Social Determinants of Inequities in Obesity Prevention and Control: American Indian/Alaska Native Population Focus

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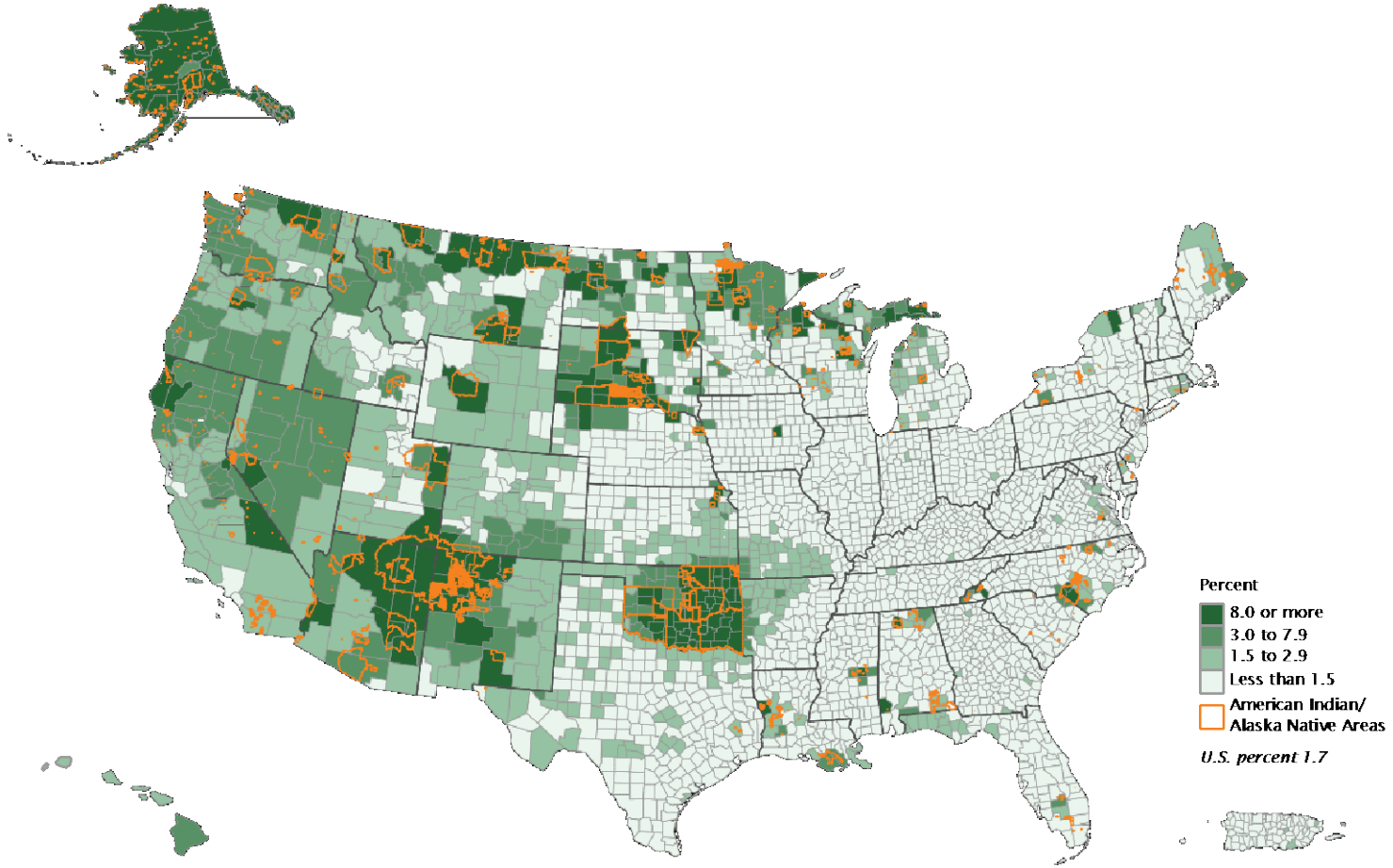
Population Introduction: American Indian and Alaska Native as a Percentage of County Population



Source: U.S. Census Bureau, *2010 Census Redistricting Data (Public Law 94-171) Summary File*, Table P1.

