Karen: It is now my honor to introduce our guest speakers, David Johnson from the Office of Population Affairs. David Johnson currently serves as a public health advisor at the Office of Family Planning within the OPA where he is responsible for the management of several national grant programs that are a part of the national Title 10 family planning program. David also serves as the performance measure and budget lead within OPA and as the performance management liaison within the office of the Assistant Secretary of Health.

Thank you, David and thank you very much for being on this presentation today.

David: Thank you Karen, Welcome everyone in webinar land. It really is my pleasure to be able to be on this and introduce not only the overall purpose to give it just a quick background on the STD related reproductive health and training assistance centers but also be able to introduce Doctor Bolan as well.

Many of you are familiar with the IPP program that was funded several years ago. The STD related reproductive health training and technical assistance centers are really an extension of the infertility prevention program. With one big shift in the major shift of this new program, which will be going into a third year, is the support and strengthened implementation of third party billing and reimbursement systems. Really assess and look at the development of program management and really improve the delivery of STD service as well as the quality of reproducing health related STD services with the goal of those at the state, local, territorial and tribal sexually transmitted diseases and state public health laboratory programs.

With this, there's 10 different training centers that are throughout the OASH regional offices. We have one in each of the 10 regional offices with region eight serving as the training center for both region eight and region seven. I'm really excited to be able to be on this and to hear what Cardea has to present to us related to a prevalent monitoring Toolkit.

With that said, I would like to introduce Doctor Gail Bolan, she's the director of the division of STD prevention at the Center for Disease Control and Prevention. Doctor Bolan is a leader in the prevention of STD prevention and has been recognized for her contributions in applied STD prevention research and implementation of science based STD programs. She's over 125 scientific publications and served on the SC HIV and STD Prevention Advisory Committee and the Office of Infectious Diseases board and scientific counselors as well as the executive committee of the American STD Association, the board of directors for the National Coalition of STD Directors and American Social Health Association. She's a graduate of Dartmouth Medical School and completed her training in internal medicine at the University of Virginia as well as in infectious
diseases at Tufts University in New England and Stanford Medical Centers. It's my pleasure to turn it over to Doctor Bolan.

Gail: Thank you, David. Good morning or afternoon to those of you who are joining us for this really exciting and really important webinar. I also want to thank Cardea for setting this up so everyone can join. I also love the chat and question and answer options on the webinar. I will be monitoring and look forward to hearing from those of you with the questions that are important to you to help advance quality Chlamydia screening in your clinical settings.

I want to be brief because I know we've got some great speakers that have the important information to share today but would like to give a little bit of background about how we got here today with CDC supporting Cardea in the development of a prevalence monitoring Toolkit.

As many of you know, the infertility prevention project has a long history in the field of Chlamydia prevention and control and reduction of adverse consequences of STI's, especially Chlamydia and gonorrhea in terms of reproductive health for women. Originally started as a screening program in Region 10 back in 1988 and was eventually expanded to all of the U.S. public Health Service regions with the target audience specifically being STD program family planning clinic and public health laboratories.

This really was a beginning of a very important area of focus for CDC in terms of women's reproductive health. I'm happy to say that we have now expanded this project and learned from the lessons that were learned through the infertility prevention project to be a national program of infertility prevention so that we insure that any vulnerable woman who is in need of Chlamydia screening, no matter where she is being seen gets the appropriate screening treatment and partner services that she deserves to prevent these adverse infertility outcomes.

What we learned through the early days of the infertility prevention program that we want to continue is that knowing the prevalence of Chlamydia in your clinic setting is critically important for you to be able to design cost effective screening programs. In general, some studies done a while ago suggest that you need at least a prevalence of about three percent to justify a comprehensive screening program. If your prevalence is less than that, you really need to target your screening to those with a higher rate of infection so that you maintain a three percent prevalence or above.

The most important thing for prevalence monitoring is really for clinic in clinical quality improvement to insure that you are screening the right populations with the highest rates of infection at the highest risk of complications and that you're...
not wasting limited resources on screening lower risk populations where the cost effectiveness really doesn't justify that level of screening.

In programs that also are able to screen a given population, our prevalence monitoring can also help us monitor disease trends although this is becoming more and more challenging as our health care system is changing in the United States and people are going to different places for care. It's hard to know that we are serving the same population that understand our disease trends but some areas do have the opportunity to know they are truly screening at a high rate. You should screen at least 85% of your population to be able to use the data for more surveillance purposes and monitoring disease trends.

In some areas around the country, I know STD directors are still looking at prevalence monitoring data to help inform their need for targeting prevention efforts where burden of disease is the highest and where trends are going in a direction that are concerning and more intervention is needed.

Again, very excited that Cardea was able to develop this Toolkit, this Toolkit from our standpoint is really to be used in any clinical setting that is doing Chlamydia screening. We hope that this is going to be very useful for agencies and allocating safety net screening resources. We also think it can be used for developing standards of practice and care in your clinical settings.

With that, I would like to turn it over, I guess back to Karen, who's going to introduce our first speaker.

Karen: Thank you so much Doctor Bolan, that was great.

Before we continue, I just want to take a minute to say that Cardea was funded to produce the Chlamydia and Gonorrhea Prevalence Monitor Toolkit by a cooperative agreement by the office of Population Affairs which is within the Office of Assistant Secretary for health in cooperation with the Division of STD Prevention within the Center for Disease Control and Prevention.

The planners and presenters have disclosed no conflict of interests including no relevant financial relationships with any commercial company pertaining to this activity. Just know that you have some faces to go with the voices that you'll be hearing today. This is Cardea's prevalence monitor team. I apologize from deviating from the monkey theme.

By the end of the webinar, we certainly hope that you will be able to describe the importance of using local data under STD apps to find and differentiate between the key indicators for prevalence monitoring and using the interactive Excel worksheets to evaluate your own organization's practices.
This Toolkit was created with the main purpose to support state and local STD and family planning programs, clinic administrators and managers and monitoring and evaluating Chlamydia and Gonorrhea or CT/GC screening efforts. We introduce key indicators for assessing screening efforts, explain how each indicator is useful and how to calculate it and provide examples of each indicator. We made many efforts to balance practicality and scientific rigor in including resources in the Toolkit.

With that, I would like to turn the presentation over to Cardea's research manager and author, Charlie Shumate, who's going to go through the Toolkit in greater detail.

Charlie: Thanks, Karen for that introduction and some of the background and purpose of the Toolkit.

With that, the Toolkit is broken down into five sections which includes the Introduction, the Key Indicators, Context & Interpretation, "Ask the Epidemiologist", and Tools and References, partial roadmaps, so that's how the remainder of the woman will go today. Sarah Salomon will take over context and interpretation and ask epidemiologists and tools and resources. If you've already downloaded the Toolkit, feel free to follow along.

