Nassau County Department of Health

Childhood Lead Poisoning Prevention Program (CLPPP)

Case Analysis of Children with Newly Identified Elevated Lead Levels: 2025

Introduction:

Childhood lead poisoning occurs when a child ingests, or inhales lead contaminated items. Lead poisoning remains a significant public health concern since there is no safe level of lead, and it causes irreversible health effects at any level of exposure. The risk of lead exposure remains in the environment until the contamination is completely removed. Children below the age of 6 years are the most vulnerable population to lead poisoning due to their hand-to-mouth behavior.[1]

In 2012, the Centers for Disease Control and Prevention (CDC) lowered the threshold "level of concern" for blood lead from 10 micrograms/deciliter (mcg/dL) to 5 mcg/dL based on data from the National Health and Nutrition Examination Survey (NHANES).[2] In October 2019, based upon CDC guidelines, New York State (NYS) amended section 67-1.2 of the public health law (Title 10 of NY Codes, Rules and Regulations) to reflect the new blood lead Level (BLL) threshold.[3]

The Nassau County Department of Health (NCDOH) plays a crucial role in preventing lead poisoning by developing public health awareness strategies, educating families, completing developmental screening, and coordinating with pediatricians until the elevated BLL has been lowered successfully. The NCDOH also conducts an environmental investigation of all homes of children with lead levels ≥5 mcg/dL, identifying lead sources and recommending appropriate abatement measures.

This case analysis report of the Childhood Lead Poisoning Prevention Program (CLPPP) reviewed the records of all new cases (venous lead ≥ 5 mcg/dL) identified in Nassau County in 2025. This report will help to identify trends that can be used for early diagnosis and prevention strategies. In addition, it will explore and identify both lead based paint and non-lead-based paint sources within Nassau County.

Background:

Lead exposure has both environmental and public health concern throughout the world.[4] Lead exposure can affect multiple body systems and often doesn't show any early symptoms until later stages of exposure. Young children and women of child-bearing age are the most vulnerable population. Exposure to very high levels of lead can severely damage the brain and central nervous system (CNS) causing convulsions, coma and even death.[5] According to the American Academy of Pediatrics (AAP) blood lead concentrations have decreased dramatically in U.S. children over the past four decades after the elimination of lead from gasoline and paint.[6] As a result of the ban on lead-based paint in the United States in 1978, there has been a significant reduction in the prevalence of lead poisoning in children with BLLs ≥ 10 mcg/dL from 78% in 1976-1980 to 1.6% in 1999-2002.[7] Still many children live in housing with deteriorated lead-based paint and are at risk for lead exposure.[6]

Lead hazards can be divided into two main categories:

1. Traditional-Lead Hazards which can include peeling/chipping lead-based paint, soil, drinking water and occupational hazards. These types of hazards can occur inside a home (interior), outside a home (exterior) or both.

2. Non-Traditional Lead Hazards which include imported items such as toys, jewelry, food products (i.e. spices), candies and traditional/folk medicines, traditional cosmetics (i.e. kohl and kajal) and religious powders (i.e. sindoor, vibhuti, and sandal powder).

Immigrant families in the US may be exposed to lead via imported consumer products.[8] Higher blood lead levels have been noted among children from immigrant families when compared to U.S-born children, but this difference declines gradually as the length of stay in the U.S. increases.[9] Some nontraditional products may contain as much as 80% lead and can enter the body via hand-to-mouth activity and/or absorption though the eyes. Some of these products may be banned for sale in the U.S. but can still make their way into the home via ethnic retail stores, visiting family and family trips overseas.

An important key to prevent lead toxicity is identifying and eliminating the sources of lead and exposures as there is no safe level of lead. New York State Public Health Law and Regulations require healthcare providers to 1) Test all children with a blood lead test at age 1 year and again at age 2. 2) Routinely assess all children ages 6 months to 6 years for risk of lead exposure. 3) Obtain a blood lead test on all children found to be at risk.[10] The NCDOH receives all lab reported lead levels though a NYS electronic system (Lead Web).

The NCDOH CLPPP has conducted prior chart reviews on children with elevated blood lead levels. The last report focused on children with lead levels of 5-9.9 mcg/dL between 10/21/2019 and 3/31/2021, which was the new threshold of concern in NYS starting in 10/2019. This current chart review highlights the new cases identified in 2025. For this report, lead hazards will be identified as 'Traditional Lead Hazards' and 'Non-Traditional Lead Hazards' as described earlier.

