

Samuel J. Crumbine Excellence in Food Safety Award Application





Executive Summary

Located in the foothills of the Rocky Mountains in Colorado, Boulder County is the gateway to year-round outdoor recreation, an active technology start-up culture, a thriving university, and a long-standing research community. As in many other thriving communities, an exploding and often unique food industry in Boulder County serves hundreds of thousands of visitors and residents every year.

The Boulder County Public Health (BCPH) Food Safety Program is an innovative, partner-focused team that works to prevent foodborne illness from impacting the lives of the many visitors and residents of this active community. Several focus areas are instrumental to the program's success: active managerial control (AMC), disaster preparedness, partnership with industry, and innovative inspection and training strategies.

By helping retail food establishments to implement AMC practices, the Food Safety Program ("program") empowers establishments to effectively manage risks of foodborne illness and simultaneously reduce the need for program staff time and resources. This approach is woven throughout all program activities and exemplifies the program's philosophy that collaboration and partnership are vital to true long-term improvement of food safety practices and reduced incidence of foodborne illness. And it's working! Evaluation data demonstrate that as the number of AMC practices increase, inspection scores get better and the potential for foodborne illnesses decrease.

An additional focus of the program is disaster preparedness. After experiencing fires year after year and a significant flood in 2013, it is imperative that retail food establishments in Boulder County are educated about important steps and considerations for maintaining the safety of the people they serve after a power outage, water contamination, or destruction of property. The program's disaster preparedness materials and outreach have helped to ensure that facilities are better prepared for future events.

The program is modeled after the <u>2015 FDA (U.S. Food and Drug Administration) Voluntary</u> <u>National Retail Food Regulatory Program Standards (VNPS)</u>, which represent best practices for food programs across the country. To date, the program has currently met Standards 2, 3, 5, 6, 7, and 9; has nearly completed work on Standard 4; and will be focusing on Standard 1 in 2017 as the State of Colorado looks to adopt the 2013 FDA Food Code. Assessments for Standards 1 and 8 have also been completed.

Despite having less than adequate resources, the program continues to make a significant difference in Boulder County and beyond. In addition to AMC and disaster preparedness, the program successfully partners with industry through the Food Safety Advisory Committee; implementing the FDA Voluntary National Retail Food Regulatory Program Standards; and responds to local foodborne illness (FBI) risk factor violations; partners with the BCPH

Communicable Disease Control Program to monitor and respond to disease; and provides intensive and effective staff training. As a result, over 80% of retail food establishments in Boulder County are rated *Excellent* or *Good*, and the number of inspections that do not cite a FBI risk factor violation has fallen sharply.

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Boulder County Public Health (BCPH) is the local public health agency that serves the public health needs of Boulder County, Colorado. Nestled in the Front Range of the Colorado Rocky Mountains, Boulder County is 1 of 64 counties in Colorado and home to 313,333 residents,

making it the sixth most populous of Colorado counties. The greatest percentage of the population lives in four dense urban cities: Boulder, Longmont, Louisville, and Lafayette, although many residents live in smaller, mountain communities. The vast majority of residents are white (74%), followed by Hispanic (14%), Asian (4%), and those identifying as two or more races (2.4%).

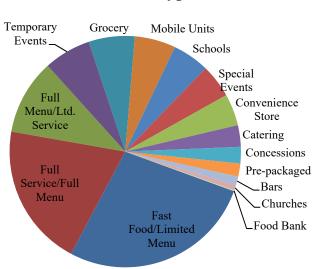
The county is home to the University of Colorado at Boulder, with an annual enrollment of nearly 33,000 students; a center for research, housing the National Center for Atmospheric Research (NCAR) and the National Institutes of Science and Technology (NIST); large businesses like IBM, Ball Corporation, and Intrado; and is a mecca for technology start-ups and triathletes.



Ninety-four percent (94%) of residents older than age 25 hold a high school degree or higher; 58.2% hold a bachelor's degree or higher. The median household income (in 2014 dollars), from 2010-2014 was \$69,407. Approximately 13.3% of the population lives in poverty.

There are approximately 1,700 retail food establishments in the county.

Туре	Total
Fast Food/Limited Menu	460
Full Service/Full Menu	338
Full Menu/Limited Service	178
Temporary Events	111
Grocery	109
Mobile Units	97
Schools	87
Special Events	79
Convenience Stores	75
Catering	51
Concessions/Sr. Nutrition	39
Pre-packaged	31
Bars	21
Churches	12
Food Banks	2



Food Service Types

The BCPH Food Safety Program is the primary regulatory agency responsible for regulating retail food establishments within Boulder County. Program staffing is comprised of 8.0 full-time equivalent (FTE) employees to do field work (7 full-time field staff and 3 part-time field staff), 1 team leader, and 1 program coordinator to work with nearly 1,700 retail food establishments.

The budget is primarily generated from license fees; the average fee is approximately \$330 per year (fees range from \$117 for a small grocery store to \$620 for a large grocery store with a deli). The 2017 program budget is \$1,033,805 – roughly \$3.30 per person (county population of 313,333). Most funding is provided by county appropriation and licensing fees.

Source of Funds	Amount	Details
County Appropriation	\$ 451,949	
Food Service License Fees	482,663	Includes licenses, civil penalties, temporary events, and owner change fees
Plan Reviews	78,900	
Food Safety Training Fees	1,964	Includes Sanitation Training Assistance for Restaurateurs (STAR) class and State Food Safety online training fees
Grants	116,308	FDA grants (2) and AFDO training grant (1)
TOTAL	\$1,131,784	

The BCPH Food Safety Program vision is a community free of foodborne illness that is responsible, informed, and partners with our Food Safety Program, a trusted and innovative leader. The program mission and goal is to protect, promote, and enhance the health and well-being of the community by preventing foodborne illness.

Each year the program sets program objectives to continue working towards meeting the program mission and goal. For the last six years, the program objectives have focused on implementation of active managerial control (AMC) practices at retail food establishments, and more recently on modeling the program after the U.S. Food and Drug Administration (FDA) Voluntary National Retail Food Regulatory Program Standards (VNPS). Finally, the program continues to develop innovative strategies to maximize limited resources.

