

# RESEARCH BRIEF

CHIA.

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## Massachusetts Foreign-Born Residents, Particularly Non-Citizens, Are Less Likely to Have Continuous Health Insurance Coverage

### Findings from the Massachusetts Health Insurance Survey 2015-2019

#### Summary

**Issue:** Citizenship and immigration status have been associated with health outcomes in prior research. One of the mechanisms through which citizenship and immigration status may contribute to health inequities is via insurance coverage. The foreign-born population in Massachusetts has been steadily increasing in recent years, underscoring the need for more information on disparities in health insurance coverage by immigration and citizenship status.

**Objective:** To investigate whether there are disparities in health insurance coverage between citizens born in the United States, naturalized citizens, and non-citizens in Massachusetts, and if so, whether disparities persist after accounting for sociodemographic factors such as age, race/ethnicity, family income, family educational attainment, sex, marital status, as well as self-reported health status and activity limitations.

**Study Design:** The Massachusetts Health Insurance Survey (MHIS) is a statewide, population-based biennial survey of the non-institutionalized population. The current study analyzes MHIS data pooled from three biennial waves (2015, 2017, and 2019), with a combined sample of 14,803 residents. Multivariable logistic regression was used to compare the rates of continuous health insurance coverage by immigration and citizenship status and age group, after adjustment for key potential confounding factors such as race/ethnicity, family income, family educational attainment, sex, marital status, and health or activity limitation status.

**Key Findings:** Despite Massachusetts' high rate of health insurance coverage, coverage rates varied by citizenship and immigration status. Gaps in insurance coverage rates by immigration and citizenship status were present among residents in all age groups after adjusting for key potential confounding factors. Moreover, differences in coverage rates by citizenship and immigration status were particularly large among children and non-elderly adults. While 98.1% of U.S.-born citizen children (aged 18 or younger) had continuous health insurance coverage, only 82.1% of non-citizen children had continuous coverage, after adjusting for other factors. Compared with U.S.-born non-elderly adults (aged 19-64), of whom 92.2% had continuous health insurance coverage, only 79.3% of non-citizen non-elderly adults had continuous insurance coverage, after adjustment for other factors.

## Introduction

Massachusetts consistently has one of the highest rates of health insurance coverage among its residents as a whole.<sup>1</sup> With 97% of residents covered at any given point and over 90% of residents insured continuously all year, Massachusetts is a leader in the nation for prioritizing the importance of health insurance coverage in promoting the health and well-being of its residents.<sup>2</sup> Nevertheless, this coverage rate is not universal. Racial/ethnic minority residents and residents with lower family income continue to bear the burden of gaps in the health care system, with higher rates of uninsurance than other population subgroups.<sup>3</sup> Additionally, access to health insurance coverage may be particularly complex for foreign-born populations, who may experience barriers to access to social programs, education, and housing, among other factors.<sup>4</sup> State-level health care reforms in 2006 and the subsequent federal Affordable Care Act (ACA) expanded health insurance access to many immigrants by allowing many lawfully present non-citizens to purchase subsidized private insurance plans through health insurance exchanges. However, some are excluded from accessing certain types of Medicaid programs despite having legal presence as a result of a federal five-year residency requirement, although they may qualify for limited health insurance benefits.<sup>5</sup> Immigrants without lawful presence in the U.S., as well as some individuals with temporary lawful presence are excluded from ACA provisions and are therefore ineligible for these plans.<sup>6,7</sup> According to one estimate, approximately one in five uninsured Massachusetts residents is uninsured due to their immigration status.<sup>8</sup>

Over the past decade, the population of Massachusetts has grown considerably, tallying more than 7 million residents as of 2020.<sup>9</sup> According to one estimate, three-quarters of the Commonwealth's net population growth between 2000-2016 was due to migration of foreign-born people to the Commonwealth.<sup>10</sup> Census counts demonstrate that the growth in Massachusetts is fueled by an increasing number of immigrants of color from a diverse range of countries, including China, the Dominican Republic, India, Brazil, and Haiti. Immigrants comprise an estimated one-fifth of the state's labor force, and their presence is not limited to urban areas.<sup>11,12</sup>

Immigration and citizenship status may contribute to health disparities.<sup>13-15</sup> Non-citizens, particularly undocumented immigrants, are vulnerable to poorer health outcomes resulting from a range of social and economic disadvantages, in addition to the increased likelihood of being uninsured.<sup>16-22</sup> With immigrants arriving in growing numbers to the Commonwealth, it is important to evaluate the health insurance system and ensure that it can serve its increasingly diverse population.

