# Child Anemia in the Minnesota WIC Program, 2025

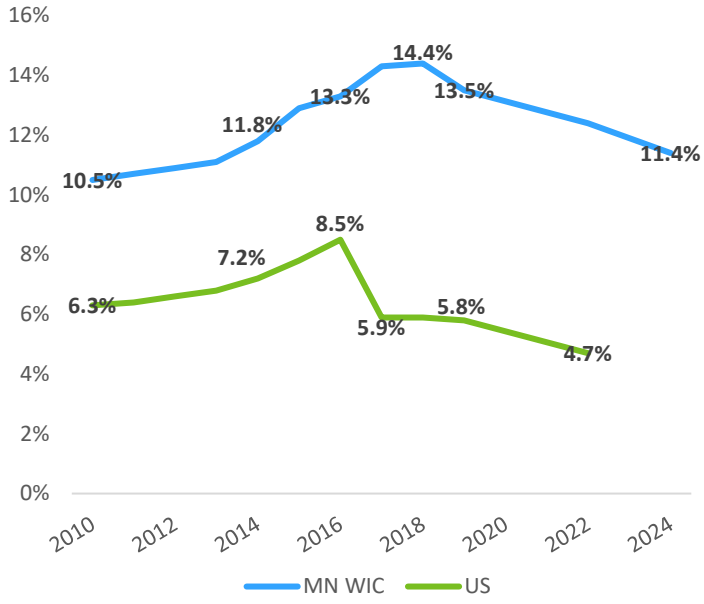
Anemia in young children can cause growth and developmental delays. Anemia is characterized by fatigue, irritability and cognitive difficulties and it is a key indicator of poor nutrition. Most anemia in children is due to iron deficiency. By the time anemia is apparent in the blood, iron deficiency has been long standing and damage to brain development may already be occurring. [1]

The WIC Program serves children up to age five living in lower income households. This population is at are at higher risk for anemia than the general population.

## Anemia in Minnesota WIC children

- Anemia in MN WIC children during 2024 decreased to 11.4% from a high of 14.4% in 2018 (Figure 1). There is a gap in data because hemoglobin was not routinely measured during the pandemic.
- Anemia in MN WIC is higher than the rate among all U.S. children (Figure 1).

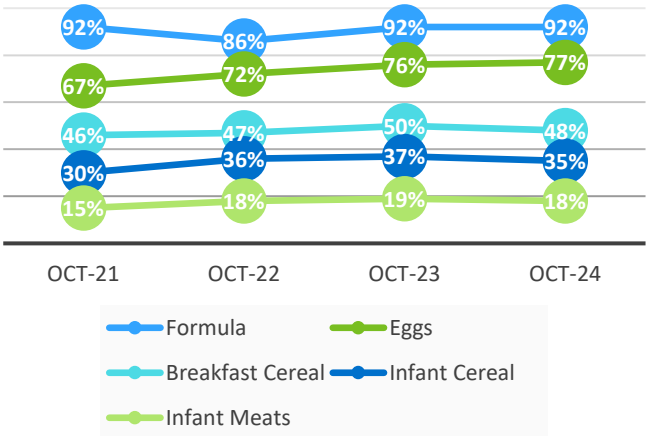
### Figure 1. Anemia in Children[2,3,4]




## Minnesota WIC addresses anemia

- Works with families to redeem WIC foods high in iron. Many families still don't use all their high iron cereals and infant meats. (Figure 2).