2017 Program Objectives

Conduct AMC assessments

Continue to disseminate the program's Disaster Guide to retail facilities

Create new Partners for Food Safety

Hold Food Safety Advisory Committee (i.e. external community organizations) meetings

Develop oral culture training and action plan

Develop HACCP* Plan templates for industry as a part of an AFDO grant

Fulfill Colorado Department of Public Health and Environment (CDPHE) delegated contract requirements

Meet FDA quota for conducting restaurant inspections

Respond to complaints/conduct foodborne illness investigations

Implement FDA VNPS - focus on #4

Participate in statewide process to revise food safety regulations

Participate in regional efforts

Conduct classes for food safety education

* Hazard Analysis and Critical Control Points

In addition to these objectives, the program monitors activities and measures achievements according to the goals established under Healthy People 2020, the Centers for Disease Control and Prevention's (CDC) winnable food safety battles, CDPHE's winnable food safety battle, and goals of the Boulder County Sustainability Plan.

Part II: Baseline and Program Assessment – Regulatory Foundation

The BCPH Food Safety Program is focused on the prevention of foodborne illness and helps to fulfill the statutory mandate to address this issue under the Colorado Food Protection Act (Colorado Revised Statutes [C.R.S.] §25-4-16), the Pure Food and Drug Law (C.R.S. §25-5-4), and the regulations promulgated under the Colorado Retail Food Establishment Rules and Regulations 6 Code of Colorado Regulations (CCR 1010-2 (adopted by the State Board of Health).

Colorado's regulations are based on the U.S. FDA Food Code and administered at the state and local levels through contract and delegation of authority. With the exception of the City and County of Denver (home rule county), all Colorado counties follow the Colorado Retail Food Establishment regulations. At the latest revision in 2013, the Colorado regulations did not meet all necessary requirements within VNPS 1 to be in alignment with the FDA Food Code; however, Colorado plans to fully adopt the 2013 FDA Food Code in 2018, which will allow the program to meet Standard 1 at that time. See Appendix for VNPS 1 – Self-Assessment.



Part II: Baseline and Program Assessment – Trained Regulatory Staff

Ensuring that staff has the knowledge, skills, and ability to complete their work is an integral part of the BCPH Food Safety Program. This helps to ensure that program staff will help to minimize foodborne illnesses; it also provides opportunities for growth and professional development.

The program has fully implemented a program that exceeds the requirements of VNPS 2, including completion of all the U.S. FDA Office of Regulatory Affairs online university (ORA U) course work, extensive field training, and verification of skill sets. Staff also is required to complete 100 independent inspections before they are standardized; and they are re-standardized every 3 years. In addition, staff participates in ongoing training that far exceeds minimum requirements, averaging over 44 hours of training per year, per person.

Program staff is also often requested to present at state and national conferences, including the Association of Food and Drug Officials (AFDO) Annual Education Conference and, for the past six years, to serve as guest lecturers for graduate-level food science classes at Colorado State University (CSU). Recently staff participated in the National Environmental Health Association (NEHA)-CDC job task analysis aimed at identifying knowledge and skills needed to develop a certification and credential for foodborne outbreak investigators.

Finally, staff has taken on lead roles to further the program's efforts towards VNPS. The 2012 audit indicated the program meets or exceeds all VNPS 2 requirements (see appendix VNPS 2 for examples of training documents and areas of focus).



Part II: Baseline and Program Assessment – Inspection Program Based on HACCP Principles

The BCPH Food Safety Program has been actively working on utilizing HACCP principles to focus on the status of risk factors, determine and document compliance, and target immediate and long-term correction of out-of-control risk factors through AMC for several years. The program met this standard in 2015 and was one of the first programs in Colorado to begin tracking In, Out, N/O (not observed), and N/A (not applicable) for critical violations.

Staff is actively engaged in becoming fluent in HACCP principles and review of facilities that are required to have HACCP plans; many facilities are cutting-edge and have actively been using reduced oxygen packaging (ROP) processes, as well as many other specialized processes. In response and thanks to an AFDO grant, the program will be working with industry and a nationally known food safety expert in 2017 to develop HACCP templates for retail food establishments to make it easier for them to successfully develop and implement an adequate HACCP plan, particularly for the most common specialized food processes, like sous vide, cook chill, and reduced oxygen packaging. This project aligns with the FDA's Voluntary National Retail Food Regulatory Program Standards (VNRFRPS) 3, 5, and 7. All goals are expected to be met by November 2017.

The program focuses on risk factors during the inspection process and determines compliance. Program inspectors use a team approach to help facilities gain immediate or long-term compliance. Staff uses a chart to determine appropriate follow-up activities (see Appendix VNPS 3). Food establishments are categorized based on their inherent food safety risks, and this risk-based methodology is used to focus limited resources on facilities posing the greatest food safety risk. Finally, program policies and procedures address variance requests and verification and validation of HACCP plans (see Appendix VNPS 3).

In addition, the program uses innovative, alternative inspection types to further aid staff and facilities with providing safe food. The first type is the consultation inspection. During this inspection, staff reviews the facility but does not use the findings for any regulatory or enforcement action. The goal is to help train staff and identify issues so they can take action to correct and prevent future issues. This type of inspection is often used for facilities where a number of violations were observed on previous inspections with the intention of providing long-term corrective action and avoiding enforcement. This type of inspection has been part of the program for more than ten years.

The second type is the AMC assessment. This inspection type aims to thoroughly analyze the management of food safety risks in the facility. It includes focusing on specific areas and providing tools and guidance for facilities to proactively implement practices to address the primary foodborne illness risks in the facility.

The third type is the quick assessment, a blend of the AMC assessment and an analysis of the compliance of the FBI risk factor violations. It is intended to understand how the facility operates

in less time than a routine inspection or AMC assessment. It is primarily used to assess the ongoing efforts of our Partners for Food Safety in lieu of full annual assessments and inspections.

The final type is food safety training, which is conducted within the facility and includes hands-on training within the setting where food workers are comfortable and using real-world examples that they are familiar with. It also allows workers to receive consistent training across their workforce. This training was the genesis for the development of our Oral Culture Learner Training Project.

Quality assurance is a priority for the BCPH Food Safety Program. In fact, the program will meet the VNPS Standard 4 by July 2017. Program staff led the initiative on a statewide workgroup to develop model program policies and procedures to ensure uniformity among regulatory staff in the interpretation of regulatory requirements, program policies, and compliance/enforcement procedures. The model policies and procedures were subsequently adopted statewide.