The current study seeks to better understand health insurance gaps faced by foreign-born Massachusetts residents in order to better target efforts to address disparities due to immigration and/or citizenship status. Non-citizens may include both residents who have lawful presence in the U.S and those who do not. The study uses the Massachusetts Health Insurance Survey (MHIS), a statewide, population-based survey of non-institutionalized residents of the Commonwealth. The survey, conducted biennially, aims to quantify rates of health insurance or uninsurance in the state and capture aspects of health care access, utilization, and affordability among residents and their families. Analyses in this brief use combined MHIS data across three biennial waves (2015-2019) to provide reliable estimates for population subgroups. Because non-citizens and other marginalized populations (e.g., residents with lower income and/or racial/ethnic minorities) may have higher rates of non-response to the survey, the sampling method uses a stratified random sampling methodology, explicitly designed to over-sample households likely to have members of these groups. It also includes a sample of pre-paid cell phone users, who are more likely to be uninsured, have lower incomes, and to be non-White. While it is still possible that these populations were under-sampled in the final dataset, any under-sampling of these populations would only result in an underestimate of these gaps.

This brief focuses on differences in health insurance coverage, comparing rates among residents of being insured continuously over the past 12 months by immigration/citizenship status and age group using multivariable logistic regression analysis, adjusting for race/ethnicity, family income, family educational attainment, sex, marital or domestic partnership status, and health or activity limitation status. As income and educational attainment are likely to be associated with outcomes for all family members in the household and children are included in the survey, family-level measures are used to model these characteristics. Table 1 describes measures included in this study.

**Table 1: Measure Definitions**

**OUTCOME MEASURE**

- **Continuous Health Insurance Coverage:** Residents reported whether they had continuous health insurance coverage over the past 12 months.

**COVARIATES**

**Demographic and Socioeconomic Factors**

*Immigration and Citizenship Status\**

- U.S.-Born Citizen
- Naturalized Citizen
- Non-Citizen

*Age Group*

- Children (18 years and under)
- Non-Elderly Adults (19-64 years)
- Elderly Adults (65+ years)

*Race/Ethnicity*

- Non-Hispanic Black (referred to as “Black”)
- Non-Hispanic White (referred to as “White”)
- Non-Hispanic Asian (referred to as “Asian”)
- Non-Hispanic Other/Multiple Races (referred to as “Other”)
- Hispanic (includes residents identifying as Hispanic or Latino/a)

*Family Income*

- Below 139% of the Federal Poverty Level (FPL)
- From 139% to less than 300% of the FPL
- From 300% to less than 400% of the FPL
- At or above 400% of the FPL

#### *Highest Level of Educational Attainment in the Family*

- Less than High School
- High School Graduate or GED
- Some College
- 4-Year College Degree or Higher

#### *Sex*

- Male
- Female

#### *Marital Status*

- Single/Unmarried
- Married or Living with Partner

#### **Health Status and Activity Limitations**

**Health Status:** Residents were asked to describe their health status at the time of the survey, including whether they experience any activity limitations due to a physical, mental, or emotional problem

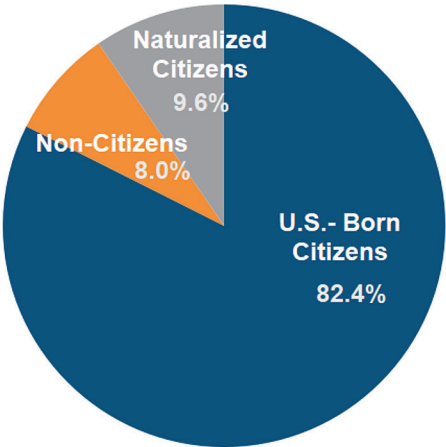
- Good or excellent health and no activity limitation
- Fair or poor health and an activity limitation
- Fair or poor health or an activity limitation

\* U.S.-Born Citizens: People born in the United States, Puerto Rico or other U.S. territory, or people who were born abroad to at least one U.S. citizen parent. Foreign-Born Residents: People residing in Massachusetts at the time of survey who were not U.S. citizens at birth. The survey does not ask about legal presence in the U.S. Naturalized Citizens: People born as citizens of another country who fulfilled the requirements to become U.S. citizens. Non-Citizens: People residing in the U.S. who are not citizens, including lawful permanent residents or green-card holders, refugees and asylees, legal non-immigrants such as those on student, work, or other temporary visas, and persons residing in the country without authorization.

# Massachusetts Population by Immigration and Citizenship Status

Over one in six Massachusetts residents is foreign-born, including 9.6% who are naturalized citizens and 8.0% who are non-citizens (Figure 1).

Figure 1. Immigration and Citizenship Status of Massachusetts Residents



Note: Percentage may not sum up to 100% due to rounding.  
Data source: U.S. Census Bureau, American Community Survey (ACS) 2021.

