

Structural and Societal Determinants of Health and Firearm Violence

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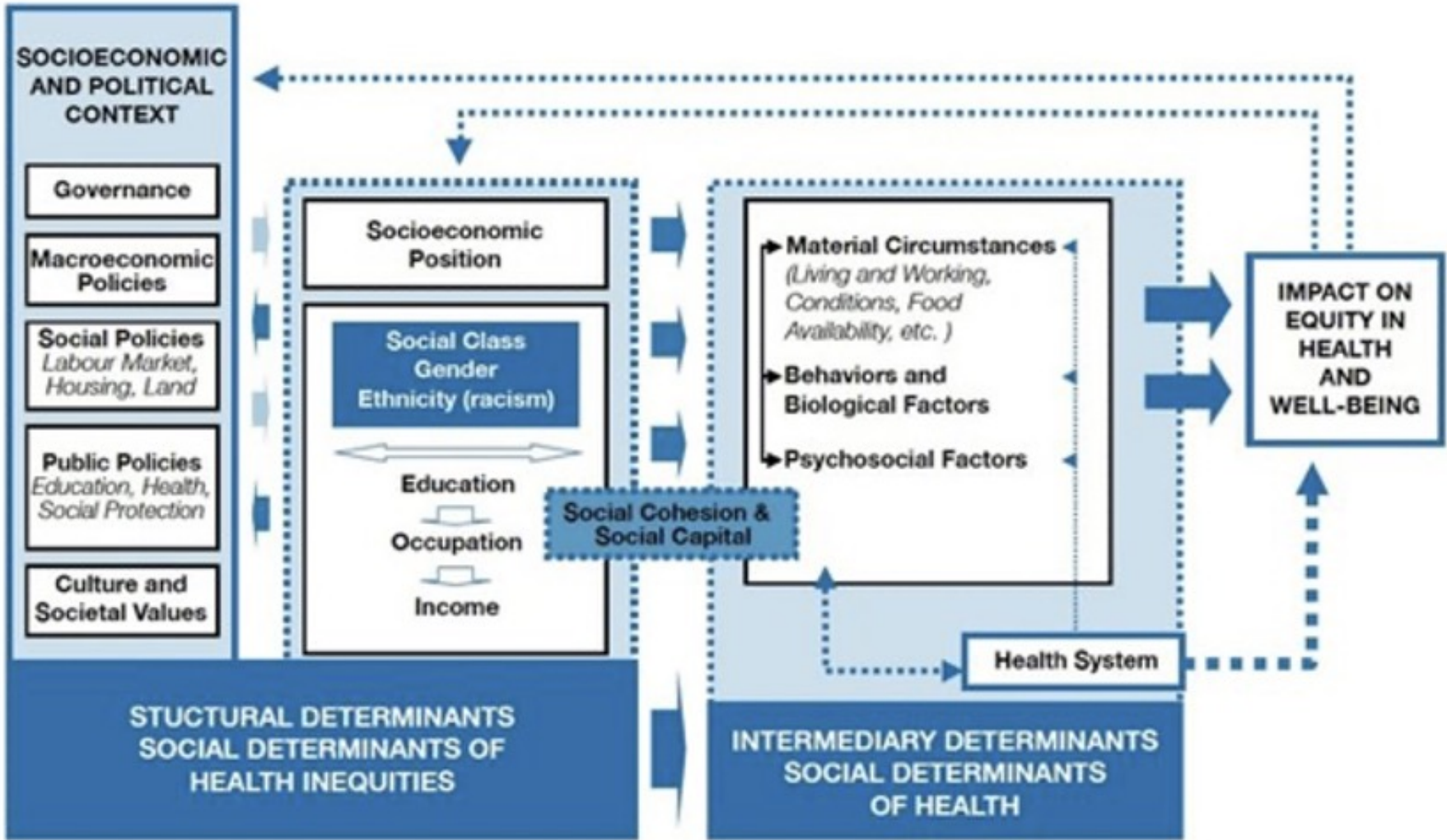


Violence Prevention
Research Program



California Firearm Violence
Research Center

WHO Social Determinants of Health and Health Equity Framework



Syndemics

- “the clustering, owing to contextual and social factors, of multiple and adversely interacting disease states (i.e., afflictions) within populations”
- Co-occurrence of interacting afflictions leads to increased burden and vulnerability
- Increased burden and vulnerability then reinforce those macro-level factors, creating a reinforcing loop that perpetuates disparities and inequities

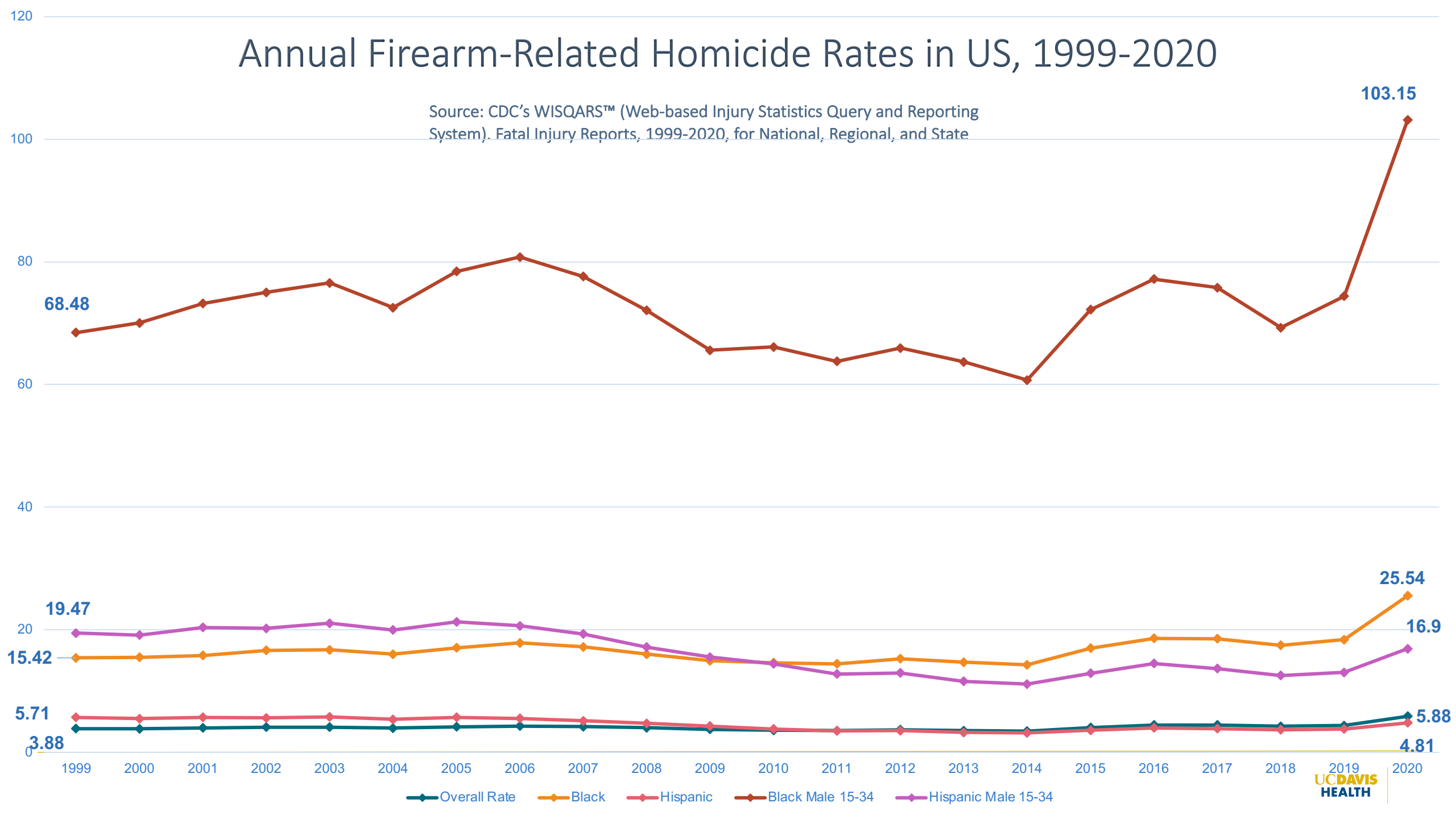
Violence

Violence is...the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation.