The BCPH Standard 4 Quality Assurance Program (QAP) will be an ongoing program in which inspectors must be compliant in the following 10 quality elements:

- 1. Determine and document the compliance status of each risk factor and intervention using *In Compliance*, *Out of Compliance*, *Not Observed*, or *Not Applicable* through observation and investigation.
- 2. Complete inspection reports that are clear, legible, concise, and accurately record findings, observations, and discussions with establishment management.
- 3. Interpret and apply laws, regulations, policies, and procedures correctly.
- 4. Cite the proper local code provisions for Centers for Disease Control and Prevention (CDC) identified risk factors and food code interventions.
- 5. Review past inspection finding and act on repeated or unresolved violations, per policy.
- 6. Follow through with compliance and enforcement.
- 7. Obtain and document onsite corrective action for out-of-control risk factors at the time of inspection, as appropriate for the type of violation.
- 8. Document options for long-term control of risk factors that were discussed with establishment managers for repeat violations; options may include but are not limited to risk control plans, standard operating procedures, equipment and/or facility modifications, menu modification, buyer specifications, remedial training, or HACCP plans.
- 9. Verify that the establishment is in the proper risk category and that the required inspection frequency is being met (this will be based on risk, as we do not currently have funding for proper staffing).
- 10. File/complete reports in a timely manner.

In addition, a field component will require that managers or appointed staff verify that inspectors are compliant in the above ten quality elements while in the field.

When the QAP identifies deficiencies in quality or consistency in any aspect, the inspector will be notified, and corrective actions will be taken, such as awareness of the deficiency, additional training, review of regulations, review of policy, increased monitoring of the specific deficiency, and possible disciplinary action, as well as others (see Appendix VNPS 4).

Part II: Baseline and Program Assessment – Foodborne Illness and Food Defense Preparedness and Response

Active surveillance and early detection of illness prevents future transmission in the community and can save lives. Fortunately, the BCPH Food Safety Program has a long history of partnership with the BCPH Communicable Disease Control Program and has an established system and tools to detect, collect, investigate, and respond to complaints and emergencies that involve foodborne illness, injury, and intentional and unintentional food contamination.

The program is part of the executive committee for the Colorado Integrated Food Safety Center of Excellence (Colorado COE) and represents the National Environmental Health Association (NEHA) in the Council for Improving Foodborne Outbreak Response (CIFOR). Program staff has contributed best practices, guidance documents, and expertise to the design of the creations of the Colorado COE.

The program is equally proactive and collaborative when it comes to emergencies. In response to the devastating effects of fires in 2010, 2012, and 2016, and a large flood in 2013, staff developed an allhazards resource for retail food facilities to ensure that residents and visitors did not suffer from foodborne illness due to loss of power, contaminated water, or damaged property. The guide is a compilation of existing resources, such as the Advanced Practice Centers (APC) Environmental Health Emergency Response Guide and guidance from Association of Food and Drug Officials (AFDO), as well as aspects of Michigan's Emergency Action Plans for Retail Food Establishments. The guide was then reviewed by local retail food establishments and state and national stakeholders to ensure it is as practical and relevant as possible. The final guide is available at BoulderCountyHealth.org; search for "Disaster Guide Restaurant."



Boulder County Office of Emergency Management Director Mike Chard understands the importance of emergency preparedness in reducing foodborne illness and said, "Once the fire is contained, the power comes on and the people and business owners return. This is where the unsung heroes of the Boulder County Public Health Food Safety Team have rushed in to prevent a secondary disaster. The spoiling of food and the ability to prevent the consumption of dangerous food substances through strong guidance and presence is paramount. The ability to engage businesses and complete efficient inspection services reduces the time businesses are closed and reduces economic impacts. Finally, getting residents and businesses the right information and monitoring the safe disposal of spoiled food substances prevents animal incidents around disposal sites and addresses vector control concerns."

Along with the Disaster Guide, staff created inspector checklists for the most common disaster responses, including fire, electrical outage, boil water orders, and sewage backup. Over the past

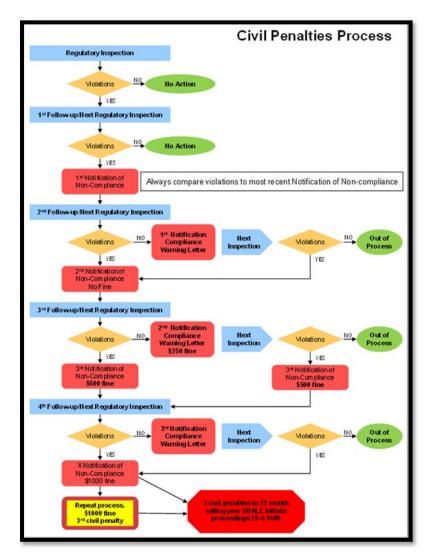
three years, this guidance has been used in other parts of the state and country (see Appendix VNPS 5 for samples of checklists and FBI investigation tools).

Part II: Baseline and Program Assessment - Compliance and Enforcement

The BCPH Food Safety Program's compliance and enforcement program encompasses several elements. Corrective actions reducing the occurrence of those violations that most often contribute to foodborne illness is the goal; however, compliance and enforcement also includes any voluntary and regulatory steps taken to achieve compliance with the regulations.

The program focuses first on active managerial control (AMC) efforts to reduce violations, but at times when buy-in is not present, enforcement may be used to achieve compliance. The civil penalty process may be applied to any repeat violation at follow-up or next inspections, but emphasis is placed on repeat foodborne illness (FBI) risk factor violations and critical violations, as they are more likely to lead to foodborne illness in comparison to non-critical violations.

The program's enforcement procedure has been in place for years and was successfully audited in 2016. Staff worked with a state-led task force to develop a uniform procedure template that could be adapted for use across the state; the program's procedure was then updated to include similar language with an addition of a flow chart to help staff and operators better understand the civil penalty process (see Appendix VNPS 6).



Part II: Baseline and Program Assessment – Industry and Community Relations

Communication and collaboration is a key tenet of the BCPH Food Safety Program and a core value of Boulder County Public Health as a whole. In 2008, the program began its efforts to implement AMC practices within facilities while simultaneously launching a forum to discuss food safety with industry partners, academia, and any others. This forum, now called the Food Safety Advisory Committee (FSAC), has meet quarterly ever since and has been the impetus to form similar groups throughout Colorado.

As a partner and collaborator, the FSAC was instrumental in creating a recognition program – The Partners for Food Safety Program (PFSP) – to encourage facilities to implement AMC practices. PFSP was launched in 2009 and now includes over 270 Partners, including the two local school districts, the University of Colorado, restaurants of all sizes, and grocery stores (e.g. Whole Foods and Sprouts Market).