Findings

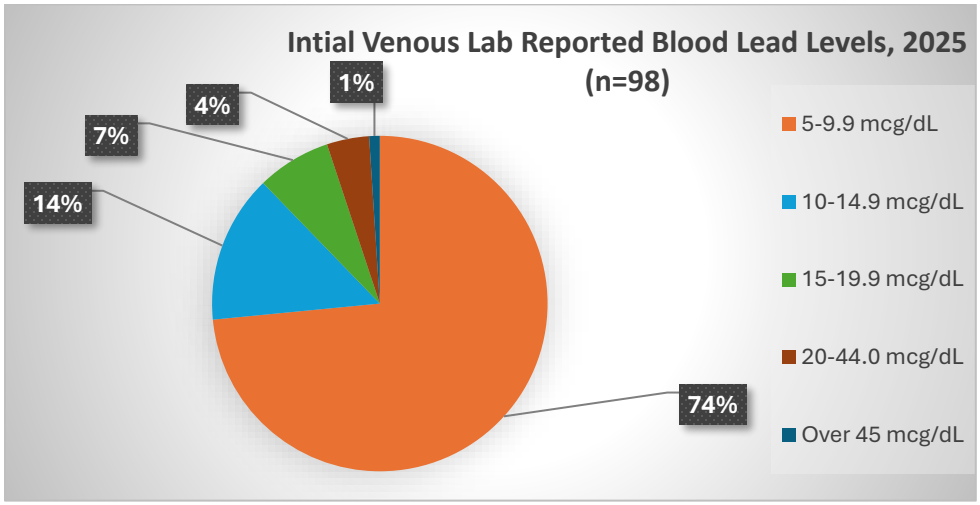
In 2025, there were 98 children newly identified as having a venous blood lead level ≥ 5 mcg/dL. The average blood lead level in these children was 9 mcg/dL.

A. Demographic Findings:

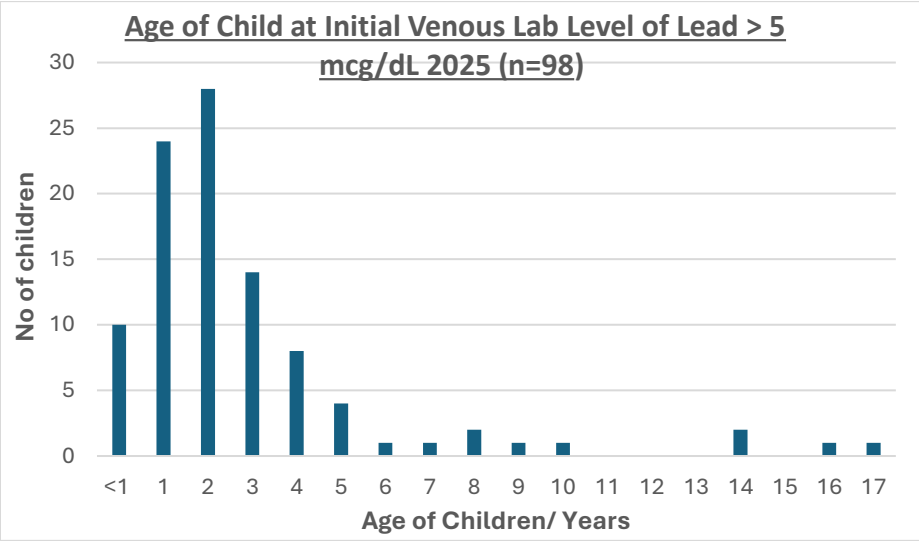
- The lead levels of newly identified children having initial venous elevated blood lead levels through lab reports varied widely. We categorized the lead levels (in mcg/dL) into 5 groups: 5-9.9, 10-14.9, 15-19.9, 20-44.0, and over 45 mcg/dL. About 74% of the children had levels between 5-9.9, about 14% between 10-14.9, about 7 % between 15-19.9, about 4 % between 20-44.0 and 1% over 45 (Graph 1).
- Females (51%) were slightly more affected than males (49%).

- The ages of the children identified as having initial venous elevated blood lead levels varied widely, from less than 12 months of age to 17 years of age, with more than half identified by 2 years of age (Graph 2).
- Race was identified using information on the lab slip. Of the 98 children, the majority had no race identified on the lab slip (Graph 3).
    - 57% (n=56) Unknown.
    - 26% (n=25) identified as Asian.
    - 10% (n=10) identified as White.
    - 7 % (n=7) identified as African American.
- Country of origin was identified by clinical history. Of the 98 children, the majority had no race identified in clinical history (see Graph 4 for breakdown).
- Children with elevated blood lead levels by ethnicity as indicated on lab slip were divided into Hispanic and non-Hispanic categories (Graph 5). Of the 98 children
    - 63 % (n=62) of children had no identified ethnicity.
    - 10% (n=10) of children identified as Hispanic.
    - 27 % (n=26) of children identified as non-Hispanic.
- The homes of the children were categorized by home age at the time of inspection (Graph 6). Of the 98 children:
    - 2 % (n=2) of children lived in homes built before 1900.
    - 13 % (n=13) of children lived in homes built between 1900-1920.
    - 23 % (n=23) of children lived in homes built between 1921-1940.
    - 33 % (n =32) of children lived in homes built between 1941-1960.
    - 5 % (n=5) of children lived in homes built between 1961-1980.
    - 2 % (n=2) of children lived in homes built between 1981-2000.
    - 1 % (n=1) of children lived in homes built after 2000.
    - 20 % (n=20) of children lived in homes that were not inspected due to various reasons such as families denied access to the home, families were unable to be reached after multiple attempts or had no inspection due to relocation.