Before starting, I want to provide a bit of clarification on terms you'll encounter throughout the resource. In developing the Toolkit, we realized there would likely be different level of Chlamydia monitor experience and intended users. Consequently, we wanted to provide explicit definitions from the Toolkit that could shorten the learning curve and contextualize the Toolkit for public health practitioners who work with prevalence monitoring data at the local level.

What follows is a short discussion on the Toolkit's framework for key prevalence monitor terms. The definitions provided in the Toolkit and the Toolkit itself is not meant to be a comprehensive guide to Chlamydia and Gonorrhea epidemiology. The definitions offered in the Toolkit are intended for use in the clinical setting as well as the general population. With that being said, it makes sense for the numerators and denominators to be defined as patients or tests versus a general population. This will become clear shortly. Finally, all definitions and indicators require you to find the population and time period of interest. Without this constraint on person, time and place, it makes it very difficult to connect data to programmatic activities, analyze trends or identify disparities.

Let's take a look at the first indicator. We define screening coverage which is our first indicator as a percent of eligible patients who've been screening for given infection. It's helpful to think of screened patient as a smaller group of the overall patients who go to a clinic and the calculations require you to use
undocumented client meaning even if the client is screening more than once in a given year, they're only going to be counted once in that calculation.

Now, to the next indicator. We like to think of a relationship between screen coverage and positivity. Positivity is defined as a percentage of valid test results with the positive results. Unlike screening coverage, positivity allows for multiple positive tests. Note how, in the positivity indicator, it's nested under screening patient so therefore, your positivity data is going to be directly related to who you've screened. That'll be discussed shortly as well.

There are likely other terms in the Toolkit that are equally important and they are described as well but screening coverage and positivity are the really the two that open up your ability to use the interactive tools that'll be demonstrated shortly.

One of my favorite questions of all to ask is why bother with prevalence monitoring? Why bother with it at all? To answer this question, we've trained the Toolkit in three domains to illustrate the benefit of using local data for prevalence monitoring activities. Since agencies are often tasked to do more with less, carrying out prevalence monitoring can help in prioritizing and identifying agency goals with valid data. Successful prevalence monitoring work can be used for quality improvement, to run up health equity and to insure cost effectiveness.

The benefits of prevalence monitor can be expressed at the local level since it provides important information on certain segments of the population. That these data are likely not generalized to the population as a whole. They're probably other benefits in prevalence monitoring at varying levels with include state, region. We think these are the most relevant to local level prevalence monitoring activities.

There are multiple quality improvement models out there but all of them at their heart have something along the lines of planned, use, study and act which is most important since it creates a feedback loop that lets the agency ask the questions what are we doing and can we do it better?

Continuous quality improvement for Chlamydia and Gonorrhea prevalence monitoring can take on any of the following. To identify gaps in service provision, to identify staff training needs, to routinely monitor screening trends, to define or adjust STI screening criteria.

There's a really nice presentation that can be accessed in the references in the Toolkit entitled Basic Tenants of Clinic Efficiency, Best Practice and Lessons Learned but goes into more depth on quality in a clinical setting.
A second benefit for prevalence monitoring is to promote health equity. Equity carries a message of social justice. Health equity refers to the study of differences in the quality of health and health care across different populations. We know that CDC data tells us the rate of Chlamydia among black women have been seven times that of white women and the rate among black men almost 11 times the rate of white men nationally and that through 2010.

I think in STD, we know that disparities by race and ethnicity are some of the most persistent health disparities in the United States. Local data can be an innovator in developing interventions to reduce these disparities. The WHO summarized it nicely by saying, "Health inequities therefore involved more than inequality with respect to health determinants. Access to the resource if needed to improve and maintain health or health outcomes."

Finally, Doctor Bolan mentioned on cost effectiveness, why three percent positivity? The Toolkit at three percent Chlamydia positivity threshold among sexually active women is an often used threshold for cost effectiveness, screening for Chlamydia. What is there three percent positivity threshold? The CDC has encouraged states and jurisdictions to assist clinics with lower than three percent Chlamydia positivity to divert funds or alter screening practices to increase detection or allocation of resources.

In the first citation you see on the slide before you, the Honey article, that was a review of 10 studies from 1990 to 2000 of women screened in primary care clinics. They found that for Chlamydia to be cost effective, the prevalence was around 3.1 to 10% which is quite a range. There are a few other resources we've included in the Toolkit. We think the Tom Jeff's National Chlamydia Coalition, expert commentary on cost effectiveness is quite nice as well so if you need information on that, feel free to access it.

It's important to remember that cost effectiveness at three percent is not 100% decided in the literature. There are a variety of factors that can influence your positivity and cost effectiveness because the cost effectiveness of screening Chlamydia is directly related to the prevalence of Chlamydia in your area. If you're screening in high prevalence areas, you're just going to detect and treat more cases than if there was a lower prevalence. There's cost not included in some of those earlier models that reviews looked at. That includes the dynamic nature of infectious disease epidemics, the number of partners, durations of effectiveness and also the frequency of screening will impact all of these things but a three percent Chlamydia positivity has been shown to be cost effective overall.
Why is prevalence monitoring with the indicators screening coverage useful, anyway? The importance of periodic review of screening coverage is for one to access provider here and the clinical screen protocols, to identify trends which we know is becoming increasingly harder to do and to evaluate the success of quality improvement initiatives to increase screening.

Why haven't I mentioned Gonorrhea screening coverage, for example? Remember, it's not generally calculated because there's no national screening recommendations for Gonorrhea as there are for Chlamydia. The national recommendation is to screen all sexually active women, 15 to 25. However, we do know that lots of clinics out there see a lot of Gonorrhea. You're screening coverage indicator should be driven by what you're seeing so if you happen to be in the situation where a clinic where there's a lot of Gonorrhea, you may want to use screening coverage for Gonorrhea, too.

While not in the Toolkit, this graphic can be helpful thinking through the screening coverage indicator. What's the data you'll need to calculate screening coverage and where you're going to obtain it. Note, only unduplicated sexually active patients are included in screening coverage applications. This will differ by setting, family planning versus primary care, where family planning, most all family planning clinics, assume the sexually active population but not all. Screening coverage is a key indicator for adherence to recommendations and protocols for screening so we've included this.

Now, to give an example, a taste of what this would look like, we've provided an example in Toolkit. Draw your attention to the figure at the bottom half of the graphic. You'll see that clinic X that screened 245 out of their 500 patient in 2009, they have a screening coverage of about 49%.