To foster communication and education, the program developed and launched the *Look Out for Restaurants* campaign in 2015. The campaign aimed to encourage residents to visit one of the Partner facilities proactively working to prevent foodborne illness and, simultaneously, raise awareness about the Partner program with other food businesses. Hence, the campaign tagline, "Look out for restaurants that are looking out for you." The campaign garnered over 1.6 million impressions.

Other aspects of the program's commitment to education are illustrated by training opportunities offered. The program provides in-house food safety training (Sanitation Training Assistance for Restaurateurs, or STAR) for retail staff that is offered in English, Spanish, and Chinese. Since 2010, 1,649 retail staff has completed the training. In addition, similar online training is available in 5 languages, reaching an additional 521 people since 2012. To complement the training, the program created the *Food Handlers Manual* that is available in English, Spanish, and Chinese. The *Food Handlers Manual* has been shared and utilized by other programs across the country.

To further augment these opportunities, the program website (<u>www.BoulderCountyFood.org</u>) provides resources for facilities, including AMC resources, forms, applications, a disaster guide, and rebate information. There is information for consumers as well, including inspection results and scores, and links to other resources, such as <u>www.FoodSafety.gov</u>. In 2015, program inspection and rating information was added to Yelp reviews for local facilities. In addition, the program implements an on-call inspector role in which an inspector is available by phone every day to answer facility and consumer questions in real time.





Part II: Baseline and Program Assessment – Industry and Community Relations

In 2016, the program developed the Oral Culture Learner Training Project, an augmentation of the FDA focus to identify better ways to communicate critical food safety information to those who do not learn as well from traditional training methods (e.g. reading materials). Program staff recruited facilities in need of training for their staff and developed training presentations consisting almost entirely of images and photos rather than text that were delivered in Spanish and English. The trainings utilize pictures, videos, and hands-on demonstration and learning for the attendees. Trainings are provided in the facilities so food handlers could make direct connections with the information being shared with them. The presentations heavily emphasize *why* the food safety practices presented are important and how critical each person's job is to preventing disease. The training also uses storytelling in the form of testimonials from people who were sickened or lost loved ones to foodborne illness to emphasize the impact of foodborne illness. To date, the feedback has been exceptional, and initial evaluation shows food safety knowledge has increased. The project has been the subject of a media story and received strong interest from the FDA.



Part II: Baseline and Program Assessment – Program Support and Resources

Based on the FDA model program, a jurisdiction should have approximately 1 full-time equivalent (FTE) devoted to food for every 280-320 inspections performed. After conducting a thorough assessment against VNPS 8, and based on this level of workload, the BCPH Food Safety Program should have 11.1 FTE devoted to food safety in order to adequately provide inspections and surveillance to reduce risk factors that contribute to foodborne illness. Currently, the program is staffed with just 8.0 FTE, requiring the need to prioritize where resources are committed.

In lieu of pushing staff to exceed the targeted threshold, the program has maintained a 320inspection per FTE per year target for all staff. The program is also targeting inspection efforts instead that are based on facility risk assessments. This does, however, create a backlog wherein not all retail facilities are visited annually. In addition to risk-based inspections, staff resources are committed to plan reviews for new and remodeled facilities, ownership changes, complaint response, investigating foodborne illnesses, and responding to customer and industry inquiries.

The strain on resources is a key motivator for finding innovative approaches to promote food safety and using a different model for the program, such as partnering with restaurants through the Partners for Food Safety Program and empowering facilities to actively manage food safety risks in their own facilities on a daily basis. Frankly, this approach provides a much more robust program and safe food environment than a simple regulatory program ever could, regardless of staffing levels. By engaging retail establishments in active managerial control practices, the program helps to ensure that practices are employed daily rather than during one or two annual regulatory inspections, and staff is onsite to supervise correction of violations. A regulatory approach alone leaves the rest of the year with uncertainty about how the facility is complying and safely handling food.

At the same time, program staff has actively sought alternatives to fill some of the resource gaps. The program successfully received several small grants and two large grants over the past six years, including two FDA Retail Standards Cooperative Agreements. In addition, the program received AFDO grants to support training, purchase program supplies, and another grant to develop HACCP templates and resources for retailers.

Finally, in 2016, staff participated in a legislative effort that created the first significant increase in retail food establishment license fees. The program was able to share key challenges and needs and, together with a team of stakeholders, phase in a 50% license fee increase over a 3-year period and establish ongoing efforts to continue to review needs every 3 years. With these funds, 3.5 FTE have been added to the program, and a team lead position has been created. Simultaneously, there has been an increase in total numbers of facilities and other projects. Six of the VNPS's have been implemented; a seventh will be complete by June 2017.

Assessment and evaluation is one of the guiding principles of the Boulder County Public Health Food Safety Program. To control the risk factors that contribute to foodborne illness, it is imperative to assess how effectively the program has been at reducing risk factor violations. To that end, in 2013, the program completed a foodborne illness risk factor study in accordance with FDA standards and completed all other elements to receive a successful verification audit for VNPS 9. The study highlighted the top risk factors observed as out-of-compliance within the jurisdiction, which were: 1) cold holding, 2) hygienic practices, 3) soap and drying devices, 4) proper cooling, 5) proper handwashing, and 6) hot holding.

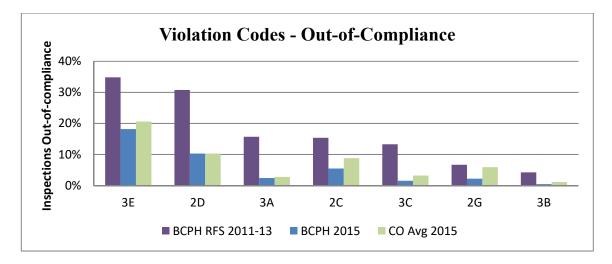
In 2014, Colorado formed the Data Standardization Work Group to begin working across different data systems to create common reports for tracking out-of-compliance rates, allowing the program to compare and identify areas to target. The following table and graph summarize some of the trend analysis the program has been able to perform.

BCPH has focused on a number of measures to identify whether we are reducing the risks of foodborne illness. We have focused on measuring compliance with FBI risk factor violations. We have seen marked decreases in violation observations. In fact we have seen significant improvement in compliance of all potential code violations.

BCPH also tracks the number of foodborne illness outbreaks we investigate annually for trend analysis. We have seen marked reductions in the number of outbreaks we investigate. We also have increased our surveillance efforts and continued to try and increase public awareness. These factors have the potential to inflate the numbers of outbreaks that are detected, but we have continued to see a decrease in numbers. Outbreak investigations also do not mean that a facility is definitely implicated in an outbreak.

