Implementing an Evidence-Based Vision Screening Program-Tools and Tips for all Ages!

Kelly Towey: Hello and welcome. Thank you for joining us today for our webinar, "Implementing an Evidence-Based Vision Screening Program -- Tools and Tips for All Ages!" This webinar is sponsored by the Office of Head Start National Center on Health and the National Center for Children's Vision and Eye Health at Prevent Blindness.

My name is Kelly Towey and I'm a consultant for the National Center on Health. Before we begin today's webinar, I'd like to highlight a few housekeeping items. First, if you're using wi-fi and are not hard-wired, you may experience greater lag time during the presentation. The slides will advance automatically throughout the presentation and attendees will not have control over the slides. All attendee lines are muted, but if you have a question, we encourage you to type it in the "Ask a Question" box on your screen. If time permits, there will be a short question and answer session at the end of the webinar.

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Please note that after the webinar you'll be directed to an online evaluation. Please take some time to share your feedback on today's webinar. Only participants who complete the evaluation will receive a certificate of participation. If you're watching as a group, the person who logged into the webinar will receive an email with a link to the survey. Please share this link with the rest of your group so that they can complete the evaluation to receive their certificate, too.

If you need technical assistance during the webinar, please type your question in the "Ask a Question" box and our technical staff will assist you. At this point, I'll turn the webinar over to Kira Baldonado from Prevent Blindness.

Kira Baldonado: Thank you, Kelly, and thank you everyone out there for participating in the webinar today. We're pleased to be here with you today to talk about four key objectives. We're going to share with you some information about common vision disorders in children. We're going to talk a little bit today about key vision developmental milestones that you should be seeing in the first year of a child's life. We're going to talk about two evidence-based approaches to screening the vision of preschool-aged children. And then finally we're going to wrap up today by describing resources at Head Start that's going to support your Head Start and Early Head Start programs and improving your vision health program.

With us today to present is Dr. Kay Nottingham Chaplin, and we'll just give a brief bio for Kay. Dr. Chaplin is a member of the Advisory Committee for the National Center for Children's Vision and Eye Health which is at Prevent Blindness. In her work experience, she's helped Dr. Geoffrey Bradford who is a pediatric ophthalmologist at West Virginia University Institute to create the Vision Initiative for Children program that trains and equips individuals to screen the vision of preschoolers. Dr. Chaplin has extensive experience with training and certification in vision screeners. She's conducted over 178 workshops and trained more than 1,600 individuals in vision screening which includes Head Start staff members to screen the vision in preschoolers. While working at West Virginia University, she also consulted about preschool vision screening for the Good-Lite company and since that time has continued to work for Good-Lite company and also serves as a Director of Vision and Eye Health Initiative at School Health Corporation.

Dr. Chaplin is a member of the West Virginia School Based Health Assemblies, School Health and Medical Service Team, and she also assists West Virginia Alliance Clubs in developing their statewide vision screening program. As a hobby, she studies eye chart history and design and is currently the Vision Eye Health Initiative's director for Good-Lite and School Health.

Also speaking today is myself, and I am Kira Baldonado. I am Director for the National Center for Children's Vision and Eye Health which is located at Prevent Blindness, and our national center is a partner organization in the Year of Children's Vision Initiative along with the American Association of Pediatric Ophthalmology and Strabismus, the American Optometric Academy of Optometry and also School Health and Good-Lite, and together we are working to provide new approaches, resources, and educational opportunities for Head Start and Early Head Start staff as they work to improve their vision health programs.

And we're pleased just to -- Dr. Chaplin and I are pleased to be able to be here with you today to talk a little bit about how healthy vision in children can contribute to improve school readiness, ability to learn, a child's self-esteem and confidence, athletic ability, and improved behavior. And your participation in the webinar today shows that you do truly care about having a strong vision health program. So, we hope that the information we provide will help you in that role. So, at this point in time, I'm going to turn it over to Dr. Chaplin to talk more about today's information.

Dr. Kay Chaplin: Okay, thanks, Kira. Hi, everybody. Thanks for joining us. And I'm going to go through this rather quickly because I have a lot of information to share with you. So, if you have questions, we will answer them, and I think you will have the opportunity to see this later.

So, I like stories, so I wanted to share with you; this is a story from a parent in West Virginia about the impact of learning that the child had after receiving prescription glasses. So, this child failed his vision screening. A subsequent eye exam indicated that he required prescription glasses, and according to mama, those glasses made an incredible difference in his life.