Now, the recommendation that says screens all sexually active women 15 to 25, so we can see in this clinical setting, they still have a lot of room for improvement.

The second useful indicator for prevalence monitoring is positivity. The importance of periodic review of positivity is for identifying trends, to see if there's changes in positivity within groups by key demographic factors and geography. Are you seeing more Gonorrhea, Chlamydia in certain populations to reveal shifts in infection patterns and maybe to access disease burdens between groups and populations. We need to talk a little bit about the last one, serve as a proxy to Chlamydia prevalence and a clinical setting.

To serve as a Chlamydia proxy for prevalence, just wanted to trick here but studies have shown that positivity can be a useful proxy in a clinical setting, although it's not a true prevalence. True positivity may include those women who...
who are tested more than one time during the single year. That needs to be taken into account although some of the early research on this positivity could serve as a useful proxy for prevalence as shown that it generally can with relative differences of about 10% in STD and family planning comes.

While not in the Toolkit as well, this graphic can be useful when thinking through positivity, what the data you'll need to calculate cover it, positivity and were you'll get it. Sarah will talk a little bit later about requesting lab data and what lab data should look like but it's important to draw the distinction between the sources you're seeing, the data you'll need for calculating your positivity versus screening coverage because positivity looks at test records versus individual clients.

Positivity is a preferred indicator for Chlamydia and Gonorrhea problems monitoring since it accounts for test, even if some patient will be tested multiple times.

Again, to illustrate it in a simple calculation, we've provided a simple example in the Toolkit. Pay your attention to the numerators and denominators, that they're only using valid tests and the numerator has a number of positive tests over the total number of positive and negative tests.

For positivity in the denominator, you're not going to include tests that are indeterminate or they didn't have a positive or negative value because screening coverage and positivity are useful indicators to measure burden of Chlamydia disease among the clinic population and subpopulations. We need to do a little more to get a clear picture.

How can you use the indicators to read some of the benefits for prevalence monitoring the Toolkit highlights? One step in the direction of utilizing the indicators lies within stratification. There are several epidemiological definitions for stratification. The Toolkit frames stratification as calculating positivity for screening coverage for several different subgroups of patients.

Excuse me for making a really bad metaphor but I'm not making sausage. You really want to see and know what your strata or your subgroups are looking like and what data went into making them. To assist with that, we've provided a bit of guidance in the Toolkit as well. Here we see screening criteria to the left on the figure. Screening criteria and protocols are the overarching framework which produces the data you're seeing and should be driving your positivity and screening coverage. This is the casing that surrounds our sausage strata.

The next ingredient that would go in would be clearly defined categories and clearly defined variables. Since ages, one of the most robust variables to stratify...
on, here's an example. When creating age ranges, screening criteria should be consistent within each age group or variable. If universal screening which is the recommendation for sexually active woman 15 to 25 and younger, if that's what we're using and selected risk-based screening is recommended for woman 26 to 30 which are older of age, appropriate age category to be 15 to 25 and 26 to 30. In grouping ages like 15 to 26 or 27 to 29 wouldn't be appropriate since it's not following your screening protocols.

It's also important to know if you're dealing with data that's continuous such as age or categorical, that's male or female or the test results positive and negative. Additionally, if you have a significant amount of missing data on variables like race or ethnicity, that could be a problem and you might want to look at why your data's missing if you can identify it because it is a problem out there. In 2010, the CDC estimated that around 26% of Chlamydia case reports were missing race or ethnicity data and that range from states where it varied from .5% to all the way to 59.5%.

Finally, less is better. We provide in the Toolkit a rule of thumb that there should be no less than 25 tests or patient in the denominator of the calculation. You're going to spread yourself too thin to meet some statistical assumptions of any of the analysis you might want to do.

In summation, if a variable can be divided into smaller categories and there's reason to believe that screen coverage or positivity will not be consistent across categories then maybe you should stratify it.

What are some useful variables to stratify on? Positivity is most meaningful when stratified by demographic or behavioral risk characteristics. Comparing positivity between separate groups of patient and indicate difference in risk of infection. The most useful demographic in behavioral risk factors for genital chlamydial screening and stratification is age. Stratifying screening coverage can help you identify missed opportunities to screen examine how provider screen patterns align with clinical protocols. Because this could vary by clinic, we didn't include the necessarily in the Toolkit in figure but we think screening coverage can be stratified in a variety of ways as well including age, sex, reason for visit, insurance type, provider ID and visit type.

The last in calculations we provided in the Toolkit cover stratifying positivity and screening coverage. In the positivity example, there's a figure given to you here. A clinic is trying to decide how to allocate their number of available Chlamydia tests to 1,500 to its annual client volume of 4,000. Using age, the clinic stratified its existing positivity data on age and found, as expected, positivity is much higher in the age strata of 15 to 19 and 20 to 25. These ages should be prioritized.
for testing. Comparing positivity between two different groups in this example indicated there's a difference in risk highlighted by age. However, to tell even more detail or even more information for this story, positivity should be stratified in a couple of other ways in terms of age and that could be by demographic, by sex partner, multiple sex partner, condom use or something else. In the Toolkit we provided another example to highlight this stratifying screening coverage.

In a second example, for quality improvement purpose, a person wants to know how they could do a better job of Chlamydia prevalence monitoring to identify missed opportunities to screen and assess in adherence of screening recommendations. They calculate screening coverage for each age strata and found that they were underscreening younger female clients. You'll notice that in the first row where 28.5. That’s the screen coverage for that age strata. For older clients, it's 50%, 26 and older.

Where could they increase screening in younger patient? By looking up their screening coverage stratified by visit type, the clinic found that for their 15 to 25 year old population, 2,000 patient came in for non-comprehensive visits. Those are things like pregnancy test, birth control or other. However, only 10% of that 2,000 were screened. This is clearly an opportunity to intervene at multiple levels. To do that, they may want to do a series of systems, interventions and we've included some examples of that in the resources in the Toolkit, self collected vaginal swabs, maybe electronic reminders during assessment, what have you. Just going to vary by clinic.

At this point, I want to say thank you for following maybe some complex information on the indicators and how to calculate them. Now, I'm going to turn it over to Picheska to open up a poll.

Picheska: Yes, it looks like Charlie's first question is "We suspect your agency may be missing opportunities to screen young women for CT/GC when you wish to examine staff adherence to screening protocols at the same time. Which variables would you use to stratify your screening coverage data?"

The poll is currently open. If you look off to the right, you see your polling column. You can select your answer now. We'll leave this open for just a little bit. Charlie, it looks like answers are starting to come in.

Charlie: Great. Let me see. I can't access them so I can pull them up. No, I can't see it.
Picheska: No. I'll push the answers as soon as we've got a good result percentage.

