staff to make these decisions on their own was a key element to the process. What was the timeframe for the practice? The Lean process was initiated in the spring of 2015 with implementation beginning January 1, 2016. As with any QI process, an ongoing continuous loop of monitoring and evaluation of the measures was implemented. Were other stakeholders involved? What was their role in the planning and implementation process? Representatives from TCHD consisted of two EHS, one EHS Field Supervisor, the five-member Environmental Health Management Team, TCHD’s Performance Management Coordinator, and the Retail Food Program Coordinator. The Deputy Division Director from CDPHE was a key contributor in facilitating the Lean concept discussion. Each of these individuals collaborated with experience from their current duties to bring the concept and direction of the process together. What does the LHD do to foster collaboration with community stakeholders? Describe the relationship(s) and how if furthers the practice goal(s). TCHD appreciates collaboration with stakeholders and affords opportunities to improve educational outreach whenever possible, as this is encouraged in the recommendations of FDA VNS #7, stated previously. Though a few TCHD staff offer presentations on regulatory perspectives several times a year, this new educational approach to compliance inspections provides for this opportunity on a daily basis, and empowers all EHSs to be involved in an outreach role. As an example, an additional part of this process required EHS personnel to survey approximately 100 RFEs during routine inspections to gather information on what the RFEs sought from TCHD in the form of additional educational resources. This information not only helped enhance working relationships with the RFEs by allowing them to voice their opinions, but it also helped to shape the goal of providing more education to improve compliance and reduce follow-up inspection rates. This valuation was affirmed by comments forwarded from a member of our local Board of Health that had received positive remarks directly from one of our largest school districts on the improved interactions they had with our EHS personnel. Any start up or in-kind costs and funding services associated with this practice? Very little additional costs or funding were used to begin the Lean process, primarily since the goal was aimed at optimizing our time and effort in the program. However, additional training materials were purchased for staff to use during educational interventions at a cost of $1,000.

Evaluation

Evaluation assesses the value of the practice and the potential worth it has to other LHDs and the populations they serve. It is also an effective means to assess the credibility of the practice. Evaluation helps public health practice maintain standards and improve practice. Two types of evaluation are **process** and **outcome**. Process evaluation assesses the effectiveness of the steps taken to achieve the desired practice outcomes. Outcome evaluation summarizes the results of the practice efforts. Results may be long-term, such as an improvement in health status, or short-term, such as an improvement in knowledge/awareness, a policy change, an increase in numbers reached, etc. Results may be quantitative (empirical data such as percentages or numerical counts) and/or qualitative (e.g., focus group results, in-depth interviews, or anecdotal evidence).

- What did you find out? To what extent were your objectives achieved? Please re-state your objectives.
- Did you evaluate your practice?
    - List any primary data sources, who collected the data, and how (if applicable)
    - List any secondary data sources used (if applicable)
    - List performance measures used. Include process and outcome measures as appropriate.
    - Describe how results were analyzed
    - Were any modifications made to the practice as a result of the data findings?

2000 Words Maximum

Please enter the evaluation results of your practice (2000 Words Maximum): *

What did you find out? To what extent were your objectives achieved? Our objectives were to reduce the number of follow-up inspections conducted in RFEs to a target rate of 25%, and to re-focus our regulatory inspections to a quality versus quantity approach. Because we were piloting our new approach in 2015, we chose 2014 as the baseline year for comparison with full implementation in 2016. We found that our approach had improved with our overall follow-up inspection rate falling from 42% in 2014 to 34% through the first three quarters of 2016, resulting in an estimated reduction of 1,470 follow-up visits from that of 2014. At the same time, our average number of minutes per inspection increased from 74 minutes in 2014 to 98 minutes as of September 30, 2016, indicating that EHS personnel were able to increase their time available for educational opportunities during routine inspections in the RFEs. As of September 30, 2016, EHS staff has conducted 115 Educational Interventions. Of added benefit, EHS staff has been keenly motivated by the much more positive/collaborative relationships generated with their RFE operators by utilizing this training approach and creation of a team atmosphere. Did you evaluate your practice? Our practice is constantly being evaluated as part of the QI process on a quarterly basis to evaluate our performance. This is being accomplished by a dedicated in-house Informatics Specialist in conjunction with division management. Feedback on the process is also gathered from EHSs and improvements are made via policy changes.

Sustainability

Sustainability is determined by the availability of adequate resources. In addition, the practice should be designed so that the stakeholders are invested in its maintenance and to ensure it is sustained after initial development (*NACCHO acknowledges that fiscal challenges may limit the feasibility of a practice's continuation*.)

- Lessons learned in relation to practice
- Lessons learned in relation to partner collaboration (if applicable)
- Did you do a cost/benefit analysis? If so, describe.
- Is there sufficient stakeholder commitment to sustain the practice?
    - Describe sustainability plans

1500 Words Maximum

Please enter the sustainability of your practice (2000 Words Maximum): *

Lessons learned in relation to practice. Lessons learned in relation to partner collaboration. Cost/benefit analysis? Is there sufficient stakeholder commitment to sustain the practice? Many lessons have been learned throughout this process. While we started with a goal of reducing our follow-up inspection rate, the Lean process created a whole wealth of additional program improvements along the way. It opened the door for a new approach to inspections, incorporating a more appropriate risk-based methodology rather than the previous routine of checking off boxes on an inspection form. This methodology allows our inspectors to focus valuable time and energy into those RFEs that pose the greatest risks to unsafe food practices, and allows inspectors more latitude for educational opportunities within these establishments. This has fostered new and better working relationships with facility operators and allows buy-in from both parties to achieve food safety compliance. Our inspectors have become more knowledgeable about various ethnic foods and how to achieve regulatory compliance while still preserving the traditional aspects of these food products and preparation practices. Focusing on education has led to increased food safety awareness, which in turn has led to increased compliance on inspections, and thereby reduces future inspection time, promoting a cost-saving benefit. As the CDPHE has observed the integration and positive outcomes of this practice into TCHD’s retail food program, it has adopted the methodology created by TCHD through the Lean process. This methodology is now being encouraged to other health departments statewide and in turn, is promoting uniformity of application throughout the state—a goal that the state of Colorado has set as a priority, and is supported as a Colorado winnable battle.

Additional Information

How did you hear about the Model Practices Program:: *

- [ ] I am a previous Model Practices applicant
- [ ] At a Conference
- [ ] NACCHO Website
- [ ] Public Health Dispatch
- [x] Colleague in my LHD
- [ ] Model Practices brochure
- [ ] NACCHO Exhibit Booth
- [ ] NACCHO Connect
- [ ] Colleague from another public health agency
- [x] E-Mail from NACCHO
- [ ] NACCHO Exchange