



Nutritional Surveillance in Georgia

The micronutrients deficiency surveillance system has been established under the CDC/USA and NCDC/Georgia Collaborative Project with objectives to implement practical and effective surveillance system, which will be essential to control micronutrient deficiency successfully, using the sentinel surveillance approach and to study existing situation on micronutrient deficiency.

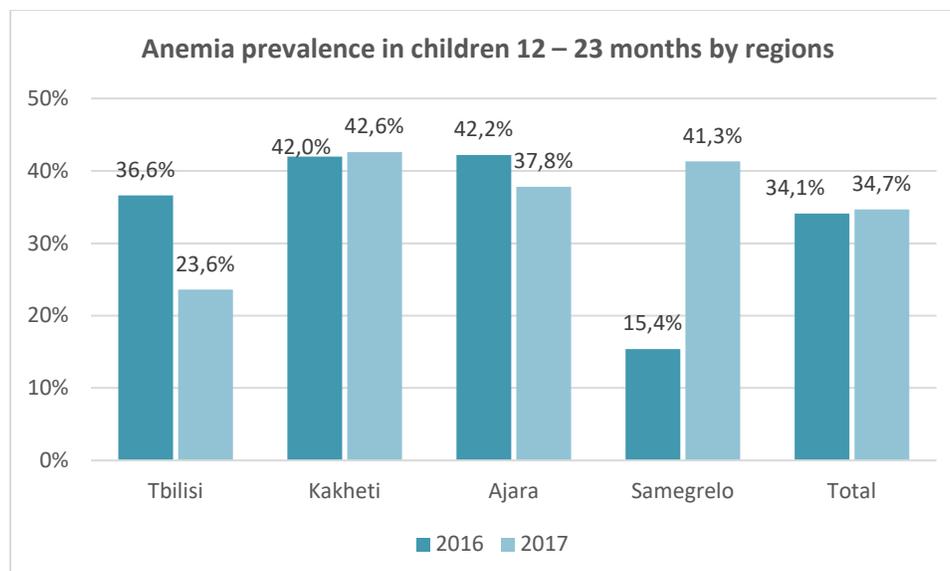
Data on selected indicators of micronutrient status of young children 12 – 23 months old, 1st trimester pregnant women, and 12-year-old school children were/are being collected across four sentinel regions in Georgia (Tbilisi, Kakheti, Ajara and Samegrelo). Those micronutrient status indicators include:

Micronutrient status indicators

- Hemoglobin (Hb) and serum ferritin (SFer), as indicators of iron status in young children 12 to 23 month old.
- Hemoglobin (Hb) and serum ferritin (SFer), as indicators of iron status; serum folate (SFol) as indicator of folate status; and urinary iodine as indicator of iodine status in 1st trimester pregnant women.
- Urinary iodine as indicator of iodine status in 12 year old school children.
- Cases of the neural tube defects (NTDs), spina bifida and anencephaly identified in fetuses that were medically terminated, and among newborns delivered in sentinel maternity facilities as indicators of folate insufficiency among women of childbearing age.

Anemia and iron deficiency in 12 – 23 months old children

About 34% of children 12 – 23 months old were identified as anemic. The prevalence of anemia ranged from about 15% to 42% in 2016, and from about 24% to 43% in 2017. The prevalence of iron deficiency (based on serum ferritin < 12 µg/L) among those young children, ranged from about 78% to 91% across the sentinel health facilities. Such alarmingly high prevalence of iron deficiency can potentially have significant negative consequences on the cognitive development of the children.