## Does the rate of continuous health insurance coverage among Massachusetts residents vary by immigration and/or citizenship status?

**Naturalized citizens and non-citizens were less likely to have continuous health insurance coverage in Massachusetts.**

Overall, 95.2% of U.S.-born citizens, 91.3% of naturalized citizens and 74.1% of non-citizens indicated they had continuous health insurance coverage in the 12 months preceding the survey before adjustment for other factors (Figure 2).

**Figure 2. Unadjusted Rates of Continuous Health Insurance Coverage in the Past 12 Months among Massachusetts Residents by Immigration and Citizenship Status, 2015-2019**



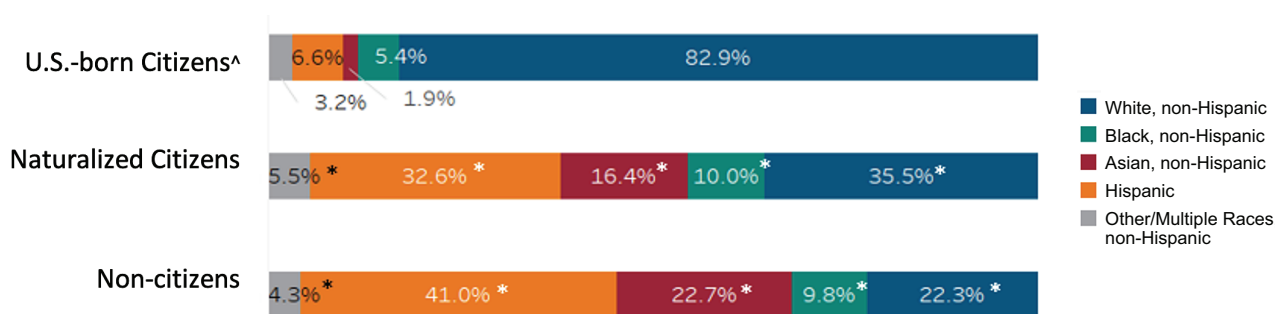
<sup>^</sup>Reference group  
 \*Significantly different from the reference group at the  $p < 0.05$  level  
 Data source: Massachusetts Health Insurance Survey (MHIS) 2015-2019.

## What are the characteristics of Massachusetts Residents by Immigration and Citizenship Status using the MHIS?

**Compared to U.S.-born citizens, naturalized citizens and non-citizens were more likely to be Hispanic, Asian, or Black, to report low family income, and/or to be non-elderly adults.**

The racial/ethnic distribution of Massachusetts residents varied deeply by immigration and citizenship status. Fewer than one in five U.S.-born citizens reported being members of racial/ethnic minority groups. In contrast, among residents who were naturalized citizens, approximately one-third identified as Hispanic; one-sixth identified as Asian; and one-tenth identified as Black. Among non-citizen residents, over 40% identified as Hispanic, more than 20% identified as Asian, and nearly 10% identified as Black (Figure 3a; Table 2).

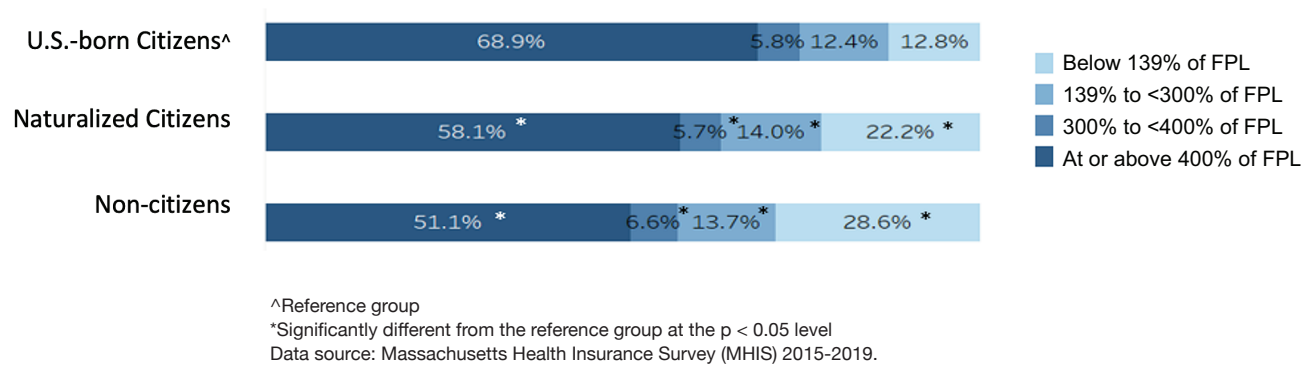
**Figure 3a. Race/Ethnicity of Massachusetts Residents by Immigration and Citizenship Status: 2015-2019**



<sup>^</sup>Reference group  
 \*Significantly different from the reference group at the  $p < 0.05$  level  
 Data source: Massachusetts Health Insurance Survey (MHIS) 2015-2019.