Our newest effort is to begin using syndromic surveillance data collected from health care providers to evaluate cases of illness. We will be able to look at this data spatially and based on demographics and potential health equity issues.

Below are some of the most significant improvements:



In addition to the 2013 and 2015 data studies, the Program conducted an analysis of the 15 foodborne illness risk factor violations, by facility classification, observed while conducting inspections at retail food establishments from January 11, 2011, through March 5, 2013. The study illustrated areas for focus, as well as a need for additional training and/or clarification with staff. See Appendix 9 for information related to the program risk assessment and evaluation.

The BCPH Food Safety Program sought to improve the following challenges from 2010-2016, in alignment with the program's efforts to work on the VNPS: 1) Limited staff resources, 2) Implement FDA VNPS, and 3) Improve inspection scores.

Challenge 1 – Limited Staff Resources

In 2010, the program was experiencing significant backlog of inspections due to limited staff to complete the needed work, including plan reviews, risk-based inspections, complaint and foodborne illness investigations, and education and outreach. At that time there were approximately 1,521 food facilities in the jurisdiction – an additional 4.5 FTE were needed to fully meet the FDA standard.

The program began looking for additional funding sources and was successful in receiving some small grants to work on VNPS, and in 2012, the program received the first FDA Retail Standards Cooperative Agreement for \$70,000 per year for 5 years. One of the grant's goals was to implement VNPS 3, 4, 5, and 6, serving as a driver to improve all aspects of the program while increasing staff resources. The program is on track to meet standards 3, 4, 5, and 6, as well as standard 9 by June 2017.

In 2015, the program received a second Retail Standards Cooperative Agreement grant that continued the path forward. This grant provided additional staff resources and made it possible for the program to further evaluate data. Most exciting is that this second agreement facilitated the development of the Oral Culture Learner Training Project to better meet the needs of food workers who are non-traditional learners and have lower reading levels.

For a number of years in Colorado there have been efforts to try and address the significant funding shortfall of retail food safety programs by considering increases in license fees. Unfortunately, these efforts were met with great opposition and never produced meaningful results. In 2015, an attempt was made to remove fees from statute and move authority for setting fees to the Colorado Board of Health. This effort, too, was met with opposition and the effort was stopped. However, a compromise was reached that set in statute the requirement for a stakeholder process to be convened every three years to discuss needs within the program. Fortunately, program staff was at the table each of these processes advocating for the needs of local programs and, after a challenging year, legislation was introduced and passed to increase license fees by 50% over a 3-year period.

These cumulative efforts to increase funding resulted in the addition of three staff to significantly address the backlog of inspections and implement many additional program initiatives.

In addition to full time staff the program has had great success hosting MPH students to fulfill their practicum and capstone requirements while supporting many efforts of the program.

Challenge 2 – Implementation of FDA VNPS to Improve and Standardize Program

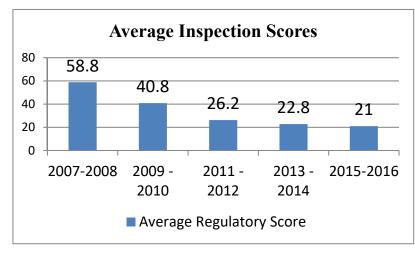
In 2010, the program began looking at how to improve the overall program and use the FDA VNPS as a best practice guide for the work of the program. The program at that time did not have comprehensive policies to standardize how it operated.

To begin, the program focused on efforts that staff was already actively engaged in, such as a strong industry engagement and outreach program, which allowed the program to meeting Standard 7 –Industry and Community Relations. Then the focus moved to training, and in 2012, the program successfully met Standard 2 – Training. Also in 2012, with the addition of staff through the FDA Retail Standards Cooperative Agreement, the program ramped up efforts to implement the voluntary standards, making significant strides in the last five years, which include:

- Meeting Standard 3 Inspections Based on HACCP principles: Being the first jurisdiction in Colorado to develop and track compliance using In/Out/Not Observed/Not Applicable data and sharing the templates statewide.
- Meeting Standard 5 Foodborne Illness and Complaints: Again, sharing templates and best practices statewide and through the Colorado Integrated Food Safety Center of Excellence.
- Meeting Standard 6 Compliance and Enforcement: Strengthening and tightening up the enforcement program.
- Meeting Standard 9 Program Assessment: Successfully conducting a risk factor study and monitoring trends.
- Standard 4 Inspection Program: Finishing up efforts to implement continual quality assurance and improvement processes in anticipation of an audit in June 2017.

CDPHE is planning to engage in a regulatory revision stakeholder process in 2017, and program staff will be a key stakeholder advocating for revisions to better conform with the FDA Food Code and allowing the program to meet Standard 1 – Regulatory Foundation, although it's likely the entire FDA Food Code may be adopted, which will also achieve compliance.

There have been significant strides to meet Standard 8 – Program Support; however, the program is still currently 3.0 FTE short of FDA target levels due to the increase to 1,700 facilities in the community. This will be further strained when funding from the FDA Retail Standards Cooperative Agreements is no longer available.



Part III: Challenges, Objectives, Measurements, and Achievements – Challenge 3

Challenge 3 – Improve Inspection Scores through AMC

The program has utilized a rating system adopted by CDPHE for inspections. The rating system attributes points to each violation

code with increasing points based on the increasing severity of the violations. Non-critical items are the lowest at 1-2 points, and critical items range from 5-20 points. Ratings are then broken down into five categories based on the total points accumulated for the violations observed as follows: *Excellent* (0-19 points), *Good* (20-39 points), *Fair* (40-69 points), *Marginal* (70-99 points), and *Unacceptable* (100 or more points) (see Appendix 10).

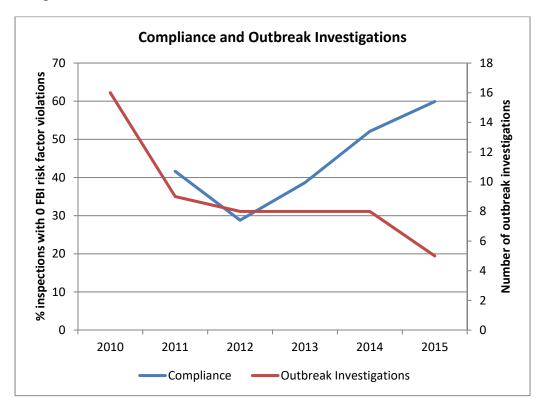
Historically, there have been challenges in facilities with similar patterns of non-compliance and little long-term sustained improvement. Inspection scores were typically *Fair*, with some facilities doing better and several doing worse: 43% of the inspections received an *Excellent* or *Good* rating, and almost 20% of inspections received an *Unacceptable* rating.