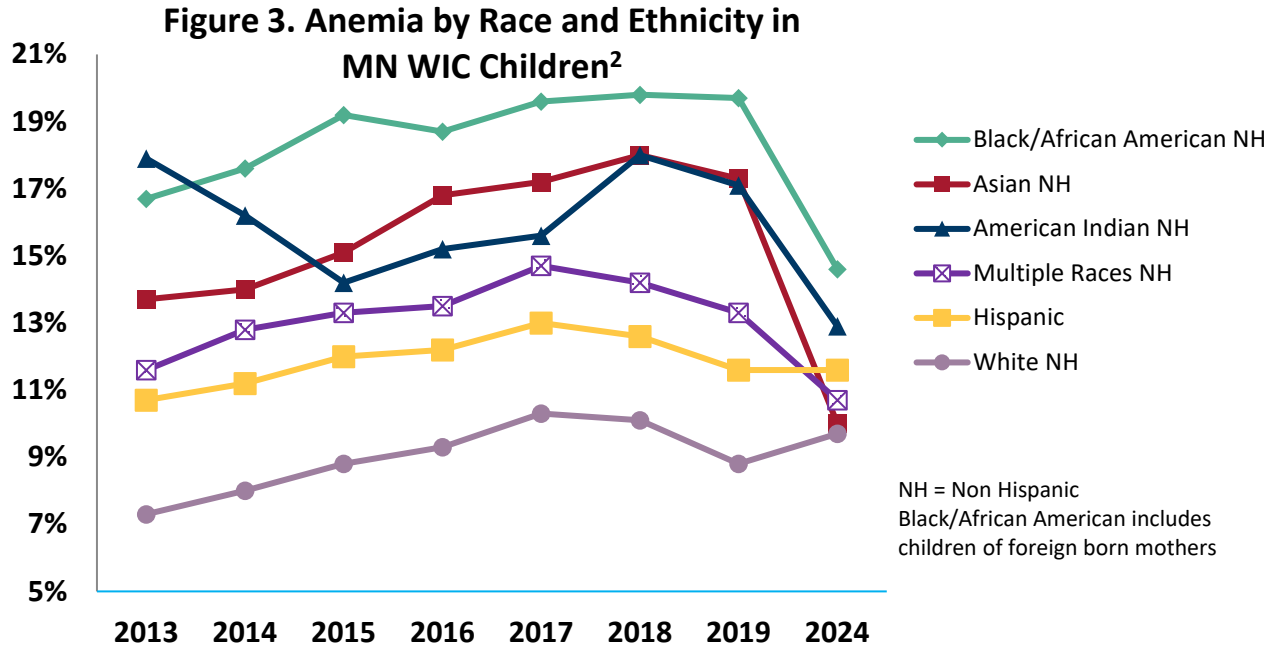
### Figure 2. Percent of Iron-Rich WIC Foods Redeemed[2]




- Provides individualized nutrition assessments and education to resolve or prevent anemia.
- Encourages breastfeeding and iron supplementation of exclusively breastfed infants and introduction of iron-rich foods by six months of age.
- Promotes appropriate bottle use and weaning from the bottle by 12-14 months of age.
- Refers children with a hemoglobin below 10 mg/dl to their health care provider.
- Connects food-insecure families to other community programs and food resources.

**Anemia in children can often be prevented by introducing iron rich foods starting at 6 months of age.**

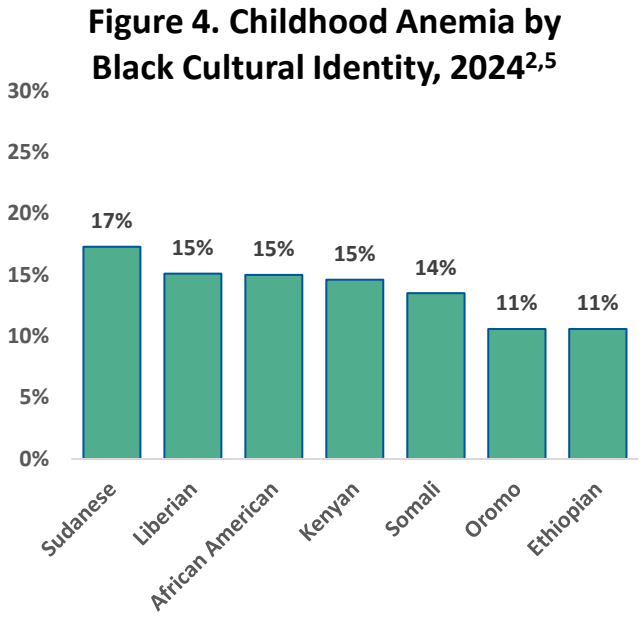
## Health inequities in early childhood anemia



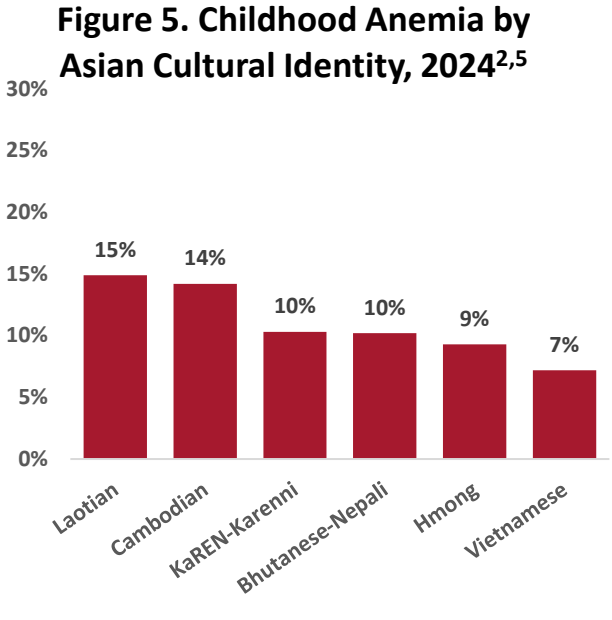

- In 2024, anemia decreased in Black/African American, Asian and American Indian children. Anemia was stable in Hispanic children and increased in White Non-Hispanic (NH) children. (Figure 3). [2]