Previously, he would not sit still for reading time. Now, he sits in his mama's lap while she reads a book from start to finish. She said he would run around the room instead of watching TV with his brother, which was frustrating to his brother, but now he watches cartoons with his brother without running around the room.

And she said that at age four, he is achieving greater success at his daycare. Before the vision screening and the eyeglasses, he was up and moving during circle time. He was kind of a loner before. He would get bored, but now he sits and participates in group activities. So, you can see how this does have an impact on learning. So, there are four objectives. I'm going to start out with two common vision disorders in young children. And, okay, here we go.

Amblyopia, which is also known as lazy eye, and I will give an explanation or a definition of that in the next slide or two, but this is a common vision disorder in young children. Strabismus also called lazy eye, but that is where the eyes cross or drift, even when the child is tired, and here's an example at the bottom. Uncorrected abnormal refractive errors, and abnormal meaning to the degree that prescription glasses are needed.

So, we're talking about myopia, nearsightedness; hyperopia, farsightedness; astigmatism; anisometropia, which may or may not be a new term for you, but that is a difference of refraction of the eyes. For example, I am nearsighted in one eye, farsighted in the other. And early detection is very, very critical for preventing permanent vision impairment. And many times, many times and probably the majority of times parents are completely unaware that their child has a vision disorder because Johnny is not going to come up to mama and hold one hand over an eye and say, "Oh, mama, I think I might be 20/50 in this eye and 20/32 in this eye, and I need an eye exam." So, that is not going to happen.

What happens usually is one eye will compensate for the other eye and the child just thinks however he or she is seeing the world is how everybody else sees the world. Again, children are unaware. So, parents and children are typically unaware. Unless it's an eye that crosses all the time, most of the time vision impairments are silent, if you will. It's not something like a boo-boo that needs a Band-Aid.

So, here's an example: David did not pass his kindergarten vision screening, and afterwards, when his mother asked why he did not tell her that he had problems seeing, his response was, "I didn't know." Now he can see more clearly and he loves his new blue glasses and blue case. So, amblyopia defined.

Amblyopia, again called lazy eye, is a brain issue defined as loss of vision when the nerve cells in the visual part of the brain -- here's an example, the picture. You can see the optic nerve, another part of the visual pathway, and the primary visual cortex. So, the nerve cells in the visual part of the brain are not receiving sufficient use while the sense of sight is developing. Amblyopia can be the result of uncorrected refractive errors. It can be the result of strabismus or crossed eyes. It can be something blocking the vision, such as cataract. And early detection and treatment, preferably before age five years, will improve the likelihood that that vision can be restored to normal if not at least as much better than what it is.

So -- ooh, happy -- here we go. Y'all bear with me because sometimes I get a little crazy here with the next button.

So, uncorrected refractive errors, hyperopia, farsightedness, that's difficult -- and most of you guys may know this already, so treat this as a refresher. So, difficulty seeing objects up close. Here's an example. Myopia, nearsightedness, difficulty seeing objects far away. Here is an example. Astigmatism, and astigmatism will affect both near and distance, so it could be like this example. And then again anisometropia, the difference between the two eyes. So, strabismus, here's an example. Misaligned eyes, another example. Uncorrected refractive errors and strabismus can lead to amblyopia and it needs to be detected and treated early in a child's life for the best outcomes.

So, importance of detecting amblyopia early is to prepare children for kindergarten and learning and to prevent permanent vision impairment and also to impact vision disorders as the child grows into older adulthood and develops older adults' vision disorders.

So, now we're going to talk about four key vision developmental milestones, during the first year of a child's life. So, the first key vision milestone occurs around eight weeks, by six weeks, no later than eight weeks, and this will be a primary interest for anybody on here who works with young children like Early Head Start. So, what you want to look at here is eye contact. And you can see in this photo we have really good eye contact, excellent eye contact in the second photo.

So, you want to know: Does the infant have good eye contact with parents? When the two are looking at each other, is the baby looking at the parent? And some of these milestones you will already be looking at in terms of just overall development, but what I would like you to do is to look at these in relationship to vision. So, not just overall development but in relationship to vision.

And so does the infant already copy facial expressions? Now, you can see in the picture on the bottom right-hand side that mama is pursing her lips there and the baby is responding. So we're copying facial expressions. Here is another example of great contact. Here is excellent contact. Look how that baby is smiling. So, eye contact with parents is essential to developing bonding and communication.