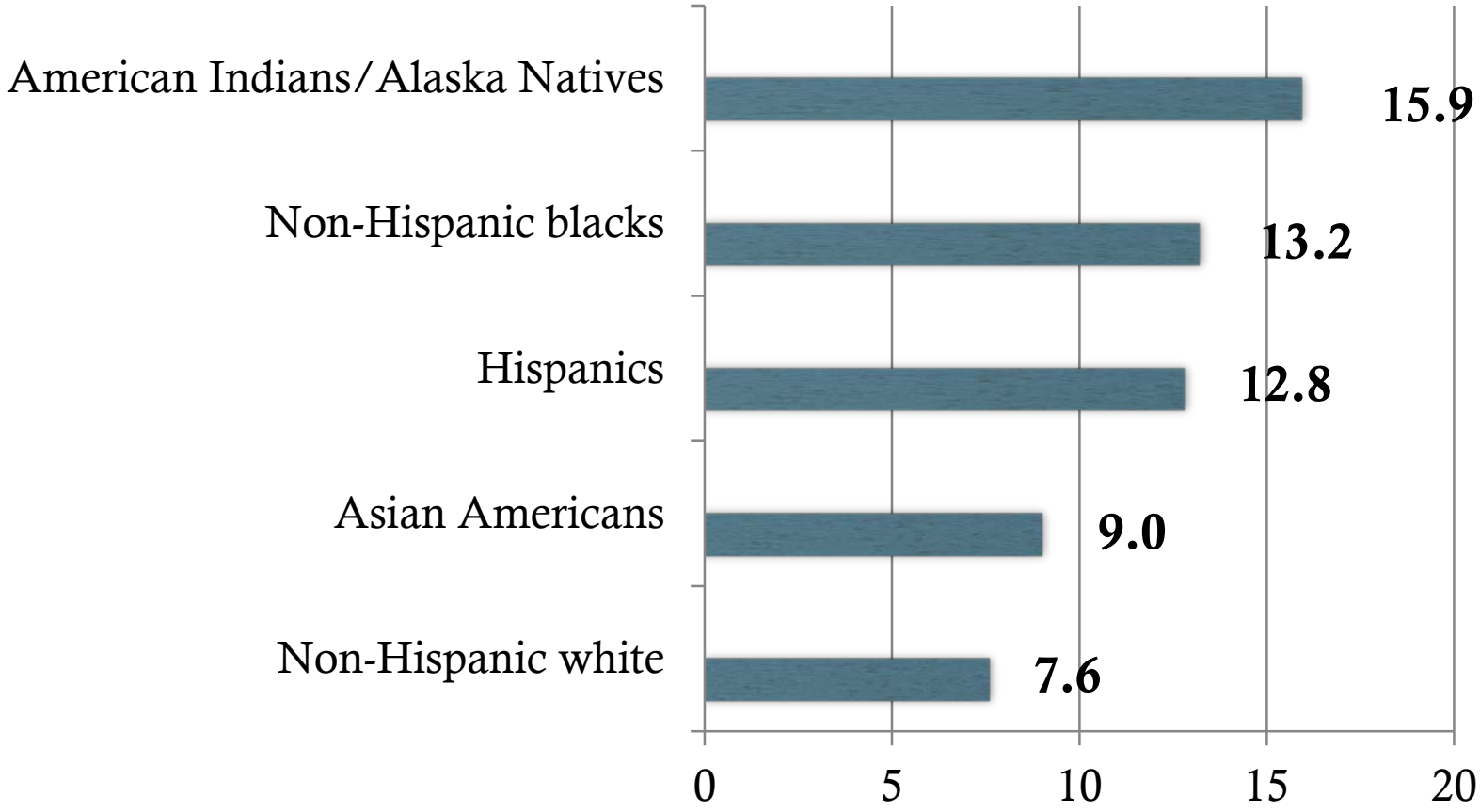
Obesity and American Indians/Alaska Natives

- Data from the National Health Interview Survey found that 71.6% of Native adults were classified as overweight or obese[1]
- Native children have the highest prevalence of obesity of any racial/ethnic group (42% compared to 31% among Black and 30% among Hispanics)[2]
- Multilevel interventions are urgently needed, however few such interventions have been developed and implemented with Native communities and virtually none have been developed and implemented within urban Native communities[3]

[1]Schiller, J. S., Lucas, J. W., & Peregoy, J. A. (2012). Summary health statistics for U.S. adults: National health interview survey, 2011. *Vital and Health Statistics. Series 10, Data from the National Health Survey*, 1–218.
[2]Adams, A. Adams, A. K., Quinn, R. A., & Prince, R. J. (2005). Low recognition of childhood overweight and disease risk among Native American caregivers. *Obesity research*, *13*(1), 146-152.
[3]Blue Bird Jernigan, V, D'Amico EJ, Duran B, Buchwald DJPS. Multilevel and community-level interventions with Native Americans: Challenges and opportunities. 2018:1-9.