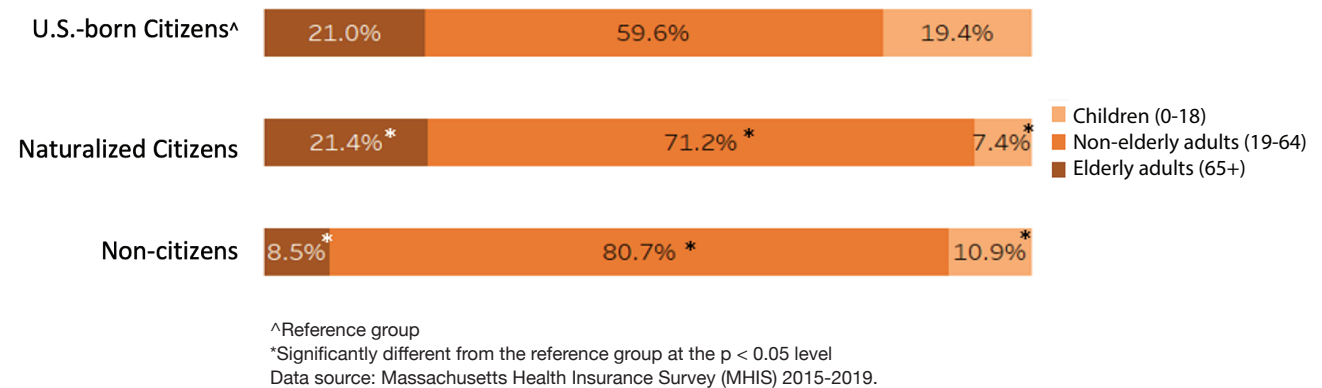
Family income relative to the federal poverty level (FPL) was also associated with immigration and citizenship status. Although a majority of residents, regardless of immigration and citizenship status, reported a family income at or above 400% of the FPL, naturalized citizens and non-citizens were less likely to have family incomes at that level and were more likely to be below 139% of the FPL, as compared with U.S.-born citizens (Figure 3b; Table 2).

**Figure 3b. Family Income Relative to the Poverty Level by Immigration and Citizenship Status**



Finally, the age distribution of residents also differed by immigration and citizenship status. Specifically, naturalized citizens and non-citizens were more likely to be non-elderly adults (19 to 64 years old) and less likely to be children or elderly adults, as compared with U.S.-born citizens (Figure 3c; Table 2).

**Figure 3c. Age Group by Immigration and Citizenship Status**



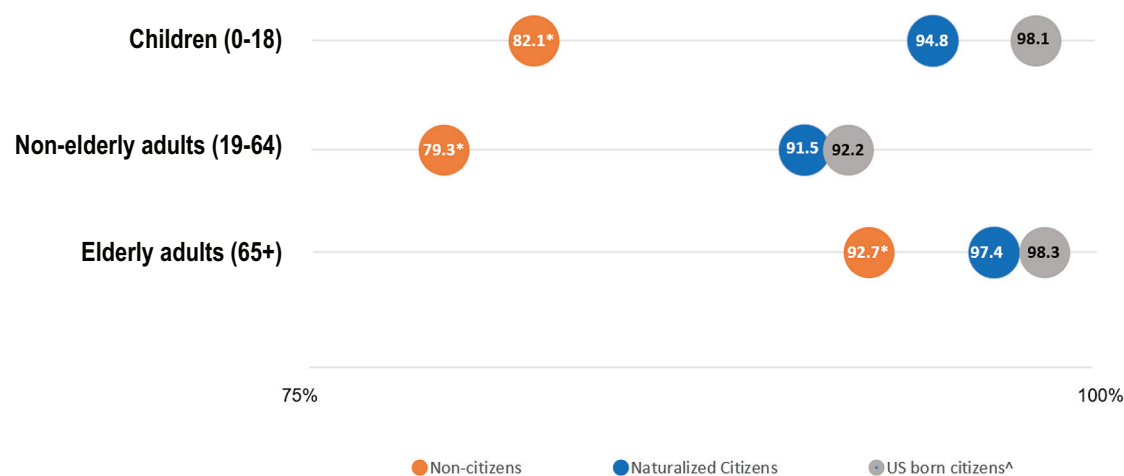
## Do associations between health insurance coverage and immigration/citizenship status persist within age groups after adjusting for other demographic and health factors?