And again, this is something you know, but I want you to please think about it from the perspective of vision. Lack of eye contact can interfere with early emotional and general development. Early intervention should begin immediately if you're not seeing good eye contact. And you also would want to help parents receive assistance in helping the infant develop communication through all the senses if vision is becoming a problem or you think that vision is a problem, so the infant should receive an eye exam from an eye doctor without delay if you don't see good eye contact.

If you could advance the first -

[Video playing in foreign language]

Dr. Chaplin: If you noticed in that video, no matter what mama was doing, the baby would not have direct eye contact with mama. Now, watch what happens after some special glasses are placed on the child. If you will advance --

[Video begins] [Women speaking in a foreign language]

[Video ends]

Dr. Chaplin: So, normally when I show that, at the conclusion of that video, I would get an "aww" or some wonderful reaction from the group, because when that baby locks on mama and can see mama, what a difference.

So, now let's talk about the vision milestone at age 12 weeks, and this is enjoyable visual interaction. So here we can see in the bottom photo that the interaction appears incredibly enjoyable. So, what you want to know is: Does the infant have a social smile? And as you can tell on this one, baby definitely has a social smile and is very happy. When the parent smiles at the infant, does the infant respond with a smile? Does the baby show interest in objects hanging over the crib such as these little animals, the bugs? So, here you can see this baby is very happy. So, a social smile means the brain is maturing, the infant can see short distances, and the infant is making sense of an object. That social smile boosts bonding and is one of the cornerstones of communication between infant and parent.

So, vision milestone at age three to four months, awareness of and exploration of the hands. Here's an example, hands at midline, baby exploring this object with hands. So, what you want to know is does the infant watch her hands? Does the infant bring his hands to midline and to his mouth? And you want to know: Does the infant hit toys hanging above her? So, here's an example, this infant exploring a necklace. Awareness of hands leads to exploring the hands with the mouth, which leads to using the hands to explore the world, and exploration with hands gives concrete information about abstract objects, including size, form, surface quality, and weight. And that concrete information about an abstract object will be stored in the infant's brain to combine with the visual concept of each object.

So, the vision milestone at age five to six months is watching and copying goal-directed reach and learning to copy motor functions. So, in this photo, you can use this as an example of what you would be looking for. So, does the infant watch other children playing? And you can see the infant -- or the child on the left-hand side of the photo watching the baby playing with that object in water. Does the infant reach for and grasp objects? Does the infant look at the object when reaching? And are the infant's eyes straight? So, reaching for a desired object leads to goal-directed behavior and shows desire, shows interest, and shows curiosity, all three of which are critical elements for learning. If the infant is not reaching for objects, maybe the infant cannot see the objects. So, again, looking at a developmental milestone from the perspective of vision, is the child not reaching? Well, maybe it's not motor.

Maybe, the child can't see what the child should be reaching for. So, if the eyes appear to intermittently turn in or out or up or down at age six months, recommend that the infant have an eye exam from an eye doctor. So, you should not be seeing this intermittent turning, after age six months.

So now let's talk about two approaches to screening vision of preschool-aged children. So, we have optotype-based screening, which you may -- the optotype is the name of the picture, the letter, or the number that you're asking children to identify. Optotype is actually a Herman Snellen term from the Snellen eye chart which was introduced in 1862. Remember, Kira said I do eye chart history as a hobby, because I need a life. So, anyway, this might be what you think about for optotype-based screening. So, it could be an eye chart.

The second approach would be instrument-based screening. This is an example of the Spot. This is an example of the Plusoptix. So, eye charts or tests of visual acuity measure visual acuity, and that is the clarity of vision when identifying an optotype, or the picture, letter, or number at a prescribed distance. It will give you information about refractive errors and anything that might be going on along the visual pathway. Instruments will not measure visual acuity, and that's an incredibly important distinction and one that I find that many screeners in this field find confusing because they'll say, "Well, it's doing near or it's doing distance." Well, it's looking at refraction, but it's not looking at visual acuity. So, very clear distinction.

Instruments do not measure visual acuity. Instruments measure amblyopia or amblyogenic risk factors such as significant refractive error, anisometropia, eye misalignment, cataract, and some of them will also give you some information about pupil size or anisomic -- anisical -- I can't even pronounce that right now. Pupil size, let's go with pupil size.

