



The Interagency Food Safety Analytics Collaboration (IFSAC) Webinar:

IFSAC Webinar: Strategic Plan and Future Directions

Presented on: Wednesday, May 31, 2017, 4:00-5:00 pm ET

CLOSED CAPTIONING TRANSCRIPT

A recording of the webinar (audio and visual) can be found at this URL:

<https://collaboration.fda.gov/p5fo6sf1qk6/>

Time	Speaker	Topic
4:00 – 4:05 p.m. ET	Cary Chen Parker (FDA)	Administrative Items & Introduction
4:05 – 4:10 p.m. ET	Katherine Vierk (FDA)	Welcome
4:10 – 4:30 p.m. ET	Joanna Zablotzky Kufel (USDA-FSIS)	IFSAC’s Strategic Plan 2017-2021
4:30 – 4:50 p.m. ET	Beau Bruce (CDC)	Future Directions
4:50 – 5:00 p.m. ET	Michael Bazaco (FDA)	Question & Answer Session (open to all attendees)

Slide 1: Welcome to IFSAC’s webinar

<<CCP>> Good afternoon. My name is Cary Chen Parker from FDA's Center for Food Safety and Applied Nutrition. I will be serving as moderator for today's webinar, along with Michael Bazaco who will facilitate the Question and Answer Session after the formal presentations. Our webinar entitled, "Strategic Plan and Future Directions" is sponsored by the Interagency Food Safety Analytics Collaboration (or IFSAC). IFSAC is a collaboration between the Food and Drug Administration (or FDA), the Centers for Disease Control and Prevention (or CDC) and the US Department of Agriculture, Food Safety and Inspection Service (or FSIS). The goal of this tri-agency collaboration is to improve coordination of federal food safety analytic efforts and address cross-cutting priorities for food safety data collection, analysis, and use. Projects and studies aim to identify foods that are important sources of illnesses.

In today’s one-hour webinar, we will describe IFSAC's [new strategic plan](#) for 2017–2021 and provide project updates.

Please note that there will be time at the end of the webinar for questions. Please type your questions in the "Q&A Box" on your screen and they will be answered at the end of the presentation in the order they were received. I'd also like to mention that the entire webinar will be recorded, both audio and visual, and the recording will be posted online in the near future. If you experience problems with the Adobe Connect software, please submit your technical issue in the "Q&A Box" and someone will assist you.

Slide 2: Today's Presenters

And now I'd like to introduce you to our three presenters today. Our first presenter is Ms. Katherine Vierk who is currently the Director of the Division of Public Health Informatics & Analytics (DPHIA) in the Office of Analytics and Outreach (OAO) within the Center for Food Safety and Applied Nutrition (CFSAN) in U.S. Food and Drug Administration (FDA). Our second presenter is Dr. Joanna Zablotzky Kufel, who is a Public Health Food Safety Analyst in the Office of Data Integration and Food Protection (ODIFP) within the Food Safety and Inspection Service (FSIS) at the United States Department of Agriculture (USDA) and the lead technical member for FSIS. And our third and last presenter is Dr. Beau Bruce, Analytics Lead in the Enteric Diseases Epidemiology Branch (EDEB) within the Division of Foodborne, Waterborne, and Environmental Diseases (DFWED) in National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) at Centers for Disease Control & Prevention (CDC).

Slide 3: Introduction Slide for Katherine Vierk

And now without further ado, our first presenter....Ms. Vierk will provide more details about why IFSAC was formed and what IFSAC's goals and activities include.

Slides 4: IFSAC History

<<KV>> Thank you, Cary and welcome to all of you. Past webinar presentations on IFSAC and projects accomplished by IFSAC have been met with great success and interest; therefore we are pleased to take some time today to discuss IFSAC's new strategic plan for 2017 through 2021 as well as share some ideas for future projects by this tri-agency analytic collaboration. First I will cover some background information about IFSAC for those who have not previously participated in webinars about IFSAC before. The Interagency Food Safety Analytics Collaboration was established in 2011 by three federal agencies, as Cary mentioned, the CDC, the FDA, and the Food Safety and Inspection Service at the USDA. The goal of the collaboration is to improve coordination of federal food safety analytic efforts and address crosscutting priorities for food safety data collection and analysis and use. IFSAC's work is currently focused on foodborne illness source attribution, defined as the process of estimating the most common food sources responsible for specific foodborne illnesses. Late last year IFSAC updated its Charter as well as a strategic plan. As the first IFSAC five-year strategic plan came to a close in 2016, a new strategic plan for 2017-2021 was created. Dr. Joanna Zablotzky Kufel will be going over the new plan in a few moments. The Charter and the strategic plan can be found on the IFSAC website if interested.