Structural Violence: *systems, policies, and practices enacted by those with power to advantage some groups while depriving others of meaningful opportunities for meeting basic needs critical to safety and health*

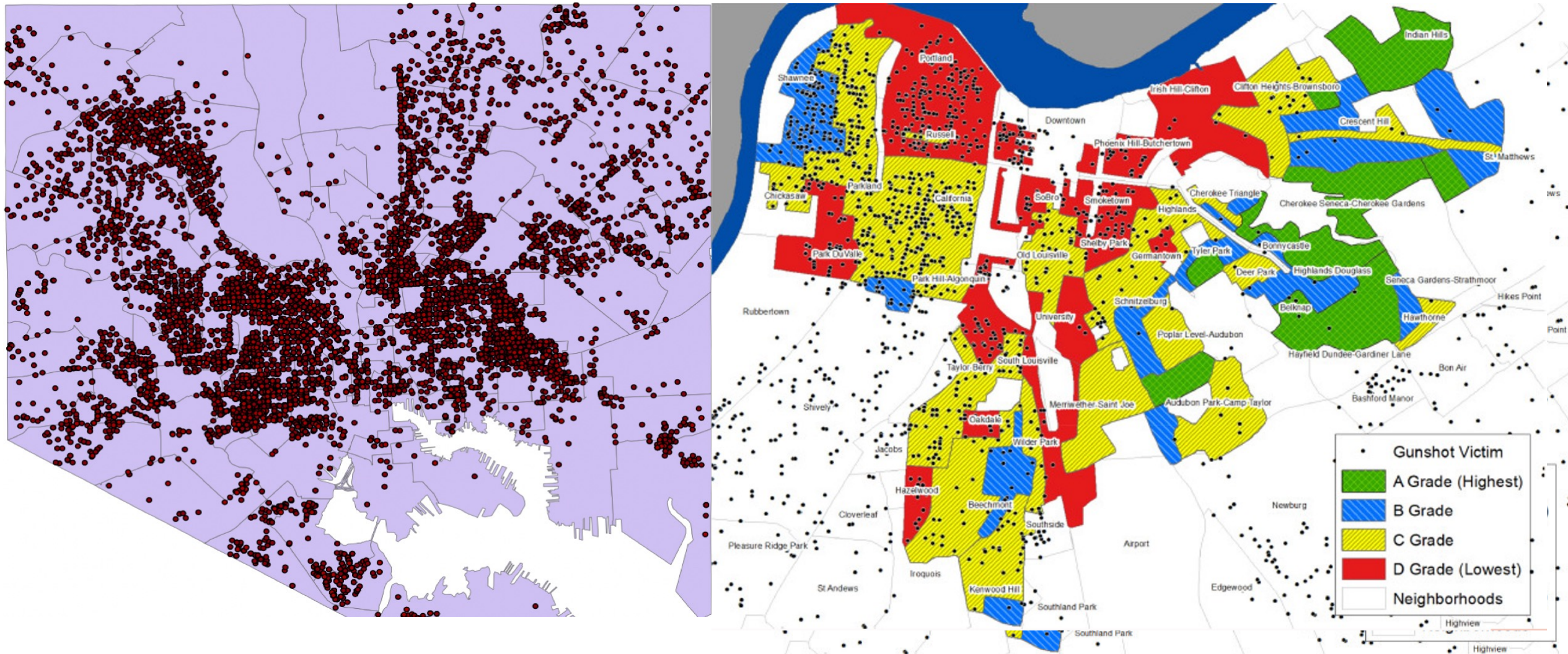
Annual Firearm-Related Homicide Rates in US, 1999-2020

Source: CDC's WISQARS™ (Web-based Injury Statistics Query and Reporting System). Fatal Injury Reports, 1999-2020, for National, Regional, and State



Firearm Violence is Spatially Concentrated

Distribution of shootings in Baltimore, MD (2003-2017) and Louisville, KY (2012-2018)

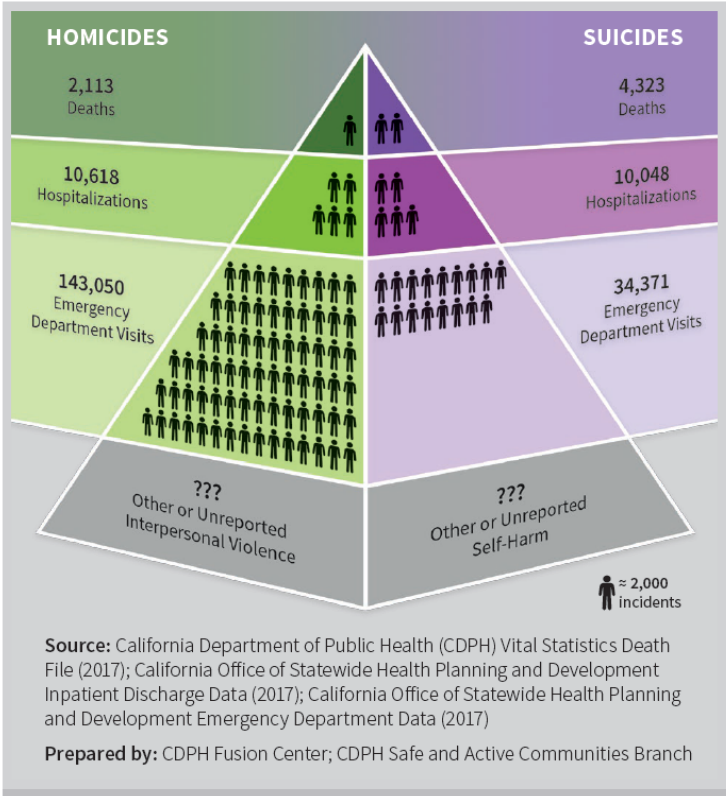
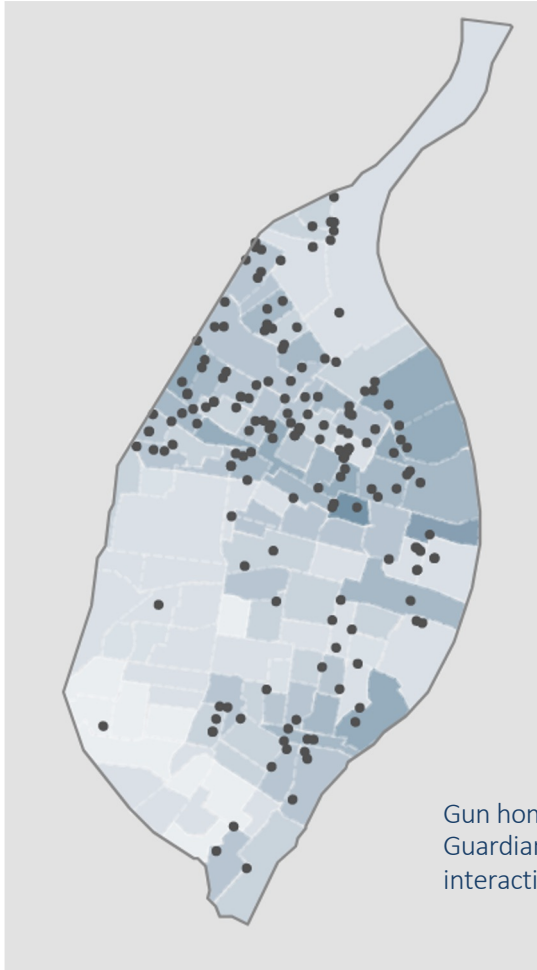


Health Effects of Witnessing or Experiencing Violence

- Psychiatric
 - **Post-traumatic stress disorder, toxic stress**, personality change, depression, **hypervigilance**, sleep problems
- Emotional
 - Withdrawal, low aspirations, **anger**, survivor guilt, despair, **loneliness**, nervousness
- Behavioral
 - Decreased academic performance, risky sexual behavior, **substance use**, delinquency, **perpetration of violence**
- Physical
 - Asthma, low birthweight, **heart disease**
- Vicarious trauma to health care and service providers

Deaths are just the tip of the iceberg

- Nonfatal firearm injuries
 - Case fatality rate, suicide ~ 90%
 - Case fatality rate, assault ~ 20%
 - Firearm assaults outnumber deaths by at least 2:1
- Firsthand exposure to firearm violence
 - 13% of teens have ever seen or heard a shooting
 - In Chicago's West and South Sides, 56% of teens heard gunshots in the past year
- Spatially proximate exposure to firearm violence
- Secondary experiences of firearm violence
- Anticipatory concerns about firearm violence



Gun homicides x Neighborhood Poverty, St. Louis, 2015, The Guardian, <https://www.theguardian.com/us-news/ng-interactive/2017/jan/09/special-report-fixing-gun-violence-in-america>