Compared with their same-age U.S.-born citizen counterparts, non-citizen residents in every age group were less likely to have continuous health insurance coverage over the past 12 months, even after adjusting for key potential confounding factors.

Although Massachusetts residents had high levels of continuous health insurance coverage in the 12 months preceding the survey, the generally high levels of coverage varied by citizenship status. We estimated the probability of having continuous coverage among residents by immigration and citizenship status and age groups after accounting for key potential confounding factors, including race/ethnicity, family income, family educational attainment, sex, marital status, and health and activity limitation status. Adjusted proportions were estimated using multivariate logistic regression.

Gaps in health insurance coverage rates by immigration and citizenship status persisted within all age groups after adjusting for other variables in the model. These gaps were particularly large among children and non-elderly adults. Overall, we calculated an adjusted continuous health insurance coverage rate over the past 12 months of 98.1% for U.S.-born citizen children, compared to only 82.1% for non-citizen children. Non-citizens also had a lower adjusted continuous health insurance coverage compared with their U.S.-born peers among non-elderly adults (79.3% vs. 92.2%, respectively). Finally, although non-citizen elderly adults experienced the smallest gaps in coverage rates, they still lagged behind their U.S.-born citizen peers (92.7% vs. 98.3%) (Figure 4; Table 3).

**Figure 4. Adjusted Proportions of Massachusetts Residents with Continuous Health Insurance Coverage by Immigration and Citizenship Status and Age Group: 2015-2019**



^Reference group

\*Significantly different from the reference group at the  $p < 0.05$  level

Data source: Massachusetts Health Insurance Survey (MHIS) 2015-2019.



## Discussion

Immigration and citizenship status have previously been found to contribute to health via a variety of mechanisms, including differential access to beneficial social programs, education, employment, and housing, as well as experiences of discrimination and stress related to structural racism.<sup>23-31</sup> This analysis found that in Massachusetts, non-citizens are disproportionately likely to experience periods of uninsurance, and non-citizens under the age of 65, including children, are significantly less likely to have continuous health insurance coverage than their same-age U.S.-born counterparts even after accounting for numerous sociodemographic characteristics and self-reported health status and activity limitations.

The lower rates of continuous health insurance coverage reported among non-citizens may reflect limited access to employer-sponsored insurance, the inability to afford insurance from the individual marketplace even when eligible, and/or eligibility restrictions for ACA marketplace coverage and certain MassHealth benefits (e.g., five-year residency requirement).<sup>32</sup> Non-citizen residents are equally likely to be employed, but they are less likely to be employed in jobs and industries where they are offered employer-sponsored insurance and more likely to have lower income as compared with citizen residents.<sup>33</sup> For elderly non-citizen residents, eligibility for Medicare mirrors eligibility requirements for Social Security Insurance (SSI) or Social Security Disability Insurance (SSDI), which requires the equivalent of 40 work credits (approximately 10 years of work) and a five-year residency requirement. Additionally, despite meeting eligibility requirements, non-citizen residents with lawful presence in the U.S. may be reluctant to seek health insurance due to fear of deportation and/or fears that applying for public health insurance may adversely affect their citizenship and/or employment visa applications.<sup>34-36</sup> Furthermore, there is wide variation within immigrant communities regarding refugee status and legal barriers to citizenship and how they correspond to both eligibility for health insurance coverage and health.

In the absence of health insurance, uninsured immigrants in Massachusetts may either go without needed health care or rely on the Health Safety Net (HSN), a program that enables qualified low-income and uninsured populations to receive certain services at community health centers and acute care hospitals. However, the services covered under the HSN program are limited, may not be as accessible as services provided in other settings, and typically do not include preventive care.<sup>37</sup> In California, Asian and Latino immigrants have been found to not only be disproportionately more likely to be uninsured compared to U.S.-born White residents, but to have lower rates of utilization of preventive health care services.<sup>38</sup> Some studies have found patterns of increasing use of preventive health care services as immigrants transition from a lack of legal presence to legal residence to attaining full citizenship, and that health insurance may help non-citizens to bridge gaps in preventive care utilization.<sup>39-45</sup>

In Massachusetts, an estimated one in twenty children are U.S. citizens with at least one undocumented family member.<sup>46</sup> Children in families with an undocumented family member have been found to experience delayed treatment at higher rates and utilize health care services at lower rates than those without an undocumented family member.<sup>47,48</sup> Unfortunately, information was not available for this study on the immigration and citizenship status of the parents of child residents, so we were unable to examine the association of parental citizenship status with coverage rates of their children.

