



Alameda County
Health Care Services Agency



Alameda County Public Health Department
Celebrating Healthy People in Healthy Communities

Air Pollution Risks & Exposure: **Community Health Impacts in East Oakland**

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Agenda

GOALS: Identify specific and cumulative health indicators as well as population characteristics that can make communities highly vulnerable to health impacts of air pollution; discuss strategies to reduce health burdens and eliminate air quality disparities

- What is Public Health? Who We Are
- Pollution Burdens and Health Impacts in East Oakland
- Key Population Characteristics
- Health Equity: Considerations for Solutions
- Questions & Answers

Public Health: Who We Are



Health & Public Health

WHO defines health as “a state of physical, emotional, mental and social well-being; it is not merely the absence of disease, dysfunction or infirmity.”

AND

Public health is “the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, and organizations, public and private communities, and individuals.”

- CEA Winslow

The graphic features a white background with a blue vertical bar on the left. Two light blue ovals are positioned side-by-side. The left oval is titled 'ACPHD Vision' and contains the text: 'Everyone in Alameda County, no matter who you are, where you live, how much money you make, or the color of your skin, leads a healthy, fulfilling, and productive life.' The right oval is titled 'ACPHD Mission' and contains the text: 'To work in partnership with the community to ensure the optimal health and well-being of all people through a dynamic and responsive process respecting the diversity of the community and challenging us to provide for present and future generations.' At the bottom, there are logos for 'Alameda County Health Care Services Agency' and 'Alameda County Public Health Department Celebrating Healthy People in Healthy Communities', along with a small number '5' in the bottom right corner.

ACPHD Vision

Everyone in Alameda County, no matter who you are, where you live, how much money you make, or the color of your skin, leads a healthy, fulfilling, and productive life.

ACPHD Mission

To work in partnership with the community to ensure the optimal health and well-being of all people through a dynamic and responsive process respecting the diversity of the community and challenging us to provide for present and future generations.

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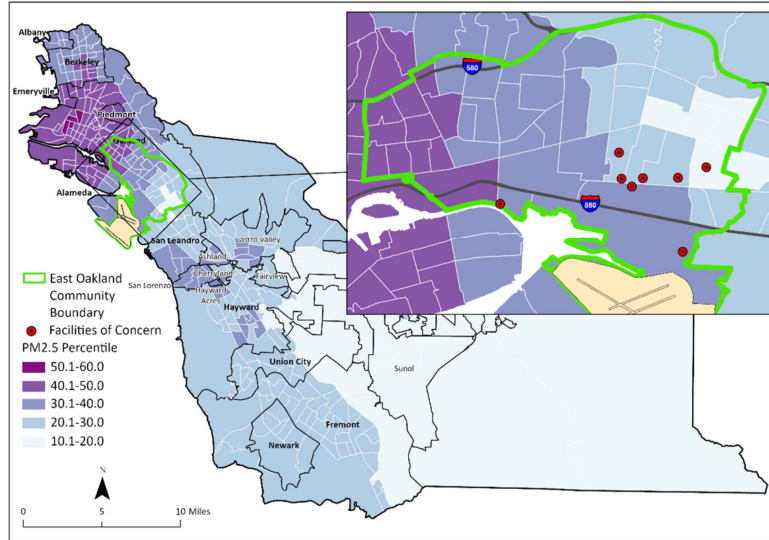
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Health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care. (drawn from Robert Wood Johnson Foundation definition)