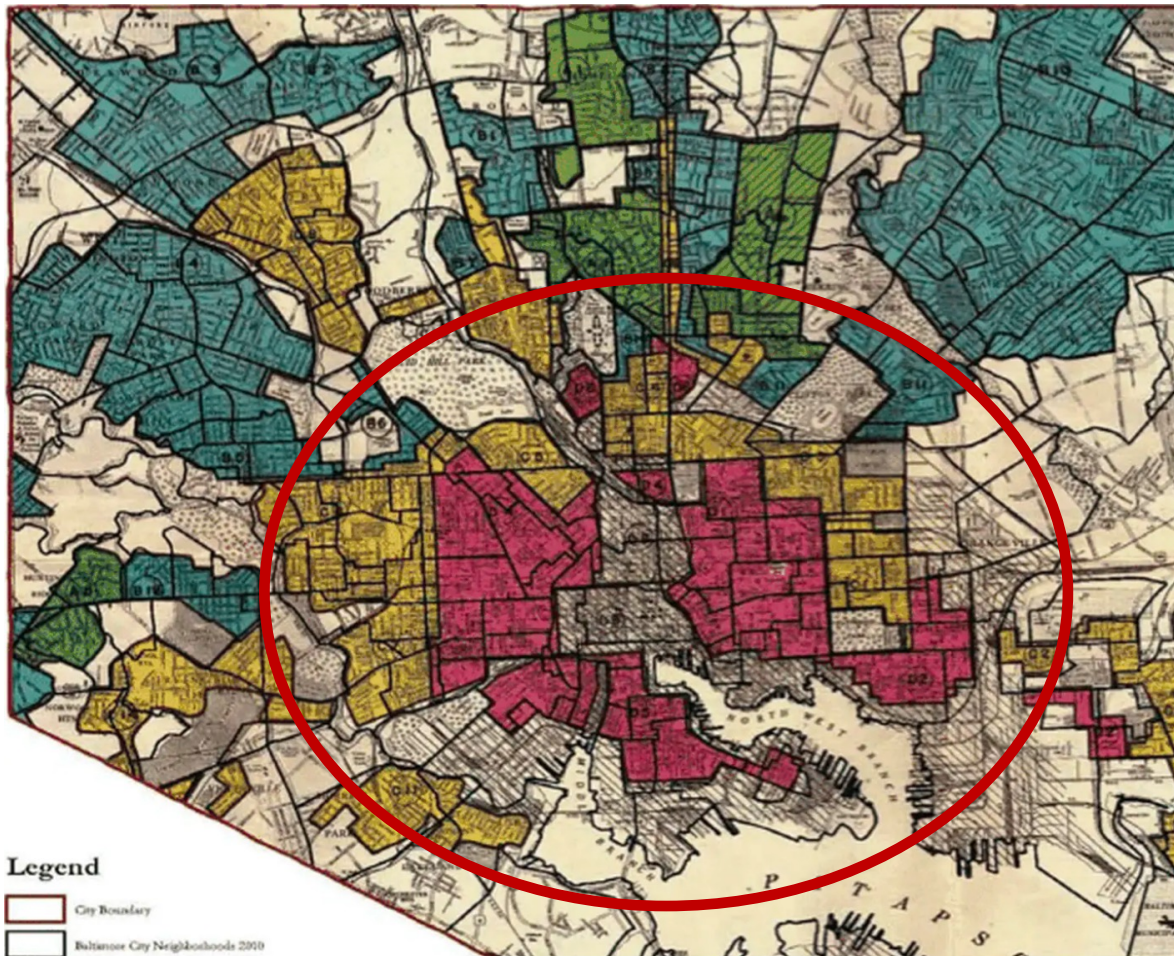
Spatially Proximate Firearm Violence

- Increased ED utilization for mental health-related symptoms among children following firearm violence w/in blocks of their homes²
- Each additional exposure of deadly firearm violence near child's home increased behavioral problems by 8%³
- Youth living w/in 1300m of past-year firearm homicide in U.S. cities with 200K+ ppl:
 - Black: 56% near 1 incident; 26% near 3+ incidents
 - Latinx: 49% near 1 incident; 19% near 3+ incidents
 - White: 17% near 1 incident; < 1% near 3+ incidents¹
- Probability of past-year exposure 50 percentage points higher for youth in high-disadvantage neighborhoods vs. low¹

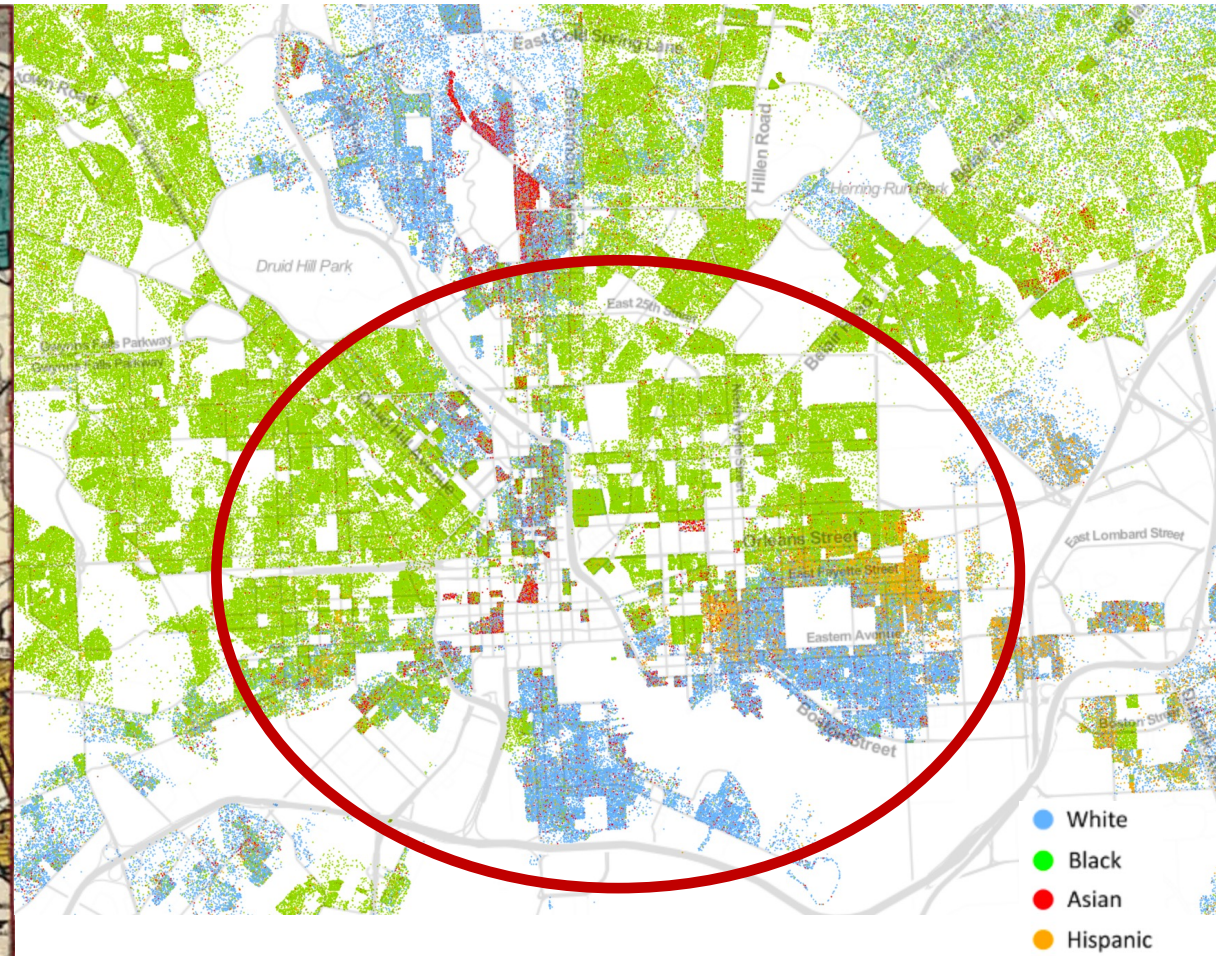
1. Kravitz-Wirtz et al., 2022
2. Vasan et al., 2021
3. Gard et al., 2021

