

The US Census and the People's Health: Public Health Engagement From Enslavement and "Indians Not Taxed" to Census Tracts and Health Equity (1790–2018)

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Public health professionals have long played a vital—albeit underappreciated—role in shaping, not simply using, US Census data, so as to provide the factual evidence required for good governance and health equity. Since its advent in 1790, the US Census has constituted a key political instrument, given the novel mandate of the US Constitution to allocate political representation via a national decennial census. US Census approaches to categorizing and enumerating people and places have profound implications for every branch and level of government and the resources and representation accorded across and within US states. Using a health equity lens to consider how public health has featured in each generation's political battles waged over and with census data, this essay considers three illustrations of public health's engagement with the enduring ramifications of three foundational elements of the US Census: its treatment of slavery, Indigenous populations, and the politics of place. This history underscores how public health has major stakes in the values and vision for governance that produces and uses census data. (*Am J Public Health*. Published online ahead of print June 20, 2019: e1–e9. doi: 10.2105/AJPH.2019.305017)

The US Census is—and was designed to be—a potent political instrument.^{1–3} The first census ever to be mandated by a country's constitution, its declared role, since its advent in 1790, was and is to count the US population every 10 years to determine, via legislatively determined algorithms, the democratic allocation of political representation in the US Congress.^{1–3} Governance, moreover, requires resources, and US Census data continually inform taxation policies and allocation of government funds.^{1–3} Affecting political power, governance, and the distribution of resources for the public welfare, the census is critical for the public's health.^{4,5}

The census is also fundamental for population health data, including calculation of death rates, birth rates, and fertility

rates.^{6–8} Indeed, only in 1946, after World War II, did oversight for vital statistics shift from the US Census Bureau to a newly formed National Office of Vital Statistics located in the US Public Health Service.^{1,6,7} Census data also provide denominators to quantify rates of diseases and injuries, monitor health inequities, and create sampling frames for myriad public health and social surveys.^{1,6–9} The uses of US Census data for public health are both legion and obvious.

The field of public health, however, has not simply used census data: it has shaped them. Historical scholarship has long recognized the role of public health in informing census conduct, content, and interpretation, for both good and ill,^{1–3,6,8} despite these contributions curiously being ignored by contemporary public health,

population science, and epidemiology textbooks,^{10–16} with some exceptions.^{8,17} Yet, as I will argue, it is—and has always been—part of the purview of public health to engage with the US Census, both politically and empirically, regarding whom the census counts (and excludes), what categories it uses, and what demarcations of place it uses.

To make my case, I offer three illustrations that engage with three enduring issues built into the very constitutional mandate for a US decennial census: slavery, Indigenous populations, and the politics of place.^{1–3} The three examples I consider are (1) the 1840 census, slavery, and insanity^{18–20}; (2) Indigenous populations and inaccurate census and health data^{21–24}; and (3) the public health roots of census tracts.^{25,26}

As a brief reminder, Article I, Section I of the US Constitution states: "All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and a House of Representatives."²⁷ But whereas Article I, Section 3 fixed the number of senators to "two Senators from each state," regardless of population, Article I, Section 2 declared that:

Representatives and direct Taxes shall be apportioned among the several States which may

be included within this Union, according to their respective Numbers, which shall be determined by adding the whole Number of free persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other persons. The actual enumeration shall be made within three Years after the first meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct.²⁷

States' place-based Congressional power thus was distributed in relation to three groups, defined in relation to political standing:

1. *Free persons (included)*: beginning with the first census, all free men, women, and children were counted, including indentured servants and those ineligible to vote (as determined by state, not federal, laws, noting that in 1790, only free adult men with property could vote).²⁸⁻³⁰

2. *American Indians (excluded based on sovereignty)*: "Indians not taxed" were Indigenous persons who lived under their own governments and thus were treated as noncitizens and not counted or taxed; Congress granted citizenship and voting rights to all American Indians (regardless of tribal affiliation) only in 1924.^{21,23,31}

3. *Enslaved persons (partial inclusion)*: the infamous Three-Fifths Compromise (whose words do not explicitly refer to slavery or race/ethnicity) reflected the contending interests of legislators who sought to enhance versus curb the power of the slave states; the compromise awarded these states enhanced political representation in Congress via partial, as opposed to zero, inclusion of enslaved persons, who were not allowed to vote.^{1,2,32}