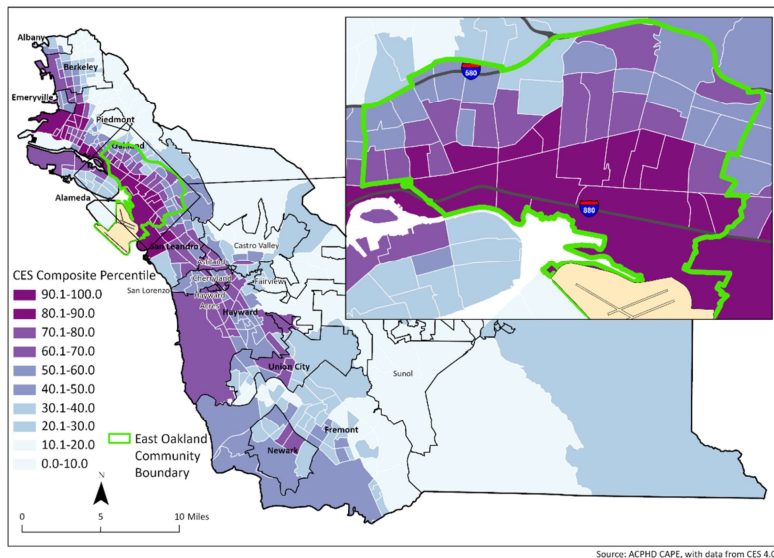
Pollution & Health



CES PM2.5



CES Composite Indicator

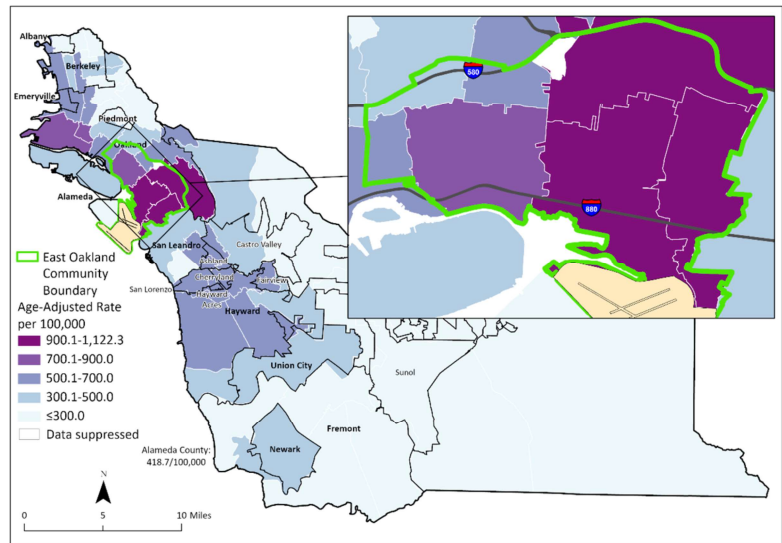


- This map shows Alameda County with the CalEnviroScreen “composite indicator” mapped by census tracts. The composite indicator combines into a single index indicators that fall into four broad groups—exposures, environmental effects, sensitive populations, and socioeconomic factors.
- As you can see, many census tracts in the East Oakland boundary have a higher CES score than the rest of the county.
- Due to historic and existing discriminatory housing and planning policies, communities of color and low-income communities are more likely to be located next to and directly affected by pollution and poor air quality.
- And not everyone reacts to air pollution the same way. Sensitive populations such as children, the elderly and those with prior health conditions are more vulnerable to the effects of pollution. Exposure to pollution can cause, or worsen, negative health outcomes, making people too sick to go to work, go to school, or simply go outside.
- East Oakland experiences high levels of pollution from highways, industrial facilities in close proximity to residents

•Much of this area south of E. 14th was zoned as industrial –

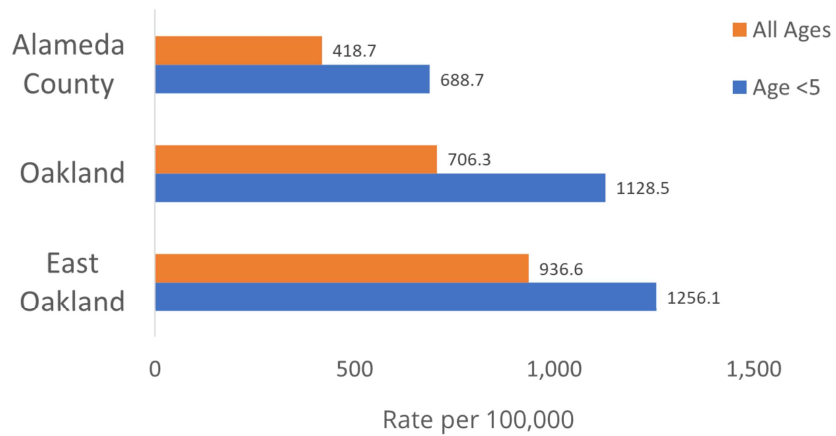
<https://dsl.richmond.edu/panorama/redlining/#loc=11/37.81/-122.37&city=oakland-ca>

Asthma ED and Hospitalizations



- Air pollutants, exhaust fumes, and chemical irritants increase chances of developing asthma and can trigger or exacerbate symptoms, so it's an important health indicator to monitor in terms of pre-existing health risk and burden.
- This map of the county shows Asthma hospitalizations and emergency department (ED) visits by zip codes.
- Here you can see that East Oakland is in zip code areas with the highest rates of asthma ED visits and hospitalizations in the county
- For East Oakland, as well as the rest of Oakland and the county, children experience the highest asthma rates.
- Asthma is a condition that can make it difficult to breathe. Some individuals with asthma may experience minor symptoms such as coughing while others could experience major problems that can limit their ability to enjoy daily activities. In severe cases, it can lead to life-threatening asthma attacks. Asthma cannot be cured, but its symptoms can be treated.

Asthma Emergency Department and Hospitalization Rates, Young Children and All Ages