Residential Segregation in Baltimore

Home Owner's Loan Corp. map, 1937

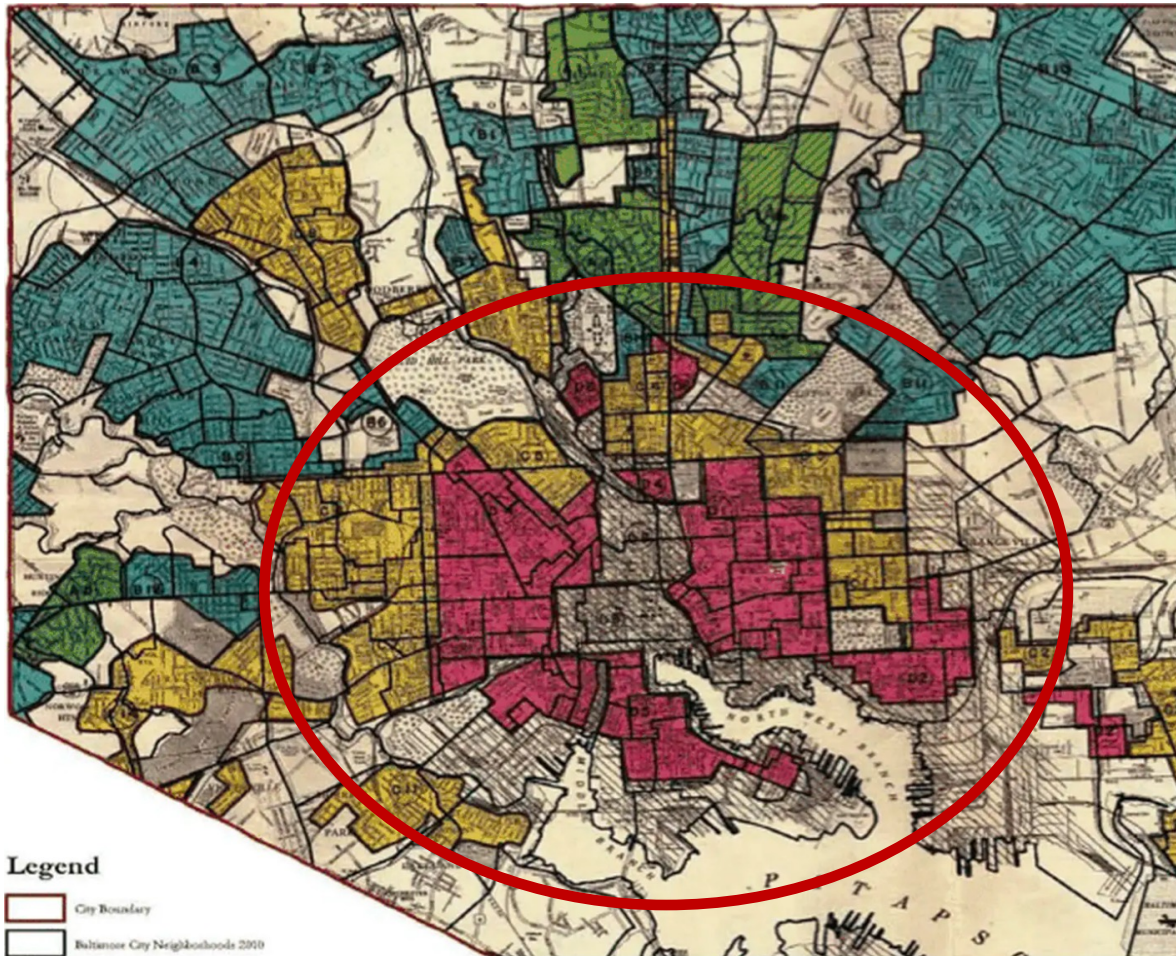


Residents by Race, 2016

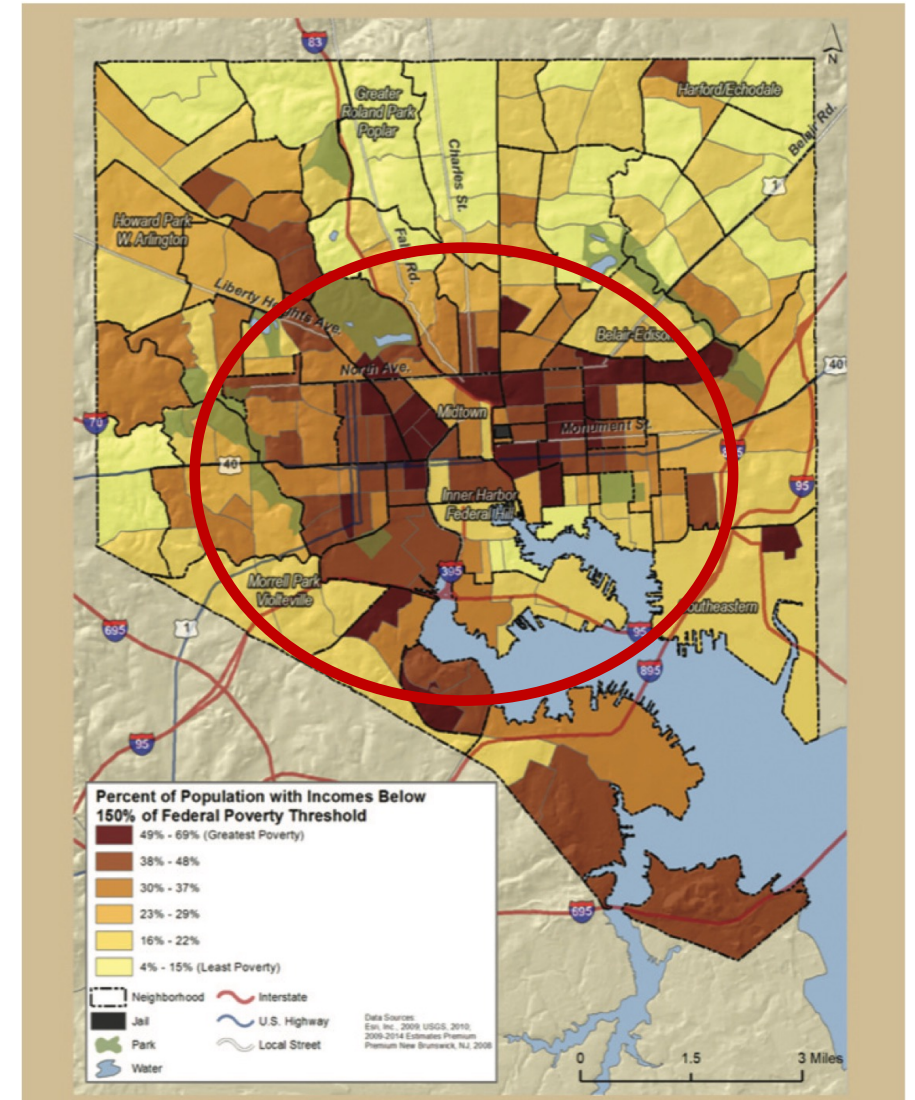


Redlining Legacy in Baltimore

Home Owner's Loan Corp. map, 1937