The legacies of these political distinctions remain manifest in how, among US racial/ethnic groups, US Indigenous populations and US descendants of enslaved persons have both the worst health status^{33,34} and most flawed census data.¹⁻³

1840 CENSUS: SLAVERY, INSANITY, AND FLAWED DATA

Slavery and population health data lay at the heart of a raging controversy about the 1840 Census, which seemingly indicated that freedom drove Black Americans mad.¹⁸⁻²⁰ Although this episode is well-known to historians of the census and of slavery,^{1,18,35} many in public health are unaware of its role in the rise of that era's nascent public health and statistical associations, in part through their efforts to improve census data.^{1,17,20}

In brief, results of the 1840 Census, which newly introduced questions about the presence of persons then termed "insane and idiots," provided evidence that the prevalence of insanity among the "colored" population (almost exclusively Black Americans), but not the White population, increased with latitude and was highest in the northernmost states.¹⁸⁻²⁰ For example, in Maine, 1 in 14 Blacks were counted as "insane and idiots," as compared with 1 in 5650 in Louisiana³⁶; regionally, 1 in 162 Blacks in the North were pegged as "insane and idiots," versus 1 in 1558 for the South.¹ By contrast, 1 in 970 Whites nationally were classified as "insane and idiots," with little geographic variation.^{1,18}

Slavery supporters predictably trumpeted these data as proof that Blacks constitutionally were incapable of handling liberty.^{18-20,35} Epitomizing these

arguments, the proslavery Secretary of State John C. Calhoun (1782-1850) proclaimed:

Here is proof of the necessity of slavery. The African is incapable of self-care and sinks into lunacy under the burden of freedom. It is a mercy to give him guardianship and protection from mental death.^{19(p473)}

Slavery opponents, by contrast, took these data as evidence that some serious error affected the US Census data.^{1,18-20} Supporting these concerns, Edward Jarvis (1803-1884)—who in 1839 had cofounded the American Statistical Association with Lemuel Shattuck (1793-1859)^{1,6,18}—carefully reviewed the census returns. His key finding was the startling discovery that insane Blacks, especially in Northern states, were tallied in locales with no Black population—leading to vastly inflated rates of their insanity.^{1,18,19,36} Despite national controversy and Congressional investigation, and despite ample documentation of gross errors (albeit no evidence of deliberate falsification of data), the US Census never officially declared these data to be erroneous.^{1,36}

Subsequent scholars have shown that the errors arose because of the poor layout of the 80-column table in which enumerators recorded the census data.^{1,18,36} The 1840 Census schedule allotted only one line per household (Figure 1).^{18,36,37} In this one cramped line, poor formatting and typesetting made it easy for enumerators to err by wrongly entering data for elderly Whites deemed to be "idiots" into the column intended for "colored" "idiots." Consequently, inclusion of a small number of White persons labeled as "idiots" in the "colored" column would have little

of histories of exclusion and subjugation.^{21–24,31} Accounting for this statistical travesty requires reckoning with histories of conquest, territory, sovereignty, and policies of cultural annihilation, as well as the complex politics of race, ethnicity, nationality, ancestry, genealogy, and “blood.”^{2,22,23,31,45}

A full rendering of the who, what, where, and how of census exclusion, counting, and miscounting of Indigenous peoples is beyond the scope of this article.^{1,2,21–24,31} However, starting with the 1790 Constitutional exclusion of “Indians not taxed,” the US Census was deeply involved in whether and how Indigenous peoples literally counted for the US polity.^{1,2,21–24,31} Initial grounds for exclusion were premised on sovereignty, with the census counting only persons subject solely to US law.^{1,2,21,23} Federal interest in the number of Indians (taxed and untaxed) increased after Congress passed the “Removal Act of 1830,” which enabled the US government to force the exchange of Indian lands in any state or territory.^{1,2,21,23,31}