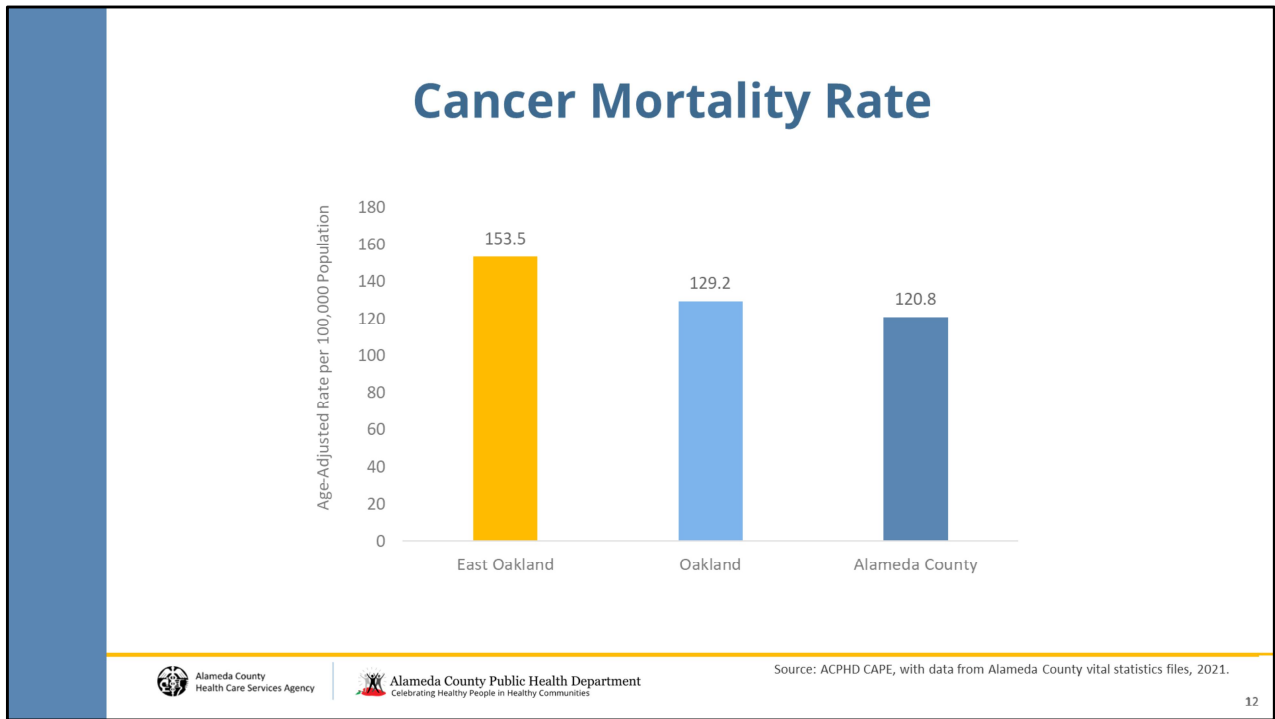


- Asthma rates are highest among childhood asthma cases for all three geographies.

East Oakland Leading Causes of Death

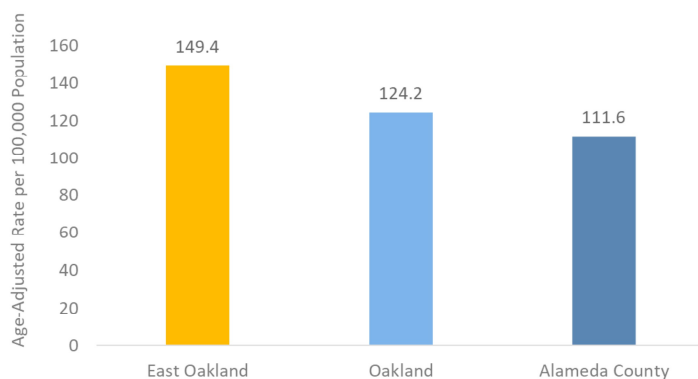
Rank	Causes	Death Count	Mortality Rate (Age-Adjusted per 100,000 Population)	% of All Deaths
1	Cancer	254	153.5	17.3%
2	Heart disease	246	149.4	16.8%
3	COVID-19	126	78.2	8.6%
4	Stroke	103	65.0	7.0%
5	Homicide	68	35.3	4.6%
6	Diabetes	61	35.2	4.2%
7	Unintentional overdose	59	30.2	4.0%
8	Alzheimer's disease	52	35.5	3.5%
9	Chronic liver disease and cirrhosis	41	22.2	2.8%
10	CLRD	34	21.7	2.3%

- Besides asthma, there are other health risks associated with – but not solely attributable to – air pollution which can be monitored.
- Cancer, heart disease, stroke, and chronic lower respiratory disease are among the top 10 causes of death in East Oakland and together account for 43.4% of all deaths.
- These diseases are related to air pollution and East Oakland residents are dying from them at higher rates than residents countywide.
- Next, we'll look at some comparisons for three of the leading diseases across East Oakland, Oakland and Alameda County. They are reflective of health inequities which are pervasive in East Oakland and neighborhoods which have the highest poverty rates. Low- and extremely low-income communities fare poorest on most key health indicators tracked longitudinally by ACPHD



Cancer is the leading cause of death in Alameda County, Oakland, and East Oakland. It accounts for 17.3% of all deaths in East Oakland. East Oakland has a higher age-adjusted cancer mortality rate per 100,000 population than Oakland and Alameda County as a whole.