So, anyway, getting back to optotype-based screening, the National Expert Panel – and you guys need to pay attention to this. Based on what I see out in the field of the different tests of visual acuity being used, the National Expert Panel to the National Center for Children's Vision and Eye Health at Prevent Blindness states the following charts are unacceptable for screening vision of children ages 36 to 72 months or three through five years or three to six years.

So, unacceptable charts include Allen figures. Here's an example on the left top line. The sailboat chart; there's an example. The Landolt C; there's an example. Lighthouse; there's an example. It's also known as "house apple" or "umbrella." Tumbling E; there's an example. And Snellen.

The reason that these charts are considered unacceptable -- there's actually more than one reason, but these eye charts do not adhere to national and international guidelines around how eye charts should be designed in order to be standardized, and although the C, the Landolt C does meet those guidelines, asking a child to give orientation and direction, as you would do with the C or the E chart, is an emergent cognitive skill that doesn't come in, until around ages 8 or 10. Up and down comes in first followed by left and right. So, at the age group that we're talking about, you're actually testing cognition and not vision.

So, these eye charts are unacceptable. So, you're probably saying, "Okay," or asking yourself, "Okay, what is acceptable?" So, the preferred optotypes for preschoolers, according to the National Expert Panel for the National Center for Children's Vision and Eye Health at Prevent Blindness, the American Academy of Ophthalmology, Pediatric Ophthalmology and Strabismus Panel, and the American Association for Pediatric Ophthalmology and Strabismus, recommend LEA symbols, there's an example, and HOTV letters as optotypes, so those are the preferred optotypes for preschoolers.

Now, the best practice, according to the National Expert Panel to the National Center, would be a single -- and APOS also recommends this. You can see down at the bottom in the citations. So, these come from both groups. So, a single LEA symbol or HOTV letter surrounded with bars, not a single letter by itself, or symbol, but surrounded with bars for children ages three to six years at five feet would be the best practice. Now, the best practice designation comes from the National Expert Panel. So, again, a single LEA symbol or HOTV letter surrounded with bars, at five feet is considered best practice for children ages three to six years.

And this is an example. This is the Vision in Preschoolers test. I don't know if you can see the optotype, but in the square, you will see -- and it's like a round circle that turns, but you will see the optotype surrounded by crowding bars, and that will give you, in essence, the same crowding as you would have in a full eye chart of a line of optotypes. So, that's an example.

Eye Check is another example, and Eye Spy 20/20, which is screening software for a computer or laptop, all of those have the single optotypes with the bars. Now, acceptable practice would be LEA symbol or HOTV letter optotypes surrounded with a crowding box or a rectangle at 10 feet. And here's an example of LEA symbols. Here's an example of HOTV letters. They come in both critical line and full threshold charts. Difference is critical line just has the line that that child needs to pass according to that child's age, and threshold is where you start at the top, take them down a chart or lines, box lines, until they can no longer identify the majority of optotypes.

So, let's talk now about occlusion. Young children usually ages 10 years and younger, but definitely in the age group that we're talking about are likely to attempt peeking, such as this, when you're covering their better-seeing eye. They're not being -- it's not a behavior issue. It's just they don't like the idea of you covering up the eye with the best vision to see their world.

So, the occluders for children ages three through five years, the best practice would be an example of an eye patch, and this also comes from APOS, or the American Association for Pediatric Ophthalmology and Strabismus, as well as the National Expert Panel to the National Center for Children's Vision and Eye Health at Prevent Blindness. See how many times I can say that fast.

So, anyway, best practice would be adhesive eye patches, acceptable practice, or if children will not tolerate the eye patch would be a specially made occluder glasses where one eye is open, the other is occluded.

Set it to one for each eye. So, unacceptable. Unacceptable occluders, according to the National Expert Panel, for children ages three to six years of age would be hand, and I know you guys are going, "Oh, no, we've been doing this wrong," or some of you may be, but hands are unacceptable. Tissues, unacceptable. Paper cups, uh-oh, unacceptable. And cover paddles, and that's like the lollipop occluders that looks like a lollipop, or the Mardi Gras mask which covers one eye at a time, and I'm not sure if I have examples, but these are all unacceptable. And why are they unacceptable? Because children can easily peek around these.

If the hand, if you're using a hand, they can look through the slits of the fingers and you can see full eye charts, full bodies, and also because that's making the image smaller, it makes it easier to identify, and you won't have a true visual acuity, so children can peek. So, hands, tissues, paper cups, cover paddles, unacceptable. There you go.