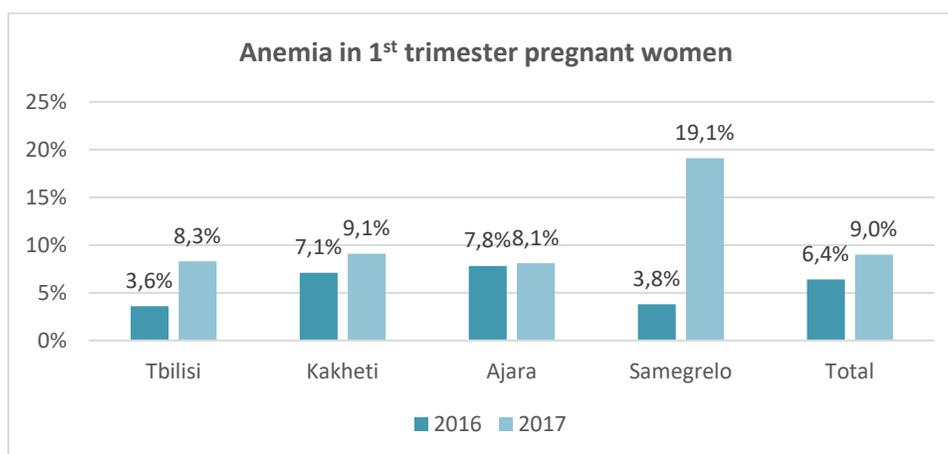


Recommendations

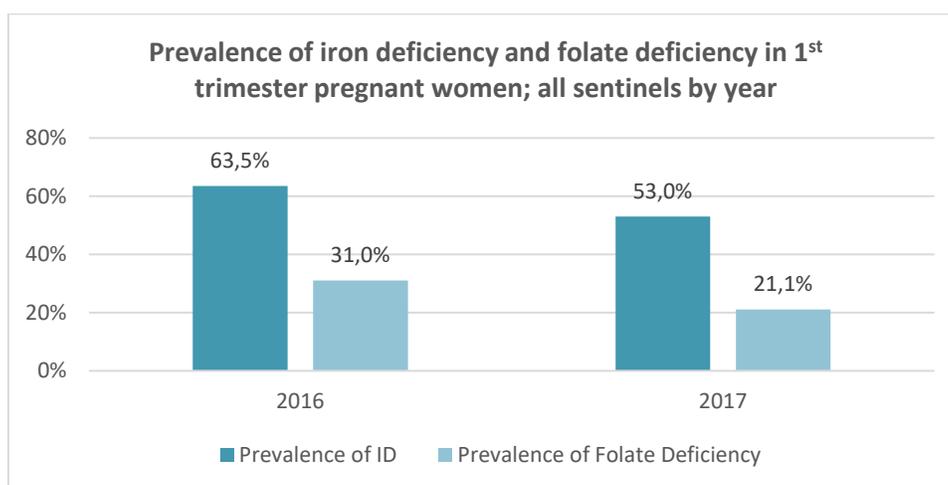
- Verify that the process of recruitment of children for Hb and serum ferritin testing is followed according to the criteria established by the NCDC, and that it does not result in “bias” toward mostly sampling children at risk of anemia and/or iron deficiency.
- Improve the promotion of exclusive breastfeeding during the first 6 months of life. However, at the same time, develop and enforce mandatory regulations related to fortification of the many brands of breast milk substitutes that are widely marketed in Georgia (while adhering to the principles that prohibit commercial promotion of such products).
- Develop and enforce regulations related to fortification of all commercially marketed complementary foods for children 6 – 23 months old, and also enable families who prefer to prepare home-cooked complementary foods to fortify the food using micronutrient powders (MNPs).

Anemia, iron deficiency and folate deficiency in 1st trimester pregnant women, and neural tube defects-affected pregnancies.

The prevalence of anemia among 1st trimester pregnant women is much lower than among young children, more than 50% of the women were found to be iron deficient (based on serum ferritin <15 µg /dL).



20% of 1st trimester pregnant women were found to be folate deficient, based on serum folate concentration <3 ng/mL. Their median serum folate of 7.5 ng/mL is also quite low, and increases the risk of fetuses developing neural tube defects (NTDs) such as spina bifida and anencephaly. Such increased risk of NTDs is illustrated in the very high birth-prevalence of NTDs (i.e. 27.5/10,000 births and 34.2/10,000 births in 2016 and 2017, respectively), more than five and six times higher than in countries where folic acid fortification of flour has been mandatory for more than 10 years.