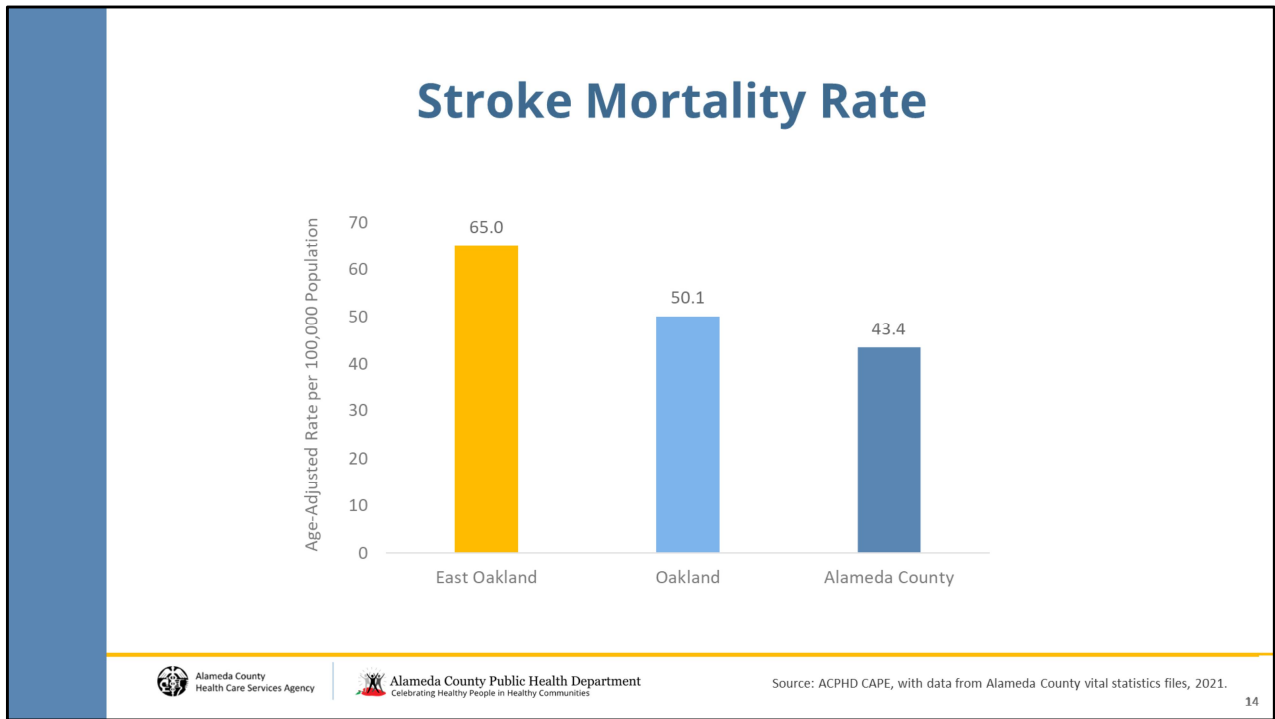
Heart Disease Mortality Rate



Source: ACPHD CAPE, with data from Alameda County vital statistics files, 2021.

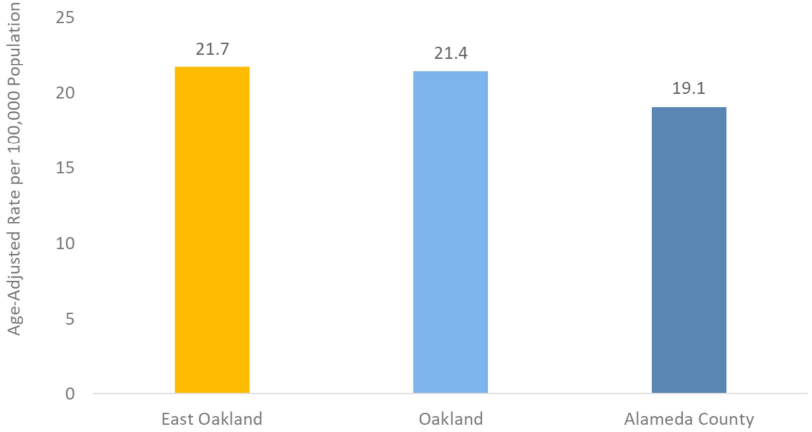
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Heart disease is the second-leading cause of death in Alameda County, Oakland, and East Oakland, accounting for 16.8% of all deaths in East Oakland. East Oakland has a higher heart disease mortality rate than Oakland and Alameda County as a whole.



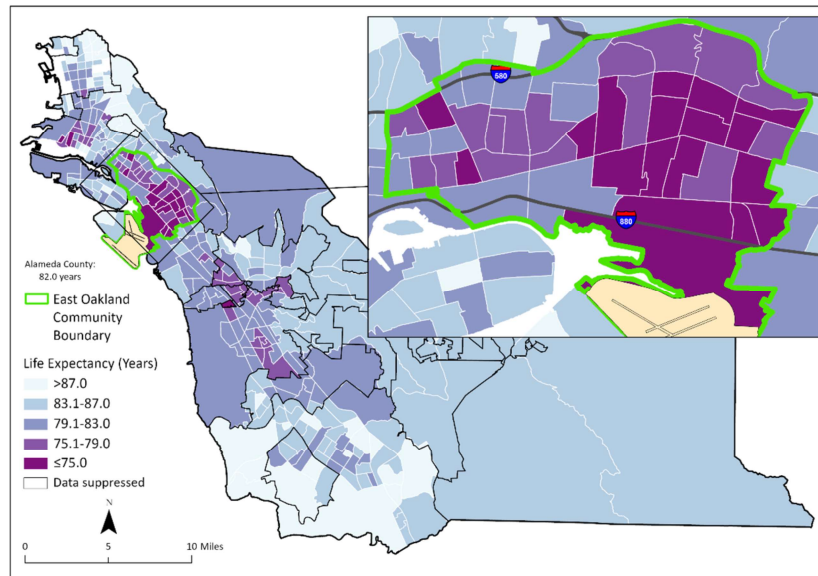
Stroke is the fourth-leading cause of death in Alameda County, Oakland, and East Oakland. In East Oakland, 7.0% of all deaths are due to stroke and the mortality rate is higher than Oakland and Alameda County as a whole.

Chronic Lower Respiratory Disease Mortality Rate



Chronic lower respiratory disease is the tenth-leading cause of death in East Oakland, accounting for 2.3% of all deaths in East Oakland. East Oakland has a higher CLRD mortality rate than Oakland and Alameda County as a whole.

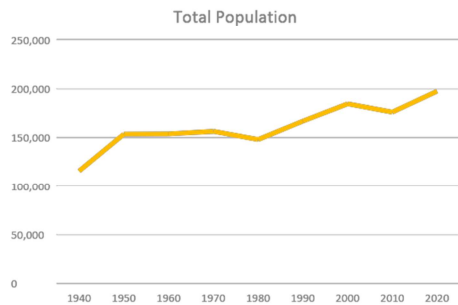
Life Expectancy



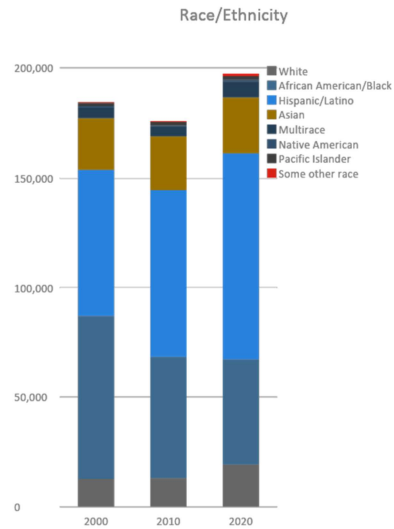
- Beyond individual sickness and death rates, it's critical to take into account indicators of cumulative health risks and impacts over the life course, like all-cause mortality or life expectancy.
- Here you can see that parts of East Oakland have the lowest life expectancy levels in the county, along with West Oakland and parts of the unincorporated area. Life expectancy in some census tracts of East Oakland is 12 years less than life expectancy in tracts with the highest life expectancy.