They are definitely coming in. Looks like about half of the attendees just a little over 50% have responded. Still continuing to come in. That's great. Love this participation.

Just so the side note. I have seen a few questions coming in through the chat box to the panelists. We will be addressing some of those during the Q&A session just after this.

All right. Looks like we got a really good percentage. I'll be closing the poll in just another second and approaching the results, Charlie, it will take just a moment for it to post, okay?

Charlie: Sure. I see one of the questions there. It seems like someone said, "You shouldn't be dividing positives by multiple tests and dividing by 100. Shouldn't you just multiply by 100?" In this question, we are multiplying those by 100. Yeah, I wasn't clear maybe in presenting it but they are multiplying it by 100 to get the percentages for the positivity.

Picheska: Thank you, Charlie.

Charlie: I hope I cleared that up.

Picheska: Yeah. The poll is now closed. I'll be posting the results. It submits over a couple second. All right. Poll results. Now, Charlie, are you able to see the poll results?

Charlie: Yeah. It seems like there's a pretty good distribution. The one that got the least amount was age. I think the most of them actually, yeah.

This was actually a trick question. You can actually stratify your screening coverage data by any of these. It just depends on what you're looking at. In our examples, we stratify by age and then by gender which would come into fault but if you have a reason to use that for some reason insurance type might be something interesting to look at with billing reimbursement out there. That might be something you want to do so yeah, you could stratify your screen coverage by all the variables.

At this point, I'm going to turn the presentation over to Sarah Salomon who will walk us through the context and the tools to do prevalence monitoring included in the booklet.
Sarah: All right. You all hear me?

Charlie: Yup.

Sarah: Great. All right. Thanks, Charlie for that great overview of the first half of the Toolkit. I'm going to take us into the last half of the Toolkit which starts with the discussion of some of the challenges to interpreting positivity data and things that you'll want to take into consideration. After that, the Toolkit includes a question and answer section called "Ask the Epidemiologist" which addresses common questions we've received from past program partners. During that segment, we'll also give you a brief tour of the interactive tools included in the Toolkit to help agencies visualize their own data.

One major limitation to positivity calculations is that they consider only patients who were tested for the STI's interest. They don't provide information about infection rates among patient who were not tested.

Another way to conceptualize this challenge is that positivity can be heavily affected by screening coverage. Let's say for example that I have six women visit my clinic. Four of them are Chlamydia free which is indicated in yellow and two of them are infected with is indicated in blue. If I were to test all six women, that is 100% screening coverage, I would find accurately that two out of six are positive or that my positivity is 33%.

On the other hand, let's say I screen only three of the six women a screening coverage of 50%. Depending on which of the three woman I screen, I could come up with a positivity as high as two out of three which is 67% or zero out of three which is zero percent.

The point here is that screening coverage can have a big impact on the accuracy of your positivity. Additionally, who you screen makes a difference. In these last two examples, our screening coverage is 50% but depending on which 50% I chose to screen, I can come up with very different positivity figures.

Nationally, screening coverage among women ages 15 to 24 averages only about 50%. If your screening coverage is substantially under 100%, it's worth considering how that may affect your positivity estimate. Are there particular groups of clients that you're less likely to screen? Is there any reason to believe that they are more or less likely to be infected than the people you are screening?
The issue of who is screened and who is not screened is also important when interpreting trends of positivity over time. Given what we just discussed about how screening coverage can affect positivity, let's take a minute to think about some examples of changes or events that might affect overall positivity in a clinic. Picheska, can I have you open this poll?

Picheska: Absolutely. The poll is now open again we'll see the poll off to your right. You can submit your answers there.

Sarah: Great. Thanks, Picheska.

Just for anyone who can't see the poll, the question is, "Which of the following could affect positivity in a clinic?" Response options are, "A. Changes to screening policies or protocols. B. Changes in client mix, such as closure of a nearby clinic. C. Provider or staff turnover. D. Scaling up of retesting or other targeted screening efforts or E. All of the above."

Picheska: Looks like we're about 50% have responded and they're still responding very quickly. We'll just leave this open just a little longer.

Sarah: Fabulous. Thanks, Picheska.

Picheska: No problem. All right. Just take a few more seconds to respond to the poll. If you have just an answer to provide, great. We've got some great results.

I will close the poll now. Sarah, it'll just take a few second for the responses to submit and then I will post it.

Sarah: Wonderful. Thank you, Picheska.

Picheska: You're welcome.

Sarah: All right. We're just waiting on these poll results to load.

Picheska: Yeah. You should wait about 15 seconds. Okay. Looks like we're loaded and I will post it now.

Sarah: Fabulous.

Picheska: Can you see?
Boy, you guys are smart. Almost everyone said answer E, all of the above. Fabulous! That is definitely the correct answer. When looking at positivity trends over time, it's always important to think about factors both within and outside of the clinic that may have affected the trends you've observed.

Changes in positivity most often reflect changes in programmatic activities. This can include changes to clinical screening policies or protocols, bringing new providers on staff and might need special training or support or special initiatives to improve screening.

The changes in positivity can also reflect external changes such as changes in client mix which might happen for example when a nearby clinic closes or when many new patients become insured due to health care reform. If you observe a change in positivity, the rule of thumb is that you should always look for any possible factors that might explain that change before you conclude that it indicates an actual increase or decrease in infection prevalence in your community.

The last section of the Toolkit is laid out in a question and answer format. The section contains answers to questions that we've commonly received from past program partners and some recommended resources for further reading including webinar archives, articles, et cetera as well as some interactive tools that we’ve developed to help with visualizing your data.

I'll take you through those questions and give you some examples of that's the answers that we've provided and the resources. The first Q&A question concerns the three percent positivity threshold for cost effectiveness and the question reads, "Our positivity for females is under three percent. How can we increase it?"

To answer this question, the Toolkit recommends assessing your screening practices to see if you’re screening too many low risk clients. We discuss some strategies to increase positivity by adjusting screening practices including stratifying by age and retesting. Stratifying screening coverage by age is a smart place to start. Study after study has shown that young women are most likely to be infected and that positivity declines with age. This is the first group we want to prioritize. Your data can tell you the extent to which you're currently prioritizing young women and how much room there is for improvements.

CDC recommends retesting of infected woman and men approximately three months post treatment or whenever the person next presents for medical care.
in the 12 months following treatment. Re-testing benefits those most at risk for infection and as a great way to increase your clinic's positivity.

A literature review by Hosenfeld showed that repeat Chlamydia and Gonorrhea infections are extremely common with nearly 14% of people infected with Chlamydia experiencing a subsequent infection and nearly 12% of people infected with Gonorrhea experiencing a subsequent infection. Retesting is likely an area where agency has room to make substantial improvements.