Definitions of which Indians counted for the census—as Indians and also as citizens—were also affected by marriage and miscegenation laws.⁴⁶ In the Western regions, for example, territorial and state governments initially had a vested interest in allowing White men to marry and have children with Indian women, as a way of transferring Indian land to US property, under jurisdiction of laws that vested in husbands the rights to control women’s property and family inheritance.⁴⁶ Passage of antimiscegenation laws prohibiting White–Indian marriages, however, began to pick up in the 1860s (since they were less useful as Whites solidified control

of Indian lands). By the 1890s, they emulated the long-standing White–Black antimiscegenation laws, which ensured that if White men impregnated enslaved Black women (whether by rape or consensual union), the women could make no claims for marital support nor could their children have any claims to White property (with the “one-drop” rule additionally ensuring that any such children counted solely as “Black”).⁴⁶

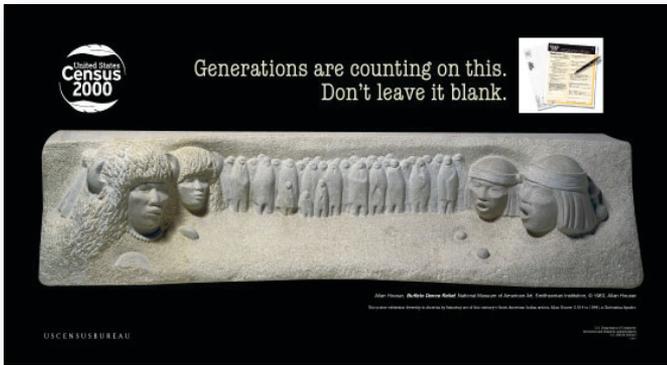
By the late 19th century, the growing federal control over the full expanse of the US continent³¹ led the US Census to adopt new methods of defining and counting American Indians. In the 1880 Census, enumerators were instructed to measure “the degree to which an Indian had adopted a European way of life” and to distinguish between “full-blood tribal members and individuals of mixed racial or tribal origin.”^{23(p72)} Fearful that these questions were a pretext for establishing further federal control, many Indians refused to participate.^{23,31} “Blood purity” was also key to the 1887 General Allotment (Dawes) Act, which granted citizenship to Indians who agreed to sell land previously held in trust in reservations, provided that they had “a certain degree (purity) of Indian blood.”^{23(p72),31} The net effect was to institutionalize the role of the US government in creating a “blood quantum” regime, still extant, to determine who counts as being Indian (above and beyond any Indigenous reckonings).^{23,31,45}

These census approaches to counting Indians entrenched both classification and misclassification of Indigenous populations in both census records and vital statistics.^{21–24} In 1894, the US Census published its first major “Report on Indians Taxed

and Not Taxed in the United States, Except Alaska,” which presented limited vital statistics and acknowledged that prior counts were severely flawed, grossly underestimating the Indian population.^{2,21,23} Granting of US citizenship to all US Indians in 1924 had no impact on census accuracy (other to change the 1930 Census report title from stating it was about “Indians ‘in’ the United States” to “Indians ‘of’ the United States”^{23(p75)}). In the 1950 Census, enumerators were supposed to include as American Indians “anyone who was one-quarter or more blood quantum,” albeit with no instructions as to how this was to be ascertained.^{21(p45)}

The profound shift in the 1960 Census from the enumerator-defined to self-defined identity, as tied to its growing use of a mailed census form (fully implemented in the 1970 Census)^{1,2} led to a sharp rise in US persons claiming American Indian “ancestry” or “race,” categories not clearly distinguished in the census instructions.^{21–23} Notably, the number of persons selecting the US Census racial category of “American Indian or Alaska Native” nearly tripled between 1980 and 2000 (rising from 1.5 million to 4.3 million), whereas the larger number selecting this group for “ancestry” remained steady (upward of 5 million to 7 million).²² In the 2000 Census—the first to permit selection of one or more racial/ethnic categories—2.5 million people selected only American Indian or Alaska Native, and another 1.9 million selected this option plus some other race(s)²¹; the data for the years 2012 to 2016 yield similar counts.⁴⁷

What are the implications of these contested categories for population health—and population health data—for American



Source. Census 2000: US Census Marketing Posters.⁶¹

FIGURE 2—Buffalo Dance—Allan Houser (1914–1994)

The 2020 Census at a Glance
Counting everyone once, only once, and in the right place.