Key Population Characteristics

Demographics of East Oakland



Overall, population in East Oakland has increased greatly since the 1940s when it was more industrial. Since 2000, there has been a decrease in the number of African Americans and an increase in Hispanic/Latinos.



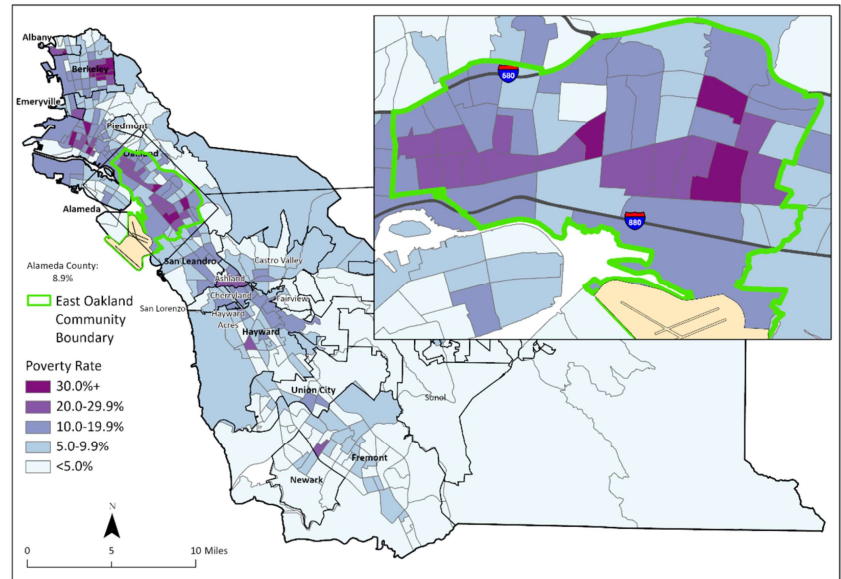
Source: ACPHD CAPE, with data from decennial census.



- Overall, population in East Oakland has increased greatly since the 1940s, going from about 100,000 to 200,000 residents. East Oakland is a diverse majority-minority community of color, but slowly reaching a Latino majority
- Since 2000, there has been a decrease in the number of African Americans and an increase in Latinos.
- Though there has been a decrease in African Americans, many census tracts in the East Oakland boundary are still about 30% African American. Latinos make up about 53% in many East Oakland tracts.

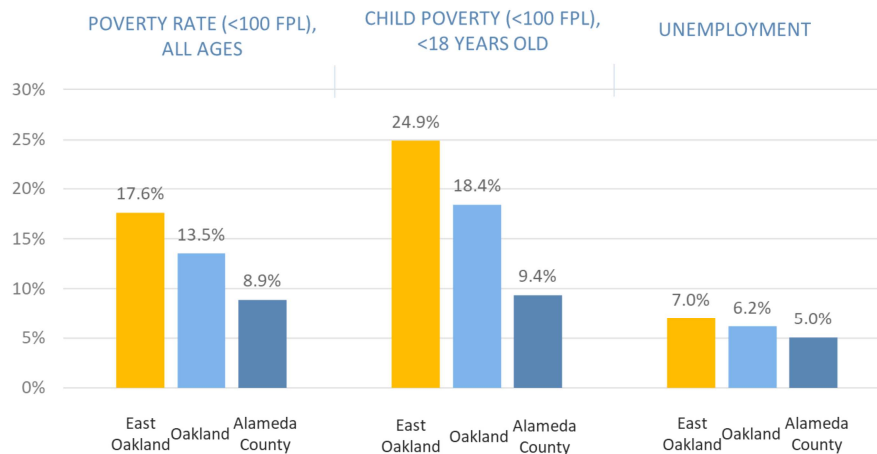
<https://statisticalatlas.com/county/California/Alameda-County/Race-and-Ethnicity>

Poverty



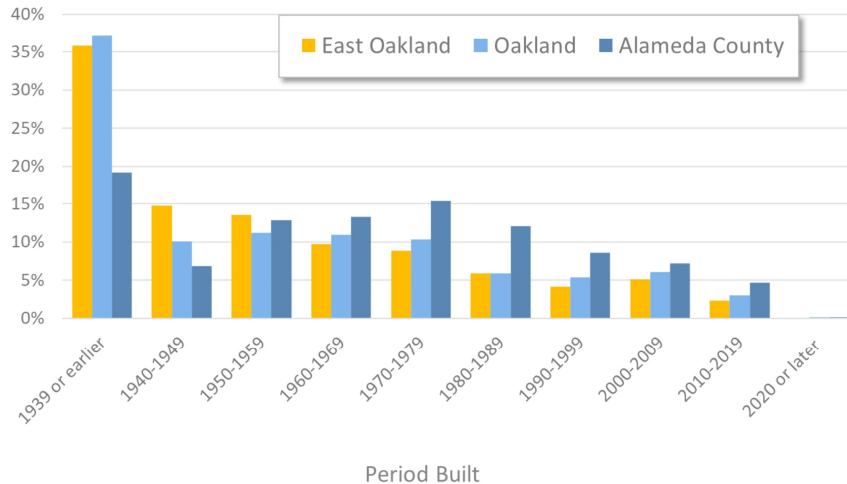
- For decades, discriminatory housing policies in the United States reinforced neighborhood segregation and disinvestment in communities of color.
- Redlined areas align with places that suffer to this day from the most persistent levels of high poverty in the County.
- In the face of long-standing disinvestment, these places have fewer resources and weaker infrastructure to support health.
- Poverty rates for children 7% are higher in East Oakland than for Oakland and 16% higher than Alameda County.