Given the growing number of immigrants in Massachusetts, the Commonwealth may want to consider different options for its health insurance programs in order to meet the evolving needs of all its residents. Removing barriers to accessing health care coverage and incentivizing its take-up among foreign-born residents, and non-citizens in particular, may be a helpful first step. Though there is an increasing number of programs and outreach initiatives aimed at this population, continued efforts to increase identification and enrollment of eligible uninsured immigrant children who are eligible for MassHealth, including Medicaid and the Children's Health Insurance Program, may be especially helpful. Additional targeted efforts aimed at increasing awareness and understanding of public insurance programs and their eligibility requirements may help to decrease gaps in coverage and, in turn, gaps in preventive health care use among non-citizens and other immigrants.

**Table 2. Characteristics of Massachusetts Residents by Immigration and Citizenship Status (MHIS 2015-2019)**

	U.S.-Born Citizens (n = 12,855)		Naturalized Citizens (n = 1,224)		Non-citizens (n = 724)	
	Percent	95% CI	Percent	95% CI	Percent	95% CI
<b>Age group</b>						
Children (0-18)	19.4	18.6 - 20.3	7.4	5.6 - 9.3	10.9	8.4 - 13.3
Non-elderly adults (19-64)	59.6	58.7 - 60.4	71.2	68.0 - 74.3	80.7	77.6 - 83.7
Elderly adults (65+)	21.0	20.2 - 21.8	21.4	18.9 - 23.9	8.5	6.3 - 10.7
<b>Race/ethnicity</b>						
White, non-Hispanic	82.9	82.3 - 83.5	35.5	32.7 - 38.3	22.3	19.0 - 25.5
Black, non-Hispanic	5.4	5.0 - 5.8	10.0	8.3 - 11.6	9.8	7.3 - 12.3
Asian, non-Hispanic	1.9	1.5 - 2.2	16.4	13.7 - 19.1	22.7	19.6 - 25.8
Other race, non-Hispanic	3.2	2.8 - 3.6	5.5	3.9 - 7.1	4.3	2.5 - 6.1
Hispanic	6.6	6.1 - 7.1	32.6	30.1 - 35.0	41.0	37.1 - 44.8
<b>Family Income Relative to the FPL</b>						
Below 139% of the FPL	12.8	12.4 - 13.2	22.2	19.5 - 24.8	28.6	25.0 - 32.2
139% to < 300% of FPL	12.4	12.1 - 12.7	14.0	12.2 - 15.9	13.7	11.0 - 16.3
300% to < 400% of FPL	5.8	5.5 - 6.2	5.7	4.5 - 6.9	6.6	4.7 - 8.6
At or above 400% of FPL	68.9	68.3 - 69.6	58.1	55.4 - 60.9	51.1	47.0 - 55.1
<b>Family Educational Attainment</b>						
Less than high school	3.6	3.2 - 4.0	14.4	12.1 - 16.7	20.9	17.8 - 24.0
High school graduate or GED	16.2	15.5 - 16.9	17.6	15.4 - 19.9	17.4	14.0 - 20.8
Some college	13.1	12.4 - 3.8	10.5	8.5 - 12.4	8.9	6.2 - 11.5
4-year college degree or more	67.1	66.1 - 68.1	57.5	54.7 - 60.4	52.8	48.8 - 56.8
<b>Gender</b>						
Male	48.6	47.5 - 49.6	44.5	41.5 - 47.4	51.4	47.4 - 55.4
Female	51.4	50.4 - 52.5	55.5	52.6 - 58.5	48.6	44.6 - 52.6
<b>Marital Status</b>						
Unmarried/Single	59.5	58.4 - 60.5	52.0	48.8 - 55.2	58.5	54.7 - 62.3
Married	40.5	39.5 - 41.6	48.0	44.8 - 51.2	41.5	37.7 - 45.3

