



2018 Arizona Targeted Lead Screening Plan



**Prepared by the Childhood Lead
Poisoning Prevention Program**

December 2017



ARIZONA DEPARTMENT
OF HEALTH SERVICES



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Plan Overview

All children in Arizona should be evaluated for lead poisoning at 12 and 24 months of age. This entails a blood lead test for children living in high-risk areas and a parent questionnaire for children not living in high-risk areas. Children should be screened for lead at the 12 and 24 month well visits when they are mostly likely to be exposed and susceptible to the effects of lead. Exposure to lead can cause serious permanent health problems that affect a child's development and ability to learn.

The principal federal recommendations on screening young children for lead poisoning are issued by the Centers for Disease Control and Prevention (CDC). The CDC recommends targeted rather than universal blood lead testing in communities or states where less than 12% of children have lead poisoning and where 27% or fewer of houses were built before 1950. Lead poisoning rates in Arizona meet these criteria for development of a targeted screening approach.

ADHS has supported a targeted screening approach since 2003 to identify and blood lead test children who are at higher risk of lead poisoning. The *2018 Arizona Targeted Lead Screening Plan* is an update and replacement for the *Targeted Lead Screening Plan for the Prevention of Childhood Lead Poisoning* prepared in 2014. The 2018 plan is effective beginning January 1, 2018.

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Screening Recommendations

All children in Arizona should be evaluated for lead poisoning at 12 and 24 months of age. Blood lead testing is recommended for children living in high-risk areas or children who have recently arrived in the United States. A parent questionnaire should be administered for children not living in the high-risk areas.

Children to Blood Lead Test

Children living in high-risk neighborhoods should receive a blood lead test at 12 and 24 months of age. Children living in high-risk neighborhoods aged 36 to 72 months should be tested if they have not been previously tested.

Neighborhoods identified as high-risk can be viewed on the lead risk map webpage found here: www.azhealth.gov/leadmap.

A list of high-risk zip codes was created as an alternative resource when the lead risk map is not feasible for use. The 2018 High-Risk Zip Codes List can be found starting on page 7. Zip codes were labeled as high-risk when a zip code contained one or more neighborhoods (census tracts) deemed high-risk. More details on high-risk area determination can be found in Appendix B.

High-risk PO Box zip codes were included in the 2018 list of high-risk zip codes as an additional resource for providers to identify children at potentially increased risk who do not share a physical address.

Recent Immigrants, Foreign Adoptees, and Refugees

The CDC recommends blood lead testing children ages 6 months to 16 years who are recent immigrants, refugees, or foreign adoptees. Children should receive a repeat test 3-6 months after placement in a permanent residence, regardless of initial results.

Children to Receive Questionnaire

Children living in Arizona, but not in a high-risk neighborhood, should receive a questionnaire at ages 12 and 24 months. If the parent/guardian answers “Yes” to any of the questions or does not answer a question, discuss responses with the parent/guardian to determine whether a blood test is necessary.

In addition to living in a geographically high-risk area, children may be at increased risk for lead poisoning from a variety of sources such as parent occupations, antiques, and cookware. A questionnaire was developed to assess a child’s individual risk for exposure to lead, including CDC recommended and regionally-specific questions. The questionnaire can be found on pages 10 and 11. For more information about exposure sources related to the questions, please see Appendix A.



