ARIZONA DEPARTMENT OF HEALTH SERVICES

WIC Code 211, Elevated Blood Lead Level (BLL) Discussion Guide

GENERAL INSTRUCTIONS

Facilitators: Use this discussion guide as a companion to the WIC Code 211, Elevated Blood Lead Level (BLL) video for the group training session. The session is divided into topic sections when the video is paused while you facilitate discussion about the topic. Discussion questions are designed to generate ideas among WIC staff about how the information and associated WIC codes apply to working with participants and what staff experiences have been.

VIDEO PART 1: Introduction

This training is a refresher about risk code 211, elevated blood level. It will deepen your understanding of lead-related concerns that can come up when working with participants.

Lead is toxic for everyone, but fetuses, infants, and children under the age of 3 are at the greatest risk. In Arizona, the most common source of exposure, especially for young children, is from lead-based paint in homes and structures built before 1978.

These are the most common sources of lead in Arizona:

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Homes built before 1978 with chipping, peeling or flaking paint, or imported toys with lead-based paint.

Imported spices, such as turmeric, coriander, black pepper, thyme, and hanuman sindoor.

Imported glazed pottery, commonly used to cook beans or hot chocolate.

Home remedies such as *greta or azarcon* used to treat stomach illness or *empacho*.

Soil or dust tracked into the house contaminated with lead.

Hobbies such as hunting and fishing that use leaded bullets or fish sinkers; some artist paints and furniture refinishing.

Work in lead-related industries such as construction, mining, welding, or plumbing.

DISCUSSION POINT 1: Sources of Lead

What common sources of lead in Arizona are most surprising to you? What sources are you most familiar with from your work with participants?

Facilitator: Listen for any differences between staff experiences. This doesn't need to be a long discussion, but it may help you identify how much people already know about this topic so you can adjust for later discussions if needed.

If during discussion, some staff share experiences that are different from others, especially about participant concerns or confusion, encourage them to share what they have found helpful in addressing participant needs.

If staff don't offer any different experiences, provide some different examples that might apply in this situation to help spark a discussion.

When you are finished discussing these questions with your group, click NEXT to continue to the next video.

Facilitator: The additional information provided below may be of interest to RDs and DTRs. You can share this information or skip it depending on what would be helpful to your group.

Intercountry Adoptions

Children who are adopted from outside the U.S. may be at higher risk of lead exposure. The main sources of lead exposure vary in different countries, so screening may be recommended. The CDC provides additional information. https://www.cdc.gov/nceh/lead/prevention/adoption.htm

Cosmetics

Imported cosmetics may carry risk of lead. Although these cosmetics aren't legal to sell in the U.S., they are sometimes found in this country. Traditional eyeliners are the highest risk. Lipstick may contain lead, but at low levels based on FDA testing. https://www.fda.gov/cosmetics/potential-contaminants-cosmetics/lead-cosmetics

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VIDEO PART 2: Effects of Lead

This section of the video explains the effects of lead on young children and how lead can affect a developing fetus. Any amount of lead is harmful. It's a neurotoxin that accumulates in the body over time. In young children, it's associated with decreased IQ, academic failure, attention deficit disorder, and behavior problems. Lead crosses the placenta and can be passed through breastmilk.

Facilitator: The additional information provided below may be of interest to RDs and DTRs. You can share this information or skip it depending on what would be helpful to your group.

Even low blood lead levels can result in a child having behavior and learning problems, a lower IQ, hyperactivity, slowed growth, hearing problems, and/or iron-deficiency anemia (https://www.epa.gov/lead/learn-about-lead#effects).

The evidence that prenatal lead exposure impairs children's neurodevelopment, putting them at increased risk for developmental delay, reduced IQ, and behavioral problems, is convincing, and the evidence continues to grow. Fetal lead exposure results in low birth weight and its related "adverse health conditions in adults who were exposed to lead in utero" among other long-term concerns. Further research is needed to better understand all the related issues, including how lead crosses the placenta and gets into breast milk, optimal timing of blood lead testing during pregnancy, and effective strategies for identification and treatment of pica in pregnant women (https://www.cdc.gov/nceh/lead/publications/leadandpregnancy2010.pdf).You can learn more about the latest lead tips, research, and recommendations for pregnant women by visiting CDC's website https://www.cdc.gov/nceh/lead/tips/pregnant.htm and https://www.cdc.gov/nceh/lead/publications/default.htm.