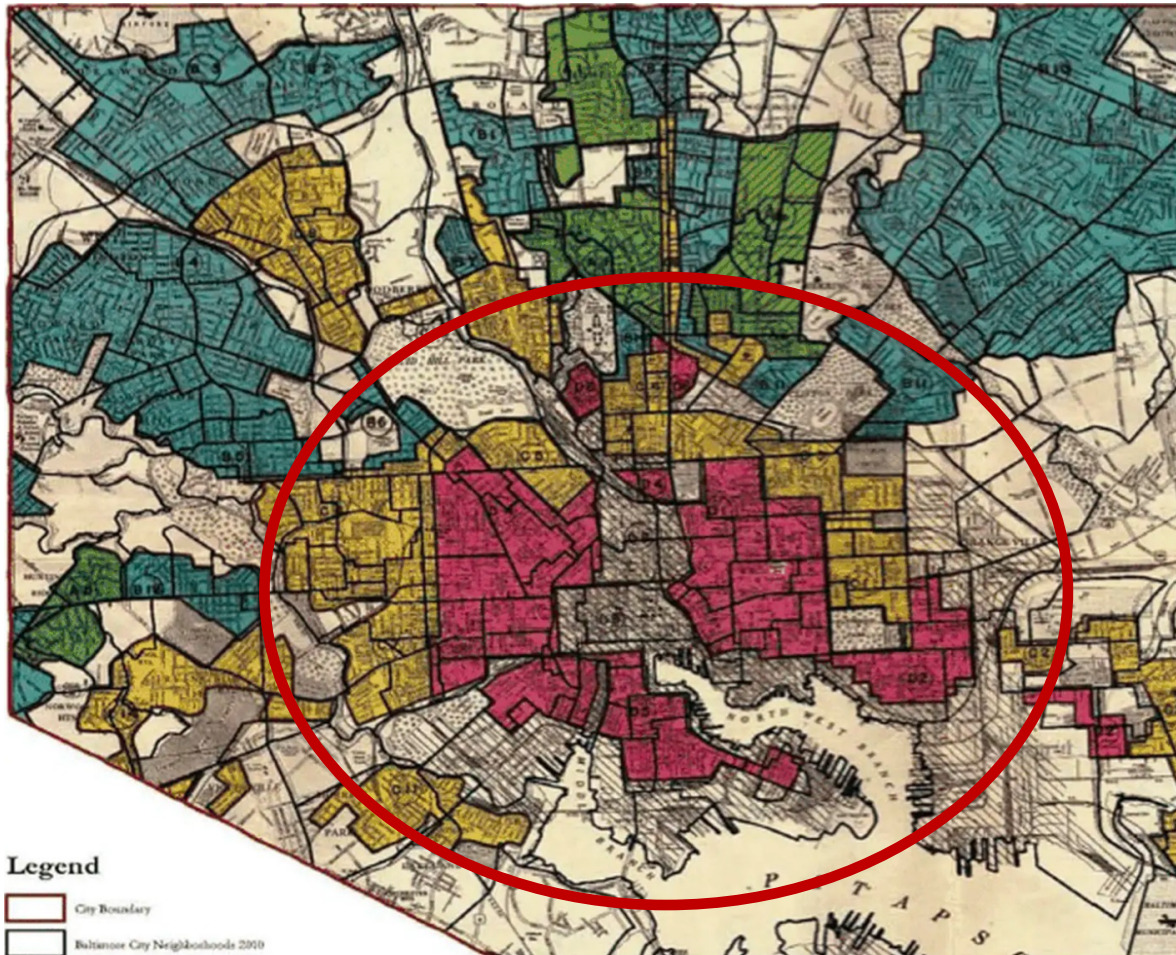


Income Below 150% FPL, 2009

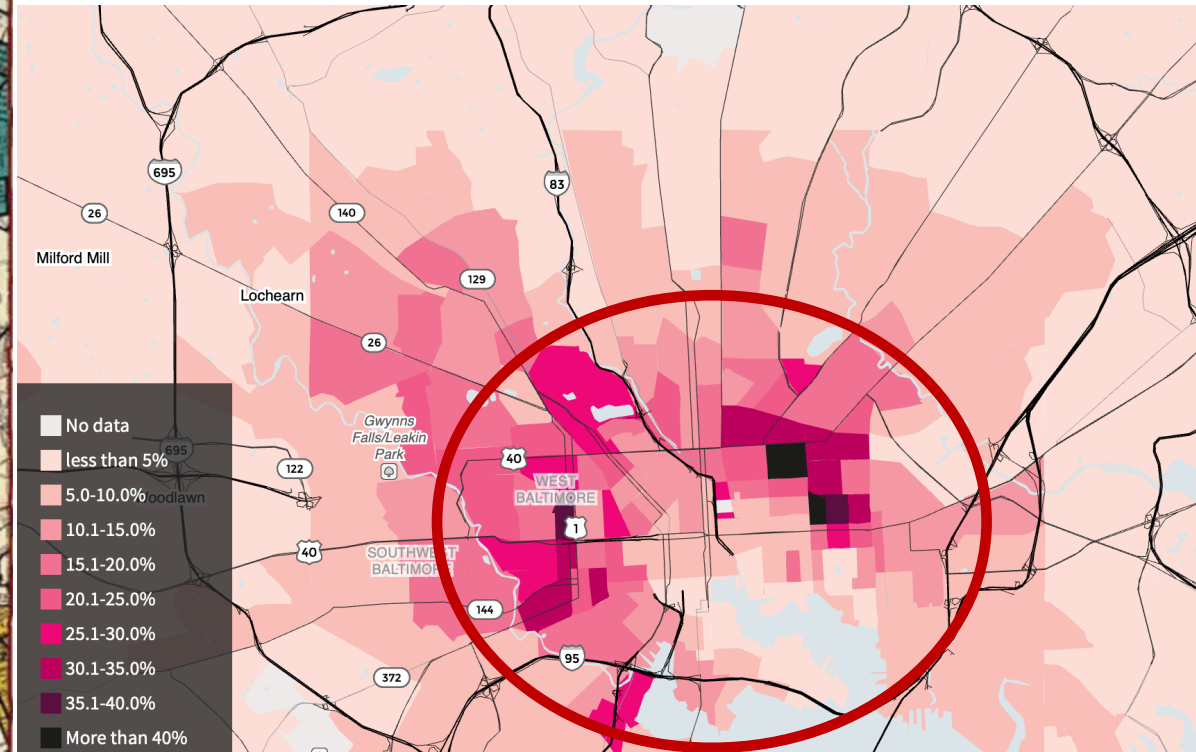


Redlining Legacy in Baltimore

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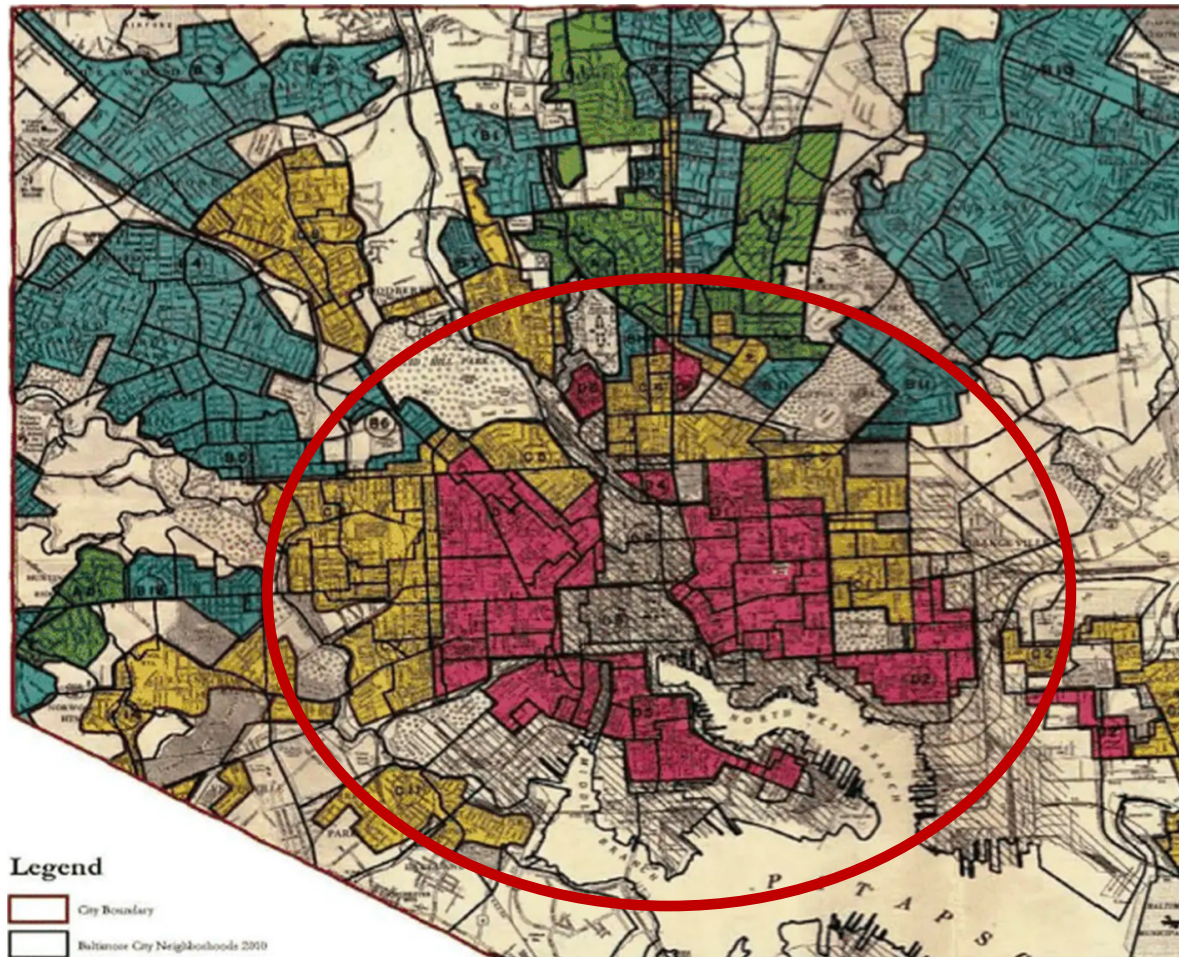