Summary of Screening Recommendations

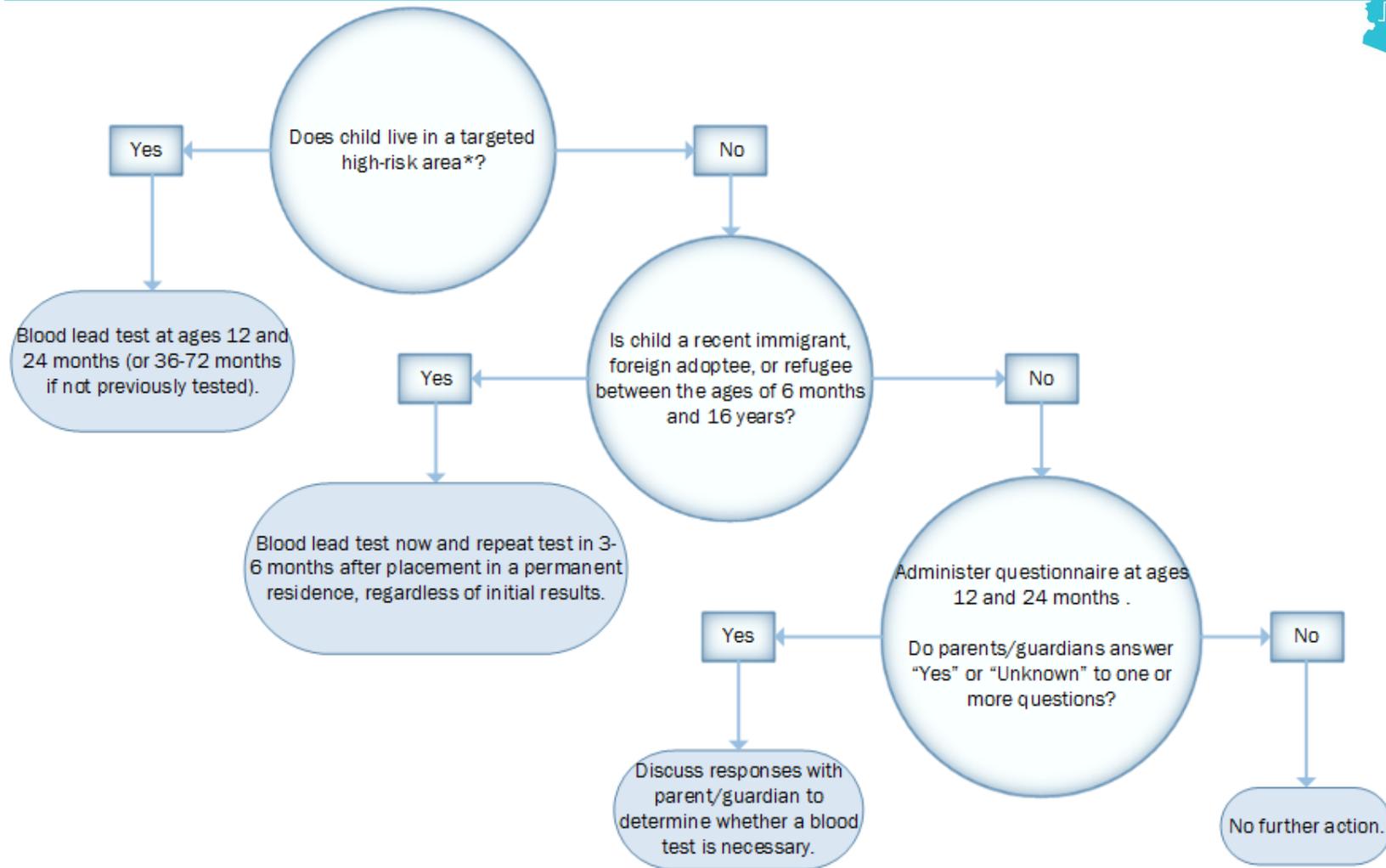
Age	Child Lives in a High-Risk Area*	Child Lives in a non-High-Risk Area
12 months	Blood Lead Test	Questionnaire [†]
24 months	Blood Lead Test	Questionnaire [†]
3-6 years (36-72 months)	Blood Lead Test if not previously tested	No formal recommendation
<p><i>All recent immigrants, foreign adoptees, and refugee children ages 6 months to 16 years should receive a blood lead test. Test should be repeated 3-6 months after placement in permanent residence, regardless of initial results.</i></p>		

*High-risk neighborhoods can be found on the lead risk map webpage found here: www.azhealth.gov/leadmap.
 A list of high-risk zip codes was created as an alternative resource when the lead risk map is not feasible for use. High-Risk Zip Codes contain one or more neighborhoods deemed high-risk.

[†]If the parent/guardian answers “Yes” to any of the questions or is unable to answer a question, discuss responses with the parent/guardian to determine whether a blood test is necessary.