Despite the high rates of reinfection, studies have consistently shown that only about 25 to 50% of patient who should be retesting are actually retested. We can see here we reference four different studies which have variations in retesting rates but they were pretty low across the board.

As part of a Toolkit, we've included a few resources and tools to help demonstrate these two issues, age-based screening and retesting. The first thing we want to show you is a tool that we've developed to help you look at opportunities to improve your screening yield. This is an interactive Excel-based worksheet to compare your current test allocations strategy and resulting positivity against the hypothetical positivity that you would find if you were to allocate resources according to age. The worksheet uses an algorithm to distribute tests first to adolescents, because as you've seen, they have the highest positivity and then use the remaining resources to screen woman ages 20 to 25 and then allows you to reserve some tests for diagnostic testing of older women.

Then, I'll take a moment now to demonstrate this tool. Hopefully, you can all see my screen now. I have an Excel worksheet open with an interactive resource allocation worksheet for Chlamydia screening. I'm going to take you through it and fill it out for a sample clinic so that you can get a sense of how it works.

Everything I enter goes into the grey boxes and everything else not in the gray box is autocalculated. Let's say I'm looking at sample clinic for the year 2014 and first prompted to fill in the data in the gray boxes according to the most recent year of data that I have available. I'm first asked how many female clients did I have in each of the age ranges.

Let's say I had 100 clients and then 19, 200, 20 to 25 and 100 26 and older for a total of 400 clients. Then, I entered the number of Chlamydia tests that I used by age group. I did 50 Chlamydia tests among 10 to 19 year olds, 150 20 to 25 and 50 among 26 and older. Then, I entered the number of positive cases that I
found. If they had four cases among 10 to 19, eight cases 20 to 25 and two cases, 26 and older.

As you can see, to the right, my positivity is autocalculated based on those numbers that I entered. Then, scrolling down, in the next step, I'm prompted to enter the number of client that I expect to see for the coming year. In this case, I don't have any reason to expect that I'm going to see more or less client that I saw last year so I'm going to go with the same numbers I put in above. A hundred client 10 to 19, 200 client 10 to 25 and 100 client 26 and older.

In step three, I'm asked to estimate the total number of Chlamydia tests available for the coming year. Again, I don't expect any changes and not getting a big surplus of tests or a big cut in funding so I'm going to assume that I have about the same number of tests that I had last year but you can change these numbers obviously depending on your situation. I'm going to say I have 250 tests again.

In step four, I have an opportunity to estimate the total number of tests that I want to reserve for diagnostic testing or retesting of older women. There's a whole page description that goes along with this tool and the Toolkit to give you an idea of how to go about estimating this number but in general, you want it to be a relatively small number because we see pretty low positivity among older woman even when we are doing risk based screening. I'm going to go with 25 tests in this case.

Then, scrolling down to the bottom, all the rest are autocalculated and what you see in step five is your results. You can see this is a model allocation, if you were to allocate tests based on client age. We're giving 100% of woman 10 to 19 are getting tested, a fairly large percentage of woman 20 to 25 are getting tested based on the number of tests that I had left over with what I allocated. Then, we have reserve those 25 tests for older woman who have particular risk factors. Using this algorithm, what you can see at the bottom is that we would expect to detect four more cases than we detected last year which is actually an increase of 28% so it's a pretty big increase.

Obviously, this tool is an exercise. It's not meant to be the hard and fast rule of how you should allocate tests. There are always other considerations you want to think about but we think it's a helpful tool just for illustrating how big an impact screening just purely based on age can have for your clinic.
With that, I'm going to go back to the slide show. All right. The Toolkit also recommends some resources describing successful interventions to improve retesting rates. The reason for such low retesting rates as we saw there in the ballpark of about 25% is that there are several steps that have to happen in order for a patient to be retested. The patient has to return to the clinic and then the provider has to identify them and retest them upon their return. Studies have shown the combination of low client return rates as low as many missed opportunities for testing is what leads to lower retesting rates.

Because there are so many points along that cascade there that could contribute to retesting rates, it can actually be challenging to compute retesting rates using administrative information systems and now this is retesting and reinfection rates require the ability to link multiple test dates and test results per patient within the defined window of time. Additionally from a clinical perspective, the data are more informative if you assess both patient return rates and provider missed opportunities to retest.

We've recognized that not all agencies have the capacity to assess their own retesting and reinfection rates. Nevertheless, we recommend that all agencies make retesting a priority. If you increase your retesting rates, you can expect to see an increase in your overall positivity for your clinic because the infection rates are so high in this population.

One retesting resource that’s referenced in the Toolkit is the California In-Touch study. Howie Howard and her team, the California Department of Public Health, STD Control Branch did some fairly sophisticated analysis of family past data to explore retesting and reinfection rates. The results were really clear. Reinfection rates were high across the board, even among older women. Once again, even if measuring reinfection rates is not feasible in all clinics, looking for ways to programmatically improve your retesting is a sure fire way to detect more infections which will result in a higher positivity in your clinic.

The second Q&A question in the Toolkit addresses what to do when resources are limited and you can’t meet the recommendation to screen all women under age 25. As with the previous question, we recommend stratifying by age and retesting to identify opportunities for improvement. The Toolkit emphasizes that there’s always room for improvement and that you should focus on screening client with the highest risk of infection to maximize the impact of your screening program.
Another Q&A question is, "Our providers are so busy, we just don't have time to screen all of our patients that are under age 25. How can we increase screening coverage?" The answer to this question is to look for ways to improve efficiency and remove unnecessary barriers to testing.

Now, assist of the client data can be very helpful in identifying gaps in service. The Toolkit includes resources on efficient technologies such as patient self-collected vaginal swabs and patient flow analysis to assess efficiency.

In region 10, for example, we identified a major service gap by stratifying by visit type. The majority of patients come in for other visit reasons such as a birth control pick up or pregnancy test and they don't come in for an initial or annual exam during the year. While screening coverage was pretty good during comprehensive visits but included an initial or in annual exam, it was 75%, we found that it was much lower at other visit types. You can see here it's circled 35%. This is a major area for improvement.

Once you've analyzed your screening coverage data to hone in on the problem and identify areas for improvement, there are a number of resources out there to help you come up with a plan for increasing screening efficiency so that it's feasible to increase your screening coverage. The Toolkit highlights a couple of resources including the vaginal swab Toolkit developed by the Region 10 Infertility Prevention Project and a webinar on patient flow analysis to improve client efficiency which Charlie referenced earlier.