Slide 5: Why IFSAC is Needed

So why did the three agencies feel IFSAC was a worthwhile endeavor? Well, one of the challenges faced by CDC, FDA and FSIS was foodborne illness attribution. By working together, the three agencies can collectively share data and methods, analyze, interpret and discuss data related to human surveillance of food contamination and work as one to move toward the goal of preventing foodborne illness. By working together we can take analytic projects that are recognized as high-priority by all three agencies, leverage the knowledge, expertise, data and resources that are available across our agencies, and work towards information that is recognized, used and in harmony.

Slide 6: Our Approach

IFSAC is an interagency collaboration and it builds on a history of our agencies having worked together on source attribution over a number of years. It applies advances in source attribution methods; it leverages knowledge, expertise and data among the three agencies; it builds an efficient structure for

getting projects completed; and it prioritizes communication and stakeholder input. And this webinar is an example of that. Some examples of recent work completed by IFSAC include: an improved food categorization scheme, hybrid analysis using surveillance data from both outbreaks and sporadic cases and case-control data. We have adapted a modeling approach to attribution that was developed in Denmark using U.S. data. IFSAC has also taken up the issue of uncertainty by providing estimates with uncertainty where possible in the projects that we have undertaken here. More information on each of these projects can be found at IFSAC's website. Importantly, the goal is to share results from analyses, their interpretation, and their use so as to enhance policy decisions from any of the three agencies involved.

Slide 7: Shared Structure and Strategy

Part of what makes IFSAC work is having a structure to the collaboration. There's a steering committee comprised of two members from each of the three agencies who are able to make decisions about commitment of resources in various projects; the Chair of the steering committee is rotated among the three agencies every year. The steering committee is intimately involved with the assessment and approval of initial project proposals as well as overseeing the progress of those projects. There's an extensive technical workgroup comprised of members from each of the three agencies and it is a dedicated group of agency experts, analysts, epidemiologists, statisticians and food safety experts who understand the needs of their agency and who develop proposals and plans for possible IFSAC projects. The technical workgroup also helps to coordinate IFSAC activities within each of the three agencies. There are also project teams which are comprised of both technical workgroup members as well as other experts from the three agencies who are pulled in to assist with specific projects.

Slide 8: Shared Structure and Strategy (continued)

New to the IFSAC structure in the past year is the addition of a communications workgroup. This workgroup is comprised of at least two people from each agency and coordinates with each agency's communication specialists to ensure harmonization of messaging for IFSAC. The communications workgroup has been essential in ensuring that communication materials are developed, accurate, timely and appropriate for intended audiences. In addition, with media and external inquiries coming to various IFSAC points of contacts in three agencies, this workgroup has been very helpful in making sure inquiries are responded to and coordinated. The addition of this workgroup in the past year has been crucial to rolling out materials related to IFSAC accomplishments.

Slide 9: Outreach and Information Sharing & Slide 10: Outreach and Information Sharing (continued)

This slide provides a list of the types of outreach and information-sharing activities coordinated by IFSAC – everything from establish a website to technical conference presentations. And most recently a podcast and an interview on IFSAC work. Some of this outreach is to provide updates and results to projects while others, like public meetings and presentations, also offer opportunities for IFSAC to hear from stakeholders.

Slide 11: IFSAC Webinars

IFSAC webinars, such as the one here today, have turned out to be a low-cost and easily accessible mode of communication with stakeholders. We are able to expeditiously share project updates and results with you, our stakeholders, before publication in peer-reviewed journals, which some of you

know takes some time to do. I want to say in closing my introductory remarks that outreach to, and feedback from, our stakeholders is imperative to the success of IFSAC. Today's webinar will tell you about what IFSAC accomplished under its past strategic plan, introduce IFSAC's new strategic plan, and introduce you to new IFSAC project proposals and ideas for the future. With that, I'll turn it over to Joanna Zablotzky Kufel from USDA's Food Safety and Inspection Service. Thank you.

Slide 12: Introduction Slide for Joanna Zablotzky Kufel

<<JZK>> Hello and welcome again to IFSAC's spring webinar.

Slide 13: Outline

So here is a quick outline/agenda of what we are going to talk about today. I will provide the background, a wrap-up of our historic strategic plan, information about our new current plan and talk briefly about the IFSAC projects that we are currently working on. And then I will hand over the reins to Dr. Bruce to provide information about IFSAC's new projects and future directions.