Some mothers may be encouraged to initiate or continue breastfeeding if "BLLs are within an acceptable range since the benefits of breastfeeding outweigh the potential health consequences the infant would otherwise endure" (Arizona WIC Nutrition Risk Criteria Manual 2017). Breastfeeding recommendations will be addressed further in Part 6 of the video.

DISCUSSION POINT 2: Why Is the Risk Greater?

A new staff person comes to you with a question. "Why are infants, children, pregnant women, and breastfeeding women at greater risk for the negative health effects of lead poisoning?"

How would you explain the risks?

Answer: Infants, children, and fetuses are at greater risk for the negative effects of lead because their bodies are growing and developing rapidly. The impacts of lead exposure are lifelong and can be severe like a lower IQ, learning disorders, and hearing loss. Since infants can be exposed to lead in utero and/or via breastmilk, it is important to identify and support both pregnant and breastfeeding women with an elevated BLL diagnosis to reduce their and their infants' risk of further exposure and support them achieving positive health outcomes.

Facilitator: Listen for any differences between what staff share.

VIDEO PART 3: Pica, Anemia, and Nutritional Status

Pica, eating non-food items, is a source of lead poisoning. Pica puts pregnant women and their fetuses at risk.

Iron-deficiency anemia can be an indicator of lead poisoning. Iron deficiency weakens the body's defense against lead absorption, while lead poisoning can cause iron deficiency.

Poor nutritional status and low intake of several key nutrients increases the likelihood of lead toxicity.

Facilitator: The additional information provided below may be of interest to RDs and DTRs. You can share this information or skip it depending on what would be helpful to your group.

You can learn more about Pica, "Compulsively ingesting non-food items," nutrition risk code 425.9, for children, and 427.3 for women, in the Nutrition Risk Criteria Manual, Nutrition Care Guidelines or the Code Education Webinar about Pica and Diets Very Low in Calories available here: https://azdhs.gov/prevention/azwic/agencies/trainers/index.php#continuing-education-home

For more information about iron deficiency anemia, refer to information about nutrition risk code 201 Low Hematocrit/Low Hemoglobin in the Nutrition Risk Criteria Manual and the Nutrition Care Guidelines 2018.

DISCUSSION POINT 3: Anemia

You're working with a pregnant woman who has iron-deficiency anemia. What other health concerns may she be at higher risk for? What do you need to pay particular attention to during the assessment to identify any health or nutrition concerns?

Answer: She is at higher risk of elevated blood lead levels because iron deficiency and higher BLLs often coexist. She may also be practicing pica, eating non-nutritive, lead-contaminated items like paint, ice, or soil, since pica is associated with iron and other nutrient deficiencies as well as higher BLL. You will want to pay particular attention to her answers to your questions about risk for lead exposure, like any red flags for practicing pica and if she lives in pre-1978 housing, and her history of lead screening/testing.

You will also want to pay attention to the quality of her diet (is it rich in nutrients like iron, calcium and vitamin C?), when you ask questions about her usual diet, and whether she is following her doctor's dietary supplement recommendations, like taking a prenatal with adequate iron, to help prevent lead absorption and improve her iron status.

Facilitator: Listen for any differences in staff experiences.

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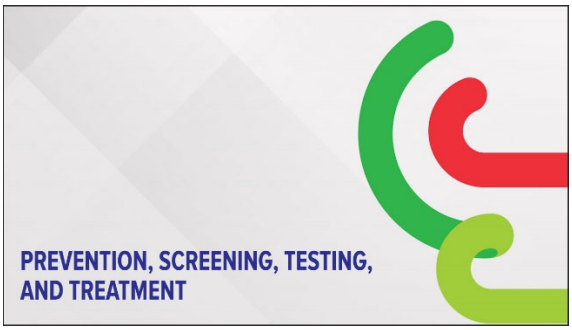

VIDEO PART 4: Prevention, Screening, Testing, and Treatment

This section of the video explains prevention, screening, testing, and treatment for elevated blood lead levels.

- **Prevention:** Avoiding exposure to lead is the most important step. The most common sources for exposure are deteriorating paint and contaminated soil and dust.
- **Screening:** Screening means determining who is at risk and should get further testing. All children should be screened for risk at 12 and 24 months.
- **Testing:** Blood lead level testing is recommended for children living in high-risk zip codes at 12 and 24 months. A blood lead level at or above 5 µg/deciliter is considered elevated.
- **Treatment:** Treatment and intervention may include nutrition-based approaches, chelating agents, and education.