Disinvestment in high-poverty areas is the main barrier to health



- In East Oakland, the community faces barriers in the social and economic environment resulting in barriers to income and wealth, and consequently health.
- Poverty rates for all ages and for children <18 are higher in East Oakland than for Oakland and Alameda County. Poverty rates for East Oakland are two times that of Alameda County for all ages, and three times that for ages <18. Unemployment rates were also higher for East Oakland than for Oakland and Alameda County.
- Note that East Oakland is a subset of the Oakland and Alameda County data so the categories are not mutually exclusive.

Age of Housing Units

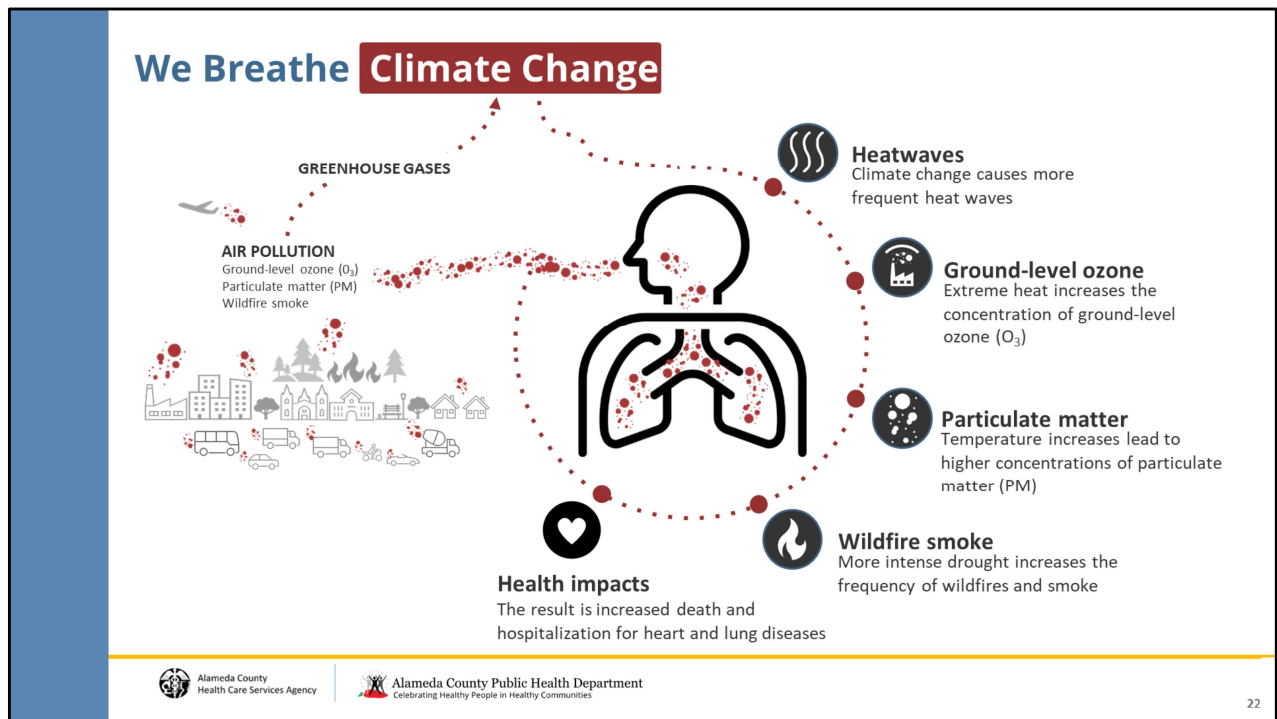


- East Oakland, like Oakland overall, has older housing stock with over 35% of housing built in 1939 or earlier. 64% of East Oakland’s housing stock was built before 1960, compared to 39% for the county as a whole.
- Poor housing conditions and exposure to environmental hazards in the home are risk factors for adverse health, including chronic disease and physical injuries; poor mental health; and shorter life expectancy. Exposure to these hazards are driven by the joint influence of both indoor and outdoor sources, the building design and conditions, and the presence and performance of ventilation systems
- Levels of pollutants found indoors can be even higher than outdoors due to poor ventilation and air circulation.

<https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/quality-housing>

Poor housing quality and inadequate conditions — such as the presence of lead, mold, or asbestos, poor air quality, and overcrowding — can contribute to negative health outcomes, including chronic disease and

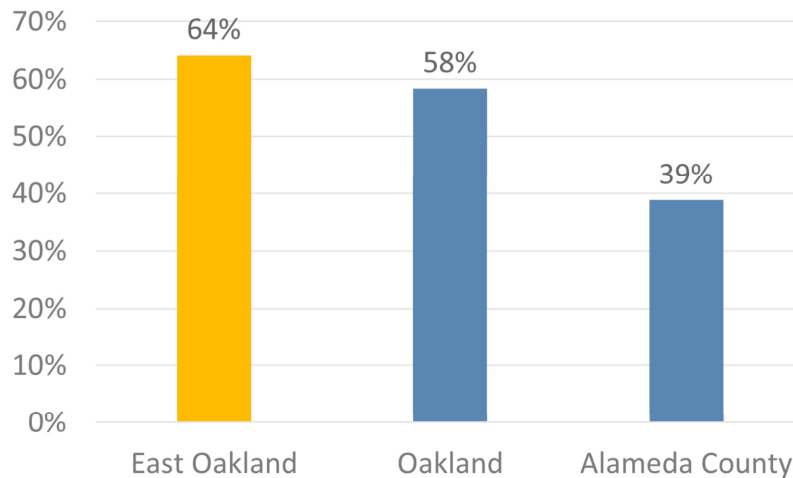
injury. For example, lead exposure from paint, pipes, and faucets can lead to irreversible adverse health effects. Even low levels of lead exposure can have serious effects on children's health and behavior, including nervous system and cognitive development. Lack of air conditioning and heating can affect residents' health. Cold indoor conditions have been associated with high blood pressure and respiratory conditions, as well as depression. Additionally, water leaks are associated with mold growth, which has been shown to affect respiratory health and increase the likelihood of asthma, coughing, and wheezing. Lack of smoke alarms, carbon monoxide detectors, and other fire suppression requirements can lead to injury and death.¹ Lastly, residents of overcrowded homes may be at risk for poor mental health, food insecurity, and infectious diseases.



