Maternal, Child & Adolescent Health Disparities in San Francisco

Food Insecurity, Water Insecurity, Malnutrition & Dehydration

Health authorities aim to reduce food insecurity to 6%[1] and achieve universal access to safe and affordable drinking water by 2030 [2]. Food security, consistent access to enough healthy food [3], and water security, the reliable availability of an acceptable quantity and quality of water [2], are essential for good nutrition. Inadequate food and water limit reproduction, growth, physical and cognitive function, mental health, and lifetime health. **Food and water insecurity are preventable drivers of health disparities.**
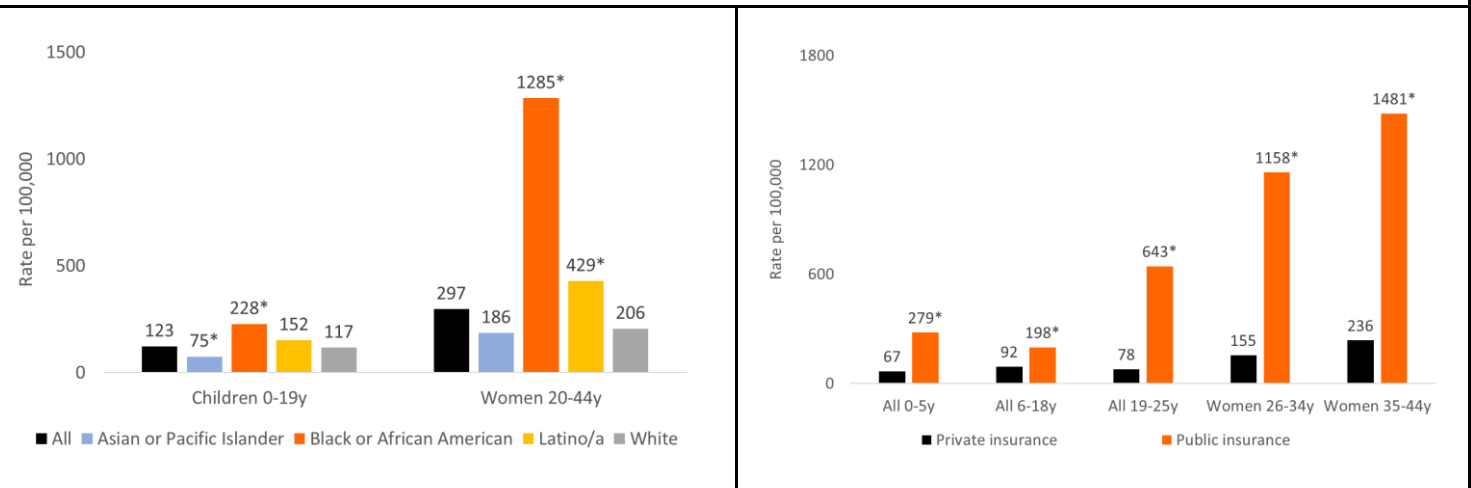
Food insecurity among women of reproductive age and children in San Francisco

- 20% of all CHIS survey respondents who identified as women ages 20-45 years living in SF reported sometimes or never being able to afford fresh fruits/vegetables in their neighborhood in 2016-2018.[4]
  - **Half (54%) of women ages 20-45 years, with an income below 200% of the Federal Poverty Limit in 2015-2019, reported not being able to afford enough food.**[4]
- 9% of all children ages 0-17 years in San Francisco lived in food insecure households in 2019.[5]
  - **Half (48%) of students (29,831 children) enrolled in San Francisco public schools qualified for free or reduced-price meals in 2019-2020.**[6]