Slide 14: Background

IFSAC was formed in 2011 as a tri-agency partnership between CDC, FDA and FSIS to meet a need to better coordinate Federal food safety analytic efforts, as Katie just mentioned. Our focus since we first came together is attribution, which we define as the process of estimating the most common food source responsible for specific foodborne illness.

Slide 15: IFSAC Strategic Plan 2012-2016

Our old strategic plan was quite a bit longer than our new plan as we were just starting out as a group and wanted to include more information about who we were and what point/information/data we were starting from. The plan utilized a combination of objectives and short and long term plans, but the primary focus was ensuring the projects complemented each other and tackled different, but related parts of the attribution problem.

We are very proud of the work we've accomplished during the first five years in meeting all of these goals and developing and finalizing these projects. In the next month, or so, we will be posting a "Wrap-Up" document to describe our accomplishments, as they relate to the goals, objectives, and plans in the old strategic plan.

Slide 16: Accomplishments in the First Five Years

So, before that document is published, we did want to provide a list of IFSAC's accomplishments over the past five years. I will not read through the next few slides in detail as you can find out more about these projects on our website, but I do want to note that many of these projects were foundational to our current work and several have been discussed or published in public venues. Just as an example, we published an article in *Emerging Infectious Diseases* and the authors of the study participated in a podcast with the journal on a project comparing characteristics of sporadic disease and outbreak-associated illnesses to determine what if any extent they are similar. We've also submitted an article for publication on the categorization scheme mentioned in the slide.

Slide 17: Accomplishments in the First Five Years (continued)

One of the biggest accomplishments on this slide are the harmonized estimates. These estimates are the first of their kind as they were developed collaboratively by all three agencies and utilized a new method to improve upon historic estimates. We also held a public meeting in 2015 about the estimates and we are currently working on a methods-based manuscript to share in more detail the approach we used for that project. Finally, I wanted to touch upon the external communication; Katie mentioned several of the communication approaches that we've taken. I've mentioned a few just now, and there's going to be a link for our webpage at the end of this presentation that you can use to look at the work we've done.

Slide 18: Development of the 2017-2021 Plan

So, in developing the 2017 through 2021 plan, we be used in the beginning the same approach as we did for the original plan. We sought-- each agency worked individually to develop a statement of needs related to attribution, those statements of needs were then combined to develop an overarching plan framework, in addition to exploring new areas.

As I mentioned before, for the 2017 to 2021 plan, IFSAC focused more deliberately on high-level goals and objectives rather than specific implementation-level projects, as we did with the first plan. Goals, objectives and strategies were developed to address these overarching needs and other considerations. Like the first Strategic Plan, we sought both internal and external input in development of the plan, with a review by the CDC Board of Scientific Counselors FSMA workgroup for this new plan.

Slide 19: IFSAC Strategic Plan 2017-2021

Some of the key take-aways from the new plan are shown on this slide and include the development and application of new models and better use of existing approaches, and continued work quantifying and describing uncertainty. I will talk more about the elements of the plan in a couple of minutes, but first I want to briefly describe the structure of the plan.

Slide 20: 2017-2021 Plan Structure

We used a formal strategic planning format for this new plan with goals, objectives and strategies on how to achieve the goals and objectives that we set out for ourselves.

Slide 21: 2017-2021 Goals

Here are three overarching goals; the first is to improve the use and quality of new and existing data sources to conduct analyses and develop estimates. The second is to improve analytic methods and models. Then finally our third goal is to enhance the use of and communication about IFSAC projects.

Slide 22: Goal 1 Objectives and Strategies

Here are the first goal with the objectives and strategies identified. The first goal, like I said is focused on data; using and improving the data we have and identifying and using new sources of data. The first objective is really focused on working with Federal, state and local partners to make the data we do have even better. We plan to do a gap analysis for the data we do have and to work to close those gaps over the course of the next five years. We also plan to partner with state and local health departments who, as I am sure most of you know, do the bulk of the work in terms of data collection on outbreaks and whose work we rely on so heavily to do attribution analyses to enhance the collection and use of the data.

The second objective is focused on continuing our work with Federal partners to incorporate regulatory sampling, inspection, and enforcement data. IFSAC has used sampling data from my agency, FSIS, and FDA in past projects, but given the wealth of information collected by the regulatory agencies we want to do more if possible.

Finally our third objective focuses on new data sources, namely whole genome sequencing. The Federal food safety agency have worked together for years now to design and develop the WGS data systems and with this new strategic plan we hope to utilize this and other novel data to an even greater extent.