- Anemia is highest in Black/African American and American Indian populations.
- Asian children in 2019 had one of the higher rates of anemia (17%), but in 2024, Asian NH children anemia rates (10%) were similar to White NH rates (9.7%) (Figure 3). [2]

## Anemia by cultural identity

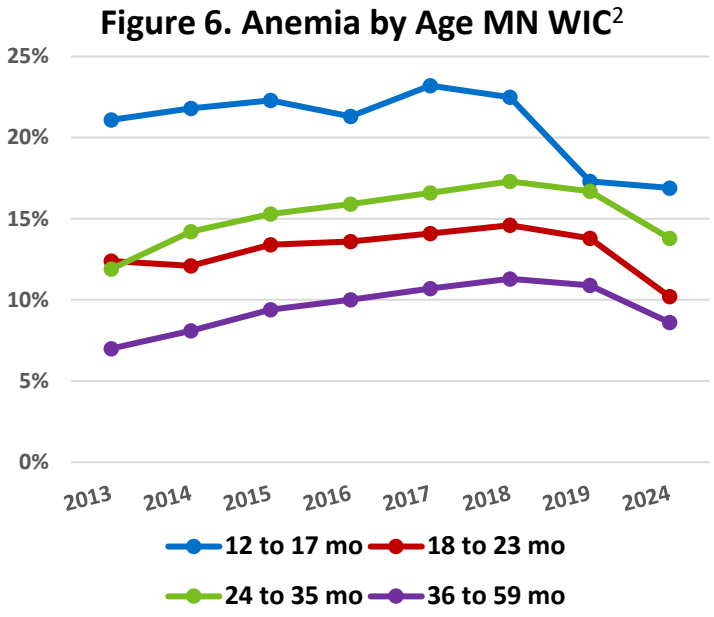



- Children from families identifying as Sudanese, Liberian, multi-generation African American, or Kenyan have higher rates of anemia (Figure 4).
- All race/ethnic groups in MN WIC exceed the U.S. rate of anemia (5.8%).[3]




- Rates vary greatly by Asian cultural identity with Laotian and Cambodian children having the highest rates (Figure 5).

## Anemia by age group




- In 2024, anemia decreased in all age groups. Children ages 12 to 17 months experienced the highest rates of anemia (Figure 6).
- Feeding behaviors that contribute to anemia or iron deficiency:
  - Not weaning from the bottle at 12 to 14 months and delaying introduction and progression of iron containing foods.[5]
  - Decline in the use of iron fortified infant cereals and low use of infant meats prior to one year.[5]
  - Giving cow's milk instead of formula before the first birthday. Cow's milk is lower in iron and can cause intestinal blood loss. Milk casein and calcium interfere with iron absorption.[5]
- Anemia in early childhood can have lifelong effects on cognition and behavior.[1]

## Actions to prevent anemia in children

| Prenatal[1] | 0 to 12 months[1] | 12 to 60 months[1] |
|---|---|---|
| **Promote infant iron stores**<br>•Support healthy pregnancy to achieve full term and normal birth weight<br>•Prevent or resolve anemia during pregnancy<br>•Promote prenatal vitamin with iron along with iron-rich foods<br>•Refer food insecure pregnant women to food resources | •No cow or goat milk until one year of age<br>•Start introducing a cup at around six months<br>•If exclusively breastfed, supplement with iron at four months (or at one month if preterm) until iron-containing solids are eaten<br>•Begin iron-containing solids at around six months<br>•Screen for anemia by 12 months of age | •Wean from the bottle around 12 months<br>•Eat iron-containing foods each day such as meats, legumes and fortified grains<br>•Offer fruits and vegetables at meals and snacks<br>•Avoid sugar beverages<br>•Limit juice to four oz a day<br>•Limit milk to 2 to 3 cups a day<br>•Planned meals and snacks<br>•Family mealtimes<br>•Refer food insecure families to food resources[6] |