Malnutrition among women of reproductive age and children in San Francisco

- 486 children and adolescents (ages 0-19 years) were hospitalized with malnutrition as primary or secondary diagnosis in 2017-2019; 143 of the 486 children (29%) lived in 3 lower-income zip codes in the Mission, Outer Mission, and Bayview Hunter's Point neighborhoods: 94110, 94112 and 94124.[7]
- 1,684 women ages 20-44 years, including 749 pregnant women, were hospitalized with a malnutrition diagnosis in 2017-2019.[7]
- Malnutrition hospitalization was significantly more frequent among Black or African American women and children compared to white women and children in 2017-2019.[7]
- In all age groups, women and children with public health insurance coverage were significantly more likely to be hospitalized with malnutrition than their peers with private health insurance.[7]

Rates of malnutrition hospitalization in SF for women and children by race-ethnicity and health insurance, 2017-2019[7]

OSHPD data[7] were analyzed by MCAH Epidemiology. Rates were calculated using 2017-2019 OSHPD patient discharge counts as numerator and U.S. Census Bureau population estimates for the 2017-2019 as denominator (Annual count by age and race: CC-EST2019-ALLDATA; Annual 5-year rolling average count by age and private or public insurance: B27002 and B27003). Rates may be under- or overestimated, if the population estimates are under- or overestimated. Malnutrition as primary or secondary diagnosis, based on ICD10 codes: D508, D509, 513, D519, D520, D530, D538, D539, E40, E41, E42, E43, E440, E441, E45, E46, E500, E501, E502, E503, E504, E505, E506, E507, E508, E509, E5111, E5112, E512, E518, E519, E52, E530, E531, E538, E539, E54, E550, E559, E560, E561, E568, E569, E58, E59, E60, E610, E611, E612, E613, E614, E615, E616, E617, E618, E619, E630, E631,E638, E639, E640, E641,E642, E643, E648, E649, O2510, O2511, O2512, O2513, O252, O253, P004, Z724, Z594, T730,T730XXA, R636, R638, Z681, Z6851. The figures summarize rates for people with female sex on record from hospital discharge and self-reported Census survey. Asian or Pacific Islander, Black or African American and White are non-Hispanic or non-Latino/a; Hispanic or Latino/a are of any race.

*Rate is significantly higher than the corresponding rate for white or privately insured women or children based on non-overlapping 95% Confidence Intervals.
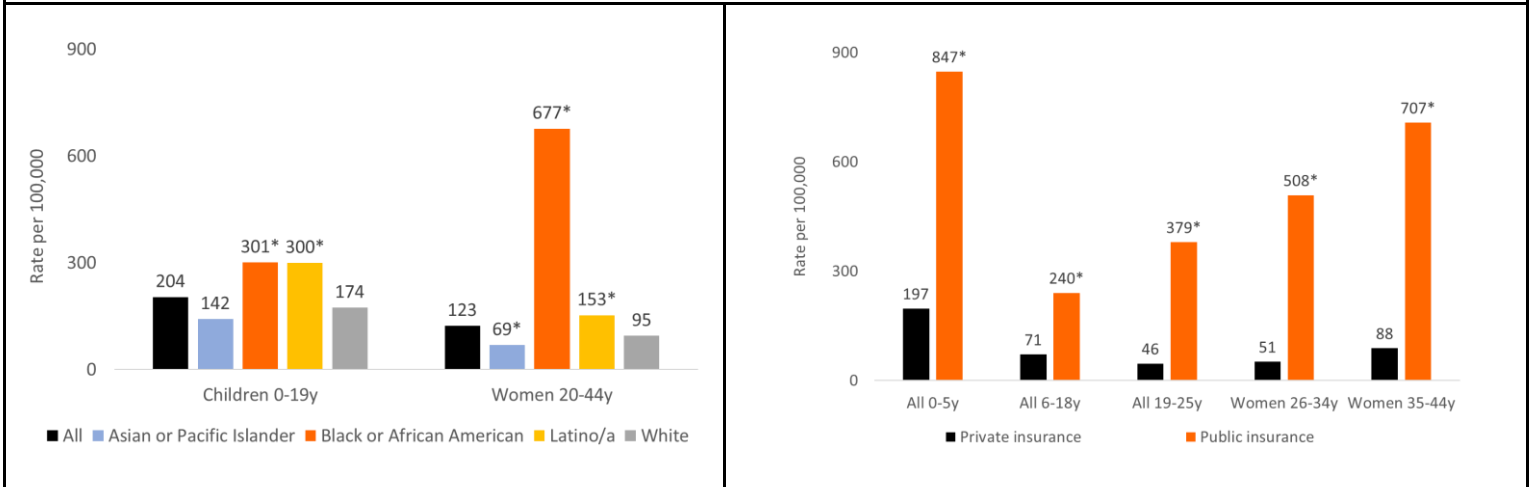
Water insecurity in San Francisco