Clinical Lead Screening Algorithm



*High-risk neighborhoods can be found on the lead risk map webpage found here: www.azhealth.gov/leadmap.

ADHS 2018 Arizona High Risk Lead Poisoning Zip Codes*

Apache, Coconino, Mohave, Navajo, Yavapai

PO Box Zip Code



Apache County

City	ZIP Codes
<i>Blue Gap, Low Mountain</i>	86520
Chambers	86502, 86512
Chinle	86503
Dennehotso	86535
Eagar	85925
<i>Fort Defiance</i>	86504
Ganado	86505
Greer	85927
<i>Hawley Lake</i>	85930
Houck	86506
Lupton	86508
Nazlini	86540
Nutrioso	85932
Red Rock	86544
Rock Point	86545
Saint Johns	85936
Tec Nos Pos	86514
Tsaile	86556
Window Rock	86515

Navajo County

City	Zip Codes
<i>Cibecue</i>	85911
<i>Clay Springs</i>	85923
<i>Fort Apache</i>	85926
Holbrook	86025
Hotevilla	86030
<i>Indian Wells</i>	86031
<i>Pinedale</i>	85934
Pinon	86510
Polacca	86042
Shonto	86054
Show Low	85901, 85902
<i>Sun Valley</i>	86029
<i>White Mountain Lake</i>	85912
Whiteriver	85941
Winslow	86047
<i>Woodruff</i>	85942

Coconino County

City	ZIP Code
<i>Bellemont</i>	86015
Flagstaff	86001, 86002, 86003, 86004, 86005,
Gray Mountain	86016
Page	86040
<i>Parks</i>	86018
<i>Sedona</i>	86339

Yavapai County

City	Zip Codes
Camp Verde	86322
Chino Valley	86323
Cornville	86325
Cottonwood	86326
<i>Lake Montezuma</i>	86342
Paulden	86334
Prescott	86301, 86302, 86303, 86304, 86305, 86313
Prescott Valley	86312, 86314, 86315
Rimrock	86335
Sedona	86336, 86340
<i>Skull Valley</i>	86338

Mohave County

City	Zip Codes
Bullhead City	86442, 86439
<i>Chloride</i>	86431
Colorado City	86021
Golden Valley	86413
Kingman	86401, 86402
Lake Havasu City	86403, 86404, 86405
Mohave Valley	86440, 86446
<i>Yucca</i>	86438

*High-Risk Zip Codes contain one or more neighborhoods deemed high-risk.

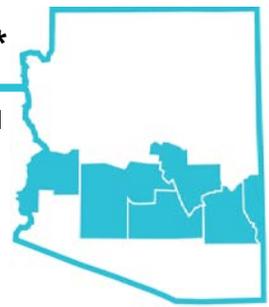
Visit www.azhealth.gov/leadmap to see which neighborhoods are considered high-risk.

The *PO Box* zip code may be used if the child's physical address zip code is unknown.

ADHS 2018 Arizona High Risk Lead Poisoning Zip Codes*

Gila, Graham, Greenlee, La Paz, Maricopa, Pinal
PO Box Zip Code

www.azhealth.gov/lead



Gila County

City	ZIP Codes
Claypool	85532
Globe	85501, 85502
Miami	85539
Peridot	85542
Winkelman	85192
Young	85554

Graham County

City	ZIP Code
Bylas	85530
Safford	85546, 85548
Solomon	85551

Greenlee County

City	Zip Codes
Clifton	85533
Duncan	85534

La Paz County

City	Zip Codes
Parker	85334
Poston	85371
Salome	85348
Wenden	85357

Pinal County

City	ZIP Code
Apache Junction	85117, 85119, 85120, 85178
Arizona City	85123
Casa Grande	85122, 85130, 85194
Coolidge	85128
Eloy	85131
Florence	85132
Gold Canyon	85118
Hayden	85135
Maricopa	85138, 85139
Oracle	85623
Pichaco	85141
San Manuel	85631
San Tan Valley	85140, 85143
Superior	85173
Valley Farms	85191

* High-Risk Zip Codes contain one or more neighborhoods deemed high-risk.