Facilitator: The additional information provided below may be of interest to RDs and DTRs. You can share this information or skip it depending on what would be helpful to your group.

BLLs: Going Deeper

There are different BLLs for identifying people in need of, and that will most benefit from, intervention; determining appropriate intervention/treatment plans for individuals; and making decisions for screening and interventions at the community level. It is important to understand a few things about BLL. First, a “biological “threshold” or “effect level” BLL is not the same as a “BLL at which intervention is required or effective,” since any amount of lead is harmful. BLLs are selected as “trigger(s) for action or inaction at an individual or community level.” The CDC uses a variety of methods to set BLLs, such as gathering input from experts and analyzing current national data sets and research as well as a wide variety of other factors

including the availability of effective interventions-- medical/environmental—and the resources and means to accomplish them. The third point is there are no separate published guidelines for pregnant women and their fetus(es); CDC recommends using the guidelines for children when evaluating “prenatal and breastfeeding women as well as infants until specific guidelines are available.” (Arizona WIC Nutrition Risk Criteria Manual 2017). This is why nutrition risk code 211 is the same for all WIC participants: BLL of > 5 µg/deciliter within the past 12 months, diagnosed by a healthcare provider.

Screening
CDC recommends that state and/or local communities implement lead screening requirements based on their local data, since there is wide variability in risk for lead exposure across communities. “Because of ongoing surveillance and analysis, public health professionals are able to target surveillance and intervention efforts on the children most at risk.” (Arizona WIC Nutrition Risk Criteria Manual 2017). Arizona began using a targeted instead of universal screening in 2003, since its lead poisoning rates meet the CDC criteria for developing of a targeted screening plan. ADHS’s targeted screening policy is, “based on geographic testing for children who are at higher risk of lead poisoning.”
https://www.azdhs.gov/preparedness/epidemiology-disease-control/lead-poisoning/index.php#high-risk-zip-codes-targeted-screening-plan

DISCUSSION POINT 4: Lead Screening and Testing

Think back to the beginning of this training, with the father who asked why his 12-month-old son needed to be screened for lead and anemia. After you share information about the risk of lead exposure, what do you say about lead screening and testing? Does his son need to be screened and/or tested for lead?

Answer: Yes, his child needs to have a lead screening, and he may need testing depending on his risk. The recommendation is that all children in Arizona have a lead screening at 12 and 24 months to determine the need for a blood test. Recommend he talk to his son’s healthcare provider about lead screening and testing recommendations that are based on his son’s risk level. You may also offer to share more information about lead and about the risk assessment zip code tool and other information on the AZDHS website.

Facilitator: You may use this question as a practice role play exercise with partners. Have one person in each pair share information about the risks of lead and about recommendations for screening and testing.

Facilitator: The additional information provided below may be of interest to RDs and DTRs. You can share this information or skip it depending on what would be helpful to your group.

Use the ADHS tool to identity the high-risk zip codes in your participant community and better target your clinic's efforts to reduce lead exposure in your program area. Consider making a cheat sheet of high risk codes for you and other staff to use better target your work with participants: https://www.azdhs.gov/preparedness/epidemiology-disease-control/lead-poisoning/index.php#high-risk-zip-codes-home.

You may also use the information in this training and/or on the ADHS website to brainstorm relevant messages for participants at higher risk for lead exposure and/or with code 211.

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VIDEO PART 5: Assessment

Most questions about lead screening and testing will happen during the B portion of the assessment, but indicators of risk may be uncovered during other times of the assessment as well.

If a participant has been diagnosed by a healthcare provider with an elevated BLL of > 5 µg/deciliter in the past twelve months, assign code 211.

BLOOD LEAD DISCUSSION POINT 5: Home Remedies

You're completing an assessment with the grandmother of a three-year-old girl. You ask the grandmother how they're doing. She replies, "Sofia was sick to her stomach yesterday, but she's feeling better after I gave her some *Greta*." (Greta is a traditional folk remedy.)

Does this raise any red flags? What additional questions would you ask?