Childhood Lead Poisoning Hotspots, 2016

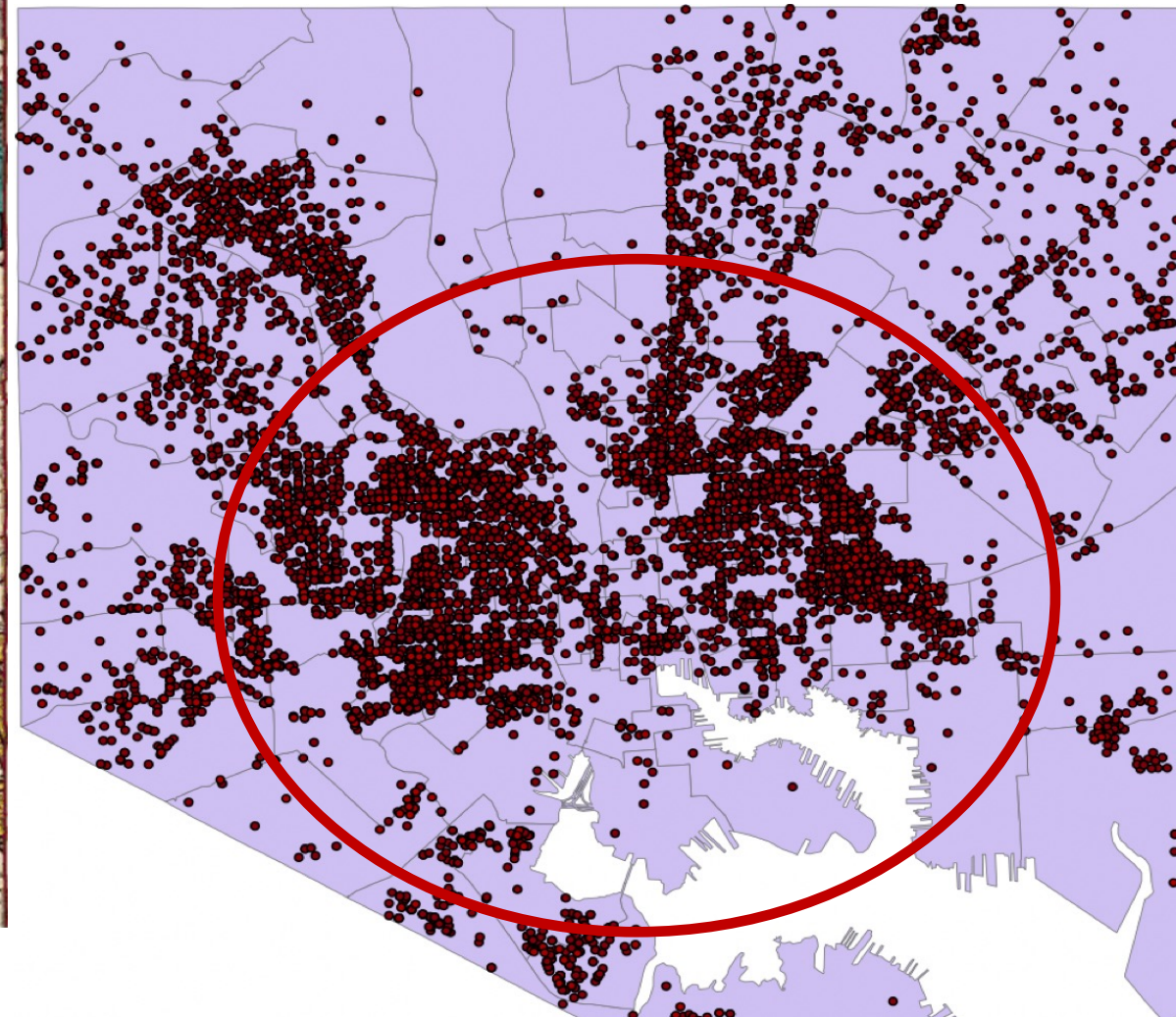


Redlining Legacy in Baltimore

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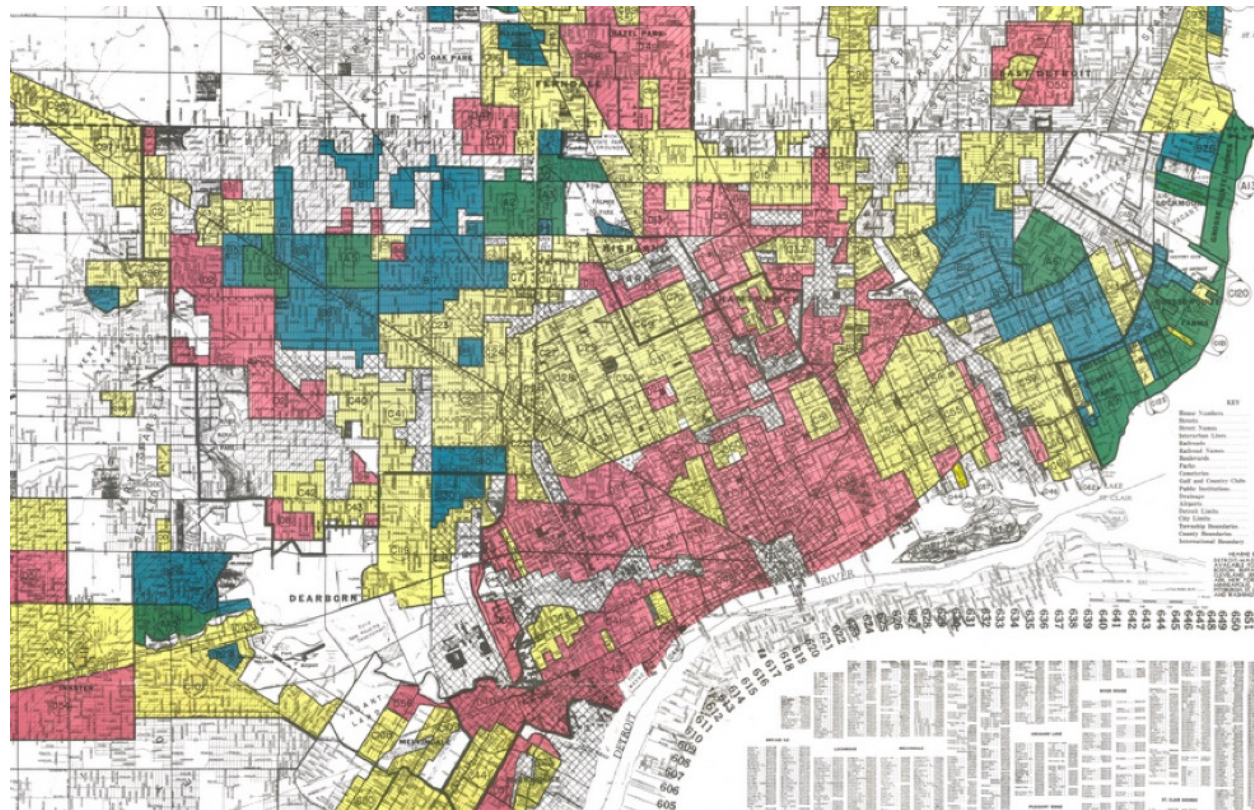