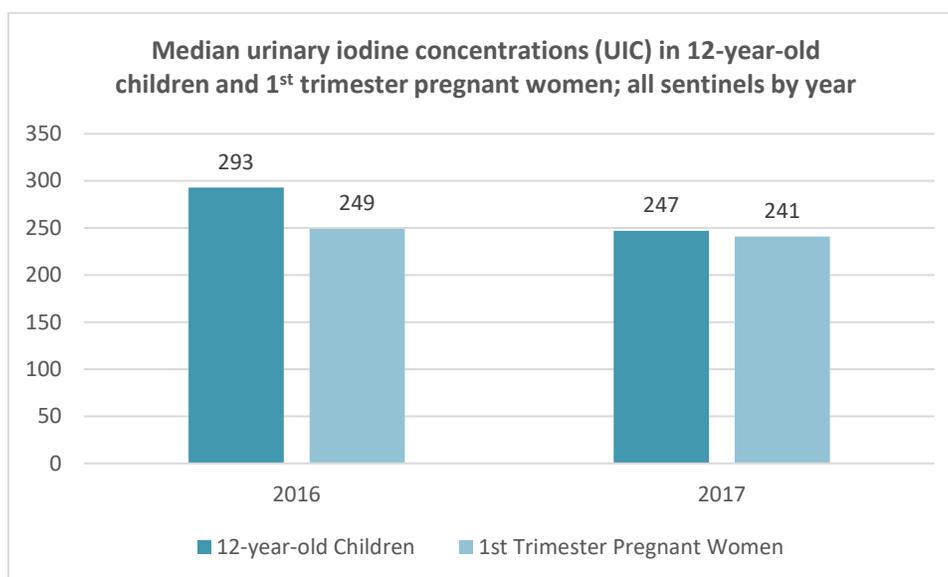


Recommendations

- Since iron deficiency in early stages of pregnancy increases the risk of pre-term delivery, it is essential to enable women of childbearing age to improve their dietary intake and start pregnancy with adequate iron status.
- Promulgate legislation, and develop and enforce regulations on mandatory fortification of all industrially milled wheat flour in Georgia (domestically produced and imported) with at least iron and folic acid to help eliminate iron deficiency as a public health problem among the population, especially women of childbearing age, and to significantly reduce the tremendous and tragic burden of NTD-affected pregnancies.

Iodine status of school-age children and pregnant women.

Iodine deficiency has been eliminated as a public health burden in Georgia due to effective iodization of salt. In fact, it may be necessary to consider possibly reducing the required concentration of iodine in salt.



Recommendations

- The public health authorities of Georgia, including the NCDC, should clearly acknowledge the critical contribution and role of the country's salt importers toward elimination of iodine deficiency in the country and protecting the cognitive development of the population.
- The public-private sector partnership on salt iodization and marketing of adequately iodized salt must be sustained indefinitely to prevent the recurrence of iodine deficiency disorders (IDD) in Georgia.
- Engage the salt importers and the agency responsible for regulatory monitoring of iodized salt, so that they might provide data on the annual quantity of adequately iodized salt marketed across the 4 sentinel regions, and use those data and an estimated per capita salt consumption of 10 g/person/day, as well as the population of each region, to calculate the "expected" population coverage of iodized salt in each area (assumed to be well over 90%).

National assessment of iodine nutrition status and iodized salt use in Georgia

To provide information on coverage of population with iodized salt in Georgia nationwide, and on adequacy of iodine content in salt on the household level through quantitative measurement of iodine concentration in salt, to determine status of iodine nutrition of the population in Georgia nationwide by measuring UIC and total body weight in school aged children (SAC), to assess status of iodine nutrition in pregnant women (PW) by collecting urine samples on the 1st trimester

of pregnancy in clinics nationwide and measuring UIC, to develop recommendations for revision of present normative values of iodine in salt, as well approaches to use of iodine nutritional supplements among SAC and PW the national survey of iodized salt use and status of iodine nutrition has been conducted by the NCDC in collaboration with the UNICEF-Georgia.

Results

- Over 90% of households in Georgia consume adequately iodized salt both in General and Mountain stratum.
- Quality of iodized salt was remarkably good for all major brands of salt imported from various countries.
- Adjusted median UIC in SAC nationwide (298 μ g/L) was within the range (100-299 μ g/L) for optimum iodine nutrition of population, albeit close to the upper limit.
- Median UIC findings in all the SAC groups are clearly above the threshold for population iodine deficiency.
- Percent UIC values less than 100 μ g/L in the 3 groups were 0.6%, 2.2% and 3.1% of SAC in urban, rural and mountainous areas, respectively.
- The median iodine intake estimate in SAC was 227 μ g/day. The analysis shows that the iodine intake of Mountain SAC is lower by 19% than of SAC in the General stratum.
- The median UIC in the 634 PW was 211 μ g/L. This finding suggests optimal iodine status of PW in Georgia as the level is conveniently in the middle of the normative 150-250 μ g/L range.

Key Achievements

According both surveys iodine deficiency has been eliminated as a public health burden in Georgia due to effective iodization of salt.

Challenges and Future Steps

- Alarmingly high prevalence of iron deficiency in children can potentially have significant negative consequences on the cognitive development of the children
- High prevalence of anemia, iron deficiency and folate deficiency in 1st trimester pregnant women
- High prevalence of neural tube defects-affected pregnancies

Further monitoring of iodized salt use and iodine nutrition is recommended to assure permanent IDD elimination and optimal iodine nutrition in Georgia.



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