Finally, we want to find ways to expand our knowledge base by bringing in internal Federal partners... – sorry--going back a step

Slide 23: Goal 2 Objectives and Strategies

Goal two objective and strategies.

Where goal one was focused primarily on data, goal two is focused primarily on methods and models. The first objective is really focused on addressing issues in data quality, quantity, methods and models. We plan to explore methods that will allow us to better address some of the key limitations we see in the outbreak data and in other sources, like the lack of complete data and missingness and better characterize and incorporate uncertainty for our estimates. We also want to look at how similar analytic problems and issues are being addressed in other disciplines. For one of our past projects on developing harmonized attribution fractions that I mentioned, we looked at the work from econometrics to utilize a decay function that allows us to estimate attribution putting more weight on more recent data without losing valuable information in much older outbreaks.

For the second objective, an overall focus of the plan, we want to develop models that do a better job of estimating changes in attribution over time, something that is more challenging to accomplish than just comparing estimates from year-to-year, and incorporating multiple different data sources such as outbreaks, sporadic, and consumption data, for example.

Finally, for the third objective we want to find ways to expand our knowledge base by bringing in internal Federal partners such as FoodNet and Gen FS and external partners such as CDC-funded Centers for Excellence.

Slide 24: Goal 3 Objectives and Strategies

For goal three, like our last strategic plan, we don't want to lose focus on the importance of communication. In the first objective we want to continue to enhance the relationships we've built with our partners and bring new players into the fold.

For the second objective we want to improve the way IFSAC's analyses are shared with partners and stakeholders and ensure that IFSAC is providing information that can be easily used and understood by all who want to use it. To achieve that, we plan on conducting a needs assessment to gather input directly from our partners and stakeholders on what they want and need from IFSAC that we are not currently giving them. We know that attribution is confusing and it's particularly confusing with different estimates are developed for the same pathogen or the same food. Moving forward we will try and

communicate those differences in a more understandable way and provide greater context for when one estimate should be used versus another. We also want to make sure that the work we are doing and the bridges we are crossing by working together to develop harmonized estimates and collaborative models makes it into the hands of decision-makers to help inform policy decisions at all levels of government.

Slide 25: 2017-2021 Action Plan

To supplement this new plan, IFSAC developed what we are calling an Action Plan, which includes specific projects we are working on or plan to start in the next several years that will allow us to achieve the goals and objectives we've highlighted here today. So the Action Plan is really an extension of strategies included in the plan, but with much more detail. We intend to post the Action Plan, along with the 2012 -- 2016 strategic plan Wrap-Up that I mentioned earlier, and the slide deck from this webinar, on the IFSAC webpage in the near future.

Slide 26: Ongoing and Recently Initiated Projects

Next I'm going to talk briefly about projects IFSAC is currently working on.

[Note: Slide 27: "Ongoing and Recently Initiated Projects" is being displayed on the screen, but the audio refers to content in Slide 28: "Current Project Highlights."]

Slide 28: Current Project Highlights

Here are some updates on our current projects. Again, I'm not going to read through this whole list because as you can see it is quite long, but a few highlights include a preliminary review and a plan for more advanced methods to reanalyze a *Campylobacter* case control study conducted by CDC FoodNet many years ago and an evaluation of case exposure ascertainment data and whole genome sequencing data to develop new and improved *Salmonella* estimates. Finally, and one actually not on this list, is a manuscript that I mentioned earlier to develop -- to include methods-- more specific methods that were used to develop these harmonized estimates.

Slide 28: Current Project Highlights

Sorry, I went a step backwards. Can you go back one slide.

Slide 27: Ongoing and Recently Initiated Projects

Again, I'm not going to read through the whole list of projects, but I again want to talk--want to reiterate how the projects build on the work we've already mentioned in this talk.

The first thing I wanted to mention is the annual report. This report is going to be an extension of the harmonized attribution estimates developed and presented in a public meeting in 2015. We plan on using the same method, but using updated outbreak data to produce a public-facing report that will inform folks on how attribution looks when new years of data are included in the model. *Campylobacter* is a challenging pathogen to understand and we know that there are many more sporadic illnesses in the population that aren't captured in the outbreak data. This project includes a full review of the literature and a re-analysis of an older FoodNet case-control study to better understand of the sources of *Campylobacter* in the food supply.

Finally, just one of the highlights from this list, we are also expanding the model to include multi-ingredient foods, like hamburgers or chicken salad sandwich as opposed to just simple foods like ground beef or chicken breasts that are currently included in our estimates.

Slide 28: Current Project Highlights

Sorry, I already went through this slide so we will move onto the next slide.