So, in this one, is this okay or not okay? It's actually not okay. Oh, no, we guessed it incorrectly, or maybe you did guess it correctly. It is not okay because this is a paper occluder. The child can turn that head just the tiniest, tiniest bit and see around the occluder. The lady holding the occlude is behind the child, has no idea if that child is peeking or not, so that would actually not be okay.

So, now let's talk about pointing at optotypes or pointing at the number, the letter, the symbol that you're wanting the child to identify. So, pointing to each optotype to help children know where they are on the chart is permissible, and here's an example. True or false?

Some of you may be giving both answers. The actual answer is false. Oh, no. The World Health Organization, not Kay, the World Health Organization says that line by line isolation or pointing line by line is okay, but not letter by letter or optotype by optotype. So, what are you going to do when you need to help a three-year-old know which optotype to identify? You can hold your pointer at the optotype -- whoops. Back up. I got ahead of myself.

Why do we not point? Holding the pointer at the optotype makes the optotype easier to identify. And I want you guys to try this when you're not at this webinar and you have an eye chart in front of you. Have someone hold their finger beneath an optotype, keep the finger there, watch what your eyes do. Your eyes zero in on the optotype and you kind of ignore the surrounding optotypes. Makes it easier to identify and you might miss amblyopia. Then try pointing briefly at the optotype, removing the pointer and watch what your eyes do. They sort of zero in, spread back out, and makes it a little more difficult to identify, and I know that sounds counterintuitive, but you don't want to miss picking up amblyopia.

So, what you can do is briefly point under or over top of the optotype and quickly remove that pointer. If you're using an eye chart such as this picture on the bottom which has a box around the optotypes, stay outside the optotype. Don't block -- excuse me, don't break the box with the pointer. Sometimes people use these little individual cards that will come with LEA symbols as a way to screen vision. Don't do that.

What happens there is you don't -- it's just incorrect because if you're showing a single optotype, and I have two studies at the bottom as an example, the visual acuity results on average will be three lines worse when you are looking at a chart with full lines versus single non-crowded optotypes. These are non-crowded, but they don't have the lines around them.

So, what does that mean? That means that you might have 20/32 with a single isolated optotype, meaning no crowding bars, but you'll have 20/80 on a line chart. Huge, huge difference. So, you don't want to do this. Now, if you're screening kids with disabilities, that's something entirely different, but this is not the topic for this moment.

So, let's talk about referral criteria. And if someone wants to post that question, we can always answer that when we do the answers to the questions today. So, referral criteria, when do you refer? The National Center for Children's Vision and Eye Health at Prevent Blindness say that children should be referred if they cannot see the majority of optotypes on the 20/50 line at age three years, on the 20/40 line at ages four and five. And so, in looking at these guidelines, that would mean the age of six years and older needs to be able to see the 20/32 line. APOS has different referral criteria, and that would be at age three children need to see the majority of 20/50, and at age four, they need to see the majority of optotypes on the 20/40 line, and at five and older, 20/32. And we can answer any questions you have about that should that come up.

So, next thing I want to talk about is untestable children, those children who could not complete vision screening. Don't lose track of those kids. Make sure you do screen their vision. The Vision in Preschoolers study, you can see it as a top citation in the bottom, which was a benchmark study for children in this age group, found that children who were untestable were twice as likely to have a vision problem than those who passed vision screening. So you want to keep track of those kids. If possible, try to re-screen the same day. If you cannot re-screen the same day and you think that child may perform better on a different day, consider re-screening the child within six months. So, six months for re-screening.

Stereoacuity, and this is when you're looking at how well both eyes work together, and it can help pick up strabismus or missed aligned -- misaligned eyes. I think I said that incorrectly. Stereoacuity is not a recommendation. [Clears throat] Excuse me. It is not a recommendation, but if you're mandated to do stereoacuity, the National Expert Panel recommends this PASS test 2, not 1 or 3, but 2 as a stereoacuity test to use if you're mandated to do stereoacuity screening.

So, let's talk about some additional unacceptable practices for children ages three through five years, according to the National Expert Panel to the National Center, and these are published guidelines. So, red -- you guys in Early Head Start, this would be for you. Red reflex testing for media opacity detection, cover testing for eye misalignment should be conducted only by health care personnel who are professionally trained to perform and interpret the tests.