The U.S. Census Bureau is the federal government's largest statistical agency. We are dedicated to providing current facts and figures about America's people, places, and economy. Federal law protects the confidentiality of all individual responses the Census Bureau collects.

The U.S. Constitution requires that each decade we take a count—or a census—of America's population.

The census provides vital information for you and your community.

- It determines how many representatives each state gets in Congress and is used to redraw district boundaries. Redistricting counts are sent to the states by March 31, 2021.
- Communities rely on census statistics to plan for a variety of resident needs including new roads, schools, and emergency services.
- Businesses use census data to determine where to open places to shop.

Each year, the federal government distributes hundreds of billions of dollars to states and communities based on Census Bureau data.

In 2020, we will implement new technology to make it easier than ever to respond to the census. For the first time, you will be able to respond online, by phone, as well as by mail. We will use data that the public has already provided to reduce followup visits. And, we are building an accurate address list and automating our field operations—all while keeping your information confidential and safe.

KEY MILESTONES

- 2018**
 - 2018 End-to-End Census Test
 - 2020 Census questions sent to Congress by March 31, 2018
 - Six regional 2020 Census offices and 40 area census offices open
- 2019**
 - Partnership activities launch
 - Complete Count Committees establish
 - Remaining 248 area census offices open
- 2020**
 - Advertising begins in early 2020
 - Public response (online, phone, or mail) begins
 - Census Day—April 1, 2020
 - In-person visits to households that haven't responded begin
 - Apportionment counts sent to the President by December 31, 2020
- 2021**
 - Redistricting counts sent to the states by March 31, 2021

United States Census Bureau
Connect with us @uscensusbureau

Source. US Census Bureau: The 2020 Census at a Glance.⁶²

FIGURE 3—Counting Everyone Once, Only Once, and in the Right Place

Indians and Alaska Natives? In a word: terrible.^{24,31,48} Both numerators and denominators for health data for US Indigenous people have long been vitally marred, with grossly inaccurate counts of birth, deaths, and the total population leading to severely biased rates.^{23,24} In 2016, the National Center for Health Statistics issued an update on the validity of “race and Hispanic-origin reporting” in US death certificates, comparing results for the period 1999 to 2011, versus earlier reports for the years 1979 to 1989 and 1990 to 1998.⁴⁹ Notably, misclassification of deaths “remained high at 40% for the American Indian or Alaska Native population (AIAN),” whereas it shrank to 3% for both the Hispanic and Asian or Pacific Islander populations and was negligible for the White and Black populations.^{49(p1)}

Correcting for this misclassification significantly increased the AIAN-to-White death rate ratio, from a deficit of 84% to an excess of 116%.⁴⁹ Other research has shown that updated bridged intercensal population estimates, routinely used for denominators for population health data, significantly overestimate the AIAN Hispanic population⁵⁰ and that, from the 2000 Census to the 2010 Census, persons categorized as AIAN had the highest rate of changing their racial/ethnic group.⁵¹

There are no easy “fixes” to these complex AIAN data issues. However, in the past decade public health researchers—working in multidisciplinary, multiagency groups, including Indigenous organizations—have been constructively collaborating to improve AIAN vital statistics, cancer registry, and other health data by cross-linking across these and other government data sources.^{22,50,52–58} This work

has led to correcting AIAN rate underestimates for mortality due to stroke, overdoses, and other causes of death,^{50,52–54} and also for injuries⁵⁵ and hospital discharges⁵⁶—and can also help inform new efforts to improve US Census AIAN data via such data linkages.^{50,52–60}

Such initiatives are both complex and costly. They also are long overdue—and necessitate full inclusion of Indigenous health expertise and organizations at every step.^{22,31,57–60} Nearly 230 years after the US Constitution washed its hands of “Indians not taxed,” it is only right that US tax dollars be expended to rectify the US government’s culpability for inequitable social and health conditions among US Indigenous populations and their inadequate documentation and monitoring. As one of the US Census posters for 2000 aptly declared, depicting a Pueblo Indian buffalo dance ceremony, “Generations are counting on this” (Figure 2).⁶¹