Slide 29: New Project Proposals and Ideas

I am going to turn it over to Dr. Beau Bruce to talk about our new project proposals and ideas.

Slide 30: Introduction Slide for Beau Bruce

<<BB>> Good afternoon, everyone. I am Beau Bruce and I'm going to be discussing our new project proposals and ideas.

Slide 31: Goals/Objectives/Strategies Widget

So, since you've been hearing about the IFSAC strategic plan today I want to help align our new projects with that strategic plan for you and in the slides that follow this you are going to see this widget here on the screen that will allow you to kind of see how the goals align with the various--where the projects--align with the various goals, strategies and objectives that we have in our strategic plan so you will see that in the corner of each of the following slides.

Slide 32: Trends in Outbreaks, Illnesses, and Changes over Time

So, one of the first new project proposals that we have is about trends and outbreaks illnesses and their change over time. You saw in our active projects this is one of the projects that we had been working on and this new project proposal represents an evolution of that project. What it does is where as before we were studying the change over time in the total illness that we had combining all four of our primary pathogens together and looking at them by various food commodities, we are going to be able to do the individual pathogen level and study that. We are also adding to that one of our other foundational projects which was the IFSAC food categorization scheme and that using the IFSAC hierarchy I'm talking about here is our hierarchical way of organizing the foods that IFSAC developed in order to have a way to align better the categories that we put our foods in that aligns better with the regulatory partners in IFSAC. We are also going to both look at illness counts in addition to outbreak counts which is what we did in the original project. Finally, we are going to be applying methodologies to this that will not only be able to create the graph that we see but help us to develop ways of assessing statistical significance for changes between various periods of time. This project can help inform several activities within, between, and among the partners in terms of improved measures for FSIS and FDA's FSMA evaluations.

Slide 33: Using exposure data to update SE attribution fractions

The second project also represents an evolution of our prior projects using the exposure data to update our *Salmonella* Enteritidis attribution fractions. In a prior project we used case- case data that was obtained by the FoodNet surveillance system as part of what's called Case Exposure Ascertainment and we tried to use the non-*Salmonella* Enteritidis cases as the controls for *Salmonella*. It has highlighted some challenges and we hope in this new project to be able to use a different type of virtual control for the CEA data which are hopefully going to be more population representative such as the NHANES study

and both the old and new FoodNet Population Survey, the new FoodNet Population Survey, is going to be starting soon and once that is complete it turns out that many of these questions were designed in the CEA to be aligned with that population survey so that part would be easier so in the meantime we hope that we will put able to use some other external data sources to provide some case-control type data from these case exposure ascertainment questions that will ultimately be useful for attributing our illnesses from *Salmonella* Enteritidis to various food commodities.

Slide 34: Expand WGS attribution for SE

The next project proposal also represents an evolution. It is also dividing off of the specific project focused on *Salmonella* Enteritidis previously. That prior project worked to look at how well the whole genome sequence data in the old project (SNP data) differentiated between chicken and eggs. We want to take that work further and compare not only the phylogenetic methods used in the earlier project but to expand and use supervised machine learning methods that take a slightly different approach to this problem and also it expand and build on that pilot work to a wider group of food and nonfood samples. We are also very interested in evaluating new algorithms for example deep neural networks that might be able to use information, some of the information even from isolates with unknown sources which those types of networks are able to accomplish.

Slide 35: Phylogenetic tree for *Salmonella* Typhimurium

Here is an example of some of the work done with these methods on the left you have a tree created from 1369 SNPs and *Salmonella* Typhimurium and using the machine learning methods that can rank those SNPs by their importance and re-create the tree using only those most important SNPs using supervised machine learning methods and you can see if you squint your eyes and compare the two trees that on the right, it seems that the tree is more homogeneous in terms of the different sources represented by the colors than the tree on the left. And we have methodologies to quantify that homogeneity and we are seeing some good success with these methods in terms of helping us categorize our isolates to various sources.

Slide 36: Evaluate biases in outbreak and other data

Now moving on to projects that are not specifically built upon prior work in such a direct way as the projects I just discussed. So, the first of these is evaluating biases in outbreak and other data sources that we use. Outbreak data as many of you know is one of the primary sources we have for our attribution work in IFSAC and as part of the foundation of fully understanding those sources of data and how they influence our models we would like to be able to understand more about the differences and the biases in this data from different sources. So for example we hope to compare multi-site outbreaks to single state outbreaks presumably in many cases the multi-site ones are generally better investigated. We also at CDC and FDA fund our sites for their outbreak investigations in different types of funding tiers and the different types of funding tiers that exist investigate at different levels. So it would be quite informative to study how the differences in data completeness, the types of data that we receive from these different sources within these different funding tiers of states to collect this data. By doing so we believe that this will help us to develop improved outbreak base models and it will also inform ways for us to impute the data that is missing because of this variability in collection by various states and various funding tiers.