The last two Q&A questions addressed technical challenges, how to obtain data and how to analyze it. First, are there different options for getting the data I need to calculate positivity in screening coverage? In the Toolkit we discussed possible data sources for screening coverage and positivity data. Screening coverage may be easier to ascertain if you use a practice management system and track screening. It does not require an electronic health record. Positivity data, on the other hand, can be a bit more challenging to obtain because it requires test result data. Many agencies are not using electronic health records or do not have electronic laboratory reporting for test results. It can also be challenging to pull this information separately from the electronic health record and integrate it with the demographic data from a practice management system.

Additionally, positivity calculations consider tests, not patient which can be more challenging to extract from some electronic health record systems that we've encountered so the Toolkit recommends a couple of alternative options, it's
Using Local Data to Guide Programmatic Decision-Making: Chlamydia and Gonorrhea
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positivity data or difficult to extract from clinical systems. First, clinic may be able to request a data report from each of the laboratories that they use for Chlamydia and Gonorrhea testing.

The Toolkit includes an example of what line listed data should look like. There's one test record per row of data and each column represents some characteristic of that test. The patient's age, their sex, their reason for visit, test result, et cetera. These data can be sent in an Excel format or a CSV format and then analyzed in Excel or imported into a statistical analysis program such as STSS, fast or data.

There should also always be an accompanying code book to clarify the meaning of any of the codes that are used in the spreadsheet. The codebook also includes the sample codebook so you can understand the codes that are used in the spreadsheet that they just showed.

Additionally, if the clinic uses only one lab for Chlamydia or Gonorrhea testing, there may be the possibility to request an aggregate summary report from the lab. If you do this, you'll want to discuss with your lab how you want the data to be stratified. This is an example of a summary or an aggregate table for Chlamydia and Gonorrhea positivity which in this case is by race ethnicity.

You can request or create tables such as by sex, age, visit type, et cetera. Whether you're working with an IT staff person or getting aggregate data from your lab, putting your data in a format like this is easy to visualize and interpret is really important for clinical decision making. The spreadsheet that we showed a minute ago is really useful for a data analysis but it's not very helpful for actually summarizing what's going on in your clinic.

Too often, agencies are asked to collect data without any mechanism for summarizing, reviewing or using that data for programmatic purposes. The goal of the prevalence monitoring Toolkit is to equip agencies to use data as part of quality improvement efforts. A strong continuous quality improvement plan requires routinely summarizing and reviewing data and then using this data to guide or adjust the program.

The Toolkit includes another interactive Excel-based tool to assist with presenting data in an easy to interpret format. Like the last tool, it is based in Excel and it allows you to enter monthly data and notes and automatically create annotated graphs from these data. I'm going to share my desktop once again to briefly demonstrate this tool. This is what it looks like. There's two tabs along the
bottom of the spreadsheet. The first says edit data and the second says view graph.

You open it up to the edit data tab and that's where you're invited to enter your data and it comes prepopulated with some sample data so that you can navigate between the edit data and the graph tab and get a sense of what it looks like and how it works. Basically, you're invited to put in the timeframe that you want to look at. We've prepopulated it with months but you could put in calendar years, you could put in quarters, you could do whatever you wanted to do. Then you put in the number of female patients that you saw in a particular age group, the number that were tested for Chlamydia and then your screening coverage is automatically calculated. Then, you're asked to put in any notes about internal or external factors that might have affected your screening coverage.

We talked about this a while ago. New initiatives or advice policies or protocols, changes in staff, really anything that you can think of. I would say to use these notes liberally because this is really a great way to help when you look at your data to help remember, "Oh yeah, there was something that happened there and that's why we think we saw a change." Then you can also enter any events or external thing so maybe a Get Yourself Tested campaign that happens once a year for a month. That could significantly increase the number of patients that you saw and tested that month.

Then, you enter similarly your positivity data so the number of patient that tested positive and the number of tests that were done and your positivity is automatically calculated.

From there, you could navigate over to the view graph tab and you see that your graphs are automatically generated based on the data that you inputted. I think most importantly, the notes are included right there with your graph, right by the data point that you made them at and again, it's a really helpful way to visualize your data and see, "Oh, we had a little dip there in positivity. Maybe that happened as a result of something we did."

Then, the other thing on the positivity side is that we have some automatically generated notes about increases or decreases in screening coverage that appear on the positivity graph to help you note that as well. That's that tool. Pretty simple but that's the idea, that it would be a simple tool that you could use on an ongoing basis. Okay. I got that. All right.
There's one last option raised in the Toolkit when positivity data are difficult to obtain. Some electronic health record systems that we've encountered can export user or patient data much more easily than they can export test record data. When necessary, user data can be used to calculate prevalence rather than positivity. As Charlie explained in the beginning, prevalence is the percentage of patients who had a Chlamydia infection within the year or whenever time period you're looking at. This is different from positivity which is the percentage of tests that were positive.

In situations where most patients are tested only once per year, prevalence and positivity will be similar, however, in situations where individual patients are receiving multiple tests within a year, positivity and prevalence can differ. For that reason, it's important to note that retesting affects positivity but not prevalence. Agencies that are doing a lot of retesting or are implementing a quality improvement initiative related to retesting should really try to use positivity data rather than prevalence data.

Finally, the most common Q&A question that we have received is, "Do you really expect individual clinic to perform their own prevalence monitoring? It seems like a lot of work." The short answer to that question is, it depends.

The procedures described in the Toolkit can be applied by any agency or health department to whom detailed patient level data are available. The questions to ask are what the data recording procedures currently look like, who has the staffing capacity to analyze the data and where are the patient level and test data stored and how can they be accessed?

Data reporting procedures vary across different agencies. In some cases, individual clinics are the only entities with access to the data needed to compute both positivity and screening coverage. In other cases, a network of clinics report detailed patient level data to an agency or a health department where there is greater capacity to analyze the data. It's pretty rare that a state health department receives the detailed level of data that's necessary to compute both positivity and screening coverage however; state and local health departments can and should play a key role in reporting relevance marketing. This is an important component that STD has. Health departments and clinic can work together to determine how to collaboratively access and analyze data. Depending on the situation, health departments may have more staffing capacity to analyze data but clinics may be able to provide the more complete data that is then accessible through labs and state surveillance systems.
It’s important that this be a mutually beneficial relationship. Data can be stratified by clinic and results provided to each clinic. In fact, sometimes we've even seen a little healthy competition through reports be as detailing how one clinic compares to other local clinics. They're usually made anonymous, they're using other clinic names but it can be a really helpful way to see where you fall relative to other clinic in your area. Health departments and clinic can work together to set achievable goals and use prevalence monitoring data to access their progress.

This concludes the presentation. I'm going to turn it back over to Karen Shiu to take questions.