Homicide and Nonfatal Shooting Locations, 2003-2017

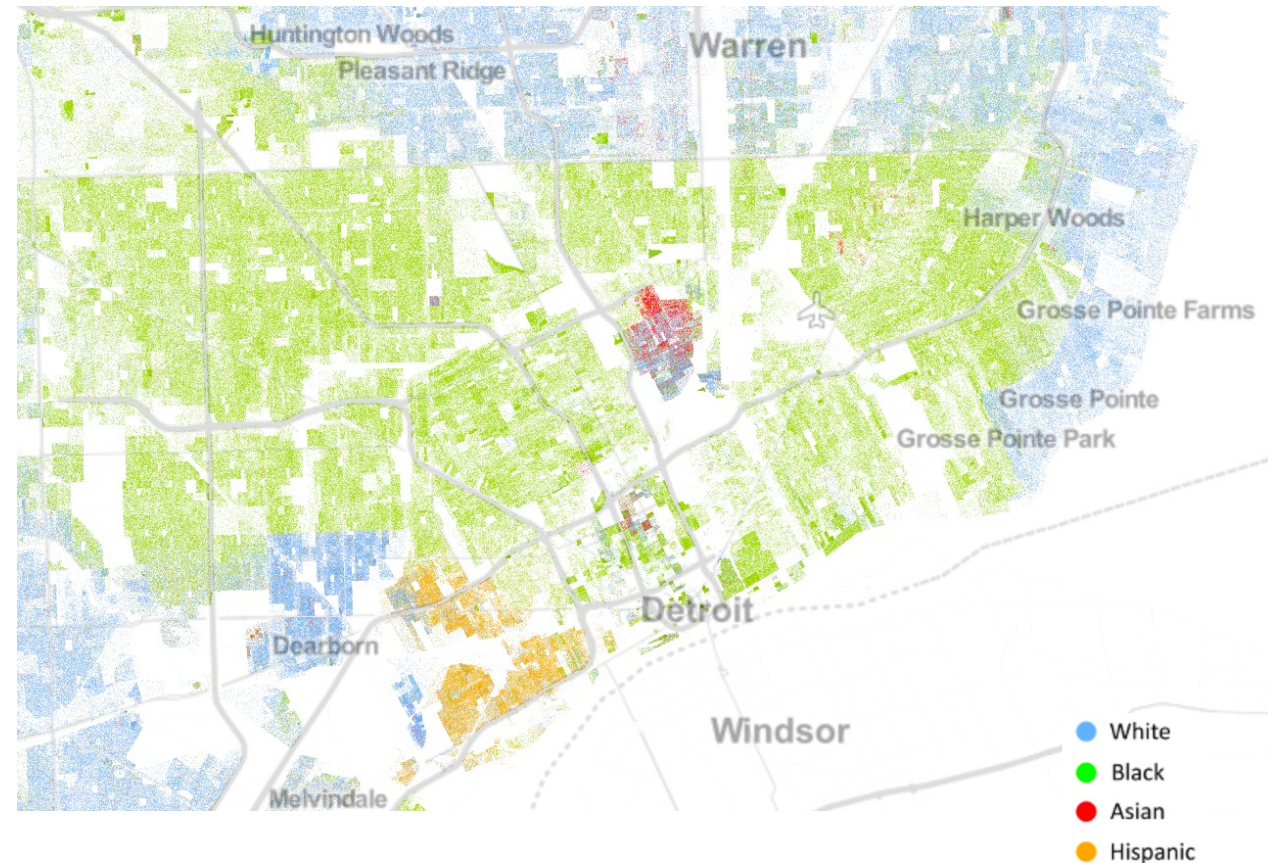


Racialized Residential Segregation in Detroit

Home Owner's Loan Corp. map, 1937



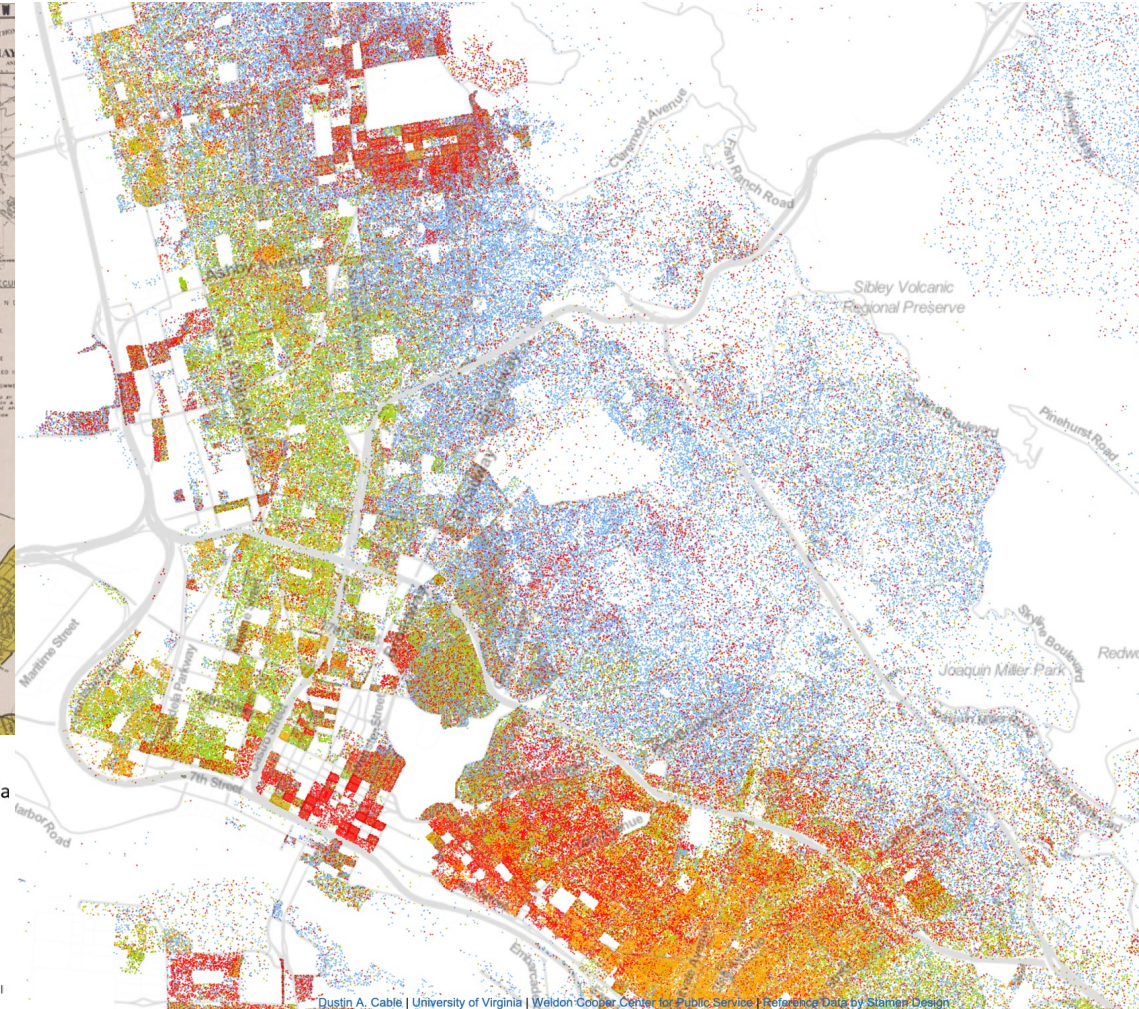
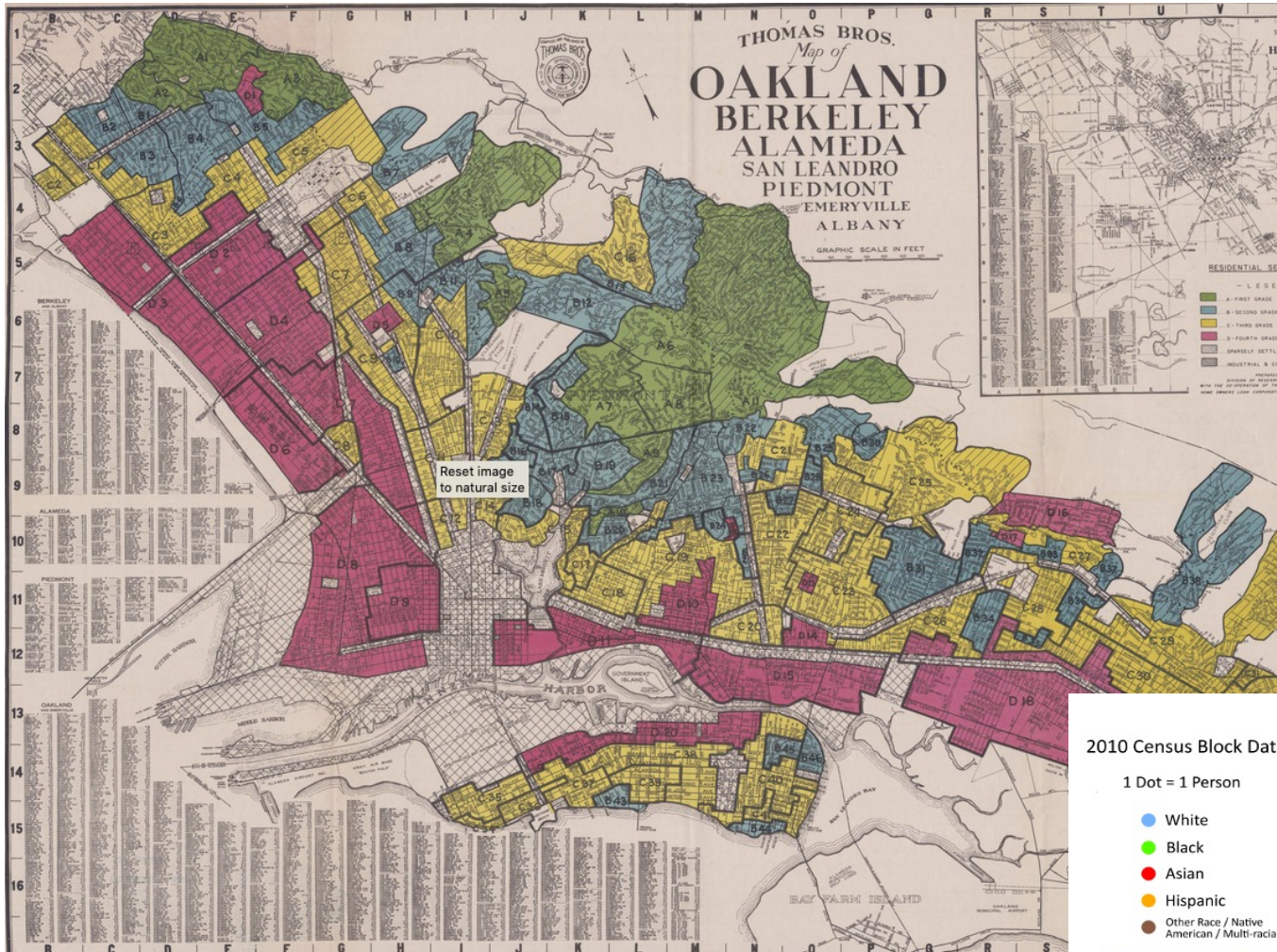
Residents by Race, 2016