SANITARY AREAS, CENSUS TRACTS, AND HEALTH INEQUITIES

As affirmed by the US Census Bureau promotion of the 2020 Census (Figure 3),⁶² local and state governments, businesses, and community groups rely on US Census data to determine needs, guide investments, provide services, and advocate for state and federal funding—including via members of Congress whose districts are ultimately determined by the politics of census counts and boundaries.^{1–5} A key unit of census geography informing these discussions and debates is the census tract, which is the smallest US Census unit with individual-level data on both social and economic characteristics (as well as data

on housing units).^{25,63} Designed to encompass populations relatively homogenous in social characteristics, census tracts optimally include 4000 persons (range = 1200–8000) and comprise “small, relatively permanent statistical subdivisions of a county or equivalent entity” whose “primary purpose . . . is to provide a stable set of geographic units for the presentation of statistical data.”⁶³

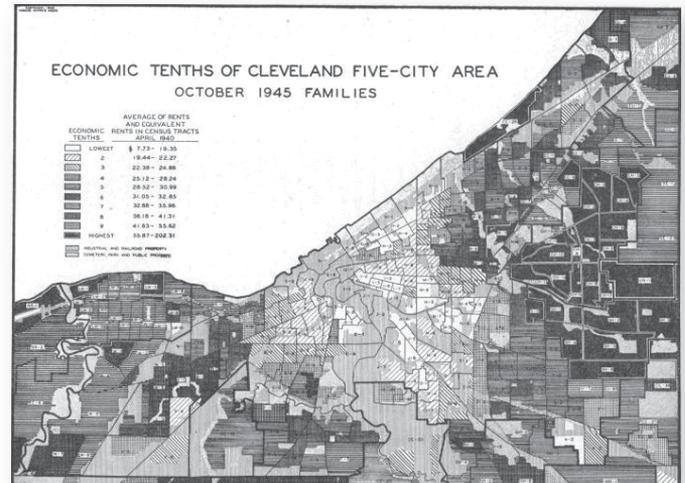
The vital role of public health—and concerns about health inequities—in establishing the census tract as a key element of census geography, however, is rarely emphasized.^{25,26} In the United States, the late 19th-century influx of immigrants and rapid growth of cities and slums galvanized interest in community conditions and health.^{9,25,38,40–43} In 1895, the Chicago, Illinois-based Hull House settlement house produced the first-ever detailed US mapping of community conditions, which they linked to health.^{9,17,64}

Their maps inspired others to follow suit, including the young W.E.B. Du Bois (1868–1963) at the beginning of his career; his work with the Hull House women⁶⁵ influenced his own path-breaking 1899 study *The Philadelphia Negro*, which likewise combined community surveys, maps, and health data.⁶⁶ At that time, the typical local unit of city geography was the ward, whose boundaries, as a voting district, created a direct link between places, politics, and power.^{9,25} As Du Bois showed in riveting figures he created for the Negro Exhibit of the American Section at the Paris Exposition Universelle in 1900,⁶⁷ ward data could be used to reveal the existence of socioeconomic gradients in health, including among the Black population, as he demonstrated with data from

Philadelphia, Pennsylvania.⁶⁸

However, a serious problem with using wards as a unit of community geography was precisely their political contingency, since political parties could—and did—manipulate (i.e., gerrymander) ward boundaries to gain electoral advantage.^{9,25,26} In the early 1900s, Walter Laidlaw (1861–?), director of the Population Research Bureau of the New York Federation of Churches, found that these politically driven temporal shifts in ward boundaries made it difficult to track and predict congregation size and composition over time.^{25,26} In 1906, he argued for the creation of small permanent units of geography, whose boundaries would not be affected by political manipulation,⁶⁹ and his case convinced the chief of the Division of Population at the Census Bureau.^{25,26,70} In 1910, for the first time ever, the US Census created small geographic units for eight large cities, including New York City.^{25,26,70}

Immediately bringing public health into the mix, in 1910 the New York City Department of Health promptly used these new units of local geography—which they termed “sanitary areas”—to improve public health data and programs.^{25,26,70} Enthusiasm for “sanitary areas” spread to other cities, and in 1924 the US Census Bureau created a Cities Census Committee to expand their use.^{25,26} A key proponent of this effort was Howard Whipple Green (1893–1959), a statistician based in Cleveland, Ohio, who was keenly aware of these area’s public health value.^{25,26} In 1927 he succeeded in getting “sanitary areas” demarcated in Cleveland, and his work led to 30 US cities having these areas defined for the 1930 Census.^{25,26} However, in response to rising use of these area data by nonhealth agencies



Note. Economic tenths defined in relation to “rent of tenant occupied homes and rent-equivalent of owner-occupied homes.”