Karen: Thank you so much, Sarah. That was a great presentation.

It looks like we do have a few questions that have come in during the presentation. I'm just going to post them now in order. Charlie, Sarah, feel free to answer as you please.

The first one is, "How do you account for screening selection decision making when government funded testing is requiring a three percent positivity rate and HEDIS which I believe stands for health care effectiveness data and information set for the clinic's ensures population is required screening for all individuals under 26?"

Sarah: Thanks, Karen. I can take a stab at that question. I'm unmuted, right?

Karen: Uh-huh.

Sarah: Okay, great. Yeah, that's a really great question. I think the HEDIS data or the HEDIS requirement that we screen all women under 26 are not necessarily in opposition to the three percent positivity threshold. Most of the time, I'm having a hard time thinking of agency I've worked with where positivity among woman under 26 was less than three percent. There may be some college health sites or maybe particular areas of the country where that is the case but for the most part, woman under 26 have a pretty high positivity rate.

I think in some situations, if you have a really small clinic and you're not doing a huge number of tests, that can affect your positivity, your positivity can fluctuate a lot from year to year and I'm not as familiar with the specific requirements of the STD apps but I know when we worked with IPP sites, we just always encouraged ... There was space to write for each individual clinic what the
positivity was and to make any notes about why the positivity was under three percent if that was the case.

We just encourages folks to write, make a note if the number of tests or the clinic was quite small or any other issues going on but I think if you were saying that we’re following national recommendations to screen 100% of women under 26 and our positivity is still falling under three percent, that that would be a reasonable explanation.

Great. The second question is what is the time frame to retest after initial positive results in treatment? Another great question. Charlie, do you want to take this one? Not hearing Charlie so maybe he's still muted so I'll go ahead.

The CDC recommends a time frame of three to 12 months after initial treatment for a positive. I think there’s some variation there, I think, with the, maybe the ACOG guidelines but they're all in at least three to six months window and I think CDC allows up to 12 months with the knowledge that you don’t necessarily have patients coming back more frequently than that. We generally don’t recommend retesting really early after a test because there's something called a test of cure which is different and it's not recommended unless I think if the woman is pregnant. CDC has some great recommendations online on the STD treatment guidelines that have all of these details of this. Those are referenced in the Toolkit as well but generally three month is the earliest cut although I have seen other studies with recent laboratory data coming out showing that you can retest as early as I think three weeks or one month but the general recommendation is still about three months.

Gail: This is Gail. Can I also add a few comments, I had trouble getting myself unmuted.

Sarah: Absolutely. Thanks, Gail.

Gail: Okay. Sorry. Trying to get myself off speaker phone. Can you hear me okay?

Sarah: Yup, I can.

Gail: Yeah, so I think Sarah, you did a great job with the HEDIS question. First of all, it's important to remember that HEDIS is a measurement. It is not a screening recommendation. Occasionally, we get calls that because HEDIS only measures a lower age limit of 16. Some providers have thought that we shouldn't screen young women under 16 because HEDIS isn't measuring it. It's was just best guess.
of populations we thought at highest risk for Chlamydia with a prevalence of three percent.

In general, as you said, most populations around the country have a prevalence of about three percent although the good news is we have been seeing some declining cases in some areas and certainly we know of some geographic areas or certain settings where you don't find that three percent cut off for say the 20 to 24 year old age group. I do know some cost-effective programs like Kaiser. If they've identified a lower prevalence, they actually don't worry about the HEDIS measure because it is something you have to report on that you can explain why you're only going up to age 19 or 20.

Some places have lowered their threshold down to the teenage group and I don't know of any setting in the United States where the prevalence of Chlamydia has been found to be less than three percent in teenagers who are sexually active. That's the HEDIS question.

Then again, except for the pregnant woman where we have been traditionally been recommending test of cure mainly because we did not know how effective Azithromycin was at the time. It was a recommended regimen in the treatment guidelines mainly because of lack of data not because we didn't think it didn't work so to be conservative in the pregnant woman there was a recommended test to cure one month after treatment. Also we know Amoxicillin which is now been downgraded to an alternative regiment for treatment of Chlamydia and pregnancy was inferior to other medicines we've used in the non-pregnant female. That was the reason for test to cure to make sure that we would pick up those 15% treatment failures with Amoxicillin.

In general, we now recommend that anyone with Chlamydia male or female be retested at three months. If there's some reason you need to retest earlier, we really don't recommend getting in that prior in the interval between treatment and a repeat mat test. You should wait at least three to four weeks because earlier than that, you can pick up dead D.N.A. that will make your test be falsely positive.

If you've got a situation where you really are concerned about persistent infection and need to test earlier then you've got to find a lab that can do Chlamydia culture which obviously is technically complicated, expensive and many labs have moved away from offering that test technology. Those are my comments.
Picheska: Great. Thank you very much, Doctor Bolan. That was very informative.

The next question is, "All examples and tools have focused on female. Is it because the screening guidelines are only for women? Can these be applied to males and is there a positivity rate recommendation for males?"

Charlie: I can take a stab at that and Sarah, you can jump in.

Yeah. The Toolkit was really designed under national screening recommendations which there are national screening recommendations for woman for Chlamydia and that's 25 and under but there shouldn't be a reason why you shouldn't apply these tools for males. You would want to modify it based on if your agency or clinic did institute some types of screening protocols for screening males but yeah, we've looked at some Cardea, some Region 10 data where we have found positivity be quite high among males. Yeah.

Sarah, you want to add anything to that?

Sarah: Yeah, I think that's a great response and a really fabulous question. Yeah, I think we went back and forth on this in the writing of the Toolkit and decided given the history of the ITP and the focus there primarily on young woman but that wouldn't be the framework and focus for the Toolkit but as Charlie said, all of these procedures are absolutely applicable to males or any other population that you're interested in.

As Charlie said, we've been spending quite a bit of time recently looking at some of our male data and just trying to look at what does the positivity look like relative to older woman for example. What does positivity in screening coverage among young men look like against women who are in that over 26 age range?

I think one thing to keep in mind is that it can be a little more challenging to look at your male data when you don't have universal screening recommendations for males. If you've been screening primarily partners or exposed males or people who you may have a reason to expect that they're positive, then of course that can increase your positivity so you do need to take that into consideration.

If that's something you're interested, I don't think we have specific resources about males in the Toolkit but if you send us an email, we'd be happy to share a couple of the presentations that we've done recently where we looked at our male data as an example.
Picheska: Great. Thank you, Sarah. Next, I have ...