So, other unacceptable practices, 20-foot testing distance because shorter distances help to maintain a child's attention with fewer distractions, near cards, screening less than five feet, screening with both eyes open. You always want to screen one eye at a time. And vision testing machines that optically simulate distance vision, such as those used at motor vehicle testing centers. These are all considered unacceptable practices.

Now, we're going to talk quickly about instruments, instrument-based screening. Again, instruments do not measure visual acuity, and I'm looking at the bottom -- at the bullets near the bottom here. Instruments measure amblyopia risk factors, such as significant refractive error, anisometropia, the difference between the two eyes. One may be near; one may be far.

Eye misalignment, cataract, anisom -- anisocoria, got it out that time, and that's pupil size difference. I need to advance. Okay, can you advance my slide, please? I seem to be stuck. There we go. Thank you. So, the instruments I'm going to be talking about are four, and these are just examples, but the Welch Allyn SureSight which screens one eye at a time is considered best practice by the National Center for Children's Vision and Eye Health. Retinomax is considered best practice.

Welch Allyn Spot Vision Screener is considered acceptable practice. And the Plusoptix is considered acceptable. Now, what this means, the difference between acceptable and best practice, or at least one difference is maybe the amount of published data, the amount was not as significant as for those in best practice. That does not mean that those instruments do not perform as well as or even better than. It's just looking at the available data at that time. So, Welch Allyn Retinomax, best practice, Welch Allyn SureSight. The Welch Allyn Spot and the Plusoptix, it's acceptable practice.

Difference between the Spot and the Plusoptix when compared with the SureSight, SureSight screens one eye at a time and the Spot and the Plusoptix will screen both eyes at a time, give you a written report that will quickly tell you whether the child passed, did not pass, or should be referred. Now, a caveat here is that when the Plusoptix and the Spot devices are used outside of an eye care setting, consultation with a pediatric eye care professional is recommended about the best cutoff to use as referral criteria for that particular age group. So, in other words, have a conversation with an eye care professional about the best referral criteria to use until we have evidence-based referral criteria, which we don't have at this moment on a national level.

So, instruments require minimal response or interaction. You just hold the instrument. The child needs to just watch the front of the instrument. Current recommendations, this comes out of a policy statement from the American Academy of Pediatrics Section on Ophthalmology, American Academy of Ophthalmology, APOS, American Association of Certified Orthoptists. This is saying that instruments -- and this is for medical practices, not necessarily mass screening, but it does inform the field.

So, preverbal children, preliterate children, children ages six months to three years, instruments would be good with those children; three to five years, instruments or optotypes; five years and above, optotypes. Instrument-based screening, most experts believe that you cannot convert an instrument measurement to visual acuity.

If you are using instruments as your primary vision screening tool, it's good to have a test of visual acuity as a backup in case you forgot to charge the battery, your device malfunctions, or you cannot achieve a reading. Not all children can be screened with a device, but most of them can, but the VIP study found that children who could not participate with an instrument could usually always participate with a test of visual acuity and vice versa. So, now I'm going to turn it back to Kira to discuss three resources. And, Kira, I apologize if I took too much time. And you're on. Thank you. Thanks, everybody.

Kira: Thank you, Dr. Chaplin. Go ahead and take a deep breath and a drink of water.

Dr. Chaplin: Okay, that was quick. Thanks, guys.

Kira: Thank you. So, yeah, I just want to talk about some resources that are available either through partnerships such as the Year of Children's Vision, collaborative writing efforts or resources that are available out there that the center has had a hand in developing, because there is a lot of presentation given to you today, and I know there's a lot of questions out there about what exactly is the right tool and device, and unless you're a very fast writer, you may not have captured all the information from today.

So, the good news is there are a lot of great resources out there that can help you keep track of this kind of information and reference back to it as you look to make some changes in your vision health program. And before we go on to the next slide, I do want to just point out to those of you that receive the Child Care Exchange magazine, in the May/June 2014 issue, we did have an article in there featuring Dr. Chaplin and Dr. Ramsey, who's also been on these webinars, and myself as well as several guest authors contributed to an article that combines a lot of this information you're hearing today and gives a little more information around children who may need a direct referral to an eye care provider.