A Disproportionate Burden:

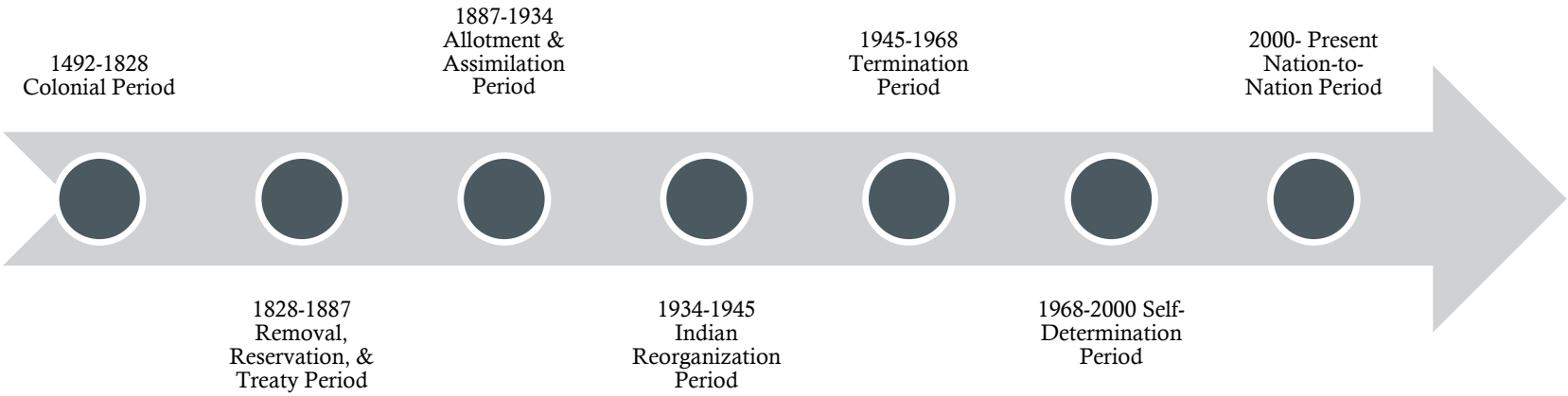
Age-adjusted % of people aged 20 years old and older with diagnosed diabetes, by race/ethnicity, United States, 2010-2012



Source: Centers for Disease Control and Prevention, National Diabetes Statistics Report, 2014.

American Indians and Alaska Natives: Racial and Political Identities

- Indigenous health inequalities arise from general socioeconomic factors in combination with culturally and historically specific factors
- The historical experiences of Native Americans—epidemic disease, removal and restriction to reservations, and forced assimilation and urbanization—have shaped the contemporary health disparities of these populations



Tribal Nations and American Governments through History

Social Determinants of Inequalities among American Indians/Alaska Natives

- According to American Community Survey data (2017):
  - **28.3%** of Natives live in poverty, nearly twice the national rate of 15.5%, and the highest of any racial or ethnic group;
  - the median Native household income for Natives is **$37,227** compared to $53,657 for the nation as a whole;
  - **23.1%** of Natives lack health insurance coverage, compared to the national average of 11.7%;
  - the percentage of Natives who drop out of school is **11%**, compared to 5% of non-Hispanic Whites

US Census American Community Survey (2017): https://www.census.gov/aian/?#

Food environments: characteristics and associated correlates in Native communities

- Native communities lack access to healthy foods[5,6]
- Foods in Native communities are more expensive than in neighboring non-Native communities[7]
- Food insecurity is 4x higher in Native communities (62%) than in the US general population (15%), and is associated with obesity, diabetes, and hypertension[6]
- Natives rely on convenience stores that sell foods primarily high in fat, sugar and sodium[5,6]

[5]Blue Bird Jernigan, Valarie, et al. (2011). "Addressing food insecurity in a Native American reservation using community-based participatory research." *Health Education Research* 27.4 (2011): 645-655..