Slide 37: Improve *Campylobacter* attribution

Another project is improving *Campylobacter* attribution. This is one of our most difficult challenges in IFSAC because the outbreak data does not appear to be as representative as it is for some of the other pathogens amongst our primary pathogens that we evaluate in IFSAC. So it will need continued focus in our new Strategic Plan period. We have an ongoing project that as was mentioned previously is re-looking at some of the case-control data around *Campylobacter* and doing a literature review to look at the attribution issues for *Campylobacter*. But ultimately we hope to be able to go another step beyond that and be able to integrate the use of this case exposure ascertainment data as discussed previously with you. It is also being performed for *Campylobacter* and we also want to be able to incorporate other data streams such as whole genome sequencing and the national antimicrobial resistance monitoring system data, each of these data sources has some information that can permit us to attribute our illnesses to various food categories. For example, we plan to perform a Hald type model in the case of *Campylobacter* and other groups have used the asymmetric island model using MLST data -- some type of model like that to incorporate these various data sources together and be able to use that subtyping data that we have from these various systems to help us with attribution. Furthermore with all of the literature and other aspects of things are prior case-control studies we would like to be able to find and create new methodologies to incorporate that -- those disparate data streams into our outbreak-based approaches and create these hybrid models that will allow us to do a better job of that with *Campylobacter*.

Slide 38: Needs Assessment

Again as mentioned and has been an important focus in the new strategic plan is communication and to do communication well one of the most important things is understanding the needs of our stakeholders. We propose to perform a needs assessment to assess the needs around attribution related to food and other sources for pathogens commonly transmitted by food, amongst both internal and external stakeholders. We have some-in IFSAC- we are lucky to have both people who have been involved with this intimately in the past as well as to have strong connections with their partners and their agencies with the subject matter expertise in doing this and look forward to doing this and learning more about how we can serve our stakeholders.

Slide 39: Development of a tri-agency illness count method

One of our long-term goals probably something that we will be doing later in this strategic plan period if we are able to accomplish some of the foundational work for this successfully is the development of a tri-agency illness count measure. You heard earlier about the annual reporting based on the 2015 reporting and that we hope to have another report this year, that's one model and we hope to be able to update that model. That model suffers from a limitation in terms of a zero-sum game limitation because it is based on percentages across the food categories so if something changes for example if one food category has an increase in percentage, that can drive some of the other categories to be smaller. It could be that something is going down because something else is going up -- rather than it being inherently because of that item going up or down. This is something that we want to be able to overcome and one way to do that is to base the attribution on illness counts within the various food categories. We can also use additional methodologies to provide uncertainty around those estimates and that is not currently a feature of the current methodologies. This will be the foundation of those

changes over time projects and also needs to be something that is capable of being done relatively straightforwardly on an annual basis and will likely need some periodic major updates for example every five years in the model inputs and so forth. That's one of our long-term goals that we hope to be able to achieve.

Slide 40: Key non-project proposals

Not everything that IFSAC does is project related. In fact, many of our non-project activities meet important goals, objectives and strategies from our strategic plan. We obviously have just been doing this webinar and also in our discussion today have emphasized the importance of communication. We plan a technical update on one of our trend projects or the tri-agency attribution report data this year and we hope to have a public meeting sometime in 2018 focusing on all the work we are doing probably on a single pathogen and synthesizing the different models and approaches we use for one of these single pathogens that we are heavily focused on. So that we can compare and contrast how each of those methodologies that we apply helps us to better understand the full picture of those pathogens. We've already talked about in our strategic plan but it is again something to reemphasize as a key non-project proposal is engagement with surveillance system partners with other groups such as IRAC, the Interagency Risk Assessment Consortium, and have roundtable interactions with these groups that have some overlap with the concepts and ideas and focuses of IFSAC and be able to share ideas and make sure that whatever we can do to align our ideas and efforts while continuing to work within our areas is maximized.

Slide 41: Next Steps

The next steps to wrap up here are both the wrap-up document and action plan, the wrap-up from the prior strategic plan and the action plan for the new strategic plan will both be released on the IFSAC webpage and we of course as IFSAC will continue working on our ongoing projects, initiate our new projects and keep communicating our results to you and to the rest of the public.

