

## S1. Designs and demographics of included studies

Article Name	Details	
Racial and Ethnic Disparities in Uptake and Location of Vaccination for 2009-H1N1 and Seasonal Influenza <sup>12</sup>	<b>Design</b>	Cohort
	<b>Sample Size</b>	White (n = 1808) Black (n = 1141) Hispanic (n = 588)
	<b>Date</b>	2011
	<b>Populations</b>	Hispanic Whites-Non HSP Black-Non HSP
	<b>Location</b>	USA
	<b>Nature of Article</b>	Vaccination uptake Clinic availability Trust to government
Predictors of knowledge of H1N1 infection and transmission in the U.S. population <sup>31</sup>	<b>Design</b>	Cohort
	<b>Sample Size</b>	1,569
	<b>Date</b>	2010
	<b>Populations</b>	black white hispanic
	<b>Location</b>	Massachuset/ USA
	<b>Nature of Article</b>	Knowledge and education about H1N1 and vaccination Socioeconomic status and level of education Availability of education
Public Acceptance of Peramivir During the 2009 H1N1 Influenza Pandemic: Implications for Other Drugs or Vaccines Under Emergency Use Authorizations <sup>26</sup>	<b>Design</b>	Cohort
	<b>Sample Size</b>	2079
	<b>Date</b>	2010
	<b>Populations</b>	White Black Hispanics
	<b>Location</b>	USA
	<b>Nature of Article</b>	Trust of people towards government Comorbidity and willingness to get vaccine

Public Willingness to Take a Vaccine or Drug Under Emergency Use Authorization during the 2009 H1N1 Pandemic <sup>13</sup>	<b>Design</b>	Cohort
	<b>Sample Size</b>	2,498>1,543
	<b>Date</b>	2019
	<b>Populations</b>	White Hispanic Black
	<b>Location</b>	USA
	<b>Nature of Article</b>	Vaccination uptake , impacted by trust in government , past experiences with pandemics such as SARS
Race-related differences in antibody responses to the inactivated influenza vaccine are linked to distinct pre-vaccination gene expression profiles in blood <sup>32</sup>	<b>Design</b>	Cohort
	<b>Sample Size</b>	270(27AA,246W,6others)
	<b>Date</b>	2016
	<b>Populations</b>	270(27AA,246W,6others)
	<b>Location</b>	USA
	<b>Nature of Article</b>	Different antigen response to vaccine in different races
Trust During the Early Stages of the 2009 H1N1 Pandemic <sup>33</sup>	<b>Design</b>	Cohort
	<b>Sample Size</b>	1543
	<b>Date</b>	2009
	<b>Populations</b>	african american/ hispanic / white
	<b>Location</b>	USA
	<b>Nature of Article</b>	Trust towards healthcare and government / healthcare impacted by income and education
The Impact of Workplace Policies and Other Social Factors on Self-Reported Influenza-Like Illness Incidence During the 2009 H1N1 Pandemic <sup>34</sup>	<b>Design</b>	Not specified
	<b>Sample Size</b>	2079
	<b>Date</b>	2010
	<b>Populations</b>	White non-Hispanic, Black non-Hispanic, or Hispanic
	<b>Location</b>	USA

	<b>Nature of Article</b>	Factors contributing in to different race exposures
Socioeconomic status, demographics, beliefs and A(H1N1) vaccine uptake in the United States <sup>35</sup>	<b>Design</b>	Not specified
	<b>Sample Size</b>	1569
	<b>Date</b>	2010
	<b>Populations</b>	white black hispanic others
	<b>Location</b>	USA
	<b>Nature of Article</b>	Vaccination uptake and efficacy related to socioeconomic status work-related inability engage in social distancing / household crowding living in an apartment
	Socio-demographic differences in opinions about 2009 pandemic influenza A (H1N1) and seasonal influenza vaccination and disease among adults during the 2009-2010 influenza season <sup>36</sup>	<b>Design</b>
<b>Sample Size</b>		55850
<b>Date</b>		2009
<b>Populations</b>		Black Hispanic White Others
<b>Location</b>		USA
<b>Nature of Article</b>		Vaccinations availability, education and acceptance in different races based on different socio-economic levels
Racial Disparities in Exposure, susceptibility, and Access to Health Care in the US H1N1 Influenza Pandemic <sup>37</sup>	<b>Design</b>	Cohort
	<b>Sample Size</b>	1479
	<b>Date</b>	2009
	<b>Populations</b>	Not specified
	<b>Location</b>	Not specified
	<b>Nature of Article</b>	Access to healthcare