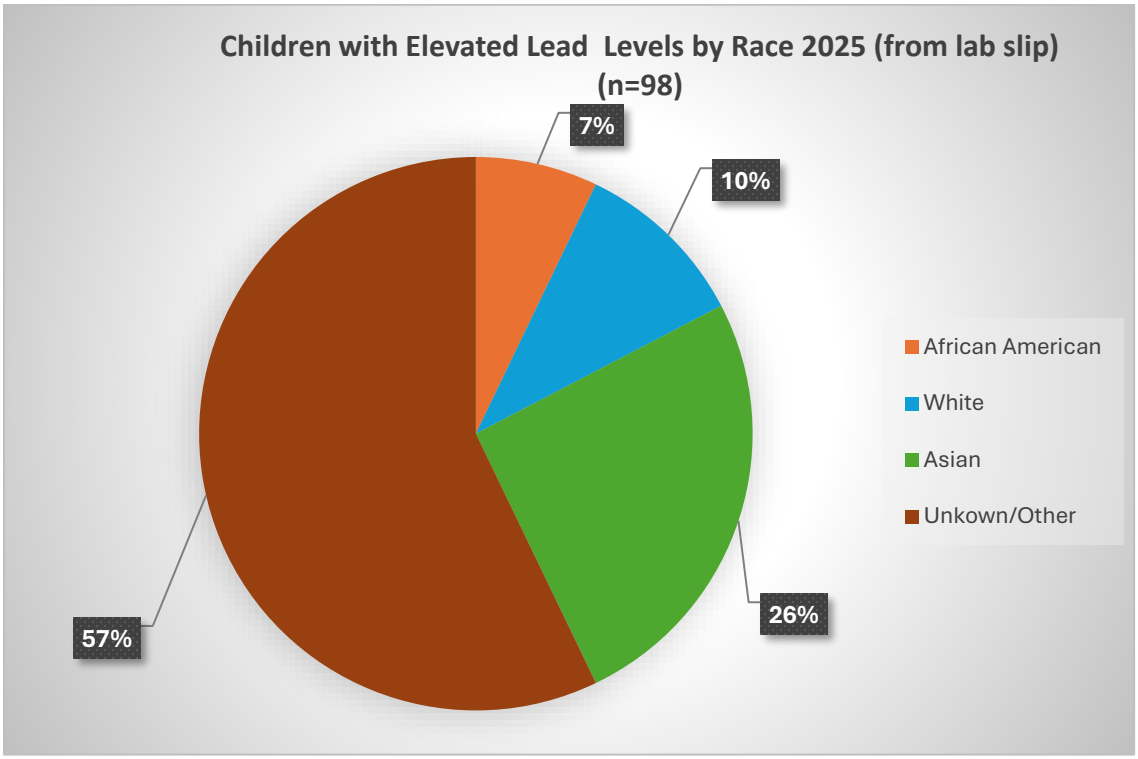
Graph 1:



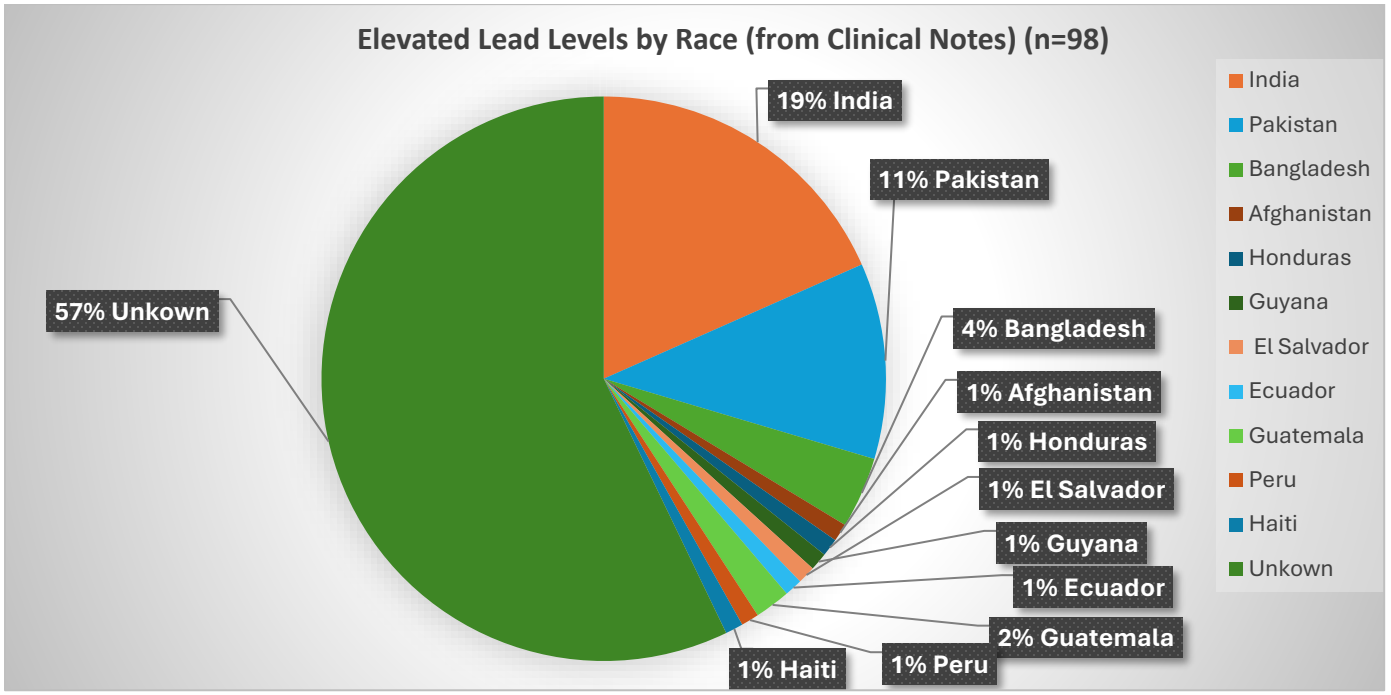
Graph 2:



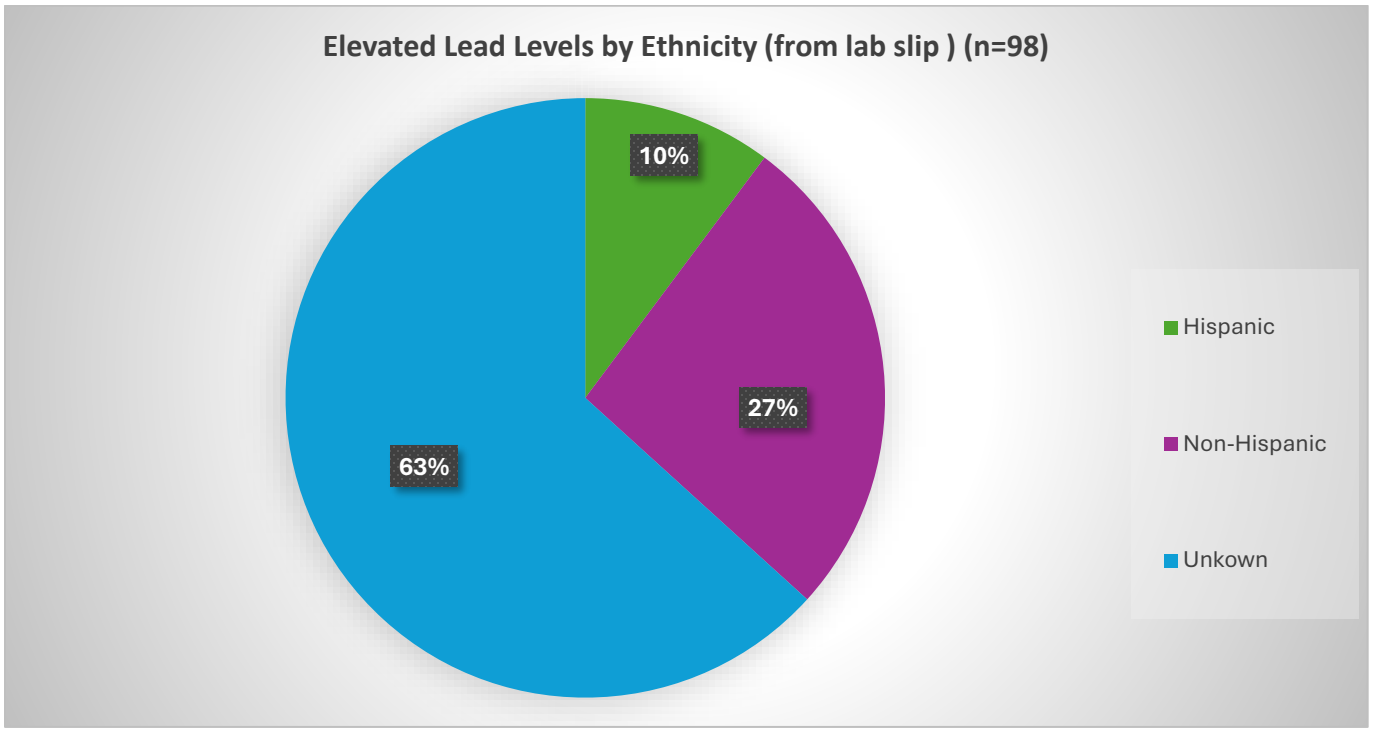
Graph 3:



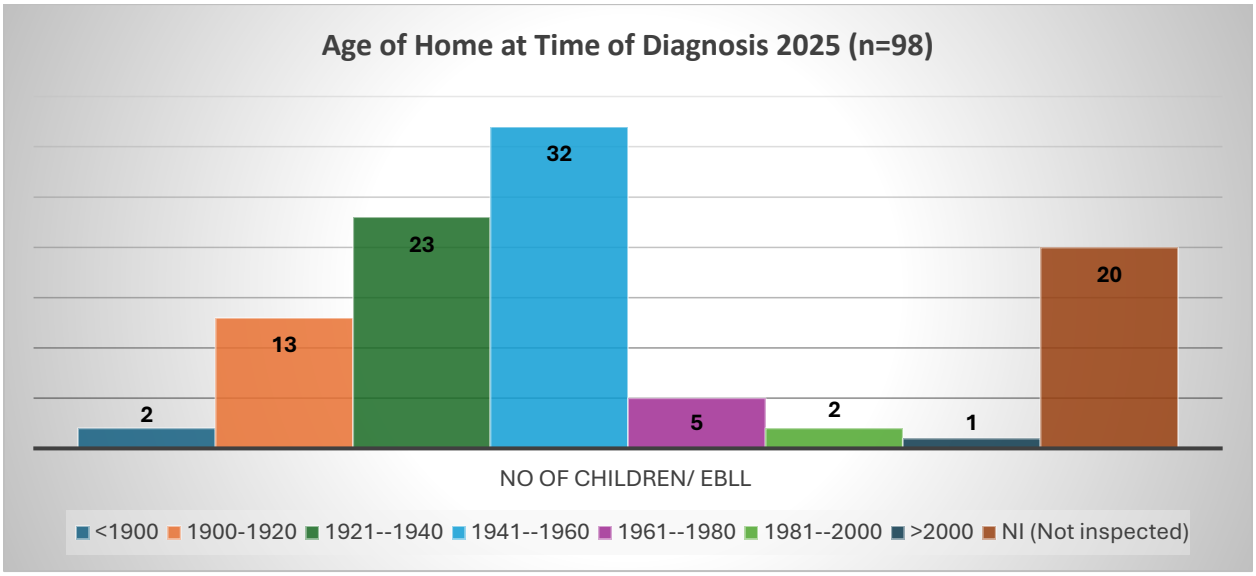
Graph 4:



Graph 5:



Graph 6:

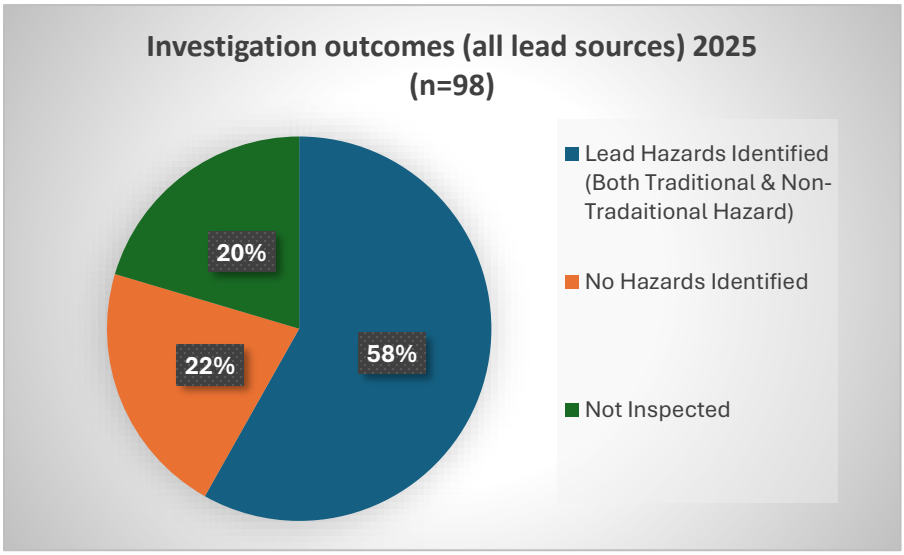


B. Source of Lead Hazard Findings:

For children identified with lead levels ≥ 5 mcg/dL, health department nursing and environmental staff initiate a home visit and environmental investigation to identify possible sources of lead.