Visit www.azhealth.gov/leadmap to see which neighborhoods are considered high-risk.

The PO Box zip code may be used if the child's physical address zip code is unknown.

Maricopa County

City	Zip Codes
Aguila	85320
Avondale	85323, 85329, 85392
Buckeye	85326, 85396
Chandler	85224, 85225, 85226, 85244, 85246, 85286
Chandler Heights	85127
El Mirage	85335
Fort McDowell	85264
Fountain Hills	85268, 85269
Gila Bend	85337
Gilbert	85236, 85296, 85299
Glendale	85301, 85302, 85303, 85304, 85306, 85307, 85311, 85312, 85318
Goodyear	85338, 85395
Laveen	85339
Litchfield Park	85340
Mesa	85201, 85202, 85203, 85204, 85205, 85206, 85207, 85208, 85209, 85210, 85211, 85212, 85213, 85214, 85216, 85274, 85275
Peoria	85345, 85380, 85385
Phoenix	85003, 85005, 85006, 85007, 85008, 85009, 85010, 85011, 85012, 85013, 85014, 85015, 85016, 85017, 85018, 85019, 85020, 85021, 85022, 85023, 85024, 85027, 85028, 85029, 85030, 85031, 85032, 85033, 85034, 85035, 85036, 85037, 85038, 85040, 85041, 85042, 85043, 85046, 85050, 85051, 85053, 85060, 85061, 85062, 85063, 85064, 85066, 85067, 85068, 85069, 85070, 85071, 85072, 85074, 85075, 85078, 85079, 85080, 85082, 85086
Queen Creek	85142
Scottsdale	85250, 85251, 85252, 85256, 85257, 85260, 85261, 85267, 85271
Sun City	85351, 85372, 85373
Surprise	85378, 85379, 85387
Tempe	85280, 85281, 85282, 85283, 85285
Tolleson	85353
Tonopah	85354
Tortilla Flat	85190
Wickenburg	85358, 85390
Wittmann	85361
Youngtown	85363

ADHS 2018 Arizona High Risk Lead Poisoning Zip Codes*

Cochise, Pima, Santa Cruz, Yuma

PO Box Zip Code



Cochise County

City	ZIP Codes
Benson	85602
Bisbee	85603
Douglas	85607, 85608, 85655
Hereford	85615
Huachuca City	85616
Mc Neal	85617
<i>Naco</i>	85620
<i>Pirtleville</i>	85626
<i>Pomerene</i>	85627
San Simon	85632
Sierra Vista	85635, 85636, 85650, 85670
Tombstone	85638
Willcox	85643, 85644

Pima County

City	ZIP Code
Ajo	85321
<i>Catalina Foothills</i>	85751
Marana	85658
Sahuarita	85629
<i>Sasabe</i>	85633
Sells	85634
<i>Topawa</i>	85639
Tucson	85701, 85702, 85703, 85705, 85706, 85710, 85711, 85712, 85713, 85714, 85715, 85716, 85717, 85719, 85721, 85724, 85725, 85726, 85730, 85731, 85732, 85733, 85734, 85735, 85736, 85745, 85746, 85754, 85756, 85757

Santa Cruz County

City	Zip Codes
Nogales	85621
Patagonia	85624
Rio Rico	85628, 85648, 85662
Tubac	85646

Yuma County

City	Zip Codes
<i>Colfred</i>	85352
<i>Gadsden</i>	85336
Roll	85347
San Luis	85349
Somerton	85350
Wellton	85356
Yuma	85364, 85365, 85366, 85367, 85369

www.azhealth.gov/lead

*High-Risk Zip Codes contain one or more neighborhoods deemed high-risk.

Visit www.azhealth.gov/leadmap to see which neighborhoods are considered high-risk.

The *PO Box zip code* may be used if the child's physical address zip code is unknown.



ADHS Parent Questionnaire

Childhood Lead Poisoning Prevention Program

This questionnaire is to help determine if your child has been exposed to lead.

Please circle Yes or No for each question.

In the past year, has your child...