Adoption of preventive behaviors in response to the 2009 H1N1 influenza pandemic: a multiethnic perspective <sup>17</sup>	<b>Design</b>	Cross-sectional telephone poll
	<b>Sample Size</b>	2,300
	<b>Date</b>	Mar 17 - Apr 11 2010
	<b>Populations</b>	1123 White 330 Black 317 Hispanic 268 Asian 262 natives
	<b>Location</b>	USA (random phone calls)
	<b>Nature of Article</b>	Adoption of preventative behaviours (eg. hygiene, social distancing, other healthcare related behaviours)
	Association of influenza vaccine uptake with health, access to health care, and medical mistreatment among adults from low-income neighborhoods in New Haven, CT: A classification tree analysis <sup>25</sup>	<b>Design</b>
<b>Sample Size</b>		1,178/1,300
<b>Date</b>		Sep – Nov, 2012
<b>Populations</b>		114 white 727 Black 239 Hispanic 91 other
<b>Location</b>		New Haven, Connecticut: low income neighborhoods
<b>Nature of Article</b>		Influenza vaccination rates, rates of comorbidities, rates of health insurance, rates of medical mistreatment, rates of frequency of doctor visits, rates of health behaviours
Can Routine Offering of Influenza Vaccination in Office-Based Settings Reduce Racial and Ethnic Disparities in Adult Influenza Vaccination? <sup>24</sup>		<b>Design</b>
	<b>Sample Size</b>	3,418
	<b>Date</b>	Mar 4 – 14, 2010
	<b>Populations</b>	1760 White 1089 Black 569 Hispanic
	<b>Location</b>	USA national survey
	<b>Nature of Article</b>	Vaccination rates, HCP visits vs. HCP recommendation rates
		<b>Design</b>

Categorical and anti-categorical approaches to US racial/ethnic groupings: revisiting the National 2009 H1N1 Flu Survey (NHFS)38	<b>Sample Size</b>	56,434
	<b>Date</b>	Oct 2009 – June 2010
	<b>Populations</b>	44909 White 4553 Black 3651 Hispanic 33221 Other
	<b>Location</b>	USA national survey
	<b>Nature of Article</b>	Vaccination rates
	Determinants of healthcare provider recommendations for influenza vaccinations14	<b>Design</b>
<b>Sample Size</b>		Not specified
<b>Date</b>		Jan – June, 2010 (focus)
<b>Populations</b>		White Black Hispanic Other
<b>Location</b>		USA national survey
<b>Nature of Article</b>		Vaccination rates, HCP recommendation rates, vs. insurance/comorbidities/attitudes towards vaccines/age/frequency of doctor visits
Disparities among 2009 Pandemic Influenza A (H1N1) Hospital Admissions: A Mixed Methods	<b>Design</b>	Mixed method analysis: quantitative (surveillance) and qualitative (interview)
	<b>Sample Size</b>	2824 surveillance; 33/120 interviewed
	<b>Date</b>	April – Dec, 2009

Analysis – Illinois, April–December 2009 <sup>39</sup>	<b>Populations</b>	<p>Surveillance:</p> <ul style="list-style-type: none"> <li>1068 White</li> <li>707 Black</li> <li>680 Hispanic</li> <li>107 Asian</li> <li>6 Native</li> <li>63 Other</li> <li>193 Unknown</li> </ul> <p>Interviews:</p> <ul style="list-style-type: none"> <li>13 White</li> <li>10 Black</li> <li>10 Hispanic</li> </ul>
	<b>Location</b>	Illinois, USA
	<b>Nature of Article</b>	Mortality rates, Hospitalization rates, vs. comorbidities, barriers in access to healthcare
	<b>Design</b>	Cross-sectional survey
Factors associated with differential uptake of seasonal influenza immunizations among underserved communities during the 2009–2010 influenza season <sup>28</sup>	<b>Sample Size</b>	991
	<b>Date</b>	Feb – July, 2010
	<b>Populations</b>	<ul style="list-style-type: none"> <li>55% Hispanic</li> <li>45% Black</li> </ul>
	<b>Location</b>	Harlem & South Bronx, New York
	<b>Nature of Article</b>	Influenza vaccination rates vs. attitudes towards vaccines, health insurance, trust in gov, concern
Factors Mediating Seasonal and Influenza A (H1N1) Vaccine Acceptance among Ethnically Diverse Populations in the Urban South <sup>16</sup>	<b>Design</b>	Cross-sectional survey
	<b>Sample Size</b>	503
	<b>Date</b>	Sept – Dec, 2009
	<b>Populations</b>	<ul style="list-style-type: none"> <li>399 Black</li> <li>31 Hispanic</li> <li>28 Multiracial</li> <li>12 Asian</li> <li>6 Native</li> </ul>