So, if you do receive that magazine or can reference it online, that would be the May/June issue of Child Care Exchange, had that article in it. So, the first resource that I want to talk to you about is a new e-book that Dr. Chaplin, Dr. Wendy Marsh-Tootle, and Dr. Geoff Bradford all were the lead authors in developing this e-book called Navigating the Path of Children's Vision Screening: Visual Acuity, Instruments, and Occluders. And if those three subtopics sound familiar to today's webinars, you can guess that this resource does have a lot of that same information you heard today, and we'll give you an opportunity to go back and see what are going to be the right charts, tests of visual acuity, optotypes, instruments, or occluder practices that you may want to consider for vision screening in your preschool-aged children.

So, this is a new resource and it's available at that web link featured down there on the slide. So, I'm kind of talking so you have a chance to jot that down, but also we'll have this link in the webinar slides as they're posted online. And so you have a chance to go back and read through this information a little more in-depth with each of the topics and have resources to go back and find out more information with. And this was a resource developed by national experts, as mentioned, and has some of the latest information possible.

Another resource that you may or may not be familiar with is a system called the 12 Components of a Strong Vision Health System of Care. On the website address listed there, this was an outcome of the Year of Children's Vision Collaborative. The groups that I mentioned at the beginning of the webinar, they came together to talk about what are the key components of a vision health system of care.

Going beyond just the vision screening, what needs to be considered for a child's sight, from parent education, provider engagement, program evaluation, cultural competency and literacy. There's a lot more to making sure a child's vision is healthy than just doing a good screening. So the article that's mentioned there, the top greenish-colored square with the children is available at the website. And then also a coordinating evaluation document goes with it. You see that picture below at sort of the angle.

This document allows you to go through each of those 12 components, considering your own vision health system, answering some easy yes or no questions, and then you're taking all of those nos and combining them at the end to create a plan of action that you want to work with for your own vision health program to make improvements over time. So, it's a great way to have that annual evaluation for what you're doing for children's vision. And then also there's oftentimes Head Start or Early Head Start programs really want to do a better job of engaging parents in follow-up. That's always been one of the issues that's popped up as we discuss some issues on that follow-up to eye care, following a failed vision screening, is parent engagement.

So, the National Center for Children's Vision and Eye Health worked with the National Center for Family Professional Partnership, NCFPP, to develop some resources that organizations can use to help parent engagement. So, there are some sample newsletter articles there, social media messages, those of you that may have Facebook or Twitter or some kind of regular Listserv contact with parents and you want to integrate messages, those sample messages already written out there. There's also some web buttons that can be added to websites or posters such as you see down there in the bottom right that can be used by your program. Same for all great resources that are already approved through national experts and designed, an easy way for you guys to integrate things into your existing educational and communication outreach methods to help parents understand what the role of vision is in a child's overall learning and development. And, again, those are available at the web address listed there on your screen. So, I think I stuck to my proposed time limit so that we have a little bit of time for questions and answers. So, I'll go ahead and open that up now.

Kelly: Okay, thank you, Dr. Chaplin and Kira, for sharing all this valuable information. We do have a number of questions. One is: How can Early Head Start and Head Start program staff help to ensure follow-up eye exams occur?

Kira: I'll talk a little bit about that, and then, Dr. Chaplin, if you want to add anything, please jump in. So, there are a lot of reasons that families may not be able to follow up with an eye exam, and so there's a lot of steps, and many of these are integrated into that 12 Component Evaluation document, that programs can take to help ensure that that barrier doesn't exist. It may be one of cultural issues, that perhaps a culture that doesn't have trust in a health care system or has fear of engagement for some reason or another. It may be income issues; they don't feel that they have the income or the insurance coverage to pay for an eye exam.

And there may be a need for understanding what their coverage does provide related to children's vision especially now with the Affordable Care Act having a vision component integrated as one of the essential benefits. In most states, that does mean an annual eye exam and access to eyeglasses for participants in those ACA programs. So, there is an opportunity for education along those lines.

Also oftentimes it's just sometimes parents and families just need some peer support to help understand what the referral outcomes are, getting to the appointment, helping the family watch other kids so they can take the child that needs the eye exam to the appointment. So, oftentimes those peer systems that Head Start may have as a part of their program, whether it's a Health Advisory Committee or a parent health program, maybe consider adding a vision component to those to help promote families following up on those eye exams. Dr. Chaplin, did you have any other recommendations?

Dr. Chaplin: Those are great recommendations, Kira, and the only thing that I would mention would be, when you talked about culture, would be looking at the culture around wearing glasses. Maybe the parent is afraid the child may be put into prescription glasses, and some families think that if their child is wearing glasses, that reflects poorly on the parents, or their child may be seen as less-than. So sometimes understanding maybe the parent perspective of wearing glasses might be helpful. I'm ready for the next question. I hope that helped.