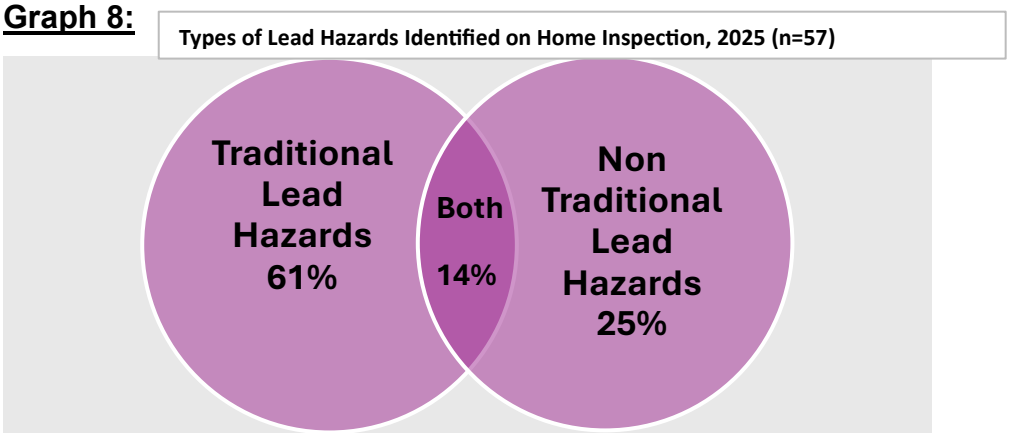
- **Of the 98 cases (Graph 7):**
  - 58% (n=57) of homes were identified with either traditional or non-traditional lead hazards.
  - 22% (n=21) of homes had no hazards identified.
  - 20% (n=20) of homes were not inspected (due to parent/guardian refusal)

Graph 7:



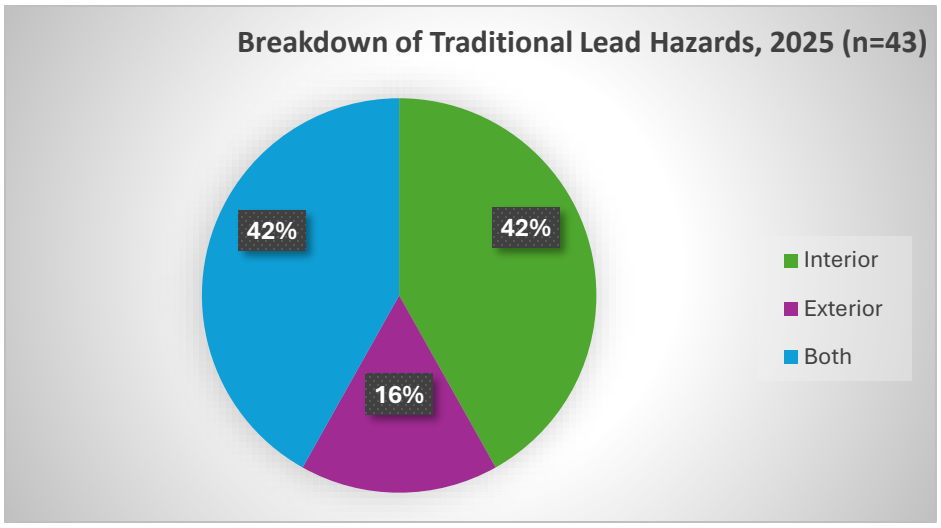
- **Of the 57 homes investigated with Lead Hazards identified (Graph 8):**
  - 61 % (n=35) of homes had traditional lead hazards only.
  - 25 % (n=14) of homes had non-traditional lead hazards only.
  - 14 % (n=8) of homes had **both** traditional & non-traditional lead hazards.

Graph 8:



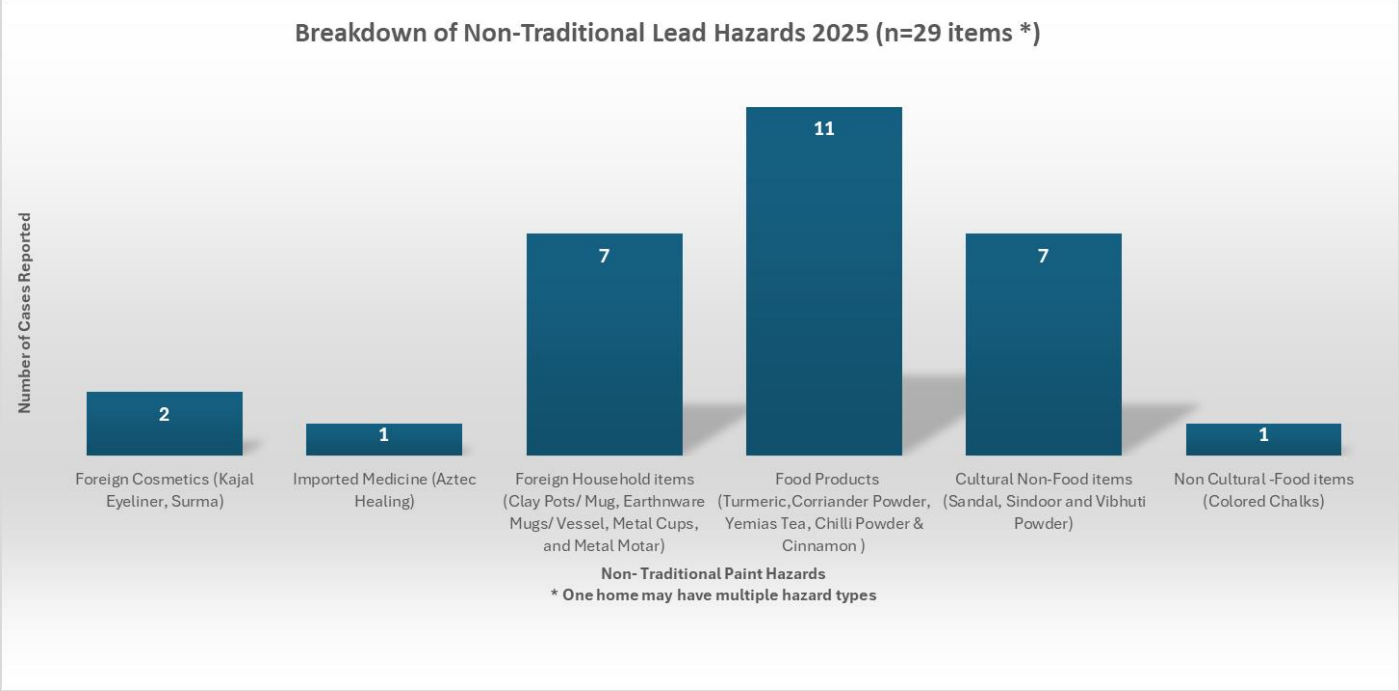
- **Of 43 homes inspected with Traditional Lead Hazards 2025, (Graph 9):**
  - 42 % (n=18) had lead hazards found only on the interior of the home.
  - 16 % (n=7) had lead hazards identified only on the exterior of the home.
  - 42 % (n=18) had hazards on both the exterior and the interior of the home.

Graph 9:



- **Of 22 homes inspected with Non-Traditional Hazards, a total of 29 items were identified as having lead (Graph 10):**
    - 38% (n=11) had food products contaminated with lead. Products included turmeric, coriander, chili powder, yemias tea and cinnamon.
    - 24 % (n=7) had foreign household items containing lead such as clay pots, earthenware mugs/vessels, metal mugs and metal mortar/pestle.
    - 24 % (n=7) had cultural non-food items containing lead such as sindoor, sandal and vibhuti powder.
    - 7 % (n=2) had foreign cosmetics containing lead such as kajal eyeliner and surma.
    - 3 % (n=1) had imported medicine containing lead such as aztec healing products.
    - 3 % (n=1) had non-cultural food items containing lead such as colored chalk.

Graph 10:



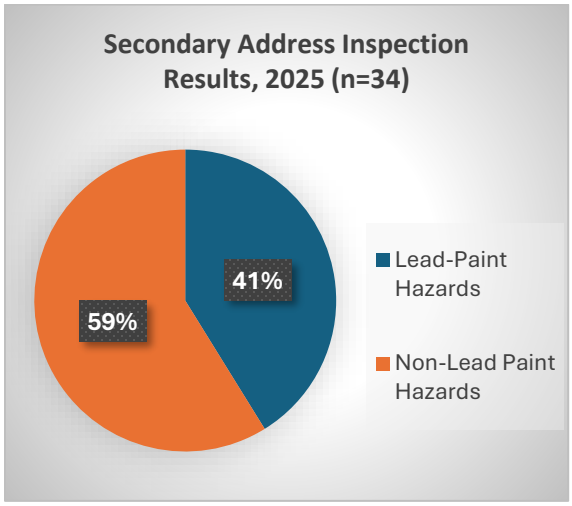
C. Secondary Address Findings:

To comprehensively track and follow up childhood lead exposure, the environmental team will inspect secondary addresses. A secondary address is a non-primary residence where children spend 8 or more hours weekly. Secondary addresses can include daycare, school, pre-school, relative and grandparents house. Therefore, secondary address analysis is an essential component in identifying sources of lead, comprehensive case management and prevention

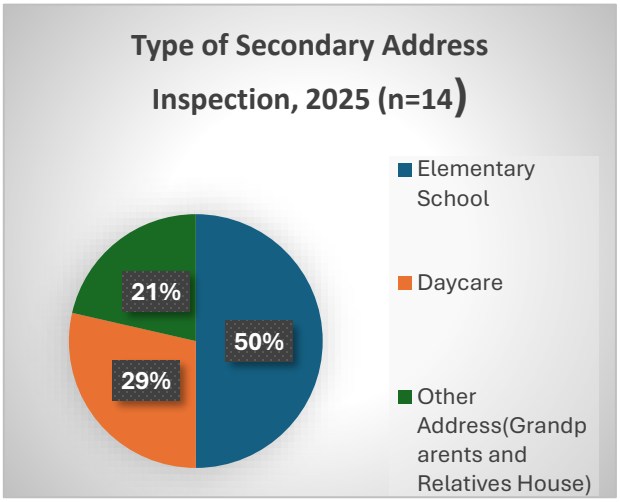
strategies. In 2025, there were 34 secondary addresses inspected due to children having a venous blood lead level ≥ 5 mcg/dL.