Slide 42: Question and Answer Session

So, at this point we are ready for your questions and looking forward to being able to answer them for you. I believe Michael Bazaco will be our leader of the questions and answers session. So, I will turn it over to him.

Slide 42: Question and Answer Session

<<MCB>> Thanks Beau. This concludes the presentation portion of the webinar. Many thanks to our three presenters, Mrs. Vierk, Dr. Zablotsky Kufel, and Dr. Bruce. We will now try to answer any questions that you have. Please use the Q&A box to log in your questions and we will take questions as they come in. If you have not entered your questions, please do so at the time so that we may review them. If you have already submitted a question, there is no need to re-enter it. Now we will begin the questions and answers.

Question & Answer Session

Q1: Our first question: "Is the necessary funding, necessary Federal funding, in place for IFSAC to continue its work?"

A1: This is Katie Vierk. Yes. All three agencies have dedicated resources to move forward with the projects and that is one of the great things about IFSAC having three agencies working together, we are able to leverage our resources so we can work on these projects.

Q2: Second question here, to one of the earlier speakers, “What are the podcast called? Where are they available and are they available somewhere other than the Apple Store?”

A2: This is Joanna. The podcast, there was one podcast and it was done with Emerging Infectious Diseases, the Journal, and we can send a link to folks after this webinar so that you can access it.

Oh and it is also available on the IFSAC website and we can point people to that as well.

<<MCB>> Are there any more questions? We have a couple coming in.

Q3: “What industries have been hardest to find attribution?” Beau, I don't know if you want to take that one?

A3: I can give it a shot. Again, in general, we aren't necessarily looking at, of course the food categories align in certain ways with the various industries. I think that it isn't so much that there's any particular difficulty, at least at this particular stage, with any given sort of data source because of that. Again, many of our outbreak models are based upon outbreak data. I do think that in the long-term it will be helpful as more whole genome sequence data becomes available, as more data from sources becomes available, there may end up being more variability in what is sampled and sometimes that sampling can be somewhat industry dependent and so that is something that perhaps our regulatory partners can discuss a little bit because when you start to do some of these other models, it is a matter of understanding sources outside of human cases particularly when you are connecting that with some other type of molecular subtyping even if that something is simple as basic MLST or even in the case of *Salmonella* for example the prevalence of various serotypes from different sources. Having sampling from those sources and having the breadth of sampling from those sources is something the models are dependent on.

I don't know if anyone else has any comments about that?

Q4: Another question that just came in. “What are some of the most important changes to the new 2017-2021 plan?”

A4: I'm happy to take that one too. I think one of the biggest changes, and it was there in the original strategic plan but it is largely a change of emphasis but this was to not only talk about in the focus of our strategic plan the attribution to categories but to put a greater focus, a greater emphasis on

understanding how those change over time. That's obvious he was always part of the point, but it is spelled out now. I think that this next strategic plan, IFSAC was just getting started back when the strategic plan was created and I think there was a lot more focus on -- it was almost the first strategic plan had a little bit more for project focus to it, little bit more granularity. This strategic plan is more typical in terms of its structure with goals and strategies then the action plan is really where we talk more about some of the more detailed aspects of specific projects. I think now that we have had five years of experience instead of thinking about what projects do we need to do to solve the problem, we're thinking more even more in a goal oriented way, we understand better the problems we have and then we're taking that strategic plan and creating the future projects based on the strategic plan rather than a little bit more of what happens when you are first getting started in your focused on the problems and thinking about how to solve them.

Q5: Thanks, Beau. "You mentioned there's a new communication function in the new 2017-2021 strategic plan, can you talk about why that is so important?"

A5: This is Katie Vierk. I would say that the communications on our plan and getting input from our stakeholders is really important and part of that communications function. In addition, making sure that we are getting the information out in a timely manner and a clear manner so that it can be used by people, both internal and external to the government, those are all...now that we've had five years under our belt and we've gotten some foundational projects done and are looking to do more that these are some of the reasons why those are important to communication function.

Q6: Thanks. "Does IFSAC issue a call for proposals and what is the timeline for this?"

A6: I think that...this is Kate again... I would say that there right now isn't a formal way for us that we put out a request for proposals, but we are certainly wanting to hear from our stakeholders on what is needed. And so any ideas or needs out there we would be most welcome to hearing and I believe on our IFSAC webpage there is an email address that those suggestions can be sent to and we can communicate with folks that way.

Then of course if we have any future meetings or something that, that's the kind of information we always want to hear and gather.

Q7: "Do you consider supplement safety under this mechanism?"