Lived in or regularly visited:		
Yes	No	A house built before 1978 that has peeling, chipping, or flaking paint
Yes	No	A house built before 1978 that has been remodeled within the past 6 months
Yes	No	A sibling, cousin, or friend that has been diagnosed or treated for lead poisoning
Yes	No	Near a factory or industrial plant or mine
Yes	No	Mexico, India, Middle East, Central America, South America, Africa, or Asia

Been around adults who:		
Yes	No	Hunt, fish, reload bullets, refinish furniture, stain glass, work with metal, or paint with fine artist paints
Yes	No	Work as plumbers, mechanics, construction workers, miners, or welders

Eaten or drunk:		
Yes	No	From ceramic cookware/dishware or imported pottery
Yes	No	Meals made with spices imported or brought in from another country (such as turmeric)
Yes	No	Candies from other countries containing tamarindo or chili powder
Yes	No	Home remedies (such as Azarcón, Greta, Rueda, or Pay-loo-ah)
Yes	No	Dirt or non-food items regularly (more than the typical baby mouthing behavior)

If you answered “Yes” to any of these questions or cannot answer a question, discuss with your child’s health care provider to determine whether your child should receive a blood test.



ADHS **Cuestionario para los padres**

Programa de prevención de envenenamiento por plomo infancia

Este cuestionario es para ayudarle a determinar si su hijo ha sido expuesto al plomo.

Por favor, círculo *Sí* o *No* para cada pregunta.

En el último año, su hijo ha...

Vivido en o visitado regularmente:		
Sí	No	Una casa construida antes de 1978 que tenga pintura descascarada, despostillada, o despegada
Sí	No	Una casa construida antes de 1978 que ha sido remodelada en los últimos 6 meses
Sí	No	Un hermano, primo, o amigo que haya sido diagnosticado o tratado por envenenamiento por plomo
Sí	No	Cerca de una fábrica o una planta industrial o mina
Sí	No	México, India, Oriente Medio, África, Asia, América Central o América del Sur

Estado alrededor de adultos que:		
Sí	No	Cazan, pescan, recargan balas, restauran muebles, fabrican vitrales, trabajan con metal, o pintan con pinturas artistas
Sí	No	Trabajan como plomeros, mecánicos, trabajadores de la construcción, mineros, o soldadores

Comido o bebido:		
Sí	No	En ollas (cazuelas, cacerolas, vasijas) de cerámica/vajillas importadas de barro
Sí	No	Comida hechas con especias importadas o procedentes de otro país (tal como la cúrcuma)
Sí	No	Dulces de otros países que tengan tamarindo o chile en polvo
Sí	No	Remedios caseros (tal como Azarcón, Greta, Rueda, o Pay-loo-ah)
Sí	No	Tierra o artículos no comestibles con regularidad (más que el típico comportamiento de los bebés de meterse cosas en la boca)

Si usted contestó "Sí" a alguna de estas preguntas o no puede responder la pregunta, hable con el doctor de su hijo para ver si su hijo necesita hacerse un examen de sangre para la detección de plomo.