- **Of 34 Secondary Addresses Inspected, 2025 (Graph 11):**
  - 41 % (n=14) had lead paint hazards identified in secondary address.
  - 59 % (n=20) had no-lead hazards identified in secondary address.
- **Of 14 Secondary Address Inspected with Lead Paint Hazards, 2025 (Graph 12):**
  - 50 % (n=7) of secondary addresses with lead paint hazards were Elementary Schools.
  - 29 % (n=4) of secondary addresses with lead paint hazards were Daycares.
  - 21 % (n=3) of secondary addresses with lead paint hazards were other addresses which include grandparents and relative house.

Graph 11:



Graph 12:



Summary:

In summary, this chart review confirms that the sources of lead hazards in Nassau County remain diversified resulting from both traditional and non-traditional lead sources. In 2025, 75%* of new cases were exposed to lead via sources categorized as 'Traditional-Lead Hazards" such as peeling walls, window paint chips and exterior paint hazards such as outside wall, paint chips, dust and soil. Deteriorating lead paint and lead in house dust and soil are often emphasized when looking for sources of lead in the United States.[11] However, lead paint contamination is not the only source of lead exposure in Nassau County.

There were 39%* of cases exposed to lead via sources categorized as 'non-traditional'. The hazards identified in the 'Non-Traditional Lead Hazards" category included: Food Products (turmeric, coriander powder, yemias tea, chili powder &

cinnamon), Foreign Cosmetics (kajal and surma), Imported Medicine (aztec healing), Cultural Non-Food items (sandal, sindoor and vibhuti powder), Foreign Household items (clay pots/ mug, earthenware mugs/ vessel, metal cups, and metal motor) as well as Non-Cultural Food items (colored chalks) can also lead to elevated lead levels. Non-paint lead exposure sources might be insufficiently characterized, and their importance underestimated.

* The total is more than 100% because some homes had **both** traditional and non-traditional lead hazards.

Discussion:

A comparison of lead hazards identified in this report to the prior reports reveals the following:

1. The 2013-2016 chart review included children with a blood lead level of 10 mcg/dL and greater. There was an average of 27 new cases per year. Non-traditional sources of lead poisoning were identified in 45% of the children.
2. The 2019-2021 chart review included children with a blood lead level of 5 mcg/dL or greater. There was an average of 105 new cases per year. Non-traditional sources of lead poisoning were identified in 30% of the children.
3. This current 2025 chart review included 98 children with a blood lead level of 5 mcg/dL or greater. Non-traditional sources of lead poisoning were identified in 39%.

Prior reports did not look at secondary address inspection results and lead hazards identified. Just over 40% of the secondary addresses inspected in 2025 had lead hazards. Secondary address inspections should be considered an integral part of case management and always be considered when identifying lead sources.

Race/Ethnicity may also play a crucial role in analysis of lead hazards. Almost 57% of the cases have no race/ethnicity identified on either the incoming lab slip or clinical history. Collecting accurate information is vital to inform intervention strategies that are both effective and culturally competent.

The age of a child’s home may also provide important data in understanding the environmental risk. In 2025, 55 of the new cases lived in homes built between 1921-1960. This may indicate that most homes built before 1920 have been remodeled and perhaps pose less of a risk than homes built between 1921 and 1960.

Recommendations & Strategies:

Over the years, measures taken by Federal, States and Local governments have resulted in the reduction of the number of children with elevated blood levels. The Nassau County Department of Health Childhood Lead Poisoning Prevention Program works on both preventing lead exposure and remediating lead exposure once it occurs.

To recognize the changes in the pattern of children's lead exposure, the Nassau County Department of Health remains committed to developing new strategic interventions to reduce dangerous lead sources in children's environments before they are exposed. The population of Nassau County is diverse and strategies to reduce exposure to religious, cultural and manufacturing sources of lead would be of benefit. Areas of interest include:

- Increasing awareness of pediatricians of current lead screening and testing laws, sources of lead and treatment recommendations.
- Thorough medical and environmental screenings and investigations (including inspection of secondary addresses) to locate the sources of exposure and educating families on foreign products which may lead to exposure as well as U.S. manufactured replacements for such items.
- Developing educational strategies for non-traditional lead sources especially in communities with newly immigrant families. NCDOH works diligently to consider and incorporate culturally appropriate prevention strategies.
- Developing culturally competent partnerships to assist in providing services to at-risk populations.
- Providing family assessment and referrals to resources for other unmet health needs.
- Providing developmental screening on all home visits using the Ages and Stages Questionnaire with direct referral to the Early Intervention Program if need is identified.
- Enhanced screening measures to identify the role of race/ethnicity to improve data to evaluate both educational and preventions efforts.

Acknowledgments:

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