Source. Green.⁷⁷ Reprinted with permission.

FIGURE 4—1940 Census Tracts and Economic Gradients in the White Infant Mortality Rate, Cleveland, OH

and researchers (including by businesses seeking to describe their market populations), the census changed the name from “sanitary areas” to “census tracts,” a term employed to this day.^{25,26,63}

In 1931, Green became the chair of the Committee of Census Enumeration Areas in the American Statistical Association,^{25,26} whose work led to the permanent use of census tracts by the US Census; in the 1940 Census, 64 cities had census tracts, over twice the number in the 1930 census.^{25,26} During this same period, Green produced a series of studies describing the distribution, by census tracts, of economic conditions and diverse health outcomes, including tuberculosis and infant mortality.^{71–73} Other researchers followed suit, with studies linking census tract economic conditions to tuberculosis^{74,75} and all-cause mortality.⁷⁶ In 1947, Green wrote a summary article on the use of census tracts to analyze city health problems.⁷⁷ Figure 4 shows the map he

included of the 1940 economic distribution of Cleveland's census tracts (categorized by decile of "rent of tenant-occupied homes and rent equivalent of owner-occupied homes") and the adverse socioeconomic gradient they revealed for White infant mortality.⁷⁷ By the early 1950s, the utility of census tracts for vital statistics and urban planning was definitively established, and the US Census appointed local liaisons to establish census tracts nationally.^{4,5,25,26,70,78} Laidlaw and Whipple's vision was finally realized in the 2000 Census, when all US counties included census tract subdivisions.²⁶

Census tract data continue to be used extensively in US public health monitoring and research.^{25,79} Work I have led since the early 1990s, for example, has empirically demonstrated the validity and utility of using census tract poverty data to monitor and analyze health inequities^{80,81}; our newer work reveals associations between census tract measures of racialized economic segregation and adverse health outcomes.^{82,83} Continued advances in geographic information systems and science ensure that linkage of census tract and other area-based census data to health and other outcomes will continue to play a vital role in documenting and monitoring links between the areas in which people live and work, their political representation, and their health and well-being—and the implications for social justice and health equity.⁷⁹

CENSUS POLITICS AND THE PEOPLE'S HEALTH

As these three examples reveal, the US Census and public health are interdependent; a corollary is that inadequate census data—and insufficient funding for the US Census—are

threats to the nation's health and to health equity. US Census data have always been and will continue to be a political instrument, one that will be used—and potentially abused—to distribute political power and resources,^{1,2} thereby affecting people's well-being and health inequities. As I prepare this article, one such prominent example involves the Trump administration's effort to add questions about citizenship to the 2020 Census⁸⁴; a legal challenge to this proposal is under way, precisely because evidence indicates it would increase the undercount of immigrants, including undocumented persons, and their families and communities.^{85–89}

The Trump administration has also sought to block inclusion of validated questions about Arab Americans⁹⁰ and lesbian, gay, bisexual, and transgender persons^{91,92}—as well as entirely erase the category of transgender^{93,94}—steps that are inimical to understanding and quantifying the social conditions and health of these populations.^{90–96}

Such distortions of census data are harmful, including to the people's health. The only way to oppose such invidious efforts is to do so loudly, with evidence, calling backlash what it is—an attack on rights gained—and with a clear vision of a more equitable world.^{97–99} Public health has long since earned its place at the table over decisions about the scope and use of US Census data. As part of the values and vision for governance that produces and uses census data, the stance of public health should be to insist on securing the data and resources, including for the US Census, that provide the factual evidence needed for good governance and the ongoing struggle for health equity. **AJPH**

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Conflicts of Interest

The author has no conflicts of interest to declare.

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