- San Francisco county ranks third in the state for highest rate of housing *without* hot and cold piped water. Incomplete plumbing is associated with poverty and low-income housing.[8]
- Access to public water in San Francisco does not meet United Nations standards for reliable availability; 75% of unhoused people surveyed in 2021 could not access adequate water to meet daily needs.[9]

Dehydration among women and children in San Francisco

- 1,508 children and adolescents (ages 0-19 years) went to the hospital and were diagnosed with dehydration in 2017-2019; 807 were admitted; 497 of the 1,508 children (33%) lived in 3 lower income zip codes in the Mission, Outer Mission, and Bayview neighborhoods: 94110, 94112 and 94124.[7]
- 1,590 women ages 20-44 years, including 206 pregnant women, had a dehydration ER visit or hospitalization in 2017-2019. 698 women, including 128 pregnant women, were hospitalized.[7]
- Hospital admission with a diagnosis of dehydration was significantly more frequent for Black or African American and Latino/a women and children than for white women and children.[7]
- In all age groups, rates of dehydration hospitalization were significantly higher for women and children with public health insurance coverage than for women and children with private insurance.[7]

Rates of dehydration hospitalization in SF for women and children by race-ethnicity and health insurance, 2017-2019[7]

OSHPD data[7] were analyzed by MCAH Epidemiology. Rates were calculated using 2017-2019 OSHPD patient discharge counts as numerator and U.S. Census Bureau population estimates for the 2017-2019 as denominator (Annual count by age and race: CC-EST2019-ALLDATA; Annual 5-year rolling average count by age and private or public insurance: B27002 and B27003). Rates may be under- or overestimated, if the population estimates are under- or overestimated. Dehydration as primary or secondary diagnosis based on ICD10 codes: E860, E861, E869, E870, T6701XA, T6701XD, T6701XS, T6702XA, T6709XA, T670XXA, T670XXD, T670XXS, T673XXA, T674XXA, T674XXA, T675XXA, T675XXD, T731XXS. The figures summarize rates for people with female sex on record from hospital discharge and self-reported Census survey. Asian or Pacific Islander, Black or African American and White are non-Hispanic or non-Latino/a; Hispanic or Latino/a are of any race.

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References:

1 US. DHHS. https://health.gov/healthypeople/objectives-and-data/browse-objectives/nutrition-and-healthy-eating/reduce-household-food-insecurity-and-hunger-nws-01

2 United Nations. https://sustainabledevelopment.un.org/content/documents/19901SDG6_SR2018_web_3.pdf

3 FeedingAmerica.org. https://hungerandhealth.feedingamerica.org/understand-food-insecurity/

4 UCLA CHIS. https://ask.chis.ucla.edu/

5 FeedingAmerica.org. https://map.feedingamerica.org/county/2019/child/california/county/san-francisco

6 CDE. https://www.cde.ca.gov/ds/ad/dataquest.asp

7 Office of Statewide Health Planning and Development (OSHPD) Hospital discharge data. http://www.oshpd.ca.gov/HID/HIRC/CustomerService/PDDAgreement.pdf

8 Pacific Institute. https://pacinst.org/wp-content/uploads/2019/07/plumbing-the-depths.pdf

9 SF Coalition on Homelessness. https://www.cohsf.org/wp-content/uploads/2021/03/Water4All-Report.pdf