In 2008, the program began a focused effort to proactively work with retail establishments to address foodborne illness risk factors through implementing active managerial control (AMC) practices within retail food establishments. The program's definition of AMC is the effort to provide facilities the tools to actively manage foodborne illness risks within their own establishments. The encouraged practices focus on the top risks for foodborne illness. Simultaneously, the program launched the Food Safety Advisory Committee (FSAC) to engage industry and other stakeholders in moving the program forward to help prevent foodborne illness in the community. Staff developed resources and worked in partnership with the regulated community.

In 2012, with the addition of staff from the FDA Retail Standards Cooperative Agreement, AMC efforts were further implemented. And in 2015, with funding from a second FDA grant, AMC efforts were further augmented.

Due to program efforts over the last six-plus years, there have been significant changes across all facilities. Average inspection scores have dropped from 58.8 in 2007-2008 to 21 in 2015-2016, nearly all facilities are rated *Excellent* or *Good* (over 80%), and less than 1% of facilities are rated *Unacceptable*. Since 2010, 1,781 AMC assessments have been conducted, and 279 facilities have become Partners for Food Safety. The following graph illustrates the improvement in average scores. As in golf, the lower the score, the better.

Simultaneously, there was a significant reduction in outbreaks and a dramatic increase in the number of inspections where FBI risk factor violations were not cited.



Data analysis reveals a positive correlation between implementation of AMC practices and improved inspection scores.



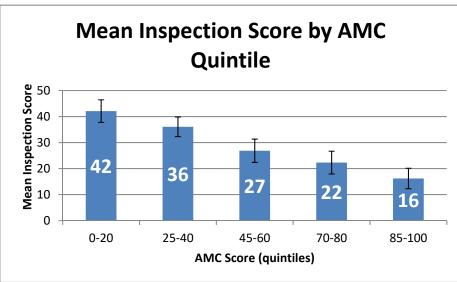


Figure 1 highlights improving inspection scores (lower mean scores) as the number of AMC practices increased.

Figure 2



Figure 2 highlights lower/better inspection scores when facilities have a certified food safety manager

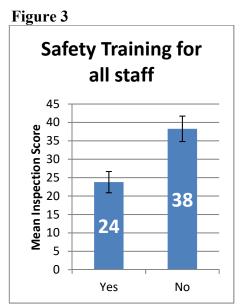
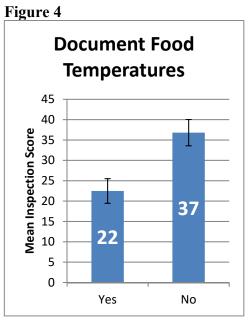


Figure 3 highlights lower/better inspection scores when facilities have food safety training programs for staff



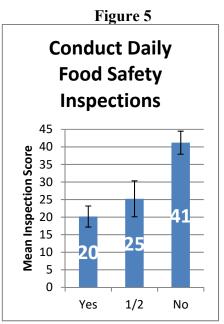


Figure 4 highlights lower/better scores for facilities that document food temps

Figure 5 highlights improving scores as facilities conduct more thorough self-inspections

Figure 6



Figure 6 highlights improving scores for facilities that have third-party audits

Additional Accomplishments

The Colorado Food Program Managers (CFPM), a formal group representing all health departments in Colorado that implement food safety programs, meets quarterly to discuss issues and share best practices. BCPH Food Safety Program staff was integral to the facilitation and implementation of a new structure and goals that the CFPM developed in 2014. In fact, a program staff member won the 2014 Environmental Health Innovation Award for creating a new idea, practice, or product that has had a positive impact on improving the environment/public health and quality of life.

	2010	2011	2012	2013	2014	2015	2016
Total Facilities	1,498	1,443	1,652	1,661	1,654	1,685	1,702
Met VNPS	#7		#2	#5 <i>,</i> #9		#3	#6
Total FTE	5.5	6	6	7	7	8	9
Total AMC Assessments	402	474	604	818	1,033	1,312	2,031
Total Partners for Food Safety	49	73	93	144	174	243	279
Outbreak Investigations	16	9	8	8	8	5	3
Other Highlights	VNPS Self Assessment		FDA 5- year Grant			2 nd FDA 5- year Grant	Successful fee increases

Highlights and accomplishments by year

Look Out for Restaurants Campaign

As described earlier, in fall of 2015, the program undertook a small-scale marketing campaign called *Look Out for Restaurants* to bring attention to the Partners for Food Safety Program. The campaign efforts targeted Boulder County residents through social media and online advertising (e.g. Facebook, Twitter, and food websites) and some print advertising (newspapers). The campaign produced over 1.6 million impressions and 2,907 visits to the website, nearly a 12% increase in traffic. Visitors also spent more time than average visiting the website (more than twice as long). Partners also noted increased traffic from patrons inquiring about the Partners Program and discounts they were offering as part of the campaign. It was a cost-effective effort that increased awareness and patronage of some of the Partner facilities.



The BCPH Food Safety Program is committed to sustaining the great work already accomplished. The program will have an audit of VNPS 4 in July 2017 and will perform another risk factor study and full self-assessment against all the VNPS in the next few years to identify additional opportunities for improvement.

The Oral Culture Learner Training Project will continue to be rolled out to facilities, with ongoing evaluation and incremental adjustments based on feedback to produce sustained behavior change. Initial trainings increased knowledge from an average of 63% correct to an average of 93% correct based on pre- and post-testing.

In 2017, the program is launching a partnership with Harvard University to track social media for potential foodborne illness using algorithms to identify Twitter chatter about foodborne illness. Staff will review food borne illness-related tweets within the Boulder County area and follow-up as appropriate.

Thanks to an AFDO grant, the program will be partnering with industry, government, and food safety experts to develop HACCP "recipes" for retailers (templates for retail food establishments) to help them successfully develop and implement an adequate HACCP plan for the most common specialized food processes (e.g. sous vide, cook chill, and reduced oxygen packaging). A project member will also present on "HACCP plans and barriers to implementation" at the 2017 Rocky Mountain Food Safety Conference. The final products will not only be a win for Boulder County, but also for those in industry and food programs throughout the country.

Finally, the program will continue to mine data and identify trends, track progress, and identify more areas of focus and improvement; develop AMC efforts and nurture partner relationships; identify and secure additional resources to reduce the backlog of facilities that have not received inspections; increase the number of staff engaged in the VNPS and other innovative projects; identify resources to tackle the burden of foodborne disease from home food preparation; and engage in understanding and educating about food allergen impacts. Boulder County Public Health is excited for the future and looks forward to what is to come!