**Table 3. Adjusted Proportions of MA Residents with Continuous Health Insurance Coverage**

	Unadjusted Proportions			Adjusted Proportions	
	N	Percent	95% CI	Percent	95% CI
<b>Citizenship by Age</b>					
Children (0-18)					
U.S.-born Citizen	1,560	97.8	96.9 - 98.7	98.1	97.8 - 98.2
Naturalized Citizen	79	91.1	82.5 - 99.8	94.8	93.6 - 95.9
Non-citizen	62	72.2	59.1 - 85.3	82.1	80.0 - 84.2
Non-elderly adults (19-64)					
U.S.-born Citizen	7,488	93.1	92.4 - 93.8	92.2	92.1 - 92.4
Naturalized Citizen	939	89.7	87.4 - 92.1	91.5	91.0 - 92.0
Non-citizen	575	72.6	69.0 - 76.2	79.3	78.6 - 80.1
Elderly adults (65+)					
U.S.-born Citizen	3,600	98.5	97.9 - 99.1	98.3	98.1 - 98.4
Naturalized Citizen	403	96.7	94.8 - 98.6	97.4	97.1 - 97.8
Non-citizen	94	90.6	85.3 - 96.0	92.7	91.8 - 93.7
<b>Race/Ethnicity</b>					
White, non-Hispanic	11,721	95.6	95.2 - 96.1	94.4	94.3 - 94.6
Black, non-Hispanic	804	89.0	86.7 - 91.3	92.1	91.7 - 92.5
Asian, non-Hispanic	476	92.3	89.5 - 95.2	94.6	94.1 - 95.0
Hispanic	1,390	82.1	80.1 - 84.0	90.1	90.3 - 91.0
Other race /multiple races, non-Hispanic	409	90.5	87.9 - 93.1	91.1	90.1 - 91.6
<b>Family Income Relative to the FPL</b>					
Below 139% of the FPL	3,077	85.6	90.6 - 91.1	90.9	90.6 - 91.1
139% to <300% of FPL	2,950	88.9	90.3 - 90.9	90.6	90.3 - 90.9
300% to <400% of FPL	1,559	93.5	93.5 - 94.3	93.9	93.5 - 94.3
At or above 400% of FPL	7,214	95.9	94.8 - 95.1	95.0	94.8 - 95.1
<b>Family Educational Attainment</b>					
Less than high school	687	81.6	78.6 - 84.7	92.2	91.8 - 92.6
High school graduate or GED	2,519	88.1	86.4 - 89.9	90.9	90.5 - 91.2
Some college	1,964	91.5	89.9 - 93.1	92.1	91.8 - 92.4
4-year college degree or more	9,630	96.1	95.5 - 96.6	94.9	94.8 - 95.1
<b>Gender</b>					
Male	6,979	92.1	91.0 - 92.4	92.4	92.3 - 92.6
Female	7,821	94.5	93.9 - 95.0	94.3	94.2 - 94.5
<b>Marital Status</b>					
Unmarried	6,320	91.7	91.0 - 92.4	92.2	92.0 - 92.3
Married	8,480	95.6	95.0 - 96.3	95.3	95.1 - 95.4
<b>Health Status/Activity Limitation</b>					
Good/excellent health, no activity limitation	9,823	94.2	93.7 - 94.8	93.8	93.7 - 93.9
Fair/poor health or activity limitation	3,217	90.0	88.5 - 91.4	91.3	91.1 - 91.6
Fair/poor health and activity limitation	1,760	93.4	92.0 - 94.9	95.0	94.7 - 95.2

## References

- <sup>1</sup> Analysis CHIA. Health Insurance Coverage and Care in Massachusetts, 2015-2019: Center for Health Information and Analysis; 2021.
- <sup>2</sup> See note 1.
- <sup>3</sup> See note 1.
- <sup>4</sup> Castañeda H, Holmes SM, Madrigal DS, Young M-ED, Beyeler N, Quesada J. Immigration as a social determinant of health. *Annual Review of Public Health* 2015.
- <sup>5</sup> Key Facts about the Uninsured Population. 2020.
- <sup>6</sup> Edward J. Undocumented immigrants and access to health care: making a case for policy reform. *Policy, Politics, & Nursing Practice* 2014;15:5-14.
- <sup>7</sup> Fuentes-Afflick E, Hessol NA. Immigration status and use of health services among Latina women in the San Francisco Bay Area. *Journal of women's health* 2009;18:1275-80.
- <sup>8</sup> Nelson D. Massachusetts' Remaining Uninsured: Who They are and how to Cover Them: Harvard University; 2019.
- <sup>9</sup> Massachusetts population grew 7.4% to over 7 million from 2010 to 2020. U.S. Census Bureau, 2022. at <https://www.census.gov/library/stories/state-by-state/massachusetts-population-change-between-census-decade.html>
- <sup>10</sup> Immigrants are our Commonwealth. 2018. <https://miracoalition.org/wp-content/uploads/2020/01/Mass-Immigrant-Facts-Jan2019.pdf>.
- <sup>11</sup> See note 10.
- <sup>12</sup> Immigrants in Massachusetts 2020. <https://www.americanimmigrationcouncil.org/research/immigrants-in-massachusetts>
- <sup>13</sup> See note 4.
- <sup>14</sup> Hacker K, Chu J, Arsenault L, Marlin RP. Provider's perspectives on the impact of Immigration and Customs Enforcement (ICE) activity on immigrant health. *Journal of Health Care for the Poor and Underserved* 2012;23:651.
- <sup>15</sup> Torres JM, Young M-ED. A life-course perspective on legal status stratification and health. *SSM-population health* 2016;2:141-8.
- <sup>16</sup> See note 15
- <sup>17</sup> Bacong A, Sohn H. Disentangling contributions of demographic, family, and socioeconomic factors on associations of immigration status and health in the United States. *J Epidemiol Community Health* 2021;75:587-92.
- <sup>18</sup> Ro A, Van Hook J. Comparing immigration status and health patterns between Latinos and Asians: Evidence from the Survey of Income and Program Participation. *PLoS one* 2021;16:e0246239.
- <sup>19</sup> Hamilton ER, Hale JM, Savinar R. Immigrant legal status and health: legal status disparities in chronic conditions and musculoskeletal pain among Mexican-born farm workers in the United States. *Demography* 2019;56:1-24.
- <sup>20</sup> Lu Y, Li X. Documentation status, gender, and health selection of immigrants: Evidence from Mexican-US migration. *Population, Space and Place* 2020;26:e2333.
- <sup>21</sup> Nakphong MK, Young M-EDT, Morales B, Guzman-Ruiz IY, Chen L, Kietzman KG. Social exclusion at the intersections of immigration, employment, and healthcare policy: A qualitative study of Mexican and Chinese immigrants in California. *Social Science & Medicine* 2022;298:114833.
- <sup>22</sup> Ortega AN, Fang H, Perez VH, et al. Health care access, use of services, and experiences among undocumented Mexicans and other Latinos. *Archives of internal medicine* 2007;167:2354-60.
- <sup>23</sup> See note 13.
- <sup>24</sup> See note 14.
- <sup>25</sup> See note 15.
- <sup>26</sup> See note 21.
- <sup>27</sup> See note 22.
- <sup>28</sup> Philbin MM, Flake M, Hatzenbuehler ML, Hirsch JS. State-level immigration and immigrant-focused policies as drivers of Latino health disparities in the United States. *Social Science & Medicine* 2018;199:29-38.