•With climate change, increasing temperatures are also leading to worsening air quality – higher concentrations of ground level ozone, particulate matter, and wildfire smoke.

<https://www.exhaustion.eu/resources/climate-change-makes-new-recommended-air-quality-levels-harder-to-reach> Direct and indirect impacts – air pollution is also contributing to the broader climate impacts, heat trapping? Does air pollution contribute to climate change worsening, and comes back to community in form of other things like wildfire smoke – and the people impacted by the smoke are the same people inhaling the particulates (the bad thing is coming back to the same community – double whammy) -- dual pathway ... what they're doing in East oakland should be done with an eye on broader climate efforts happening... bring in any other factors on social vulnerability and why the CERP matters – Julia has access to good economics pieces

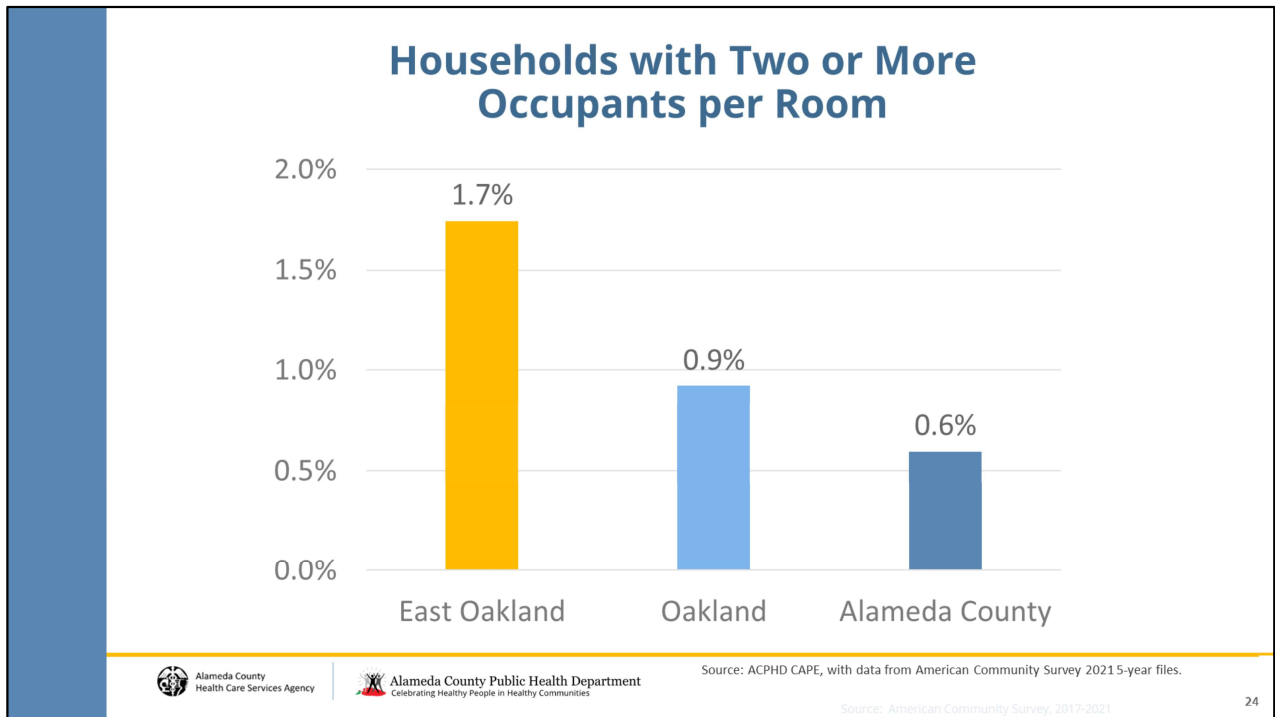
Housing Units Built Before 1960



- A greater percentage of housing stock in East Oakland and Oakland are built before 1960. In fact, the percentage of housing built before 1960 in East Oakland was 1.6 times that of Alameda County.
- In cities with older housing stock, many residents live in buildings with lead paint that may be exposed or deteriorate, as described above, as a result of lack of maintenance over time. Children, due to crawling and their naturally exploratory natures, are at most risk for inhaling and ingesting lead dust and chips from lead paint in the building as they touch walls, windows, and floors where lead dust can accumulate, and play outdoors on soil that is contaminated by deteriorated exterior lead-based paint and other lead sources, such as industrial pollution and past use of leaded gasoline. Over time, paint dust and chips become loose from wear and tear (particularly from windows or doors opening and closing) or from improper home renovations.
- Other housing and health issues are often correlated with older housing stock.
- Poor housing conditions and exposure to environmental hazards in the home are risk factors for adverse health, including respiratory, cardiometabolic, and reproductive health effects; physical injuries; poor mental health; and shorter life expectancy. Exposure to these hazards are driven by the joint influence of both indoor and outdoor sources, the building design and conditions, the presence and performance of ventilation systems, and residential activity patterns
- Levels of pollutants found indoors can be even higher than outdoors due to poor ventilation and air circulation.
- Acknowledging indoor air quality as a driver of poor health (less well studied and regulated) - any data of older housing stock contributing to poor indoor air (asthma