HealthMap Food	dborne Illr	ness: Boulder	Classified Tweets	Melany Niemann (Logou	Boulder County food-service safety training comes with graphic pictures
Showing classified twe	eets for B	oulder:			Visuals help Spanish-speaking workers score higher By Pam Mellskog
map analytics					For the Camera
validate	ê 0 🚑	12.14.16 Longmont, Colorado	Gone from food poisoning to the flu to uvulitis to tonsilities to a rash since thanksgiving. There is no end in sight.	details O 9	
validate	ê 0 <mark>4</mark> 3	12.13.16 Boulder, CO	heading to thailand for 2mos. can anyone tell me where I can get food poisoning? I would v much like to come home skinny. ቀ ደገ	details O 9	
validate	ê 0 🦊	12.12.16 Boulder, CO	@TedEGrau I would believe this better with a lot of ellipses, also: food poisoning so sucks, sony t1	details O 9	

Part V: Contact Information and Permission

Contact Information

Lane Drager, Consumer Protection Program Manager Boulder County Public Health 3450 Broadway Boulder, CO 80304 303-441-1178 Idrager@bouldercounty.org

Gina Bare, Food Safety Team Lead Boulder County Public Health 3450 Broadway Boulder, CO 80304 303-441-1192 gbare@bouldercounty.org

Food Safety Program Website: www.BoulderCountyFood.org

Permission

Foodservice Packaging Institute may place our Crumbine Award application on <u>www.crumbineaward.com</u> and/or any other use of this award application or the names, information contained within.



ROCKY MOUNTAIN REGION 1821 30TH STREET • UNIT A • BOULDER • COLORADO • 80301 • 303.440.5220

Tenzin McClain Whole Foods Market 2905 Pearl St Boulder CO 80301

January, 11th 2017

To whom it may concern

I started working with BCPH about ten years ago. I was new to the field of Food Safety. Catherine Huffman mentored me for a couple of years and taught me how to be an auditor. We worked at all of the Whole Foods in Boulder County. At the time we had five stores in Boulder. We worked together to create a very good food safety program for the store.

When we were having challenges with our hand washing program. Catherine worked with me to get a variance form the state.

BCPH has worked with me on many projects and been true partners with Whole Foods. We have worked on our cold press juice mock HACCP program, our ROP /HACCP program we have in our meat department.

Lane and his staff are great to work with. Anytime I am working on a program or have an issue I can call or email and they get back to me promptly. This relationship / partnerships is a working model of how it can be. Our Global Team came to Boulder and meet with BCPH to see how this partnerships worked.

I would not be able to do the job I do today if not for this partnership.

Tenzin McClain

QA Whole Foods Market





Samuel Crumbine Award for Excellence in Food Protection Foodservice Packaging Institute Conference for Food Protection

Department of Food Science & Human Nutrition Fort Collins, Colorado 80523-1571 (970) 491-3819

January 21, 2017

Dear Selection Committee,

Thank you for the opportunity to share my perspective regarding Boulder County Public Health and my respect for their outstanding programs. As food system trends shift across the U.S. and public health professionals face multiple food protection challenges associated with environmental issues and population increases, it is critical to have departments like Boulder County to implement the best courses of action. In addition, over the past 5 years, Boulder County Health has also responded to devastating wildfires and epic floods that threatened the safety of the local food supply. I have been a member of the faculty at Colorado State University since 2007 focusing on food safety and outreach education and during that time I have come to appreciate Boulder County's proactive approach to food protection and consumer education that extends beyond the county to the greater Colorado community and Rocky Mountain region.

I have worked with representatives of Boulder County Health in a variety of ways, as an invited presenter at their monthly meetings, as an attendee at state public health conference presentations, and as a fellow member of state-wide committees, so I am well acquainted with their department and programs. Their team is well respected in the public health configuration of the end of the programs and a collaborative approach to solving problems. As an outreach educator, I frequently survey and review internet materials and I would give the Boulder County Health website an A+ rating. From raising backyard chickens to safely preparing baked goods, science-based information is available for consumers and retail food workers 24/7. They set a high standard in the area of food protection and our residents benefit greatly from their efforts.

As an active partner in the Colorado Integrated Center of Excellence in Food Safety, Boulder county representatives help guide this nationally-recognized center for public health training. Their office has also given graduate students experiential learning opportunities and mentorship which is invaluable for future public health professionals. Boulder County serves as a model program for the MPH students enrolled in the Colorado School of Public Health.

With the demands of protecting public health and responding to emerging and rapidly evolving issues, finding effective methods of developing programs and engaging the public is a substantial challenge for local health departments. I appreciate the establishment of the Samuel Crumbine Award to recognize those who excel in this effort. Thank you for considering Boulder County Health for this award.

Sincerely,

Marisa Burning

Marisa Bunning, Ph.D. Associate Professor and Extension Food Safety Specialist Department of Food Science and Human Nutrition Colorado State University Fort Collins, CO 80523-1571 marisa.bunning@colostate.edu (970) 491-7180 colorado school of public health UNIVERSITY OF COLORADO COLORADO STATE UNIVERSITY UNIVERSITY OF NORTHERN COLORADO

> Department of Epidemiology Campus Box B119 13001 E. 17th Place Aurora, CO 80045 303 724 5162 office 303 724 4620 fax Elaine.Scallan@ucdenver.edu

January 18, 2017

RE: Application by Boulder County Public Health's Food Safety Program for the Samuel J. Crumbine Consumer Protection Award for Excellence in Food Protection

To the Crumbine Award Jury,

It is my great pleasure to write this letter in support of the application by Boulder County Public Health's Food Safety Program for the Samuel J. Crumbine Consumer Protection Award for Excellence in Food Protection at the Local Level. Boulder County Public Health's Food Safety Program is outstanding and very highly regarded by other public health agencies, academia, and industry alike. In my view, this program is exceptional because it not only continually strives for excellence but continually strives to set a higher bar for excellence.

I am an Associate Professor in the Department of Epidemiology at the Colorado School of Health. When I joined the Colorado School of Public Health in 2009, I was tasked with bringing together leaders in food safety from all sectors around the state and developing an agenda for working together to as part of a Food Safety Center within the newly formed Colorado School of Public Health. Staff members at Boulder County Public Health's Food Safety Program were one of the first groups at the table and their commitment to innovation and multidisciplinary collaboration was instrumental in our Center becoming a CDC-funded Integrated Food Safety Center of Excellence in 2012, one of five Centers of Excellence nationwide.