A7: I think right now given the amount of work and the needs we have already and the food safety and looking at our traditional foods that's kind of where we have been focusing on. I can see as time moves on that we would be able to maybe expand. I know this group has talked in the past about looking

beyond attribution and beyond the typical industries and food products we've been the looking at but right now that's not in the plan.

Q8: "With FSMA coming on, is it their intent to sample food plants and their supply of plants to gain attribution data?"

A8: No. We would have to talk to the experts for FSMA that have been drafting those but that is not the intent of FSMA to be collecting data from plants to then be used for research. That is not the intent of FSMA.

Q9: I think this question is probably for Beau. "Which project will likely be where you place most of your focus?"

A9: I would say that we don't, in particular, focus on any specific project more than another. I think it is more about the sequencing, our bandwidth and capacity to do those projects. You have a considerable group and our technical workgroup who is regularly attending our calls and one of the strengths of the IFSAC is people are able to align themselves with the projects that they have the best skill set to accomplish and to do. And to participate in team meetings both as their interest, capabilities and time and energy and all those things align with and are aligned with their usual duties. We try to move all these projects forward pretty consistently, I would say because they all are pretty important issues as we see them because they go through a process of being approved. We as the technical workgroup and the steering committee of IFSAC both create projects but ultimately and ideas for projects but ultimately those projects are developed into proposals and plans and those go through a process of vetting with both our teams and our strategic and our steering committee and again there is a commitment being made by our steering committee members to put the resources behind these projects. For them to be approved and to be moved forward their thought to be important and all worthy of being done. I think that one of the nice things about much of the work we do is that and I think one of the benefits I know personally at CDC that I have from being a part of IFSAC is that the problems we are working on in IFSAC may inform something not only for IFSAC but for agency specific things that I am simultaneously working on. For example, we were talking about the advancement of the *Campylobacter* case-control studies. Well we're in the midst of analyzing other case-control data at CDC and thinking through the advanced ways that we are working to reanalyze those case-control studies is valuable to my team back at CDC. Many of these projects have ways that they inform each other that there's a dependency on them but there also -- they also -- the interlock in very important ways that allows us to really move things forward. That's my answer.

Q10: Thanks Beau, and we have another one for you. "Do the experts feel that current epidemiological methods particularly consumption interviews and surveys are sufficient and are there plans to develop

more robust methods, given that WGS (Whole Genome Sequencing) is becoming more prevalent that the value of supporting epidemiological data becomes more critical?"

A10: Yes. This is something that we have been thinking a lot about at CDC since we are primarily responsible for a lot of the of the surveillance activity that you are talking about, especially in terms of the interviews and surveys and so forth so not necessarily about consumption but about many of the questions that are asked during outbreaks and that are informing those models as well as part of FoodNet through this case exposure ascertainment I've been talking about. So there've been several initiatives and again this is always again working with our partners as well but a few initiatives to highlight for example have been at the *Listeria* initiative where we in coordination with the states have been able to create enhanced epidemiologic data collection to pair with whole genome sequencing. They're in the process of, with CSTE coming up, is quite relevant of proposing that also for STEC and ultimately we are in the stages and have even discussed some of this with states the expanding our epidemiologic data collection in a consistent way for *Salmonella*, for *Campylobacter*, *Shigella* and so all these things the latter in particular is still in an early stage. But at CDC, certainly, we recognize that the epi data is an important piece of this and there's a good study and perhaps we can find it and send it out to folks showing the value of combining that data with the whole genome sequence data. That was for outbreak investigation but as you can imagine that same data will have value for us in terms of attribution as well.

Q11: One last question as we're coming close to the end here. "What groups are working on your current projects? Is it universities, research-based institutions, or are all the projects conducted internally by CDC, FDA and USDA?"

A11: This is Katie again. Right now the IFSAC projects are all being done internally. We have had industry representatives and academicians coming to... sitting on panels at our public meetings but I think if you saw some of the goals outlined when Joanna was talking, one of them is... one of the objectives to enhance our relationships and engagement with internal and external groups. So we do expect to and would like to partner more in the future.

Slide 43: Thank you for attending IFSAC's webinar

<<MCB>> I would like to once again thank our presenters, Mrs. Vierk, Dr. Zablotsky Kufel and Dr. Bruce. We appreciate your participation in today's webinar and we hope that you will join us again in the future. If you have any additional questions please send us an e-mail at IFSAC@fda.hhs.gov. A recording of the webinar and the transcript will be posted online in the near future. Again, thank you for your attendance. This concludes today's webinar session.

[Event concluded]