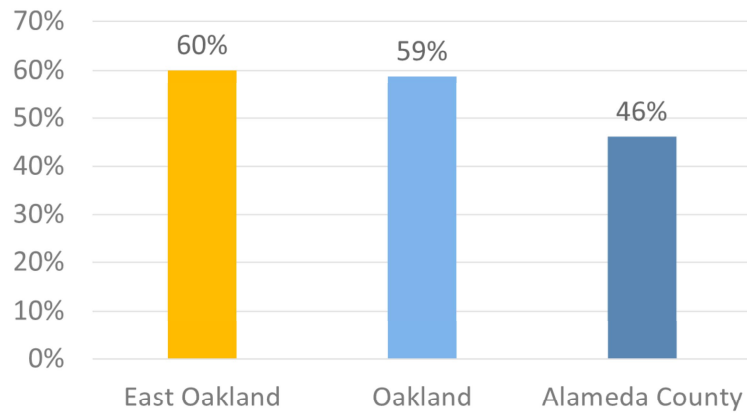
triggers) ... weatherization, window treatments, cycle of impacts (inside due to poor outdoor air, stuck with poor inside air, and extreme heat exposure)

- installing continuous mechanical ventilation systems in multi-family homes significantly reduced the presence of harmful airborne particles that contribute to respiratory and cardiovascular illness. her than the outdoor levels if a home is not p
- <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-022-00866-8>
- We developed a multidimensional Housing and Environmental Quality Index (HEQI) based on the World Health Organization's Housing and Health Guidelines and applied it to the 2019 American Housing Survey (AHS). The HEQI consisted of ten domains associated with poor health: household fuel combustion, dampness and mold, pests and allergens, lead paint risk, high indoor temperatures, low indoor temperatures, household crowding, injury hazards, inadequate water and sanitation, and ventilation. We evaluated the validity and performance of the HEQI against three housing characteristics (i.e., year built, monthly rent costs, unit satisfaction rating) and two established indices (i.e., Adequacy Index, Poor Quality Index). Compared to established housing indices, the HEQI captured four new environmental health domains of household fuel combustion, high indoor temperatures, severe crowding, and high building leakage, which enabled the identification of 57.7 million (63%) more households at risk. The multidimensional HEQI performed better than established housing indices at capturing both housing quality and environment health risk factors. Established indices focus primarily on physical deficiencies, costs of repair, or the deflation in home values as a result of these deficiencies [[11](#), [12](#), [13](#), [47](#), [48](#)]. In particular, the PQI and Adequacy Index failed to capture environmental risk factors like mold, cockroaches, household crowding, household fuel combustion, and higher building leakage.



- East Oakland had a higher percentage of households with two or more occupants per room, a rate 1.9 times that of Oakland and 2.8 times that of Alameda County.
- Overcrowding has been linked to numerous housing and health issues.

Renter-Occupied Housing



- The percentage of renter occupied housing for East Oakland and Oakland was 1.3 times that of Alameda County.

Health Equity: Considerations for Solutions



- To reduce life expectancy gaps and improve community health, we must look at air quality issues with a health equity lens and choose interventions that maximize health co-benefits in heavily exposed and impacted communities like East Oakland.
- Our health department is committed to working in partnership to support efforts that improve air quality and health in ways that are equitable and involve most impacted communities in the process and decisions.
- One of the key programs we provide that address a health impact of air pollution is Asthma Start. Expansion of this service was an action identified in the West Oakland CERP, and since then we've successfully expanded the reach of the program – through the CalAIM expansion – to be able to serve more kids and now able to serve adults too (people on Medicaid)...

Total present enrollment in Medi-Cal for East Oakland based on its five zip codes (94601, 94603, 94621, 94605, 94613): 190,502

AB 617 provides opportunities to reduce air pollution emissions and maximize health co-benefits in communities like East Oakland



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- do we know the percentage of people on Medical in East Oakland... how many households does this touch?

County EJ and Climate Planning: Opportunities to Leverage Solutions

- **Prioritize Urban Greening:** Invest in the maintenance, expansion, and protection of urban forests and green infrastructure
- **Require Buffer Zones:** Apply air pollution exposure overlay zone around freeways and require new construction in these and other targeted areas of poor air quality to install enhanced ventilation systems and other proactive strategies to protect residents
- **Improve Access to Healthcare and Supportive Services** for vulnerable groups.
- **Protect the Soil and Water from Contamination:** Environmental Health oversight of investigation and cleanup of hazardous materials
- **Making Homes More Resilient:** Expand participation in programs such as the Low-Income Weatherization Program, Renew Alameda County, and East Bay Energy Watch that provide funding and resources for low-income households



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KIMI talking points:

• There are several opportunities related to County plans underway that I wanted to call your attention to. The County's Environmental Justice Element and the Community Climate Action Plan both include policy and programmatic strategies that address environmental protection, community resiliency and energy efficiency/weatherization of homes.

• One of the key programs that ACPHD provides that address a health impact of air pollution is Asthma Start. Expansion of this service was an action identified in the West Oakland CERP, and since then we've successfully expanded the reach of the program – through the CalAIM expansion – to be able to serve more children and now also adults on Medi-Cal too.

EXTRA NOTES:

* About 27% of adults in East Oakland have government insurance, compared to 11% for Alameda County

Thank you