Kelly: Okay. And our next question is, it says: I am new to Head Start and to vision screening. Can you briefly explain what exactly 20/40 and 20/50 means?

Dr. Chaplin: Yes, I think. It's just a little convoluted to explain, but that means --, now, you'll be using a 10-foot chart or a 5-foot chart, so the 20 will get a little bit confusing, but they're calibrated to be 20 feet.

So, in other words, you may see a 10 over 25 on the left-hand side of the chart and a 20/50 on the other side. That means that a person standing 20 feet from an eye chart, if they have 20/20 vision, they can see that 20/20 line. If they have 20/50, that means they need to move up in order to see that line. Does that help, Kira? That is a tough one to explain.

Kira: I guess I would just say that those 20/40, 20/50 calibrations along the side of a traditional eye chart, those that were originally invented years ago which were at 20-foot distances, each of those numbers represent larger and larger optotypes from what's considered normal vision, which is 20/20, so that the higher the number is on the bottom, the worse the vision is. And so when we look at creating tools that work better with younger children, so we want to work with them at closer distances, we've taken that traditional 20-foot chart and recalibrated it down for 10 feet or for 5 feet.

But just to help maintain understanding of what the vision outcome is, they've retained that 20 over a number sort of response as a measure of vision. So, it's sort of a holdover from those 20-foot charts, but we're trying to improve the tools to work better with this younger population, so you'll see shorter chart distances, but they just retain that 20 over another number format just to keep that uniform understanding as you relay somebody's acuity measurement.

Dr. Chaplin: Right. Good explanation, Kira, because if you say to someone that their vision is 5 over X or 10 over X, they're going to have a little difficulty understanding -- they're going to have to think about what you're saying. Okay, next question. Hope that helped.

Kelly: Thank you for that answer. Our next question is: Is the Spot vision screener sufficient alone for preschool screenings?

Dr. Chaplin: I'll take that, Kira, and then you can add on. You actually have a choice of whether you want to do instrument-based or optotype-based. You're not being asked to do both. So, if you wanted to use Spot, that would be absolutely fine. I was just saying to have an eye chart as a backup just in case there's a child that you're having trouble capturing a reading and then you won't miss an opportunity to screen that child, so that you don't need to do both, and that might be what you are asking. Kira, do you have anything you want to add?

Kira: I do just want to add that when you are using an instrument-based device, particularly Spot or Plusoptix, those are two devices that don't yet have universally set referral criteria programmed into them when you start to use them in a preschool-aged population. So, we do recommend that as you initiate using those tools to work with a trusted eye care provider organization in your area to pick the right referral criteria to have it programmed into your device, and those typically are devices that allow you to set that referral criteria. And I just think it's really important that as you start to use those devices, make sure you're watching your referral rates and your outcome to eye exam rates to make sure you're not over-referring or under-referring in any significant format. So, it's just a really important step to take as you initiate using an instrument-based device in treating those preschool environments. As more research comes out about the right referral criteria in those sorts of devices at the center, obviously you want to add that to its website, but right now the research shows just isn't there to have the referral criteria to say, "Okay, everybody program this into your Spot vision screening device when you're screening a three through five-year-old." We just don't have that yet. So, connect with an eye care professional for that.

Kelly: Okay, thank you. I think we have time for one more question, and it's: Is it possible that a child that has astigmatism that goes untreated that it can cause them to develop amblyopia?

Dr. Chaplin: That is one of the refractive errors listed that can lead to amblyopia if not treated, detected and treated, because what happens is, if you're having that blurred vision and it's sufficient enough that the brain vision is not developing at the time that the vision system is developing, then that can lead to amblyopia. Typically -- well, I'll stop there because we're going to run out of time. Kira, do you want to add anything?

Kira: No, I think you covered it pretty well.

Kelly: Thank you, Dr. Chaplin and Kira, for all of this information. For those of you who might have asked questions that we didn't have time to answer, we will be answering those questions via email over the next several weeks, so you will be hearing from us. And just a reminder, when the webinar ends, there's going to be a survey poll that can be taken, and there will be an email sent to everyone who watched live with instructions on how to share the survey link with everyone in your group, because remember, only those who fill out the survey will receive a certificate of completion. And, thanks again, for joining us for this webinar and we look forward to having you participate in future events.