		27 Didn't say
	<b>Location</b>	Metropolitan Atlanta, Georgia
	<b>Nature of Article</b>	Vaccination acceptability rates vs mistrust, hx of medical mistreatment, attitudes of vaccines
Pandemics and Health Equity: Lessons Learned from the H1N1 Response in Los Angeles County <sup>15</sup>	<b>Design</b>	Vaccinations + cross-sectional telephone survey
	<b>Sample Size</b>	163,087 (vaccinated); 1750 (surveyed)
	<b>Date</b>	Oct 23 – Dec 08, 2009 (vaccinations); Dec 16, 2009 – Mar 08, 2010 (surveys)
	<b>Populations</b>	Black White Asian Hispanic Native Pacific Islander
	<b>Location</b>	Los Angeles County, California
	<b>Nature of Article</b>	Vaccination rates, Health beliefs / Attitudes towards vaccination
	Assessing Differential Impacts of COVID-19 on Black Communities <sup>20</sup>	<b>Design</b>
<b>Sample Size</b>		-3142 US counties
<b>Date</b>		-Not specified
<b>Populations</b>		-656 disproportionately Black counties and 2465 other counties
<b>Location</b>		-US nationwide
<b>Nature of Article</b>		-Racial disparities in COVID-19 disease and death & associated determinants

Awareness, Attitudes, and Actions Related to COVID-19 Among Adults With Chronic Conditions at The Onset of The US Outbreak <sup>18</sup>	<b>Design</b>	-Cross-sectional and cohort studies
	<b>Sample Size</b>	-630 adults
	<b>Date</b>	-March 13th - 20th, 2020
	<b>Populations</b>	-23-88 year old Blacks, Whites, Hispanics, and Others with 1+ chronic medical conditions
	<b>Location</b>	-5 academic internal medicine practices and 2 federally qualified health centres in Chicago, Illinois
	<b>Nature of Article</b>	-COVID-19 awareness, knowledge, attitudes, and related behaviours among US adults who are more vulnerable to complications of infection due to age and comorbid conditions
Black-White Risk Differentials in COVID-19 (SARS-COV2) Transmission, Mortality and Case Fatality in The United States: Translational Epidemiologic Perspective and Challenges <sup>29</sup>	<b>Design</b>	-Data stimulation and cross-sectional study
	<b>Sample Size</b>	-9 states
	<b>Date</b>	-April 2020
	<b>Populations</b>	-Blacks/ AA, Whites, Asians, and Others
	<b>Location</b>	WI, MI, LU, IL, MD, NC, NJ, NY, and CA
	<b>Nature of Article</b>	Race & COVID-19 transmission, mortality, and case fatality
Covid-19 by Race and Ethnicity: A National Cohort Study of 6 Million United States Veterans <sup>21</sup>	<b>Design</b>	Cohort study
	<b>Sample Size</b>	5, 834, 543 US Veterans
	<b>Date</b>	February 8th - May 4th, 2020
	<b>Populations</b>	Non-Hispanic Whites/ Whites, Non-Hispanic Blacks/ Blacks, and Hispanics
	<b>Location</b>	US nationwide