Racialized Residential Segregation in Oakland

Home Owner's Loan Corp. map, 1937

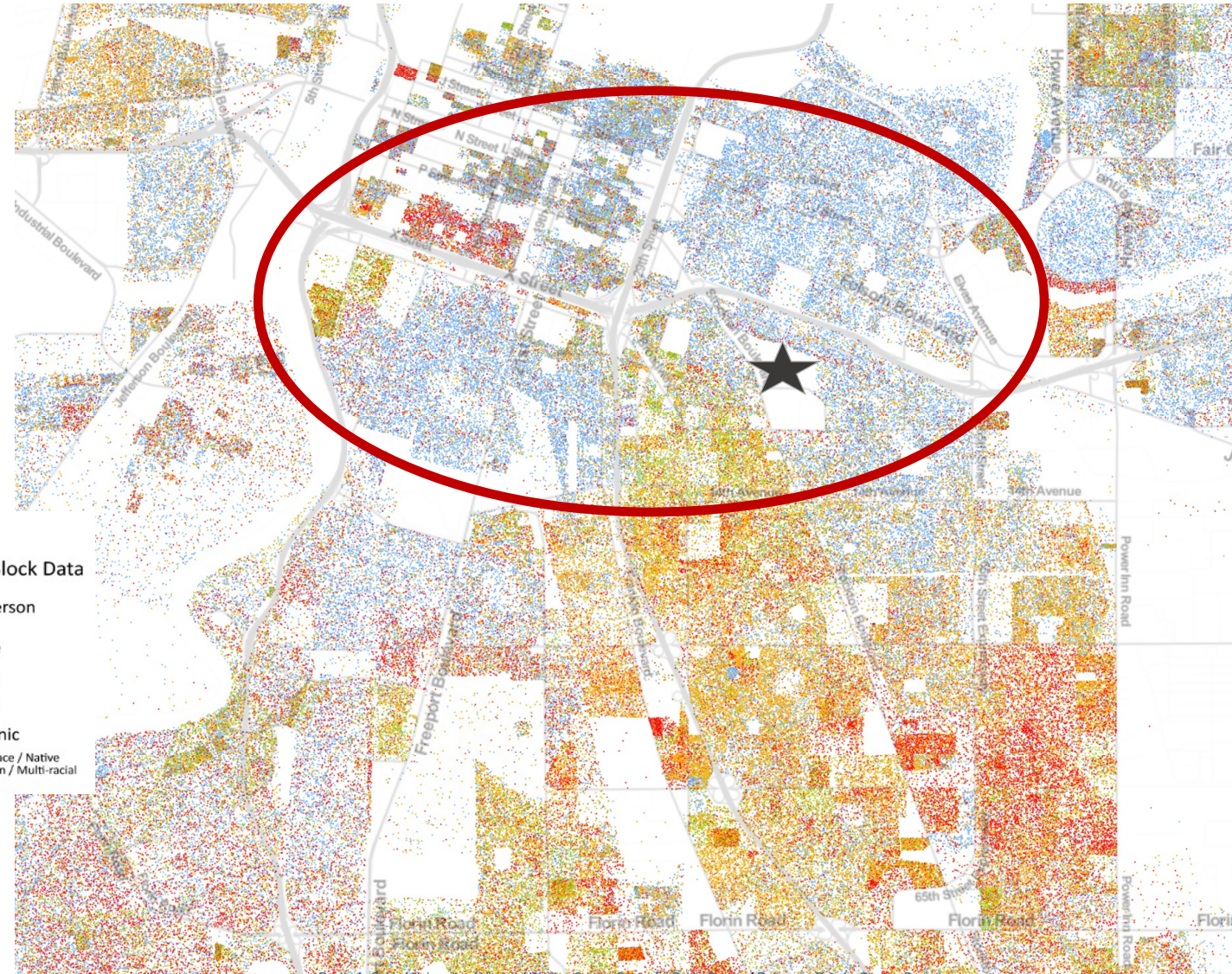
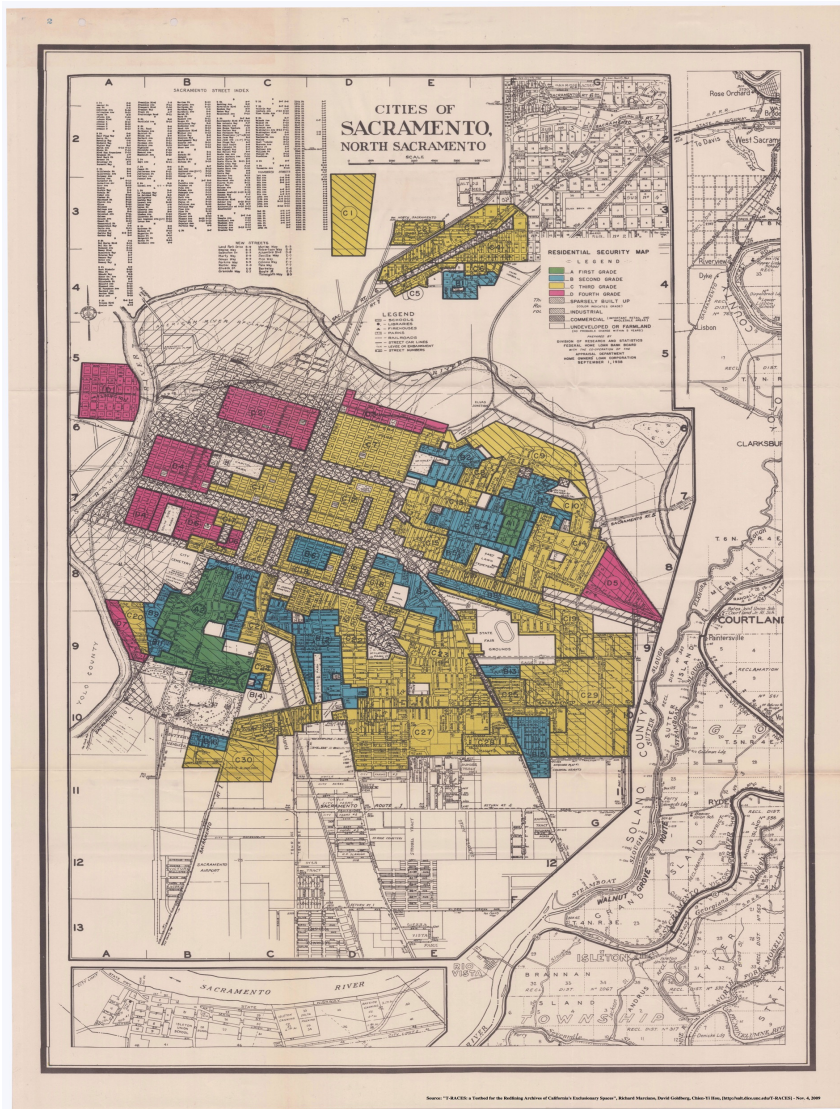
Residents by Race, 2016



Racialized Residential Segregation in Sacramento

Home Owner's Loan Corp. map, 1937

Residents by Race, 2016



Sources: HOLC; Nelson et al, University of Richmond, 2018

Racialized Residential Segregation, Income Inequality, and Firearm Violence

- Redlined communities -> significantly higher rates of firearm injury compared to non-redlined areas (Benns et al. 2020; Poulson et al. 2021)
- Living in communities with concentrated SES disadvantage increases prob. of involvement in & exposure to community violence (Beardslee et al 2019; Schleimer Buggs et al. 2022)
- Wage differentials and neighborhood-level income inequality associated with violent crime (Kennedy et al 1998; Rowhani-Rahbar et al 2019)

Household/Neighborhood Disadvantage and Firearm Violence

- Living in communities with concentrated absolute or relative social and economic disadvantage increases the probability of involvement in and exposure to community firearm violence (Beardlee et al 2021; Schleimer, Buggs et al 2022)
- Insecurities in basic needs such as food, housing, and financial resources at the individual, household, and community levels independently and jointly associated with the increased risk of violence exposure and involvement (Schuck and Widom 2021; Miller et al 2021; Caughron 2016; R Smith et al 2020)
- The impact of food insecurity on predictors of violence has been noted even when food insecurity occurred years prior (Slopen et al 2010)

Household/Neighborhood Disadvantage and Firearm Violence

- Concentrated disadvantage and needs insecurities may contribute to interpersonal violence by affecting cognitive functioning, stress levels, conflict, and mental health problems (Hatcher et al 2019)
- When experienced during childhood, basic needs insecurities and concentrated disadvantage may serve as risk factors for *exposure to violence in the home*—an adverse childhood event that increases the risk of future violence exposure and involvement (Miller et al 2021)

Addressing Firearm Violence Through an (Racial) Equity Lens

Interventions Focused on People (and Places)

Community Violence Intervention (CVI) Strategies

- Individualized wraparound social services
 - Housing/financial assistance, legal services, therapeutic services, grief/trauma counseling, substance use disorder treatment, job training, etc.
- Hospital-based violence intervention programs
- Community (“street”) outreach
- Violence interruption and crisis management
- Case management and transformational mentoring

Interventions Focused on Places

- Vacant lot remediation
- Dilapidated building demolition
- Home façade renovation
- Increased lighting
- Tree planting
- Investments in low-income housing improvements

Addressing Equity Addresses Violence

- State and local-level social spending on social and public health services associated with decreases in homicides (Sipsma et al. 2017, Kim 2019)
- Earned Income Tax Credit -> reductions in firearm violence (Lenhart 2021)
- Low-Income Housing Tax Credit Program -> violent crime reduction (Freedman and Owens 2011)
- Increasing women's economic self-sufficiency reduces risk of intimate partner violence (McKean 2004)
- Other equity-driving policies:
 - participatory budgeting
 - voter enfranchisement
 - greater support and economic opportunity for formerly incarcerated peoples
 - universal basic income
 - policies that decriminalize and support individuals experiencing substance misuse, mental illness, and poverty

Addressing Equity Requires Two Key Points

1. Centering the voices and experiences of those most impacted by the problem, who have the most to lose or gain by strategies to address
2. Increasing the representation of those voices and experiences in research, policymaking, and practice leadership

Thank you!



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