As Co-Director of the Colorado Integrated Food Safety Center of Excellence (CoE), I continue to look to staff at the Boulder County Public Health's Food Safety Program for their leadership and expertise around developing model practices for foodborne outbreak response and developing trainings and resources for local and state public health professionals who respond to foodborne illness outbreaks. Lane Drager, Food Safety Program Coordinator, is an active member of the CoE Executive Committee, participating on quarterly calls and annual meeting and helping to build this Center. Other staff members have participated in key informant interviews to identify training needs, conducted webinars on important topics related to foodborne illness outbreak investigations, and facilitated our engagement with other environmental health professionals around the state.

One of the first trainings that we developed as part of the CoE was an online training directed at environmental health professionals conducting environmental assessments as part of a foodborne illness outbreak investigation. In this effort, staff members at Boulder County Public Health's Food Safety Program were on the expert committee overseeing training development. In addition, they reviewed learning objectives and content, pilot tested the trainings with new staff, and generously shared tools and resources that they themselves had created with other local public health departments

colorado school of public health

UNIVERSITY OF COLORADO COLORADO STATE UNIVERSITY UNIVERSITY OF NORTHERN COLORADO

on the training website.

More recently, our group was recently funded by the National Network of Public Health Institutes through a Cooperative Agreement with CDC's Environmental Health Services Branch to develop a training compilation and certificate for environmental assessments during foodborne outbreak investigations. We were tasked with identifying expert Advisory Committee members around the United States and all levels of government to oversee the project. We nominated Boulder County Public Health's Food Safety Program Coordinator, Lane Drager, with the full support of CDC's Environmental Health Services Branch demonstrating Boulder County Public Health's Food Safety Program leadership on the national stage.

In conclusion, I can very highly recommend the Boulder County Public Health's Food Safety Program for the Samuel J. Crumbine Consumer Protection Award for Excellence in Food Protection at the Local Level. This is an exceptional program with a strong mission for forming partnerships and collaborating with all members of the food safety community. They are strong leaders in food safety who have and continue to strengthen food safety in Boulder, Colorado, and the United States. Please do not hesitate to contact me if you have questions.

Yours sincerely,

Elaine Scallan Associate Professor, Department of Epidemiology Director, Doctor of Public Health Program in Epidemiology Co-Director, Colorado Integrated Food Safety Center of Excellence

一一八夜

January 25, 2017

To the Samuel J. Crumbine Award Committee,

I am writing to support the Boulder County Public Heath in getting awarded the Samuel J. Crumbine Consumer Protection Award. In an industry where restaurants and the Health Dept. don't normally see eye to eye, the BCPH has broken these barriers and created a program that lets restaurants and the Health Dept. work together as a team toward a common goal, consumer safety.

The BCPH has created a program called the Partners in Food Safety. This program, through certain requirements will get an establishment recognized in the industry, as well as promote the establishment to the general public, as a place that goes above and beyond the practices of food safety. The BCPH has quarterly meetings, in which all are invited, to go over any industry health changes or concerns that are happening, along with any questions that need to be answered. Just recently, the City of Denver has adopted this program, and started their own "Partners in Food Safety" Program. Hopefully this is the foundation for more programs like this across Colorado.

Marshall, Shawna and Lane, are very approachable with any questions I have, and if any interpretation or addition conversation needs to be had, they are quick to contact the state and get back to me with an answer. The BCPH and our staff worked together to create procedures at our Boulder store, a continuous sushi line, where raw seafood wouldn't cross contaminate with other cooked and raw vegetables and proteins. This system is in place at another one of our locations, and will be our system for our company going forward.

The BCHD has made the relationships between restaurants and the health department to work as a team to form a partnership to provide outstanding food protection services to our community.

Sincerely,

Scott Nakasone Culinary Director Hapa Sushi Motomaki



The Samuel J. Crumbine Consumer Protection Award Jury Foodservice Packaging Institute 201 Park Washington Court Falls Church, VA 22046

March 8, 2017

Dear Crumbine Award Jury Members:

I am writing this letter in support of the Samuel J. Crumbine Consumer Protection Award nomination on behalf of the Boulder County Public Health (BCPH), Boulder, Colorado. I attest that they are consistently a leader of a model retail food protection program.

Specifically, BCPH accomplishments include:

- Successful implementation of the Voluntary National Retail Food Regulatory Program Standards (VNRFRPS), having successfully met and audited on:
 - Standard 2: Trained Regulatory Staff
 - Standard 3: Inspection Program Based on HACCP Systems
 - Standard 4: Uniform Inspection Program
 - Standard 5: Foodborne Illness and Food Defense Preparedness and Response
 - Standard 6: Compliance and Enforcement
 - Standard 7: Industry and Community Relations
 - Standard 9: Program Assessment
- The Partners for Food Safety program has served as a model for other local public health jurisdictions retail food protection programs in the State of Colorado
- Invited speakers on their FSAC, Partners for Food Safety and their Active Managerial Control
 program successes with their industry partners at conferences:
 - State: Colorado Environmental Health Association Annual Education Conference
 - Regional: Rocky Mountain Food Safety Conference
 - o National: Association of Food and Drug Officials Annual Education Conference
- Recipients of two FDA Office of Partnerships Cooperative Agreements. These are grants up to \$70,000/year for a five year period to promote and enhance public health through the reduction of FDA Risk Factors through implementation of the VNRFRPS
 - Advancing Active Managerial Control and Voluntary National Program Standards
 - Advancing the FDA Voluntary Retail Food Program Standards through Evaluation of Data/Informatics and Oral Culture Training in Boulder County, CO
- Recipients of three AFDO Cooperative Agreements in FY17
 - Category 1: Standard 8
 - Category 2: HACCP Success
 - Category 3: Training

BCPH, leaders in public health, has accomplished these outstanding public health measures while being understaffed per the criteria in Standard 8: Program Support and Resources.



It is my honor to endorse and support Boulder County Public Health for the Samuel J. Crumbine Consumer Protection Award. Their continued leadership and guidance to the regulatory community and regulated industry is exemplarily. Please feel free to contact me if I can provide any additional information for this outstanding program.

Sincerely,

S/ Mario Seminara

Mario Seminara, R.S. Regional Food Specialist U.S. Food and Drug Administration 6th Avenue and Kipling Street Bldg. 20, Denver Federal Center Denver, Colorado 80225-0087 www.fda.gov

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