

How Hypertension Prevalence Was Estimated

How are yearly hypertension prevalence estimated for the 26 Health Districts in Los Angeles County calculated?

Hypertension prevalence estimates were calculated by following the Healthcare Effectiveness Data Information System (HEDIS) criteria. We limited our estimates to members aged 18-85 years to exclude children and youths as well as to ensure data privacy for the relatively small population of Kaiser Permanente Southern California (KPSC) members older than 85 years. We are approximating hypertension prevalence for each Health District using information from KPSC members living in each respective Health District. KPSC membership has been found to be approximately representative of the population living in its service area.¹

In each year, the denominator is the adult population aged 18-85 years who were KPSC members (allowing for a 45-day gap of membership in a given year) and who had an address in Los Angeles (LA) County at some point during the measurement year. Member addresses were geocoded to census tracts then linked to LA County Health Districts that are bigger than census tracts but align with 2012 census tract boundaries. There are 26 LA County Health Districts. These Health Districts were created by the Los Angeles Department for Public Health² for planning purposes. The link to the map and shapefile of Health Districts can be found below. We exclude all members that were pregnant during the measurement year, had end stage renal disease, dialysis, a nephrectomy, or kidney transplant as well as members who were in hospice care and at the end of their life.

In each calendar year, a member was considered to have hypertension (and to be part of the numerator of the prevalence estimate) if they had at least two outpatient visits on different dates with either a diagnosis of hypertension (International Classification Disease (ICD) 9th revision codes 401-405, and ICD 10th revision codes I10-15) during the measurement year or the year prior. We also considered members to have hypertension if they had at least two blood pressure measurements during two different outpatient visits with elevated or high blood pressure (systolic blood pressure ≥ 140 mmHg OR diastolic blood pressure ≥ 90 mm Hg). If multiple blood pressure measurements were taken on a given day, the lowest valid systolic and lowest valid diastolic reading was used. Biologically implausible values for blood pressure (diastolic blood pressure < 20 and > 160 , systolic blood pressure < 50 and > 300) were excluded.

We currently do not provide data for 2020 onward as the COVID-19 pandemic brought about important changes in health care utilization which, for example, affected the number of routine hypertension measurements in primary care as well as the patients who sought care during the pandemic.

Race imputation for Hispanic members with unknown race

For persons who indicated that they were Hispanic and who did not indicate a race, we imputed race. For that purpose, we used the information from Hispanic members who had identified their race. For example, among those Hispanic members that indicated a race, 87% identified as white, 1.3% identified as black

¹ Koenig, C., Langer-Gould, A. M., Gould, M. K., Chao, C. R., Iyer, R. L., Smith, N., ... Jacobsen, S. J. (2012). Sociodemographic characteristics of members of a large, integrated health care system: comparison with US Census Bureau data. *The Permanente Journal*, 16(3), 37–41.

² Los Angeles County Public Health Department. (2017). Health District Profiles. <http://publichealth.lacounty.gov/dhsp/HealthDistricts.htm> (accessed on 6/10/2022)

and 9% indicated they were of an “other race”. We randomly assigned a race to each Hispanic member who had not indicated a race by recreating the same proportion of races that we had found among Hispanic members who indicated their race.

Link to shape files of Health Districts:

<https://geohub.lacity.org/datasets/lacounty::health-districts-2012/about>