**References**


1. Baker RD, Freer FR. Diagnosis and prevention of iron deficiency and iron-deficiency anemia in infants and young children (0-3 years of age), Pediatrics 2010; 126 (5) 1040-8, accessed April 2025.
2. Minnesota WIC Information System
3. Williams AM, Ansai N, Ahluwalia N, Nguyen DT. Anemia prevalence: United States, August 2021 – August 2023, CDC. Accessed April 2025.
4. World Health Organization, accessed April 2025.
5. Minnesota Vital Statistics
6. Roess AA, Jacquier EF, Catellier DJ, Carvalho R, Lutes AC, Anater AS, Dietz WH. Food consumption patterns of infants and toddlers: Findings from the Feeding Infants and Toddler Study (FITS), 2016, J Nutr 2018;148 (3) 1525S-35S, accessed April 2025.
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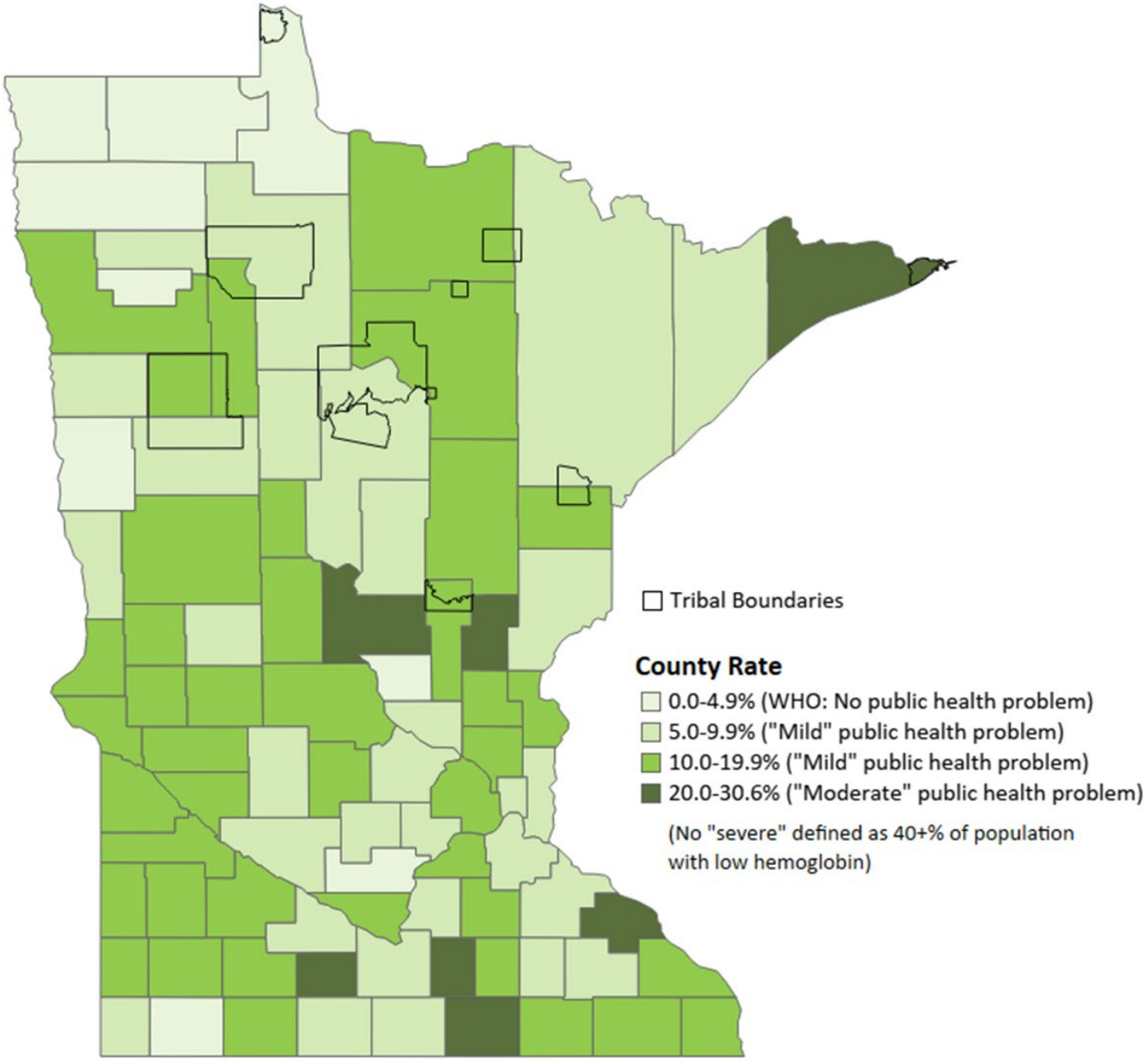
## Anemia in infants and children participating in MN WIC by county of residence, CY 2024[2]

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