	<b>Nature of Article</b>	Patterns of testing and test results for COVID-19 & mortality by race and ethnicity in the largest integrated healthcare system in US
Disparities in COVID-19 Reported Incidence, Knowledge, and Behaviour <sup>19</sup>	<b>Design</b>	Linear regression and cohort study
	<b>Sample Size</b>	5198 US citizens
	<b>Date</b>	March 29th - April 13th, 2020
	<b>Populations</b>	Whites, Blacks, and Hispanics
	<b>Location</b>	US nationwide
	<b>Nature of Article</b>	Knowledge, beliefs, and behaviours regarding COVID-19
Disparities in Outcomes Among COVID-19 Patients in A Large Health Care System in California <sup>27</sup>	<b>Design</b>	Cohort study
	<b>Sample Size</b>	14, 036 COVID-19 patients
	<b>Date</b>	January 1st - April 8th, 2020
	<b>Populations</b>	Whites, Hispanics, Asians, Black/ AA, and Others (American Indian, Alaskan Native, mixed race, declined to state, unknown) who were 18+ with at least 1 encounter with Sutter Health between January 1st - April 8th, 2020
	<b>Location</b>	Sutter Health in northern California across 22 counties
	<b>Nature of Article</b>	Adults with suspected and confirmed COVID-19 & risk of hospitalization
Improved Measurement of Racial/ Ethnic Disparities in COVID-19 Mortality in The United States <sup>40</sup>	<b>Design</b>	Indirect standardization
	<b>Sample Size</b>	322 US counties
	<b>Date</b>	COVID-19 outbreak - May 13th, 2020
	<b>Populations</b>	Non-Hispanic African Americans/ Blacks, non-Hispanic Whites/ Whites, non-Hispanic Asians/ Asians, and Hispanics of any race/ Hispanics

	<b>Location</b>	US nationwide
	<b>Nature of Article</b>	Racial/ ethnic groups & COVID-19 mortality by age and place
Racial Disparities in Knowledge, Attitudes, and Practices Related to COVID-19 in the USA <sup>23</sup>	<b>Design</b>	Cohort study
	<b>Sample Size</b>	1216 adults
	<b>Date</b>	March 11th - 15th, 2020
	<b>Populations</b>	Whites, Blacks, Hispanics, and Asians or Multiracials who were 18+ living in USA (including Alaska and Hawaii)
	<b>Location</b>	US nationwide
	<b>Nature of Article</b>	Racial disparities & knowledge, attitudes, and practises related to COVID-19
Racial, Economic and Health Inequality and COVID-19 Infection in the United States <sup>41</sup>	<b>Design</b>	Cross-sectional study
	<b>Sample Size</b>	369 US counties (102, 178, 117 people)
	<b>Date</b>	COVID-19 outbreak - April 9th, 2020
	<b>Populations</b>	Asians, Blacks, Hispanics, and Whites
	<b>Location</b>	7 most affected states across US: Michigan, New York, New Jersey, Pennsylvania, California, Louisiana, Massachusetts
	<b>Nature of Article</b>	COVID-19 infection and mortality rate & demographics, socioeconomic and mobility variables
Social Vulnerability and Racial Inequality in COVID-19 Deaths in Chicago <sup>42</sup>	<b>Design</b>	Cohort study
	<b>Sample Size</b>	77 Chicago community areas
	<b>Date</b>	Not specified
	<b>Populations</b>	African Americans and Other Racial/ Ethnic Groups
	<b>Location</b>	Chicago

	<b>Nature of Article</b>	Effects of social vulnerability and health risk factors on the spatial distribution of COVID-19 deaths
African American COVID-19 Disparities <sup>30</sup>	<b>Design</b>	Ecological study using linear regression
	<b>Sample Size</b>	152 counties
	<b>Date</b>	January 22nd - April 12th, 2020
	<b>Populations</b>	African Americans
	<b>Location</b>	Top 3 most populous counties of each US state
	<b>Nature of Article</b>	Impact of the density of African American communities on COVID-19 prevalence and death rate
	US County-Level Characteristics to Inform Equitable COVID-19 Response <sup>22</sup>	<b>Design</b>
<b>Sample Size</b>		Not specified
<b>Date</b>		Not specified
<b>Populations</b>		Non-Hispanic Blacks and non-Hispanic Whites
<b>Location</b>		-US nationwide
<b>Nature of Article</b>		-Biological, demographic, and socioeconomic factors influencing susceptibility to COVID-19