- <sup>29</sup> Lauderdale DS, Wen M, Jacobs EA, Kandula NR. Immigrant perceptions of discrimination in health care: the California Health Interview Survey 2003. *Medical care* 2006;914-20.
- <sup>30</sup> Orrenius PM, Zavodny M. Do immigrants work in riskier jobs? *Demography* 2009;46:535-51.
- <sup>31</sup> Flores Morales J. Aging and undocumented: The sociology of aging meets immigration status. *Sociology Compass* 2021;15:e12859.
- <sup>32</sup> See note 8.
- <sup>33</sup> Esterline C, Batalova J. Frequently Requested Statistics on Immigrants and Immigration in the United States at <https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states#immigrants-labor-force>
- <sup>34</sup> See note 8.
- <sup>35</sup> Foundation KF. Health coverage of immigrants. Kaiser Family Foundation Washington, DC; 2022.
- <sup>36</sup> Perreira KM, Crosnoe R, Fortuny K, et al. Barriers to immigrants' access to health and human services programs. ASPE Issue Brief Washington, DC: Office of the Assistant Secretary for Planning and Evaluation 2012.
- <sup>37</sup> <https://www.mass.gov/orgs/health-safety-net>
- <sup>38</sup> See note 21.
- <sup>39</sup> See note 10.
- <sup>40</sup> See note 22.
- <sup>41</sup> Vargas Bustamante A, Fang H, Garza J, et al. Variations in healthcare access and utilization among Mexican immigrants: the role of documentation status. *Journal of immigrant and minority health* 2012;14:146-55.
- <sup>42</sup> Pourat N, Wallace SP, Hadler MW, Ponce N. Assessing health care services used by California's undocumented immigrant population in 2010. *Health Affairs* 2014;33:840-7.
- <sup>43</sup> Wilson FA, Wang Y, Borrell LN, Bae S, Stimpson JP. Disparities in oral health by immigration status in the United States. *The Journal of the American Dental Association* 2018;149:414-21. e3.
- <sup>44</sup> Lindsay AC, de Oliveira MG, Wallington SF, et al. Access and utilization of healthcare services in Massachusetts, United States: a qualitative study of the perspectives and experiences of Brazilian-born immigrant women. *BMC health services research* 2016;16:1-8.
- <sup>45</sup> Wilson FA, Wang Y, Stimpson JP, McFarland KK, Singh KP. Use of dental services by immigration status in the United States. *The Journal of the American Dental Association* 2016;147:162-9. e4.
- <sup>46</sup> See note 1.
- <sup>47</sup> See note 13.
- <sup>48</sup> Allen B, Cisneros EM, Tellez A. The children left behind: The impact of parental deportation on mental health. *Journal of Child and Family Studies* 2015;24:386-92.

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