Answer: Sofia may be at risk of lead exposure by using Greta. It is a fine orange powder of lead oxide with lead content as high as 90%. It is a Latino traditional medicine (as well as Azarcon, also known as alarcon, coral, luiga, maria luisa, or rueda) used for an upset stomach (empacho), constipation, diarrhea, and vomiting, as well as for teething. It is important to offer the grandmother information about the risks of lead exposure, especially for young children, and let her know that traditional remedies like Greta can have very high amounts of lead. You will also need to ask if the child has had a lead screening and refer as needed.

The child is also at risk for routinely taking a dietary supplement that may have harmful consequences (code 425.10). You will need to ask more questions to determine if they **routinely** use traditional remedies or other dietary supplements that may be harmful because they may contain lead. Assign the dietary code, as appropriate, and offer relevant information and support.

Even if the child does not meet the criteria for assigning code 425.10, you may want to offer information about the importance of talking to the child's healthcare provider **before** giving any dietary supplement, including traditional remedies, and about why taking them can put their child at risk for lead exposure or other health concerns.

Facilitator: The additional information provided below may be of interest to RDs and DTRs. You can share this information or skip it depending on what would be helpful to your group.

Additional information about traditional medicines and lead:

- Ghasard, an Indian folk medicine, has been found to contain lead. It is a brown powder used as a tonic.
- Ba-baw-san is a Chinese herbal remedy that contains lead. It is used to treat colic pain or to pacify young children.
- Daw Tway is a digestive aid used in Thailand and Myanmar (Burma) and has been found to contain high levels of lead and arsenic.

https://www.cdc.gov/nceh/lead/tips/folkmedicine.htm

VIDEO PART 6: Education and Referrals

You can help participants reduce their lead exposure by sharing relevant information, encouraging the consumption of nutrient-rich foods, and offering referrals.

Nutrition education messages can focus on reducing exposure through common sources of lead and consuming a nutrient-rich diet. Women may initiate and continue breastfeeding with elevated BLLs under certain conditions, but will likely benefit from a referral to a lactation expert.

Children who haven't been screened for lead at 12 or 24 months, and all participants with specific risks, may be referred to a healthcare provider.

Facilitator: When you pause the video for discussion, you may want to talk about expectations and examples of when frontline staff about need to refer to the clinic nutrition or lactation expert with participant lead-related concerns. RDs may want to brainstorm together about this either prior or after the training for sharing with the frontline staff.

DISCUSSION POINT 6: Pregnant Mother and Child

You're certifying a pregnant mother and her two-year-old daughter. You learn that they live in an older home, the woman has low hemoglobin, and they've never had a lead screening.

What concerns related to lead do you have about these participants? What nutrition education and referrals might you offer?

Answer: Both of them are at higher risk for the negative effects of lead (higher risk for infants and growing fetuses). They both need to have a lead screening because they are at higher risk of lead exposure (i.e., young child, older home), and all children in Arizona need to be screened at 24 months. The mother has a low hemoglobin which means she is more likely to absorb lead if exposed, have an elevated BLL, and/or be practicing pica. You can educate them on screening and refer them to a healthcare practitioner for the screening.

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VIDEO PART 7: Summary

Lead exposure is a serious risk for infants, children, and pregnant women's growing babies. At WIC, you have an important role in identifying participants who have been diagnosed with elevated BLLs, those who need to be screened or tested, and those who are at higher risk for lead exposure.

Facilitator: After the summary video, you may ask some or all of these reflection questions.

- *What is one important thing you learned during this training?*
- *What do you still need to learn more about (or what are you confused about)?*
- *What is one thing you will change due to this training?*

Citations and Resources

- https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/lead-poisoning/poisoning-flyer.pdf
- https://www.epa.gov/lead/learn-about-lead
- https://www.azdhs.gov/preparedness/epidemiology-disease-control/lead-poisoning/index.php#parent-health-effects
- https://www.aap.org/en-us/ImagesGen/Lead_infographic.jpg
- https://www.azdhs.gov/preparedness/epidemiology-disease-control/lead-poisoning/index.php#parent-sources
- https://www.cdc.gov/nceh/lead/publications/primarypreventiondocument.pdf
- https://www.cdc.gov/nceh/lead/tips.htm
- https://www.cdc.gov/nceh/lead/prevention/adoption.htm
- https://www.fda.gov/cosmetics/potential-contaminants-cosmetics/lead-cosmetics