Appendix A: Understanding the Questionnaire

Question	Explanation
Lived in or regularly visited:	
A house built before 1978 that has been remodeled within the past 6 months or has peeling, chipping, or flaking paint	<p>Lead-based paint was banned in 1978. Older homes, such as those built before 1950s are more likely to have lead-based paint than those built nearer to 1978.</p> <p>Lead-based paint is most commonly found on friction surfaces such as windows, window sills, and door frames. Lead-based paint becomes a hazard when it is no longer intact, allowing it to chip and get into household dust, or allowing children to pick at the paint.</p> <p>Lead-based paint peeling on the outside of the home may contaminate soil around the home.</p>
A sibling, cousin, or friend that has been diagnosed or treated for lead poisoning	Children living or playing in the same environment as other children with lead poisoning may be exposed to the same source(s) of lead.
Near a factory or industrial plant or mine	Factories or industries, such as mining and smelting, may release lead in the air. Over time lead can build up in the soil where children may play. Workers may also bring home lead on their skin, clothes, shoes, and work items.
Mexico, India, Middle East, Central America, South America, Africa, or Asia	Lead sources, such as spices, pottery, remedies, industries, and other products have been identified originating from these countries. Children spending extended time in these countries, such as frequent trips, or continuing to use products from these areas should be tested.
Been around adults who:	
Hunt, fish, reload bullets, refinish furniture, stain glass, work with metal, or paint with fine artist paints	Products associated with these hobbies have been found to contain lead. Children who have access to items used in hobbies or who also participate in the hobbies with parents can become exposed to lead.
Work as plumbers, mechanics, constructions workers, miners, or welders	These jobs may work with lead. Workers may bring home lead on their skin, clothes, shoes, and work items.
Eaten or drunk:	
From ceramic cookware/dishware or imported pottery	Lead has been found in imported pottery, especially from Mexico, used primarily for simmering foods, such as beans. Other cookware that have been found to contain lead include china, porcelain, crystal, and pewter.
Meals made with spices imported or brought in from another country (turmeric)	Asian, Indian, and Hispanic spices have been found to contain lead. The most common contaminated spices include turmeric, chili powder, coriander, and black pepper. Lead can get into spices by being grown in contaminated soil, unintentionally added through processing, or added for color or weight.
Candies from other countries containing tamarindo or chili powder	Tamarindo or chili grown in lead-contaminated soil or processed in a lead contaminated area can contain lead. Lead may also be found in the ink of some wrappers.
Home remedies (Azarcon, Greta, Rueda, Pay-loo-ah)	Lead has been found in some traditional folk remedies used by Hispanics, East Indians, and Middle Easterners. Lead and other heavy metals are put into certain folk medicines because these metals are thought to be useful in treating some ailments. They are typically used to treat an upset stomach (empacho), constipation, diarrhea, vomiting, and are often given to teething babies. Other remedies and medicines include Bo Ying Compound, liga, azul añil, and estomaquil.
Dirt or non-food items regularly (<i>more than the typical baby mouthing behavior</i>)	Children known to eat non-food items, especially dirt, have been found to have elevated blood lead levels.



Appendix B: High-Risk Area Determination

Data Sources

2011-2015 blood lead surveillance data for children under the age of 6 years reported to the Arizona Department of Health Services

2011-2015 American Community Survey (ACS) 5-Year Estimates

2010 U.S. Census

Risk Score Methodology

Risk factors associated with lead poisoning were identified using the 2015 American Community Survey (ACS) 5-year estimates. Predictive probability of risk was calculated for each census tract using the proportion of children whose blood lead level was greater than or equal to 5mcg/dL and the following risk factors at the census tract level: housing characteristics (percent of pre-1950 housing, percent of homes built between 1950 and 1979), poverty level, and demographic characteristics (percent of population 5 years and over speaking Spanish at home, percent American Indians, and percent Blacks). Census tracts in the top two quartiles with a risk score greater than or equal to 0.41 are considered high-risk. Each census tract was scored on the risk factors associated with lead poisoning. The more risk factors found in the census tract, the higher the score will be. This does not necessarily mean an individual child will have lead poisoning if he or she lives in a census tract identified as high-risk.

High-Risk Zip Code Identification

Census tracts were used to determine high-risk areas across the state for lead poisoning as they cover much smaller geographic areas and more similar population characteristics than a zip code. However, census tract information is rarely known. A list of high-risk zip codes was created as an alternative resource to determine risk when the lead risk map, www.azhealth.gov/leadmap, is not feasible for use.

Census tract and zip code boundaries are determined differently and typically do not align well with each other. Census tracts may cross multiple zip code boundaries and several census tracts may be found within a zip code. In order to translate the high-risk census tracts into high-risk zip codes, Geographic Information Systems (GIS) software was used to spatially join population centers for each of the high-risk census tracts to zip codes. Zip codes were labeled as high-risk if any population center of a high-risk census tract was found within a zip code.

High-Risk PO Box Zip Codes

High-risk PO Box zip codes were included in the 2018 Targeted Screening Plan as an additional resource for providers to identify children at potentially increased risk who do not share a physical address.

Limitation: PO Box zip codes may not be in the same census tract or zip code of a child's home; therefore, PO Box zip codes should be used only if a physical address is unknown.