Gail: This is Gail. Could I chime in again about the male screening issues? This is obviously a question that we get at CDC a lot because intuitively, it seems that screening women, why aren't we screening men since maybe the woman are getting infected from men? There actually is a male screening consultation we had a number of years ago that the document is on our web site. The challenge of screening men is the cost of the complications of Chlamydia really in the reproductive health of the female. Unless you're screening the sexual network of the men and women, you could screen a lot of men and screen a lot of woman and not reduce any Chlamydia in woman or the reproductive health complications.

There was a number thrown out at one point of maybe you need a prevalence of six percent in young men to be cost effective. That still is in question. At the moment our guidelines are including U.S. for Men's Services Taskforce is you should target male screening in clinic with high prevalence in men or boys such as adolescent clinics, STD clinics or corrections.

Certainly, our main strategy to identify infection in men is through partner services and that we really focus on the index case or the index infection in the female and really make an effort to find their partners, get their partners tested, obviously if they're positive then find other partners but also make sure that the partner gets treated as quickly as possible through a variety of partner services options that people now have between B.Y.O.P., bring in your own partner to the clinic setting at the time the woman's getting evaluated or E.P.T., expedited partner therapy.

That's our male screening issues.

Karen: Thank you Doctor Bolan.

Sarah: Yeah, thank you. I guess the one other thing I would just add to that is in terms of the strategies that we have provided in the Toolkit, you could use it to look ... There are screening recommendations around M.S.M. for example. You could use these same procedures to look at screening for Chlamydia and Gonorrhea online at MSM or screening for Hep C among HIV infected M.S.M. and there's all sorts of different applications of these same techniques.

Karen: Great. The next one I have a combination of a comment as well as a question. This participant said, "Positivity is based on tests and not patient so basically a
patient can be tested numerous times and be included in the positivity rate. For example, we have several patient which have positive more than three times a year, which then increases our positivity rate, so should this be standardized to some degree?" In this participants particular situation, they allow retesting if it has been greater than 30 days since the last test but in some states, they may allow retesting at two weeks or different time points.

Sarah: I think as we discussed with the last question, two weeks is that early for retesting, if you’re doing that this testing as Doctor Bolan pointed out, you really don’t want to do that any earlier than three weeks minimum. I think the issue of people coming back in and being reinfected that frequently is definitely an issue to be aware of. I think it's great that you clearly are aware of it and are tracking that.

Yeah, I guess when you're comparing positivity factors across different agencies with different practices and certainly different client mixes, it's really helpful to have that context and know that that may be one of the reasons that your positivity is so much higher. It's also a reason why potentially in your case looking at both positivity and prevalence could be helpful for your agency to get a sense of how many people are getting infected versus how many people are getting multiple infections. Then, I would definitely recommend taking a look at some of the resources that Holly Howard and her group have put together around not only calculating retesting rates but actually intervening to try to improve retesting and doing some counseling with patient.

Karen: Great. We have one last question. It says, "what about the number of false positive tests when universal screening is implemented in a low prevalence setting? How have those affected clinic costs?"

Charlie: I can take first part of that. I think that's generally what the idea of the Toolkit is for because you're essentially wasting money with those false positives if you're in a low prevalence setting, my opinion. What you need to do is probably take a look at what your universal screening criteria is. Is it universal for everyone who comes into the clinic or is it universal by the national recommendations of 25 and under.

Then, if it is universal and on the national recommendations, then you would want to stratify. If you notice that, there's a discrepancy like in some of the examples where positivity was different by screening coverage and by the type
of visit, then you would want to allocate the resources for testing to a different population. That's just a quick answer on my part.

Sarah: Yeah. Can I-

Charlie: It's just more positive.

Sarah: Can I add one more thing?

Charlie: Yeah. Go for it.

Sarah: Yeah. I think the first thing I would ask is to make sure that you're using the latest and greatest test technologies. If you're using vaginal swabs for women, the sensitivity and specificity of those tests are really, really good and you think the false positives rate is under one percent. Urine based testing is a little bit less specific, I think, which can be an issue for men but generally, you would have to be in a really, really, really low prevalence setting for this to be much of an issue for you. I hear this concern a lot. I think it's overblown, actually.

Then, the other thing that Charlie raised and that you raised in the question, just referencing universal screening, we didn't mention in this presentation. I think we do in the Toolkit that screening recommendations do vary from clinic type to clinic type. There are certain clinic types like STD clinic and detention settings where universal screening is recommended because the positivity is so high.

Karen: Great. We have a few more minutes for questions. I highly encourage our participants to ask any content related questions at this time. While we give another 30 seconds or so for questions that come in, I would just like to remind everyone that you can access the Toolkit as well as the interactive tools that Sarah have showing you today and Cardea's website, Cardeaservices.org/pmtoolkit.

I would also like to encourage everyone to visit Cardea's website and join our online learning community. There are many valuable resources that we have posted on both of these platforms and also the online learning community will give you an opportunity to network with your colleagues and discuss not just prevalence monitoring but also other STDRH related topics. If you have any questions that you would like to get in touch with someone directly, Charlie has graciously shared his email with us.

We got another question.
Charlie: Send me an email. Oh, good!

Karen: Great. It says, "How often do you suggest performing prevalence monitoring for program? Yearly, quarterly, et cetera." I think that's a great question, guys.

Charlie: Well, I think it depends on the program and what the purpose of the data you want to do with it, right? It's performance problematic. If so, you might want to do regular prevalence monitoring quarterly and how soon can you get the data? Sometimes it's a lot more difficult getting data out of administrative systems than it would seem to be. That's a short answer on my part.

Sarah, do you have any other things?

Sarah: I would agree with you, Charlie. I think that prevalence monitoring should really be built into ongoing processes as possible. Some of the tools that we've included, particularly the graphing tools can be something that you update on a monthly basis. Then, the frequency with which you convene your staff to actually look at those data and think about what changes you want to make, that's up to you but I think a lot of these measures are calculated on an annual basis and so it can be easiest to think about how to imply them annually but that doesn't mean that you need to wait until next year to get started.

Karen: Great. Thank you, Charlie. Is there another reminder? There are no CEs for this presentation. However, we are offering a certificate of participation if you complete an evaluation.

Is there any more questions? That give me the perfect segue into the evaluation, please, please, please complete the online evaluation for this webinar as your feedback is very important to us at Cardea.

If you stay on this window that you will see now, you can complete the evaluation by clicking the Submit button or if you close up the webinar window, you will automatically be redirected to the evaluation.

Also, if several people are viewing the webinar on the same computer, please repeat the evaluation for each person. Like I said, we do want feedback from as many participants as we can.

On behalf of the Cardea STDRHTTAC prevalence monitoring team, thank you all so much for your participation. We hope you have a wonderful rest of your day.