[6]Blue Bird Jernigan, V., Wetherill, M. S., Hearod, J., Jacob, T., Salvatore, A. L., Cannady, T., ... & Wiley, A. (2017). Food insecurity and chronic diseases among American Indians in rural Oklahoma: The THRIVE study. *American Journal of Public Health*, *107*(3), 441-446.

[7]McLaury et al. (2016). Variation in WIC cash-voucher redemption among American Indian reservation communities in Washington State. *Journal of Hunger and Environmental Nutrition*, 11(2), 254-262.

Removal and Restriction to Reservations and the Impact on American Indians

- The removal and restriction of Natives to reservations resulted in reliance on the Food Distribution Program on Indian Reservations instituted by the U.S. Department of Agriculture
- This monthly program provides canned and packaged surplus foods, most of which were high in sugar and fat
- It has been associated with the significant prevalence of obesity, diabetes, and hypertension among Natives[8]

[8]L. Dillinger, Stephen C. Jett, Martha J. Macri, Louis E. Grivetti, T. (1999). Feast or famine? Supplemental food programs and their impacts on two American Indian communities in California. *International Journal of Food Sciences and Nutrition*, *50*(3), 173-187.

Loss of Land and Loss of Health/Wellness

- Wellness among many Indigenous peoples is community-centered, as people belonging to one's own community, the land, and its animals are all viewed as inherently a part of the self.[9] Few models (and measures) of wellness/health represent this holistic concept.[10]
- Colonization disrupted the crucial bond with the land and the natural environment that is a key feature of indigeneity, and is mirrored by systems of knowledge and societal arrangements[10]
- Loss of land for many results in loss of knowledge, foods, culture, and ultimately purpose and meaning[11]
- Studies have shown that mental health and physical health improves when Native people eat traditional foods, engage in traditional activities (i.e. stickball, hula) and "spend time on the land."[12,13]

[9]Donatuto JL, Satterfield TA, Gregory RJH, Risk, Society. Poisoning the body to nourish the soul: Prioritising health risks and impacts in a Native American community. 2011;13(2):103-127.
[10]Blue Bird Jernigan, V, D'Amico EJ, Duran B, Buchwald DJPS. Multilevel and community-level interventions with Native Americans: Challenges and opportunities. 2018:1-9.
[11]King, M., Smith, A., & Gracey, M. (2009). Indigenous health part 2: the underlying causes of the health gap. *The lancet*, *374*(9683), 76-85.
[12]Irmayer LJ, Fletcher C, Watt R, Irniq P, Semeniuk IR. Locating the Ecocentric Self: Inuit Concepts of Mental Health and Illness.
[13]Kaholokula JKa, Look M, Mabellos T, et al. Cultural dance program improves hypertension management for Native Hawaiians and Pacific Islanders: a pilot randomized trial. 2017;4(1):35-46.

Key Implications:

- Due to their sovereign status, national and state obesity policies may not directly reach tribal citizens
- Existing research has focused on state/national policies, has excluded tribes
- The generalizability of "evidence-based" obesity programs/policies in the context of tribal settings is unclear; lack of indigenous models of wellness within scientific literature
- The 566 tribal nations have unique and diverse cultural, geographic, and political infrastructures that may influence obesity programs and policies
- Many tribes are uniquely positioned, and inherently motivated, to implement obesity policies, given tribal citizen healthcare costs

Key Implications:

- Funded projects must be rigorously designed and evaluated
- Tribal nations/communities must have the capacity and infrastructure to implement policies
- Researchers and health planners must be familiar with tribal policymaking processes
- Tribal leadership must be equipped with health impact and cost effectiveness tools to make informed decisions
- Tribal economic sovereignty must be incorporated into obesity policymaking

Summary Recommendations

- Use participatory approaches that respect tribal sovereignty, including economic sovereignty
- Fund studies that are culturally-centered, with rigorous designs, and strong evaluation components
- Build research and implementation capacity of tribes and research partnerships
- Translate implementation knowledge of practitioners and disseminate findings
- Include a focus on AI/ANs residing in urban areas